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THE REPUBLIC OF YEMEN
Unlocking the Potential for Economic Growth

A Country Economic Memorandum

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Currency = Yemeni Rial (YER)
USD 1 = YER 214.9

Abbreviations and Acronyms

CEM	Country Economic Memorandum	PSA	Production-sharing agreement
DFID	U.K. Department for International Development	SOE	State-owned enterprise
EITI	Extractive Industries Transparency Initiative	TEVT	Technical education and vocational training
GCC	Gulf Cooperation Council	WDI	World Development Indicators
GDP	gross domestic product	WTO	World Trade Organization
OECD	Organisation for Economic Co-operation and Development		

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Disclaimer

This Country Economic Memorandum was undertaken in May 2014 before the situation in the Republic of Yemen began deteriorating significantly in September 2014. Though the cutoff date of the analysis was December 2014, most of the data used in the analysis date from no later than 2013.

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Executive Summary

i. **The long-term economic issues of the Republic of Yemen remain unresolved, and are further deepened from ongoing political and armed conflicts.** The internal political crisis that started in 2011 began worsening during the last quarter of 2014 and evolved into open conflict between the transition government and various warring factions, mainly Houthi and al-Qaeda. Since March 2015, the country is experiencing a major armed conflict, significantly deteriorating key economic and human indicators. The internal conflict stems (partially) from festering problems of governance and political economy that this Country Economic Memorandum (CEM) is meant to address. Although the Republic of Yemen has changed significantly since this study was undertaken, the analysis and recommendations of this CEM remain relevant for any future post-conflict recovery and reconstruction effort though most of the recommendations must likely await a more stable political environment to be implemented.

ii. **The deeply entrenched patronage system, including the exclusive distribution of government appointments and resources, is a major obstacle to reform that the country faces, and the political economy is the key determinant of growth.** The country has long been hostage to a short-term rent-extraction frenzy by multiple elites who have undermined any possibility of sustainable development, have been able to distort economic policy and block reforms, and have continued to seek rents aggressively that might otherwise have been recycled into development. This has occurred in the most profitable or most strategic economic subsectors such as oil and gas, agriculture, water, telecommunications, and financial services.

The struggle for the control of rents has distorted policies promoting growth and weakened the role of public interest groups

iii. **The policy distortions are rooted in the willingness of elites to use their control over state resources to extract rents.** This rent extraction has emerged in the context of the limited access order that North et al. (2007) have used to describe countries, such as the Republic of Yemen, where personal relationships among the elite form the basis of political organization and cooperation and where the capacity of citizens to act collectively to prevent predation by elites of the resource rents of the country is weak. Former President Saleh's power and ability to mediate among different groups derived not from centralized authority, but from an elite pact that permitted him to consolidate control over the government, the military, the tribes, and, later, through both co-optive and coercive strategies, over economic resources. In the same way that power was distributed informally and through personal connections, the regime also relied on informal networks to exercise influence. Thus, for example, it relied on tribal mediators to negotiate access to oil fields in troubled areas. In return, the mediators would be given access to state resources, including cash, cars, and jobs. The process worked in reverse as well: ordinary Yemenis needed to use informal power brokers to access state institutions to arrange meetings, for instance, or to make sure their cases were heard.

iv. **Although growth requires private sector participation, political incentives to promote private sector initiative by enterprises controlled by nonelite actors are scant.** Successful private entrepreneurs not affiliated with established elite groups are considered potential threats to elites and elite bargains, and everything has been done to reduce their influence and growth. To maintain the dominant position, Yemeni politico-military elites have relied on the strategy of limiting access to rents, including through the discretionary application of economic regulations. For example, barriers to access to credit have been used to curtail the entry of new firms and expand the privileges of incumbent firms. Similarly, exclusive access to government contracts by connected firms and limited competition have raised the cost of doing business

among unconnected firms, such as firms in the transport sector. In addition, elites have constrained the ability of other social groups to challenge their dominant position by restricting the right of association, press freedom, the role of civil society organizations, and access to data and information. This combination of measures has reinforced the divide within the private sector whereby a few connected firms thrive, while many others struggle to survive, but fail to grow. The stability of this equilibrium has also depended on the ability of elites to share economic rents selectively through subsidies and access to public employment. Public employment has been actively used as an instrument to guarantee jobs among influential and loyal tribal *shaykhs* (tribal leaders), while fuel subsidies have been used to ensure a minimum standard of living among the population. Such heavy intervention in the economy and in labor markets has muted the incentives for the private sector to grow, innovate, and generate jobs.

v. **The system of control over rents characterized Yemeni politics for the 30 years before 2011, but was not easy to sustain.** The rent system started collapsing in 2011 for two main reasons. One was the dramatic reduction in the oil revenues available for sharing, a particularly acute issue since the early 2000s. Competition and fragmentation heightened among Yemeni elites over a shrinking pool of resources. The second reason was the emergence of new claimants on rents. As new generations emerged and previously excluded tribes gained authority, the network of patronage grew, diverting a large and increasing share of state resources away from development. This resulted in a substantial rise in the wage bill, fuel subsidies, and defense spending—all important conduits for patronage—and less resources for capital investment.

The country's limited growth, low productivity, and low private investment over the past 20 years are symptoms of suboptimal development

vi. **For the last two decades, the economic performance has been good, but unimpressive.** The economy grew at an average of 5 percent a year between 1990 and 2010. However, because of rapid population growth, per capita gross domestic product (GDP) rose only 1.3 percent annually. Economic growth was largely driven by the hydrocarbon sector and associated private services (transport, trade, and communications) and public services. Services accounted for about 60 percent of GDP growth in 1990–2010, while industry and the primary sector contributed 24 percent and 16 percent of GDP growth, respectively. The service sector, which also includes oil-related services such as transport, has been the largest contributor to GDP growth since the mid-1990s, when hydrocarbon sector production was picking up, hinting at the fact that the economy has been exhibiting a key characteristic of the natural resource curse, namely, rapid growth in services rather than in commodity production (Collier 2010).

vii. **Growth has been driven by capital accumulation and, to a lesser extent, an expanded labor force, but without a productivity gain.** Of the average 5 percent annual GDP growth between 1990 and 2010, the average contribution of capital was 2.6 percentage points, while labor and other human capital contributed an average of only 0.3 percentage points. On average, the contribution to growth of total factor productivity was negative, at −1.2 percentage points. This result suggests that, without productivity improvement, it will be impossible to sustain high growth.

viii. **Investment, which has declined since 1997, has been mainly led by a private sector dominated by rent-seeking oil- and nonoil-related private activities.** In 1990–2010, average private investment represented 12.5 percent of GDP, while public investment represented only 5.5 percent of GDP. The most dynamic private sector undertakings consisted of a few individuals and business groups that launched profitable rent-extracting economic activities in areas such as oil and gas or real estate. Most private investment occurred within the segment of the private sector that was taking advantage of economic and political connections to expand activities. However, total investment has been decreasing since 1997 from an already low level, mirroring the trend in private investment, while public investment has also been low. After peaking at 24.2 percent of GDP in 1997, up from 10.5 percent of GDP in 1990, total investment broadly decreased, from an average of 19.4 percent of GDP in 2000–05 to 14.8 percent in 2006–10, while

private investment has been declining since the late 1990s, falling from 19 percent of GDP in 1997 to 7.1 percent in 2010; it was an average of 8.8 percent of GDP in 2005–10. This decline was exacerbated by the deterioration in security beginning in the mid-2000s. Also, public investment declined sharply, from 9.2 percent of GDP in 2003 to 4.6 percent of GDP in 2010; it was an average of 6.3 percent of GDP in 2005–10. Foreign direct investment was mainly concentrated in the oil and gas sector, which accounted for 88 percent of foreign direct investment in 2005–10. Oil investment was barely sufficient to restore some of the lost capacity that naturally occurs during the extractive process. As a result, overall hydrocarbon productive capacity is below the peak achieved in the early 2000s. The regular sabotaging of oil pipelines has worsened the situation, raising the costs of oil production.

ix. **Labor productivity has remained weak in the key sectors of manufacturing and services.** The analysis shows a large productivity gap between the mining sector, which includes oil and gas, and the rest of the economy because of the capital intensive nature of mining. Although the shift of workers from low-productivity agriculture mainly to the trade sector boosted average labor productivity in 1994–2010, the majority of workers are still active in sectors with low productivity, such as agriculture (24.7 percent of workers), construction (10.6 percent), and trade (22.1 percent). Mining accounts for only 1.3 percent of workers, and productivity in mining has fallen. The lack of productive diversification, innovation, and structural transformation, as well as the lack of inclusiveness in the meager growth process, has led to limited employment opportunities among the mostly young and growing labor force. Weak productivity, high unemployment, and the misallocation of labor and human capital have generated weak economic performance.

The hydrocarbon sector, especially oil, has been the key source of rents, which are used mainly to the advantage of the patronage system

x. **Hydrocarbon resources have been the main engine of economic activity for more than 20 years.** The contribution of the sector is much larger than the 12.5 percent average share of oil and gas activities in value added GDP that was registered in 1996–2014 and that derives from the multiplier effect of the demand in sectors—mainly construction and services—linked to hydrocarbon resources. Oil and gas dominate exports, constituting more than 90 percent of exports, and account for about 75 percent of government revenue. Despite the decline in oil production, it remains a key source of exports and government revenue.

xi. **The management of oil and gas resources has been a victim of market distortions and elite capture.** Rents generated by the oil sector have been mainly used for political purposes and distributed to political, military, and tribal elites, but also to pay the relatively large government bureaucracy. The share of wages and subsidies in the national budget has been rising steadily and has represented up to 20 percent of GDP, or more than 50 percent of total government expenditure, during the last 20 years. Fuel distribution and the extensive subsidy system have not only weighed heavily on the government budget, but have also favored the smuggling of fuel products, which has benefited the elites and created severe supply shortages. While fuel subsidies to final consumers were partially removed in September 2014, this reform is still controversial. In addition, the subsidies for the inefficient power-generation industry have not been removed.

xii. **The government has been unable to diversify economic production beyond the extractive industry and thereby develop the nonoil sector.** The oil and gas sector is responsible for one-fourth of economic growth, while the remaining three-fourths of growth are generated by services, mainly trade and transport, the banking sector, and telecommunications. However, most successful enterprises involved in these services are not typical Yemeni enterprises. They are generally well connected to political and military power and have strong links with the oil sector. The inability to develop the nonoil sector and, more broadly,

to promote growth arises because of the incapacity of the elites to cooperate and exploit the country's natural resources sustainably and responsibly.

Elite networks have prevented appropriate land and water reforms, thus blocking the development of agriculture, a key sector in the economy

xiii. **Agriculture's capacity to develop is quite limited mainly because of the scarcity of arable land and water.** The Republic of Yemen has one of the lowest per capita supplies of freshwater in the world because of rising population and limited water resources. The sector faces other constraints such as low productivity, limited diversification, and the lack of infrastructure in rural areas, but the mismanagement of land and water is the most problematic.

xiv. **Land management needs to be improved; in particular, legislation is inefficient and benefits mostly the well connected.** The land registration process, which is based on a deed registration system, is inefficient, time-consuming, and untrustworthy. The sale of several deeds for individual parcels of land and other types of fraud are common. Registration provides no assurance of title and no national cadaster exists; a situation that creates room for fraud and leads to land disputes, which benefit the most powerful tribal and politico-military elites.

xv. **Competition for water resources is common and benefits mostly powerful and well-connected people.** This competition arises because of the territorial control over the flow of surface water to downstream users and over the access to groundwater. Groundwater has been declining drastically over the last three decades. This is a result of (a) misguided policies involving subsidies for water extraction, leading to the overextraction of water, especially for the cultivation of qat, a native flowering plant typically chewed as a stimulant and to induce euphoria; (b) rapid agricultural development; (c) a lack of law enforcement to regulate water use; and (d) substantial vulnerability to climate change. Low-interest loans, cheap diesel fuel pricing, and public investment have encouraged the use of water in surface or spate irrigation. In particular, qat cultivation accounts for 40 percent of water use. The misguided policies have benefited mostly the richest and most powerful segments of society, giving rise to a water crisis that elites have not been able to address. Indeed, officials involved in water management point to a prioritization of elite interests over long-term sustainability as a key issue in water and agricultural management.

Elite networks have inhibited private sector development and limited the expansion of the nonoil sector

xvi. **Problems in governance have represented a substantial barrier to the development of the private sector.** The government has not been able to use oil revenues to develop a modern economy beyond the hydrocarbon sector. In general, firms face a lack of profitable opportunities and weak capacity for expansion in product markets. Nonetheless, a few firms, especially state-owned enterprises (SOEs), tend to be more successful. This suggests that the poor functioning of formal market institutions is a barrier to the successful growth of new entrants into business and that business regulations and institutions need to become more efficient and promote fair competition.

xvii. **The appropriate implementation of laws and the enforcement of regulations should be a priority if the business environment is to improve.** The enforcement of regulations and laws is sometimes subverted or undermined as soon as the regulations and laws are enacted because implementation is hampered by the influence of interest groups. For example, a special law passed against monopolies and to foster competition provides for the establishment of a competition protection and monopoly and commercial fraud prevention commission, which has not yet been formed. A top priority should be to tackle the implementation gap in the delivery of government services to business. The gap has appeared because

the most well connected enterprises are able to take advantage of the poor rule of law, corruption, and institutional weakness.

xviii. **The lack of independence in the judiciary is the major factor behind the poor enforcement of laws and regulations.** The judicial system is hampered because of frequent government interference and the government's reluctance to enforce court rulings. Thus, after the courts ruled against banks in repeated cases, the banks avoided bankruptcy by simply rescheduling their commercial loans. Numerous textual ambiguities and omissions in laws and regulations also leave room for judges to resort to uncodified legal sources to support their decisions.

xix. **The poor quality of trade, transport, and logistics infrastructure and limited access to electricity, telecommunications, land, and other public services undermine the competitiveness of firms.** While the political and security situation has exacerbated these issues, the roots of the bad performance lie in poor government oversight, the power of the government monopoly, and the lack of a framework for enhancing public services. For example, the poor performance of the electricity sector is the result of the pervasive involvement of government agencies in the sector without a clear legal framework, the monopoly of the sector by the poorly performing state-owned integrated power company, the Public Electricity Corporation, the chronic setting of low electricity prices by the government, and the lack of a coherent and transparent framework to support private sector participation. The decisions and actions taken to address emerging sectoral issues are typically shortsighted and motivated by political interests without consideration for the negative impacts on private investment. Likewise, limited competition in telecommunications because of government monopolies on international connectivity and access to the backbone infrastructure inhibits the expansion of the sector.

xx. **Little has been done to develop the nonoil sector; export performance is poor because of high production costs and the limited participation of firms.** Exports of merchandise goods were one of the driving forces of economic growth in the early 1990s, but stagnated during the 2000s and remains volatile. Non hydrocarbon exports are dominated by agriculture and fisheries, which account for over 60 percent of these exports. Few firms participate in the export market, and, if they do, their export volume is low compared with firms elsewhere in the Middle East and North Africa region and in Sub-Saharan Africa. In addition, Yemeni exports are concentrated on only a few destinations: China, India, and Thailand account for over 70 percent of the total oil and gas exports, while about 30 percent of the total nonoil exports go to Saudi Arabia. Raising export volume among firms and expanding the number of firms that export appear to be the two main areas in which the country's merchandise exports could be boosted. To achieve this goal, the competitiveness of firms will need to be fostered by reducing production costs (labor and inputs) to improve productivity. Limiting the appreciation of the Yemeni rial would also contribute to greater export volume through the intensive margin by allowing firms to reach more market destinations and export more products.

xxi. **The country has not used oil benefits to develop human capital, and the labor force is largely characterized by substantial gaps in education and skills, which limit the potential to fill the scarce well-paying jobs and undertake entrepreneurial ventures.** In particular, female labor market participation remains low and needs to be increased, especially by promoting the education of girls and women at all levels, including in technical education and vocational training, which remains poor in quality and does not always respond to employer needs. In particular, education and skill shortages among migrant Yemenis represent a loss in competitive edge relative to non-Yemeni workers in the labor markets of neighboring Gulf Cooperation Council (GCC) countries. It is therefore important to bridge the gap between TEVT curricula and labor demand, especially by strengthening the links among the TEVT system, labor markets, and private sector enterprises. Finally, for the benefit of migrant Yemenis, the quality of education and training in general should be aligned with GCC standards.

In the long run, federalism represents a possible way to reconcile national and elite interests

xxii. **The adoption of a federal system of government could represent the solution to numerous challenges by devolving power and enhancing accountability, oversight, and citizen engagement.** It could thus help reduce corruption and create an environment of constructive competition across regions on issues of development. In January 2014, the delegates at the National Dialogue Conference ratified the final conference document, which stipulated the transformation of the Republic of Yemen into a federal state, and, in February 2014, the national dialogue committee published its final report, recommending six regions, four regions in what used to be the Arab Republic of Yemen prior to the 1990 unification and two regions in what used to be the People's Democratic Republic of Yemen. The committee also announced the composition of the states that are to be included in each region.

xxiii. **Even before the crisis erupted in September 2014, it was unclear how the regional governments would be formed.** The allocation of regional control over natural resources and issues of national unity dominated the debate over the various federal plans. The poorer areas of the country opposed granting autonomy to richer, particularly oil-rich regions. This led to cleavages between south and north, but also, in the south, between east and west. In a country where armed groups are active in all regions and security is a significant concern, federalism was viewed by some as a recipe for the dissolution of the country. National elites saw a significant political risk in federalism, and little was understood or decided about the manner in which regional governments would be elected, or about the policies over which they would have responsibility. The nature of the regional control over natural resource rents was likewise unclear. A central government with less access to oil rents would have drastically reduced abilities to co-opt elites.

xxiv. **The absence of detail on the institutional framework of the federal proposal meant that the consequences of the six-region plan were difficult to discern.** On the less optimistic side, the external actors interested in the internal politics and security situation in the country were no less active after 2011 than before. These actors therefore had no reason to reduce the financial flows they were using to influence events. This influence is unlikely to diminish if the flows are channeled to new and underfunded regional governments. In addition, given the number of groups with the capacity to project force in the country and the weakness of civil institutions, the struggle over the allocation of natural resource rents will continue, regardless of the formal outcome of constitutional negotiations.

xxv. **More optimistically, although fragmentation within the six regions mirrors the social fragmentation of the country, federalism would reduce the challenges of collective action and government accountability because it aligns more traditional and modern political structures and interests.** Any given tribe is a more encompassing and representative social organization within its region than within the country and is therefore more likely to internalize the costs of inefficient regional policies than the costs of inefficient national policies. Similar arguments can be made about the Houthi movement in the north or the al-Hirak movement in the south.

Recommendations

xxvi. **The recommendations of this CEM are expected to help set the scene for future growth and address structural constraints in the medium and long term.** This CEM analyzes the key obstacles to unlocking the Republic of Yemen's economic growth potential and has been commissioned with the intention to provide Yemeni policy makers with specific priority policy recommendations to remove the binding constraints to growth, while ensuring that policies are rooted in political reality. The situation in the country has, however, changed significantly since this study was undertaken, especially since January 2015. Whereas this report was expected to deliver recommendations toward the end of the post-2012

political transition, the recommendations will now need to be considered by a post-conflict government that will be tasked with the priorities of reconstruction and economic recovery.

xxvii. **The CEM recommends measures to help reduce capture, prevent conflict, facilitate investment, and encourage the sustainable use of human capital and natural resources, particularly land, water, oil, and gas.** The rent-seeking behavior of elites has reduced the ability to use oil revenues to promote private sector development and build the country's infrastructure and human capital. Therefore, the measures recommended aim at (a) strengthening institutions for the governance of key resources and improving the ability of the population to act collectively to identify better policies; (b) improving management in the oil and gas sector, including attracting investment in exploration; (c) using land and water efficiently and reducing the capture of the sector by elites; (d) reducing the obstacles to competitiveness and enhancing the rule of law in business; and (e) enhancing the quality of human capital. Addressing the issue of elite capture is expected to be a long and difficult process.

Introduction

1. **Long-term economic issues are unresolved in the Republic of Yemen, while the country is experiencing a political conflict.** The political crisis that started in 2011 worsened in the last quarter of 2014, becoming an open conflict between the transition government and various warring factions, mainly Houthi and al-Qaeda. The conflict is (partially) a symptom of unresolved governance and political economy issues this Country Economic Memorandum (CEM) is trying to address. Although the country has changed significantly since this study was undertaken, the CEM analysis remains relevant, though most of the recommendations likely must await a more stable political environment to be implemented.

2. **The economy is often portrayed within a dire picture of impending disaster, but the main obstacles revolve around the lack of institutional development.** Although the economic and social problems are real, including sluggish growth in gross domestic product (GDP), high unemployment, declining oil production, and water issues, they are not caused by an absolute, irreparable shortage of resources. Possessing liquefied natural gas reserves, mineral riches, a once-prominent deep-water port, opportunities for tourism, and more, the country is, in many ways, rich in resources. However, these resources have not been used efficiently to generate adequate growth to steer economic and social development. The country's contentious politics and lack of institutional development constitute the main obstacles to surmounting the current economic difficulties.

3. **The root problems reside in the lack of governance and in elite capture.** For the last 20 years, economic growth has stemmed primarily from oil revenues, not from fostering domestic labor, infrastructure, or investment, all sources of sustainable, long-term economic growth and stability. However, the oil resource has been captured by elites, and the country's institutions and infrastructure have long been neglected. Water resources have been depleted and inefficiently used in the agricultural sector; the government's institutional capacity has remained week; and Yemeni labor is not being put to good use at home and regionally. The theme of this report, unlocking the potential for economic growth, reflects the urgent need to tackle these obstacles.

4. **The CEM analyzes the key obstacles to unlocking the country's potential for economic growth and provides policy recommendations to remove these obstacles, while ensuring that policies are rooted in political reality.** The expected end of the political transition is the perfect time to rethink the socioeconomic model and address the challenges the country is facing. This report identifies the challenges linked to the current political instability and economic insecurity and explores why factor productivity continues to be low and what may be done to take advantage of the resources—natural and human—the country possesses. The report is organized into six chapters grouped into three parts, as follows.

5. **Part I of the report provides an overview of the economy.** It has one chapter (chapter 1), which provides an overview of the country's growth and macroeconomic performance and challenges and analyzes and emphasizes the limited dynamism of a rent- and hydrocarbon-cursed economy.

6. **Part II describes cross-cutting issues that constrain policy implementation, regardless of the sectors where they occur.** These problems include political distortions (described in chapter 2), impediments to the business environment (chapter 3), and the lack of quality in human capital (chapter 4).

- In chapter 2, the report draws on material outlined in the rest of the report to argue that the policy problems that undermine the country's development can be linked directly to political distortions introduced by the fragmentation among the population and the elites. While the informal elite networks

are able to block reform and aggressively continue to seek rents that might otherwise be recycled into development, the population is unable to exert its rights and hold the elites accountable.

- Chapter 3 analyzes the major impediments in the business environment. Through the analysis of the de jure legal and regulatory business environment as well as the enforcement of business regulations, the chapter identifies key legal and institutional changes that can help reduce the opportunities for rent seeking that favor well-connected businesses.
- Chapter 4 discusses the opportunities to maximize the benefits of the country's human capital by enhancing the quality of worker skills, increasing women's labor force participation, and facilitating the migration of Yemenis to work in the Gulf Cooperation Council (GCC) countries. To achieve this goal, the Republic of Yemen needs to enhance the quality of the education system, especially technical education and vocational training (TEVT), and respond to the existing demand for skilled workers.

7. **Part III explores the specific constraints and sources of growth in the key sectors of agriculture (chapter 5) and oil and gas (chapter 6) and discusses the governance reforms required.** The selection of these sectors has been guided by their importance to the economy. While the oil and gas sector has played a major role in economic growth over the last 20 years, elite capture and mismanagement have prevented the sector from reaching its potential. The broad agricultural sector has substantial potential for growth and employment generation, but resources, especially the access to land and water, need to be used efficiently.

- Chapter 5 explores the constraints to realizing the potential of agriculture. It argues that a key constraint on the sector is the capture of land and water by multiple elites motivated by short-term rent extraction, which prevents the efficient management of these assets and therefore undermines any possibility of sustainable development. The chapter also discusses other constraints and weaknesses affecting the sector and proposes legal and institutional changes that could help increase transparency in the management of the sector.
- Chapter 6 analyzes the prospects for growth in the oil and gas sector and discusses key governance reforms that would help reduce rent seeking in the sector.

PART I. OVERVIEW OF THE ECONOMY

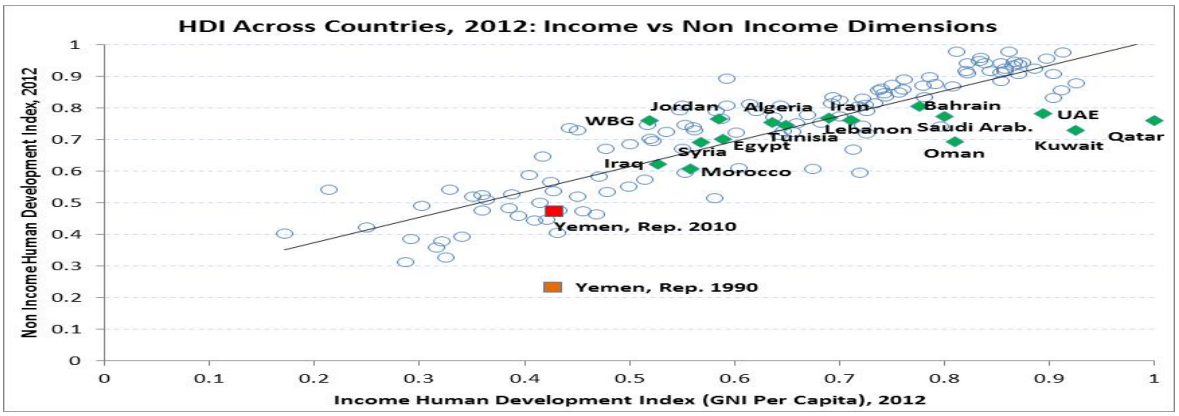
Chapter 1: Growth Performance

8. **This chapter provides an overview of the growth and macroeconomic performance of the Republic of Yemen.** For the last two decades, the country's economic performance has been good, but unimpressive. On average, the economy grew at 5 percent annually between 1990 and 2010. However, because of rapid population growth, GDP per capita rose only 1.3 percent a year, which is not sufficient to reduce poverty. The following section provides a brief overview of the country's economic development. The subsequent section seeks to unpack the drivers of economic growth by decomposing growth into its main components. The last section offers an overview of macroeconomic performance and challenges.

1.1. Overview of the Country's Progress in Development

9. **Progress in human development outcomes is limited.** The Republic of Yemen exhibits the lowest GDP per capita in the Middle East and North Africa region and is also the most underdeveloped country based on the nonincome dimension of the human development index.[1] The country is below the levels of education and health indicators that would be expected based on per capita income (Figure 1).[2] While there has been progress in the expansion of education, such as in literacy rates, enrollments in basic and higher education, and TEVT, significant gaps remain relative to regional partners and even low-income peers in terms of required resources (public investments) and the quality of education, especially secondary and tertiary education (World Bank and Republic of Yemen 2010).[3] Similarly, malnutrition, food insecurity, and inadequate access to water, social welfare, and health care have deteriorated since the 2011 revolution. This has affected especially the most vulnerable, mainly women, children, and youth (World Bank 2012). Such issues constitute a reflection of a larger problem represented by the lack of inclusiveness in the development process.

Figure 1. Cross-Country Comparison of the Income and Nonincome Dimensions of Development, 2012



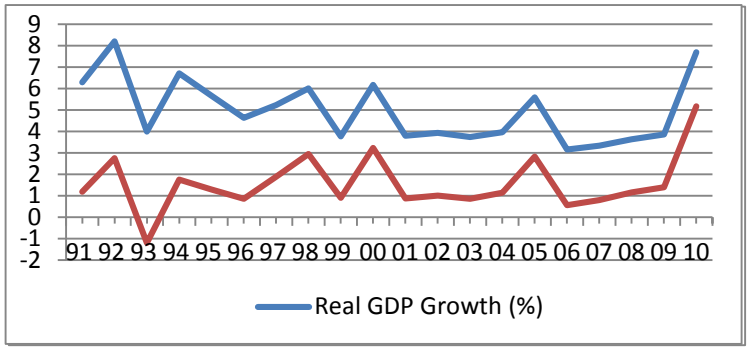
[1] By 2012, the last year on which data are available on all countries in the Middle East and North Africa region, the country's per capita GDP in current U.S. dollars was, at $1,341, only 15 percent of the regional average and almost half the level of the economy with the second lowest per capita GDP, the West Bank and Gaza. See also UNDP Open Data (database), United Nations Development Programme, New York, https://data.undp.org/dataset/Income-index/qt4g-yea9.

[2] According to the most recent relevant classification of countries based on gross national income per capita (Atlas Method), the Republic of Yemen is a lower-middle-income economy, with a gross national income per capita of $1,300 in 2013, relative to a $1,036 threshold under which countries are considered low income.

[3] This contributed to a rise by a factor of two in the country's nonincome human development index between 1990 and 2012.

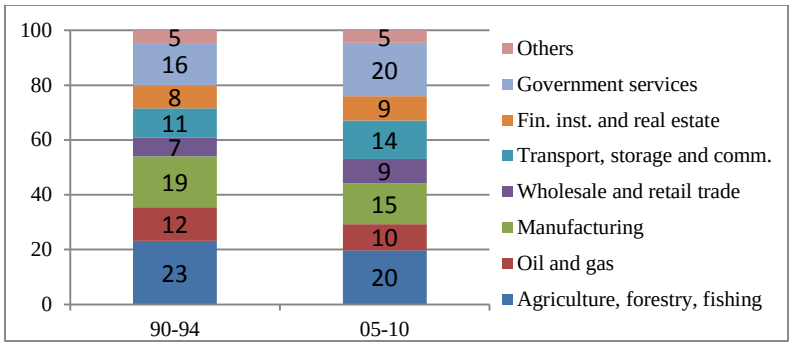
10. **Economic growth has been good over the past two decades, but it is insufficient in light of the significant demographic growth.** Between 2000 and 2010, the economy grew at an average 4.5 percent a year, down from an average 5.6 percent a year in the 1990s. While this rate of growth appears respectable, the country has also been characterized by rapid population growth (at 3.1 percent over the period), so that the growth in per capita GDP averaged less than 1.5 percent a year (Figure 2).[4] As a result, unemployment remains high, particularly among youth, among whom it reaches 45 percent. Furthermore, about 70 percent of the employed labor force works in the informal sector, and most of the formally employed work for the government or entities dependent on the government. This reflects a weak and sluggish private sector incapable of generating jobs.

Figure 2. GDP Growth, (annual rates, %)



11. **The change in the structure of the economy through a shift from agriculture to public and private sector services does not reflect a growth in productive sectors.** Over the last two decades, the composition of GDP has changed somewhat (Figure 3). During the periods 1990–1994 and 2005–10, the largest sectors in terms of GDP shares were agriculture and fisheries (over 20 percent of GDP), government services, manufacturing, transport and communications, oil and gas, and trade. Among these activities, the GDP shares of government services, trade, and transport and communications increased during the two periods. However, most of these activities benefit from a noncompetitive economic environment that enables them to capture large market shares and generate growth, but with little job creation.

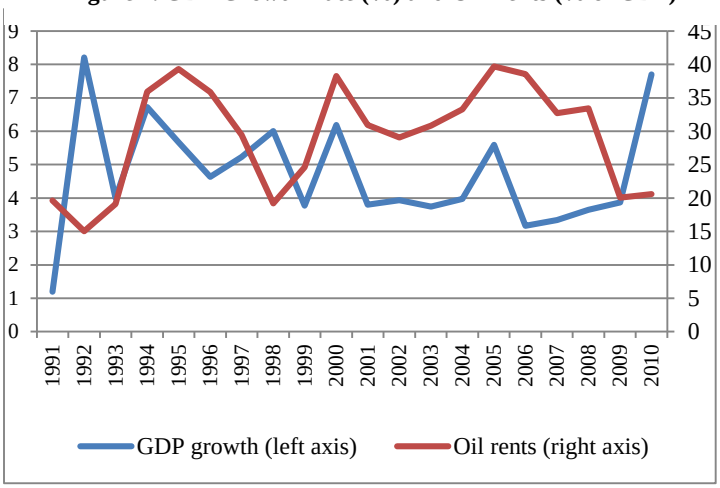
Figure 3. Change in the Weight of Sectors (% of GDP)



[4] The high population growth rate arose, in part, because of an incomplete demographic transition: fertility rates were over 8 children per woman of childbearing age (15–49 age-group), twice the average in the Middle East and North Africa region in 1990. But it also arose because of the return of close to 1 million Yemenis from the Gulf States in the early 1990s. Because the Republic of Yemen was against the international coalition's war against Iraq, Saudi Arabia ended all economic assistance and deployed troops on the frontier. In addition, it expelled about 1 million Yemeni immigrants. As a result, not only did the country suffer a sudden loss of remittances, but it also had to face the problem of absorbing the huge influx of returnees. In the space of three months, it experienced a 7 percent increase in the population and a 15 percent expansion in the workforce, pushing unemployment up severely.

12. **Economic performance has been driven by oil since the 1990s, but oil revenues are at the root of the slowdown in economic reforms in the 2000s.** After the unification of the country in 1990, the economy grew at an average 6.3 percent a year until 1994.[5] However, the civil war that erupted in 1994 caused economic growth to decelerate to 4.2 percent in 1994. With the achievement of political stability facilitated by oil rents, the government implemented an economic reform and stabilization program that helped keep the growth rate at an annual average 5.2 percent in 1995–2000 (Figure 4).[6] In the 2000s, a number of reform initiatives were launched, including civil service and public financial management reforms, a major adjustment in fuel subsidies in 2005, the introduction of a general sales tax, an anticorruption drive, and improvements to the social safety net, but most were only partially implemented and with significant delays. The country's willingness to reform succumbed in the face of increasingly favorable international oil prices and rising political and security constraints. Economic growth during 2000–10 decelerated to an average rate of 4.3 percent a year, while GDP per capita increased by 1.6 percent. In 2011, the political and security crisis caused the economy to slip into recession, and GDP shrank by 12.7 percent. The economy recovered slowly, growing by 2.4 percent in 2012 and 4.8 percent in 2013. In 2014, economic growth slowed to about 0.3 percent because oil production was restricted by infrastructure sabotage and severe fuel shortages and widespread power cuts seriously disrupted economic activity. Macroeconomic stability is now constantly threatened by insecurity and political instability, the main causes of the oil infrastructure sabotage that has reduced hydrocarbon production and, hence, export revenues, the most important source of government revenue. In addition, the current energy subsidy system absorbs most fiscal revenue, compromising fiscal sustainability and leaving little scope for urgently needed growth-enhancing infrastructure investment and social expenditures. To mitigate the impacts of oil price shocks as oil reserves decline, the country must prepare to transition to a nonoil economy, especially by promoting private investment.

Figure 4. GDP Growth Rate (%) and Oil Rents (% of GDP)



13. **The government has not been able to use oil rents to promote productive activities and diversify the nonoil sectors of the economy.** During the last 20 tears, the oil sector has been responsible for about one-third of economic growth, while the remaining two-thirds of growth have been generated by services, mainly trade and transport, banking, and telecommunications (see below). However, most successful enterprises involved in these services have close links to the oil industry and to the political and military elites, and a large part of the rest of the economy is informal and has been stagnant. Government revenues, mostly generated by the hydrocarbon sector, have been used primarily for recurrent expenditures,

[5] Unity was fostered by serious economic problems in both the former Arab Republic of Yemen and the former People's Democratic Republic of Yemen. A growing debt service burden in both countries trimmed foreign exchange reserves during 1988–89. At that time, the two countries were the poorest in the Arab world, and both governments hoped that the unity process would facilitate lucrative joint oil development projects—especially in the disputed territory along the undefined border lying between the former Arab Republic of Yemen's Marib and the former People's Democratic Republic of Yemen's Shabwa—that would generate badly needed revenue.

[6] The program focused on stabilization, price and trade liberalization, investment regulation, fiscal adjustment, and reform of the exchange rate regime. This was a response to three major shocks: a harsh drought in the early 1990s, the precipitous drop in worker remittances and external aid following the Gulf war, and the high costs of unification and reconstruction after the civil war of 1994.

mainly on consumption, especially to subsidize the prices of oil products. As a result, capital expenditure has been low (an average of 6.7 percent of GDP in 2000–10), and investment on public infrastructure and services has not been sufficient to create an enabling environment for private sector development and economic diversification.

14. **The lackluster economic performance is tied up in a substantive set of intertwined problems that stifle social returns and limit the ability of entrepreneurs to appropriate the returns.** Costly, ineffective intermediation, especially for the sake of small and medium enterprises, and the crowding out of the private sector by the government are further complicating the potential for diversification, innovation and employment generation among small and medium enterprises. From the perspective of growth diagnostics, all such problems that extend basically over every single branch of the diagnostics tree have a common, fundamental root, namely, the interplay of failures by the government and the pervasive influence of elites, characterized by rent-seeking behavior and the inability to act to regain social stability and macro stability and to build the fundamentals for long-term growth (**Box 1**).

15. **A large share of the country's industrial assets remain partially or fully state owned and subject to tribal control as part of the patronage system.** There are several state-owned enterprises (SOEs) in various sectors, including electricity, water, oil and gas, construction, and telecommunications. The Yemen Economic Corporation, the Public Electricity Corporation, the Yemen Petroleum Company, and the Yemen Telecommunication Corporation are the most prominent examples of SOEs. Government ministries supervise the operation of each SOE. There are also mixed-sector enterprises with mixed public-private ownership. The president of the country appoints the managing director of each SOE, who coordinates with the relevant ministries in taking vital decisions. In some areas, for example, power distribution and fuel distribution, only SOEs are allowed to operate. The private sector is mainly composed of micro and small enterprises operating primarily in small retail trade and services. According to the latest establishment census, large enterprises (over 25 employees) account for only 0.3 percent of all enterprises (**Table 1**; see also chapter 3). An indication of the extent of tribal control and patronage is offered by the fact that successful businesses established before 2011 were pressured to partner with prominent political, military, and tribal elites, so that, by some estimates, fewer than 10 families controlled more than 80 percent of imports, manufacturing, processing, banking, telecommunications, and transport in 2011 (Hill et al. 2013; Chatham House Yemen analysis, 2012).[7]

Table 1. Private Enterprises, by Size

Staff, number	Enterprises, number	Share of total, %
1–4	276,719	91.9
5–9	12,867	4.3
10–24	3,288	1.1
25+	1,034	0.3
Not defined	7,067	2.3
Total	300,975	100.0

Source: 2004 establishment census, Central Statistical Organization.

Box 1. The Republic of Yemen: Growth Diagnostics

In identifying the main binding constraints to economic activity and private entrepreneurship, the growth diagnostics framework is valuable: a top-down approach that systematically analyzes each of the elements that might impose wedges between actual and expected returns to economic activity (Hausmann, Rodrik, and Velasco 2004). Based also on an extensive process of data analysis and consultations with stakeholders from the government, the private sector, civil society, and international partners, the main hypothesis suggests the binding constraints arise from the pervasive consequences of a dysfunctional government, together with deeply rooted networks of patronage, that have the following effects:

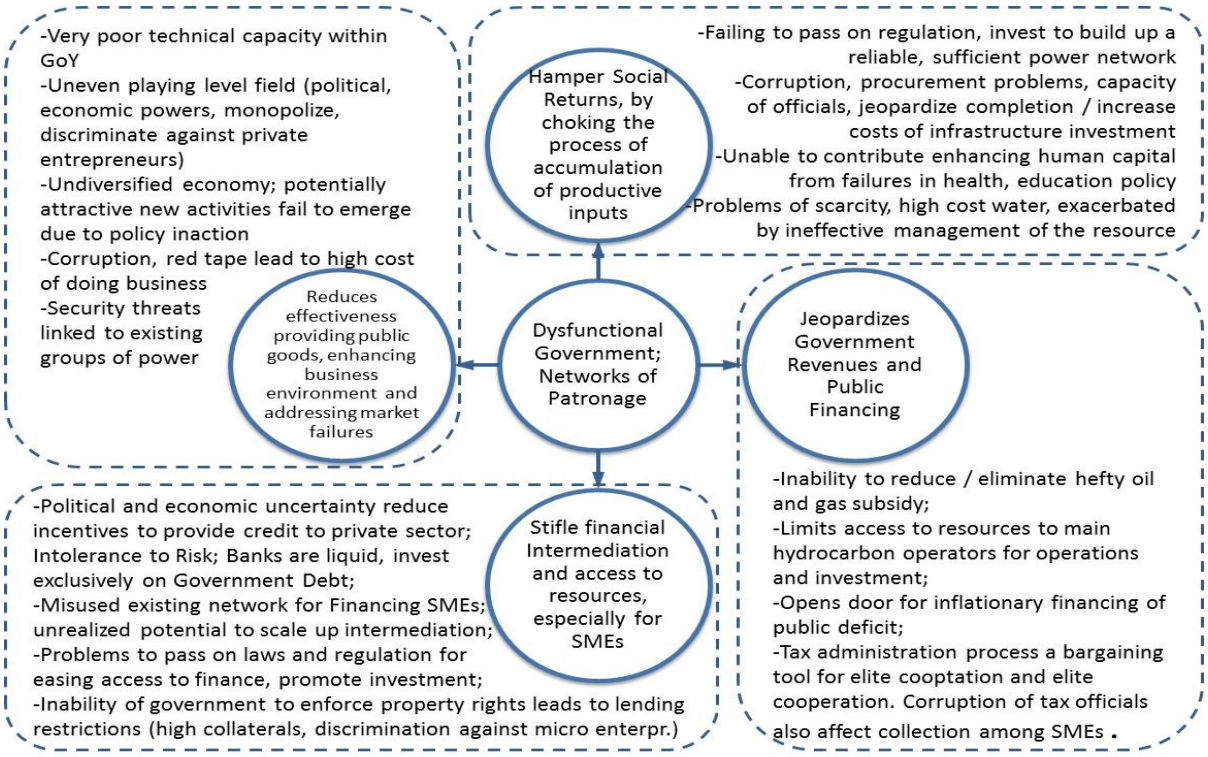
- Determine the shortsighted, rent-seeking behavior of elites and groups of power, hurting output potential and the opportunities for inclusive development

[7] Chatham House calculated this figure by building a map of the biggest companies in the most important sectors of the economy using hard data and anecdotal detail acquired through interviews and showing that a small group of economic players controlled the overwhelming majority of the country's most important economic assets.

- Limit the ability of private entrepreneurs to undertake, scale up, and modernize economic activities
- Discourage, harm, or fail to contribute to the process of human capital formation, thus limiting the ability of individuals to take advantage of potential opportunities or contribute to the pool of ideas and economic initiatives

According to this hypothesis, the country's low potential for growth and diversification has been driven by a phenomenon of state capture: political dynamics linked to a dysfunctional government and shifting, unstable, and harmful elite alliances. Such dysfunctionality and the omnipresence of groups of power affect all areas of economic activity, as illustrated in the growth diagnostic tree (Figure B1.1). This CEM shows that lack of governance, regulatory and institutional gaps, and rent-seeking behavior undermine the development of the private sector and constitute major constraints on the development of the agricultural sector and the oil and gas sector. It offers real recommendations for reform that can be acted on. However, as a prerequisite to such reform, all parties should recognize that, historically, fragmentation among competing elites has prevented the elites from working collectively for the common good and, consequently, contributed to a dysfunctional government that has constrained growth potential.

Figure B1.1. The Republic of Yemen: Growth Diagnostics Tree



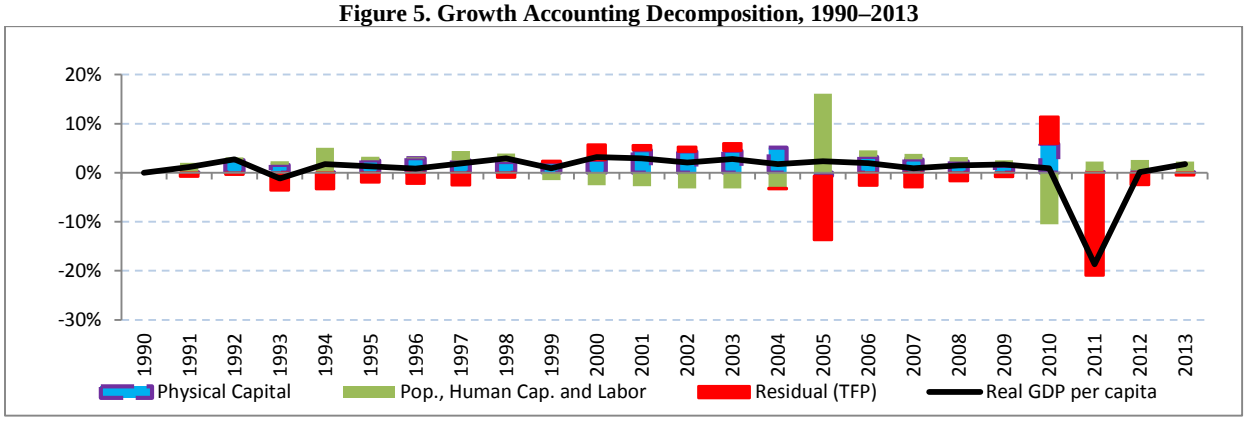
1.2. Drivers of Growth

16. **This section explores the drivers of growth in the country's economy.** The overall picture exhibits mostly falling total factor productivity associated with a lack of structural transformation, lethargic innovation (shown by the lack of dynamism in manufacturing and modern service activities), and reliance on extractive industries for output generation and on low-productivity agriculture and services for the generation of employment.

17. **Over the past two decades, the country's growth has been largely driven by capital accumulation and the expansion of the labor force, but with little improvement in productivity.** To measure the contribution of the various factors in the country's economic growth and indirectly compute

the rate of technological progress, the total factor productivity, we have carried out a growth accounting decomposition (Box 2). The results highlight that, in 1990–2010, average annual growth was 5 percent, but per capita growth was only 1.7 percent because of the high rate of population growth (Figure 5). The sources of growth change slightly depending on the period. In 1990–94, economic growth was driven mainly by the expanding labor force, but there was limited capital accumulation, and no improvement in productivity. Annual growth rates of real GDP of 6 percent were equivalent to only slightly more than 1.1 percent in per capita terms considering the almost 5 percent average annual population growth. From 1994 to 2010, growth was increasingly driven mainly by capital accumulation (mostly in the oil and gas sector) rather than labor force expansion. This period also coincided with the implementation of a program of economic reforms and stabilization that was undertaken in early 1995. In 2011, the economy contracted by more than 12 percent because of the political unrest. Continued instability and uncertainty have characterized the recent years under the transitional government. Sustained civil conflict has been linked to the emergence of al-Qaeda in the Arabian Peninsula and continued civil strife, especially with southern separatist groups and the Houthi movement in Saada. The result has been a pattern of sluggish growth at an average 3.3 percent between 2011 and 2013, mainly driven by the expanding labor force and accompanied by negative total factor productivity growth.

Figure 5. Growth Accounting Decomposition, 1990–2013



Box 2. Growth Accounting

From the aggregate macroeconomic viewpoint, an increase in productivity can be measured by gains in total factor productivity. In this setting, total factor productivity represents any change in real output that cannot be explained by physical or human capital accumulation. To measure it in the case of an economy, a production function must be assumed that estimates how inputs are combined to produce outputs. We have assumed a standard Cobb-Douglas production function, as follows:

$$Y_t = A_t K_t^{\alpha} (L_t H_t)^{(1-\alpha)}, \qquad \text{(B2.1)}$$

in which A measures technological progress (total factor productivity); K is physical capital; L is labor employment; H is a human capital index, calculated as $H = e^{0.07.S}$, where S represents the average number of years of school among the labor force on the assumption that returns to education are 7 percent a year; the parameter α measures the elasticity of output Y to physical capital K; and $1 - \alpha$ measures the elasticity of output to labor and education inputs.

Following standard practice in growth accounting, we generate a capital stock series based on assumptions about the initial stock level and depreciation rates. In the Republic of Yemen, as in most developing countries, physical capital is not readily available, but is specified as follows:

$$K_t = (1 - \delta)K_{t-1} + I_t, \qquad \text{(B2.2)}$$

where K_t denotes capital stock at period t; δ is the depreciation rate of capital stock; and I_t is investment at period t. For the Republic of Yemen, we set δ at 5 percent, and we set a capital-output ratio in 1990 arbitrarily at 1.33 to

calculate the initial capital stock. Investment is proxied by gross capital formation, which equates gross fixed capital formation with a change in the inventories of capital stock. Gross capital formation and gross fixed capital formation are measured in local currency (constant prices). The series on gross capital formation, gross fixed capital formation, and change in the stock of inventories, as well as on labor, are extracted from the World Development Indicators database of the World Bank. Finally, based on growth accounting experience in other developing countries, we have assumed $\alpha = 0.4$.

Based on the country's phases of political and economic development and to capture both long-term trends and developments within shorter periods, we have carried out the growth accounting exercise for five main periods: (a) the entire period from 1990 to 2010; (b) 1990–94, during which unification occurred in 1990 and a civil war in 1994; (c) 1994–2010, which started with reunification and witnessed large investments in oil and gas production, especially in the 2000s; (d) 2010–11, which experienced an economic decline because of the political crisis; and (e) 2011–13, which was characterized by a fragile economic recovery.

18. **Investment has been mainly concentrated in private oil- and nonoil-related rent-seeking activities.** In 1990–2010, private investment represented as average 12.5 percent of GDP, of which foreign direct investment was an average 1.5 percent of GDP (concentrated in 1991–93 and 2006–08), while public investment represented only 5.5 percent of GDP. Marginal returns on fixed capital investments were fairly high (Figure 6). The country's incremental output-capital ratio was comparable with the corresponding ratio in Tunisia and the Middle East and North Africa regional average ratio, although it was below the ratios in high-performing countries in Africa and Asia such as Uganda and China (**Table 2**). [8] The Republic of Yemen achieved the highest GDP growth rates when the investment-to-GDP ratios were high in 2000, 2005, and 2010.

Figure 6. Growth and Investment Efficiency, 1990–2010

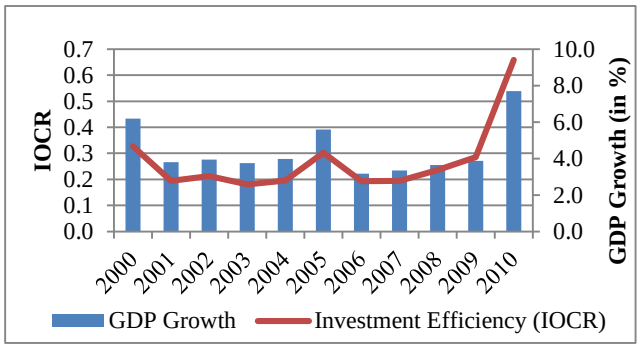


Table 2. Average Growth, Investment, and Productivity, 2006–09

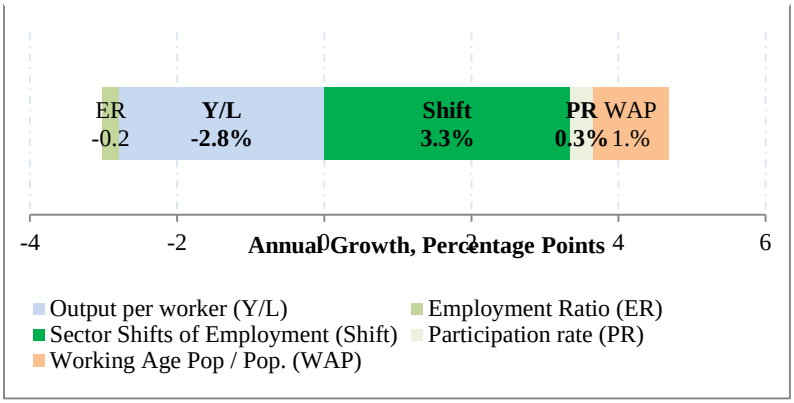
Economy	*GDP growth*	*Investment as % of GDP*	*Productivity. incremental output-capital ratio*
Botswana	3.2	29.9	0.11
China	11.4	41.6	0.27
Uganda	8.8	21.8	0.40
Yemen, Rep.	3.5	15.6	0.22
Tanzania	6.8	28.6	0.24
Tunisia	4.8	23.3	0.21
Mauritius	4.6	24.9	0.18
Regional average	5.0	23.8	0.21

Source: Calculations based on World Bank WDI data.

[8] The marginal return to fixed capital investment is measured by the incremental output-capital ratio, calculated as the ratio of the growth rate over investment as a percentage of GDP. A higher ratio suggests a greater efficiency of returns to investment, translating into higher economic growth.

19. **The Shapley decomposition of growth suggests that, between 1994 and 2010, growth was driven by demographic change and an employment shift out of the agricultural sector.** The Shapley decomposition allows us to decompose per capita GDP growth into components (Box 3). The results highlight that, beyond the increase in the labor force, GDP growth was largely driven by a gradual move out of agriculture and into other sectors (which have higher productivity) (Figure 7 and Table 3).[9] GDP per capita grew 1.7 percent a year between 1994 and 2010. The largest driver of this growth was the structural change across sectors of the economy because shifts in sectoral employment contributed an average 3.3 percent a year to GDP growth per capita (see below). The change in demographic structure, which is measured as the growth in the working-age population as a share of the total population, contributed about 1 percent a year to per capita growth over this period. Although population growth slowed from about 5 percent in the early 1990s to 2.3 percent today, the working-age population has steadily increased, from 49 percent of the total population in 1990 to 58 percent in 2010. The labor force participation rate, which is measured as the share of the active population in the working-age population, also contributed an average 0.3 percent a year to per capita GDP growth. However, declines in the employment rate (−0.2 percent a year), measured as the share of the employed among the active population, as well as within-sector productivity per worker (−2.8 percent) slowed the growth of GDP per capita. The reduction in within-sector productivity was especially pronounced in hydrocarbon activities as a result of the drop in production and also in manufacturing and services.

Figure 7. Decomposition of Changes in Output Per Capita Growth, 1994–2010



Box 3. GDP Decomposition and the Measurement of Structural Change in the Economy

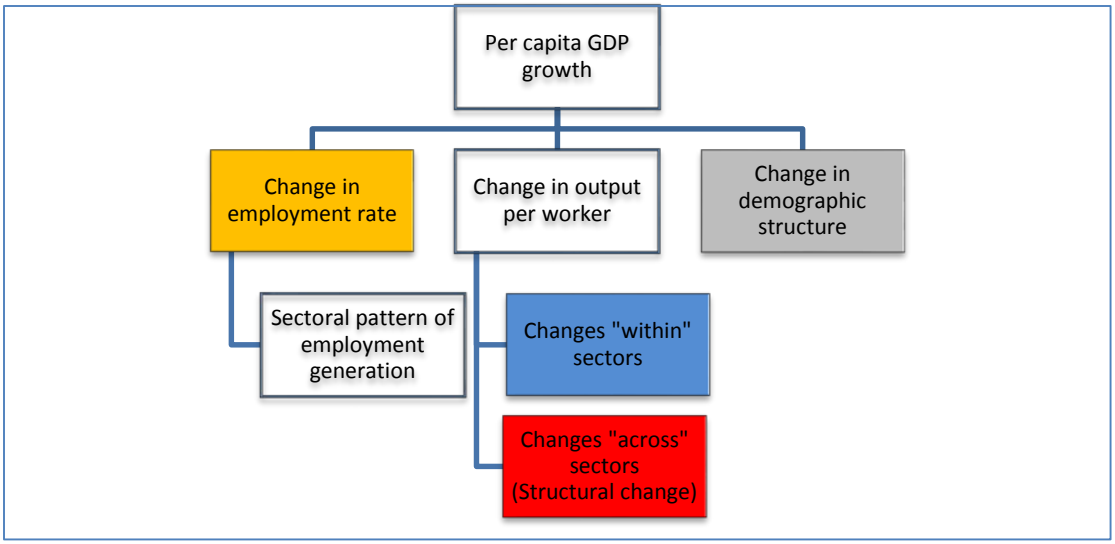
One of the key insights of development economics is that growth is driven by a structural shift from agriculture to the industrial sector. This process of structural change tends to be mirrored in the pattern of employment so that, over time, the labor force in the nonagricultural sector increases, while employment in the agricultural sector declines (Kuznets 1967). As labor moves to the industrial sector, overall productivity rises and incomes expand. The reallocation of workers from one sector to another is therefore an important aspect of economic development. Recent research highlights that as much as 85 percent of the international variation in aggregate total factor productivity can be attributed to differences in the relative efficiency across sectors, underlining the importance of enabling a dynamic economic environment (Chanda and Dalgaard 2008).

To understand the various drivers of growth in the Republic of Yemen, we have decomposed GDP per capita growth into the following components: (a) the change in the rate of employment, (b) the change in demographic structure, and (c) the change in labor productivity, which we proxy by looking at the change in output per worker. Each of these components is important in its own right: the employment rate and the demographic structure components reflect the change in the number of jobs, while the productivity component captures the change in the value of the creation of those jobs, which normally reflects the wages and the quality associated with the jobs. The change in labor productivity can be decomposed through the Shapley decomposition methodology into two additional components: the changes in sectoral productivity (the "within" component) and the changes arising from a reallocation of labor across sectors (the "across" component) (Shapley 1953; Shorrocks 1999) (Figure B3.1). The across-sectors component provides a measure of how the reallocation of labor has contributed to the country's

[9] The following identity establishes a link between per capita GDP and demographic and labor force variables:
$\frac{Y_t}{POP_t} \equiv \frac{Y_t}{L_t} \times \frac{L_t}{LF_t} \times \frac{LF_t}{WAP_t} \times \frac{WAP_t}{POP_t}$

growth in the past, that is, the contribution of structural change to growth. Similar decompositions are used in World Bank (2009). Alternative methodological approaches for decomposing labor productivity have been proposed by Pages (2010) and McMillan and Rodrik (2011).

Figure B3.1. GDP Growth Decomposition



The Shapley decomposition is a game theory–based counterfactual exercise to gauge the changes in a variable (in the case here, output per worker) that take place as a result of changes in another individual variable (employment ratio, employment shifts across sectors with different implied average products of labor, and within-sector changes in the average product of labor) under the assumption that other determinants remain unchanged (Shapley 1953). Conducting a Shapley decomposition in this way requires data on employment and real value added by sector of economic activity. Data on employment by sectors are quite scarce. (Information on the Republic of Yemen from the International Labour Organization is available for 1994, 1998, 1999, 2004, and 2010.)

Table 3. Decomposition of Per Capita GDP, by Product of Labor, Employment Ratios, and Sectoral Employment Shifts, 1994–2010

percentage points per year

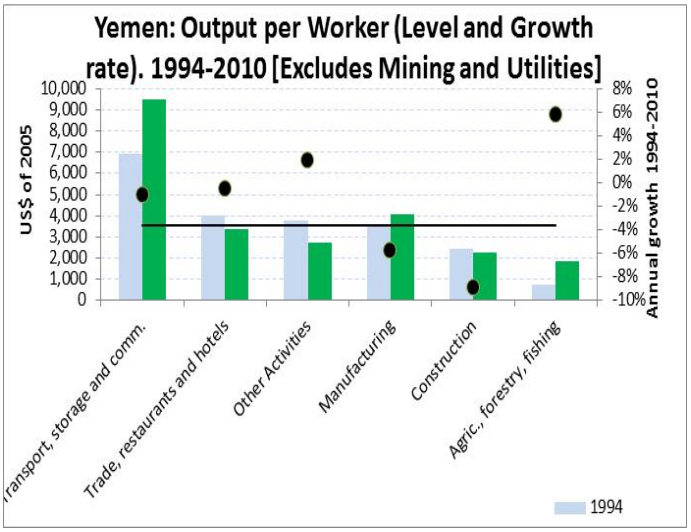
Indicator	*Output per worker*	*Employment*	*Sectoral composition of employment*	*Total*
Sectoral contribution, change in per capita GDP	−2.8	−0.2	3.3	0.3
Agriculture, hunting, forestry, fishing (ISIC A–B)	0.7	−1.9	1.2	0.0
Mining, manufacturing, utilities (ISIC C–E)	−2.2	0.2	1.3	−0.7
Manufacturing (ISIC D)	0.0	0.2	0.0	0.2
Mining, utilities (ISIC C, E)	−3.2	0.1	2.2	−0.9
Construction (ISIC F)	0.0	0.2	−0.1	0.1
Wholesale, retail trade, restaurants and hotels (ISIC G–H)	−0.2	0.7	0.0	0.5
Transport, storage, and communication (ISIC I)	0.2	0.1	0.2	0.5
Other activities (ISIC J–P)	−0.4	0.4	−0.1	−0.1
Participation rate				0.3
Ratio: 15–64 age-group to total population				1.0
Info Item: decomposition of change in output per worker				−2.8
Due to changes in total factor productivity				−2.3
Due to changes in capital-labor ratio				−0.5

Source: Calculations based on government, Central Statistical Organization, World Bank WDI, and International Labour Organization data.

Note: ISIC = International Standard Industrial Classification.

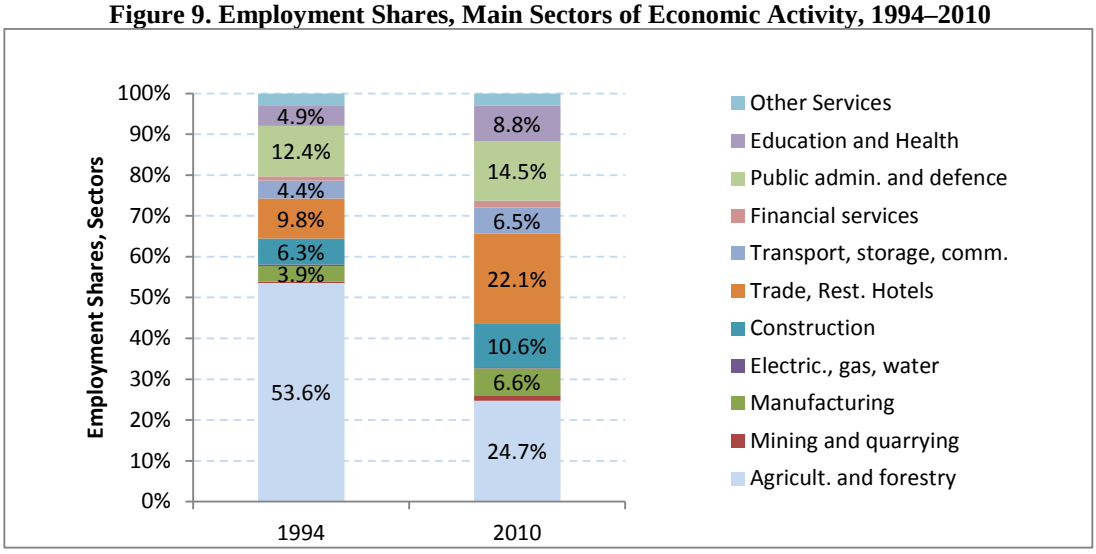
20. **A shift in the composition of employment away from agriculture has been the main source of the increase in the average product of labor between 1994 and 2010.** There is a large productivity gap between the mining sector (not shown in Figure 8), which includes oil and gas, and the rest of the economy because of the capitalistic nature of the mining sector. Agriculture is a low-productivity sector compared with the rest of the economy, and, as a result, there has been a steady outflow of workers from agriculture (Figure 8). The share of workers in the agricultural sector dropped from 54 percent of total employment in 1994 to 25 percent in 2010 (Figure 9). This was matched by an increase in the relative weight of trade (from 10 percent to 22 percent), construction (from 6 percent to 11 percent), and other activities (notably, public services; from 21 percent to 28 percent). Nonetheless, the majority of workers are still in sectors characterized by low productivity such as agriculture (25 percent of workers), construction (11 percent), and trade (22 percent). Only 1.3 percent of workers are active in the mining sector, which is a high-productivity sector even if within-sector productivity has declined in line with sectoral output.

Figure 8. Output per Worker, by Sector, 1994–2010



Source: Calculations based on data of the government, the Central Statistical Organization, the World Bank WDI, and the International Labour Organization.

Figure 9. Employment Shares, Main Sectors of Economic Activity, 1994–2010



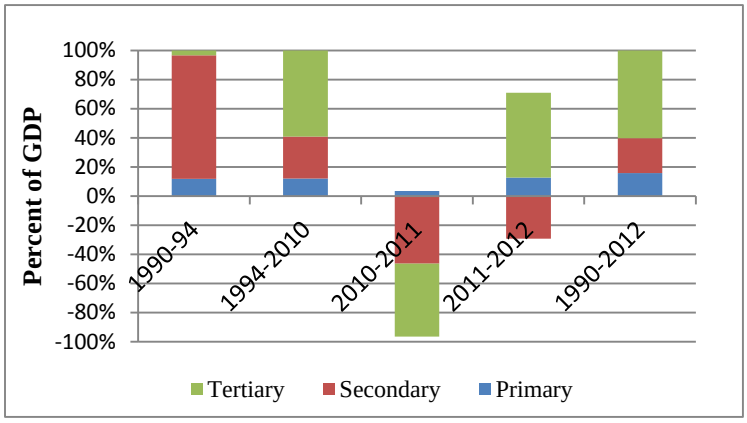
21. **A look at the sectoral pattern of aggregate growth over the long-term period of 1990–2012 shows that services and, to a lesser extent, industry were the main contributors to economic growth, while agriculture contributed less** (Figure 10). Services contributed the most to growth, accounting for about 60 percent of GDP growth in 1990–2012.[10] Industry and the primary sector contributed 24 percent and 16 percent, respectively. The service sector, which also includes oil-related services such as transport,

[10] The most important services are trade, transport, communications, and government services.

has been the largest contributor to GDP growth since the mid-1990s, when hydrocarbon sector production was rising. The country's economy thus exhibits a key feature of a natural resource–cursed economy, namely, rapid growth in services rather than in the commodity-producing sectors (Collier 2010).

22. **The hydrocarbon sector grew at an average 2.3 percent a year, well below the nonoil economy (5.5 percent).** The value added in the oil and gas sector grew at only 0.4 percent a year between 1990 and 2010 and represented less than 20 percent of the total value added during the period. Nonetheless, the sector has a multiplier effect on the rest of the economy because of the use of government oil revenue in the provision of public services and the impact of the consumption and investment by private sector hydrocarbon operators.

Figure 10. Yemen, Rep.: Sectoral Contribution to GDP Growth



23. **Economic growth was mainly generated by low-productivity private sector activities during the two decades.** In 1990–2010, the private sector contributed 3.7 percentages points of GDP growth (Table 4). Almost entirely outside the oil sector, it grew 6.0 percent a year. Growth was driven by services and exceeded the 3.6 percent growth of public sector value added GDP.[11] Primary sector activities, entirely private, grew 4.4 percent a year, mainly because of agriculture (excluding qat) and fishing. Secondary activities grew at 3.4 percent a year, fueled by oil, gas, and construction on the public sector side (3.1 percent) and, on the private sector side (4.2 percent), by construction and manufacturing. The private sector can be loosely divided into three types of economic activity based on the degree of modernity and the ability to innovate and compete: (a) the subsistence economy, (b) rent-seeking oil- and nonoil-related activities, and (c) a marginal modern private sector. The observed private primary sector growth rate of 4.4 percent mostly reflected population expansion because, in the absence of good opportunities, a large share of new labor market entrants had to take up whatever subsistence activities they were able to carry out, and this was mostly in agriculture (Figure 11). Similar circumstances applied in retail trade, which consists mostly of informal or otherwise small-scale activities. Growth in the sector can also be linked to labor force expansion. Both agriculture and trade represent about 50 percent of value added in the private sector and contributed to half the growth, but cannot be associated with the sort of activities that drive innovation, productivity, and well-paying jobs. The small size and lackluster performance of private manufacturing are at the heart of the weak growth performance of the country.

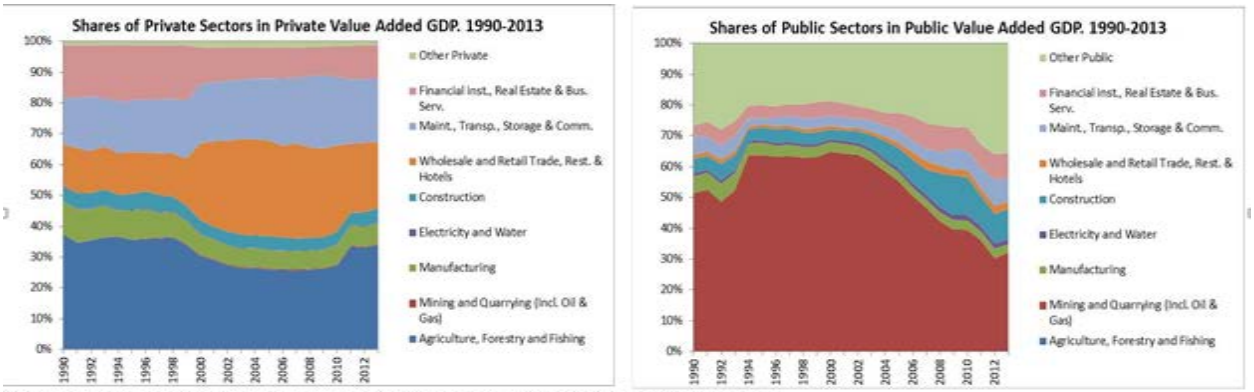
Table 4. Contribution to Growth of the Public and Private Sectors, 1990–2010

percent

Indicator	*Average annual growth*	*Average weight*	*Contribution*
Private sector value added	6.0	61.3	3.7
Public sector value added	3.6	38.7	1.4
Total GDP	5.0	100	5.0

[11] Measuring the productivity of the public sector is notoriously difficult because the sector produces mainly nonmarket outputs, the value of which cannot be directly observed. As a result, public sector output is generally calculated by equating it to the inputs, that is, the amount spent on producing the output, which, to a large extent, consists of wages. However, in the Republic of Yemen, several SOEs are involved in the production of market goods and services such as oil and telecommunications.

Figure 11. Shares of Private and Public Sectors in Value Added GDP, 1990–2013



Source: Staff calculations, based on GoY, Central Statistics Office (CSO) data

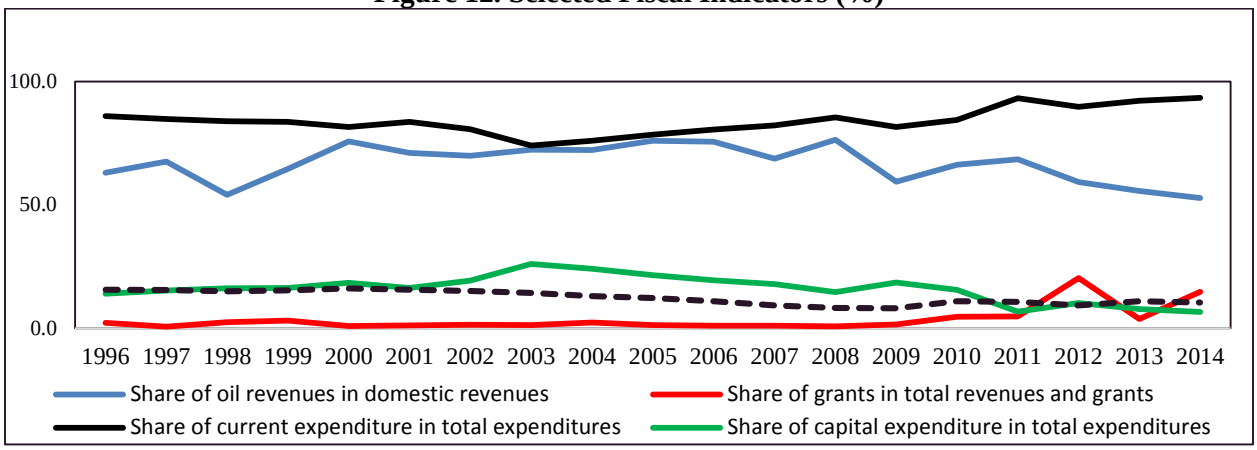
24. **Domestic demand, mainly consumption, contributed to most of the GDP growth, while the contribution of exports was weak.** A decomposition of GDP growth into the sources of demand highlights that external demand contributed an average of only 0.1 percentage points to GDP growth in 1990–2012, while domestic demand contributed 4.0 percentage points. The only significant contribution of external demand to GDP growth was in 1995 and 1996 and then in 1999 and 2000, which coincide with the period after the implementation of the trade and macroeconomic reforms of the mid-1990s.

1.3. Macroeconomic Performance

25. **The Yemeni economy is a dual economy, and the contribution of the hydrocarbon sector to the generation of value added is dwindling.** Most aggregate value added is generated by or linked to the oil sector (see above). Hydrocarbon resources are the main engine of economic activity (Figure 12). The sectoral contribution is much larger than the 12.5 percent average share of oil and gas activities in value added GDP registered in 1996–2014, which results from the multiplier effect of demand on other sectors tied to hydrocarbon resources, mainly construction and services. The value added share of the hydrocarbon sector dropped from more than 15 percent in the mid-1990s as oil output steadily fell during the last decades.

26. **Since the early 1990s, more than half of domestic revenue has been generated by the hydrocarbon sector.** Hydrocarbon revenue represented an average of 20 percent of GDP during 1996–2014, that is, 68 percent of total domestic revenue. Oil production was undertaken in the late 1980s. Output reached 173,000 barrels a day in 1988 and peaked at over 440,000 barrels a day in 2000, but started declining drastically after 2001 as a result of maturing fields, limited exploration, and frequent sabotage of oil infrastructure. In 2009, the country began producing commercial quantities of natural gas for domestic use and for export as liquefied natural gas. Until 2008, the government was able to sustain growing oil revenue because of the booming prices for hydrocarbons and, to a lesser extent, because of the expanding government share in oil production. Since 2009, revenues have declined because of the fall in prices and the drop-off in output caused by insecurity, especially since 2011. In 2014, the situation worsened because of the decline in oil production and international prices. Grants remained low, at less than 1 percent of GDP most of the time, except in 2012 and 2014 (Figure 12).

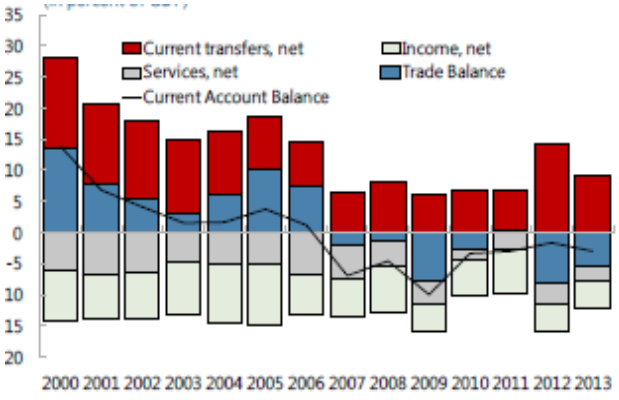
Figure 12. Selected Fiscal Indicators (%)



27. **Revenues have been used primarily to cover recurrent expenditures.** Recurrent expenditures represented an average of 28 percent of GDP in 1996–2014, that is, 84 percent of total expenditures. Spending was mainly on consumption, especially on wages and salaries and on oil product subsidies, which represented, respectively, 35.5 percent and 24.5 percent of recurrent expenditures over the period. As a result, capital expenditure was low and declining and stood at an average 5.4 percent of GDP, 14 percent of total expenditures during the period. Reducing spending on capital items helped keep the fiscal deficit under control in the absence of other sustainable financing. Nonetheless, fiscal deficits, including grants, remained high over the last decade and represented an average 5.8 percent of GDP in 2008–14. Rising deficits created a vicious circle of greater borrowing, growing debt, and higher debt servicing payments, all of which, in turn, required larger deficits. The public debt stock increased from 42.4 percent of GDP in 2010 to 48.2 percent in 2014. While public external debt remains relatively low because of limited access to nonconcessional borrowing, domestic public debt has been rising, from 22.5 percent of GDP in 2010 to 34.0 percent in 2014. At the end of 2014, external public debt stood at about $7.4 billion. The debt sustainability analysis completed in July 2014 found a moderate level of debt distress, but the external debt profile is prey to fragile political and security conditions that are negatively affecting oil production and exports.

28. **The balance of payments was adversely affected by the Gulf War in the early 1990s.** Remittances fell by 42 percent between 1990 and 1993 following the country's support for Iraq during the first Gulf War and the subsequent expelling of millions of Yemeni workers from the GCC countries. The current account deficit reached a peak of $1,217 million in 1993; foreign exchange reserves sank to only $144.6 million; and the trade deficit was $920 million. In 2000–05, the current account balance was positive because of a positive trade balance and growing remittances, but was declining, mainly because of a negative balance in services and transfers of oil profits (Figure 13).

Figure 13. Current Account Balance (% of GDP)



Sources: Central Bank of Yemen; and Fund staff estimates.

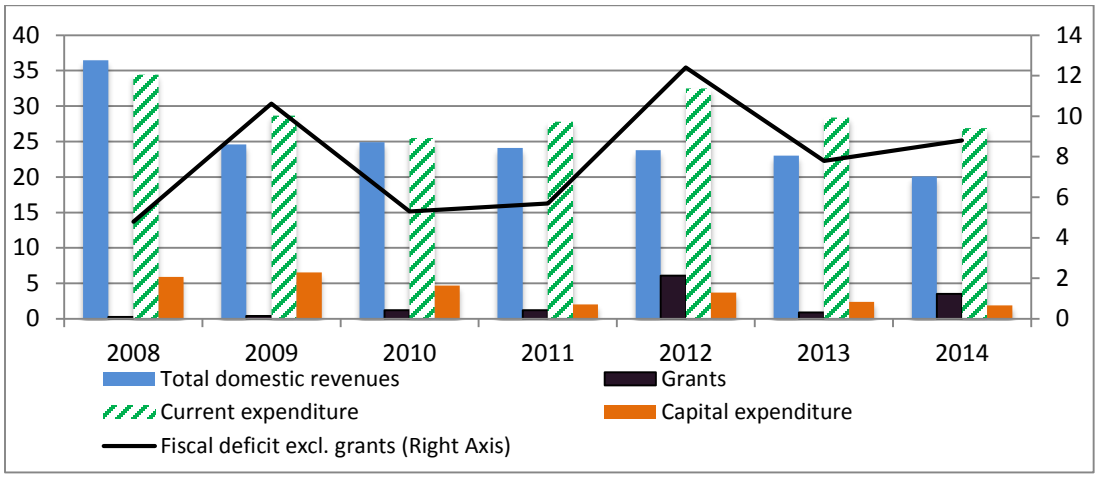
29. **Since 2007, the current account balance has been negative, despite the expansion of the hydrocarbon sector in the 2000s**. The trade balance has been in deficit except in 2011, and the dynamics of trade are dominated by the hydrocarbon trade. Services and income balances have been consistently in

deficit, while current transfers have been broadly stable at 6–8 percent of GDP. A large inflow of current transfers in 2012 reflected exceptional grants from Saudi Arabia amounting to nearly $2 billion, as well as a large rise in worker remittances, which continued in 2013. In 2014, the sabotage of oil infrastructure persisted, and international oil prices dropped, notably, during the last quarter. Gross foreign reserves declined by about $800 million, to reach $4.1 billion at the end of 2014, sufficient to cover only three months of imports.[12]

30. **The exchange rate has been stable since the civil unrest began in 2011, implying sizable real appreciation.** In 2011, the nominal exchange rate was YER 213.8 for $1.00. The rial was slightly devalued, to YER 214.9 for $1.00, in July 2012.[13] Since then, the rial has been under significant downward pressure, but the Central Bank of Yemen has been running down its reserves to support the currency. This is unlikely to continue in 2015 because of the erosion in the international reserves.

31. **The macroeconomic environment has been volatile since the 2011 crisis.** Macroeconomic stability has been constantly threatened by insecurity and political instability, the main causes of oil infrastructure sabotage that reduces hydrocarbon production and, hence, export revenue, the most important source of domestic revenue and the main financing source for vital imports. In addition, the current energy subsidy system absorbs a large share of fiscal revenues (7.2 percent and 6.4 percent of GDP in 2013 and 2014, respectively), compromising fiscal sustainability and leaving little scope for urgently needed growth-enhancing infrastructure investment and social expenditures (Figure 14**.**).[14] This volatility constitutes a major constraint on medium- and long-term public and private sector investment. Because of the declining oil reserves and to mitigate the oil price shocks, the government must prepare for the transition to a nonoil economy, especially by promoting private investment.

Figure 14. Public Finances (% of GDP)



Source: Government, DFID, and World Bank estimates.

[12] In the early 2000s, international reserves had covered 10 or 11 months of imports.

[13] The de jure exchange rate arrangement is free floating, but the de facto exchange rate arrangement is classified as "stabilized" (International Monetary Fund) because the Central Bank of Yemen holds the currency steady by injecting international reserves into the market.

[14] A fuel price reform was initiated in July 2014 that involved the lifting of oil subsidies, but the subsidies were partially restored by the government in September 2014 under the pressure of the Houthi rebels. In addition, the government continues to subsidize electricity production by the Electricity Corporation and other independent power producers.

1.4. Conclusion

32. **Productivity improvements are critical to sustaining and accelerating growth.** On average, GDP grew 5 percent a year between 1990 and 2010. Economic growth was largely driven by resources from the hydrocarbon sector and by a few services, especially transport, trade, communications, and public service, closely tied to the hydrocarbon sector. A growth accounting analysis highlights that, at the aggregate level, the growth of the economy over the two decades was driven by capital accumulation and, to a lesser extent, by expansion in the labor force, but with no productivity gains. The contribution of capital and of labor and human capital were 2.6 percentage points and 0.3 percentage points, respectively, while the contribution of the improvement in total factor productivity was −1.2 percentage points.

33. **More generally, the economy has been unable to create jobs and to reallocate resources efficiently from low-return to high-return activities.** The analysis highlights that weak economic performance is linked to weak productivity, high unemployment, and a misallocation of labor and human capital. The results of a Shapley decomposition of GDP reinforce these findings. At −2.8 percentage points, productivity per worker contributed negatively to the growth of GDP per capita between 1994 and 2010. This was driven by a mix of low productivity overall and a drop in the productivity of the hydrocarbon sector, reflecting the slowdown in output. Similarly, declines in the employment rate contributed negatively, at −0.2 percentage points, thus slowing per capita GDP growth over 1994 to 2010. Most of the growth derived from the demographic expansion of the labor force and the reallocation of workers (structural change) from subsistence agriculture toward other low-productivity sectors, notably, trade and public services. While the movement of workers out of agriculture boosted average labor productivity over the period, the analysis also shows that labor productivity in key manufacturing and service sectors was weak. For the economy to grow sustainably, service productivity needs to increase and the hydrocarbon sector needs to be more active. The large role of agriculture in the economy also suggests that measures to boost productivity in this sector could be critical in accelerating growth. Indeed, the majority of Yemeni workers today are active in sectors characterized by low productivity, such as agriculture (24.7 percent of workers), construction (10.6 percent), and trade (22.1 percent).

34. **The country has scope to accelerate growth by attracting more investment and boosting exports**. The analysis highlights that the country achieved the highest GDP growth rates in 2000, 2005, and 2010 when the investment-to-GDP ratios were high. This suggests that attracting greater investment is needed. Similarly, external demand contributed only an average of 0.1 percentage points to GDP growth during 1990–2012, while domestic demand contributed 4.0 percentage points. Given the low purchasing power of the domestic market, domestic demand alone cannot generate sufficient growth to absorb unemployed Yemeni. Therefore, it is important for the government to adopt a strategy aiming at boosting exports.

35. **In sum, this chapter suggests that the barriers to investment, exports, and the growth of productive sectors are huge.** Removing the constraints to private sector growth through policy reforms to improve the business environment as well as in the labor market in support of productivity growth and labor reallocation are thus important preconditions for creating higher growth. To complement the analysis presented in this chapter, part II (in three chapters) provides an assessment of the cross-cutting constraints on economic growth in the country—the overall political economy environment for economic growth—that need to be taken into account in future efforts to promote reforms aimed at inclusive growth (chapter 2), the constraints facing private sector investment (chapter 3), and a preliminary assessment of the constraints and opportunities in the labor market (chapter 4). This is followed by part III, which presents an in-depth assessment of the constraints facing the key sectors of agriculture (chapter 5) and oil and gas (chapter 6).

PART II: GROWTH: THE DRIVERS AND THE CROSS-CUTTING CONSTRAINTS

Chapter 2: The Political Economy of Growth

36. **This chapter outlines the adverse incentives facing government decision makers in the effort to launch reforms aimed at economic growth and poverty reduction.** Following the overview of growth performance in the previous chapter, this chapter argues that the joblessness, widespread poverty, and violence in the country are being driven by the underlying political dynamics.

37. **Drawing on material outlined in the rest of the report, this chapter argues that the policy problems that are thwarting development in the Republic of Yemen can be linked directly to political distortions introduced by the fragmentation of citizens and elites.** Specifically, we argue that citizens have only a weak capacity to act collectively, to insist on better policies, and to prevent the capture of the resource rents of the country by elites. In the past, attempts at reform that challenged the status quo prompted successful pushback by informal networks of elites who were able to act contrary to the collective interests of the population. These informal elite networks are able to distort economic policy and block reform and have aggressively continued to seek rents that might otherwise have been recycled into development. Moreover, these informal networks are competing with each other and unable to work cooperatively, and, as a result, they subvert even reforms that might benefit them collectively. Fragmentation among both citizens and elites is therefore at the core of the analysis in this chapter.

38. **Recent political events are an important indicator of the fragmentation among elites and citizens in the country.** For decades, no single group, whether composed of citizens or elites, was sufficiently strong to impose its will on the others, and, at the same time, the capacity of these groups to coordinate and act collectively was too weak to prevent insurgency. Hence, though the country has a long history of insurgent movements, none has been able to overturn the status quo, but the state has also never been able to suppress the insurgents. Recently, though, the Houthi group has grown in power and may now prevail over the unorganized, fragmented groups that characterize Yemeni society. The immediate issue is whether the success of this group can be attributed to a high level of organization, rendering the group unusually capable of collective action, or whether its success is caused by access to resources that have substituted for organization.

2.1. Elite Bargaining, Rent Sharing, and Their Implications

2.1.1. Elite bargaining and rent sharing

39. **Domestic and international observers agree that the willingness of elites to use their control over state resources to extract rents is at the root of the policy distortions that have long stifled growth and, by the same token, slowed poverty reduction in the Republic of Yemen.** The limited access order theory can be used to describe countries in which rent extraction arising because of power bargaining among elites forms the basis of political organization and cooperation (North et al. 2007). The ability of former President Saleh's regime to exercise power and to mediate among separate groups derived not from centralization, but from a bargain with elites, which included members of the Sanhan clan, a minor clan in a village north of Sana'a. With the rise of the Saleh administration, the tribe gained influence within the military and other security institutions, along with the leading members of the Hashid tribes, Yemen's main tribal confederation, of which the Sanhan is a part, too. Hashid's sphere of influence stretched also to economic assets, private or state-owned, and to the key political party structures. Key to this pact were President Saleh himself—a leading military officer from the Sanhan clan—and the paramount *shaykh* (leader) of the Hashid. Through overlapping roles and personal networks, they consolidated control over the government, the military, the tribes, and, later, through both co-optive and coercive strategies, over economic resources and religious groups. Consistent with the limited access order theory, rent sharing is an

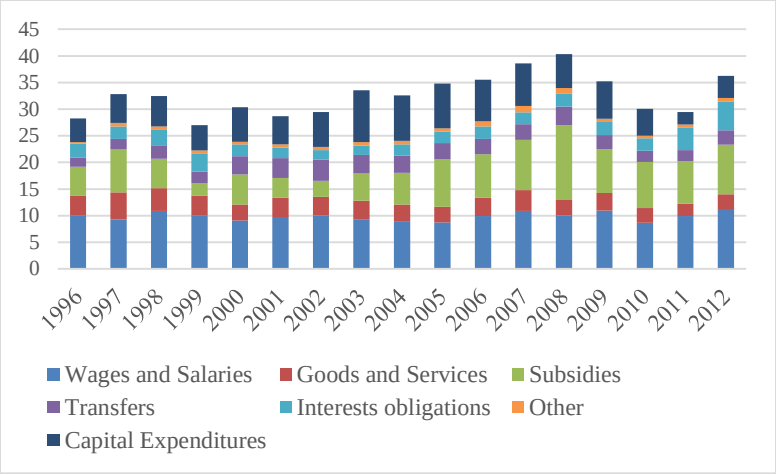
essential element of such pacts and key to political stability (North et al. 2007). The stability of the pact in the Republic of Yemen depended on the belief among the various actors that resources were equally distributed among them and that no individual would attempt to consolidate control over the various levers of power that underpinned the regime (see below).

40. **In the same way that power was distributed informally and through personal connections, the regime also relied on informal networks to exercise influence.** If it needed to achieve particular policy goals, the regime turned to tribal, military, and economic networks, all of which were informal in the sense that they were outside the formal state apparatus. For instance, while working on resource-extraction projects in troubled areas, the government would often rely on tribal mediators to negotiate access, but would promise state resources (jobs, cars, cash payments, and so on) to facilitate the deals. The process worked in reverse as well: ordinary Yemenis needed to use informal power brokers to access state institutions to arrange meetings and to make sure their cases were heard.

41. **The system of control over rents that characterized Yemeni politics for the 30 years before 2011 collapsed as a result of two developments; the first was the dramatic reduction since the early 2000s in the resources available for sharing.** Over the past decade, oil output began to decline, and revenues were bolstered only by the rising prices on international markets. The country experienced a collapse of oil revenue as a percentage of GDP from 2006 onward: in only five years, oil rents fell from 40 percent of GDP to less than 20 percent (see Figure 4). These revenues were a key component of the patronage networks. Competition heightened among the elites over the shrinking pool of resources. This competition bred instability. Any individual member of an elite, observing a decline in the rents flowing to him, was faced with both the problem of his declining ability to bind his supporters to him and the problem of possible adverse shifts in his power relative to other elites. At the same time, the wider population, benefiting from technology advances and also cognizant of the drop in benefits trickling down from elites, became more aware of the extent to which state resources were being diverted into the patronage networks. Elite fragmentation thus exacerbated the effects of declining resource rents by preventing elites from acting cooperatively to adjust to these effects (see below).

42. **The second development that helped trigger political instability was the emergence of new claimants to the rents.** As new generations emerged and previously excluded tribes gained authority, the network of patronage grew, diverting a large and increasing share of state resources away from development. As a result, the budget of the Department of Tribal Affairs, which is widely considered the most obvious conduit for patronage, rose every year from 1997 onward, tripling between 2001 and 2012. Anecdotal evidence on the distribution of state jobs, contracts, and subsidized fuel suggests there had been a similar expansion in patronage in less readily visible parts of the public sector. The wage bill rose exponentially, reflecting the fact that public sector jobs are an important conduit for patronage in a country where, by some estimates, around a third of all public sector workers are ghosts, that is, they do not turn up for work, but draw pay. Similarly, spending on fuel subsidies rose dramatically and became the single largest state spending item in 2007 (Figure 15). Spending on defense, which is also widely considered a key source of patronage, also rose appreciably. Senior

Figure 15. Government Expenditures (% of GDP)



military officers would allegedly use the salaries of ghost soldiers and the sale of military equipment and fuel to bolster their incomes, while businesses and individuals that had been allocated inflated amounts of subsidized fuel would sell the fuel back to other regional markets at normalized prices (USAID 2006).

43. **The reduction in the resources available for sharing and the emergence of new claimants were particularly important because the elites were unable to make credible commitments with each other.** If they could have made such commitments, incumbent elites could have more easily resisted demands by emerging elite groups and could more effectively manage the declines in the rents available for sharing without resorting to violence. Instead, individual elites realized their capacity to extract rents depends on their power relative to other elites. This meant that rival groups had strong incentives to attempt to shift the balance of power in their favor by accumulating more rents than other elites.

44. **The constant threats to the rent claims of the elites have generated significant policy effects.** First, the current security vacuum and paralysis in governance can be traced to the collapse of the pre-2011 elite bargain, which seems to have been a consequence of the reduction in available rents and the emergence of new claimants described above. Political stability had depended on regular rent sharing among elites to limit the incentives for open conflict (North et al. 2007). This system privileged actors, such as tribal and military leaders, who were capable of mounting a violent challenge to central authority. If the number of such actors rose and the rents available to pacify them declined, violence became more likely. Second, by shortening elite time horizons, the fragility of interelite agreements gave top elites a strong incentive to maximize short-term rent extraction, that is, at the expense of the larger potential long-run rents they might be able otherwise to gather in. Hence, while natural resource management, of oil or water, for example, appears to be lax, this appearance may be the deliberate result of a prioritization of rapid extraction, even if this rapidity is less efficient.

2.1.2. The public policy implications of the breakdown of the elite bargain

45. **The nature of the elite bargain and the short horizons that the instability of this bargain engenders have significant consequences for public policies on growth and poverty reduction.** Agriculture and water management provide a prime example of these issues. The informal arrangements among agricultural producers that have sustained smaller-scale agricultural activities for centuries are insufficient to support the significant improvements needed for irrigation or for the expanded commercialization of cash crops (see chapter 4). For instance, because access to water typically depends on informal arrangements, large landowners or others with government connections are able to capture the resources (for example, if they are upstream along an irrigation canal). These elites have little interest in providing the public good through formal institutions, thereby improving the access to and the sustainable management of water. Thus, water becomes scarcer. Moreover, many elite groups earn large profits from the production of qat, which requires substantial amounts of water pumped from the ground. In addition, these elites are fearful their (ambiguous) property rights may not be respected in the future and try to produce as much qat as possible using water and soil unsustainably, that is, at a rate that does not allow the water to be replaced and opting not to cycle crops in a manner that would replenish soil nutrients (Gatter 2012). Hence, while some communities have managed groundwater governance effectively and prevented excessive borehole drilling, many other communities and larger groundwater reservoirs have not benefited from such effective governance, leading to a water crisis that elites have not been able to address. Indeed, officials involved in water management point to a prioritization of elite interests over long-term sustainability as a key problem in water and agricultural management.

46. **Interviews point to the short horizons of elites and elite fragmentation as two of the main reasons for the distortions in the agricultural sector.** According to a former senior official at the Ministry of Water and Environment, the government has not been able to implement policies that encourage the sustainable use of water because “it is not in the interests of the people who really run things” (author

interview, May 2014). The same official complained that rivalry between the water and agriculture ministries—a sign of additional fragmentation (see below)—has also been an obstacle to the establishment of a coherent, consolidated policy on the issues.

47. **Private sector development has also been stymied by rent seeking.** Growth requires private sector participation, but political incentives to promote private sector initiative in favor of enterprises controlled by nonelite actors are scant. Although the advantages of growth ostensibly flow to all, they are given little weight in political decision making. This is because elite bargains depend on rent sharing, which includes offering privileged access to selected economic sectors. The free entry of unconnected private entrepreneurs into these sectors would undermine the elite bargain, particularly if these entrepreneurs are successful and more efficient.

48. **Private firms unprotected by elites are easy prey for officials at all levels of government, and, as a result, they are hobbled.** Firms responding to the Enterprise Survey pay an average of two bribes a month to tax inspectors and municipal police authorities (see chapter 3). Successful businesses are pressured to partner with prominent political, military, and tribal elites (see chapter 1). Several private sector representatives interviewed for this report allude to the sanctions placed on people attempting to innovate and who resist overtures to partner with established elites (box 4). In 2001, this system was so widespread that, by some estimates, fewer than 10 families controlled more than 80 percent of imports, manufacturing, processing, banking, telecommunications, and transport (Hill et al. 2013). That the predation has had negative effects on the economy is shown by the disproportionately large share of small firms in the private sector (see **Table 1**). Another sign of the negative impact is that capital intensity is lower in the Republic of Yemen than in West Bank and Gaza, which suggests how weak investor confidence is.

Box 4. Predation of the Private Sector

A former businessman described the ordeal of winning a public sector contract to build a series of roads. He was then approached by a known associate of the former president, whose bank had underwritten the financing for the project. When the businessman refused to hand over a share in his firm, the bank froze the financing, eventually causing the businessman—who continued to refuse a partnership—to lose the contract. In what the businessman saw as a bid to punish his lack of cooperation, the bank then charged large fees for payments for financing he says he had not received, leading to costly legal proceedings that were ongoing at the time of writing. The road was built by a second contractor, but at a higher price and lower quality, according to the contractor.

Source: Interview conducted in Sana'a, May 2014.

49. **The obstacles erected against the private sector highlights the problem of elite fragmentation.** While the crippling of the private sector is not in the collective interest of elites, each member of an elite benefits individually and does not internalize the costs that the predatory practices impose on other elites. Because elites are not organized collectively and are not accountable (either to other elites or to citizens), the practices continue unchecked. Policy reforms intended to encourage private sector initiative have had little effect. Elites have used informal means to circumvent formal rules meant to support private sector activities outside elite control. For example, policy reforms designed to simplify regulations or protect investor rights have not been enforced.

50. **The oil industry provides another example of the consequences of rent sharing.** In 2010, the *Wall Street Journal* reported on an investigation by the U.S. Department of Justice into alleged bribes paid by a Western oil company to Yemeni officials and regime-affiliated companies through inflated contracts for transport, equipment, and services as part of the bidding process for a major oil-sector data collection project (Searcey and Coker 2010). The oil firm made payments to a relative of a high-level government official and to a service firm run by a serving military officer that held an effective monopoly over import

licenses for equipment for the oil industry.[15] Other oil firms signed similar deals with the two men. Since the 2011 uprising (when the military officer split from the Saleh regime), the firms have encountered ongoing dilemmas in their operations. Without the support of the two men, they cannot do business; yet, by working with them, they are clearly affiliated with two rivals who see the political scene as a zero-sum game. In addition, since the beginning of the country's transition, a number of accusations have been made that officials have been profiting from short-term contracts that are associated with accelerated rent extraction, especially in the power sector, where temporary power-generating facilities have cost the government hundreds of millions of dollars in fees and subsidy costs.

51. **Much-needed legislative and institutional reforms have not been undertaken that would allow the upstream and downstream integration of state enterprises to manage resources more efficiently and with greater transparency.** The delay in adopting these and other reforms has arisen, as industry officials widely acknowledge, because, although the oil sector directly provided 65 percent of state revenue between 2002 and 2012, the elites push up the cost of producing oil in the country to well above the international average, even taking into account the cost of security (see below). Moreover, the weak management of the downstream industry means that it costs more to produce fuel domestically at the state-run Aden refinery than it does to import fuel from abroad.

52. **The persistence of industry fragmentation and weak management can be traced directly to the allocation of separate segments of the industry among different elite groups and to the interdepartmental rivalries that flow from this division of responsibilities across competing elites.** These inefficiencies include breakdowns in payment flows across links in the value chain starting with the Ministry of Finance, which diverts capital from the industry to support government spending, much of which goes to financing the patronage of other elites. The inability of the state to provide security and the poor coordination across the interior, defense, and oil ministries foster an environment in which oil production is regularly interrupted.

53. **Delays in payment arise in part because, to rein in mounting budget deficits, the Ministry of Finance defers payments for operating costs to state oil firms and to the state monopoly fuel distributor.** But nonpayments also arise in part because government spending is intimately linked to the rent sharing that cements elite alliances. For example, elite-linked service companies, in collaboration with state institutions and firms, significantly overcharge for the services and equipment they provide. Procurement reforms would directly challenge the interests of these elites, as would a more transparent tendering process for oil production blocks, which are often won through intermediaries with links to the elites (see chapter 5).

54. **Rent sharing also has especially troublesome implications for the organization of the public sector.** Rent sharing typically implies assigning control over particular sources of rents (government agencies, oil firms, customs, and so on) to particular actors. Because individual ministries and even departments tend to be allocated to individual elites who are unable to make credible bargains with each other, cooperation within the public administration is undermined. Sharing information is one sign of cooperation. However, over the course of gathering data for this report, the authors regularly discovered that various departments refused to share data with one another or relied on data that differed from those provided by other departments. As several officials explained, career advancement and job security in the public sector are a function of the influence, power, and, ultimately, wealth that individual officials control. These are, in turn, a function of information. In one department, according to one well-informed interviewee, a list of key projects was held on a single flash memory device in the possession of one individual, who used the information as a bartering tool. Attempts to streamline data sharing are seen by

[15] The relative to the government official acted as an intermediary in the deal despite holding an official position as the head of a public-private joint venture firm, which should have precluded him from this activity.

such individuals as a threat to their authority and ability to earn favors from others. In an environment in which elites have incentives to cooperate, this behavior would be suppressed, and public officials would be required to collaborate. Instead, elites have few incentives to be transparent about their activities whether in ministries or in economic sectors they control.

55. **The decisions of public officials are influenced by elite fragmentation.** The positions of officials depend on elite patrons who, because of the fragility of elite bargains, have short horizons for action. The officials under their patronage share these short horizons. Since the creation of the transitional government in 2011, the two main political parties represented in the cabinet have been the General People's Congress, the historical party of government, and Islah, the main Sunni Islamist party that was part of a coalition government with the General People's Congress between 1990 and 1997. These parties have traded claims and counterclaims about handing out important jobs within the ministries. The ministries have come to be considered a possession of one or the other party, and the rivalries between the former allies are played out at in the interactions among the respective civil servants who are ostensibly apolitical.

56. **Political appointees have short horizons because they seek to maximize rent extraction during a period when accountability is shared between parties and there is no guarantee that they will have jobs once elections have been held.** Under these circumstances, their decisions are oriented toward short-term gains, rather than to the larger rents that both they and society could receive if they operated under longer time horizons. Take, for instance, an official who must approve a procurement process to improve the management information system of a ministry. The introduction of such a system is time consuming. An official who expects to be in office a long time can structure a contract with the provider that ensures that the provider will build the system and that the official can extract a 10 percent commission up front. Because the official will be in office for a long time, his decision is unlikely to be reversed, and the provider is willing to pay the upfront commission. The official also bears the future costs of project failure and therefore has an incentive to structure a contract to ensure that the provider is only paid if the system is successfully installed. An official with short or uncertain tenure, however, will focus on smaller procurements that take less time to complete, leaving society without the more efficient longer-term procurements and leaving the official with fewer rents.

57. **A former high-ranking Ministry of Finance official observed that most public sector reforms have failed because of the absence of champions and the lack of cooperation within the government.** The reforms that achieved more were honored in form, but not in practice. For example, the Ministry of Finance was supportive of financial management reform, but saw it as a technical exercise rather than a tool of strategic planning. (Interview, Sana 'a, April 26, 2014).

58. **Reforms pursued with the backing of senior regime members have failed.** The difficulty of forging interelite agreements accounted for the failure of reforms backed by senior regime members. Between 2006 and 2010, for example, a group of Western-educated technocrats pursued a focused package of reforms aimed at creating momentum behind wider changes in the way the country was administered. Despite the backing of influential senior officials, the group had little success. According to several of the people involved in the effort, embedded elites saw the young reformers as rivals in the future management of state resources, while the president eventually prioritized stability within the regime over the reform program (Al-Iryani, de Janvry, and Sadoulet 2013).

2.2. Fragmentation among the Population

59. **Why do these massive inefficiencies persist even after the country's own experience with the Arab Spring?** A cohesive citizenry capable of collective action to protect its interests can limit elite rent seeking and hold elites accountable for development policy failures. However, Yemenis have no organized basis for holding the government accountable for serving the collective welfare. Yemeni elites have been

allowed to promote their individual interests with impunity. Over the past three decades, whenever challenges have arisen, as in the case of the emergence of the Hirak group in the southern part of the country, or the Houthis in the north, or al-Qaeda in the Arabian Peninsula, the elites have prevailed.[16]

60. **In principle, rents can trickle down from elites to citizens, among whom they could help to reduce poverty. Yet, the fragmentation of the population and their local, usually tribal leaders has limited their ability to act collectively in defense of their interests.** As a consequence, rather than coordinate in an effort to reduce elite rent seeking and to extract a larger share of elite rents, they have, historically, competed with each other to receive rents, driving down the rents extracted from top elites. More generally, fragmentation and competition among the population and their local leaders undermine the accountability of elites to nonelites. Elites have few incentives to share rents or to provide public goods such as education, security, health care, an attractive investment climate, or efficient infrastructure.

2.2.1. Tribes and the organization of the population

61. **Historically, tribal leaders sought to extract benefits from the government for tribe members.** For centuries, tribes have been the fundamental units of social organization, and the tribe-based system has been stable (Dresch 1984a, 1984b). Ethnographic evidence indicates that, at the local level, shaykhs are reasonably accountable to tribal members. Historically, these tribal leaders have been able to negotiate an acceptable settlement with the central state or ruling authority, as the limited access order predicts should occur (North et al. 2007). Indeed, the negotiation of such a settlement has traditionally been at the core of the responsibilities of a tribal leader. "A successful shaykh [in the north] is thus regarded as generous and open-handed, incurring debts, if necessary, for the sake of his tribe's material survival" (Salmoni, Loidolt, and Wells 2010, 55). Moreover, there are many possible shaykhs, thereby promoting competition among them and enhancing accountability to tribal members. Phillips (2008) and Weir (2007) argue, along with most observers, that local tribes are central to local politics and the public provision of goods. Hill and Nonneman (2011, 7) describe political rule in the north, since 1962, as "decades of balancing and fluctuating networks between tribes and the state, and different constituencies within each, as well as between Saudi Arabia, the state and the tribes." This balancing act was difficult: several presidents were removed or assassinated before Ali Abdullah Saleh took power in 1978.

62. **Nonetheless, tribal organization has been too fragmented to constitute a bulwark against development-retarding economic policies and rent seeking by the central government in the modern era.** In part this is because of shifts in the way power and rents are distributed. Until the 1980s, the process was tribecentric, and the state relied on rents from tribes and on tribal approval for central authority. Since the 1980s, dependence has shifted in the other direction. Using oil and gas rents that they control, central government leaders have relied on the lure of the rents to buy the support of tribes.

63. **Co-optation not only establishes support among particular tribes, but, more importantly, undermines collective action among tribes, giving selective rewards to some tribes that they would lose if they joined with other tribes against the regime.** "By primarily relying on selective patronage to co-opt local elites, the [government] has created further schisms among Saada residents, perpetuating its sociopolitical peripherality" (Salmoni, Loidolt, and Wells 2010, 43). Co-optation also undermines within-tribe organization, however. While this reduces the ability of co-opted tribes to organize against the

[16] The al-Hirak is a political movement active in the former People's Democratic Republic of Yemen beginning in 2007. It calls for secession and the reestablishment of a separate republic in the south. Ansar Allah, more commonly known as the Houthis, are a Zaidi Shia group created in 1992 and initially active in northern Saada Governorate, where they have been fighting the government intermittently since 2004. The Houthis have now grown into a broad national political movement. They took Sana'a in September 2014. The militant Islamist group al-Qaeda in the Arabian Peninsula was formed in 2009 through a union of the Saudi and Yemeni branches of al-Qaeda.

government, it also reduces the ability of shayhks to mobilize tribal members in active support of the government. Salmoni, Loidolt, and Wells (2010, 87) report that, during the 1980s and 1990s, co-optation was sometimes targeted at shaykhs who utilized regime largesse for their own purposes rather than to nurture their relationship with tribe members:

> Shaykhs whose second homes were in Sana'a [and therefore better-known to the government] tended to focus less on their governorate, reducing their esteem among tribal members. . . . These [government] actions also meant that shaykhs no longer had the pulse of their communities and could not slow down or channel social change in a direction benefiting the [government]. They could also not "deliver" tribes, as social solidarity was reduced, and in some cases tribal members came to oppose their shaykhs.

64. **This process of co-optation did not yield a large share of rents for the population, however.** It is true that "shaykh-qabili/tribesmen relations become more transactional than before, with qabilis concerned less about the status and prestige of their shaykhs than about what the latter could get out of the government for them" (Salmoni, Loidolt, and Wells 2010, 87). However, this did not lead to citizens extracting greater rents from the central government. Salmoni, Loidolt, and Wells (2010, 76–77) argue that competition among shayhks for regime patronage undermined the rents flowing to citizens:

> Neopatrimonialism allows the regime itself to survive as the arbiter of mahsubiya or political patronage in the north. This approach, however, elicits ongoing local competition for patronage, which creates rumbling chaos, discord, and conflict.

65. **The post-1980s shift away from tribes changed again when oil revenues declined.** Co-optation became more difficult.

> Strong tribal traditions and autonomy in the north and center of the country, as well as in Hadhramaut (in the southeast), reasserted themselves against an underresourced government. Simultaneously, Salafi interpretations of Islam increasingly made inroads across the border from Saudi Arabia. (Hill and Nonneman 2011, 7)

2.2.2. Political parties and the organization of the population

66. **The discussion of organization of the population focuses on tribe and family because all observers emphasize the centrality of these to the social and political life of the country.** In more developed and cohesive polities, however, political parties are the key vehicle for collective action among citizens, but only if the citizens are organized for this purpose. Political parties exist in the Republic of Yemen. They are not, however, organized to promote collective action among citizens. The largest political party, the General People's Congress, has neither a formal ideology, nor policy stances around which it mobilizes voter support. Indeed, appeals to elite and tribal interests, funded by the distribution of rents, are central to party cohesion. The party mobilizes support through the distribution of transfers to individuals rather than the provision of collective goods that improve the welfare of all party members, much less all Yemenis (Al-Iryani, de Janvry, and Sadoulet 2013). The second largest party, Islah, is a coalition of tribal groups, but also includes the Yemeni branch of the Muslim Brotherhood and conservative businessmen. Like the General People's Congress, Islah's constituency is largely in the north. Islah has a clearer ideological stance than the General People's Congress; officially, its goal is to create an Islamic state in the country. However, as Phillips (2008, 166) observes, Islah is not organized to promote the collective welfare of party members. Instead, "ultimately Islah's actions have been guided more by elite relationships than by consideration of its grassroots constituents." Absent a clear economic agenda, which observers say Islah lacks, substantial grassroots control of party leadership, and the potential that supporters, satisfied with the

sectarian agenda, will be more lenient toward rent-seeking and growth-retarding economic policies, Islah also does not constitute a vehicle for collective action by citizens to promote economic development.

2.2.3. Nonparty groups and the organization of the population

67. **Two of the most prominent political forces have both tribal and party characteristics: the al-Hirak movement in the south and the Houthis in the north.** Both movements were granted corporate seats at the National Dialogue Conference; yet, neither is cohesively organized. The al-Hirak movement, in particular, is widely regarded as divided ideologically. Thus, beyond the general rhetoric around safeguarding southern interests against northern encroachment, there are significant internal divisions between those who adopt a harder stance and those who take a softer stand on southern independence. It is also regarded as divided geographically. Regional cleavages inside the movement are significant. Cleavages are also substantial between southern leaders who reside outside the country and others who reside inside the country as well as among various groups that took part in the 1986 civil war in the then-independent south.[17] Salmoni, Loidolt, and Wells (2010) report that the Houthis have historically attempted to sustain an ideological appeal to mobilize support, but the appeal is largely nationalistic (anti-Israel and anti–United States) and sectarian (the promotion of Zaydism). Meanwhile, the movement relies on distinctly nonideological appeals derived from the social bonds of kin and tribal networks. Many of the movement's allies have joined the Houthis as much because of the opposition of the Houthis to the former regime, the Hashidi, or to the Islah as because of the political or ideological goals.

68. **Thus, Yemenis have no organized basis for holding the government accountable for serving their collective welfare.** The tribal organizations that have, for centuries, protected the collective welfare of small groups of Yemenis (hundreds or thousands of individuals) have not provided a platform for promoting development at the national level. Meanwhile, parties have not emerged to facilitate the collective action of the citizenry, or, where they have so emerged, the actions they have sought to organize have been reactionary, aimed, for example, at unseating the Saleh regime, the Hashid, or Islah, rather than positive, with well thought-through aims.

2.3. Collective Action and the Yemeni Elite

69. **Elites are not organized to pursue collectively public interests, or to reach intertemporal agreements with each other to such an effect.** While a careful characterization of the elites is both difficult and beyond the scope of this chapter, elite groups are self-centered, pursuing typically short-term oriented rent interests with the view to maximize monopoly or (shared) oligopoly rents**.** They are unable to make credible commitments to pursue policies that are collectively optimal from the point of view of the elites, such as improvements in the organization of the security forces or infrastructure, or providing for an investment climate conducive for enhancing investment, including for the oil exploration. They cannot agree to defer rent extraction today to increase the rents available in the future, for example, by improving the management of water and petroleum resources. Both of these initiatives would require superior forms of organization whereby members can constrain leaders from acting against the collective interest and whereby members who free ride rather than fulfilling their obligations to the group are punished. Instead, land and numerous other valuable privileges have been allocated to elites to deter collective action against the regime, but also to ensure a sufficient balance of power across elite groups.

70. **In some countries, the organization of the public interest is broadly provided by the ruling party or the military, but this is not the case in the Republic of Yemen.** In the Republic of Yemen, parties are associations of elites and are vehicles for the pursuit of individual elite objectives, not for the

[17] Reliably sourced information on al-Hirak is difficult to obtain. One detailed report, though of uncertain provenance, is "The Southern Hirak (2007–2013)," Yemen-iaty: Yemen Simplified (February 26, 2013), Yemeniaty.com, http://yemeniaty.com/allposts/2013/02/the-southern-hirak-2007-2013.html.

pursuit of the collective interests of all the elites or all the population. The military has historically been similarly structured: "By 2010, the army was made up of a series of factional alliances that resembled more a collection of feudal warlords than a modern, centrally managed military" (Hill et al. 2013, 21). The divided military, and the division among elites more generally, were intentional. President Ali Abdullah Saleh was more insulated from threats to his regime, if his potential rivals could not organize collectively. Instead, rivals established independent centers of power, none individually strong enough to overthrow him. President Saleh allowed the army to become divided, such that his son, Ahmed Ali, and an important potential competitor, Ali Mohsin, each developed competing centers of power and patronage. Government monopolies (for example, for the distribution of petroleum products) were given to men who had close ties to Saleh, but also to Mohsin. Individual military commanders were given the right to use, for their private purposes, the fuel allocations to their units. President Hadi's attempts to restructure the army and introduce a centralized command hierarchy, meanwhile, have further fragmented the military rather than turn it into a cohesive force.

2.4. Persistent Fragmentation and Federalism: The Republic of Yemen since 2011

71. **When oil production slowed and rents dried up during the economic crisis of 2008–09, competing elites had less to lose in challenging the Saleh regime and could more cheaply mobilize the population, while the ability of Saleh to use oil rents to prevent this diminished.** Since 2011, attacks by tribesmen on a key pipeline in the central governorate of Marib have further constrained the ability of the central state to distribute rents (Hill et al. 2013). Consistent with this shortage of rents to control the elites, vested interests played a large role in promoting the popular uprising in 2011; the demonstrations and counterdemonstrations in Change Square were financed and driven by competing elite interests that later subsumed the popular protest movement.

72. **Some observers have argued that the events of 2011 helped initiate a shift toward a new system of democratic governance in the country, one that will ensure more transparent and accountable institutions** (Hill et al. 2013). However, the underlying (dis)organization of the population and elites has left President Hadi with the same tools that President Saleh's administration had to maintain stability, along with the same weak political incentives to pursue development and minimize rent seeking. The regime change precipitated by the events of 2011 did not lead to the formation of organizations sufficient to promote collective action by either elites or citizens. Political stability has been purchased with currency familiar to Yemenis: giving competing elite groups—for instance, from the Islah and the General People's Congress parties—control of different ministries and sources of rents.

73. **The difficulties to bring about reform reflect the continued political fragmentation of the country.** Persuading elites to act collectively to address national problems remains difficult, even if gains from cooperation are obvious and immediate at times of conflict. The government has not been able to make significant headway on reform. Discussions between the government and the International Monetary Fund on a reform program, including the fuel subsidy and the wage bill reforms, concluded in September 2014. However, there has been strong opposition by some political parties, and the reforms have still not been implemented because the country is now experiencing a period of acute political volatility. Moreover, while some allies of the previous president have been removed from lucrative positions in SOEs, the private sector continues to be dominated by the same elite players. These elites have as much ability as ever to use their resources to shift public policy in their favor, and as little incentive as ever to consider the long-run development costs of their actions for the country (Hill et al. 2013).

74. **The difficulty of dealing with elites are exacerbated by the ongoing role of externally directed resources.** According to Hill and Nonneman (2011), neighboring countries maintain extensive transnational patronage networks in the Republic of Yemen. Interviews conducted in Yemen uniformly revealed that "political actors in Yemen have long believed that the resources of external players might be

mobilized to further their own personal interests" (Hill and Nonneman 2011, 5). In addition, many Yemeni observers also viewed the provision of U.S. military aid to security and intelligence units, which were during the times of the Saleh administration under the command of ex-President Saleh's relatives, as sustaining his family's ability to maintain control (Hill and Nonneman 2011, 5).

75. **The availability of apparently significant external resources can compensate for the lack of organization among groups.** Consider, for example, the challenge of persuading a loose confederation of tribes to contribute resources for a collective effort to challenge the government in Sana'a. One way to ensure the success of such a collective effort is to give tribal leaders the right to elect the head of the confederation, and the confederation head the right to replace tribal leaders who renege on their responsibilities. These represent difficult decisions for all concerned. The family that takes the lead in forging a tribal confederation, as well as the leaders of individual tribes, would all prefer not to facilitate potential challenges to their positions. Another way to ensure the success of such a collective effort, though, is through external subsidies. These reduce the burden of collective action, because group members do not need to raise resources to pay soldiers, provide weapons, or address logistical challenges. Moreover, outside resources facilitate the recruitment of leaders of tribes of which the members may not be enthusiastic about challenging the central government.

76. **One important institutional change ushered in by the National Dialogue Conference is the division of the country into six regions, but it is not yet clear how regional governments will be formed.**[18] The distribution of regional control over natural resources and national unity dominated the debate over the various federalization plans. With respect to redistribution, poorer areas of the country opposed granting autonomy to richer, particularly oil-rich regions. This led to cleavages between south and north, but also, in the south, between east and west. In a country where armed groups are active in all regions and security is a significant concern, federalism was viewed by some as a recipe for the dissolution of the country. However, national elites also saw a significant political risk in federalism: under the centralized system of President Saleh, national elites had ample discretion to use oil rents and their formal control of regional governments to co-opt opponents and maintain their own positions. Little is known or decided about the manner in which regional governments will be elected or about the policies over which they will have responsibility, including regional security. Regional control over natural resource rents is also unclear. A central government with less access to oil rents will have drastically reduced abilities to co-opt elites.

77. **The absence of institutional detail regarding the federal proposal makes the development consequences of the six-region plan difficult to discern.** On the less optimistic side, the interests of external actors in the internal politics and security situation in the country are no less extensive since 2011 than before. These actors therefore have no reason to reduce the financial flows that they have used to influence events. This influence is unlikely to diminish even if these flows are channeled to new and underfunded regional governments. In addition, given the number of groups with the capacity to project force in the country and the weakness of civil institutions, the struggle over the allocation of natural resource rents will continue, regardless of the formal outcome of constitutional negotiations.

78. **More optimistically, although fragmentation within the six regions mirrors the social fragmentation of the country as a whole, federalism has the potential to facilitate collective action and government accountability.** Federalism is expected to align more traditional (tribal) and modern political structures and interests. Any given tribe is a more encompassing and representative social organization within its region than within the country as a whole and is therefore more likely to internalize the costs of inefficient regional policies than of inefficient national policies. Similar arguments can be made about the Houthi movement in the north or the al-Hirak movement in the south.

[18] The six regions are Aden, Azal, Hadhramaut, Janad, Sheba, and Tahamh.

2.5. Conclusion

79. **Oil rents have been used to buy tribal, military, and bureaucratic allegiances and perpetuate the extraction of rents, while assuring political stability.** However, this fragmentation prevents the competing elites from cooperating to exploit rents sustainably. As a result, it has been difficult to persuade elites to act collectively to adopt reforms that might help address national problems and curtail oil rent extraction. To address this issue, it is important to build and strengthen institutions for the governance of key resources. This could be achieved if:

a. Donors work with Yemenis to finance and enforce multi-elite institutions for the governance of key resources. So, instead of tolerating the assignment of particular sectors, industries, or resources to particular elites, work should be undertaken to establish cross-elite control of each sector, industry, or resource, for example, oil refineries, wells, pipelines, water resources, ports, and transport infrastructure. Instead of each elite group controlling a particular source of rents, each group should have a stake in all sources of rents. The advantages of this is that all elites would be held hostage by all other elites. Any elite group that attempts to take one particular source of rents for itself would lose access to the others in which it has a share.
b. Formal agreements among elites are enforced. This requires a second-best set of legal and judicial reforms that at least ensure that formal contracts between elites are enforced. The idea is that, gradually, elites rely more on formal contracts, less on informal dealings, laying the groundwork for the expansion of formal rights to all citizens.
c. The formal state security apparatus is put more firmly under the control of multiple elites, exactly as resources themselves should be governed. The idea is not that each elite group controls one unit, but that they exercise joint control over the entire apparatus. This implies deep institutional reforms which could be undertaken during the state rebuilding phase after the political crisis.

80. **Citizens are unable to act collectively to make elites responsive to their interests.** The analysis argues that, because citizens have only a weak capacity to act collectively to insist on better policies and prevent the predation of the resource rents of the country by elites, informal elite networks are able to distort economic policy and block reform and have continued to seek rents aggressively that might otherwise have been recycled into development. For example, the elite control of sectoral rents does not enrich the citizens who are clients or constituents of the corresponding elites. To address this problem, the following solutions are proposed:

a. Remove all laws that limit the right to organize, including requirements that associations should obtain government permission.
b. Promote nongovernmental organizations that, on the Bangladesh model, provide services across the country that are not targeted by tribe, but are motivated by need and other technical and developmental criteria. These organizations can grow into politically relevant institutions, while addressing immediate human development needs more effectively than the government.

81. **The adoption of federalism represent an opportunity for elites and citizens to cooperate and exploit the country's natural resources sustainably and responsibly.** Although fragmentation within the six new regions mirrors the social fragmentation of the country as a whole, federalism is expected to reduce the challenges of collective action and government accountability simply because regional populations are smaller than the national population. Any given tribe is a more encompassing and representative social organization within its region than within the country as a whole and is therefore more likely to internalize the costs of inefficient regional policies than of inefficient national policies.

82. The next chapters show that lack of governance, regulatory and institutional gaps, and rent-seeking behaviors undermine the development of the private sector (chapter 3) and constitute major constraints on the development of the agricultural sector (chapter 4) and oil and gas (chapter 5).

Chapter 3: Removing the Obstacles to Competitiveness

Introduction

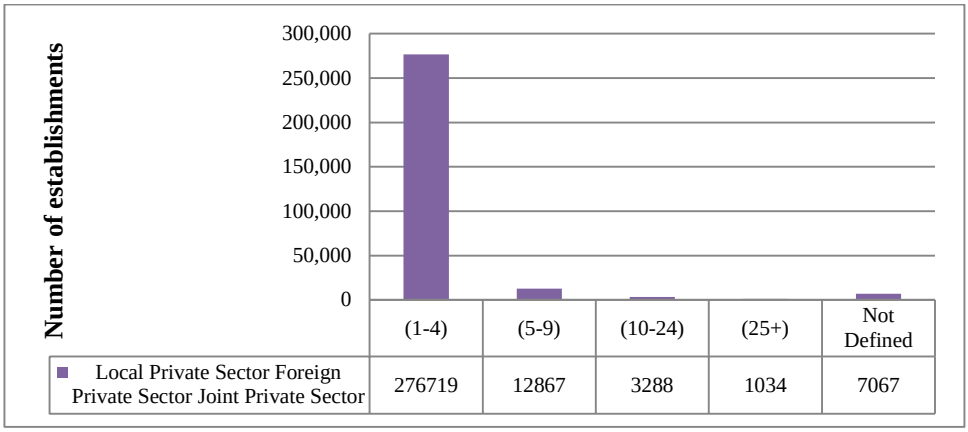
83. **To thrive, enterprises need an adequate investment climate and functioning markets and infrastructure networks.** This is a big challenge in the country, which has limited infrastructure, especially in electricity and transport, and because of the nature of the economy, which is dominated by elite control over rents and little diversification (chapter 2). Over the medium term, the country must overcome these challenges and implement policies that favor a competitive and diverse private sector.

84. **This chapter analyzes the major impediments in the country's business environment**, based mainly on the results of the last Enterprise Survey (2013), an examination of key business laws, and interviews conducted in the country for this study. It is organized as follows. The first section briefly presents the structure of the private sector. The second section explores the de jure legal and regulatory business environment. The third section reviews the enforcement of business regulations and offers recommendations to lower the obstacles to competitiveness and enhance the business environment. The fourth section scrutinizes the micro foundations of the country's competitiveness and investigates the contribution of unfavorable production costs to the weak production base and to the problems in exports.

3.1. The Structure and Performance of the Private Sector

85. **The private sector consists mostly of micro and small enterprises operating mainly in small retail and services** (chapter 1). The vast majority of firms are informal microenterprises, mostly informal sole proprietorships operating on their own account. The formal sector is concentrated in trade, mainly retail, and, to a lesser extent, services and light manufacturing. Large enterprises, those with over 25 employees, are few. The 2004 establishment census, the latest available, counted only 1,034 large enterprises. The foreign enterprises are operating primarily in the oil and gas sector, into which the domestic private sector is not well integrated except for a few service providers working as contractors.

Figure 16. Private Establishments, by Size



Source: 2004 establishment census, Central Statistical Organization.

86. **The structure of private sector activity suggests that there are significant barriers to growth in value adding and in the specialization of firms.** The large number of small formal firms, combined with the substantial tendency among large firms to report barriers to growth, implies that, while entry into the formal sector may be relatively easy, the possibility of profitable expansion may be limited by risk and uncertainty, administrative hurdles, inadequacies in infrastructure, excessive competition, and weak firm

capacity. This is underscored by the behavior of the large firms, which are characterized by appreciable internalization in activities and services, namely, electricity generation, transport, distribution, and training. Profitable market opportunities and services able to support the expansion of production are unavailable for small and medium enterprises or access is highly restricted or prohibitively costly. This raises the cost of production and the minimum efficient size of profitable firms in the private sector. High transaction costs resulting from inadequate mechanisms for contract enforcement and the resolution of commercial disputes creates an environment of legal uncertainty that helps limit growth potential.

87. **Governance problems represent perhaps the most evident and important barrier to the development of the private sector, as well as to the growth in the size of firms.** Firms generally face a lack of profitable opportunities and possess a weak capacity for expansion in product markets. "Larger and older firms tend to be more successful, owning their own land and engaging in export activities" (World Bank 2002, 57). One reason this is so appears to be the ability of these larger firms to use their extensive informal networks. By bypassing formal marketing institutions and creating integrated firm structures, these firms avoid the governance and institutional failures in the business environment. However, such opportunities are restricted to a few firms, and the poor functioning of formal market-supporting institutions is thus an obstacle to the growth of new entrants (see below).[19]

88. **SOEs often create unfair competition for the private sector.** The establishment of SOEs was envisioned as an engine of development and employment generation and as a means of achieving other social and commercial objectives. However, some subsectors are dominated by SOE and suffer from distorted competition owing to the privileges granted to SOEs by the government. Examples of manufacturing and service SOEs competing in the same markets as private firms are TeleYemen, the Public Cement Manufacturing and Marketing Corporation, the National Tobacco and Matches Company, the Yemen Economic Corporation, the Yemen Drug Corporation, the National Bank, the Yemen Bank for Reconstruction and Development, and the Al Ghwuaizi Tuna Company. These SOEs are often accorded privileges, exemptions, and immunities that give them a competitive advantage over their private sector rivals. Thus, they are provided with direct subsidies to sustain commercial operations; in-kind benefits such as land use, rights-of-way at no or considerably lower cost; concessionary financing and guarantees, including credits at below-market interest rates; exemptions from bankruptcy rules; and information advantages. These advantages keep SOE costs artificially lower and enhance the ability of SOEs to more efficient pricing. Selected SOEs have monopolies on sectoral operations, such as the monopoly enjoyed by Yemen Petroleum Company on fuel imports. The unique institutional status and the privilege associated with politically appointed executive management allow SOEs to function with limited oversight and accountability. SOEs are also used as instruments of patronage in the allocation of jobs, subcontracts, and subsidized output to favored groups and therefore represent opportunities for more rent seeking.

3.2. The Regulations and Institutions Governing Business and Trade

89. The de jure regulatory environment and institutional framework for business and trade, while not perceived as a major obstacle to business activity and trade, needs to be enhanced. Selected laws have been updated in recent years, and there has been extensive improvement in the legal environment. Challenges and gaps remain, however, many of which are likely to be addressed because of the recent accession of the country to the World Trade Organization (WTO).

[19] Market-supporting institutions are the rules, enforcement mechanisms. and organizations that promote market transactions by transmitting information, enforcing contracts, and managing competition. The relevant formal institutions include judicial systems, competition laws, credit-rating agencies, and land titles. See World Bank (2002).

Investment Law

90. **The new investment law has helped improve competition, but investment in key sectors is still governed by special laws.** In 2010, the government enacted a new investment law (no. 15) that eliminated tax exemptions offered in the 2002 version. The 2010 law, however, stopped short of opening up several sectors to outside investment, such as sectors regulated by special laws, "namely: 1. exploration and exploitation of oil and gas; 2. exploration and exploitation of minerals; 3. banking and exchange; and 4. import and export trading, wholesale and retail trade" (GIA 2010, 5). Some have criticized the elimination of tax exemptions and attributed the decline in the country's ability to attract foreign investment to this and other issues in the 2010 law. In any case, tax incentives for investment projects were removed from the purview of the General Investment Authority under the new investment law and transferred to the jurisdiction of the tax and customs authorities under Law No. (17) of 2010 Concerning Income Tax (Deloitte 2013).

91. **The General Investment Authority is charged with the mandate for investment promotion and facilitation, but its role is ambiguous.** The mandate is well defined, but the importance of the role the authority plays in attracting investment is unclear, given the overall poor investment climate because of the security situation and political instability. The management of the authority has been advocating for amendments to the law to reinstate the authority's ability to grant incentives and perform other functions.

Tax Law

92. **The government reformed the tax system in 2010, but the system should be simplified.** Law No. (17) of 2010 Concerning Income Tax expanded the tax base, but reduced the general corporate tax rate from 35 percent to 20 percent and repealed all tax exemptions except tax incentives for investment projects that meet the criteria set forth in Article 64 of the law. The tax rate on eligible investment projects is set at 15 percent, but tax rates of 50 percent and 35 percent have been imposed, respectively, on mobile phone service providers and on international telecommunications services and the production and importation of cigarettes. Yemeni firms are now also taxed on their worldwide income, while nonresident companies are taxed based on their locally generated income. To avoid double taxation, the law provides for tax credits for selected taxes paid outside the country.

93. **Despite the reforms, the number of tax payments per year and the time necessary to prepare tax forms are substantial.** An average firm makes 44 payments a year, against 18 in the Middle East and North Africa region and 12 in the high-income countries of the Organisation for Economic Co-operation and Development (OECD). Firms also spend about 248 hours a year in preparing taxes, which is more than double the average in the region (220) and the OECD high-income countries (175). They pay total taxes amounting to 32.7 percent of profits, which is about the average in the Middle East and North Africa region (32.3), but less than the taxes paid by firms in the OECD high-income countries (41.3).

94. **Another area of contention that affects the environment for doing business is the government's plan to enforce Law No. (19) Concerning General Sales Tax of 2001, as amended by Law No. (42) of 2005.** Although the law was enacted over a decade ago, the government has only recently begun implementing it following private sector protests against its fairness, concerns about worsening poverty in the country, and allegations of corruption at the General Tax Authority (FIAS 2007). The law imposes a general sales tax of 5 percent, but higher rates on some goods, such as 90 percent on cigarettes and 10 percent on mobile phone services. It also establishes a zero tax on exports, aviation services, and baby formula and exempts some banking, financial, insurance, health care, domestic ground transport, and residential real estate leasing services.

Foreign Trade Law

95. **The Foreign Trade Law removed trade barriers, except those necessary to protect national security, public health, and the environment.** Law No. (16) of 2007 Concerning Foreign Trade regulates foreign trade, including imports and exports. It requires importers to register with the Trade Registry, which, according to Law No. (33) of 1991, is associated with a physical residency requirement. It also requires that import licenses for certain goods be obtained in advance in accordance with applicable laws, and it requires one-time registry of imports of pharmaceutical products and fertilizers with the Ministry of Public Health and Population and the Ministry of Agriculture and Irrigation. Imports must comply with local standards; importers and manufacturers of machinery and transport, electronics, and other equipment must make spare parts and maintenance services available within the country; and food and drugs are subject to inspection to ensure the accuracy of import statements. The law bans the importation of goods that are not shari'a compliant or that represent a threat to national security, public health and morals, or the environment as decreed by the prime minister. Trade remedies are permissible under the law, which also seeks to remove barriers to trade other than the bans to protect national security, public health, and the environment. Exports must also comply with applicable standards and are only allowed by registered traders; chambers of commerce are responsible for issuing certificates of origin.

Competition Law

96. **The Law on Competition Promotion, Monopoly, and Commercial Deception Prevention provides the legislative basis for promoting competition and preventing monopolistic and deceptive trade practices.** Excluded from the scope of Law No. (19), enacted in 1999, however, are commercial companies that signed concession agreements with the government; urgent and temporary measures taken by the Council of Ministers during emergencies; state monopolies; commercial agencies; and the harmful use of intellectual property rights. It took the government more than six years to establish the Anti-Monopoly and Competition Protection Authority. The authority has the power to investigate complaints of restrictive business practices and make recommendations to the Ministry of Industry and Trade, which has the authority to refer relevant matters to the general prosecutor for investigation and legal action. The law also limits the right to use the law as the basis for public lawsuits brought before the Ministry of Industry and Trade.

The Law on Agencies

97. **The Republic of Yemen imposes entry restrictions on foreigners wishing to establish and operate agencies of foreign companies in its territory.** Law No. (23) of 1997 Concerning Regulating Agencies and Branches of Companies and Foreign Houses, as amended by Law No. (16) of 1999, provides that the agent of a foreign company must be a national and permanent resident of the country, and, in the case of a company acting as an agent, the capital of the company must be owned by Yemenis. The law prohibits the importation of equipment unless an agent of the foreign company is registered with the Ministry of Industry and Trade. The registered agent is obliged to ensure the local availability of maintenance services and spare parts for the imported equipment.

98. **Additional restrictions on the freedom to trade are found in Law No. (33) of 1991, as amended by Law No. (31) of 1997, Concerning Trade Registry.** According to this law, no person may work as an importer, exporter, contractor, or agent unless that person has a permanent place of business in the country. During its WTO accession negotiations, the country made commitments to bring its trading regime in line with WTO agreements, including by ensuring "the right to import and to export in a non-discriminatory and non-discretionary manner" (WTO 2013, 17) (see below).

The Effect of Recent Developments: WTO Accession and the Transition to a Federal System

99. **The Republic of Yemen's accession to the WTO on June 26, 2014 is likely to result in more trade liberalization.** For instance, during the WTO accession negotiations, the country committed to ensuring that SOE purchases of goods and services not intended for governmental use and SOE sales in international trade are based solely on commercial considerations. In addition, the country confirmed that, by the end of 2014, it would "grant any natural or legal person of a WTO Member, regardless of physical presence or investment in Yemen, the right to be the importer of record of any product allowed to be imported into Yemen" (WTO 2013, 17). While it agreed to an average tariff rate of 21.1 percent on all products (an average of 24.9 percent on agricultural products and 20.5 percent on other products), it also agreed to reduce to zero within four years the bound rate for other duties and charges under Article II (1) (b) of the General Agreement on Tariffs and Trade, 1994, from a maximum of 0.25 percent. The import ban on coffee and mango and the seasonal import restrictions on agricultural products were to be lifted beginning on the date of accession. Moreover, the country agreed to eliminate all quantitative restrictions on imports and other nontariff measures such as licensing or quotas and to amend the Customs Law to allow the independent review of administrative decisions on rules of origin. It pledged to abolish the requirement to notarize certificates of origin and invoices by Yemeni consulates in the country of export after 2017. Additionally, it agreed to apply the Agreement on Trade-Related Aspects of Intellectual Property Rights no later than December 31, 2016. Transparency practices, including the publication of laws, judicial decisions, administrative rulings, and other trade-related measures were also to improve as a result of WTO accession (WTO 2013).

100. **The country has made specific commitments on trade in services in 11 core service areas**, as follows: business services, including professional services and computer services; communication services, including telecommunication services; construction and related engineering services; distribution services; educational services; environmental services; financial services, including insurance and banking; health-related and social services; tourism and travel-related services; recreational, cultural, and sporting services; and transport services. These 11 sectors cover 78 subsectors (WTO 2013).

101. **Although the country has taken steps in regulatory reform, the implementation of the reforms has been hindered by weakness in the rule of law.** This is evident in the country's ranking on the Doing Business indicators, which show the country near the lowest rank on many indicators, including ease of getting credit, protecting investors, and paying taxes, which are all closely tied to the capabilities of law enforcement (Table 5). Laws and regulations do not seem to be the main obstacles to doing business. The challenge lies in regulatory enforcement and governance.

Table 5. The Republic of Yemen and the Region: Doing Business Indicators, 2015

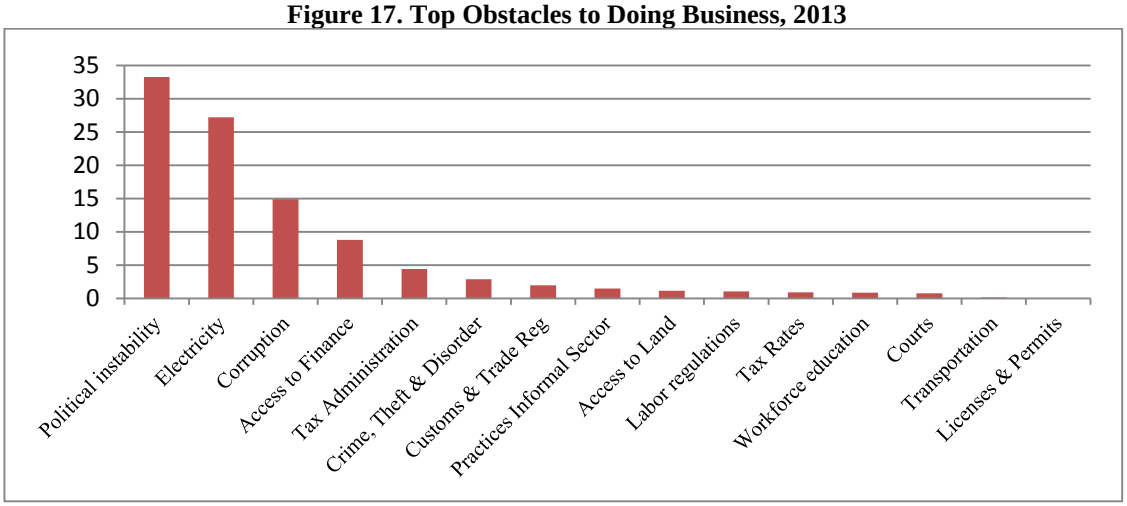
Indicator, rank	*Yemen, Rep.*	*Worst regional performance*		*Best regional performance*	
	Rank	*Rank*	*Economy*	*Rank*	*Economy*
Ease of doing business	137	188	Libya	22	United Arab Emirates
Starting a business	140	144	Libya	58	United Arab Emirates
Dealing with construction permits	68	189	Libya	4	United Arab Emirates
Getting electricity	122	122	Yemen, Rep.	4	United Arab Emirates
Registering property	44	189	Libya	4	United Arab Emirates
Getting credit	185	185	Yemen, Rep.; Libya	71	Saudi Arabia
Protecting investors	162	188	Libya	43	United Arab Emirates, Kuwait
Paying taxes	135	157	Libya	1	United Arab Emirates, Qatar
Trading across borders	134	178	Iraq	8	United Arab Emirates
Enforcing contracts	85	141	Iraq	66	Iran, Islamic Rep.
Resolving insolvency	154	189	Iraq, Libya	47	Qatar

102. **The National Dialogue Conference generated an agreement to transition to a federal system with six regions.** The effects of this decision on the investment climate cannot be predicted. However, devolving authority and resources to regions could have a positive effect in opening up space for competition and aligning local government and private sector interests. There are also risks associated with the capacity of regional governments, the creation of new opportunities for rent-seeking behavior, and the disruption in well-functioning markets.

3.3. The Business Environment in Practice

103. **In practice, the environment for business, investment, and trade suffers from numerous challenges.** As in previous years, firms interviewed in the 2013 Enterprise Survey identified political instability, poor electricity services, and corruption as the top obstacles they perceived in doing business in the country (Figure 17).[20] The perception that political instability was an obstacle had increased dramatically, which is not an unexpected outcome given the political upheaval during the period.

Figure 17. Top Obstacles to Doing Business, 2013



Source: 2013 data of the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.

104. **It seems that the perception that corruption, electricity distribution, transport, and customs and trade regulations are obstacles to business has become more widespread.** A substantially higher share of businesses identified these areas as major or severe obstacles to business in 2013 relative to 2010, and there are no areas where perceptions have improved appreciably (Table 6).

Table 6. Perceptions of the Business Climate Have Deteriorated Significantly
percent

Aspects of the business climate with statistically significant change in perceptions	*2010*	*2013*
Firms identifying corruption as a major constraint	68.28	86.34
Firms identifying crime, theft, and disorder as major constraints	29.36	67.46
Firms identifying transport as a major constraint	13.49	31.27
Firms identifying electricity as a major constraint	56.16	78.60
Firms identifying customs and trade regulations as major constraints	13.95	35.58

Source: 2010, 2013 data of the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.

[20] See Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.

3.3.1. The governance deficit: corruption and insecurity

105. **The enforcement of regulations and laws is sometimes undermined as soon as the laws are enacted.** The implementation of regulations can be hampered by the influence of interest groups. For example, the law against monopolies provides for the establishment of a competition protection and monopoly and commercial fraud prevention commission, but such a commission has never met.

106. **The lack of independence of the judiciary is the major issue contributing to the weakness of the enforcement of laws and regulations.** The judicial system is hampered by frequent government interference and the reluctance of the government to enforce court rulings. In many cases in commercial court, judges have neglected to take certain statutes into consideration if they found them shari'a noncompliant, basing this on the Constitution, which views Islamic jurisprudence as "the source of legislation." For example, after courts ruled against banks in repeated cases, the banks avoided bankruptcy by simply rescheduling their commercial loans. Numerous textual ambiguities and omissions in laws and regulations also leave room for judges to resort to uncodified legal sources to support their decisions.

107. **Widespread petty corruption prevents the effective delivery of even the most routine government services and the enforcement of regulations on certain business practices, such as registration, licensing, inspections, taxation, and customs.** The prevalence of this problem can be gauged from the Enterprise Surveys, which indicate that a majority of firms are expected to make informal payments to obtain services, conclude dealings with tax inspectors and other regulators, and secure government contracts (Table 7).[21] While petty corruption, by definition, occurs at a small scale, it is more impactful in some ways because it colors practically all government-business relationships and therefore affects a broader constituency directly, including formal and informal businesses.

108. **The common perception that bribes are expected in public procurement is especially striking.** While these results are only indicative, 77.7 percent of the firms surveyed report they are expected to pay an estimated 4 percent of the contract value to obtain a government contract. Public procurement reform has been on the government agenda for some time, but these results demonstrate that it would likely be ineffective unless accompanied by a willingness to undertake serious enforcement.

Table 7. Perceptions of Bribery in Government Services Are Widespread

	percent
Firms expected to give gifts to obtain construction permits	78.86
Firms expected to give gifts to secure government contracts	77.70
Firms expected to give gifts to obtain electrical connections	70.84
Firms expected to give gifts to obtain import licenses	62.78
Firms expected to give gifts in meetings with tax inspectors*	59.15
Firms expected to give gifts to obtain operating licenses	58.50
Firms expected to make informal payments to get action*	54.88
Firms expected to give gifts to obtain water connections	32.07
Firms believing the court system is fair, impartial, and incorrupt*	21.08

Source: 2013 data of the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.
Note: Some point estimates are associated with a low number of observations because the business did not engage in the activity at all or refused to respond to the question. Such point estimates should be considered only indicative.
* = Associated with over 200 observations and may be considered as more reliable point estimates.

[21] The surveys only estimate the perception of corruption, not actual incidence. They may underreport because of the reluctance of respondents to provide accurate answers or to answer at all. See Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org.

109. **Likewise in tax inspection, there is a widespread perception of corruption.** Over 59 percent of firms reported they had to give gifts or bribes to tax inspectors (Table 8). The share of reports of corruption during tax inspections was substantially greater among larger firms. Based on the average number of payments per year (44 according to the Doing Business indicators [2014]), the country is the worst performer in the region. This clearly shows that tax inspection reform should be at the top of the government reform agenda. Previous surveys have also identified municipal police inspections as another area in which substantial informal payments are required.

Table 8. The Need to Reform Tax Enforcement Is Evident

All firms reporting they were expected to give gifts to tax inspectors, %	59.15
Large firms reporting they were expected to give gifts to tax inspectors, %	90.24
Medium firms reporting they were expected to give gifts, %	58.67
Small firms reporting they were expected to give gifts, %	57.75
Tax payments, number per year	44.00
Time spent dealing with taxes, hours per year	248.00

Source: 2013 data of the Enterprise Surveys (database), International Finance Corporation and World Bank, Washington, DC, http://www.enterprisesurveys.org; 2014 data of the Doing Business (database), International Finance Corporation and World Bank, Washington, DC, http://www.doingbusiness.org/data..

110. **Another key area of governance deficit is security.** The share of firms reporting crime, theft, and disorder as a major or severe constraint to business activity more than doubled between 2010 and 2013, from 29 percent to 67 percent of all firms surveyed and 92 percent of the large firms surveyed. Insecurity along major roads between cities was reported as a special concern, but firms report a generalized sense of insecurity as well, even in urban areas. Firms in regions where the central government's control has been weak or worse, such as in Saada or Abyan, are particularly vulnerable.

111. **The discussion above shows that there is an implementation gap that must be addressed in each area of government-to-business service, whether it is business registration, licensing, inspection, taxation, or customs.** Cross-cutting issues prevent this, primarily the lack of rule of law, poor government accountability, and weak state capacity. The potential to close part of this implementation gap would be provided by the introduction of measures to promote (a) transparency before the public, such as public consultation on laws, the publication of regulations, service standards, and public procurement outcomes, and (b) internal transparency and accountability, such as audits, use of information technology systems, performance reporting, and separation of powers and authority. However, each area will require specific actions based on the implementation gap within that space. For example, businesses report that they view municipal and police inspections as a mechanism used by these authorities to engage in petty corruption. Given that these inspections are controlled by local governments, reform in this area of government service will require an intervention within the municipal level that provides transparency on the inspections that have been authorized, their purpose and requirements, their frequency, and other factors, combined with a citizen feedback mechanism and action to hold abusing inspectors accountable. By contrast, reform of customs administration must be tackled by the central government through an institutional reform agenda that leads to greater professionalism among customs workers, fosters the utilization and upgrading of technology, and applies information technology to monitor and control corrupt practices.

3.3.2. Reliability, Access, and the Cost of Infrastructure

Electricity

112. **The unreliability and lack of adequate access to electricity are persistent, binding, and widespread constraints.** Access to electricity by firms has deteriorated significantly over the past three years. In 2010, only 22 percent of businesses reported owning or sharing generators, and an average of 4

percent of electricity was reportedly obtained by firms from generators. By 2013, these shares had risen to 79 percent and 28 percent, respectively. As a result of the greater dependence on generators, the availability of fuel has also become an important issue, especially with the increasingly frequent fuel shortages in recent years and months. The electricity sector is now costing the country about 6 percent of GDP value annually through direct and indirect subsidies. However, the country is not obtaining the affordable, reliable, and sufficient electricity it needs to power economic growth, not is it able to boost electricity service sustainably to more rural areas for poverty reduction. It is in the grips of a major power crisis that is threatening the business competitiveness, fiscal discipline, job creation, economic recovery, and growth potential. Power outages averaged 4 hours a day among businesses in 2013, which represented a total estimated 141 hours without power per firm per month. In the first three months of 2014, some firms reported that power outages had reached an alarming average of over 8 hours a day. These data are reported in the major cities. The situation is more dire outside the urban areas where most of the surveyed firms are located; in rural areas, the issue revolves more around access than reliability.

113. **The poor performance of the electrical power sector is not solely an outcome of the conflict and the crisis since early 2011. While recent events have exacerbated the problem, the roots of the problem lie rather in poor government oversight and performance, government monopoly, and the lack of a framework for private sector participation.** Over the last decade, the electric power sector has been characterized by little progress in expanding access and adding capacity to meet the growing demand by new industrial and commercial establishments. This is the result of the pervasive involvement of government agencies in the sector without a clear legal framework; the sectoral monopoly of the Public Electricity Corporation, the poorly performing state-owned integrated power company; the chronic inadequate electricity pricing by the government; and the lack of a coherent, transparent framework to support private sector participation. The government has never adopted a comprehensive approach to the fundamental problems of the sector. Instead, the decisions and actions taken to deal with sectoral issues are typically shortsighted and motivated by political considerations that may be perceived to yield short-term benefits, but seriously undermine the prospect of putting the sector on a sustainable long-term path. As a result, the sector's performance is deteriorating, and government efforts to resolve the short-term crisis keep failing, creating a vicious circle.

114. **The government must implement a wholesale reform agenda to confront all aspects of sectoral development, including institutional, legal, regulatory, structural, governance, and pricing issues, to create the conditions to improve sectoral performance and attract financing.** The top government priorities in the sector should include (a) developing a new, effective institutional and regulatory framework so that government policy making in the sector is separate from the regulatory and management functions of state-owned power entities; (b) creating a viable sectoral structure by breaking up the Public Electricity Corporation and commercializing and corporatizing the various component businesses; (c) mobilizing the private sector and unleashing its potential so as to promote investment in the provision of electrical power; and (d) implementing a new electricity pricing regime that would attract and sustain investment in the sector and encourage production and consumption efficiency.

115. **The government should recognize that power sector reform is a major undertaking that requires will, commitment, and hard work, but that key reform decisions must be taken now and be acted on immediately to generate significant improvements in the medium and long terms.** The government must recognize the severity of the problems and become committed to addressing them. It needs to change attitudes and decision-making processes so that any initiative aimed at a short-run impact should not create problems and undermine the development of the sector over the medium and long terms. As a first step, it should endorse a comprehensive power sector reform strategy with a clear roadmap and appoint a champion to lead and be responsible for implementation.

Telecommunications

116. **The negative effects of government monopolies on the adequacy of infrastructure services are evident in the telecommunications sector.** In the sector, the effects are evident in access and costs. Although there are four mobile phone operators, international connectivity capability is monopolized by an SOE. The introduction of competition is perhaps the most urgent issue facing the sector, particularly in the mobile broadband Internet segment of the market.

117. **In the accessibility and affordability of telecommunications services, the country is significantly behind other countries in the Middle East and North Africa region and other low-income countries.** The mobile phone subscription rate is at 54 percent, which is substantially lower than the regional average of 100 percent. The rates are significantly lower for mobile and wireless broadband services; for example, in 2012, there were about 435,000 3G subscribers in the country, which has a population of about 25 million. The poorest 40 percent of the population would need to spend over half their incomes to link to mobile broadband Internet services and 46 percent of their incomes for fixed broadband Internet.

118. **The country will rely on mobile or wireless broadband for Internet connections in the medium term** primarily because laying the last-mile fixed-line connection to buildings will remain a challenge as it is in other low-income countries. In 2000, the country took the forward-looking step of opening up the mobile phone segment to new entrants, thereby leading the Middle East and North Africa region at the time. However, because of the advent of the 3G/4G technology, the mobile market in the country cannot be considered fully liberalized given that only one of the four mobile operators is able to provide 3G service. 3G and 4G services are considered the more profitable service lines among operators, and it is critical for operators to ensure such capacity for future investment and innovation in their networks. Furthermore, monopolies still exist on international connectivity in the country and on the limited access to the core backbone infrastructure, and the capability of the operators to build and expand services is therefore restricted. Plans are therefore evolving to issue new licenses to allow mobile operators to upgrade their networks to provide services at faster speeds.

119. **Steps toward liberalization.** Parliament ratified the WTO accession agreement on April 28, 2014. Thus, the country became the 160th member of the global trade organization. This has triggered telecommunications-specific WTO obligations, which include the following:

- *Competitive safeguards within the legal and regulatory framework*: members are required to establish competitive safeguards to prohibit suppliers from engaging in anticompetitive conduct.
- *Interconnection agreement among operators:* a fair cost-based interconnection framework in line with global best practice must be established.
- *Universal service programs to serve the unserved:* options must be reviewed to promote universal service, such as a pay-or-play scheme or a universal fund that would extend telecommunications to unserved or underserved areas, which might include schools, universities, and health care entities.
- *Public availability of licensing criteria:* licensing criteria and decisions should be publicly available.
- *Establish an independent regulator:* the regulator should be a neutral agent responsible for ensuring a level playing field among operators and should provide oversight on licensing; the allocation of frequencies and channels, rights-of-way, arbitration and dispute resolution, and other issues.
- *Allocation and use of scarce resources:* develop a fair, systematic approach for the allocation and use of scarce resources, including frequencies, channels, and rights-of-way.

Transport

120. **Transport services are costly and inadequate to support commerce and trade.** Ground transport services suffer from government interference, poor security, and poor infrastructure. Road insecurity is a key issue, particularly on roads between cities. This raises costs and creates uncertainty. Freight forwarders are reluctant to take charge of cargos from port to client warehouses because of insecurity. Transport companies have increased their rates between the ports and Sana'a, for example; rates doubled, from $350 to $700, between January 2012 and May 2014 for a 20-foot container between Al Hodeidah Port and Sana'a. Transport companies argue that payments to tribesmen, fuel shortages, and insecurity justify the new rates. Insurance premiums for land transport are high, ranging from 1 percent to 3 percent of the value of cost, insurance, and freight.[22] Owners of transport companies report regular payments of $200 per truck to tribesmen.[23] Some major companies have decided to invest locally in mosques and schools in areas traversed by their cargos to secure these areas. Some traders use air transport rather than land transport. Such is the case of a cigarette plant in Al Hodeidah Governorate that delivers products by plane to the capital.

121. **Insecurity is a major impediment to new market entrants not only because of the related costs, but also because of the expertise required to solve security issues.** This expertise includes specialist knowledge about the practices of hijackers and the authorities, whose means are limited, and about insular issues and conflicts, whether political or personal, involving the authorities, tribesmen, and Islamist militants. Retrieving hijacked cargos, trucks, or cars, negotiating informal payments, avoiding specific areas, and negotiating with transporters make the costs unpredictable and require a robust awareness of local areas. This knowledge favors long-established Yemeni importers, who acknowledge they are used to dealing with this environment, which they consider part of the "old Yemeni culture." Insecurity has a direct impact on the management capacity of state agencies at the points of entry. Several cases have also been reported of weapons being shipped into Yemeni ports and of importers retrieving the containers after running gunfights along the docks.[24] How can this cycle of insecurity be broken that fuels unfair competition and generates an implicit cost for consumers. Specialist knowledge and security intelligence, scanning machines, and risk analysis are probably the three components of any effort to enhance security and attract trade.

122. **Transit arrangements with Saudi Arabia, with whom the Republic of Yemen shares most of its land borders, are inadequate.** Some traffic regulations at border crossings from Saudi Arabia require transport operators to discharge all cargo from one truck and load it onto another. Because of visa restrictions and security issues, operating on both sides of the border requires authorization. Some transport companies also prefer to use certain trucks at border crossings and other trucks inside the country. This causes delays at borders and, combined with the insecurity on roads leading to the borders, constrains cross border trade.

123. **Transport and trade infrastructure is lacking.** Road congestion in Sana'a and the absence of break-bulk facilities around the capital are costly for operators because their trucks are often idle in and around Sana'a. Heavy trucks are banned from the city from 7 a.m. to 10 p.m. and from the ring road from

[22] The land shipping insurance premiums are the highest in the region (Lester 2010).

[23] This payment to tribesmen may be higher if there are several roadblocks by tribesmen.

[24] One of the two largest seizures of ammunition in 2013 was reported in the Republic of Yemen. It involved ammunition seized from a container imported from China. The country is the first in ammunition seizures among the 36 countries that have reported such seizures. One of the three largest seizures of pistols was also reported in the country. Another seizure was reported in Oman. The Republic of Yemen is among the top 10 departure and destination countries for weapons. Data on seizures of illegal goods such as weapons should be considered with caution: they demonstrate both the intensity of the illegal trafficking and the ability of local authorities at detection. Above all, they demonstrate that the country is facing a serious problem with weapons.

7 a.m. to 3 p.m. This causes delays in offloading goods and raises transport costs. The poor quality of infrastructure at border crossings—such as information technology servers, slow Internet connections, and outdated scanning machines—and poor logistics management causes delays and opportunity costs.[25]

124. **The country has several ports, but traffic is limited.** Three port corporations were created in 2007: the Gulf of Aden Port Corporation (Aden), the Red Sea Corporation (Al Hodeidah, Mokha, Ras Isa, and Saleef), and the Arabian Sea Ports Corporation (Ahs Shihr, Mukhalla, and Nishtun). Aden is the only port able to process cargoes in the regional transshipment market. Al Hodeidah and Mukhalla serve the national market, while other ports specialize in specific industries (such as grain, petroleum products, and fisheries). Additional facilities are envisaged, such as the expansion and deepening of the Aden Container Terminal (an agreement has been signed with the Chinese operator China Harbour Engineering Company Group), the rehabilitation of Al Hodeidah Port, and the creation of new ports at Burum and Saleef (to replace the existing Mukhalla port, which has limited space) and in Socotra.

125. **New developments may justify port investment.** Before insecurity escalated in the second half of 2014 and onward, several major shipping lines had increased their traffic via Yemeni ports, such as Evergreen Line (April 2014, for transshipment in Aden), the China Ocean Shipping Company (May 2014, a direct line between Aden and China), and MSC (February 2014, a direct line between Mukhalla and Oman). The port strategy designed in 2009 by the Ministry of Transport proposes the specialization of ports to discourage competition among them (Cornell 2009). The national ports strategy focuses on maritime transport in relevant governorates or future regions in support of local development in the context of federalism. The new law on private-public partnerships may encourage this strategy. Once peace and stability are recovered, Aden would develop transshipment activities to become a hub port, while other ports would still serve the national market.

126. **Government interventions in the transport services market and bureaucracy are creating additional inefficiencies and costs in transport services.** The law on land transport establishes contracting processes that reduce competition among transport operators by prohibiting importers and exporters from interacting directly with transport companies. Legally, licensed private offices under the authority of the Land Transport Authority are in charge of assigning trucks to clients. Moreover, each transport company is allowed to work with only one specific office, and the offices are organized into groups that receive an equal share of the transport demand. At the present time, truck owners and drivers have created unions and are seeking to corner freight distribution. In 2013, Aden and Al Hodeidah ports were paralyzed by two strikes among trucks owners dissatisfied with the process. To prevent strikes, the government has adopted a pragmatic approach of freezing the activities of the private offices in charge of freight distribution, negotiating fixed rates with truck driver unions, and assigned the offices the ability to organize the booking of trucks for clients. This liberalization, which will also guard against monopolies, is still under negotiation and has not yet been formally accepted.

127. **The delays and the high cost of imports and exports because of bureaucratic red tape need to be reduced.**[26] There are numerous causes of the delays in the clearance process, including lengthy customs procedures, corruption, use of port areas as warehouses by importers, the lack of technical knowledge among importers, and the lack of a technical apparatus among administrators.[27] The main bottleneck arises

[25] As of June 2014, only 14 scanning machines, mostly outdated and poorly maintained, were deployed at eight major entry points.

[26] The World Bank mission was not allowed to visit field services in Aden and Al Hodeidah ports, which has limited the accuracy of the analysis. Fortunately, the Yemen Customs Authority undertook an important effort to provide data that it has allowed the mission to analyze.

[27] These kinds of delays have been reported in interviews, but an accurate assessment would have required field visits in ports. There is no incentive to remove the goods quickly from ports because port charges are low. In Djibouti and

between the registration of the manifest (or a ship's arrival) and the registration of the declaration by the importer. Solutions to these delays include adequate demurrage rates proportional to the time spent in customs warehouses, reducing the time spent on checking the quality and volume of goods by outsourcing the certification so that it will be conducted at the point of export, reducing dramatically the controls of the Yemen Standardization, Metrology, and Quality Control Organization or improving the entity's capacity, and enhancing customs procedures by making actors in the clearance process accountable legally and in terms of the delays arising because of their actions by allowing them to record their field work on the customs information system, lightening the administrative burden on customs officials, who could then focus more on monitoring and reducing the number of administrative procedures, which could shorten the delays and limit the opportunities for corruption.

3.3.3. Access to finance

128. **Despite important initiatives in the regulatory regime over the past decade, the financial sector in the Republic of Yemen continues to be the weakest in the region.** This is partly because of the role of the government in crowding out private sector lending, regulatory and capacity challenges, and, to some degree, the dominance of banks owned by conglomerates and engaged in connected lending. The banking sector, which dominates the financial system, is considered stable, profitable, and liquid, partly because of the large share of low-risk high-yield government treasury bills in the bank portfolios. However, a relatively high nonperforming loan ratio—25.5 percent in 2012—reflects both significant credit risk and deficiencies in the ability of banks to manage the risks adequately.

129. **About one-third of the firms surveyed in 2013 reported that access to finance is a major or severe constraint; the share would likely be higher under less volatile circumstances.** Smaller firms are more likely to report that access to finance is a constraint because they have fewer of their own financial resources at their disposal for investment and working capital and face greater obstacles to obtaining bank financing. Firms of all sizes rely primarily on their own finances rather than banks for investment and for expenses, but this is more pronounced among small and medium firms (Table 9). Private credit is not widely available, representing a paltry 3.9 percent of GDP, and even this lending is limited to a small number of borrowers (**Table 10**). According to the Central Bank of Yemen, there are only 121,102 borrowers, but fewer than 80 borrowers account for an estimated 70–80 percent of private lending by commercial banks. The issue of connected lending has been noted as a concern by the central bank. A circular was issued in 1999 to restrict these practices, and central bank is seeking to tighten supervision.

Table 9. Access to Finance by Large, Medium, and Small Enterprises

percent

Indicator of access to finance	*Large*	*Medium*	*Small*
Internal finance for investment	91.69	94.60	93.34
Value of collateral needed for a loan, % of the loan amount	174.82	381.74	268.06
Loans requiring collateral	74.69	88.70	91.32
Firms using banks to finance investments	5.69	0.00	3.77
Firms using banks to finance expenses	12.73	12.53	5.82
Firms with bank loans or line of credit	7.48	14.60	3.55
Firms with checking or savings accounts	95.89	78.27	41.31
Firms identifying access or cost of finance as a major constraint	11.98	26.24	34.42
Sales sold on credit	31.07	47.90	27.90
Bank finance for investment	2.93	0.00	1.13
Firms not needing a loan	82.10	60.60	51.53

Salalah, as in many ports in the world, demurrage rates increase in accordance with the time spent in customs warehouses; this is not the case in Aden, for example. Relevant port tariff policies should encourage traders to avoid using a port as a warehouse.

Table 10. Size and Depth of the Financial Sector, Median Values

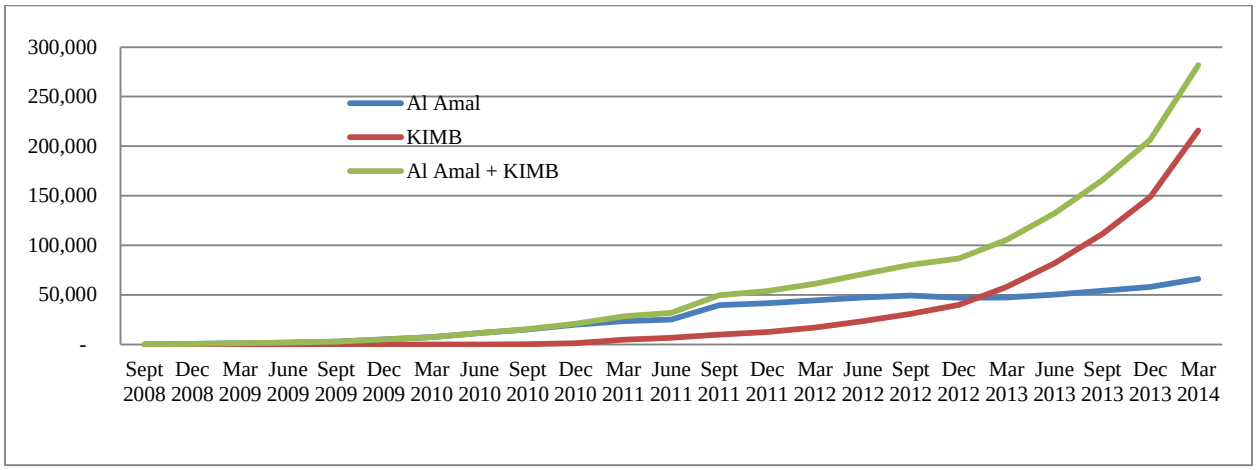
percent

Ratio	*Yemen, Rep.*	*Middle East and North Africa*	*Lower-middle-income countries*
Domestic bank deposits/GDP	19.2	59.3	35.6
Private credit/GDP	3.9	29.3	31.1

Source: 2012 data of FinStats (internal database), World Bank, Washington, DC.

130. **A positive segment of the financial sector is microfinance, one of the most advanced in the Middle East and North Africa region for both the maturity of the players and the enabling legal, regulatory, and supervisory framework.** There are currently a dozen microfinance service providers, including several nongovernmental organizations or programs, one nonprofit company (Al Awael), and two active specialized banks: Al Amal Bank, which was initially established as a microfinance institution under a special law, and Al Kuraimi Bank, a money exchange company started in 1995 that acquired a microfinance banking license in 2010. Their collective outreach exceeds 100,000 active borrowers and 280,000 savers after strong growth over the past few years (Figure 18). Their outstanding loan portfolios are close to $50 million, and the value of deposit accounts is around $130 million. The slow scaling-up of microfinance banks into the small and medium enterprise lending space may constitute a viable avenue for improving access to finance among such enterprises, especially in the absence of initiative within the conventional banking sector to develop business models to scale down financing to these enterprises.

Figure 18. Number of Savings Accounts at Microfinance Banks, 2008–14



Source: Data of the International Finance Corporation.

131. **The challenge going forward is to facilitate the growth and depth of the financial system, while maintaining system stability and addressing any weaknesses within the difficult economic and political environment.** The large financing needs of the government and the high interest rates reduce incentives of banks to lend to the private sector, a problem that is exacerbated by weaknesses in the insolvency regime and judiciary infrastructure in enforcing creditor rights. Ongoing efforts to improve financial infrastructure (credit registry, payment systems) and contract enforcement (assigning specialized judges to commercial cases) will have a positive impact on bank lending to the private sector, but additional reforms are needed. The emergence of new players, including Islamic banks, microfinance institutions, and nonbank financial institutions, is expected to contribute to improvements in the size and efficiency of the financial system.

3.3.4. Access to land

132. **Firms do not seem to perceive access to land for economic use as a business constraint.** Rather, access to land is manifest as an issue at the macroeconomic and sociopolitical levels because land rights, the transparency of land management, and the use of public lands are subjects of national debate. Indeed, the National Dialogue Conference addressed this issue head on because of the controversies and the implications for social justice and regional consensus.

133. **Because of the difficulty of enforcing land and property titles, banks are reluctant to accept land as debt collateral.** Moreover, land adequately serviced for industrial or commercial uses is scarce, although this is not likely to be a deciding factor among investors, it does create complications. The General Investment Authority surveyed investors and found that many reported delays, complications, and even failures in their investment projects because of problems obtaining land title or possession of land.

3.4. Realizing the Potential for Exports

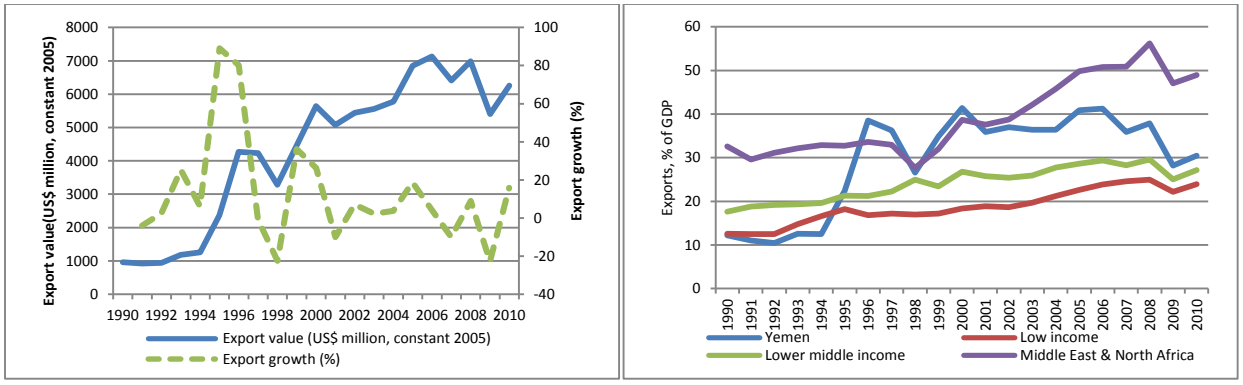
134. **This section examines the structure and performance of the private sector in exporting.** Using firm-level data, this section analyzes the micro foundations of the country's competitiveness and investigates the extent to which low productivity and unfavorable production costs contribute to the country's weak production base and exports.

3.4.1. Export performance

135. **Merchandise exports quickly rose to become one of the driving forces of economic growth in the early 1990s, but export performance has stagnated during the 2000s and remains volatile.** Between 1990 and 1999, the value of total exports increased from about $1.0 billion (constant 2005 U.S. dollars), or 11 percent of GDP, to $4.5 billion, or about 35 percent of GDP in 1999, a trend driven primarily by the growth in oil exports, which now represent over 80 percent of total exports. The country's export performance has slowed during the 2000s. The value of exports rose from only $5.6 billion, or 40 percent of GDP, in 2000 to $6.3 billion in 2010, or 30 percent of GDP. Exports were highly volatile during the 1990s and, to a lesser extent, the 2000s. The coefficient of variation of exports dropped from 0.64 in 1990–99 to 0.12 in 2000–10, but the volatility of exports was still high relative to the situation in other lower-middle-income countries (Figure 19).

Figure 19. Export Value and Growth, 1990–2011

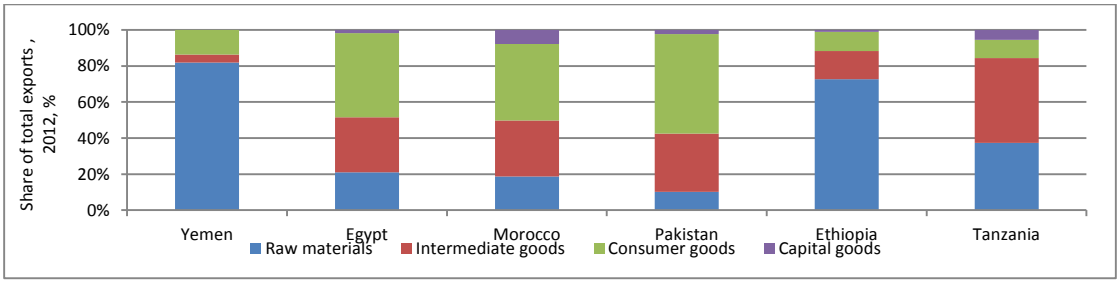
a. Export value and growth in Yemen, Rep. **b. Exports in Yemen, Rep. and comparator countries**



Source: Data of World Development Indicators (WDI).

136. **Agricultural and mineral commodities dominate among nonoil and nongas exports; there is little domestic processing.** Agricultural and mineral products accounted for about 74 percent of total nonoil and nongas exports between 2004 and 2012 (Figure 20). Exports of agricultural and fishery products mainly consist of commodities such as fish, meat, fruits and vegetables, and coffee and tea, while naphthalene is the most important nonoil and nongas mineral export.[28] The country's exports are also characterized by limited domestic processing of primary products; about 82 percent of total exports take the form of raw materials, while intermediates account for about 5 percent. The limited processing of primary products is also striking in comparison with regional comparators.

Figure 20. Exports Are Dominated by Agricultural and Mineral Commodities



137. **Yemeni exports are concentrated in a few destinations.** The top 3 oil and gas export destinations (China, India, and Thailand) accounted for an average of over 70 percent of total oil and gas exports between 2000 and 2011. The top importer of Yemeni oil and gas (China) alone accounted for over a third of total exports. Nonoil and nongas exports are also concentrated in terms of market destinations. About 40 percent of total nonoil exports went to GCC countries, and 20 percent went to other countries in the Middle East and North Africa region. Saudi Arabia alone accounts for about 30 percent of total nonoil and nongas exports. A shared language, historical ties, and physical proximity to Arab countries appear to be the leading factors behind the Republic of Yemen's pattern of nonoil exports to Arab countries (Table 11). Free trade agreements with other Arab countries have had positive, though moderate effects on export growth to Arab countries. The Greater Arab Free Trade Agreement, the sole free trade agreement of which the country is a member, has resulted in a marked decline in tariffs faced by Yemeni exports to other Arab countries.[29] When the agreement entered into force in 2005, tariffs dropped to zero from an average of 7 to 18 percent across sectors. The agreement has slightly modified the pattern of exports toward Arab countries. The export share to GCC countries rose from 43.9 percent of total nonoil and nongas exports in 2004 to about 46.5 percent during 2005–10.

Table 11. Major Export Destinations, 2010–12

Nonoil and nongas exports				Oil and gas exports			
Destination	Export value, $, 1,000s	Export share, % of total exports	Export products, number	Destination	Export value, $, 1,000s	Export share, % of total exports	Export products, number, 6 maximum
Saudi Arabia	225,013	31	543	China	2,200,000	32	4
Singapore	184,756	10	64	India	1,300,000	22	3
United Arab Emirates	113,766	7	370	Thailand	992,490	17	3
Somalia	59,037	8	291	Korea, Rep.	421,220	7	3
Egypt, Arab Rep.	53,332	7	140	Singapore	333,207	6	1
Kuwait	45,302	3	47	United States	228,965	3	3

[28] Naphthalene is an aromatic hydrocarbon found in coal carbon or crude oil. It is used in the manufacture of plastics, resins, fuels, and dyes. Alone, it represented about 15 percent of nonoil and nongas exports in 2010.

[29] The members of the free trade agreement are Bahrain, the Arab Republic of Egypt, Iraq, Lebanon, Libya, Oman, Palestine, Qatar, Saudi Arabia, Sudan, the Syrian Arab Republic, Tunisia, and the United Arab Emirates.

Nonoil and nongas exports				Oil and gas exports			
Destination	Export value, $, 1,000s	Export share, % of total exports	Export products, number	Destination	Export value, $, 1,000s	Export share, % of total exports	Export products, number, 6 maximum
Vietnam	41,949	6	24	New Zealand	156,594	3	1
Netherlands	36,817	1	38	United Arab Emirates	142,153	4	6
China	25,131	4	510	Malaysia	136,825	3	2
Jordan	19,921	2	96	South Africa	111,112	2	2

138. **The pattern of exports across sectors has changed little over the last decade.** Agricultural and fishery products were the main source of nonoil and nongas exports, accounting for over 60 percent of the total (Figure 21). Textiles, apparel, leather, and footwear experienced strong growth between 2004 and 2007, but the growth slowed subsequently, resulting in a sharp decline in the share in total exports. Within sectors, the discovery of new export products is relatively limited. Between 2004 and 2012, an average of 15 new products were introduced each year, while an average of 12 older products were dropped across sectors. However, the extent of new export product discovery differed greatly by sector (Figure 22). The introduction of new export products was more widespread in young or emerging sectors such as textiles, apparel, leather, and footwear and in small machinery and equipment.[30]

Figure 21. Export Share, by Sector, Nonoil and Nongas (%)

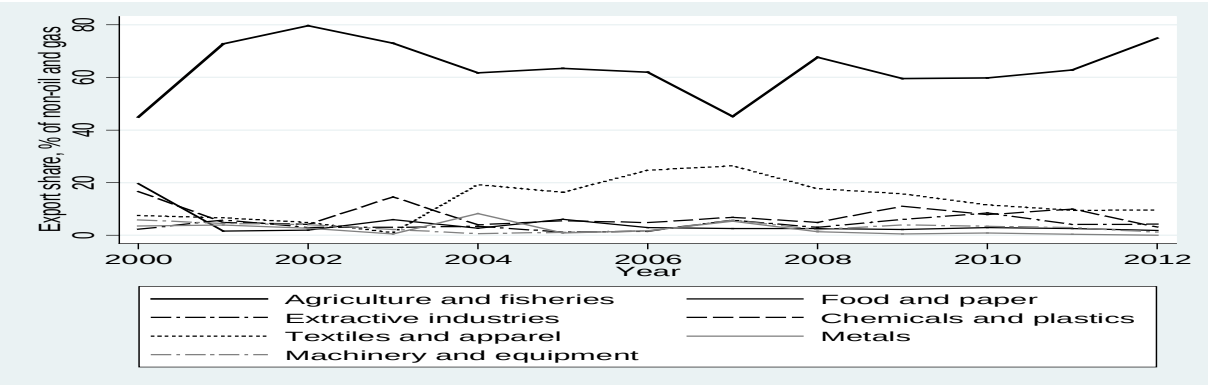
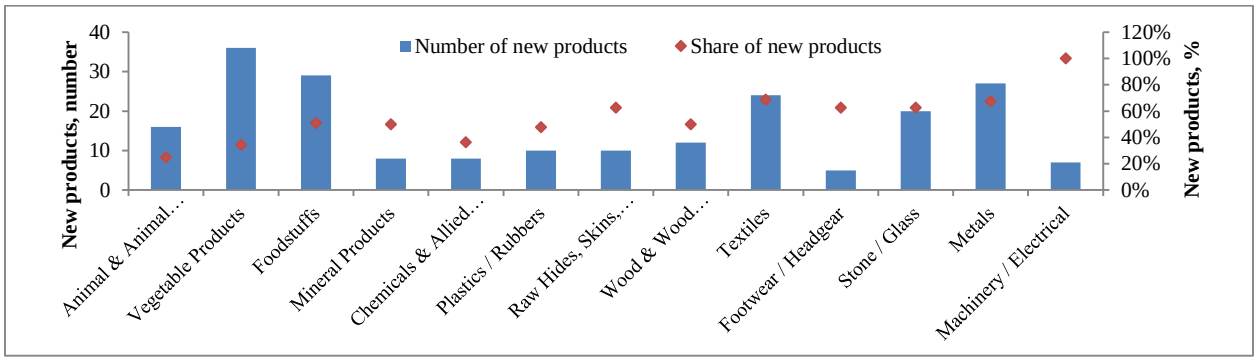


Figure 22. Number of New Export Products, 2004–12

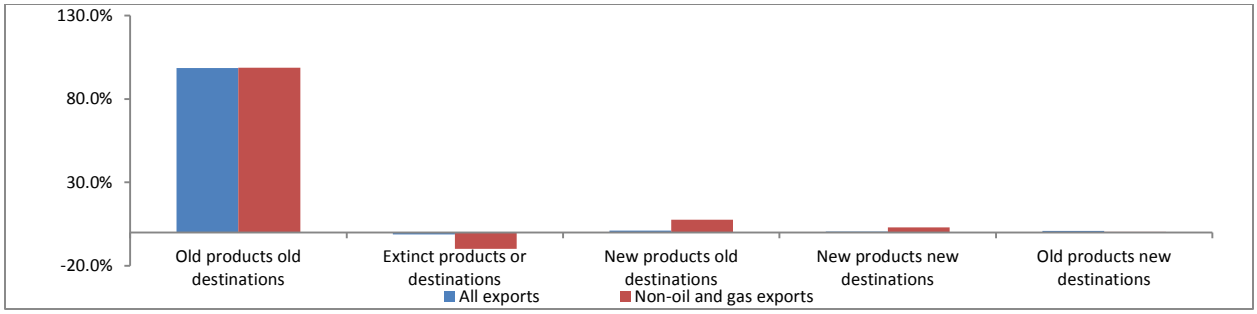


Note: The number of products is calculated at the Harmonized System six-digit level.

[30] In parallel, 21 new destinations were introduced, most of which were on the African continent, putting the number of export destinations at 88 countries (all product exports included). The 21 new countries introduced between 2004 and 2012 were Africa (Benin, Burundi, Cameroon, Cape Verde, the Comoros, Central African Republic, Chad, Sudan, Zambia, and Zimbabwe), Europe and OECD (Austria, Azerbaijan, Canada, Denmark, Malta), Latin America (Colombia), and Asia (the Democratic People's Republic of Korea and the Philippines).

139. **However, exports of traditional products to traditional destinations were the main driver of export growth, pointing to weak competitiveness gains in new products and market destinations.** A decomposition of export growth carried out to assess the contribution of the various export margins to overall export growth, namely, the introduction of new export destinations and new export products (extensive margin) and changes in export volume per product per destination (intensive margin).[31] It was undertaken for 2004–12 for total exports as well as for exports of nonoil and nongas products. The results (Figure 23) show that the intensive margin (exports of traditional products to traditional destinations) accounted for over 98 percent of export growth between 2004 and 2012. Among nonoil exports, the introduction of new products was the second-largest driver of export growth, accounting for about 10 percent of exports. Export growth through the introduction of new products was realized mostly through traditional export destinations. Export contraction resulting from the abandonment of destinations and products was virtually equal to export growth through new export products, indicating a lack of export growth along the extensive margin during 2004–12.

Figure 23. Contribution of the Extensive and Intensive Margins to Overall Export Growth, 2004–12



Note: The graph shows the contribution of each export margin to overall export growth. The contribution of each margin is expressed as a percentage of total export growth.

140. **Few Yemeni firms participate in the export market, but, if they do, their export volume is low compared with firms in the Middle East and North Africa region and in Sub-Saharan Africa.** Using the World Bank Exporter Dynamics Database, we analyze the characteristics of Yemeni exporting firms and compare them with firms in benchmark countries.[32] The results show that few firms participate in the export market. An average of only 522 firms export every year compared with an average of 5,315 firms in a typical country in the Middle East and North Africa region and 3,093 in a typical African country (1,382 firms per country per year, excluding South Africa).[33] These large differences suggest that, in the Republic of Yemen, there was a limited and weak production base and a low rate of participation in the export market among domestic firms. If they do export, Yemeni firms appear to be less likely than typical exporters in the region to survive in the export market. The annual export value of the median firm in countries in the Middle East and North Africa region is 36 percent higher than the median export value of Yemeni firms. The country has few large exporters; the top 1 percent of exporters only account for 33 percent of total exports, compared with 51 percent in the region and 58 percent in Sub-Saharan Africa.

[31] The contribution of each margin is calculated as follows: let x_{ckt} be exports to country c of product k at time t. The growth of exports is defined using the Davis and Haltiwanger (1992) growth rate given by $g_{ckt} = 2 * (x_{ckt} - x_{ckt-1}) / (x_{ckt} + x_{ckt-1})$. If s_{ckt} is the share of exports to country c of product k at time t, then the total export growth of the margin is given by the weighted sum g_{ckt}, where the weights are s_t; $G_t = \sum_{c,k} s_{ckt} * x_{ckt}$, which can be calculated for each margin separately. The contribution of each margin to export growth is expressed as a percentage of total export growth.

[32] See Exporter Dynamics Database, World Bank, Washington, DC, http://go.worldbank.org/KZGM120470.

[33] Between 2006 and 2010, there was an average of 6,728 exporters a year in Bangladesh and 15,325 in Pakistan.

141. **At the micro level, increasing the volume of firm exports and raising the number of firms that export appear to be the main two margins along which merchandise exports could be boosted.** Despite their small size, Yemeni exporters have a similar reach in terms of the number of export products and the number of destinations relative to the typical firm in the region or in Sub-Saharan Africa (**Table 12**). The median Yemeni firm exports 2.00 products, compared with 2.18 products in the median firm in the region and 2.03 products in the median firm in Sub-Saharan Africa. The median Yemeni exporting firm only reaches 1.00 destinations, compared with 1.06 destinations at the median firm in the region and 1.08 destinations at the median firm in Sub-Saharan Africa. Moreover, a look at the ratio of the mean to the median numbers of export products and destinations suggests that the level of heterogeneity across firms is somewhat similar in the Republic of Yemen and comparator countries. Put together, the analysis strongly suggests that raising export volume (intensive margin) and the participation of firms in export markets (extensive margin) are two important dimensions along which exports could be expanded. This requires that the productive base be strengthened and gain competitiveness.

Table 12. Characteristics of Exporting Firms

Indicator	*Measure*	*Yemen, Rep.*	*Middle East and North Africa*	*Sub-Saharan Africa*
Exporting firm dynamics	Number of exporters	522	5,315	3,093
	Entry rate	0.53	0.40	0.43
	Exit rate	0.53	0.40	0.42
	Survival rate, years	0.35	0.43	0.36
Export value per firm per year, $1,000s	Mean	790.31	1,472.83	1,687.28
	Median	48.37	65.77	24.88
Export concentration	Herfindahl-Hirschman index	0.04	0.03	0.12
	Export share of top 1 percent	0.33	0.51	0.58
Number of export products	Mean	4.71	5.42	6.06
	Median	2.00	2.18	2.03
Number of export destinations	Mean	2.43	2.54	2.38
	Median	1.00	1.06	1.08

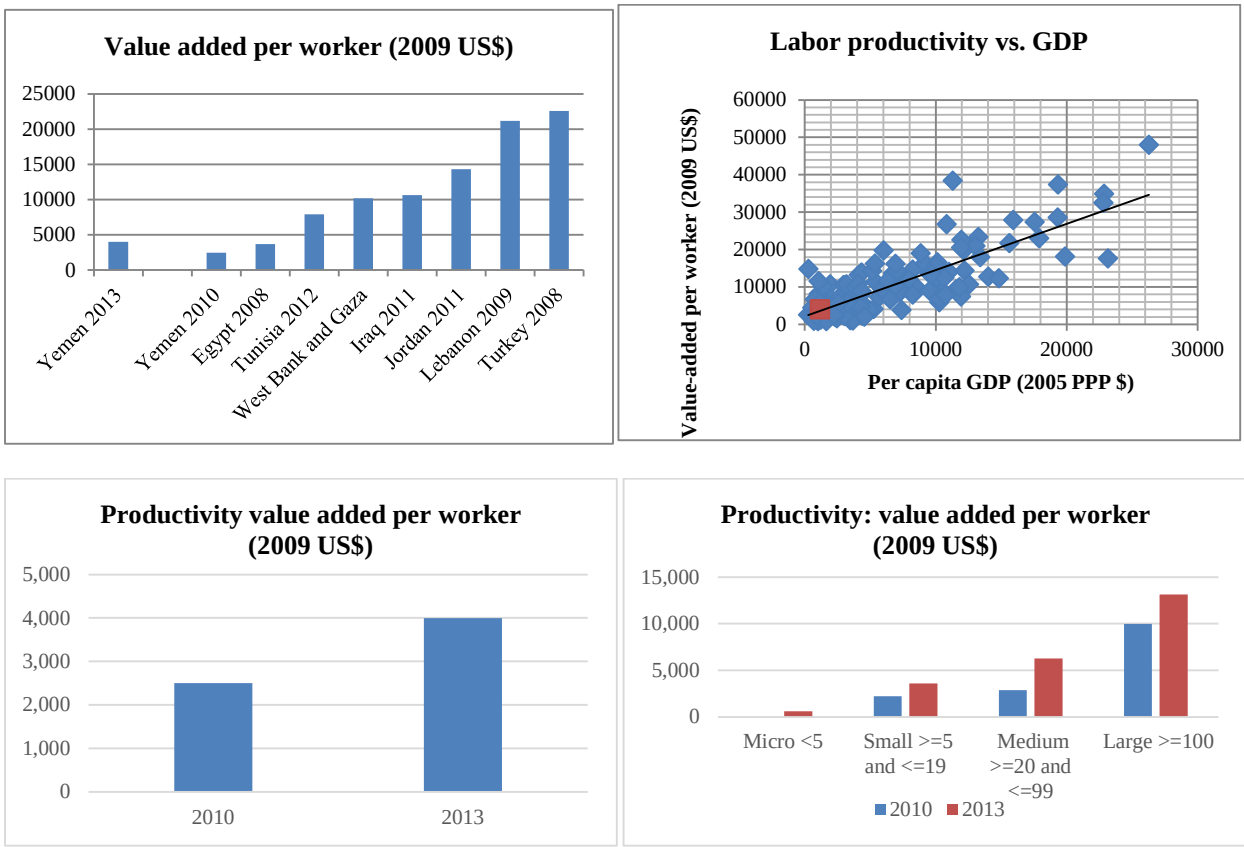
Source: Data of the World Bank Exporter Dynamics Database.
Note: Reported statistics are averages over 2006–10. The Middle East and North Africa includes the Arab Republic of Egypt, the Islamic Republic of Iran, Jordan, Kuwait, Lebanon, and Morocco. Africa includes Botswana, Burkina Faso, Cameroon, Kenya, Malawi, Mali, Mauritius, Niger, Senegal, South Africa, Tanzania, and Uganda. Entry and exit rates are calculated as a share of the number of exporters during the previous period.

3.4.2. Productivity and cost competitiveness

Labor productivity

142. **Estimated at only $3,993 per worker, labor productivity in the Republic of Yemen is the lowest among the countries examined in the region (**Figure 24**).** However, the country's GDP is relatively on par with the country's level of income and development. Low labor productivity is driven by a combination of factors, including the concentration of firms in low-productivity subsectors; low capital intensity, with a predominance of small firms with limited capital investment; and generally low technical efficiency. These factors are attributable to root causes related to governance, fiscal and macroeconomic policies, business regulations, the business climate, and public and private sector capacity (see above). The trend is, however, positive. In value added per worker per year, labor productivity improved from about $2,500 in 2010 to $3,900 in 2013. As is typical, larger firms are more productive than smaller firms.

Figure 24. Labor Productivity Measures



Cost structure and cost competitiveness

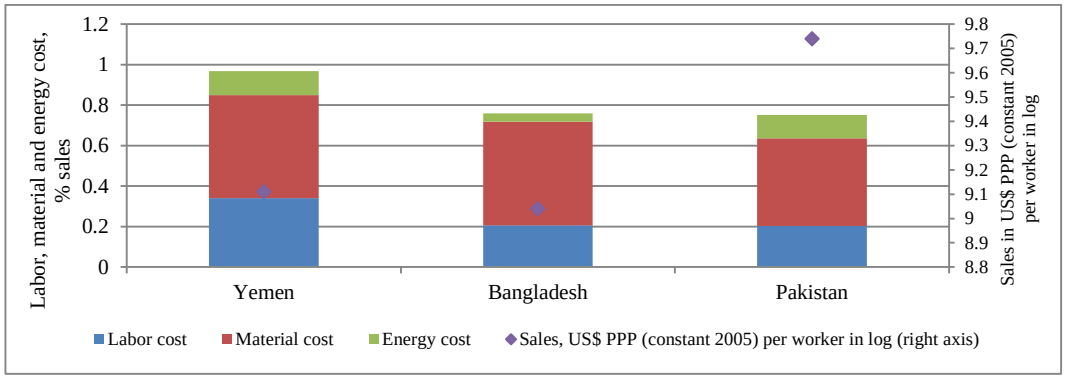
143. **The fact that few Yemeni firms participate in the export market suggest that cost competitiveness may be a key factor inhibiting export growth.** High production costs (relative to productivity) tend to reduce the entry of new firms and the survival and growth of existing firms, resulting in a less dynamic private sector with weak competitiveness. Limited firm entry and limited private sector dynamism lessen the competitive pressures on firms to lower costs and improve efficiency and productivity. This subsection analyzes these questions by investigating the extent to which high production costs may be contributing to the low participation of Yemeni firms in the export market and to poor performance. Bangladesh and Pakistan are used as benchmarks in this analysis.[34] Bangladesh is used as a benchmark low-wage country that has been able to develop light manufacturing and become competitive in textiles and apparel, while Pakistan is used as a comparator mid-wage country with more advanced agricultural and agribusiness sectors.

144. **Yemeni firms face high labor costs and appear to be at a cost disadvantage, compared with peer countries, indicating that improvements in firm productivity and a reduction in input costs are critical to the development and competitiveness of the manufacturing sector.** The average sales per worker among manufacturing firms is slightly higher in the Republic of Yemen than in Bangladesh (about 7 percent higher), but much lower in the Republic of Yemen than in Pakistan (about 47 percent lower).

[34] Bangladesh's level of income is currently about 20 percent lower than the level of income in the Republic of Yemen. Pakistan's level of income (per capita GDP in 2005 international purchasing power parity U.S. dollars) is about 40 percent higher than that of the Republic of Yemen (2013). A lack of microdata limits the extent to which other relevant benchmark countries could be included.

However, Yemeni firms face much higher input costs than their counterparts in these two countries (Figure 25). Put together, the average costs of labor, materials, and energy are equal to about 97 percent of average annual sales, compared with 76 percent in Bangladesh and 75 percent in Pakistan. This virtually closes the small productivity advantage of Yemeni firms compared with firms in Bangladesh and widens the performance gap between Yemeni and Pakistani firms. Most of these differences in cost performance are driven by labor costs and, to a lesser extent, by differences in the cost of energy and materials. Labor costs reach 34 percent of sales in the Republic of Yemen, while they are only 21 percent among firms in Bangladesh and 20 percent in Pakistan, indicating that unit labor costs put Yemeni firms at a competitive disadvantage.[35] The average Yemeni firm also spends more on electricity and fuel (11.8 percent of sales) than typical firms in Bangladesh (4 percent). This shows that the development of competitive labor- or energy-intensive industries in the Republic of Yemen would be challenging if wages and energy costs remain high and that productivity and other dimensions of competitiveness such as logistics performance and product quality would need to improve to strengthen the country's competitiveness. The high production costs among Yemeni firms also point to the weak competition in the economy, which often means there is less competitive pressure to reduce costs and improve efficiency and productivity. About 6 percent of firms report they are single players or in a duopolistic setting in the domestic market, and 25 percent of firms report they have five competitors at most.

Figure 25. Input Costs and Productivity among Firms



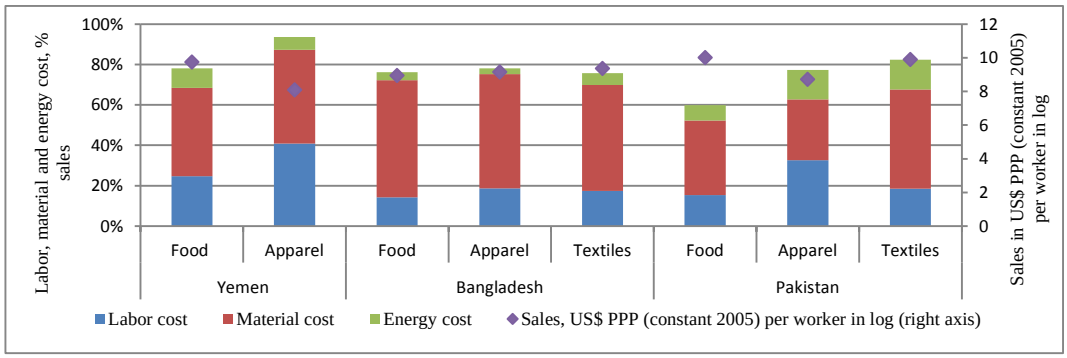
Source: Data of the World Bank Enterprise Surveys: 2010 survey for the Republic of Yemen, 2006 survey for Bangladesh and Pakistan.
Note: Labor costs include wages, allowances, social security payments, and other benefits. Energy costs include electricity costs and the cost of fuel and other forms of energy. Labor productivity is measured by first deflating sales using each country's consumer price index and then expressing the result in international purchasing power parity U.S. dollars using the 2005 conversion factor for GDP. All statistics are weighted using survey weights.

145. **Would agribusiness and labor-intensive manufacturing be competitive given the low level of domestic processing of raw agricultural products and the need to unleash growth and rapid job creation?** The question is approached through the lens of firms and the existing productive base using the World Bank Enterprise Surveys. The analysis is restricted to the food and beverage industry (International Standard Industrial Classification code 15) and the apparel and textile industry (International Standard Industrial Classification code 18) because sufficient firms have been sampled in these industries to draw meaningful statistics. We examine whether existing firms in these industries are cost competitive compared with firms in peer countries. In the food and beverage industry, average sales per worker among firms are much higher in the Republic of Yemen than in Bangladesh, while overall production costs are similar (Figure 26). However, Yemeni firms in the industry produce much less per worker than firms in Pakistan and face higher input costs, especially for labor, materials, and intermediate goods, showing that there is

[35] A more precise measure of unit costs would be labor costs per unit produced. However, data on total production in monetary or physical terms are not available in the survey. The measure of unit cost based on sales data is biased upward if large inventory loses or losses in production occur because of, for instance, perished goods or theft.

significant scope for gains in cost competitiveness among the Yemeni firms. In the apparel and textile industry, Yemeni firms appear to be less productive and to face higher production costs than similar firms in Bangladesh and Pakistan. These large differences show that productivity and production costs need to improve significantly if the country's apparel and textile industry is to strengthen domestically and be competitive in the export market.

Figure 26. Firm Input Costs and Productivity, by Sector

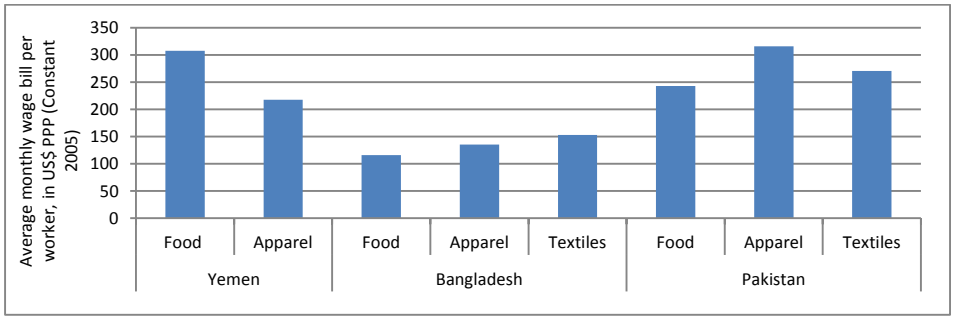


Source: Data of the World Bank Enterprise Surveys: 2010 survey for the Republic of Yemen, 2006 survey for Bangladesh and Pakistan.
Note: Labor costs include wages, allowances, social security payments, and other benefits. Energy costs include electricity costs and the cost of fuel and other forms of energy. Labor productivity is measured by first deflating sales using each country's consumer price index and then expressing the result in purchasing power parity international U.S. dollars using the 2005 conversion factor for GDP. All statistics are weighted using survey weights.

146. **An analysis of wages in the manufacturing sector suggests that Yemeni firms face higher wages than firms in low-wage economies, but could be competitive in mid-wage manufacturing activities with firms in other low- and lower-middle-income countries.** However, improving the functioning and performance of the labor market will be critical to stimulate such activities. The high labor costs relative to sales among Yemeni firms may be an outcome of high wages, or low productivity and low technical efficiency, or a combination of these. Shedding light on which of these factors contributes the most to the high labor costs is crucial to providing more information about the constraints to cost competitiveness and deriving the relevant policy implications. Meanwhile, the wages paid to various types of workers are not observed in the data used here (the World Bank Enterprise Surveys); only the total wage bills of firms are available. We therefore follow a simple approach whereby a firm's average wage per worker is proxied as the ratio between the firm's wage bill and the number of workers in the firm. This measure should be interpreted with care because it is influenced, for instance, by differences in skills, particularly by the mix of skills among production workers and nonproduction workers. To limit this concern, differences in average wages per worker should only be analyzed and discussed within individual sectors.

147. **According to the analysis, Yemeni firms in the food and beverage industry pay much higher wages than firms in the same sector in Bangladesh and Pakistan (**Figure 27**).** In apparel, Yemeni firms pay wages below those in typical firms in Pakistan, but above those paid by typical firms in Bangladesh. Put together, the findings highlight that, given their production structure, Yemeni firms face wages that are much higher than wages in low-wage countries such as Bangladesh and, overall, more comparable to wages in higher-wage lower-middle-income countries such as Pakistan. This indicates that specific niches for mid-wage labor-intensive manufacturing activities exist in the Republic of Yemen and could be developed if wage inflationary pressures are kept low and other important dimensions of cost competitiveness are improved. The specific labor market policies that, if reformed, could improve the country's competitiveness, also need to be examined.

Figure 27. Average Monthly Wage Bill per Worker



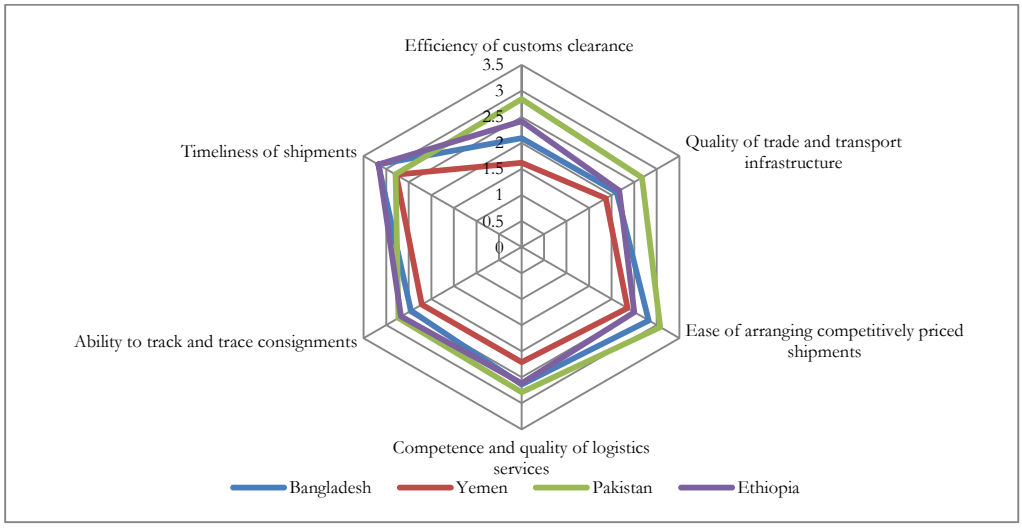
Source: Data of the World Bank Enterprise Surveys; 2010 survey for the Republic of Yemen; 2006 survey for Bangladesh and Pakistan.
Note: The average wage per worker is estimated as the firm's wage bill, divided by the number of workers. The wage bill includes wages, allowances, social security payments, and other benefits. The unit labor costs are converted in real terms using the consumer price index in each country. The conversion factor for GDP is then used to convert these values into international purchasing power parity U.S. dollars.

148. **The country needs to tap into its large pool of low-skilled workers to stimulate the development of agribusiness and labor-intensive manufacturing, while limiting wage inflationary pressures.** Labor force participation in the country is among the lowest in the world; of the population aged 15 to 64 (about 13.5 million people), only about 50 percent are working or actively looking for work. The labor force participation rate is especially low among women (26 percent versus 74 percent among men). Facilitating the economic participation of women and improving the employability of the population would thus bring millions of additional workers into the labor force.[36] This would provide a large pool of low-skilled workers to stimulate the development of agribusiness and labor-intensive manufacturing, while keeping wage pressure low in the short to medium term. Moreover, about 25 percent of the workforce is currently in the agricultural sector, and a large portion of the workforce is involved in low–value added retail and commerce activities.[37] This demonstrates that the process of structural transformation, if harnessed through judicious policies, could help boost the availability of a sustainable stock of workers able to participate in industrial development over the long term.

149. **The competitiveness of export firms is undermined by the ineffectiveness and poor quality of trade, transport, and logistics infrastructure.** The ability to receive intermediate goods and ship final products at reasonable cost and in a timely and predictable manner are key dimensions of firm competitiveness. This is particularly relevant given the perishability and time-sensitiveness of the main products the country exports (for example, raw and low-processed animal and vegetable products). However, the quality of the transport and logistics infrastructure and of services is poor. The country ranks 151st among 160 countries in the 2014 logistics performance index, which underscores the important progress needed to improve on the current performance (Figure 28).

[36] Given the current level of educational attainment, the majority of these workers would be low skilled. The literacy rate was about 65 percent in 2011 among the population aged 15 years or above, while the primary-school and lower-middle-school completion rates were, respectively, 70 percent and 43 percent.
[37] About 32 percent of the population aged 15 years or above was employed in 2010.

Figure 28. Logistics Performance Scores



Note: The data show logistics performance scores according to the six main components of the logistics performance index 2014.

3.4.3. Exchange rate dynamics and competitiveness

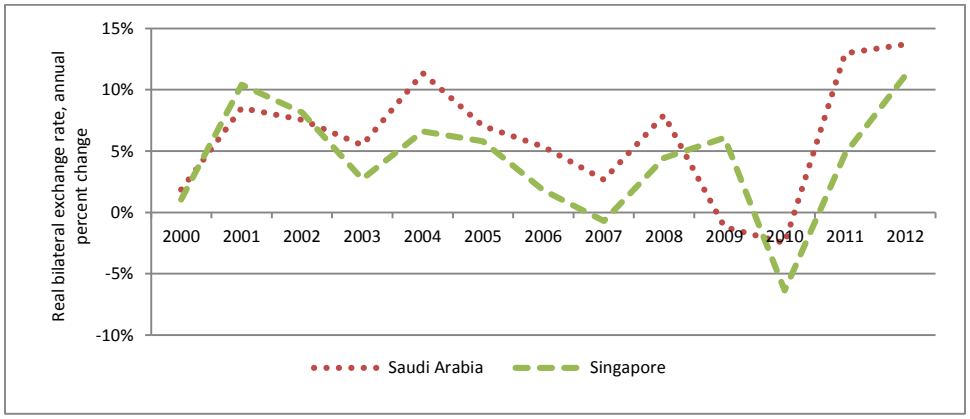
150. **Effective rial exchange rate management is a major challenge given the country's dependence on oil exports and revenues.** A large body of literature and country experiences indicates that exchange rate management is critical to a country's price competitiveness, export performance, and, ultimately, growth. The current approach to the rial exchange rate may best be described as a tightly managed float. There is no announced target for the rial, but the operations of the Central Bank of Yemen reveal an implicit desire for stability relative to the U.S. dollar. Some measure of flexibility is allowed, but the central bank is generally keen to avoid day-to-day fluctuations of any great magnitude. The central bank's principal tool in exchange rate management has been foreign exchange auctions, but other measures, such as increasing the reserve requirement on foreign currency deposits, have been used during periods of stronger pressure (IMF 2014).

151. **Recent analysis shows that the rial is sensitive to the price of oil.** Thus, the exchange rate appreciated by 3 percent in real terms following a 10 percent increase in oil prices (IMF 2013). A major concern is therefore whether the country's substantial dependence on oil and gas receipts, which represent 83 percent of exports and 63 percent of government revenue, may have led to large exchange rate appreciation that, in turn, hurt the nonoil and nongas sector and the related exports.

152. **We have analyzed the impact of exchange rate dynamics on export performance to determine the effect of rial management on nonoil exports.** The exercise involved analyzing how appreciation and depreciation of the real bilateral exchange rate between the Republic of Yemen and a potential trading partner might affect the country's exports to that destination. Figure 29 shows the dynamics of the real bilateral exchange rate with two major nonoil export destinations, Saudi Arabia and Singapore, between 2000 and 2012. In the case of Saudi Arabia, the exchange rate appreciated by 5–14 percent in real terms in all but three years; in two of these three years, the exchange rate depreciated by 3 percent or less. The pattern of appreciation and depreciation of the bilateral exchange rate is somewhat similar in the case of Singapore, except that the rates of appreciation oscillated between 1 percent and 11 percent. Across all countries, the rial displayed an overall trend toward real appreciation in 2000–12. In over 44 percent of all foreign country–year observations, the rial appreciated against the currency of other countries by at least 5 percent, and, in 22 percent of instances, the rial appreciated by 10 percent or more. The depreciation of the

rial against other currencies was less frequent—only 29 percent of instances—and lower in magnitude; the depreciation was less than 10 percent in 82 percent of the instances.

Figure 29. Real Bilateral Exchange Dynamics, 2000–12 (% annual change)



Note: A positive (negative) annual change corresponds to an appreciation (depreciation) of the rial against the foreign currency. See the text for details of the calculation of the real bilateral exchange rate.

153. **An appreciation of the rial against the currency of partner countries reduces export volumes significantly.** We have applied the methodology outlined in Box 5 to the country's nonoil and nongas exports in 1999–2012. The results indicate that an appreciation of the rial against the currency of a foreign country by 10 percent leads to a reduction in exports by about 21 percent (Table 13). If the rial appreciates by 10 percent, exports to countries with GDP per capita below $3,000 (constant 2005 prices) drop by 30 percent, and exports to countries with GDP per capita above $3,000 drop by 10 percent, indicating that exports are more sensitive to appreciations of the exchange rate among lower-income countries because of higher perceived import prices in these market destinations as the exchange rate appreciates. Put together, these findings suggest that reining in the appreciation of the rial would contribute to strengthening the country's price competitiveness and exports.

Box 5. Measuring the Effects of Real Exchange Rate Dynamics on Nonoil and Nongas Exports

The Real Exchange Rate between the Republic of Yemen and country j (RER_{jt}^{Y}) is calculated as the product of the nominal exchange rate, e_{jt}^{Y} (the amount of the currency unit of country j per a Yemeni rial), and the relative prices between the Republic of Yemen and country j. The consumer price index in each country is used to measure price levels; an alternative would be to use an index of labor costs, which is, however, not available in many countries. The bilateral real exchange rate is given by the following:

$$RER_{jt}^{Y} = e_{jt}^{Y} * \frac{CPI_{t}^{Y}}{CPI_{jt}} \qquad \text{(B5.1)}$$

The nominal exchange rate between the Republic of Yemen and country j, e_{jt}^{Y}, is obtained using the available data on the exchange rate with the U.S. dollar by following the simple approach $e_{jt}^{Y} = e_{jt}^{US}/e_{Yt}^{US}$, where e_{kt}^{US} is the exchange rate between country k and the United States measured in the currency of country k per U.S. dollar. In this approach, an increase in RER_{jt}^{Y} corresponds to a real appreciation of the rial against the currency of country k.

Then, given ExP_{jt}, a measure of the Republic of Yemen's nonoil and nongas export performance to country destination j, a regression is estimated, as follows:

$$ExP_{jt} = \beta * \log(RER_{jt}^{Y}) + \gamma * X_{jt} + \theta_j + \mu_j * t + \epsilon_{jt}, \qquad \text{(B5.2)}$$

where X_{jt} is a vector of country controls, including population and GDP per capita; θ_j is a set of country dummy variables (fixed effects) that control for time-invariant factors such as distance and proximity, common language, and so on; $\mu_j * t$ is a country-specific time trend to account for the fact that different countries have differing real exchange rate dynamics and demand for

imports from the Republic of Yemen; and ϵ_{jt} is the error term.

The coefficient of interest is ß; a negative coefficient estimate indicates that an appreciation of the rial against the currency of a foreign country reduces nonoil export performance. The equation is estimated using ordinary least squares under the assumption that changes in the Republic of Yemen's nonoil and nongas exports do not affect the real bilateral exchange rate. This assumption is quite reasonable in the case of the Republic of Yemen given that nonoil and nongas exports represent a small fraction of the country's exports; oil exports represent over 83 percent of the total export value.

Table 13. The Impact on Export Competitiveness of a Rial Appreciation against Trading Partner Currencies

percent

Destination	*Export value*	*New destination*	*Products, number*
All countries	−2.19*	−0.23*	−0.57
Countries with per capita GDP at less than $3,000	−3.02*	−0.20*	−0.89*
Countries with per capita GDP at more than $3,000	−1.09*	−0.27*	−0.27

Note: The table shows the elasticity of various measures of export performance with respect to the real bilateral exchange rate. The first column shows the impact on the results based on the value of exports expressed in constant 2005 U.S. dollars. The second column shows the impact on the likelihood of exporting to a new destination. The estimates are based on a linear probability model. The third column shows the impact on the number of products exported; the number of export products is calculated at the Harmonized System four-digit level.

* = coefficients that are significantly different from zero.

154. **The greater flexibility of the rial exchange rate is necessary to transition to a nonoil economy.** The Republic of Yemen is highly dependent on imports, and changes in the exchange rate are quickly reflected in the price of tradables, particularly food, which constitutes more than 40 percent of the consumer price index basket. To boost competitiveness and the investment environment in the context of a low base of nonhydrocarbon exports and the decline in oil production and exports, the country should adopt an exchange rate policy that will ensure a smooth transition to a nonoil economy over the next decade by allowing the rial to depreciate.

155. **Limiting the appreciation of the rial would also contribute to expanding exports through the intensive margin by allowing firms to reach more market destinations and export more products.** The methodology outlined in Box 5 can also be applied to analyze how the dynamics of the real exchange rate affects both the likelihood of exporting to a destination and the number of export products to existing market destinations. The results indicate that an appreciation of the rial by 10 percent against the currency of a potential trading partner leads to a reduction in the likelihood of exporting to that destination by 2.3 percent and, if the country is richer (GDP per capita over $3,000 in constant 2005 U.S. dollars), by up to 2.7 percent. The lower propensity to export to richer countries as the exchange rate appreciates is partly related to greater competition and competitiveness pressures in richer market destinations. The results also show that the appreciation of the exchange rate is accompanied by a loss of competitiveness at the product level. The number of products exported drops by about 5.7 percent if the exchange rate appreciates by 10 percent.[38] This latter effect is mostly driven by exports to lower-income export destinations; in this case, the number of export products drops by about 8.9 percent if the exchange rate appreciates by 10 percent.

3.5. Conclusion

156. **The main findings of this chapter include the following:** (a) the majority of firms in the Republic of Yemen are small service-oriented workshops operating in captured domestic markets with few opportunities for profitable expansion; (b) private sector firms are languishing in an environment characterized by weak governance and corruption, regulatory arbitrariness, high taxes and inefficient tax administration, and unfair business practices; (c) access to public services such as electricity,

[38] The average and median number of export products across export destinations at the Harmonized System four-digit level are, respectively, 13.5 and 3.0 products.

telecommunications, and transport is difficult and costly, and the transaction costs associated with incidences of crime, theft, corruption, and other problems are high; and (d) larger firms and SOEs tend to benefit from the well-entrenched networks of influence and finance.

157. **The proper implementation of laws and the proper enforcement of regulations should be a priority if the business environment is to improve significantly.** The main challenge is the achievement of dynamic and broadbased growth in the private sector given the weak infrastructure and the weak institutional environment for the private sector in terms of weak governance and institutions. The analysis shows that the priority is not a matter of enacting or amending laws, although this is warranted in some cases, particularly in light of possible reforms that may be needed to comply with post-accession WTO requirements or to accommodate a federal system.[39] The top priority is to tackle the implementation gap in the delivery of government-to-business services, which is driven by the lack of rule of law, corruption, and institutional weakness.

158. **These recommendations require an improvement in the security environment and a reduction in political uncertainty.** Under the current conditions of political instability and uncertainty, the recommendations would be difficult to achieve, and, as past experience has shown, even where achievements are made, they can be easily erased. For example, an initiative was undertaken in 2007 to establish one-stop shops at the Ministry of Industry and Trade to streamline and simplify business registration. Legal and regulatory reforms were enacted at the time to simplify business registration requirements and to establish arrangements between the ministry and other regulating agencies to host services at the one-stop shops. A first one-stop shop was opened at the ministry, but the plan was derailed by the physical destruction of the ministry and the one-stop shop it housed during 2011. Despite this outcome, such efforts need to be restarted and multiplied after the rule of law has been reestablished.

[39] The Republic of Yemen became a WTO member in June 2014.

Chapter 4. Human Capital

Introduction

159. This chapter discusses the opportunities available to the Republic of Yemen to maximize the benefits of the country's human capital by enhancing the quality of worker skills, increasing women's labor force participation, and facilitating the migration of Yemenis for work in the GCC countries. To achieve this goal, the country needs to enhance the quality of the education system, especially TEVT, and respond to the existing demand for skilled labor. Section 1 analyzes demographic and labor trends. Section 2 then highlights the gaps in education, health care, and nutrition outcomes that limit the potential of Yemenis to fill scarce jobs and undertake entrepreneurial ventures. Section 3 argues that women's participation in the labor market remains low and constrains the prospects for a more rapid demographic transition. Section 4 examines the opportunity for Yemenis to work in the GCC countries.

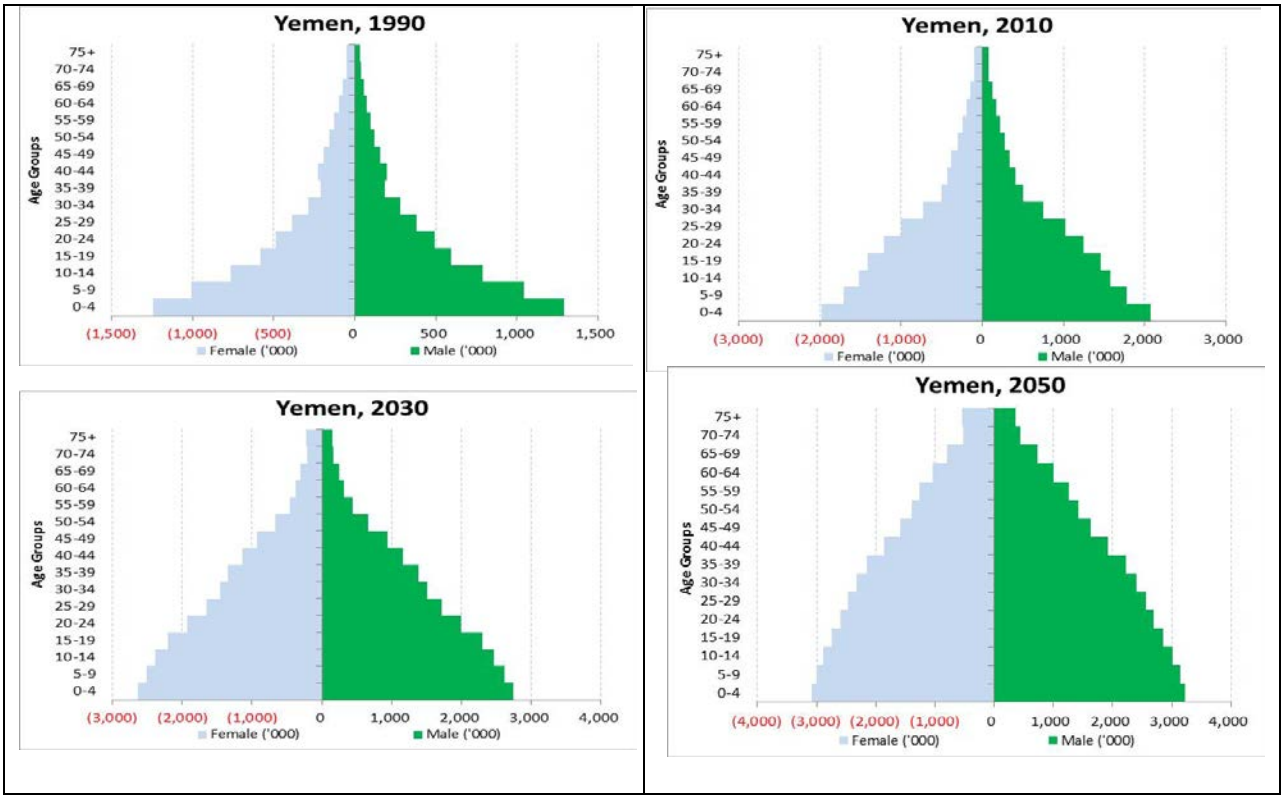
4.1. Demographics and Labor Force Trends

160. **More jobs need to be created for the expanding labor force.** In the early 1990s, the country had the highest fertility rate in the world, at 8.7 children per mother of childbearing age.[40] It also had a high under-5 mortality rate and low life expectancy at birth. Since then, the fertility rate has been cut in half, though it remains high, and, between 1990 and 2012, the infant mortality rate fell from 87.8 to 46.3 deaths per 1,000 live births. Life expectancy rose from 57.7 years in 1990 to 62.9 years in 2012. These data imply that the demographic transition has been relatively slow.[41] The demographic transition is a process that naturally leads from an earlier situation in which there is a large share of children in the population, such as in the Republic of Yemen in 1990, to an increase in the share of the young working-age population relative to the total (the country in 2010), and, then, to a more balanced population structure across age-groups (Figure 30). However, because the transition is incomplete in the Republic of Yemen, that is, the fertility and mortality rates are both still relatively high, there will be sustained expansion over the next three or four decades in the working-age population relative to the total population, which is also growing at a high rate. This prospect might be good news for an economy that is creating jobs at a rapid pace and fostering the steady birth of new and profitable industrial ventures, but this is not yet the case in the Republic of Yemen, which has one of the highest unemployment rates in the region, especially among youth, among whom it is 45 percent. The working-age population is expected to grow at about 3 percent a year between now and 2040, that is, an average of almost 700,000 people reaching working age each year over the next three decades.

[40] See the WDI database. Historically, fertility rates were high in Yemen because of a combination of cultural issues, especially the young age at which women tend to marry, and the lack of knowledge about and unavailability of family planning services.

[41] The demographic transition is the shift from high birth and death rates to low birth and death rates as an economy develops from a preindustrial foundation to an industrialized foundation.

Figure 30. Population Structure, by Age-Group

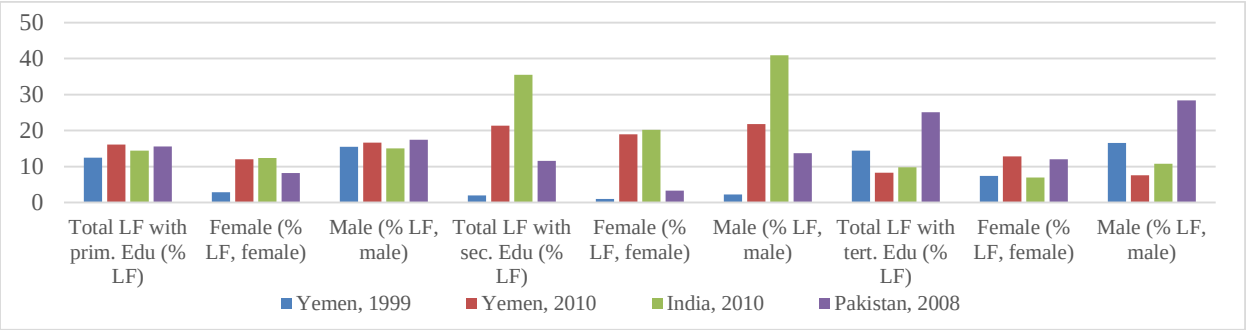


Source: Calculations based on population projections in the World Population Prospects database.

4.2. There Are Important Gaps in Education and Health Outcomes

161. **The labor force is at a disadvantage in educational attainment relative to the labor force in countries at similar income per capita.** A comparison of the labor force by primary, secondary, and tertiary educational attainment in the Republic of Yemen and in India and Pakistan shows gaps, especially among individuals with secondary and tertiary education. The gaps have been narrowed over time, but are still significant (Figure 31). This is relevant because Indian and Pakistani laborers and technicians compete with Yemenis on the GCC labor market.

Figure 31. Educational Attainment of the Labor Force, the Republic of Yemen vs India and Pakistan

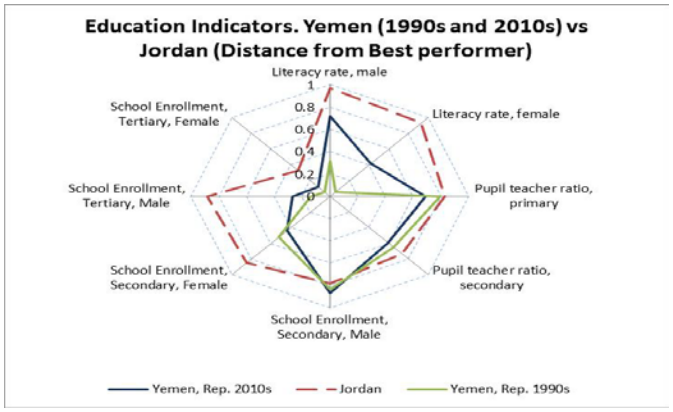


162. **Despite substantial advances in schooling and literacy, there are evident inadequacies in the quality of and access to education.** According to a report on education in the Republic of Yemen, enrollments in basic education increased sixfold, from approximately half a million to over 4 million,

between 1977 (preunification) and the end of the first decade of the 2000s (World Bank and Republic of Yemen 2010).[42] Also in the 2000s, TEVT enrollments jumped fifteenfold, from under 8,000 to approximately 23,000, while higher education enrollments grew from 175,000 in 2000 to over 230,000 toward the end of the decade. Yet, significant gaps remain, particularly among women and in rural areas.[43] Thus, the country's education indicators remain well below those of Jordan, the best performer in the Middle East and North Africa region (Figure 32).

163. **TEVT enrollments rose steadily in the last decade, but the current program framework is responsive only to a limited number of people and for limited employment opportunities.** The TEVT system should increase public and private sector training capacity. The ability to be more responsive is currently constrained by (a) the small number of TEVT institutions, (b) an imbalance in the geographical distribution of training opportunities, and (c) low utilization rates at TEVT institutions. In addition, the quality and relevance of TVET need to be enhanced. The predominant characteristic of the TEVT system is the supply-driven approach. Despite some attempts at reform, the links between the TEVT system, labor markets, and private sector enterprises are still weak.

Figure 32. Education Indicators: The Republic of Yemen vs Jordan



164. **By 2010, nearly 40 percent of the population of 25 million, or 9.5 million people, were of primary- or secondary-school age (5–19 years).** In 2030, this age-group will still account for about 35 percent of the population (over 14 million people in an expected population of 41 million).[44] This represents an additional challenge for a country that is populous and geographically diverse and in which many rural families are sparsely distributed around education centers.[45] Meanwhile, the government's effective support for basic education is "constrained by inadequate financing, ineffective management (especially teacher deployment), and lack of governance" (World Bank and Republic of Yemen 2010, 2). Furthermore, public resources are also needed for quality improvements in post–basic education. According to a report on education in the country, "public universities need to greatly improve their graduates' skills and their programs' relevance to the labor market, advance the teaching force, modernize the curriculum, establish a sound quality assurance system, and upgrade teaching and learning facilities" (World Bank and Republic of Yemen 2010, 2–3).

[42] Enrollment indicators are based on annual school surveys and do not necessarily reflect actual attendance or dropout rates during the year.

[43] At a 2012 net enrollment rate (78.5 percent among females and 93.2 percent among males) and considering 2015 World Population Prospects projections, over 113,000 children aged 5 will fail to enroll in primary school every year (86,000 girls and 27,000 boys). Similarly, although literacy rates doubled in 1990–2010, over a third of Yemenis are still illiterate, including more than 50 percent of women.

[44] Calculations based on a United Nations medium variant scenario for population growth. See World Population Prospects database.

[45] The vast majority of the population resides in 160,000 communities scattered across separate topographical zones, making service delivery extremely difficult, including the provision of educational services to rural communities (World Bank and Republic of Yemen 2010).

165. **The country has achieved progress in many measures of the provision of health care services, but tends to lag substantially behind peer countries in the region** (Figure 33). It recorded progress in health outcomes by appreciably reducing mortality rates (Table 14). However, progress has been slow since 2011 because of increased malnutrition linked to the country's vulnerability to food and fuel prices, especially in regions affected by conflict. Essential government services such as health care, social welfare, and the provision of water have been reduced or eliminated. Conflict was compounded by rising commodity prices, exacerbating the severe and widespread chronic vulnerabilities, particularly in nutrition, food security, and access to water and health care.

Figure 33. Health Indicators: The Republic of Yemen vs Jordan

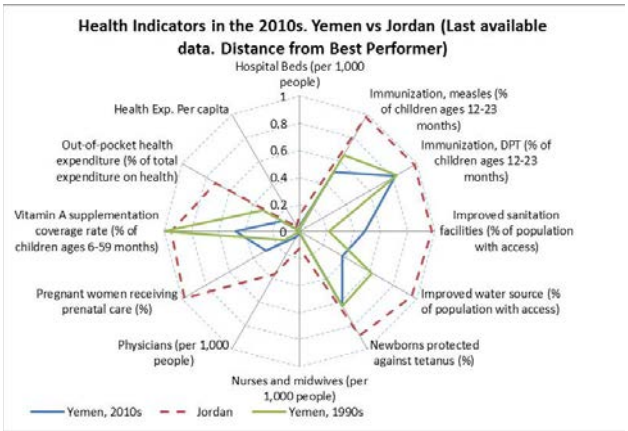


Table 14. Mortality Rates
per 100,000 live births

Indicator	*2000*	*2005*	*2010*	*2013*
Maternal mortality ratio (national estimate)	—	—	—	148
Maternal mortality ratio (modeled estimate)	370	330	290	270
Mortality rate, infant (age 0–1 year)	69.2	56.1	45.5	40.4
Mortality rate, neonatal (age 0–28 days)	36.9	31.6	26.8	24.3
Mortality rate, under-5 (age 0–5 years)	95.7	75.1	58.8	51.3

Note: — = not available.

166. **Nutrition outcomes are also poor.** According to the 2014 Comprehensive Food Security Survey (WFP 2014), malnutrition problems persist in the country. About 10.6 million people (around 40 percent of the population) are food insecure, and, within this group, about 5 million people (19 percent) are severely food insecure. The country also has a high, stubborn rate of malnutrition: about 31.5 percent of the population is underweight, and 41.3 percent are stunted, yielding a wasted population of 12.7 percent (Table 15).[46] Stunting affects cognitive ability, educational attainment, and thus possible future earnings and job potential.

Table 15. Prevalence of Malnutrition, 1997–2014
percent of population

Survey	*Acute malnutrition (wasting)*			*Chronic malnutrition (stunting)*			*Underweight*		
	Severe	*Moderate*	*Total*	*Severe*	*Moderate*	*Total*	*Severe*	*Moderate*	*Total*
Demographic and Health Survey, 1997	2.6	10.3	12.9	26.7	25	51.7	14.5	31.6	46.1
Comprehensive Food Security Survey, 2010	3.6	9.4	13.0	21.7	14.9	46.6	12.6	12.9	35.5
Comprehensive Food Security Survey, 2014	2.5	10.2	12.7	18.1	23.2	41.3	9.1	22.4	31.5

Sources: CSO and Macro International 1998; WFP 2010, 2014.

[46] Underweight is measured by comparing an individual's weight-for-age with a reference population of well-nourished and healthy individuals. Stunting, or shortness-for-age, is an indicator of chronic malnutrition calculated by comparing an individual's height-for-age with a reference population of well-nourished and healthy individuals. Wasting reflects a severe process that leads to substantial weight loss, usually associated with starvation or disease. Wasting is calculated by comparing an individual's weight-for-height with a reference population of well-nourished and healthy individuals.

4.3. Women's Limited Economic Participation Is a Lost Opportunity

167. **Women and men in both urban and rural locations face unemployment and lack of opportunities, but women are confronted by additional barriers that severely limit their labor force participation despite the strong financial needs of their families.** More than 90 percent of women of working age do not participate in the labor force, that is, they are neither employed nor looking for work (World Bank 2014a). This compares with 20 percent of men who are out of the labor force (2005 Yemen Household Budget Survey). More than 90 percent of the women who work and almost all rural women who work do not receive monetary pay.[47] Article 19 of the Constitution guarantees equal opportunity to all citizens in the economic sphere, and Articles 5 and 42 of the Labor Law affirm that women have equal rights in relation to employment, wages, training and rehabilitation, and social insurance (World Bank 2014a). Yet, these principles of equality are in sharp contrast to the realities of women's lives. Strict gender norms (such as those that limit women's role and identity to domestic work), religious traditions, mobility restrictions and the practice of seclusion, time constraints, limited education, and concerns for women's honor and safety mean that women's economic activities are often conducted in the private sphere of the home.

168. **Women participate in the workforce in urban areas at almost three times the rate in rural areas.** Urban women in urban areas typically work for pay, mostly in the public sector, but they also exhibit higher unemployment rates. Unemployment affects nearly one urban woman in eight. Urban contexts provide more outlets for women who wish to engage in paid work beyond their homes, but many of the same norms and practices that discourage rural women from economic participation or that limit their participation to jobs that are extensions of their domestic roles are also reported. Urban men also struggle with unemployment, but at less than half the rate of urban women.

169. **Entrepreneurship can provide outlets for women, including entrepreneurship from the home, and may therefore be more compatible with the prevailing conservative norms. Nonetheless, women own only about 6.5 percent of firms; women make up only 5 percent of permanent full-time workers in enterprises; and the number of enterprises in which the top managers are women is low** (World Bank 2014a). Marital relations are governed by a formal legal framework such as Personal Status Law No. (20) of 1992 and amendments 1998 and 1999. However, in practice, the strong gender hierarchy makes it difficult for women to pursue business enterprises without the approval and support of their husbands. Women business owners likewise struggle to raise capital though formal and informal sources and even to be allowed to use assets as collateral. More promising, microfinance services are appearing that do not require tangible collateral, and women account for nearly 90 percent of the customers.

170. **Actions across diverse fronts are needed to reduce and remove the severe, interlocking constraints on women's opportunities for economic inclusion in society.** Given the extremely low rates of participation of women in the workforce and the significant incidence of women working without pay, a better understanding of unpaid work and the constraints on women's participation is critical.[48] This could then form the basis for appropriately designed policy interventions that address the constraints. Given the strong social norms revolving around women working for pay and women working outside the home, however, normative change will need to be actively fostered in schools, communities, and the workplace.

[47] Working without pay, such as farmwork and home-based sewing and handicraft activities, is part of women's typical household responsibilities, especially in rural communities.

[48] One factor of constraint on women's economic participation is the high rate of early marriage, which can lead to early pregnancy, withdrawal from schooling, and social isolation.

4.4. The Opportunity for Yemenis to Work in the GCC Countries

171. **Research spearheaded by the government has identified four key hypotheses about the insertion of Yemenis in GCC labor markets** (MPIC 2009, 2012). First, low levels of educational attainment among Yemenis may discourage their employment in the GCC. Second, GCC employers may not want to employ other Arabs in low-skilled positions because of the social stigma. Third, Yemenis may have difficulty obtaining employment in key sectors or occupations because of greater employer familiarity with workers from other major source countries of labor. Fourth, Yemenis may only be able to obtain employment in markets close to the Saudi-Yemeni border. By comparing Yemenis with expatriate laborers from other major source countries of labor, this section examines the accuracy of these hypotheses. It also identifies potential barriers to greater GCC labor market insertion by Yemenis and recommends steps to increase the flow of Yemeni labor migrants in this corridor.

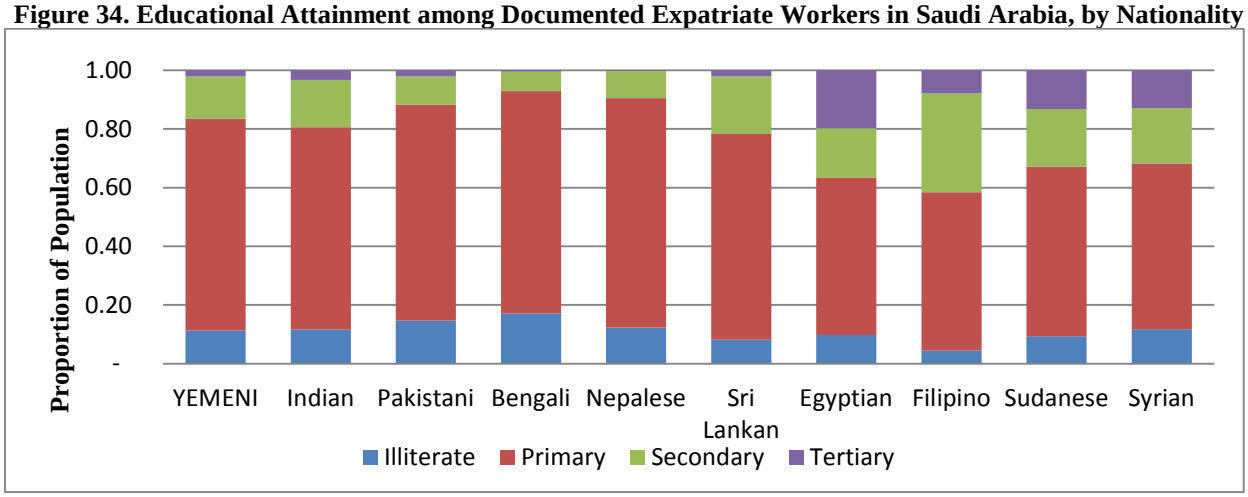
4.4.1. Yemeni insertion in GCC labor markets

172. **Job opportunities exist for Yemenis in GCC labor-intensive sectors, but the competition with South Asian laborers is intense.** Expatriate labor comprises between 55 percent and 96 percent of the labor force in the six GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates). Most migrant workers are from several key origin countries, including Bangladesh, the Arab Republic of Egypt, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, and the Republic of Yemen. Employers, mostly in the private sector, rely on intermediaries such as recruitment firms and manpower agencies to source these workers, who often lack formal education. Expatriate employment is heavily concentrated in labor-intensive sectors such as construction, manufacturing, and wholesale, retail, and trade, as well as domestic work and other services. Within a largely foreign labor force, Yemenis should find ample opportunity for employment in the GCC. Theoretically, the culture, language, and religion they share with the local population should give them a comparative advantage over the Asian expatriates, and geographical proximity should facilitate their greater mobility at less cost. Yet, Bangladeshis, Indians, and Pakistanis dominate in the GCC labor market. Identifying the causes of this apparent discrepancy may help in designing steps to enhance Yemeni labor market insertion in the GCC.

173. **Of the approximately 13.0 million expatriates employed in the GCC, between 1.0 million and 1.2 million, or 7 to 9 percent, are Yemeni.** Yemenis tend to be concentrated in Saudi Arabia largely because of geographical proximity, historical ties, and the relative size of Saudi Arabia's economy. The limited data on GCC expatriate employment hinder a detailed breakdown of Yemeni migrant workers by country, and the prevalence of undocumented flows from the Republic of Yemen further complicate any quantitative analysis. However, data on the legal employment of Yemenis in Saudi Arabia do permit a general discussion of differences and similarities between Yemenis and other migrant workers in the GCC countries. Undocumented Yemeni migrants may comprise between 20 percent and 40 percent of the Yemeni constituency in Saudi Arabia; this prevents a more thorough analysis.

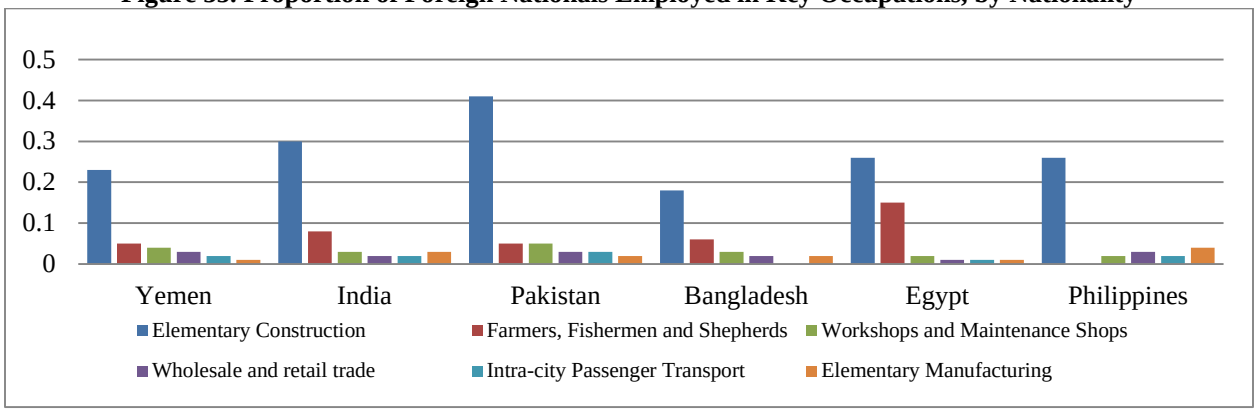
174. **Registry data include information on the educational attainment of 22 percent of the registered Yemeni workers in Saudi Arabia, similar to the data coverage among other expatriate groups.** The educational attainment of documented Yemenis working in Saudi Arabia mirrors that of Indians, Pakistanis, and Sri Lankans and is generally better than that of Bangladeshis and Nepalese (**Figure 34**). Thus, while improvements in skill acquisition and certification might facilitate greater labor market insertion among Yemenis, limited educational attainment alone does not appear to place Yemenis at a comparative disadvantage in employment. However, the educational attainment of Yemenis does lag that of Egyptians and other Arab expatriates. If Saudi employers are reluctant to hire Arabs for low-skilled positions as hypothesized, Yemenis may face a disadvantage in competing with Bangladeshi, Indian, and Pakistani expatriates for elementary positions, the only positions for which most Yemenis are qualified.

Figure 34. Educational Attainment among Documented Expatriate Workers in Saudi Arabia, by Nationality



175. **Examination of job placements by occupation and sector eases a direct comparison of Yemeni and Egyptian migrant employment to address the issue of potential employer preferences against hiring Arabs for low-skilled positions.** In Saudi Arabia, generally, Yemenis are employed in the same occupations and sectors as other expatriate groups, namely, as low-level workers in construction, maintenance, retail, and transport as well as in agriculture (**Figure 35**). Egyptians generally work in the same sectors and at the same occupational level as Yemenis. Limited Egyptian employment—1 percent of the expatriate population—in slightly more skilled construction work is likely attributable to the greater educational attainment among Egyptians rather than the cultural biases of employers. Thus, in general, Yemenis do not appear to suffer from any stigma regarding the employment of Arabs in low-skilled positions, though more comprehensive data are necessary to confirm this finding.

Figure 35. Proportion of Foreign Nationals Employed in Key Occupations, by Nationality



176. **There are two major differences between the employment of registered Yemenis in Saudi Arabia and the employment of registered expatriates from other major origin countries of labor.** First, few Yemenis are employed in the narrow category of "maintenance and cleaning contracts and employment and subsistence," which covers domestic workers and other janitorial employees. Twice as many Indians and Pakistanis and four times as many Filipinos are employed in this category. This difference may coincide with the second major difference between the Republic of Yemen and other source countries of labor: the small number of Yemeni women registered as employees in Saudi Arabia. Six times as many Indian women and 120 times as many Filipina women are employed there. Given the common practice of hiring women as domestic workers in the GCC labor market, domestic work may represent an

underexploited opportunity for the employment of Yemeni women.[49] Barriers to exploiting this market may have to do with the traditionally low labor force participation rate of Yemeni women.[50] Yet, interviews in Saudi Arabia show that, to maintain familial privacy, household employers prefer to hire domestic workers who speak and read only limited or no Arabic. There may thus also be room to suspect that stigmas about the employment of Arabic-speaking domestic labor may discourage Yemeni labor market insertion in this narrow category of employment.

177. **In educational attainment, occupation, sector of employment, and geographical dispersion, registered Yemeni workers in Saudi Arabia are comparable with expatriates from other major origin countries of labor, except for the limited participation of Yemeni women and the small number of domestic workers.** Thus, Yemenis do not appear to be at a major comparative disadvantage relative to other expatriate groups, and the Yemeni labor supply is sufficiently compatible with Saudi labor demand. While these findings cannot be extrapolated to other GCC markets, Saudi Arabia does represent the largest labor market in the GCC and has incorporated the largest number of Yemeni workers. Furthermore, judged by the level of expatriate employment in labor-intensive sectors in Sauudi Arabia and the labor productivity of these sectors among GCC countries, the characteristics of workers in countries besides Saudi Arabia are unlikely to be dramatically different. While the above findings about the Yemeni labor supply do not explain the limited Yemeni labor market insertion in the GCC, an examination of the recruitment and selection systems established to respond to the GCC labor demand may provide insights about barriers to mobility.

4.4.2. Formal labor agreements, recruitment, and selection

178. **Several agreements, treaties, and international accords allude to the preferential treatment of Yemenis in admission to or employment within the GCC.** These agreements, some of which are exclusively with Saudi Arabia, focus on tangential issues: border disputes, common defense, or the Republic of Yemen's potential entry to the GCC. The agreements include the Taif Treaty of 1934 and the 2000 Convention on Border Demarcation. These accords hold little or no potential to facilitate the improved insertion of Yemenis into the GCC labor market because of the limited scope, lack of numerical targets or quotas, and omissions of any institutional structure to facilitate increased or improved labor mobility among Yemenis. Furthermore, the legacy of conflict in the early 1990s with Saudi Arabia and the 2011 revolution have spurred tensions between the Republic of Yemen and the GCC.

179. **Strengthened policy enforcement has recently begun restricting, rather than encouraging Yemeni labor force participation in the GCC.** Policies in Saudi Arabia and other GCC countries prohibit the employment of foreigners in positions not stipulated in the sponsorship arrangements of the individual migrants. Yemenis appear more likely to be employed in positions not linked directly to a certified sponsor because of the relative ease of undocumented migration and the large network of Yemeni small business owners willing to employ other Yemenis. Thus, while these policies do not directly target Yemenis, enforcement disproportionately affects Yemenis. In 2013, for example, Saudi enforcement of sponsorship compliance led to the departure of as many as 1 million Yemenis from Saudi Arabia.

180. **While Yemenis are disproportionately affected by the enforcement of sponsorship policies, some GCC countries are developing institutional arrangements that may offer Yemenis an alternative to informal or undocumented employment.** In 2010, when Qatar's Emir made an additional

[49] However, Social norms may prevent most Yemeni women from leaving the Republic of Yemen unaccompanied by men relatives. The women who are able to leave may be at risk of abuse and trafficking; so, the process should be well regulated.

[50] The labor force participation rate among Yemeni women in 2010 was 20 percent, compared with 74 percent among Yemeni men (United Nations 2010).

90,000–100,000 work visas available, he urged Qatari firm Silatech to consider how vocational training programs might maximize the productivity and labor of prospective newcomers, particularly Yemenis (Box 6).

Box 6. The Silatech Experience in Developing the Republic of Yemen–Qatar Labor Mobility Corridor

To sensitize Qatari firms to the availability of Yemeni labor, the Qatari firm Silatech created a basic construction qualification based on the input of Qatari firms operating in the Republic of Yemen as well as the internationally renowned educational firm Pearson. Sana'a Community College, a local provider of vocational certifications in the Republic of Yemen, had been operating a construction upskilling course that failed to gain private sector traction. Silatech used a train-the-trainer program at Sana'a Community College to prepare the teachers of this course to implement the newly developed construction curriculum. The resulting course, which was offered free by Sana'a Community College, facilitated the certification of about 1,500 experienced construction workers in basic occupational safety skills. Silatech and Pearson's involvement in the program ended when the revolution began in 2011, but Sana'a Community College has continued to offer the safety and training course to paying students.

Trained and certified Yemeni workers did not find eventual employment in Qatar because the pilot scheme was terminated during the political upheaval of 2011. Nonetheless, the acquisition of employer-recognized qualifications by Yemenis represents a major accomplishment in the development of a labor mobility system that benefits Yemeni workers. During the design and implementation of the program, pilot architects identified several challenges that may hinder efforts to catalyze a functional labor mobility system. First, employers and Yemenis demonstrated a lack of information about labor market dynamics that may impede labor mobility flows. Silatech's experience suggests that construction firms operating in Qatar frequently employ labor from South Asia because these workers accept lower wages, do not consume qat, and can be hired cost-effectively through the same robust recruitment systems that operate throughout the GCC. While quantitative data to substantiate or refute employer perceptions—such as comparable reservation wages between Yemenis and South Asians—is unavailable, these perspectives could reduce Yemenis employment opportunities both within and outside Qatar.

Similarly, Sana'a Community College expressed concerns regarding the quantity of Yemenis that engaged in training programs who expected a guarantee of subsequent high-paid employment in the GCC. These expectations could invite exploitative rent seeking among training institutions looking to capitalize on Yemeni perceptions about the value of certifications. To avoid the damaging effects of misinformation, government actors might consider enhanced data collection on Yemeni reservation wages and the value of training to employers. These data could raise the profile of Yemeni labor in the recruitment considerations of firms, while sensitizing Yemeni workers to the reality of GCC labor market dynamics.

Silatech pilot architects identified a second challenge: the dysfunctional nature of vocational systems in Qatar and throughout the GCC. The underdevelopment of these systems prevents Yemeni workers from using vocational training to their competitive advantage in the labor market. Vocational training systems currently lack the capacity to provide employer-recognized certifications to Yemeni laborers. Silatech's pilot scheme succeeded in developing basic construction qualifications recognized by specific employers, but the cultivation of industry-wide recognition requires significantly more time, investment, and collaboration. Likewise, the Qatari government (among others in the GCC) does not utilize or prescribe vocational standards with any relevance to or bearing on worksite operations. The lack of consensus among construction industry and government actors regarding the nature and importance of vocational qualifications discourages the use of such qualifications in the labor market. Thus, at least in the construction industry, both demand side and supply side barriers limit the ability of Yemenis to leverage training for the purpose of greater GCC labor market insertion.

Existing and potential recruitment mechanisms

181. **The misinformation and low levels of institutional development that Silatech encountered during the design and partial implementation of the pilot project point toward a third, underlying barrier to Yemeni insertion in the GCC labor market: underdeveloped recruitment systems.** The lack of communication between employers and the potential labor supply on wages offered and skills required demonstrates the need for more active intermediaries between GCC firms and Yemenis. Other source

countries of labor represented in the GCC depend on recruitment agents to communicate information about the labor supply to GCC employers. While these agents often engage in rent seeking and exploitative practices, they ultimately serve the role of marketers and salespeople who advance the goal of better labor market insertion among expatriates. Misinformation about wages and skill profiles abounds in other source countries, but not to the extent observed in the Republic of Yemen, where it seems to prevent the development of a functional labor mobility system.

182. **Detailed data on Republic of Yemen–GCC recruitment practices is not available, but, according to anecdotal evidence, this labor corridor is not associated with formal, regulated, and well-connected recruitment agencies.** Interview data from Saudi Arabia report that firms in labor-intensive sectors such as construction and manufacturing, as well as their recruitment partners, do not usually consider the Republic of Yemen as a source of labor. Saudi recruiters do not have offices in the Republic of Yemen, and the irregular distribution of Yemenis in the formal sector has prevented employers from associating Yemenis with high-quality skills or a favorable work ethic, characteristics that are typically attributed to Filipinos and Nepalese, respectively. If robust recruitment systems do focus on Yemenis, the expulsion of around 1 million Yemenis from Saudi Arabia shows that these systems are largely informal. Such unregulated recruitment processes will provide fewer and fewer benefits for Yemenis as GCC governments begin addressing visa violations and tightening the regulations covering labor mobility systems.

183. **Two factors probably contribute to the lack of developed recruitment systems between the Republic of Yemen and the GCC: the visa issue and recruitment fees.** First, GCC governments may be reluctant to issue visas to Yemeni workers, especially following the 2011 revolution. Yemeni government offices could encourage GCC ministries to offer more work visas to Yemenis by establishing stronger security clearance processes and conducting frequent consultations with the relevant GCC agencies to build confidence in the systems. Second, Yemenis may be reluctant to pay for recruitment services as nationals from other labor source countries usually do because of the low cost of informal migration routes into Saudi Arabia. To overcome this challenge, Yemeni authorities might consider subsidizing recruitment efforts and actively discouraging illegal border crossings by Yemenis to Saudi Arabia. These irregular migration routes not only jeopardize worker safety, but ultimately discourage the development of recruitment systems capable of driving enhanced GCC labor market insertion.

184. **Given the latent political and recruitment barriers that may currently prevent further labor mobility toward the GCC, government actors can take three key steps to raise the quantity and quality of the employment opportunities of Yemenis abroad**:

- **Encourage target destination countries to permit and facilitate greater labor immigration from the Republic of Yemen.** Yemeni government actors can achieve this goal by designing rigorous clearance processes, in collaboration with GCC authorities, to cultivate GCC trust in Yemeni labor mobility systems. Yemeni authorities might also conduct frequent consultations with relevant GCC ministries to maintain awareness of any changes in GCC labor policy.
- **Increase the representation of GCC recruiters in the Republic of Yemen.** Yemeni authorities should conduct meetings with government-approved recruiters operating in the GCC, including Saudi Arabia's 10 mega recruiters, to invite firms to recruit Yemeni labor and identify any barriers preventing the recruitment of Yemenis. Simultaneously, Yemeni authorities should communicate with GCC private sector leaders to signal an interest in providing high-quality labor to GCC markets. Active engagement with these two labor market actors may lead to a stronger formal recruitment system in the Republic of Yemen.
- **As Yemeni authorities engage GCC governments, private firms, and recruiters, Yemeni training institutions should begin to align qualification standards with the GCC's emerging skill framework.** Silatech's pilot scheme tested the utility of raising the visible skill level of Yemenis to

enhance the labor market insertion of Yemenis in the GCC, but stopped short of linking this transnational effort with widespread domestic training systems. As Kuwait, Saudi Arabia, and the United Arab Emirates develop their skill standards and decide how these domestic standards might apply to expatriate workers, the Republic of Yemen may consider how to incorporate these skill standards into its own training systems. Adoption of relevant skill standards and alignment with GCC systems may build the capacity of Yemeni training institutions to meet domestic skill needs, while also facilitating greater international labor mobility among Yemenis.

4.5. Conclusion

185. **Chapter 4 shows that the Yemeni labor force is largely characterized by substantial gaps in education and skills, which limit their potential to fill the scarce well-paying jobs and undertake entrepreneurial ventures.** In particular, there is a gap between TEVT curricula and labor demand that needs to be filled, especially by strengthening the links among the TEVT system, labor markets, and private sector enterprises. Similarly, the participation of women in the labor market needs to be increased, especially by promoting girls education at all levels, including in TEVT. The chapter also discusses the opportunity for Yemenis to work in GCC countries and showed that, among migrant Yemenis, education and skills gaps create a loss in competitive edge against non-Yemeni workers in the GCC labor market. To achieve these goals, institutional reform of the education sector is required to enhance the quality of education and align education among Yemenis with GCC standards.

PART III. SECTORAL CONSTRAINTS AND SOURCES OF GROWTH

Chapter 5. Developing Agriculture and Fisheries

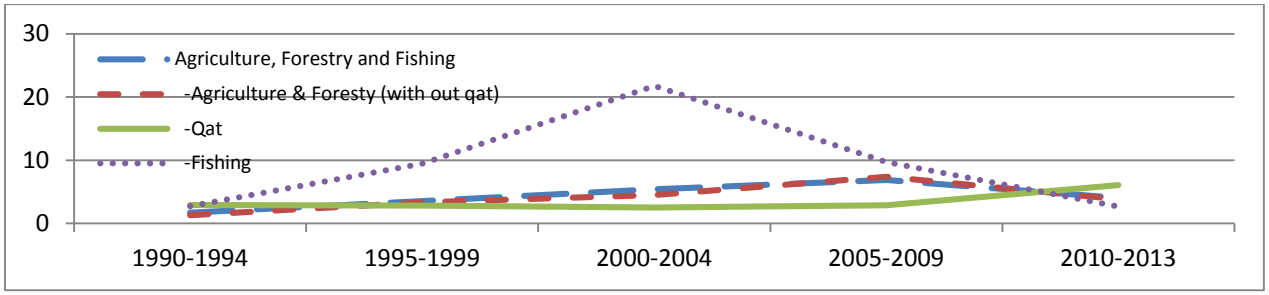
186. **This chapter explores the constraints to realizing the potential of agriculture and fisheries in the Republic of Yemen.** A key constraint on the country's growth is the capture of the economy by multiple elites motivated by the short-term extraction of rents, which undermines any possibility of sustainable development (chapter 2). This also applies to agriculture, where key production assets, namely, land and water, have been captured and are not managed efficiently. This chapter provides insights into these issues and discusses other major constraints and weaknesses affecting agriculture and fisheries. The chapter is organized as follows. The first section presents a brief description of the agriculture and fisheries in the country. The second section discusses the scarcity of land and water and the weak governance of these assets and proposes policy actions to address the related problems in governance. The third and fourth sections discuss other key constraints on agricultural development and proposes measures to enhance the growth in agriculture. The fifth section concludes.

5.1. The Importance of Agriculture

187. **Agriculture and fisheries are an important component of the economy, contributing 19.5 percent and 3.0 percent, respectively, to GDP.** Agriculture is the third-largest economic sector, after services and industry (including oil). Agriculture is the main source of income among 73 percent of the population either directly (33 percent) or indirectly through the services and industries connected to the agricultural economy. It employs more than half (54 percent) of the labor force. Among poor Yemenis, who mostly live in rural areas, agriculture is particularly important as a source of food and income. The agricultural sector is also a key factor in efforts to reduce internal migration and related social and economic problems. The youthful age structure of the country means that many more jobs will be needed, and agriculture offers important opportunities for boosting employment, productivity, and income. Although fisheries employ a smaller share of the labor force (estimated at around 1.5 percent) than agriculture, it is nonetheless also a vital part of the economy. After petroleum products, fisheries represent the main source of export earnings. It is a major source of employment, income, and food security along the coasts of the country.

188. **The net output of agriculture has been increasing steadily since 2000.** Agricultural output consists of qat, which represents about 30 percent of agricultural GDP; vegetables and fruits, another third of agricultural GDP; livestock production, 20 percent; and cereals, 10 percent. Agricultural GDP grew steadily during the 1990s, with average annual growth of 1.7 percent in the first half of the decade, climbing to an annual average of 3.5 percent in the second half. This positive trend continued throughout the next decade and into 2000–13, but, in the more recent years, agricultural growth has been driven mainly by expansion in qat production, while growth in fisheries has slowed drastically over the past decade (Figure 36).

Figure 36. Average Annual Growth Rates, Agriculture (%)

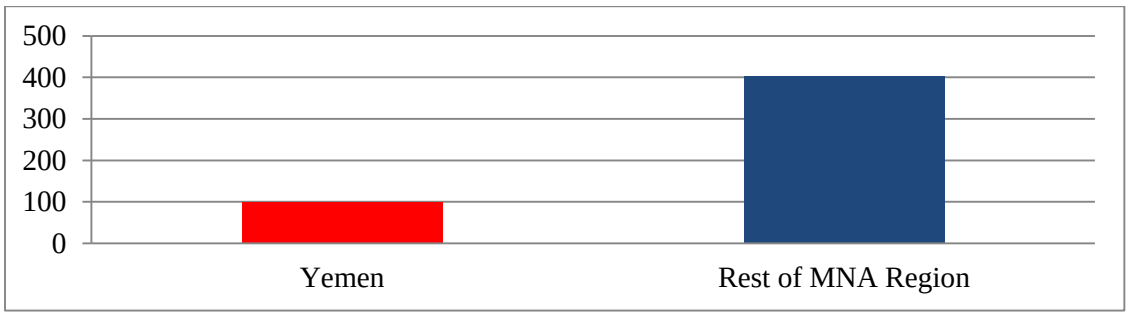


5.2. Key Constraints on Agricultural Growth: The Scarcity of Water and Land

189. **The Republic of Yemen is an arid country, and agriculture accounts for around 93 percent of water use.** The country has no perennial rivers; most of the water for agriculture comes from rainfall in the mountainous areas, groundwater, and seasonal spate water and springs. Over the last 30 years, the rapid growth in the demand for higher-value products and the transformational role of groundwater have driven growth and employment in agriculture. More recently, however, productivity has been stagnating, and water availability is declining. This highlights the need to boost productivity while conserving water.

190. **The groundwaters on which more than half of the outputs of agriculture now depend are fully exploited, and reserves are being overdrawn and are dwindling rapidly.** By some accounts, withdrawals exceed renewable resources by more than 30 percent (IDRC 2010). In terms of water scarcity, the Republic of Yemen is among the top five countries in the world, and it compares unfavorably with other countries in the Middle East and North Africa region, although the region as a whole faces water scarcity (Figure 37).

Figure 37. Available Freshwater (cubic meter per person)



191. **The country is especially vulnerable to climate change, which is expected to increase the variability and intensity of rainfall, resulting in flood risks and aridity.** The threats to the water sector from a changing climate would have serious implications for agriculture. Climate change, including changes in average temperature, rainfall, floods, and drought, pose challenges for agricultural adaptation in a country in which water is already scarce and groundwater reserves are being rapidly depleted.[51]

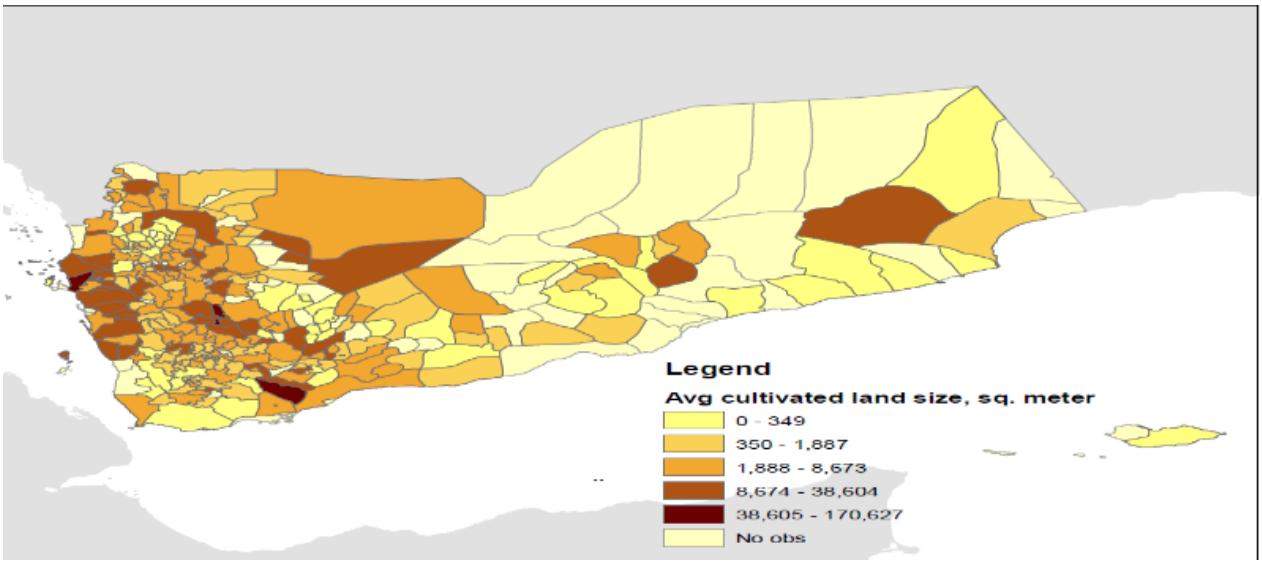
192. **In addition to severe water scarcity, Yemeni agriculture is also hampered by the scarcity of land.** Only 3 percent of the country's total land area of 528,000 square kilometers is arable land, and most of the rest is desert, pasture, or rangeland, Yemeni agriculture has little room for the expansion of land use. About 1.5 million hectares (2.8 percent of the total land area) are cultivated, roughly 50 percent under rainfed agriculture and 40 percent under groundwater or flood irrigation. The remaining 10 percent of farming is fed by dam and stream irrigation.

193. **Lack of access to land has resulted in small and fragmented farms.** This poses another constraint that prevents agriculture from making a larger contribution to rural incomes, national GDP, and addressing the trade imbalance in food items. The country has about 1.2 million landholders, about 60 percent of whom have two to five plots of land. The average farm size is less than a hectare, and less than 5 percent of farms are more than 10 hectares (USAID 2010) (Figure 38). Landlessness among poor smallholders and land concentration among wealthy, absentee landowners are a particular feature of the

[51] See Wiebelt et al. (2011) for an analysis of the potential impacts of climate change on the country, including additional data and the modeling of agriculture and various agroecological zones.

irrigated plains where cash crops are produced. Landlessness among women is also common because women have few landownership rights, even though they are responsible for three-quarters of the farming in the country. This is mainly because traditional and religious laws undermine the existing legal rights of women to own, buy, and sell land (Manea 2010).

Figure 38. Average Farm Size



194. **Land degradation is also a growing problem because of soil erosion, increasing salinity, and desertification.** Traditional methods, such as the use of highland terraces, have been failing because of a lack of maintenance, further exacerbated by the expanding migration of men from the rainfed highland areas. In the plains, the extensive use of large-scale irrigation systems, rapid runoff in wadis, and excessive withdrawal of groundwater for qat production have led to the degradation of agricultural lands and rangelands.

195. **Agricultural production is intimately linked to access to land and water use.** Legislation and the management of these assets are therefore important. Inadequate legislation and weak management often lead to disputes, which sporadically degenerate into armed conflict and deaths among claimants and which affect agricultural and rural development and stability.

196. **Land legislation is inefficient and benefits mostly those who are well connected.** The 1995 Law of Land and Real Estate provides for the classification of land (public, private, communal) and the terms of use, but it is mainly applied in urban areas. Land governance in rural areas is determined mainly by customary and Islamic law under the leadership of shaykhs (USAID 2010) (**Box 7**). Formally, the Department of Public Domain (Ministry of Finance) and the Ministry of Public Works and Highways administer urban land. The General Authority of Lands, Survey, and Urban Planning is responsible for (a) urban and rural land inspections and surveys, layouts, and planning; (b) the management of state and private lands and endowments of property held in trust and used for a charitable or religious purpose (wakf); (c) the administration and registration of land, including the maintenance of land records; (d) the valuation of land; and (e) the oversight of land expropriation. In practice, traditional leaders (shaykhs and amins [minor officials]) continue to exercise authority over much of the land in rural areas, and many also hold local government offices and keep the land registry. The land registration process, which is based on a deed registration system, is considered inefficient, time-consuming, and untrustworthy. Cases in which one parcel of land is sold several times and other types of fraud are common; registration provides no assurance of good title because there is no system for authenticating title deeds and land documents (formal or

customary), and no national cadastre exists, a condition that creates space for fraud and results in land disputes. Only an estimated 10–20 percent of land is registered. Among land transactions, 80–90 percent occur through *basira* (informal documentation) (MPWH 2010; World Bank 2009). Access to water, which is tied to land rights, is a common cause of land disputes, particularly in areas of water scarcity (World Bank 2008).

Box 7. Land Tenure and Administration

Land tenure types include the following:

- Ownership: the main form of land tenure, which covers about 80 percent of agricultural land
- Communal landholding
- Leaseholds: commonly on a cash basis for several years
- Sharecropping
- Squatting: mostly in urban areas

Among most households in rural areas, access to land and water depends on property rights backed by customary law (‘urf) and local institutions. Households with strong political or military connections have sometimes been able to acquire land and other assets as a result of informal influence and patronage, which may then be accompanied by legal formalities. The country has a national legal framework for land rights, but this has limited effectiveness beyond urban areas, and this appears unlikely to change in the short to medium term. Land transactions are not formally recorded because there is no official system for authenticating land titles. Among rural households, reliance on community-based rights to land and water is part of a larger pattern whereby property rights, the enforcement of agreements, and dispute resolution generally depend mainly on informal or customary institutions, rather than a national legal framework.

197. **The competition for water resources is widespread and benefits mostly the powerful and well-connected people.** It is caused by the control over the flow of surface water to downstream users exercised by others. Over the last three decades, access to groundwater has also been declining drastically as a result of (a) misguided policies involving subsidies for water extraction, which led to overextraction, especially for the cultivation of qat; (b) rapid agricultural development; (c) a lack of enforcement of regulations on water use, and (d) substantial vulnerability to climate change. The use of tube wells and water pumps since the 1960s has steered the country away from traditional farming practices and systems of water management, and the country can no longer live in balance with its natural resources. Furthermore, the government failed to regulate groundwater extraction. Instead, policies that encouraged the use of water were implemented, including low-interest loans, cheap diesel pricing, and public investment in surface or spate irrigation. Because of this, groundwater and surface irrigation have been significantly underpriced, causing Yemenis to be wasteful in their use of water (Ward 2001). In particular, qat cultivation has contributed to depleting water; 40 percent of water is used on qat, and farmers are unwilling to give up this crop because it is often their only source of income.

198. **To develop agriculture, the country must first address the issues in landownership and water use.** Because of land disputes, potentially productive land is not being used, valuable crops are being destroyed, and new investment is being delayed or cancelled. Because of water disputes, water supplies are being impeded or even cut off. Therefore, it is important that the government adopt and implement measures to improve land management and land use and to promote sustainable water use. These should include institutional reforms and technical measures.

199. **Broader land and water reforms have been piecemeal and hindered by competing interests among elites and branches of the executive.** The National Water Law passed in 2002, for example, is supposed to regulate water extraction from wells, and the National Water Sector Strategy and Investment Program launched in 2005 has led to a positive shift toward decentralized water management, in particular with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit. These steps have

generated some level of consensus regarding the exploitation of water resources in areas such as Amran and have also reportedly averted conflict (Lichtenthaeler 2010). However, the disconnect between the Ministry of Water and Environment, which is responsible for resource management and domestic water supply and sanitation, and the Ministry of Agriculture and Irrigation, which deals with irrigation efficiency, dams, and watershed management, has meant that the rate of consumption has not been addressed in the agricultural sector, which is responsible for 90 percent of water consumption (Lichtenthaeler 2010). At the same time, attempts to reform the cultivation of qat, a notable contributor to water consumption, have stalled in parliament, and traditional water management rules continue to treat water as an everlasting, unlimited resource (Hydro-Yemen and Care 2005). Meanwhile, land reform has been primarily concerned with the urban investment climate, but progress has been extremely limited, and there appear to be genuine grounds for concern about whether more extensive enforcement of compliance with land registry regulations can avoid triggering conflict.

200. **Land and water legislation needs to be revised, especially to include conflict prevention, reduce capture, facilitate investment, and encourage the sustainable use of natural resources.** Thus, tenure security among smallholders, which depends mainly on the informal recognition of their rights to land by their families, fellow community members, and local shaykhs, should be respected and acknowledged by the government and therefore free of the risk of expropriation. In addition, an effective and fair system for dealing with land disputes should be established. Furthermore, the following measures could be considered to strengthen land and water management:

a. Strengthen the technical and institutional capabilities of the General Authority of Lands, Survey, and Urban Planning and the National Water Resource Authority
b. Examine the structure of subsidies for agricultural production inputs and adjust it to reflect conditions conducive to water conservation
c. Introduce stiffer import duties on the pumps and other equipment used for groundwater abstraction; provide economic incentives for water conservation such as subsidies, tariff concessions, and tax incentives for investment in effluent treatment plants and recycling equipment installed by the private sector
d. Promote a system of water pricing that encourages water conservation; this includes introduction of crop-based charges in the agricultural sector; a structure of progressive tariff rates based on the production cost of water in the urban water supply system, and pollution charges based on the volume of wastewater produced
e. Control groundwater exploitation through regulations on well registration, spacing, depth, horsepower, and annual abstraction volume according to zones and uses; through permits and taxes among well operators; and through the establishment of protection zones
f. Implement measures so that farmers achieve greater irrigation efficiency; such measures might include special credit facilities for farmers for the acquisition of the materials and equipment needed for the efficient use of water
g. Strengthen the community management of land and water, including grazing commons and groundwater (**Box 8**)
h. Implement research and extension services to teach and advice farmers on techniques to achieve greater productivity, especially through water conservation; implement measures to discourage the expansion of irrigated areas (especially areas under qat) by promoting other cash crops
i. Reuse treated water, and charge for the disposal of effluent so industries may consider recycling water
j. Provide technical information on water-saving technologies to water consumers in industry
k. Through educational and public information campaigns, create awareness among the general public and policy makers about the seriousness of the water resource problems facing the nation
l. Coordinate donor activities in the sector to avoid the duplication of efforts and to ensure the best use of the financial and other resources available through external assistance

Box 8. Community-Based Natural Resource Management

Communities, particularly at the local level of villages and as wider networks, play a significant role in the management of local resources such as land and water, providing not only a basic framework of property rights that control access, but also rules regulating use, including rainwater harvesting, grazing, and irrigation.

The performance of community institutions varies and is vulnerable to intervention and the capture of benefits by influential people, but the country has strong traditions of deliberative decision making, dispute resolution mechanisms, principles for balancing private and collective interests for beneficial resource use, and protecting the interests of the socially vulnerable.

There are risks that government actions, including the inappropriate imposition of a formal legal framework, could disrupt local institutions and lead to increased exclusion, capture, and inequity, especially given the limitations of formal legal and administrative institutions.

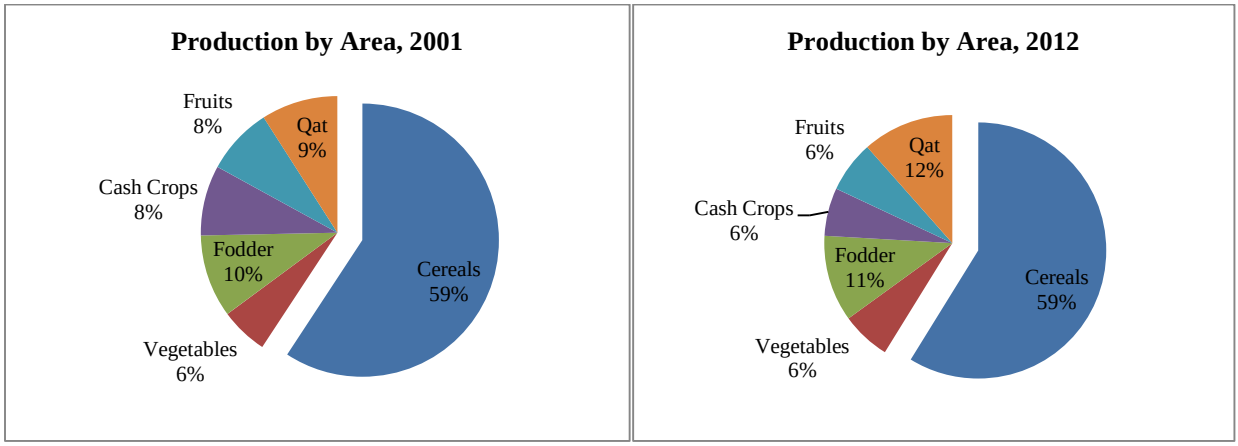
However, there are also opportunities for the government to recognize and reinforce customary law and the local self-governance of natural resources, including targeted efforts to provide technical support and regulatory backstopping.

5.3. Other Weaknesses in Agriculture: Low Productivity and Lack of Diversification

201. **Agriculture has the potential to enhance economic growth, the sector's productivity is low.** Cereal yield has been around 1.0 ton per hectare or less for the past couple of decades. This is low relative to countries with similar agroecological conditions, such as Ethiopia (1.7 tons per hectare), and also low relative to countries in the region, such as Jordan (1.2 tons per hectare), Morocco (1.3 tons per hectare), and Tunisia (1.6 ton per hectare). There is scope and potential for improvement in livestock production, given the relevance of the contribution of livestock production to the incomes of rural communities.

202. **Yemeni agriculture is not sufficiently diversified.** The production mix in agriculture has not changed much since 2001, except for the expansion in the area under qat (Figure 39; **Box 9**). Most significantly, the share of cultivated area under crops that could lead in the transformation of agriculture, such as cash crops and fruit, has been stagnant.

Figure 39. Agricultural Production, by Area, 2001 and 2012



Box 9. The Place of Qat in Rural Development

Qat is a particularly significant feature of Yemeni agriculture. Qat is a mild stimulant leaf chewed daily for recreation. About 40 percent of total water resource use is dedicated to qat. Qat production is profitable, but it

crowds out the production of food crops and export crops, and its consumption can be a social and health problem. However, it is also a mainstay of the rural economy in the highland areas where it is grown and where over 25 percent of farmers, including poor ones, grow the crop. There is broad recognition that qat plays a vital role in the rural economy, but also that measures to reduce consumption must be adopted as a way to decrease and ultimately phase out qat production by promoting market-driven alternatives, modeled on recent isolated experiences that have led to the replacement of qat stands by other high-value crops such as coffee and almonds.

203. **Several long-term structural issues impede growth in the agricultural sector.** The causes of low agricultural productivity include inadequate marketing systems, low human resource capacity, lack of infrastructure, insufficient availability of inputs (including high-yield seed varieties), postharvest losses, and inefficient top-down agricultural research and extension services. In livestock production, the causes of low productivity include the inadequate availability of grazing and supplementary feeding, the low protein and mineral content of livestock feed, and diseases, including lethal infections such as rinderpest, Rift Valley fever, and sheep pox and nonlethal diseases such as infestations of internal parasites.

204. **Weak public services have prevented the public sector from adequately addressing the constraints to achieving greater productivity in agriculture.** Following a decade of declining public expenditures in the sector, the role of government in agriculture has been decreasing, and many routine functions of ministries of agriculture and irrigation elsewhere are not performed in the Republic of Yemen. Despite several successive relevant agricultural development projects supported by external donors, the agricultural services provided by the Ministry of Agriculture and Irrigation have suffered from the lack of sustainability in the absence of adequate local financing of performance-based staff compensation. The role of the private sector in agriculture has been limited, particularly in contributing to the value added in agricultural production, marketing, and export services. This has resulted in the poor performance of Yemeni exports of high-value cash products such as coffee and honey. External factors such as social conflicts and lack of security are also having adverse impacts on agriculture.

205. **Historically, Yemeni women have lacked access to political, economic, and social opportunities, but the political transition offers an opportunity to enhance the role of women in development.** In rural areas, women contribute substantially to agriculture, but their potential is limited by legal, economic, and cultural constraints. Women provide 60 percent of the labor in crop cultivation and more than 90 percent in tending livestock, but they are allowed few rights over land. The migration of men to work in cities or other countries can also contribute to economic growth, but this means that women play an even greater role in agriculture.

5.4. Policies to Enhance the Growth of Agriculture

206. **Strengthening land and water regulations and management is a prerequisite to the development of agriculture, but policies are also needed to increase agricultural productivity and diversification.** This section identifies areas in which there is scope for policies and programs to make positive contributions to the growth of agriculture.

5.4.1. Diversifying growth: the promise of decentralization

207. ***Localizing development:*** **decentralization creates the potential for policies that are better suited to local conditions.** In all parts of the country, participatory programs have shown how external support can be combined with local planning and implementation. The capacities of villages, subdistricts, and districts can be systematically enhanced, as demonstrated by the work of the Empowerment for Local Development Project, which is being carried out in 70 of the country's 333 districts. Scaling up such approaches, if done carefully and accompanied by plenty of learning and adaptation, could build a

foundation for diversified development tailored to local conditions, priorities, and opportunities, including agriculture and the value added through the supply of inputs and the marketing of agricultural products.[52]

208. ***Market federalism:*** **decentralization to regions, districts, and subdistricts could encourage healthy competition across geographical areas to create attractive conditions for investment and development.**[53] Exposure to international and domestic competition and opportunities could induce elites to pursue longer-term enlightened self-interest through the creation of coalitions for growth aimed at establishing a positive environment for farmers and businesses to add value in ways that lead to shared prosperity.[54]

209. ***Regional diversity:*** **the regions provide a basis for considering how geographical differences create various constraints and opportunities for agricultural development.** As a follow-up to the National Dialogue Conference, the establishment of federal regions was proposed, including six regions and Sana'a, the national capital (chapter 2). Four regions would have direct access to the sea, including the major seaports of Al Hodeidah and Aden, as well as smaller ports such as Mukhalla in Hadhramaut and Mokha in Janad.[55] Economic links, administrative capacity, and other factors in Tehama (Al Hodeidah), Janad, Hadhramaut, and, possibly, Aden could be favorable for agricultural exports, as well as opportunities for development inside the country that would raise the domestic demand for vegetables, fruit, livestock, and other higher-value agricultural products.[56] Tehama already has a substantial export agriculture, including mango and other fruits. Janad benefits from relatively more rainfall than the rest of the country and more extensive agricultural development, as well as significant industry in Taiz. Hadhramaut has a long history of international connections and some specialized agriculture. The regions of Azal and Saba are

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[52] For an analysis of the factors contributing to success under difficult conditions in the work of the Social Fund for Development, see Al-Iryani, de Janvry, and Sadoulet (2013). On the importance of learning and adaptation in community-driven development and similar programs, see Mansuri and Rao (2012).

[53] For the theory of competition among localities, see Ostrom, Tiebout, and Warren (1961). Analysis of market federalism in China emphasizes the ways in which competition between major cities and provinces can create incentives for local elites to pursue growth by rendering benefits more inclusive and longer term, rather than allowing narrow, short-term rent extraction (Blanchard and Shleifer 2000; Chen, Hillman, and Gu 2002; Montinola, Qian, and Weingast 1995). However, this may depend on revenue-sharing rules and the ability of the government to promote an open, competitive environment for business and counteract attempts at local protectionism. Conditions in the Republic of Yemen differ greatly from China's unitary state with a strong central government. However, the potential for healthy competition between cities and regions is relevant, including international links that offer contestability and could encourage inward investment.

[54] One source of analytical models for elite policy making is Mancur Olson's (1993, 2000) analysis of the reasons even a selfish autocrat, a "stationary bandit," might still have incentives to provide security, stability, and favorable conditions for growth. The pluralist distribution of power poses additional challenges for collective action, as well as the opportunity to construct coalitions for growth. Yemeni elites retain strong links with rural areas and are still politically dependent on such support. Centralized patronage politics have weakened this sort of downward accountability, while the shift to more political contestation may reinvigorate the need for shaykhs and other leaders to consider policies that offer a wider distribution of benefits. For a framework and analysis of government failure, see Acemoglu and Robinson (2012), who emphasize the advantages of inclusive development, but also stress the difficulty of changing governance institutions and the need for modest ambitions about the extent of change that may be feasible. For institutional analysis with stronger attention to the role of armed conflict and the conditions under which elites may support better governance, see North, Wallis, and Weingast (2009); North et al. (2012).

[55] For information on Yemeni ports, see "Ports of Yemen," Seaports: Information for the Maritime Community, http://seaport.homestead.com/files/yemen.html.

[56] In theory, Aden should have high potential for development, for exports, and as a growth pole that stimulates the domestic demand for agriculture and other goods and services. However, the history of state-led development under the People's Democratic Republic of Yemen and the associated attitudes that still persist, the difficulty in achieving cooperation among regional elites, and the risk that centralized rent seeking would obstruct port development make the prospects somewhat more questionable.

landlocked, which represents disadvantages for development.[57] The presence of oil and gas, such as in Shaba (in Marib) and Hadhramaut, increases the risk of a resource curse if more broadly based, more inclusive economic development is neglected.[58] The highlands in Azal and Saba contain many poor households among which farming, including rainfed agriculture and livestock, is an essential part of livelihoods, and, so, agricultural development could make a big difference in these households. Regions differ in geography, administrative capacity, social capital (including international links), the human capital in education and skills, natural resources, and many other factors, which will shape how they cope with challenges and opportunities.[59]

5.4.2. Taking advantage of opportunities in agricultural value chains

210. **The analysis of value chains reveals ways to raise productivity and earnings among farmers and others involved in the market for agricultural inputs and products.**[60] Many crops are supported by well-established retail and wholesale networks for the supply of inputs and the sale of outputs. Opportunities for adding value include techniques for increasing production and productivity, for shifting to products and varieties better matched to market demand, and for improving sorting, grading, and other aspects of postharvest handling such as storage, packaging, branding, and certification. Agricultural markets are affected by restrictions on exports and imports. Value chains also depend on the broader environment for business, particularly rural businesses (see below). Value chains reveal opportunities for relatively focused interventions based on working with specific sets of stakeholders.

- *Fish.* The Republic of Yemen has a long coastline on the Red Sea and Indian Ocean and an exclusive economic zone with productive fisheries. After oil and gas, fish are the third most valuable export. Studies suggest that many fishers have relatively little understanding of which types of fish consumers prefer. Fish are often sold as a generalized commodity, with little differentiation to realize the higher value of particular species. Fisheries may be damaged or destroyed by overexploitation and destructive fishing practices.
- *Honey.* The country has a long history and a reputation for high-quality honey, including the honey of Hadhramaut, which can command high prices in export markets such as the GCC countries. Certification could help assure consumers of higher quality, enabling better prices.
- *Coffee.* The country is famous as the original source of coffee, but has long since been supplanted by other providers. However, the climate is still favorable. There are some examples of successes in taking advantage of the country's reputation to sell high-value coffee to specialized markets in Europe and the United States, but most farmers lack relevant information on opportunities and needs.

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[57] For the problems of landlocked states, see Collier (2007). The provisions agreed as part of the National Dialogue Conference attempt to ensure the freedom of trade among regions.

[58] For a recent perspective on issues related to Hadhramaut, see Haykal Bafana, "Hadhramaut: Rebellion, Federalism, or Independence in Yemen," Muftah.org, April 22, 2014, http://muftah.org/hadhramaut-rebellion-federalism-independence/#.VgKw-Y9VhBc.

[59] A realistic assessment of the economic prospects of the country needs to consider a range of optimistic and pessimistic scenarios, as well as business-as-usual scenarios based on the current, somewhat more pluralistic distribution of power or on the centralized patronage that prevailed in recent decades. Even under pessimistic scenarios of worsening state failure, much of the country might still resemble the social order that is being maintained in areas such as Puntland and Somaliland in Somalia, rather than the instability of southern Somalia or the destructive civil wars in Lebanon or Syria. The vigor of local institutions in the country, historically and during the conflict in 2011–12, including the emergence of local initiatives such as people's committees, suggests there is substantial institutional resilience, even under adverse conditions. The analysis presented here is intended to be relatively robust across a range of scenarios, rather than requiring or assuming drastic improvements in governance capacity although better governance could do a lot to create more favorable conditions for agricultural development.

[60] This section draws on analysis in SMEPS and KIT (2009) and World Bank (2014b).

- *Mango.* The country produces horticultural crops, such as mango, pomegranate, and dates, for domestic sale and some international export. However, there are few processing facilities to produce juice, concentrate, and other associated products.
- *Wheat.* While the country imports most of its rice and wheat, local wheat production is still important in some areas. Exports are banned; so, prices fluctuate; and farmers are unable to realize added value from higher-quality wheat.
- *Qat.* While often discussed as a problem in terms of its social impacts and water consumption, qat represents a major value chain in terms of income and employment.[61] Farmers in the highlands, including smallholders, benefit from much of the value of qat production. Qat is highly perishable and must be harvested and delivered to consumers the same day. The qat value chain usually involves a series of buyers and sellers to connect farmers to consumers, who are sensitive to quality. Qat production has driven the establishment of backward links to the clearing of fields and the development of irrigation systems that sometimes include trucking in fertile soil and water. In the highlands, the prospects of boosting the production of alternative crops depend on the competitiveness of these crops with qat.[62]

211. **The capabilities embedded in the value chains for qat and other crops can be considered a resource for further agricultural diversification.** The grading of quality, certification, branding, packaging, and other improvements offer ways for farmers and other participants to realize more value from agriculture.

5.4.3. Supporting livelihoods through livestock

212. **Among poorer households, livestock are an important source of income and meat and function as savings, which can be used for special occasions or emergencies.** Small livestock, including small ruminants, sheep, and goats, are particularly important for women. Various projects have involved activities to improve livestock production. So far, however, there seem to be few examples in the country of innovations with widespread impacts on livestock production. International experience and the experiences gained through projects in the country hint at the potential for a variety of interventions that might ultimately have an impact, including among the poor. These include the following:

- *Feed production.* Homemade concentrates may allow farmers to improve livestock nutrition, at affordable prices.
- *Veterinary services.* In rural areas, farmers are often unable to obtain assistance and, so, lose livestock to solvable problems.
- *Disease control*. Vaccination, deworming, and other health activities can reduce losses, especially if these can be coordinated to build up herd immunity or eliminate problems in particular areas.
- *Breeding*. The introduction of enhance breeds, including through artificial insemination, can improve livestock growth rates, quality, and prices.

[61] For an introduction to some of the issues revolving around qat, see Caton 2013. Qat consumption has expanded in many ways in the country in recent decades, including qat chewing by women (separately from men), expansion into areas, such as the north of the country, where it was previously considered religiously forbidden, and transformation into a daily activity, rather than a recreation mainly reserved for weekends or special occasions.

[62] In principle, qat could also be imported from nearby countries such as Ethiopia. However, so far, such imports have been blocked by local qat traders. Efforts to reduce qat consumption seem unlikely to succeed unless there are broader social changes (such as those that have affected cigarette and alcohol consumption in some other countries). In the meantime, reductions in qat production in some areas are likely to be offset by increases in production in other locations, without necessarily reducing the supply of qat or the amount of water consumed in qat production.

- *Small-scale poultry production.* International examples illustrate how commercial operators may be able to provide chicks, feed, and other inputs and purchase eggs or chickens in mutually profitable arrangements with smallholders.
- *Dairy.* International examples also show how small-scale farmers with only one or two cows can become linked to markets, testing, and good practices that help develop a reputation for quality and enable farmers to gain more income.

213. **Opportunities for improving livestock seem to require further experimentation and pilot testing.** Many innovations may be provided more effectively through private markets. Livestock development may also be part of a menu of options as part of community-driven development projects, such as the agricultural activities carried out by the Social Fund for Development. While the important roles of farmers, the private sector, and nongovernmental organizations must be recognized, the government may also be able to play a valuable role in supporting research, piloting initiatives and demonstrations, and providing a supportive economic environment for improving livestock production.

5.4.4. Supporting livelihoods through fisheries

214. **Fisheries are a key livelihood source for many poor communities, as well as many people working in boat building and maintenance workshops and auctioneers, processers, transporters, wholesalers, and exporters.** According to a 2005–06 household budget survey, fisheries accounted for 0.8 percent of the employed labor force. In coastal areas, fish constitutes an important source of protein and therefore plays a part in ensuring local food security. The Yemeni marine environment is characterized by a high level of productivity because of seasonal upwelling in coastal waters. The rich fisheries resource, if properly managed, can continue to be a major source of employment and income for many of the poorest in rural coastal areas. These populations have few other income-earning opportunities because agriculture is limited by the plummeting availability of freshwater.

215. **Recent records indicate that the wild fish catch has reached a plateau and that the prospects of large increases in the production of fisheries are slight, given experiences worldwide.** In consideration of this, the National Fisheries Strategy of the Republic of Yemen notes that, if allowed to continue, the open access regime that prevails today will inevitably end in the degradation of the resource base, a deterioration in livelihoods, and a decline in the contribution of fisheries to national economic growth. A sound management framework for fisheries within a new federal structure is therefore crucial to ensuring the ability of fisheries to support the future economic and food security needs of the country.

216. **Management arrangements for fisheries within a federal structure will need to take into account the current arrangements to ensure continuity and community support.** More recent sectoral reform efforts have led to the decentralization of responsibilities through the creation, in December 2010, of four region-centered fisheries authorities with substantial jurisdictional responsibility over defined coastal areas: the Red Sea, the Gulf of Aden, the Arabian Sea, including Socotra, and Mahara. Overall, the experience in operationalizing the fisheries authorities may prove useful in devolving fishery management functions.

5.4.6. Encouraging rural investment through better infrastructure and services

217. **The potential for agricultural development is shaped by the larger context of political economy, infrastructure, regulation, and other factors.** Conflict, instability, and uncertainty discourage investment in, for example, tree crops, which take longer to mature, and improvements in farmland and community infrastructure. Nonetheless, despite the recent history of conflict and uncertainty and the patterns of patronage and rent seeking, farmers and communities appear still to be interested in investing

to improve agriculture. However, import and export restrictions are distorting the prices farmers use to make decisions and are restricting the available opportunities.

218. **A rural investment climate survey in 2010 provided information on the constraints perceived by urban and rural entrepreneurs.**[63] Men and women entrepreneurs generally reported similar constraints. Corruption was rated as a constraint by 40 percent of rural businesses and by 60 percent of urban businesses. Constraints on farm and nonfarm businesses were generally similar, except that farm businesses were more concerned about water, and nonfarm businesses about electricity. These perceptions are comparable with those expressed by enterprises in general (chapter 4).

- *Electricity*. Businesses reported that lack of reliable electricity is an important constraint. While many can and do buy generators, this is more expensive and depends on the availability of fuel. Appropriate technologies for agricultural processing that do not require electricity could help add value.
- *Finance*. Rural entrepreneurs report lack of access to finance as another major constraint. Microfinance projects are active in rural areas, though their scale is still relatively limited. Remittances are an important source of income in many rural communities, though recipients face choices about whether to use the funds for investment or consumption. Farming is still a prestigious activity among rural residents, and it is seen as a source of security against future uncertainty. The large flows of funds from the country reveal that the underlying constraint is not availability of finance, but centers instead on creating conditions that encourage investment within the country in agriculture and other sectors (see above).
- *Roads*. Rugged terrain and lack of roads raise costs and make agricultural development difficult in much of the country. International experience indicates that road construction can make a major difference in allowing better access to goods and services and more opportunities. It also gives local people, including poor people and local elites, a stronger stake in markets and good conditions for business. The Public Works Department has experience working with communities to plan and build roads, and this is an area where public investment could have a substantial impact.
- *Telecommunications*. Mobile phone service is available in most rural areas, helping to open up opportunities by facilitating the checking of prices, keeping in touch with business contacts, and solving problems without long trips. Access to phone and Internet service eases agricultural development.
- *Business services*. Analysis in terms of the Doing Business indicators shows that business services, management innovation, technology, labor, finance, telecommunications, and government-related issues (including corruption) are all areas that need improvement. Businesses could benefit from better access to markets and market information, financial services, technical advice, particularly on product processing, and training and advice on business skills. International experience demonstrates that business promotion can be more effective if it is demand-driven, empowers motivated entrepreneurs, makes appropriate use of groups, including women's groups, allows businesses to start small and grow, applies a comprehensive approach, and focuses on job creation.

5.5. Conclusion

219. **Chapter 5 shows that agriculture is and will continue to be an important source of jobs, provided that adequate reforms are implemented.** If decentralization and other changes in political economy create conditions favorable for broadbased, inclusive growth, then agricultural development could make an important contribution to growth and diversification in the economy. For this to occur, land and water legislation needs to be strengthened and measures taken to reduce capture, prevent conflict, facilitate investment, and encourage the sustainable use of natural resources. These measures would include institutional reforms to strengthen the technical and institutional capabilities of the General Authority of

[63] For an analysis of the rural investment climate, see Sawada and Zhang (2012) and World Bank (2014b).

Lands, Survey, and Urban Planning and the National Water Resource Authority; the revision of the structure of subsidies for agricultural inputs and machinery; encouragement for water conservation through adequate water pricing; the enforcement of regulations for well registration, spacing, depth, and horsepower; and the promotion of irrigation efficiency. In addition, measures need to be implemented to boost agricultural productivity and the diversification of crops, livestock, and fisheries and to encourage rural investment through better infrastructure and services.

Chapter 6. Oil and Gas

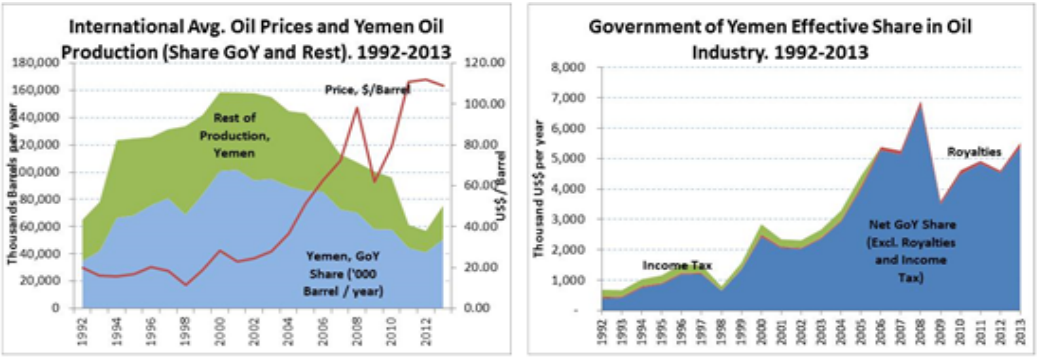
220. **The Yemeni economy is heavily dependent on oil and gas revenues, but the oil and gas sector faces enormous institutional and technical challenges.** Output is declining, and investment in production is limited by a deficient legislative framework, empty government coffers, and security threats to exploration firms. The downstream refining and distribution industry was, until recently, governed by highly inefficient fuel subsidies, which led to widespread corruption and fuel smuggling.

221. **This chapter analyzes the sector with the aim of examining ways to undertake reform to make the sector a growth engine in the context of a more decentralized system of government.** The business environment is characterized by weak governance and corruption, as well as by the influence of well-entrenched networks. Chapter 3 suggests ways to address these issues so as to improve business competitiveness in general. This chapter focuses on the oil and gas sector, as follows. The first section provides an overview of the sector and emphasizes institutional issues that need to be resolved to attract investment. The second section analyzes oil and gas exploration and production and highlights the need to increase transparency. The third section probes oil refining and distribution and the issues connected to these functions. The fourth section stresses the need for an appropriate revenue management system that takes into account the plan to install a federalist form of government. The fifth section concludes.

6.1. Overview of the Oil and Gas Sector

222. **Oil and gas production is relatively new in the Republic of Yemen.** The country began producing crude oil in 1986 at low levels and gradually increased production throughout 1987. The first significant production came online in 1988 and produced 173,000 barrels a day. Production peaked at over 440,000 barrels a day in 2000, but started declining drastically after 2001 as a result of maturing fields, limited exploration, and frequent sabotage of oil infrastructure. In 2013, production averaged 150,000 barrels a day. At the beginning of 2009, the country began producing commercial quantities of natural gas for domestic use and for exports as liquefied natural gas. But, like the oil infrastructure, the natural gas infrastructure, particularly pipelines, is the target of persistent attacks. Until the international financial crisis of 2008–09, the government was able to sustain increasing oil revenues because of booming prices for hydrocarbons and, to a lesser extent, its augmented shares in oil production (Figure 40). By 2013, oil prices had fully recovered to the pre-2009 levels, but revenues remained lower than the historical maximum because of the decline in production as a result of insecurity. In 2014, the situation worsened following the fall in both oil production and international prices.

Figure 40. Oil Production and Oil Revenues



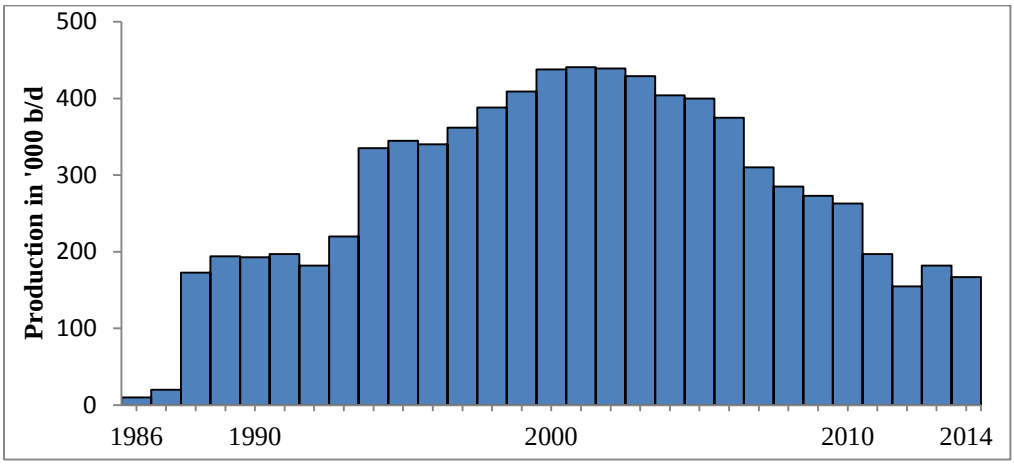
Source: Staff (DFID, WB) calculations, based on GoY (Production) and World Economic Outlook (prices) data.

223. **The oil and gas sector is the main source of government revenue, exports, and foreign exchange reserves** (chapters 1 and 2). As of June 2013, the country had 3 billion barrels of oil reserves and 430 billion cubic feet of natural gas reserves, which would last 52 and 50 years, respectively, at 2013 production levels (BP 2013). Compared with other countries in the region, the Republic of Yemen is a small oil producer, though it is the Arabian Peninsula's second-largest gas exporter (after Qatar). In any case, the sector is a core component of the economy, contributing about 15 percent of GDP, 65 percent of government revenue, and more than 80 percent of export revenue.

6.1.1. Resources, output, and revenue trends

224. **The importance of the sector to the economy stands in sharp contrast to the declining trend in output and the foreseeable depletion of resources.** Oil production fell from a peak of 457,000 barrels a day in 2002 to around 160,000 barrels a day in 2013, and the decline continued in 2014 (Figure 41). Commercial gas production, which began in 2009, currently contributes only 2 percent of government revenue and is thus unlikely to offset revenue shortfalls because of declining oil production.[64] If the current trend persists, the country will become a net importer in the next few years both in terms of government revenue and the volume of trade, probably no later than 2017.[65] This means that the country cannot count on the oil and gas sector as a reliable source of income for the future.

Figure 41. Oil Production, 1986–2014



225. **The declining trend in output has occurred because of high marginal exploration costs, the lack of investment, and a fragile security environment.** As remaining resources decline, the cost of exploiting marginal units in existing oil fields increases, and the opening of new fields requires costly exploration studies. Yet, investments in studies, data collection, and capital infrastructure have fallen because of empty government coffers, poor financial management, and an extremely fragile security environment. In 2012 and 2013, oil infrastructure suffered from 78 sabotage attacks, compared with 62 attacks during the preceding 20 years. Tribesmen and local militants sabotage pipelines and block roads to attract attention to local grievances, and security forces are alleged to collude with the perpetrators. Today, the lack of political stability and security is negatively affecting production and exports. This situation not only keeps current output below potential, but disrupts the supply of crude oil to refineries and of refined fuel to consumers. It also deters long-term investments in capital infrastructure and exploration.

[64] The data represent the average over the last five years for the revenue from gas exports and domestic sales combined.
[65] This is based on internal Ministry of Oil and Minerals estimates provided to the authors.

226. **The sector has been affected by institutional weaknesses and a lack of long-term strategic planning.** Since long before 2011, the relationship between the relevant government ministries and public companies have suffered from deficiencies in internal communication, information sharing, the delineation of management responsibilities, and ownership of projects. Interinstitutional cohesion and cooperation have been further weakened since the appointment of the current coalition government in late 2011. This lack of cohesion, coupled with political rivalries within the government, has made planning and reform execution increasingly difficult under the coalition (see above).

6.1.2. Geography and infrastructure

227. **For the purposes of oil and gas exploration, the country is divided into 86 onshore and 29 offshore blocks.** Oil production is concentrated in the governorates of Hadhramaut (50 percent of production during 1990–2012) and Marib (40 percent of production). The most important producing blocks are operated by SOEs Safer (block 18) and PetroMasila (14) and by France's Total (10) (Yemen 2013). The smaller blocks are operated by medium-sized private firms (Table 16). Gas production is limited to Marib Governorate's block 18, containing 67 percent of proven total gas reserves, and is conducted by SOE Safer.

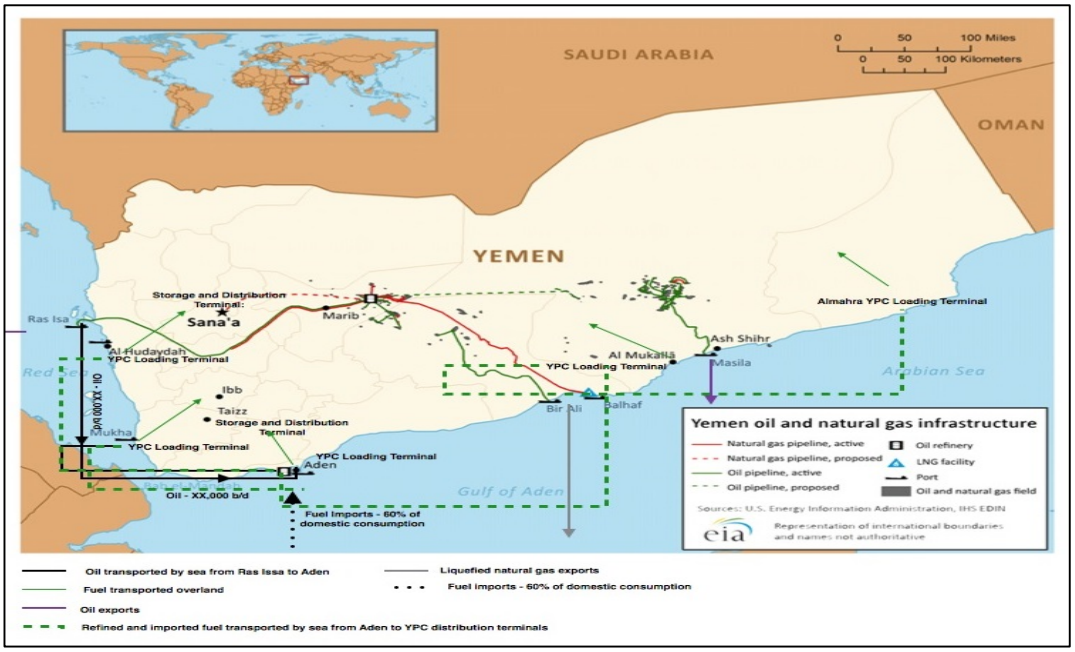
Table 16. Oil Exploration Blocks and Operators

Basin	*Governorate*	*Block*	*Operator*	*Shareholders*	*Output*[a]
Marib-Shabwa	Shabwa	Block 5/Jannah Hunt	Jannah Hunt	Kufpec, Exxon Mobil, Jannah Hunt, Newco, Total YICOM	26,997
	Shabwa	Jannah Hunt/AlRaja	Jannah Hunt	Kufpec, Exxon Mobil, Jannah Hunt, Newco, Total YICOM	144
	Shabwa	Block S1/Damis	Occidental, TransGlobe	Occidental/TransGlobe, YCO	500
	Shabwa	Block S2/Al-Uqlah	OMV	OMV, Yemen Resources, Sinopec, YCO	16,542
	Shabwa	Block 4	YICOM	YCO, KNOC, YICOM	4,500
	Marib	Block 18	Safer	Safer -100%	38,329
Masila	Hadhramaut	Block 14/Masila	PetroMasila	PetroMasila – 100%	35,000
	Hadhramaut	Block 10/East Shabwa	Total	Total, Comeco, Kufpec, Occidental	45,000
	Hadhramaut	Block 32/Hwarim	DNO	Ansan Wikfs, DNO, TransGlobe, YCO	4,000
	Hadhramaut	Block 53/East Saar	Dove	Dove, DNO, MOE, Petrolin, YCO	4,000
	Hadhramaut	Block 9/Malik	Calvalley	Calvelley, Hodd Oil, YCO	5,035
	Hadhramaut	Block 51/East Al-Harj	Nexen	Nexen, YCO	4,000
	Hadhramaut				

Note: DNO = Det Norske Oljeselskap ASA, a Norwegian oil company. KNOC = Korea National Oil Corporation. MOE = Republic of Yemen, Ministry of Electricity and Energy. OMV = OMV Aktiengesellschaft, an Austrian mineral oil corporation. YCO = The Yemen Co., the national oil company. YICOM = Yemen Company for Investment in Oil and Minerals.
a. In barrels per day as of February 2014, based on internal Safer and PetroMasila estimates.

228. **The production and export infrastructure is shaped by the geographical concentration of oil fields and the pre-1990 division of the country into a southern socialist state and a northern market economy–oriented state** (Figure 42). Oil produced in Marib and Shabwa is transported via pipeline to Ras Issa on the Red Sea. The government share of output—60 percent of output from privately operated fields and all output from block 18—is partly exported in exchange for foreign reserves and partly shipped to the Aden refinery. The share of output that pertains to private firms is exported. This represents approximately 40 percent of the production of privately operated fields.

Figure 42. Oil and Natural Gas Infrastructure



229. **The legacy of the country's division and a lack of infrastructure investments create weaknesses in the export and refining system.** For example, the Marib field is not connected by pipeline to the Aden refinery because the latter was the property of the former People's Democratic Republic of Yemen. A new pipeline connecting Marib or the Ras Issa export terminal on the Red Sea with the refinery might reduce transport costs, but would damage the interests of established monopoly transporters. The 60-year old refinery runs on outdated equipment and refines no more than 60,000 barrels a day, meeting less than half of local demand.[66] Besides, the refinery was originally built to refine imported Russian crude oil and is not equipped to refine the heavy grades of oil produced in the eastern part of the country. This crude is therefore exported directly from the coast of the Arabian Sea.

230. **Unlike the publicly owned oil infrastructure, gas transport and liquefaction are managed by a consortium, Yemen Liquefied Natural Gas, a private international joint venture created in 2004 in which the government holds a 22 percent share.** The consortium receives the gas from Safer in exchange for an operating budget, transports the gas to the port of Balhaf, liquefies it at its own purpose-built facility, and then markets the gas internationally.

6.1.3. Institutional structure

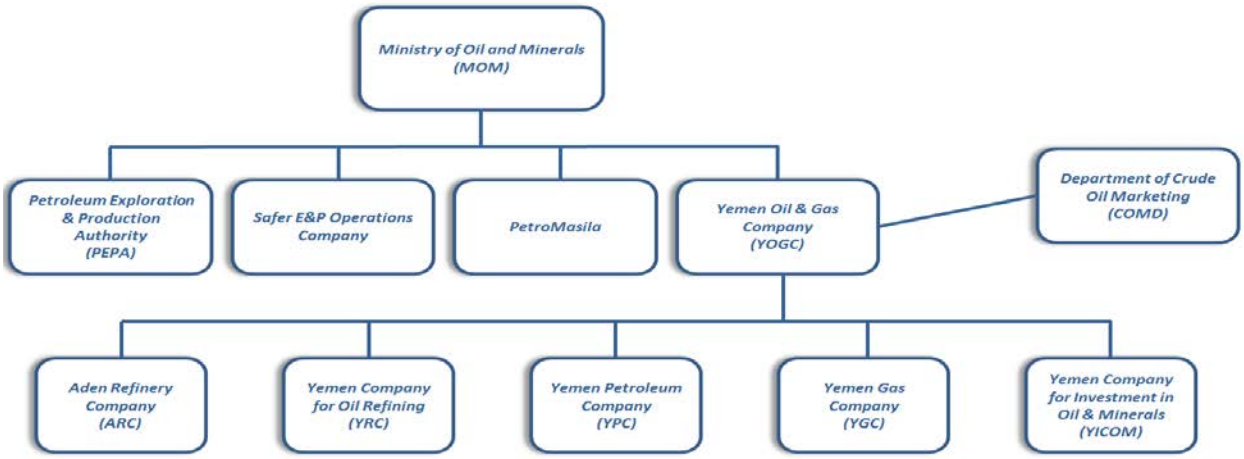
231. **The government oversees and regulates the oil and gas sector at all stages of production.** The key players upstream are the Ministry of Oil and Minerals and the Ministry of Finance (Figure 43). The Ministry of Oil and Minerals collects data on resources, oversees the bidding process for exploration rights, and defines the terms of production-sharing agreements (PSAs). The Ministry of Oil and Minerals also holds the two state oil companies, Safer and PetroMasila, and around 15 percent of carried share in most private concessions through its subsidiary, the Yemen Company for Investment in Oil and Minerals.[67] The

[66] A second refinery in Marib, held by the Yemen Company for Oil Refining, has a capacity of 10,000 barrels a day and refines fuel for the regional market.

[67] This means the government makes no contribution to development costs.

Ministry of Finance is in charge of providing operating costs to Safer and PetroMasila, collecting royalties and taxes from private oil firms, and monitoring crude oil sales.

Figure 43. Oil and Natural Gas Institutional Structure



232. **Downstream, the Yemen Oil and Gas Corporation of the Ministry of Oil and Minerals manages crude oil exports and functions as a holding company of several refining and distribution companies.** Among Yemen Oil and Gas Corporation's subsidiaries are the Aden Refinery Company and the Yemen Petroleum Company, the state fuel distributor, which distributes refined fuels across the country. The Yemen Gas Company fulfills the same distribution role for liquefied petroleum gas, which constitutes 10 percent of the gas produced by Safer.

233. **This institutional structure suffers from overlapping competencies and lack of cooperation among agencies, in particular between the Ministry of Oil and Minerals and the Ministry of Finance.** The shared responsibility for crude oil sales is an example of overlapping competencies. While an interministerial crude oil marketing committee determines the share of government-owned crude to be exported, the responsibility for implementing this decision lies with Yemen Oil and Gas Corporation in the Ministry of Oil and Minerals, but is being monitored by the Ministry of Finance. An example of rivalry is the fact that the Ministry of Finance, which crucially depends on oil as a source of revenue, is unwilling to provide the Ministry of Oil and Minerals and the latter's SOEs Safer and PetroMasila with the capital budgets necessary to expand production. The Ministry of Finance lists the unwillingness of the SOEs to share data as an obstacle, but the firms point out that data sharing may lead to Ministry of Finance interference.

234. **The government poorly communicates information about the oil and gas sector.** Poor communication and a lack of overall leadership within the government are characteristic across the various subsectors and ministries despite the existential importance of reform in the oil and gas sector. The current culture within the Ministry of Oil and Minerals and the wider governance of the country has created an atmosphere of deferred responsibility and blame. There is little sense of accountability. Overall, the ministries display a culture of deferred responsibility and blame; senior officials invariably blame the lack of security, lack of funding, and uncertainty over the effect of federalism in limiting development and strategic planning. These issues are not new to the country; many officials have worked within the sector for decades and have never had a clear explanation why reforms are not implemented, infrastructure is not built, and a proper strategic plan for the sector is not formulated.

235. **Respondents to interviews conducted for this report highlighted the deepening financial crisis and the Ministry of Finance's poor management of state funds as major barriers to the development of the oil and gas sector.** This is unquestionably a hugely important issue. One state-run oil firm, which did not receive the revenues from the oil it produced, had not obtained any contribution toward its operating costs from the Ministry of Finance during the five months previous to the World Bank mission in April 2014. Another state operator complained that it was not being given the capital expenditure funds it required to maintain or increase oil production. Yemen Petroleum Company complained that it was owed close to a cumulative $1 billion by the military, state electricity utility, and the Aden Refinery Company and that it was not being properly funded by the Ministry of Finance. The Aden Refinery Company, meanwhile, was unable to pay for fuel worth an estimated $300 million.

236. **To address these and other such issues, the government should develop a long-term vision for the sector.** This would involve clearly defined policy priorities, responsible and responsive stakeholders, and a sequenced implementation plan. In tandem, the government should review the governance framework for the sector, clarify the respective responsibilities of the Ministry of Finance, the Ministry of Oil and Minerals, and their subsidiaries, and revise institutional arrangements where overlaps and rivalries exist.

6.2. Boosting Exploration and Production

237. **While the share of oil production controlled by the public sector has risen in recent years, total production has been steadily diminishing.** The government currently receives 60 percent of the production of privately operated fields, which account for 61 percent of total production, and the entire production of publicly operated fields, which account for 39 percent of total production. The equivalent of 76 percent of all oil produced in the country is thus received by the government, a volume that may rise in 2015 after the government's takeover of Block 10, which is expiring, and 53 concessions. In the meantime, however, total production is steeply declining, and decisive action is necessary to maintain the absolute value of the government share of output.

6.2.1. Attracting international investors

238. **The decline in oil production has heightened the need for greater investment in exploration and production to enhance the oil recovery from existing assets and to discover new supplies.** Greater investment would limit the sharp falloff in the government revenue provided by the sector and would deliver the expertise in exploration that only international investors possess for oil fields with certain characteristics.

239. **An information deficit hampers the government's ability to organize bidding rounds and reduces the government's return on negotiated concessions to private firms.** While basic geographical studies have been conducted, and seismic and drilling work has been carried out in some fields offered in bidding rounds by the government, not much has been done to discover the location of the oil, how much there is, and how the oil can be extracted. Equally troublesome is the lack of organization of data where it does exist. A data mapping project has been planned for the better part of a decade, but has been stalled repeatedly because of both technical issues and allegations of corruption.

240. **According to oil companies, the PSAs governing oil concessions contain terms that are unfavorable to investors, given the relatively small size of oil reserves and the difficult security environment.** The current bidding PSA round, the fourth, was launched after the new PSA law was drafted by the government in 2008 because of the concern about the lack of interest in the country's oil sector despite record-high oil prices. The updated PSA continued to set 20-year production schedules and offered an option to extend production by five years and a carried interest rate of 5–10 percent granted to the Ministry of Oil and Minerals. Under the new deals, a joint management committee would oversee

exploration and, if a discovery were to be made, would negotiate the terms of a joint venture company to manage the asset, in which the state would hold a 50 percent stake. With the addition of the carried share, the government would, in effect, have a 55–60 percent share in the asset. The government has repeatedly offered on- and offshore PSAs to international firms in formal bidding rounds (in 2012 and 2013) and on an ad hoc basis, but has had little success in attracting investors.

241. **Many historical PSAs were negotiated through agents affiliated with various actors within the pre-2011 regime.** The collapse of the regime has allegedly led now-rival actors to target one another's business interests. Businesses owned by elite Yemenis allied with Islah, a religious and tribal coalition of tribal and conservative Sunni forces, have also been targeted by the Houthis, a northern rebel group that seized control of Sana'a in September 2014. This has led some oil companies to attempt to withdraw from the country and has further deterred potential investors.

242. **The process of tendering and awarding PSAs that is managed by the Petroleum Exploration and Production Authority offers a window of opportunity for improvement.** In addition to the allegedly unfavorable PSA terms, the process of PSA ratification is cumbersome. It includes the Parliament, which often creates delays. There is no overarching petroleum law to streamline the bidding process and regulate the full cycle of projects. Contracts are sometimes sliced into smaller deals to avoid tender board scrutiny. There is also anecdotal evidence that firms make unfeasibly low bids and then inflate costs after winning the contracts because of a lack of enforcement of contract terms by state bodies, while local brokers or other local intermediaries are involved, which helps maintain vested interests, but allows costs to be inflated.

243. **Increasing the transparency of the sector is another challenge.** The Republic of Yemen joined the Extractive Industries Transparency Initiative (EITI) in 2007 in an attempt to improve the transparency and accountability of domestic extractive industries. However, it has since produced five reports, covering 2005–11, and has been temporarily expelled twice because of noncompliance with EITI obligations. More ownership by the government and civil society will be needed if the reports are to become meaningful on the ground. Transparency and accountability could be enhanced in the sector if the government, without delay, would (a) introduce legislation to foster transparency and the application of open data concepts at the Ministry of Finance, the Ministry of Oil and Minerals, and the relevant oil and gas SOEs and require these entities to publish more detailed and disaggregated data on production, prices, government revenue, and, possibly, the terms of PSAs; (b) make the PSA drafting and approval process more transparent; and (c) strengthen the commitment of the Ministry of Finance and the Ministry of Oil and Minerals to the EITI, share more data with the EITI team, increase the donor EITI budget contributions, and regularly publish annual reports.

244. **As obstacles to investment, firms point to the government's lack of commitment and the serious insecurity in the country.** The government's decision to take over the privately held Marib and Masila concessions upon their expiry, respectively, in 2005 and 2011 has led firms to question the value of investing in the country. Current investors and many companies that might be interested in investing in the sector are postponing their financial commitment until a negotiation of the Total-led Block 10 concession has been completed. Firms also criticize the lack of an overarching petroleum law and uncertainty over whether a future government will try to push for even less attractive terms by renegotiating deals as the government did with the offtake agreements negotiated in 2005 for a liquefied natural gas project.

245. **The government should strive to increase private sector investment in oil and gas exploration and production** by enacting a petroleum law (the 2010 investment law does not cover oil and gas), reassessing the fiscal terms for new fields being explored and for fields under production, simplifying and streamlining the PSA approval process, and clarifying the roles of the various government bodies in the drafting of PSAs and the bidding process. Improving the security environment is a key priority in the effort to attract international investors and avoid disruptions in the fuel supply chain.

6.2.2. Reforming public sector operators in oil and gas

246. **The two state oil operators, Safer and PetroMasila, suffer from serious financial constraints and complain about not receiving sufficient resources** from the Ministry of Finance to expand their activities, despite the ministry's heavy dependence on the revenues generated by these operators. In the case of Safer, the operation is essentially kept alive by the gas production payments of the Yemen Liquefied Natural Gas consortium.

247. **Reforming Safer and PetroMasila and their relationships with the Ministry of Finance and the Ministry of Oil and Minerals could considerably increase the efficiency of firms.** This could be accomplished in various ways, for instance through the provision of performance incentives by granting companies the right to retain a share of their revenue or to commercialize their activities. More boldly, a reform might involve the creation of a national oil company and the establishment of mechanisms to monitor performance. An important element would be to ring-fence the independence of these SOEs from the government in the way operations are conducted. These reforms should improve the financial viability of the SOEs and incentivize international oil companies to invest in them or at least establish cooperation agreements.

248. **Establishing a joint venture between local operators and international oil companies might be a useful way to attract investment and expertise while preserving sovereignty in the sector.** International experience shows that producer countries are less frequently requiring national oil companies to act as all-purpose monopolies and more frequently relying on international oil companies. In the latter model, a ministry regulates the activities of national and international oil companies; so, no specific regulations are needed for the national oil company. National oil companies can flexibly participate and do not have to have a uniform stake in every domestic project. Decision making might focus on whether joint ventures should undertake work on all types of fields or prioritize exploration, while other operations are left to the national company. Informal discussions have taken place between the government and international actors, and there is some interest in a joint venture, which, if properly designed, could also represent a means to enhance technology transfers and local capacity building.

6.2.3. Encouraging gas exploration

249. **The Republic of Yemen has 430 billion cubic meters of proven gas reserves, mainly in the Marib basin.** Two-thirds of these reserves (288 billion cubic meters) were allocated in 2007 to the Yemen Liquefied Natural Gas consortium under an agreement by which 90 percent of this amount would be sold for export and the remaining 10 percent would be allocated to domestic needs. The remaining one-third of the reserves (142 billion cubic meters) has not yet been certified, and, because most of it represents associated petroleum gas, its development will necessarily depend on an increase in oil production. Of this 142 billion cubic meters, around 40 percent is near-term gas that could be mobilized. More time would be required to develop the remaining reserves, which are, however, expected to be certified soon by the government.

250. **The amount of current gas reserves is relatively small, but large parts of the country have not yet been explored because of a lack of resources.** Complete data are not available on the potential size of probable and possible reserves or on the likely cost of development. The available data seem to indicate there is a relatively small chance of finding large oil and gas fields and a relatively good chance that development costs would be higher than the regional average. This does not mean that gas reserves would not be found or that it would not be economic to develop them. However, proactive measures to encourage discovery and development may be needed.

251. **Several blocks containing associated gas are not yet under production, and substantial amounts of gas are being reinjected and flared because of the lack of gas gathering systems in producing blocks.** Before 2009, the country reinjected most of its natural gas production to aid in oil recovery, and, despite a detour of some gas to exports, the country is still the 9th largest gas reinjector in the world. It is estimated that an average of 40 million cubic feet of gas are flared each day.

252. **A key reason the associated gas has not been used so far is the lack of PSA provisions on this issue, a deficiency partly remedied in the newest generation of PSAs (the fourth wave).** The first three waves of PSAs contained no provisions regarding associated gas. The new PSAs contain updated gas provisions that give PSA holders the right to negotiate the development of nonassociated gas fields. These new contracts allow profit-sharing in the development of gas. However, because the terms of these contracts are extremely unfavorable to private sector agents, no gas development has taken place so far under the new PSAs.

253. **The main actor in nonassociated gas is the Yemen Liquefied Natural Gas consortium.** The government signed an agreement with the consortium in 2009, and the consortium then built facilities with the capacity to export 6.7 million tons a year, which implies an investment of $4.7 billion. Consortium shareholders include Total E&P, YLNG, and Korea Gas Corporation, the same firms that also buy gas from the consortium on the international market, creating a potential conflict of interest. The government agreed to this long-term agreement and low offtake prices after encountering difficulties in finding buyers for exports. Prices were fixed with a view to production costs rather than international market prices. Contracts were renegotiated with YLNG and Total E&P in 2012, and discussions with Korea Gas Corporation are under way.

254. **Overall, the country faces a trade-off between exporting gas to maintain revenue and keeping gas to fuel electricity generation plants.** In 2009, when 90 percent of the available resources were committed for export, the government may have considered that potential resources were far greater and that part of the anticipated new discoveries could be used to satisfy the growing local need. Another motivation for maximizing exports may have been the greater reliability of the payments associated with the international market relative to domestic firms and households. However, the opportunity cost of exporting gas instead of using it to run generation plants that are otherwise run with expensive diesel is considerable. While the economic value of exporting gas through liquefied natural gas is estimated at $3.70 per million British thermal units, the economic value of using it domestically for electricity generation is approximately twice as high (Gerner and Tordo 2011). This is why the need to use more liquefied natural gas reserves to generate electricity was a recommendation of the Sustainable Development Working Group of the National Dialogue Conference.

6.3. Refining, Distribution, and Subsidies

255. **Fuel distribution until July 2014 was characterized by an extensive subsidy system, which weighed heavily on the government budget, promoted the smuggling of fuel products for the benefit of elites, and created severe supply shortages.** While fuel subsidies were removed briefly on July 30 2014, this reform was highly controversial, and gas prices are still subsidized (**Box 10**). This section therefore discusses the distortionary nature of the prereform subsidy system and the market failures that persist since the reform.

Box 10. The Fuel Subsidy Reform

The government briefly ended fuel subsidies on July 30, 2014, and fuel prices nearly doubled. The price for gasoline increased from YER 125 to YER 195 per liter; the price for diesel and kerosene, from YER 100 to YER 200. Under pressure from the Houthi movement, which advanced on Sana'a in September 2014, the government signed the Peace and National Partnership Agreement, under which fuel subsidies were partly restored on gasoline and diesel fuel. The

new prices are subsidized at 18–30 percent, with no change in liquefied petroleum gas (table B10.1). The fuel price is not allowed to float, however, and fuel import licenses are still available only to a limited number of importers.

Table B10.1. Unit Fuel Subsidies and Prices

Fuel	*Unit*	*Unit price, YER*	*Unit subsidy, YER*	*Unsubsidized unit price, YER*	*Unit subsidy, % of unsubsidized price*
Liquefied petroleum gas	Kilogram	109.1	47.7	156.8	30.4
Gasoline	Liter	150.0	32.5	182.5	17.8
Diesel	Liter	150.0	40.0	190.0	21.1

The removal of the remaining subsidies on liquefied petroleum gas, diesel, and gasoline are planned in 2015. The recent fall in international oil prices creates an opportunity to remove subsidies with little effect on the price paid by consumers, but it is unclear if this will be politically viable. The government has formed a committee to review the issue and is due to make a decision.

Subsidy removal would reduce the purchasing power of vulnerable groups. According to a 2013 estimate, full subsidy removal would raise the poverty rate by 9.3 percentage points (1.5 million people). In addition, it would diminish the rent of elites and thus generates their opposition. To mitigate any adverse effects on the poor, the government is working with international donors to improve the targeting and funding of social welfare programs.

6.3.1. Supply chain organization and pricing

256. **Fuel supply and distribution are managed by the Aden Refinery Company and the Yemen Petroleum Company and are subsidized by the Ministry of Finance.** The Aden Refinery Company refines the government share of locally produced crude oil and also imports fuel from international markets because local refining capacity does not cover local demand. The Aden Refinery Company buys the government share of crude oil from the Ministry of Oil and Minerals, and it also buys fuel imports at international market prices. It sells refined fuel to the Yemen Petroleum Company at market price, including transport costs. Under the subsidy system, the Yemen Petroleum Company sold on the domestic market at a subsidized price set by the government; the subsidy reached up to 70 percent for gasoline and 57 percent and 54 percent for kerosene and diesel, respectively (Gerner and Tordo 2011). The Ministry of Finance reimbursed the Yemen Petroleum Company for the difference between the selling price and the purchase price.[68]

257. **The government fixes annual fuel allocations to gasoline stations in the various regions and to businesses, ministries, and state companies.** This was necessary because the subsidies and the state monopoly in refining and distribution prevented the normal functioning of a market. The allocations are officially based on need and past consumption, and an annual growth rate is applied equally across all consumers. Under conditions that are opaque, the government also allocates licenses to selected businesses to import processed fuel.

258. **The energy subsidy system was fiscally unsustainable, crowded out pro-poor and pro-growth public spending, and was highly regressive.** In 2013, the government spent about $3.3 billion (YER 629 billion) in energy subsidies. This represented 23 percent of government expenditure and 7 percent of GDP (IMF 2014). The size of the subsidy bill was thus equivalent to the fiscal deficit, crowding out government spending on infrastructure and social development programs. According to World Bank estimates, the richest 20 percent of the population received 40 percent of the subsidy payments, meaning that the subsidy primarily benefited the affluent.

[68] The Public Electricity Corporation claims an additional subsidy for fuel directly from the Ministry of Finance.

6.3.2. Subsidy-related market distortions and elite capture

259. **Because the subsidy reduced the price of energy consumption, it distorted production toward energy-intensive industries and inefficient power generation.** In 2013, 38 percent of subsidy payments went toward fuel oil and diesel purchases for the power sector, delaying the transition to nonhydrocarbon power generation; 32 percent of subsidy payments went toward diesel purchases used by industrial, commercial, agricultural, and residential consumers for electricity generation (World Bank 2013).

260. **While the process of fuel allocation was officially based on consumption needs, it was captured by political and economic elites, which obtained favorable allocations through political connections.** Larger allocations were provided to connected individuals and businesses, which often overstated their needs. Government officials also complain that state utilities and power stations provided inflated demand estimates. There is also anecdotal evidence that fuel allocations to the industrial sector had risen since 2011, despite a large drop in industrial economic activity.

261. **Excess fuel allocations were resold into the local market at much higher prices or were exported to East Africa.** The local black market effectively became dominant in fuel sales so that ordinary consumers had little opportunity to buy fuel at the subsidized price. Even high-level officials within Yemen Petroleum Company acknowledged the existence of smuggling through privately owned gas stations.[69] Larger companies and companies linked to transport businesses took advantage of the higher fuel prices in Africa to smuggle fuel internationally.

262. **Fuel smuggling, production shortages because of sabotage, and, possibly, hoarding by speculators contributed to severe fuel shortages, which climaxed in the first half of 2014**. Moreover, several ships with an estimated $300 million (YER 64 billion) of fuel were stranded in the port of Aden in May 2014, as the cash-strapped Ministry of Finance was unable to pay for the supplies. Gasoline stations were often empty for several days in a row, leading to long queues and street protests.[70]

6.3.3. Other institutional and market failures

263. **Although the subsidy removal raised fuel prices up to the market price, other institutional and market failures persist despite the reform.** Most importantly, the government continues to control fuel prices and processed fuel imports. This means that neither the price nor the supply of fuel is able to adjust to ensure that supply meets demand. A full liberalization of imports is necessary to increase supply and avoid future shortages. This will inevitably require prices to float.

264. **In addition, the entire distribution system is complex and partially uncompetitive.** The system is characterized by state monopolies upstream and a myriad of privately owned gasoline stations and retailers downstream, many of which benefit from unfair competition and patronage networks established by the previous political regime. More research is needed to understand the effects of the removal of fuel subsidies on the distribution system.

265. **The upstream section of the fuel supply chain is dominated by the old, low-capacity Aden refinery and the state distribution monopoly, Yemen Petroleum Company, each of which has a weak market position.** Plans exist to expand refining facilities and build a new refinery suitable for refining the Masila blend and are described in the National Dialogue Conference documents, but they have not been

[69] Interview with Heba Tairy, director of commercial affairs, Yemen Petroleum Company, *Yemen Times* (May 15, 2014).
[70] Interview with Heba Tairy, director of commercial affairs, Yemen Petroleum Company, *Yemen Times* (May 15, 2014).

implemented. In particular, businesses holding import licenses and others benefiting from current production shortages have an interest in preventing such reforms. Overall, however, it is unclear whether local refining is cost-efficient at all. Yemen Petroleum Company has been financially dependent on Ministry of Finance subsidy payments, which are often in arrears, causing delays in purchases from the Aden Refinery Company and international fuel suppliers. Yemen Petroleum Company claims that the military and the Public Electricity Corporation are also in arrears in fuel payments. It is thus unclear whether the removal of the subsidies alone will strengthen Yemen Petroleum Company's financial position.

266. **Downstream, several private transport companies have built effective monopolies over the distribution of products by land and sea**. These companies have considerable bargaining power and economies of scale that could make encouragement for competition difficult in the future. A key player among these firms is a shipping business that controls more than 90 percent of all sea transport and that is alleged to have ties to the former regime and to a presidential adviser who is in the military. Another key player is an overland transport company that has similar ties to the former regime and that is the main contractor of the Public Electricity Corporation, for which it transports an estimated 80 percent of all the fuel the public company uses.

6.4. Fiscal Federalism and Natural Resource Management

267. **The country is undergoing a significant shift in fiscal policy as it transitions from a highly centralized state to a federal structure.** Based on the outcomes of the National Dialogue Conference, it was decided to devolve power to six regional governments—four in the north (Azal, Janad, Sheba, and Tahamh), and two in the south (Aden and Hadhramaut)—once a new constitution is approved (**Box 11**).[71] If the decentralization process also includes the devolution of fiscal power, it may constitute an important change for local governments, which currently collect little revenue of their own and are largely dependent on central transfers.

Box 11. Fiscal Federalism and Natural Resource Management

The Republic of Yemen is currently a centralized state. The central government collects and allocates 98 percent of total public revenue, including all natural resource royalties and corporate taxes.

- Per capita revenue allocation (expenditure) by region has been stable over time and is higher in commercially vibrant Aden and in southern Hadhramaut (see Table 17).
- Other regions receive an allocation roughly proportionate to their population share.
- While regional inequality in fiscal transfers is moderate, large inequalities in public service provision exist across governorates.
- Because natural resources, which account for 65 percent of public expenditure, are distributed highly inequitably, a federal system must provide for some degree of interregional revenue sharing.

The 2000 Local Authorities Law attempted to devolve some fiscal powers to local governments, but was largely unsuccessful in changing the status quo.

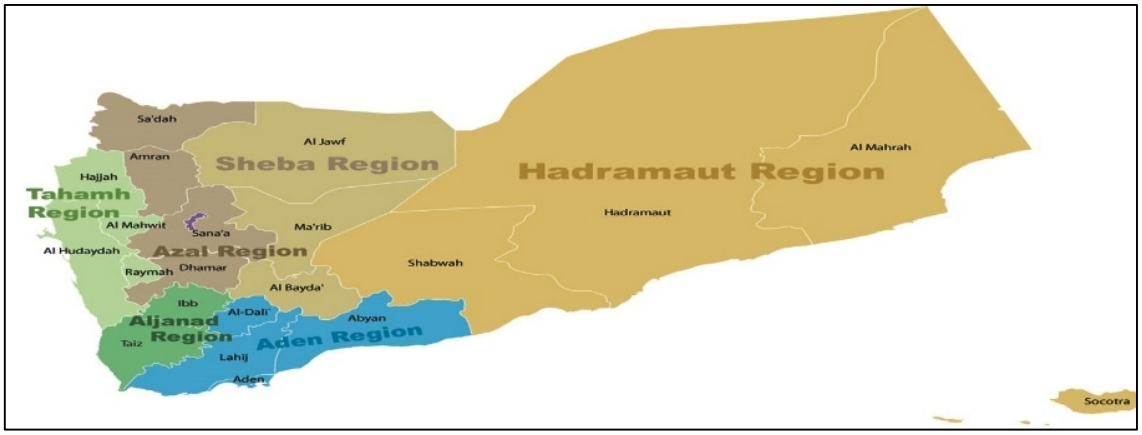
The National Dialogue Conference outcomes have provided some impetus for the introduction of fiscal federalism, as follows:

- Creation of a federal state with six regional governments, four in the north and two in the south
- Vague commitment to increasing the autonomy of the resource-rich south
- No details on mechanisms for resource extraction, taxation, and revenue allocation

[71] "Yemen to Become Six-Region Federation, Committee Approves," Saba Yemen News Agency (February 14, 2014), http://www.sabanews.net/en/news341196.htmx.

- The design of the federal structure and other reforms depend on the adoption of a new constitution

Box 12. Federal Regions



Source: Yemen Times.

Natural resource management in federal states is shaped by the country context, as follows:

- Centralized systems, which distribute revenue according to a sharing formula, ensure equity, but may exacerbate political tensions (for example, Nigeria).
- Decentralized systems can bridge political divisions between the central government and local governments, but may increase inequality (for example, the United Arab Emirates).
- Clear laws on the division of responsibilities are crucial: ambiguity regarding the ownership, exploitation, taxation, distribution, and regulation of natural resources can worsen conflict (for example, Iraq).

While the choice of a federal model is a political issue, ensuring that the system is functional and fiscally sustainable is a technical matter.

268. **The current revenue allocation model most closely resembles a centralized system.** The central government collects about 98 percent of total government revenue and redistributes it across regions in the form of projects and direct transfers to districts and governorates (Table 17). Aden and southern Hadhramaut register a significantly higher per capita expenditure. This can be explained by the infrastructure needs in larger economic centers and the special political role of the south. There is no clear correlation between per capita expenditures and either poverty shares or oil production shares. Large inequalities in per capita expenditure and, thus, public service provision exist across the governorates.

Table 17. Revenue Allocation across Regions

Governorate	Federal Region	Share in Total Population by Region*	Poverty Share by Region**	Poverty Share by Governorate **	Production Output (% of Total)	Share in Total Oil Production by Region***	Per Capita Public Expenditure by Region (Average 2009-2013)****	Per Capita Public Expenditure by Governorate (Average 2009-2013)****
Aden	Aden	11.34%	1.08	0.48	0%	0%	28166	40,302
Lahj				1.34	0%			23,634
Aldhali'				1.26	0%			17,376
Abbyn				1.30	0%			30,557
Hadramawt	Hadramawt	8.10%	1.25	1.01	53%	79%	25148	25,044
Almaharah				2.52	0%			38,557
Shabwa				1.54	26%			22,833
Albaidhaa	Sheba	6.35%	1.42	1.47	0%	21%	15870	14,607
Marib				1.30	21%			29,043
Aljawf				1.41	0%			10,396
Thamar	Azal	19.35%	0.95	0.73	0%	0%	14108	13,715
Sa'adah				0.47	0%			11,102
Amran				1.82	0%			14,522
Sanaa				0.80	0%			16,550
Hajjah	Tahamh	22.97%	1.05	1.35	0%	0%	12426	11,536
Mahwait				0.87	0%			17,086
Raimah				0.97	0%			14,511
Hodaidah				0.90	0%			11,593
Taiz	Aljanad	22.85%	0.97	1.07	0%	0%	13103	17,669
Ibb				0.85	0%			13,117
Sanaa City	Central Secretariat/ Sanaa City	9.03%	0.42	0.42	0%	0%	18773	18,773
Total		**100%**			**100%**	**100%**	**17067**	**17,067**

*Based on population figures from the Yemen Statistical Yearbook, 2013.
**Share in region's poor population as share of total poor population, over region's share in total population. Based on 2007
***Based on output estimates from Safer/PetroMasila, February 2014.
****In YR, based on data on State Public Expenditures By Administrative Division, 2009-2013.

269. **A decentralized revenue management system needs to strike a balance between providing good incentives and a fair share of revenue to producing regions and redistributing revenue with a view to poverty reduction.** Natural resources, which cover 65 percent of public expenditure, are distributed highly inequitably within the country. Only two in six regions feature any oil and gas production. Because of this and the large interregional inequalities in poverty rates and public service provision, a federal system must provide some degree of interregional revenue sharing. There is large scope for enhancing the pro-poor targeting of public expenditure. However, natural resource producing regions should also be given adequate incentives to facilitate natural resource extraction and mitigate negative externalities such as environmental damage and sabotage to oil and gas infrastructure.

6.5. Conclusion

270. The discussions in chapter 6 stress the need for the government to take action on various fronts to (a) maximize the returns from oil and gas production to Yemeni firms and the government, (b) avoid government losses from fuel smuggling, and (c) ensure a steady supply of fuel products to consumers.

271. **The government needs, first, to reduce uncertainty by developing a long-term vision for the sector**, with clearly defined policy priorities, responsible and responsive stakeholders, and a sequenced implementation plan. In tandem with the development of this vision, the government should review the governance framework for the sector, clarify the respective responsibilities of the Ministry of Finance, the Ministry of Oil and Minerals, and their subsidiaries, and revise institutional arrangements where overlaps and rivalries exist. In addition, to enhance accountability and transparency in the sector, the government, without delay, should (a) adopt legislation to foster transparency and the application of open data concepts at the Ministry of Finance, the Ministry of Oil and Minerals, and the relevant oil and gas SOEs and require these entities to publish more detailed and disaggregated data on production, prices, government revenue, and, possibly, the terms of PSAs and (b) strengthen the commitment of the Ministry of Finance and the Ministry of Oil and Minerals to the EITI, share more data with the EITI team, increase the EITI budget contributions by donors, and regularly publish annual reports.

272. **Second, the government should strive to increase private sector investment in oil and gas exploration** by enacting a petroleum law (the 2010 investment law does not cover oil and gas), reassessing the fiscal terms for new fields that are being explored and for fields under production, simplifying and streamlining the PSA approval process, and clarifying the roles of various government bodies in the drafting of PSAs and in the bidding process, thereby making the PSA drafting and approval process more transparent. Enhancing the security environment is a key priority in the effort to attract international investors and avoid disruptions in the fuel supply chain.

273. **Third, investments in gas development could be encouraged** through clear PSA terms on associated petroleum gas. A review of the pricing arrangements between Safer and the Yemen Liquefied Natural Gas consortium for nonassociated gas from block 18 is needed, given the high international gas prices, the renegotiated offtake agreements, and the stable extraction costs.

274. **Fourth, the government should enhance the commercial viability of state exploration firms**, Safer and PetroMasila, by increasing the financial autonomy of these firms and, thus, their capital budgets, while clarifying the relationships between the firms and the Ministry of Oil and Minerals and working with the firms to design mechanisms for successful international joint ventures.

275. **Fifth, while the partial removal of fuel subsidies constitutes a crucial step in eliminating government losses because of fuel smuggling**, the step needs to be complemented by the full liberalization of prices and fuel imports. In addition, the government needs to mitigate the adverse social effects of the reform through targeted welfare programs, and it needs to end monopolies and corruption networks in fuel distribution. It should also consider extending local refining capacity.

276. **Finally, all these reforms will have to be implemented in a context of fiscal federalism** whereby the new regions will become involved in the supervision, regulation, and taxation of extraction. If federalization is to be successful, the law-drafting process cannot be purely political, but must draw on inputs from legal experts. Moreover, responsibilities and competencies across the various tiers of government must be clearly defined and delineated, and the administrative capacities of local governments must be actively developed.

Epilogue and Conclusion of the Report

277. **The analysis of the Republic of Yemen in this CEM covers a 20-year period ending in 2014, before the political and security situation deteriorated significantly.** It therefore does not cover the most recent political crisis that occurred during the first semester of 2015 and has significantly affected recent social and economic developments.

278. **The ongoing crisis has had a disastrous social impact on the country.** Fighting and the air and sea embargo have provoked a humanitarian crisis. The United Nations has reported that, as of September 2015, the conflict had left over 2,000 dead and exacerbated food insecurity in the country, which imports 90 percent of its basic food stuffs. The conflict has also displaced over 1,700,000 people, including about 50,000 who have fled to neighboring Djibouti, Ethiopia, Saudi Arabia, and Somalia. The conflict has also caused massive destruction to infrastructure and services in major cities, for example, in Aden, Hadhramaut, and Sana'a, thereby affecting especially the poor and the vulnerable.

279. **The crisis has also worsened an already dire economic situation.** Domestic production in several sectors has been significantly reduced. In particular, insecurity and the sea embargo have led to a halt in the production and exportation of oil and gas. As a result, there is no fresh inflow of international reserves to the country; there is pressure on the Yemeni rial to depreciate; and the fiscal impact is huge. Without oil and gas revenues and with no direct budget support from neighboring countries, the government's ability to invest in poverty reduction, basic social infrastructure, and services has drastically declined, and the government must struggle to pay wages in the public sector. The sea and air embargo, combined with the scarcity of international reserves, is making the importation of even basic commodities difficult, leading to inflation on the domestic market.

280. **The CEM analysis and recommendations are relevant despite the recent political and economic developments.** The ongoing conflict is partly a symptom and partly a result of unresolved long-term issues of governance and political economy that this CEM addresses. This means the CEM analysis and recommendations are more relevant today than ever. It is urgent to confront the structural constraints, including issues of governance, that have contributed to the current situation and prevented the economy from prospering. The time to act on the economic and social fronts is now. However, these structural constraints can be tackled only if the Yemeni elites reach a political agreement that maximizes the long-term benefits for the country so that a more stable political environment is restored. Without peace and security, the sustainable exploitation of the country's resources or the promotion of private sector development will be problematic.

281. **The CEM recommendations are expected to help set the scene for future growth and for reducing or eliminating the structural constraints in the medium and long term.** Because of deeply rooted patronage networks, the country has been held hostage by short-term rent extraction that has undermined the possibility for sustainable development. Key economic sectors such as agriculture and water have been captured. The land registration system is inefficient and a source of enduring conflicts. Fraud is common. Misguided policies have led to the overextraction of water for qat cultivation. There is little enforcement of water regulation. Similarly, the management of oil and gas resources has been a victim of market distortions and elite capture, generating rents used for political purposes and distributed to various elites, including payments within the bureaucracy. The rent-seeking behavior of elites is damaging to output potential and the opportunities for inclusive development and limits the ability of private entrepreneurs to undertake, scale up, and modernize economic activities. The CEM recommends measures that will help

reduce capture, prevent conflict, facilitate investment, and encourage the sustainable use of human capital and natural resources, especially land, water, oil, and gas.

282. **The report recommendations need to be implemented by the postconflict government to accompany reconstruction.** This CEM has analyzed the key obstacles to unlocking the country's economic growth potential. It was commissioned with the intention to provide Yemeni policy makers with a prioritized set of specific policy recommendations to remove the binding constraints on growth, while ensuring that policies are rooted in political reality. The situation in the Republic of Yemen has, however, changed significantly since this study was started, especially since January 2015. Whereas it was anticipated that this report would deliver recommendations at the end of the post-2012 political transition, the recommendations will now need to be considered by a postconflict government, which will be tasked with the priorities of rebuilding the country and launching economic recovery. Whereas all the recommendations throughout this report should be considered, this report proposes a smaller set of priority recommendations that (a) can be realized quickly using the capacity available, (b) promote legitimacy, and (c) promote economic stability. These recommendations, in italic font, are included in Table 18.

Table 18. Summary of the CEM Recommendations

Priority area	*CEM diagnosis*	*Objective*	*Recommended measures*
Political economy	It appears Yemeni elites are not organized to pursue their collective interests or to reach intertemporal agreements with each other. They have been unable to make credible commitments to pursue policies that are collectively optimal from their own points of view, such as improvements in the organization of the security forces or infrastructure. They have not agreed to defer rent extraction today to increase the rents available in the future, for example by enhancing the management of water and petroleum resources. (See chapter 2.)	Build and strengthen institutions for the governance of key resources.	Undertake institutional reform to put the state security apparatus firmly under the joint control of multiple elites and avoid the control of single units by any elite group. Undertake legal and judicial reforms to ensure that elites gradually rely more on formal contracts and less on informal dealings. *Finance and enforce multielite institutions for the governance of key resources and ensure returns are shared by establishing cross-elite controls over each sector, industry, or resource, such as oil refineries, wells, or pipelines; water resources; ports; transport infrastructure.*
	There is no organized basis for holding government accountable for serving the collective welfare. The tribal organizations that have, for centuries, protected the collective welfare of small groups of Yemenis (hundreds or thousands of individuals) have not provided a platform for promoting nationwide development. Meanwhile, parties have not emerged to facilitate citizen collective action, and, where they have, that action has been reactionary, aimed, for example, at unseating the Saleh regime, rather than positive, with well thought-through aims.	Improve the ability of citizens to act collectively to insist on better policies.	Promote nongovernmental organizations that provide services nationwide, that are not targeted according to tribe, and that are motivated by need and other technical and development criteria. *The government should remove all laws that limit the right to organize, including requirements that associations should receive government permission.*
Removing obstacles to competitiveness	There is significant room to enhance the de jure regulatory environment and institutional framework for business and trade. A number of laws have been modernized in the past decade or more, but challenges and gaps remain, many of which will likely need to be addressed as a result of the recent WTO accession. (See chapter 3.)	Improve the de jure regulatory environment.	Review and modernize the regulatory environment, notably, through the following: (a) simplify the tax system (Income Tax Law, General Sales Tax); (b) reform the Investment Law to make it more attractive to potential investors; (c) modernize the Foreign Trade Law to make it compliant with the WTO; (d) revise the Law on Competition Promotion, Monopoly, and Commercial Deception Prevention; (e) modernize the Agencies Law and the Trade Registry Law.
	In practice, the environment for business, investment, and trade suffers from a range of challenges, exacerbated by the insecurity prevailing in the country. First, the enforcement of regulations and laws is sometimes undermined by the influence of interest groups as soon as the laws are enacted. Second, the judicial system is hampered by frequent government interference and the government's reluctance to enforce court rulings. Numerous textual ambiguities and omissions leave room for judges to resort to uncodified legal sources to support their decisions. Third, widespread petty corruption prevents the effective delivery of even the most routine government services and enforcement of regulations related to business, such as registration, licensing, inspection, taxation, and customs. Finally, insecurity is a key challenge to business activity. (See chapter 3.)	Improve the business environment in practice	Enhance the rule of law through the following: (a) introduce measures of public transparency (such as public consultation on laws, the publication of regulations, service standards, public procurement outcomes) and internal transparency and accountability (audits, use of information technology systems, performance reporting, separation of powers and authority); this has the potential to close part of the implementation gap; (b) implement measures to strengthen the independence of the judiciary; (c) remove legal ambiguities and omissions in laws (for example, on interest rates); (d) strengthen the enforcement of laws and regulations; (e) adopt measures to fight corruption, especially in government services related to business; (f) reform customs administration to professionalize customs workers and reduce corrupt practices.

Priority area	*CEM diagnosis*	*Objective*	*Recommended measures*
			Adopt measures to enhance security in cities and on main roads between cities.
	The quality of infrastructure—trade, transport, and logistics infrastructure and access to electricity, telecommunications, land, and other public services—undermines the competitiveness of firms. While the political and security situation has exacerbated these issues, the roots of the poor performance lie in poor government oversight and performance, government monopolies, and the lack of a framework to enhance public service. (See chapter 3.)	Improve access and the quality of infrastructure and public service, such as power, telecommunications, transport, access to finance, and access to land for business use.	*Power sector*: (a) adopt a comprehensive reform strategy with a clear roadmap; (b) develop a new, more effective institutional and regulatory structure with separation of the policy-making functions, regulatory functions, and management functions of state-owned power entities. *Telecommunications*: (a) establish an independent regulator with oversight over licensing; the allocation of frequencies, channels, rights-of-way; and arbitration and dispute resolution. *Transport and customs*: (a) liberalize the transport sector; (b) enhance customs procedures to speed up goods clearance and make each actor in the clearance process accountable. *Land management*: (a) adopt and implement measures to improve land management and land use. *Access to finance*: (a) strengthen credit registry and the payment system to enhance access to finance.
	Export performance is poor because of high production costs and low participation among firms. Although exports of merchandise goods were one of the driving forces of economic growth in the early 1990s, export performance has stagnated during the 2000s and is volatile. Nonoil exports and gas exports are dominated by agriculture and fisheries, which account for over 60 percent of nonoil and nongas exports. Few Yemeni firms participate in the export market, and, if they do, their export volume is low compared with firms in the region and in Sub-Saharan Africa. Increasing firm export volume and raising the number of firms that export appear to be the two main margins along which merchandise exports could be boosted.	Enhance export performance.	Introduce measures to improve the productivity of exporting firms by reducing the production costs of labor and inputs. Allow a gradual increase in exchange rate flexibility to support exports and economic growth and help protect reserves.
Human capital	The labor force is largely characterized by substantial gaps in education and skills, which limit the potential to fill scarce well-paying jobs and undertake entrepreneurial ventures. In particular, female labor market participation is low. Similarly, TEVT quality is low and does not always meet employer needs. For migrant Yemenis in particular, education and skill gaps determine a loss of competitive edge against non-Yemeni workers in the labor markets of neighboring GCC countries. (See chapter 4.)	Enhance the quality of human capital.	Adopt measures to bridge the gap between TEVT curricula and labor demand, especially by strengthening the links across the TEVT system, labor markets, and the business community.
		Increase female labor force participation.	Promote the education of girls at all levels, including in TEVT. *A commitment by the government to reduce and remove the severe and interlocking constraints on women's opportunities for economic inclusion in society: in schools, communities, and the workplace.*
		Enhance the competition of Yemeni labor in the GCC market.	Improve the quality of education, notably, by aligning it with GCC standards. *The government can take steps to increase the quantity and quality of Yemeni employment opportunities abroad through the following: (a) increase the local representation of GCC recruiters; (b) design rigorous clearance processes in collaboration with GCC authorities to cultivate GCC trust in Yemeni labor mobility systems; (c) conduct frequent consultations with relevant GCC ministries to maintain the awareness of changes in GCC labor policy.*
Agriculture and water	Agriculture's capacity is limited, mainly because of the scarcity of arable land—only 3 percent of the total area—and of water and the mismanagement of these resources. As a result, water reserves are overexploited; groundwater withdrawal exceeds renewable resources by 30 percent; land legislation is inefficient and benefits mostly those who are well connected; land registration provides no assurance of good title; and competition for water resources is common and benefits the most powerful. The sector also faces other constraints such as low productivity, limited diversification, and lack of infrastructure in rural areas. (See chapter 5.)	Improve land and water management.	Strengthen land and water legislation. In particular, promote measures to reduce capture, prevent conflict, facilitate investment, and encourage the sustainable use of natural resources. The measures could include the following: (a) institutional reforms to strengthen the technical and institutional capabilities of the agencies managing land and water; (b) revision of the structure of the subsidies for agricultural inputs and machinery; (c) encouragement for water conservation through adequate water pricing; (d) enforcement of regulations for well registration, spacing, depth, and horsepower; and (e) promotion of irrigation efficiency.
		Increase agricultural productivity and diversification.	Promote measures to increase agricultural productivity and the diversification of crops, livestock, and fisheries and to encourage rural investment through better infrastructure and services. The measures include the following: (a) promote research and extension services; (b) increase the availability of agricultural inputs; (c) promote adequate marketing systems; and (d) promote other cash crops to replace qat.
Oil and gas	The oil and gas sector has been affected by institutional	Strengthen the institutional	*The government will need to take action to secure*

Priority area	*CEM diagnosis*	*Objective*	*Recommended measures*
	weaknesses and a lack of long-term strategic planning. Long before the 2011 political crisis, the relationships between relevant government ministries and public companies suffered from deficiencies in internal communication, information sharing, the delineation of management responsibilities, and poor project ownership. In addition, the management of oil and gas resources has been subject to market distortions and elite capture, whereby rents are used mainly for political purposes, distributed to political, military, and tribal elites, and also used to support an extensive subsidy system, which weighs heavily on the government budget. (See chapter 6.)	framework of the oil and gas sector.	*hydrocarbon infrastructure, reassure oil companies, and attract them back.* *As part of an approach to stabilize the sector, the government should develop a long-term vision with clearly defined policy priorities, responsible and responsive stakeholders, and a sequenced implementation plan.*
		Increase investment in oil and gas exploration.	Introduce adequate legislation to encourage private sector investment in oil and gas exploration. Enhance the commercial viability of state-run exploration firms.
		Remove market distortions.	Fully liberalize fuel prices and fuel imports to complete the removal of fuel subsidies.

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