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Social Spending for Inclusive Growth in the Middle East and Central Asia

Prepared by an IMF staff team led by Koshy Mathai, Christoph Duenwald, and Anastasia Guscina

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Executive Summary

Socioeconomic outcomes in the Middle East and Central Asia have improved substantially over the last two decades. Nearly all countries in the region have made gains in health and education outcomes. And, excluding conflict-affected countries, these gains have generally been larger than in comparator economies outside the region. At the same time, the COVID-19 pandemic has had a substantially adverse impact across the world, and the Middle East and Central Asia region is no exception.

Notwithstanding its past progress, the region continues to face the central challenge of improving social conditions and boosting inclusive growth. Even before the COVID-19 pandemic, high and rising economic and gender inequality, high youth unemployment, internal conflicts, and large movements of refugees threatened economic prospects and underscored the importance of policy efforts to boost opportunities for all and meet the UN Sustainable Development Goals (SDGs). The pandemic has further magnified these challenges and brought into sharp focus the urgent need for higher social spending, particularly on health and social protection, to save lives and protect the most vulnerable.

Social spending is widely understood to be a key policy lever for supporting and promoting inclusive growth. It can play an essential role in improving the welfare and economic potential of citizens and, as shown during the COVID-19 crisis, in protecting vulnerable groups. It can also play a role in boosting long-term growth and reducing poverty and inequality. Ensuring an adequate level of public spending on education, health, and social protection and improving the efficiency of this spending are important for building a healthy and productive workforce and, more broadly, an inclusive society.

This paper examines the role of social spending in improving socioeconomic outcomes in the Middle East and Central Asia. In particular, it addresses

the following questions: (1) how large is social spending across the region? (2) how do countries in the region fare on socioeconomic outcomes? (3) how important is social spending as a determinant of these outcomes? and (4) how efficient is social spending in the region?

The key findings are as follows:

- While countries in the Middle East and Central Asia have made notable progress in recent decades, they still lag global peers in socioeconomic outcomes, and their levels of public social spending are lower as well.
- Public spending on education, health, and social protection can have a meaningful impact on socioeconomic outcomes. Overall, the results suggest that a 10 percent increase in social spending per capita could close 20–65 percent of the Human Development Index (HDI) gap between countries in the region and their global peers.
- The gap in outcomes between the region's countries and global comparators is larger than that in spending, suggesting that not only the amount but also the efficiency of social spending may need to be enhanced. Our empirical findings suggest that increasing the efficiency of spending in the region to the global frontier could—without any increase in outlays—eliminate one-third of the HDI gap.
- Spending efficiency is linked strongly to indicators of institutional capacity and governance.

Although this paper uses the standard definition of "social spending," other forms of spending on health, education, and income support also matter for social outcomes. Such spending includes private outlays by households, charitable activity, and foreign-aid-funded projects outside the budget. There may also be a social component to other parts of the government budget (including the wage bill and some subsidies). Ignoring these components could, in theory, skew inferences about the adequacy and efficiency of social spending. Consistent data on these other types of social outlays, however, are often not available, and the social component of the public wage bill and subsidies is particularly difficult to identify properly. That said, to the extent that the sum total of these other forms of social spending is neither systematically higher nor lower in the region than in peer countries—and evidence suggests that they are not—our conclusions should not be materially affected by these measurement issues.

The results suggest some key areas for policy action. Some countries—and particularly those where public social spending is relatively low—may need to focus on raising that spending. To protect fiscal sustainability, this may require reallocations within existing budget envelopes and/or expansion of

those envelopes via increased revenue mobilization, as many countries in the region have done in recent years (IMF 2018). Nearly all countries should also aim to increase the efficiency of social spending—particularly those countries with limited capacity to expand their fiscal space and those that fall significantly below the efficiency frontier. Improving efficiency may require improving the targeting of social protection (while ensuring that intended beneficiaries are not mistakenly excluded), addressing existing gaps (for instance, eliminating gender gaps in access to education), promoting financial inclusion (which can facilitate the payment of benefits and reduce the scope for corruption), and perhaps most important—but also most challenging—strengthening institutions and improving transparency and accountability.

The region can build on its initial response to the pandemic. Most Middle East and Central Asian countries were able to quickly mobilize resources for additional health care and social protection outlays in response to the COVID-19 crisis. While the crisis is ongoing, the experience so far already offers valuable lessons on how to reprioritize expenditure and improve spending efficiency, including through greater use of digital technologies.

CHAPTER

1 Introduction

The Middle East and Central Asia region faces an urgent need for more inclusive growth. Demographic pressures, youth unemployment, poverty, and high and rising inequality are challenging policymakers to create opportunities for all. At the same time, several countries in the region are dealing with internal conflicts, large inflows of refugees, and heightened security risks. In addition to domestic conditions, a more challenging external environment, with slowing global growth, uncertainty related to trade, and geopolitical risks, weigh further on economic prospects and hinder the ability of countries in the region to meet the SDGs. The recent COVID-19 pandemic has magnified these challenges and exposed significant vulnerabilities both in health infrastructure and social safety nets in the region. Public finances have been significantly stretched to deal with existing needs as well as the human cost of the pandemic and to contain its economic fallout. In many countries, financing constraints limit the availability of budgetary resources.

Against this background, this paper examines the role that social spending can play in improving social and growth outcomes in the Middle East and Central Asia. Previous IMF work has explored the effects of overall fiscal spending and of infrastructure spending on socioeconomic outcomes (IMF 2017, 2018), as well as the importance of reorienting fiscal policy toward promoting inclusive growth (IMF 2019b). This paper builds on those earlier studies by focusing on social spending. We show econometrically that increased public expenditure on education, health, and social protection lead to better education and health outcomes, reduced poverty and inequality, and stronger growth overall. We also document that—despite impressive, albeit uneven, progress over the past decades—Middle East and Central Asian countries generally lag global comparators in socioeconomic outcomes. Moreover, levels of social spending are typically lower than in global peers. This highlights the case for (1) increasing budgetary allocations and, given fiscal sustainability considerations, (2) improving the efficiency of social

spending. The first objective requires a reprioritization of the existing expenditure envelope and/or enhanced revenue mobilization, with the precise mix varying across countries and dependent on a deeper analysis of fiscal space across the region that is beyond the scope of this paper.[1] The second objective requires policy efforts to address the factors underpinning relative spending inefficiency, such as institutional weaknesses, governance problems, and poor financial inclusion.

The COVID-19 crisis has underscored the need for strong health systems and effective frameworks to channel cash transfers to vulnerable households.[2] The crisis has forced a swift and concerted national and multilateral response to ensure adequate public spending on health and social protection, so as to cushion the human and economic toll. The pandemic is still unfolding, but the region has already demonstrated its capacity to quickly mobilize and deploy additional resources for health and social protection including through greater use of technology, to reach the most vulnerable. Adequate social protection can help reduce poverty and inequality and ensure the welfare of the most vulnerable. Beyond the crisis, more equitable access to education andhealth care can contribute to human capital accumulation and inclusive growth. Ensuring that a country has enough fiscal space to undertake adequate investment in human capital and can do so efficiently is key to preserving fiscal sustainability and enabling long-term growth.

The paper is organized as follows. Chapter 2 discusses the definition of social spending used in the paper and its possible limitations. Chapters 3 and 4 document how countries in the region fare in terms of the level of social spending as well as socioeconomic outcomes. The paper next presents econometric analyses of the extent to which social spending affects socioeconomic outcomes. The final sections analyze the efficiency of this social spending and explore factors that may be driving inefficiency in the region. The paper concludes with policy recommendations, drawing also on the annex that presents three case studies from the region.

[1]Also beyond the scope of this paper are the complicated tradeoffs involved in spending reprioritization. Some governments may choose, for instance, to spend more on infrastructure hoping to boost growth and thereby improve social outcomes instead of increasing social spending. Whether such a strategy works would, of course, depend on country-specific circumstances.

[2]The response to the pandemic has also involved difficult decisions for countries with limited fiscal space, as they have faced policy tradeoffs—for example, protecting social spending versus supporting firms. This issue lies outside the scope of this paper.

CHAPTER

2 Defining Social Spending

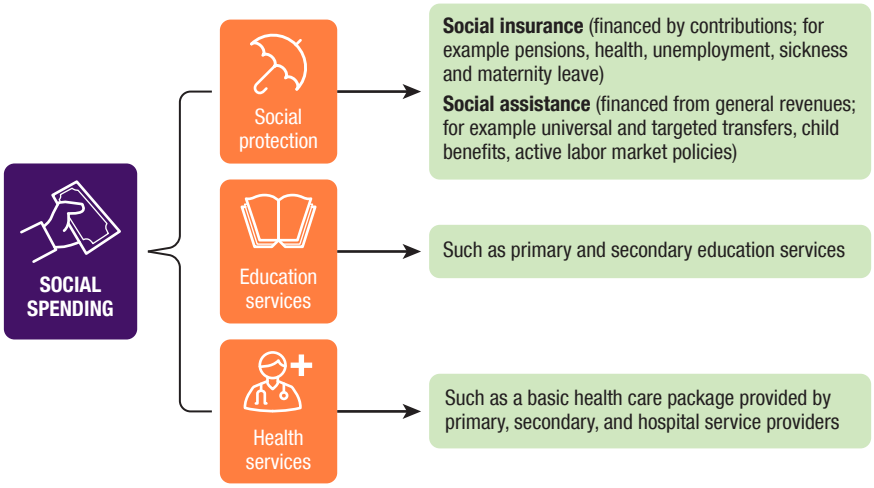
This paper uses the traditional definition of "social spending" adopted in the literature. Consistent with IMF (2019b) social spending is hence defined as on-budget government spending on social protection, education, and health (Figure 1).

Other types of spending may also have a social component but are often seen as inferior to well-designed public spending (Annex 1). A large public wage bill due to high public-sector employment and/or a public-private wage premium can be seen as a form of social protection, albeit one that may be poorly targeted, adds to budget rigidities, and—in the case of a high wage premium—also disincentivizes private-sector employment (Tamirisa and Duenwald 2018).[1] Likewise, some subsidies may have a social-protection element, as they amount to a universal transfer to households, though here too the benefits are seen mostly by the rich, at least in absolute monetary terms, and incentives again are distorted (toward overconsumption) (Figure 2). Countries in the region spend considerably on these (Figure 3). Private outlays on education[2] and both domestic and foreign charitable spending in these areas (including off-budget, foreign-aid-funded spending) may also have a material impact on social outcomes, though it is worth noting that private spending cannot substitute for public when it comes to serving poorer segments of the population. Comprehensive cross-country data on these types of expenditure are not available, but to the extent that they are broadly similar, overall, as in the rest of the world, their omission is unlikely to bias our results. Thus, in this paper, we focus mainly on the literature's standard definition of social spending, for which systematic, cross-country data are available (Annex 1).

[1]And, of course, a large public wage bill may divert resources from spending on education, health, and social protection, as traditionally defined.

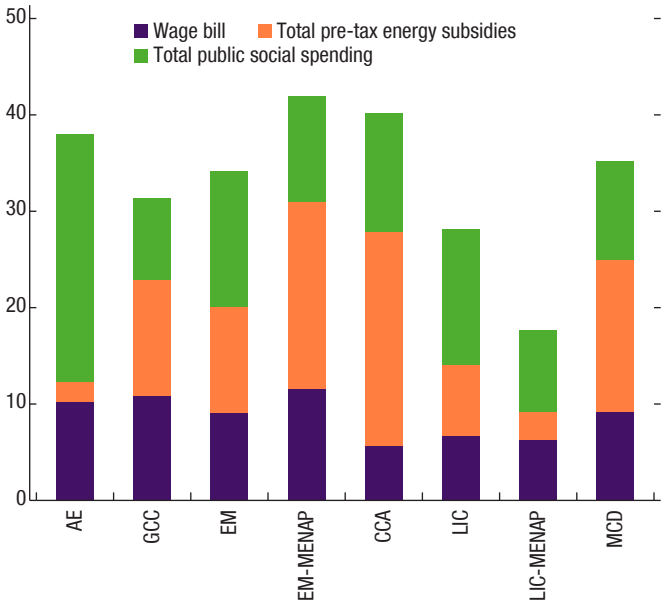
[2]Data on private health care spending are available and used in the empirical analyses described below.

Figure 1. Definition of Public Social Spending



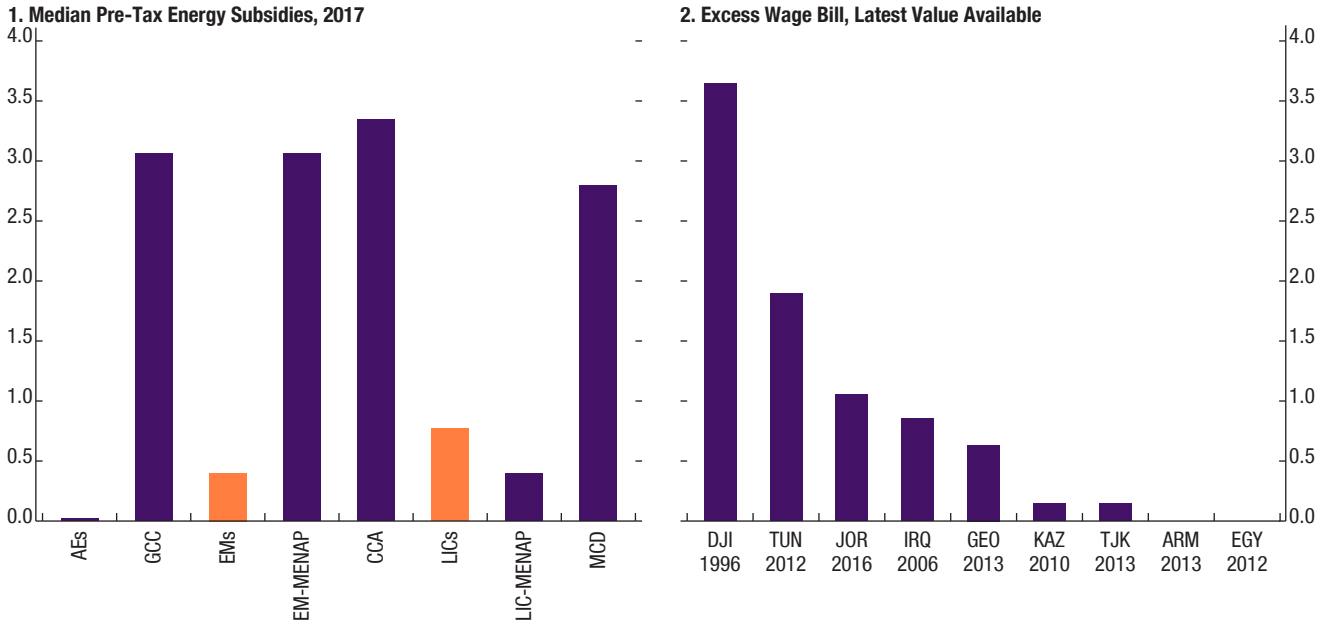
Source: IMF (2019b).

Figure 2. Wage Bill, Subsidies, and Social Spending
(Percent of GDP, 2018 or latest available)



Sources: IMF, *World Economic Outlook*; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.

Figure 3. Selected Budgetary Spending with Social Aspects
(Percent of GDP)



Sources: IMF, FAD Country-level Energy Subsidies by Energy Product and Externality Component; IMF, Public-Private Sector Wage Premium Dataset; IMF, Government Compensation and Employment Dataset, 2016; World Bank, Worldwide Bureaucracy Indicators; The World Bank; and IMF staff calculations.
Note: Pre-tax energy subsidies are estimated as the amount by which the cost of supplying energy products exceeds the price paid by its users. They do not take into account foregone revenue from unduly low taxation and are not always explicitly included in government budget figures. "Excess wage bill" is defined as the amount by which the government wage bill exceeds what it would be if the public wage premium over the private sector were zero. The public wage premium is the amount by which public-sector pay exceeds private-sector pay for comparable levels of education, experience, etc. This concept of the "excess wage bill" implicitly assumes no public-sector employment surplus or deficit. Negative estimates of the wage premium are set to zero. Data labels use International Organization for Standardization (ISO) country codes.

CHAPTER

3 The Level of Social Spending in the Middle East and Central Asia

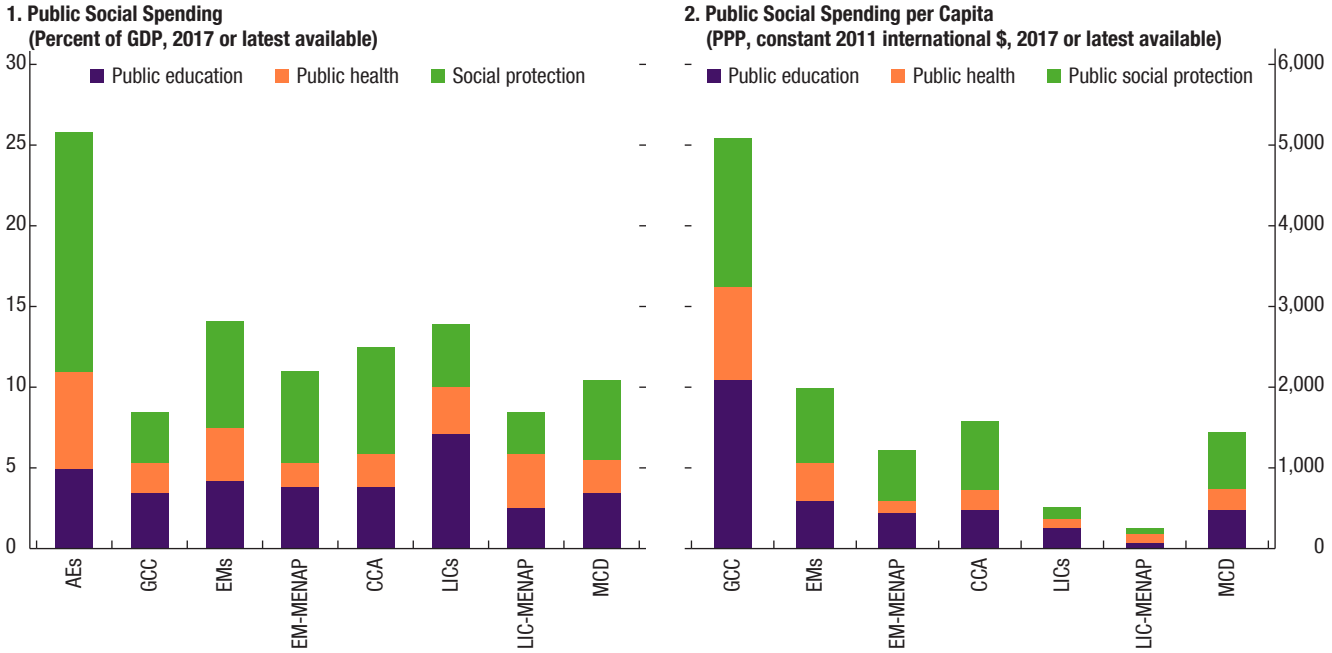
This section compares the relative size of social spending of countries in the Middle East, North Africa, Afghanistan, and Pakistan (MENAP) and the Caucasus and Central Asia (CCA) regions with global peers. As the Middle East and Central Asia (MCD) region includes low-income, emerging market, and high-income economies, it is important to ensure proper benchmarking across global peers.[1] As income levels are an important determinant of social spending levels, we compare low-income countries in MENAP with other low-income countries (LICs), emerging markets in MENAP (EM-MENAP) as well as the CCA with other emerging markets (EMs), and GCC countries with advanced economies (AEs).

While there is significant cross-country diversity, social spending in the region is generally lower than in other parts of the world (Figure 4).[2] Governments in the region devote 10.4 percent of GDP on average to social spending, compared to an EM average of 14.2 percent. LIC-MENAP countries' level of social spending is particularly low, averaging 8 percent, compared to the global LIC average of 14 percent of GDP. GCC countries spend less than AEs. The difference is also striking in terms of purchasing power parity (PPP) per capita spending, where, for example, EM countries in the MENAP region spend an average of US$1,220 on social outlays compared to US$1,978 spent by EMs globally. It is worth emphasizing that simple cross-country comparisons like these are just a starting point—a full analysis of the adequacy of social spending would need to account carefully for country-specific circumstances. Nonetheless, the relatively low levels of social

[1]Country classifications within the Middle East and Central Asia (MCD) region include low-income countries (LIC-MENAP), emerging markets (EM-MENAP), countries of the Gulf Cooperation Council (GCC), and countries in the Caucasus and Central Asia (CCA), as defined in Annex 2.

[2]The paper does not attempt to estimate the desirable minimum level of social spending, as this would depend on the existing gaps with socioeconomic indicators and SDGs, the efficiency of that spending, and societal preferences.

Figure 4. Public Social Spending



Sources: World Bank ASPIRE Database, World Bank, *Education Statistics*; World Health Organization, *Global Health Expenditures Database*; IMF, *World Economic Outlook*; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.
Note: PPP = purchasing power parity.

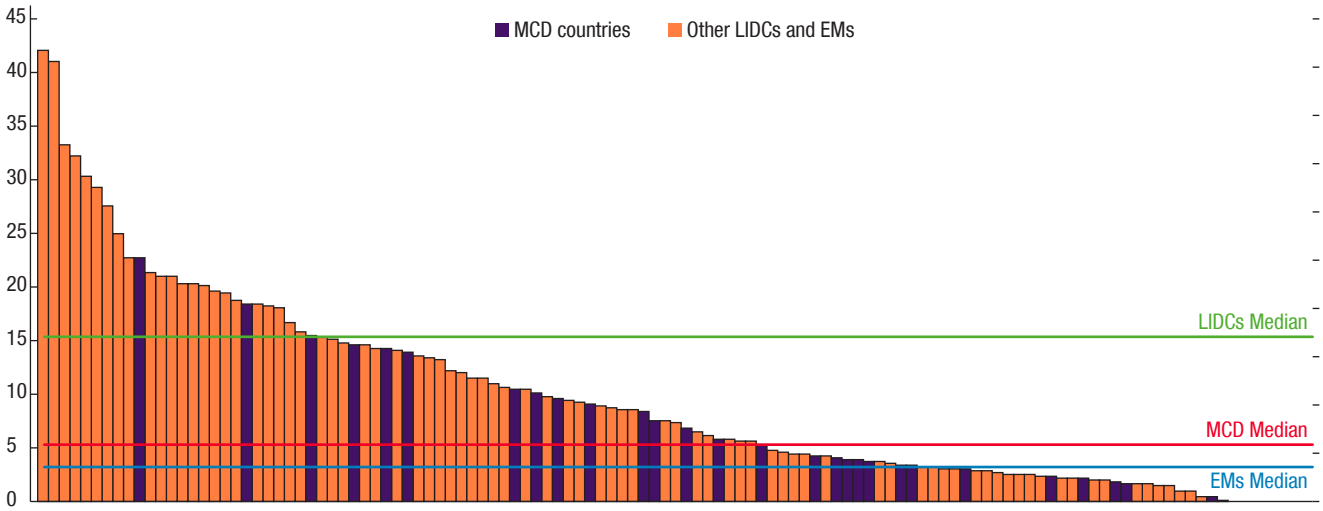
spending across country groupings in the region are notable and suggest the need for further, bottom-up sectoral analyses of spending needs.

The additional spending needed to reach the SDGs underscores the scale of the challenges faced by the region. The median country in the Middle East and Central Asia needs to spend an additional 5.3 percent of GDP per year by 2030 to achieve five critical SDGs covering human, social, and physical capital, and many MCD countries would need even more spending (Figure 5). Indeed, this estimate is a lower bound, as it assumes that spending efficiency is at the frontier—for less-efficient countries, even larger additional spending would be needed.[3]

The level of public health care expenditure is generally lower than in global comparators, while private expenditure on health is relatively large (Figure 6). On average, countries in the region spend 6 percent of GDP on health care, of which 3 percent is public expenditure and 3 percent is private. Private health expenditure in the CCA and LIC-MENAP comprises about 71 percent of overall health expenditure, perhaps reflecting the unavailability of

[3]See Gaspar and others (2019) for methodological details.

Figure 5. Additional Spending Needs in 2030 to Meet Selected SDGs
(Percentage points of GDP)



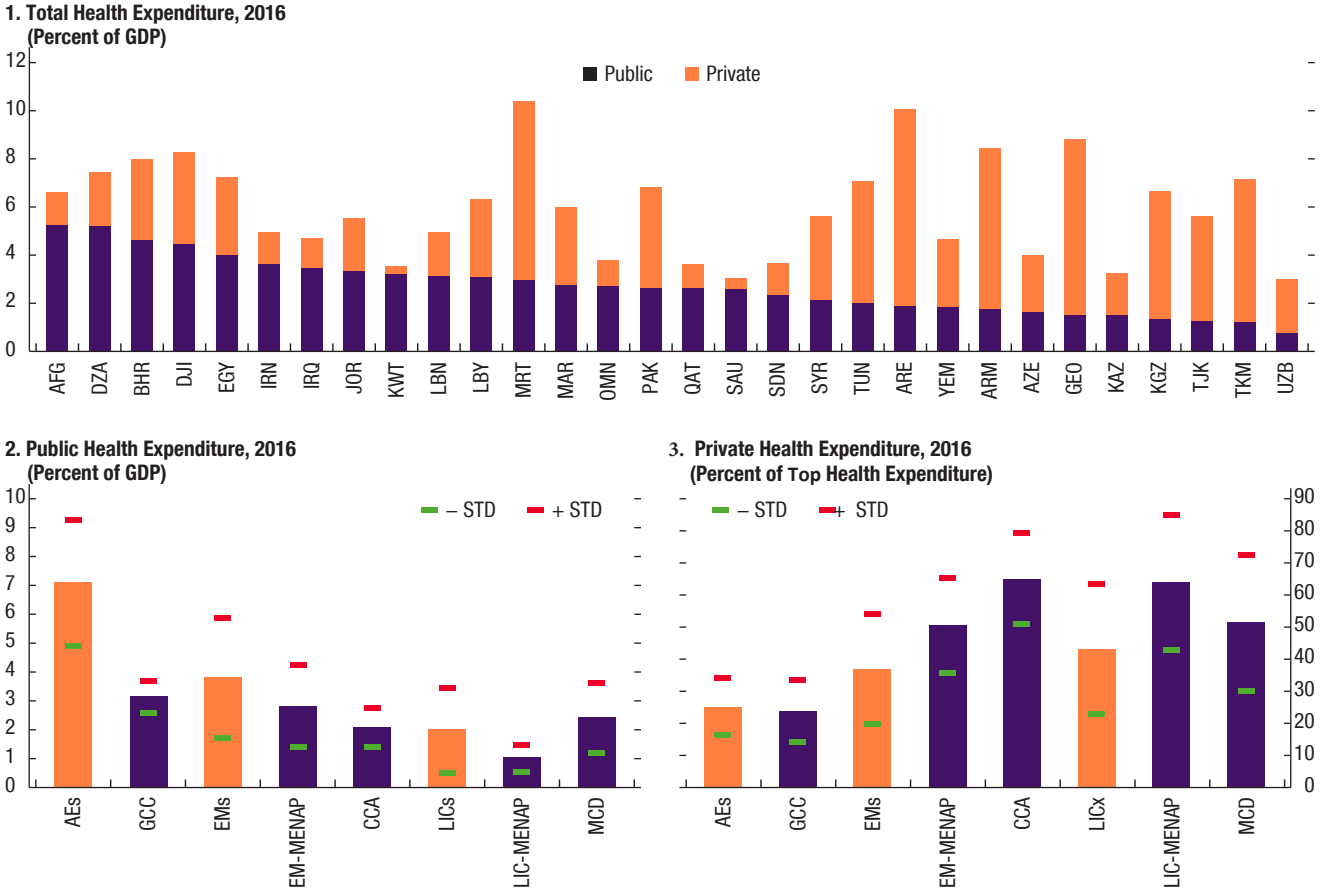
Source: IMF staff calculations based on Gaspar and others (2019).
Note: Additional annual spending required on education, health, roads, electricity, and water and sanitation to meet the corresponding UN Sustainable Development Goals (SDGs), relative to a baseline of current spending to GDP in those sectors.

extensive public medical services. This composition of expenditure, tilted toward private sources, raises concerns about the access of poorer individuals to health services. In particular, low public health spending often implies a larger financial burden for individuals due to high out-of-pocket expenses, which in turn is a significant barrier to accessing health care, especially among the poor and vulnerable.

Public education spending in the region is also lower than in global peers (Figure 7). On average, governments in the region spend 3.5 percent of GDP on education, whereas global EMs are at 4.2 percent. This pattern is observable across all country groupings and their peers. GCC countries spend less on education, relative to GDP, than their AE counterparts, but they spend relatively more in terms of PPP US dollars per capita spending. LIC-MENAP countries spend considerably less than any other group, at only 2.6 percent of GDP. Comprehensive data on private education spending in the region are not available.

Similar patterns are observable with regard to social-protection spending (Figure 8). On average, countries in the region spend 4.9 percent of GDP on social protection, compared to 6.6 percent in EMs. Social spending in the CCA is comparable to that of EMs (6.6 percent of GDP for both), but EM-MENAP countries spend less (5.7 percent). The most striking difference is between GCC countries and their AE peers, with a spending gap of

Figure 6. Public and Private Health Spending



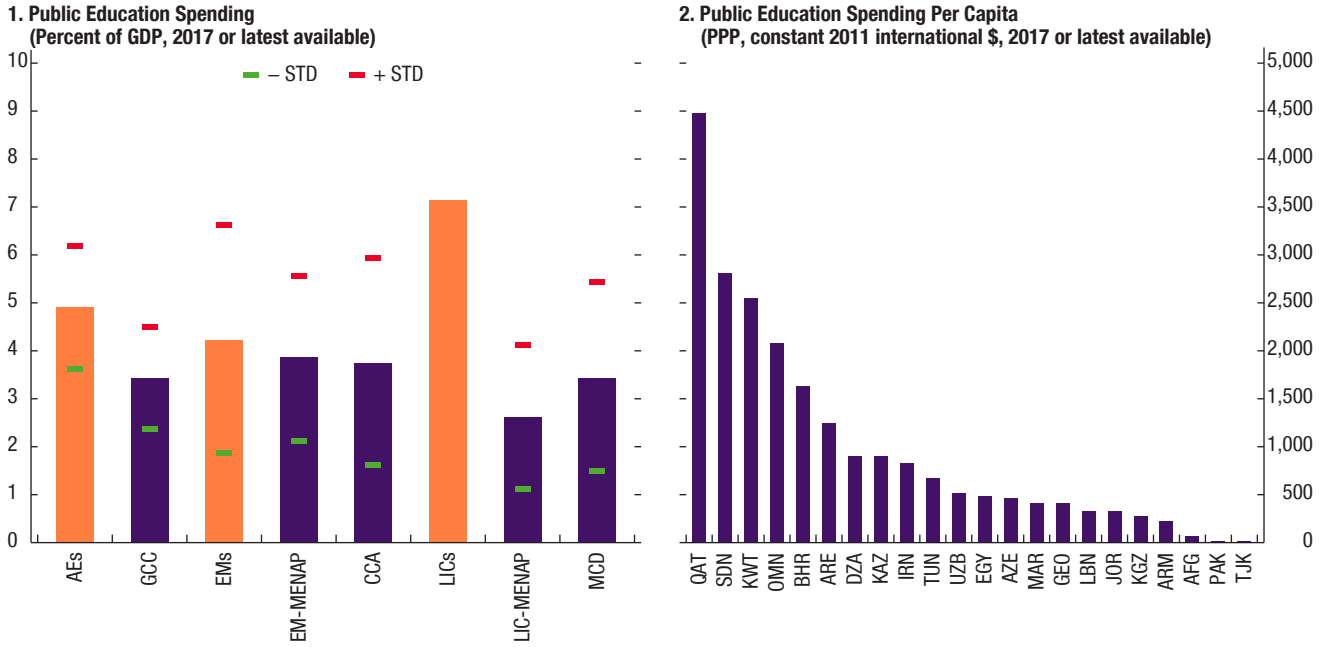
Sources: IMF, FAD Expenditure Assessment Tool; IMF, *World Economic Outlook*; World Health Organization, *Global Health Expenditures Database*; and IMF staff calculations.
Note: The data do not reflect the recent scaling-up of health expenditure due to the COVID-19 pandemic. Data labels use International Organization for Standardization (ISO) country codes. STD = standard deviation.

11.7 percentage points. However, the variability of social protection spending in PPP$ per capita terms in the GCC is high, ranging from US$280 in Qatar, to US$7,200 in Kuwait.

Most countries in the region substantially increased social spending in response to the COVID-19 crisis. Given the varying states of preparedness across the region, including in health care infrastructure, and the varying speed at which the pandemic spread, responses differed across countries (Table 1). An important part of the response was to support health care spending, and at least half of the countries in the region announced plans for targeted support to lower-income and vulnerable households and informal workers.[4] IMF emergency financing operations helped many countries in the

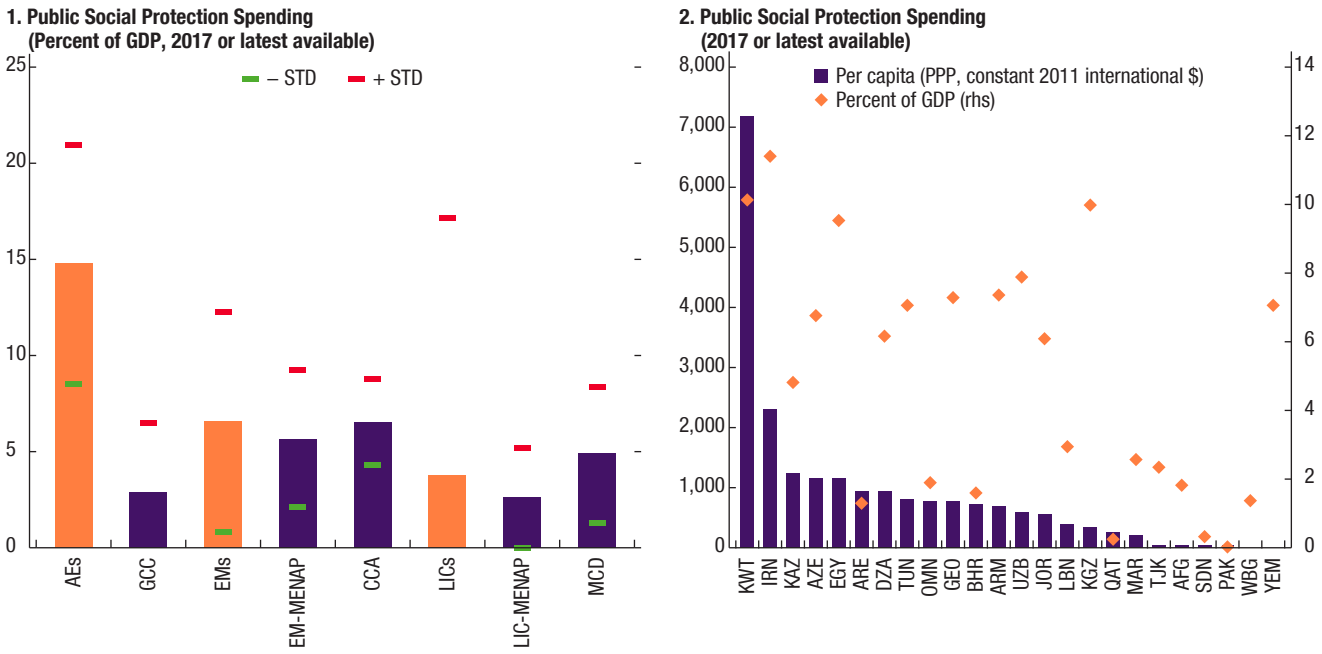
[4]IMF COVID-19 Response Tracker.

Figure 7. Public Education Spending



Sources: World Bank, *Education Statistics*; IMF, *World Economic Outlook*; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. PPP = purchasing power parity.

Figure 8. Social Protection Spending



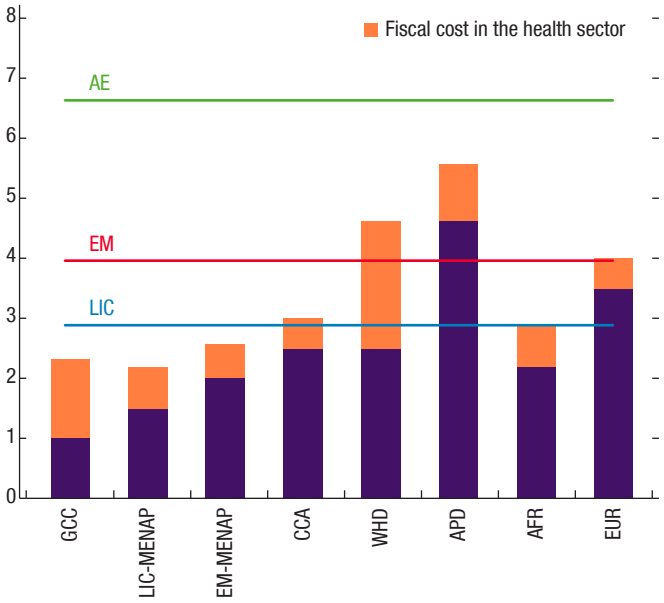
Sources: IMF, FAD Expenditure Assessment Tool; IMF, *World Economic Outlook*; World Bank ASPIRE Database; and IMF staff calculations.
Note: The data do not reflect recent scaling up of social spending expenditure due to the COVID-19 pandemic. STD = standard deviation.

Table 1. Social Protection Responses to COVID-19 in MCD Countries

	Social Assistance			Social Insurance				Labor Market		
	Cash Transfers	In-kind Transfers	Utility and Financial Support	Paid Leave/ Unempl.	Health Insurance Support	Pensions and Disability	Social Contribution Waivers/Subsidies	Wage Subsidy	Training Programs	Adjustment in Labor Regulations
Afghanistan		x								
Algeria	x	x		x		x	x			
Armenia	x	x	x			x		x		
Azerbaijan	x		x	x				x		x
Bahrain	x		x	x						
Djibouti		x						x		
Egypt, Arab Rep.	x	x				x		x		
Georgia	x		x	x				x		
Iran, Islamic Rep.	x			x						
Iraq	x	x								
Jordan	x	x		x			x			
Kazakhstan	x	x			x	x				
Kuwait							x			
Kyrgyz Republic	x	x	x				x			
Lebanon	x	x	x	x						
Mauritania			x							
Morocco	x			x			x			
Oman										
Pakistan	x		x							
Qatar				x				x		
Saudi Arabia			x	x	x			x	x	x
Sudan		x								
Tajikistan	x									
Tunisia	x			x	x	x	x			
Turkmenistan										
United Arab Emirates	x		x				x		x	
Uzbekistan	x	x		x	x	x		x	x	x
Yemen, Rep.										

Sources: Gentilini (2020); national authorities; and IMF staff.

Figure 9. Fiscal Cost of COVID-19, 2020
(Percent of GDP)



Sources: National authorities; IMF COVID-19 Country Surveys; and IMF staff calculations.

region to achieve these goals.

Some countries (Egypt) also increased education spending. Most of the social protection assistance is directed through cash transfer programs, and many countries have made effective use of technology in delivering these programs. Although country heterogeneity is substantial, the fiscal cost[5] of responding to the pandemic has generally been significant—on average above 2 percent of GDP, although somewhat smaller than in global peers (Figure 9; Box 1).

[5]Fiscal measures include above-the-line on-budget measures in response to COVID-19 directly affecting the government budget balance or financing needs in gross terms, including additional spending on health and social protection and foregone revenue from cutting tax rates on certain goods from taxes or postponing tax collections.

CHAPTER

4 Socioeconomic Outcomes in the Middle East and Central Asia

We focus on standard socioeconomic indicators used in the literature for which we have the widest data availability, both in time and country coverage. For health outcomes, we focus on infant mortality rate and life expectancy at birth, which are two standard indicators widely used in the empirical literature to assess the relationship between health and economic progress as well as to measure the effectiveness of health expenditure (Erdoğan, Ener, and Arıca 2013; Aisa and Pueyo 2006). For education outcomes, we focus primarily on secondary school enrollment and expected years of schooling. These are also standard indicators used in the literature (Clements, Gupta, and Inchauste 2004; Afonso, Schuknecht, and Tanzi 2005) and have the widest data availability, both in time (since 1990) and country coverage. While these indicators may provide little information on the quality of education, they seem to be positively correlated with Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMMS) scores for countries where the data are available (Figure 10). We supplement this analysis with other educational outcome indicators, such as learning poverty (LP).[1] For the aggregate socioeconomic outcomes, we look at the HDI,[2] the inequality-adjusted HDI (IHDI),[3] income per capita, poverty rates, and the World Bank's Human Capital Index (HCI).

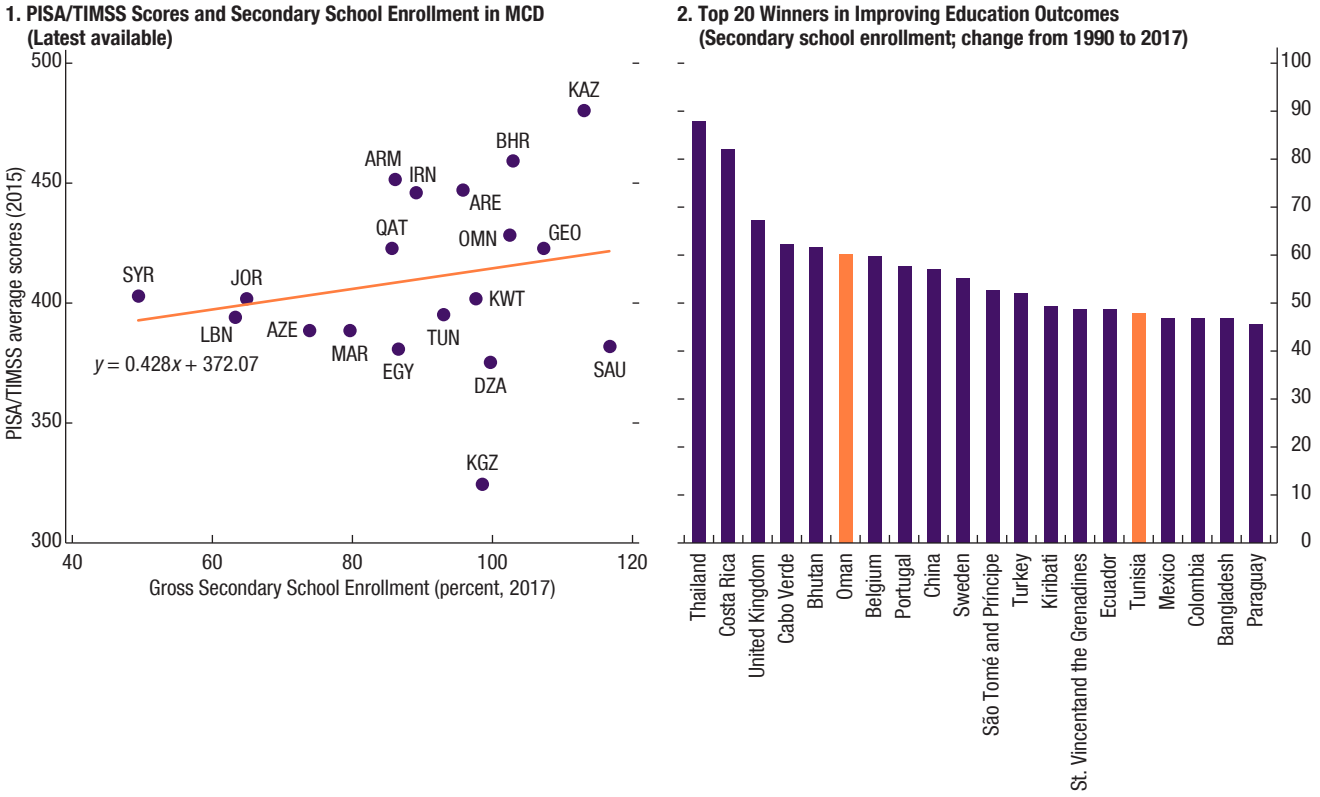
We find that socioeconomic outcomes in the region have improved substantially over the last two decades (Figures 10 and 11). Nearly all countries in the region made impressive absolute gains in health and education outcomes over the past

[1]The World Bank's indicator of learning poverty measures the percentage of children who cannot read and understand a short text by the age of 10.

[2]The HDI combines four indicators: life expectancy, expected years of schooling of children, mean years of schooling for the adult population, and gross national income per capita.

[3]The IHDI combines a country's average achievements in health, education, and income with how those achievements are distributed among the country's population by "discounting" each dimension's average value by its level of inequality.

Figure 10. Education Outcomes

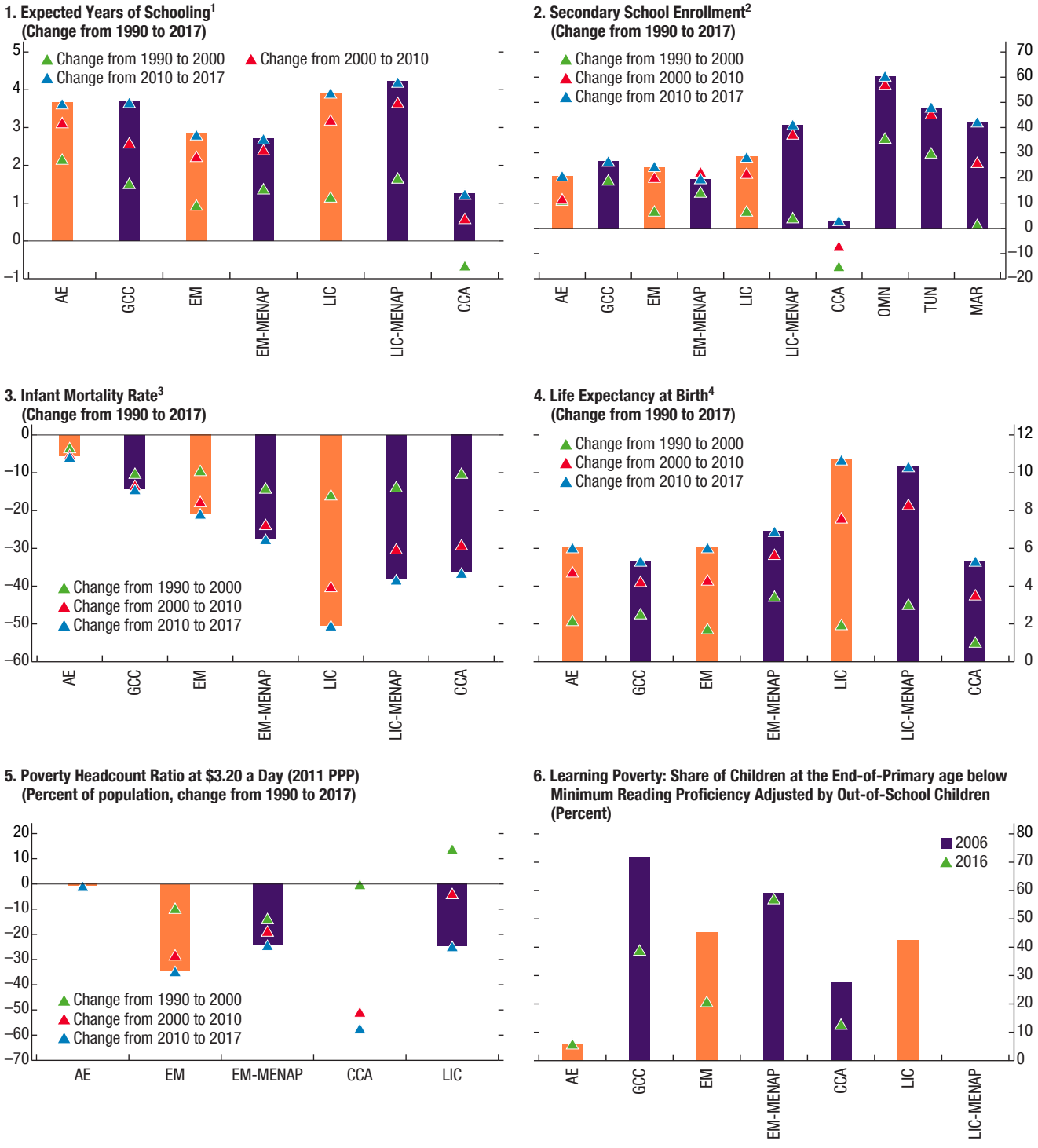


Sources: World Bank ASPIRE Database; TIMSS and PISA Evaluations; IMF, *World Economic Outlook*; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.PISA = Program for Internation Student Assessment; TIMSS = Trends in International Mathematics and Science Study.

two decades, as well as in poverty reduction. Even in relative terms, except for low-income countries, MENAP economies posted larger-than-average socio-economic gains. Tunisia (Annex 6) and Oman, for instance, are among the top 20 countries worldwide in terms of increasing secondary-school enrollment since 1990, and Morocco is in the top 20 countries for improvements in the HDI. Notably, LIC-MENAP countries reduced the secondary-school enrollment gap with other LIC peers, mostly because of closing the gender gap. Saudi Arabia also made significant progress in eliminating gender gaps in access to education and encouraging greater female labor force participation. Higher female secondary-school enrollment is associated with lower fertility rates (Figure 12), improved female literacy, and lower infant mortality. In the CCA, secondary school enrollment and expected years of schooling dropped following the collapse of the Soviet Union but have since recovered.

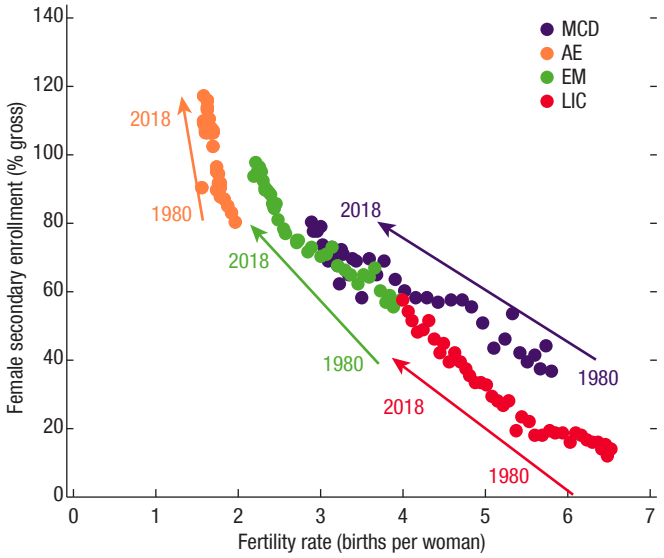
However, the rate of progress in improving socioeconomic outcomes appears to be slowing down. In reducing infant mortality and achieving higher life

Figure 11. Improvement in Socioeconomic Indicators



Sources: World Development Indicators, Learning Poverty (October, 2019); World Bank and UNESCO Institute of Statistics; and IMF staff calculations.
[1]Years a current 2-year-old is expected to spend in school based on current enrollment rates of 2- to 29-year-olds.
[2]Children enrolled in secondary schools as a share of that age group; can exceed 100 due to repeaters and late/early enrollments.
[3]Number of deaths in the first year of life per 1,000 live births.
[4]How long, on average, a newborn can expect to live, if current death rates do not change.

Figure 12. Fertility Rate vs. Female Secondary Enrollment[1]
(Averages from 1980 to 2018)



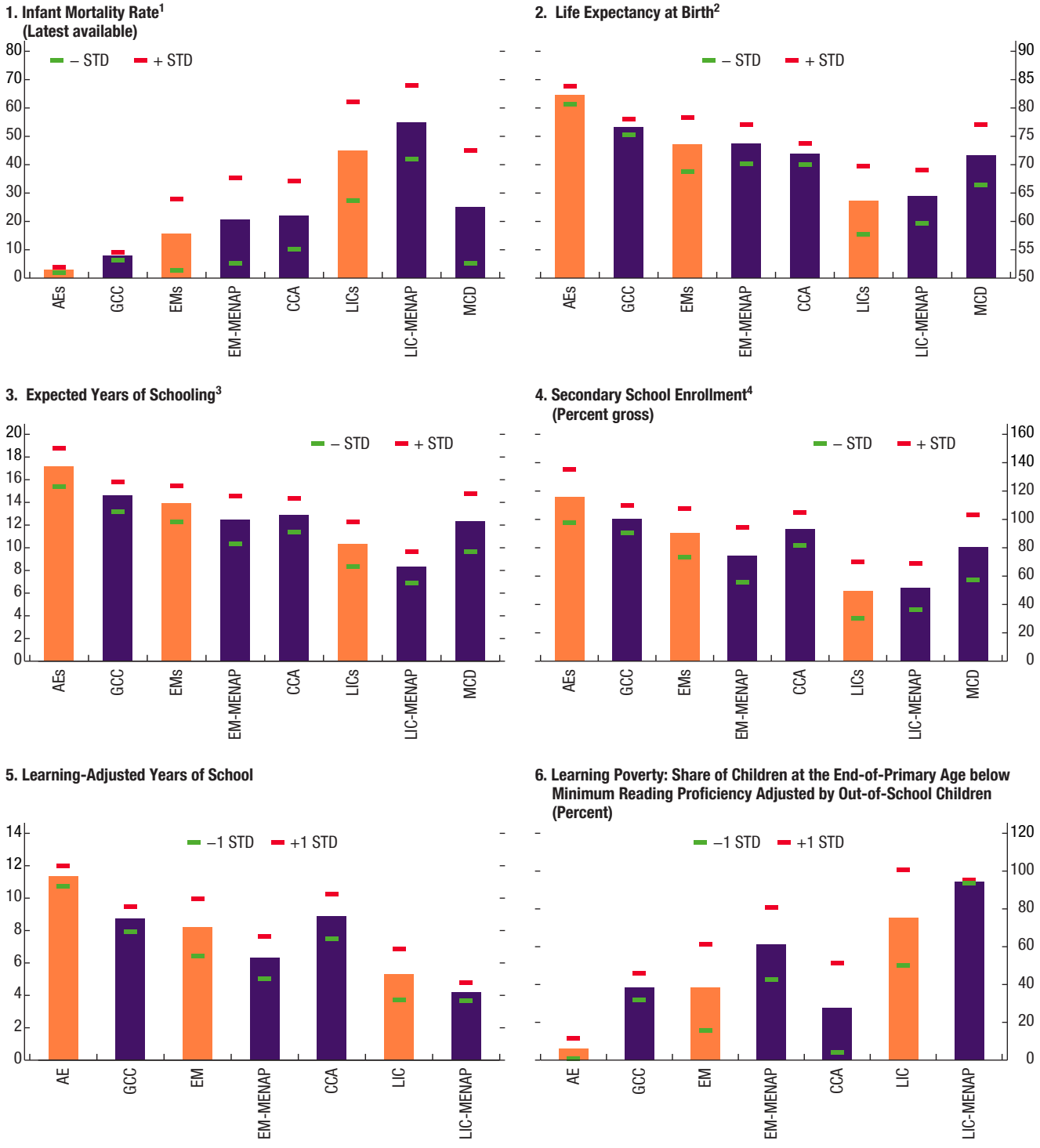
Sources: World Bank Development Indicators; and IMF staff calculations.
[1]Each dot represents average for each group in a specific year, starting from 1980.

expectancy, MENAP countries made progress at the same rate or higher rate than global peers during 1990–2000. However, the rate of progress has been slowing down, particularly over the last decade, perhaps reflecting in part conflicts in several countries which lead to internal displacement, increased refugee flows, and rising poverty. For example, life expectancy at birth and secondary school enrollment fell after the start of the conflict in Syria.

As a result, the region still lags its peers on health and education indicators (Figure 13). For example, despite their higher income levels, the GCC's infant mortality rate is twice that of advanced economies. Infant mortality is also higher in CCA countries and in EM-MENAP and LIC-MENAP compared to their global counterparts. Similar trends are also visible in education, where MENAP emerging markets lag their peers in secondary school enrollment rates by 13.9 percentage points and in expected years of schooling by 1.4 years. Other educational outcomes tell a similar story: adult literacy rates in EM-MENAP are at 76 percent, which is 17 percentage points lower than the EM average.[4] Data from the United Nations Development Programme (UNDP) Education Index reveal similar results, as countries in the region, with the notable exception of CCA, fare worse in educational outcomes than their global peers.

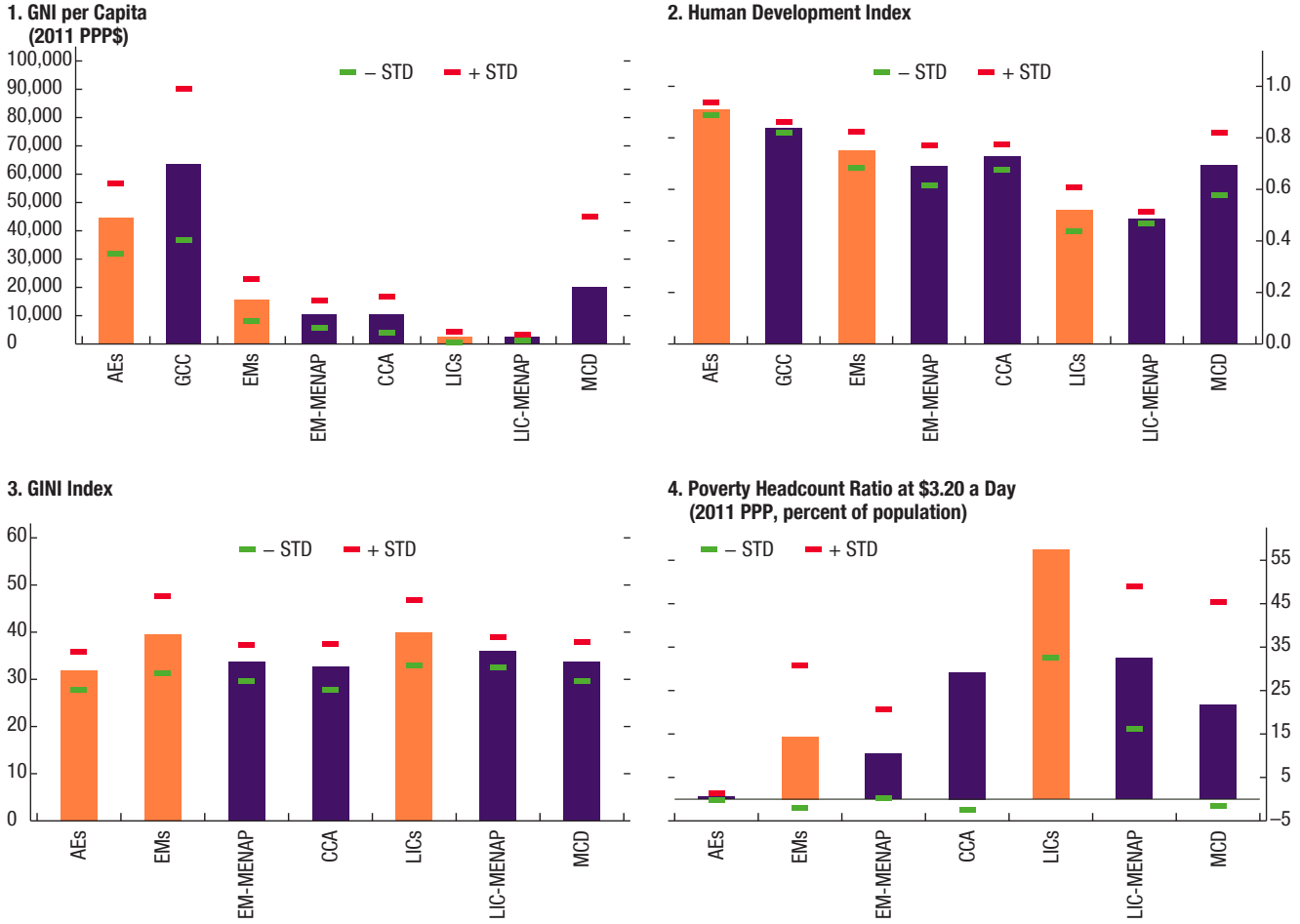
[4]See World Bank (2020) for a detailed analysis of the opportunities for boosting education's contribution to economic growth and social development in MENA.

Figure 13. Socioeconomic Outcomes in Middle East and Central Asia Countries and Relevant Global Peers
(2018 or latest available value)



Sources: The Human Capital Project; World Development Indicators, Learning Poverty (October 2019); World Bank and UNESCO Institute of Statistics; and IMF staff calculations.
Note: STD = standard deviation.
[1]Number of deaths in the first year of life per 1,000 live births.
[2]How long, on average, a newborn can expect to live, if current death rates do not change.
[3]Years a current 2-year-old is expected to spend in school based on current enrollment rates of 2- to 29-year-olds.
[4]Children enrolled in secondary schools as a share of that age group. The percent can exceed 100 due to repeaters, late enrollments, or early enrollments.

Figure 14. Socioeconomic Indicators
(2017 or latest available value)



Sources: World Development Indicators; United Nations Development Programme; and IMF staff calculations.
Note: PPP = purchasing power parity; STD = standard deviation.

Most of the region also lags on aggregate indicators of wellbeing (Figure 14). For example, despite much higher gross national income (GNI) per capita, GCC countries have lower HDI scores than advanced economies globally. Emerging and low-income MENAP countries lag their comparators in both GNI per capita as well as HDI scores. Inequality-adjusted HDI scores are also relatively low in emerging and low-income MENAP countries. CCA countries, however, have a higher average inequality-adjusted HDI score than EMs. In terms of the Gini coefficient, countries in the region score better (lower) than their global EM and LIC counterparts. Finally, poverty rates in the region are generally somewhat higher than in global peers, and the distribution of income somewhat more unequal.

CHAPTER

5 Impact of Social Spending on Socioeconomic Outcomes

The extent to which social spending matters for socioeconomic outcomes remains a subject of discussion in the literature. Haile and Nino-Zarazua (2018) find a statistically significant impact of social spending on the IHDI and on child mortality. Alper and Demiral (2016) find that social spending boosts growth, and Gupta, Verhoeven, and Tiongson (2003) find that health spending improves health outcomes. Baldacci and others (2008) conclude that education and health spending have a significant impact on education and health capital, but that improving governance and taming inflation could help to achieve the same outcomes. On the other hand, Filmer and Pritchett (1999) find no effect of public health spending on child mortality on account of inadequate institutional capacity and market failures. Likewise, Rajkumar and Swaroop (2008) show that public spending has virtually no impact on health and education outcomes in poorly governed countries, whereas they find a positive impact of public spending in countries with good governance. Most prior empirical work finds that social spending, especially when accompanied by good governance, is associated with better social outcomes and higher growth.

We use a range of econometric methods applied to a global panel data set to tackle the question of whether social spending matters for socioeconomic outcomes. Our data cover 191 countries during 1990–2017. Data sources are described in detail in Annex 2. Socioeconomic outcomes enter the regressions as dependent variables.

We estimate the following equation:

$$Outcome_{it} = \alpha + B_1(S_{Spending})_{it-1} + B_2(Z)_{it} + \mu_r + \mu_t + \varepsilon_{i,t}$$

Outcome refers to a set of socioeconomic outcomes. We estimate five different models using health-related outcomes (child mortality rate, life expectancy

at birth), education-related outcomes (secondary school enrolment rate, expected years of schooling) and overall welfare outcome (Human Development Index) as dependent variables. We also consider specifications with poverty rates and inequality-adjusted HDI measures on the left-hand side.[1] The term *S_Spending* denotes social spending as a percentage of GDP (or in PPP dollars per capita terms) in the previous year.[2] Z refers to a vector of control variables; μ_r and μ_t denote unobserved region-specific effects and time effects, respectively; and $\varepsilon_{i,t}$ represents the disturbance term.

We rely on standard controls used in the literature. To control for the structure of the economy, we use standard variables from the literature. Inflation is used to proxy macroeconomic stability, the sum of exports and imports to GDP to proxy trade openness, and the share of domestic credit to GDP is used to control for the level of financial development. To control for institutional quality, we include indices of government effectiveness and control of corruption from International Country Risk Guide (ICRG) and World Bank's World Governance Indicators (WGI). Prior literature provides evidence of a strong correlation between health outcomes and access to safe drinking water and sanitation facilities (Rajkumar and Swaroop 2008), the degree of urbanization (Schultz 1993), and fertility rates (Mishra and Newhouse 2009). We add these as controls in the health-outcome regressions. We also control for external and domestic conflict.

Simple estimation methods suggest that there is a positive and statistically significant relationship between social spending and socioeconomic outcomes (Figure 15). We start with pooled OLS estimates with regional dummies and then add country fixed effects. Regressions are conducted on a global sample. The results suggest that there is a positive and statistically significant (at the 1 percent level) relationship between social spending and the HDI, IHDI, and poverty reduction (Annex 3). The results also suggest that public spending on education is associated with higher secondary-school enrollment and expected years of schooling, while higher public health expenditure is associated with greater life expectancy and lower infant mortality. In all these specifications we use lagged social spending to control for endogeneity.[3] The results do not change regardless of whether we use social spending in percent of GDP or in PPP dollars per capita terms, or whether the analysis is conducted on annual data or on three-year or four-year averages. Detailed regression results, including various specifications, are presented in Annex 3.

[1]Gini coefficient data for the region are patchy, so we instead look at the inequality-adjusted HDI (see above).

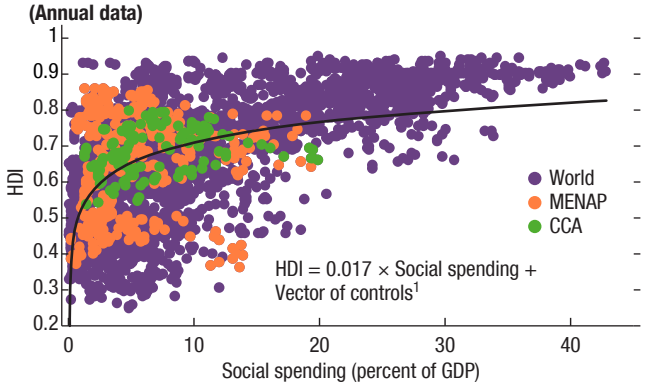
[2]Public education spending is used in case the dependant variable is an education-related outcome, whereas public health spending is used if the outcome is health related.

[3]The results are robust to using three- and four-year lags of social spending.

Figure 15. Public Social Spending and Socioeconomic Outcomes

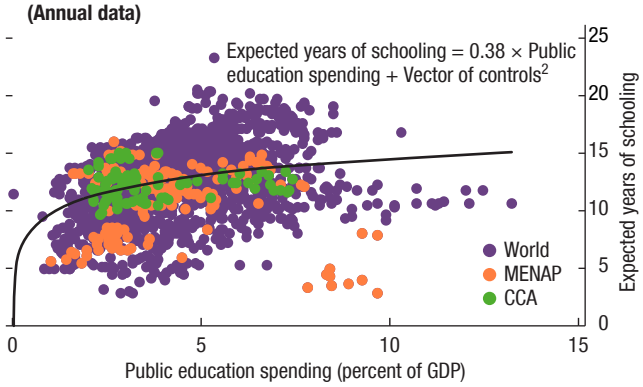
(1990–2017)

1. Social Spending and HDI
(Annual data)



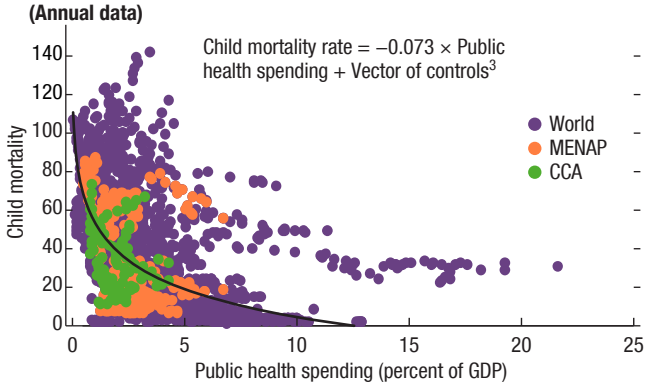
[1]Fixed effects regression. Controls include inflation, trade to GDP, credit to GDP, urbanization, GDP per capita, and government effectiveness index.

2. Public Education Spending and Expected Years of Schooling
(Annual data)



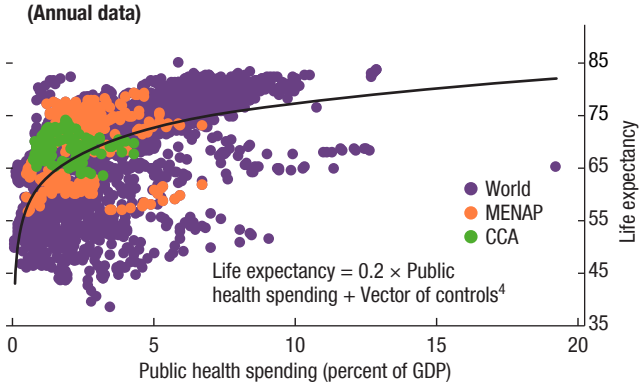
[2]Fixed effects regression. Controls include inflation, government effectiveness index, credit to GDP, GDP per capita, access to safe water, fertility rate, and urbanization.

3. Public Health Spending and Child Mortality
(Annual data)



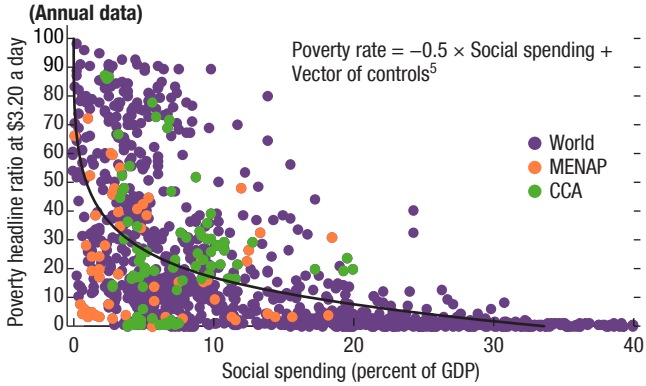
[3]Fixed effects regression. Controls include private health spending, inflation, government effectiveness index, credit to GDP, GDP per capita, and access to safe water.

4. Public Health Spending and Life Expectancy
(Annual data)



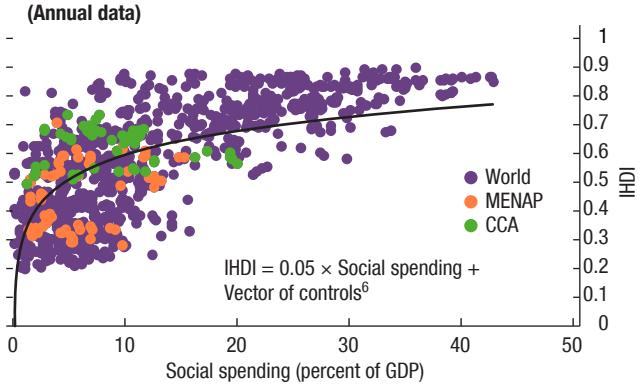
[4]Fixed effects regression. Controls include inflation, government effectiveness index, credit to GDP, GDP per capita, access to safe water, fertility rate and urbanization.

5. Social Spending and Poverty Rate
(Annual data)



[5]Fixed effects regression. Controls include public health spending, public education spending, inflation, government effectiveness index, urbanization, credit to GDP, and trade.

6. Social Spending and IHDI
(Annual data)



[6]Fixed effects regression. Controls include inflation, urbanization, government effectiveness index, credit to GDP, conflict, trade, and corruption.

Sources: United Nations Development Programme; World Development Indicators; World Bank ASPIRE Database; World Health Organization; and IMF staff calculations and estimates.

Addressing endogeneity is a key challenge.[4] Some countries may choose to spend more on social objectives precisely because their outcomes are poor, and if this reverse causality is not accounted for, the estimates can be biased. Although our OLS and fixed effect regressions always relate current outcomes to spending of the year before, this lag structure alone may not be sufficient to eliminate endogeneity.

We use instrumental variable (2SLS) estimation and the generalized method of moments for a system of equations (SGMM) to control for endogeneity. In our 2SLS estimation, we employ a range of instruments—variables correlated with spending but credibly unaffected by outcomes—to correct for endogeneity. These are standard instrumental variables (IVs) used in the literature. Easterly and Rebelo (1993) used log of population as an IV, arguing that smaller countries suffer from diseconomies of scale and have to spend more. The share of agriculture in GDP was used by Tanzi (1992) since agrarian societies have a weaker revenue base and tend to have lower spending. Von Hagen (2005) argued that ethnic tensions may result in suboptimal allocation of public spending by compounding a "common pool" problem. Recent papers by Haile and Nino-Zarazua (2018); Gisselquist, Leiderer, and Nino-Zarazua (2016); and Dreher, Nunnenkamp, and Thiele (2008) used the same set of instruments.[5] The SGMM specification also allows us to control for the persistency of the dependent variable (HDI) and to demonstrate that the results are robust and the relationship between social spending and socioeconomic outcomes is not spurious.

The econometric results suggest that public social spending has an appreciable effect on socioeconomic outcomes (Table 2). Higher public social spending is associated with a higher HDI, even after controlling for income, the degree of urbanization, macroeconomic stability, trade openness, domestic and external conflict,[6] and the level of financial development. This conclusion holds regardless of estimation methods, use of different specifications, and whether the analysis is conducted on annual or three- and four-year averages (Annex Tables 3 and 5).[7] Even the most conservative coefficient from the SGMM estimation points to an economically significant impact on the HDI, as it is scaled from 0 to 1.

[4]Another issue of concern is whether there are threshold effects or nonlinearities—the impact of additional social spending could vary with the size of outcomes gaps or the initial levels of spending (as suggested, in different contexts, by Linnemann and Winkler (2016) and Biolsi (2017)). We do not explore these issues in our estimation.

[5]The first stage of the IV estimation controls for the level of urbanization and trade openness, and the post estimation results seem to suggest that the instrumental variables are relevant and not weak.

[6]This is not used in the 2SLS estimation because one of the instrumental variables is ethnic tensions.

[7]For SGMM estimation we had to limit the number of explanatory variables, to keep the number of instruments (lags) smaller than the number of countries. Number of observations and countries is substantially smaller than in the 2SLS.

Table 2. Regression Results for HDI Outcome
(Annual data for 2SLS, and three-year averages for SGMM)

	2SLS[1]		SGMM[2]	
	% of GDP	Per capita	% of GDP	Per capita
Social Spending (log)	**0.139**	**0.060**	**0.000**	**0.005**
Inflation, Consumer Prices (annual %)	0.000	**0.000**		
Urbanization (Log)	**0.149**	**0.159**	0.000	**−0.005**
Domestic Credit to Private Sector (% of GDP) (Log)	**0.020**	**0.015**	**−0.002**	−0.003
Trade, % GDP (Log)	**−0.029**	**−0.010**		
Control of Corruption	**0.076**	**0.029**	0.001	0.002
Observations	2242	2242	337	337
R-squared	0.711	0.717		
Number of Countries	130	130	88	88

Source: IMF staff estimates.
Note: HDI = Human Development Index; SGMM = Systems Generalized Method of Moments; 2SLS = two-stage least squares.
[1]Instruments are a share of agriculture in GDP and index of ethnic tensions. Bolded coefficients are significant at least at 5 percent level.
[2]Includes lagged dependent variable; public social spending at time *t*.

Public spending on health and education has a significant impact on health and education outcomes (Table 3 and Annex 3). For the health-outcomes regression, besides the standard controls used above, we also use access to safe water as one of the explanatory variables. Since data on private health expenditure are available, we also use it as a regressor. Private health expenditure also matters for reducing child mortality, but it is less statistically significant, and the effect is smaller than for public health spending. While the private sector may be more efficient at delivering services for individual households, public health care spending seems to matter more for improving aggregate welfare indicators—lowering poverty rates, improving life expectancy, and reducing child mortality (Table 3). There are insufficient data on private education spending to include this variable in our regression analysis of determinants of education outcomes. However, the limited data available suggest that private education spending is small relative to public education spending, while the ratio of the two is broadly in line with other country groups, and therefore any bias in our results should also be small (see Annex 1).

We also find that social spending matters for both lowering poverty and boosting the IHDI. Both the aggregate measure of social spending and its health and education subcomponents come out as statistically significant and with the right sign, even after controlling for other macroeconomic and institutional variables and country heterogeneity. The quality of institutions, proxied by an index of government effectiveness, is found to help reduce poverty (Annex 3, Annex Table 6).

We also evaluate the relative importance of social spending components on aggregate socioeconomic indicators. Most of our empirical work considers health and education outcomes separately—public spending on education was one of the explanatory variables for education outcomes, while health spending (private and public) were explanatory variables for health outcomes.

Table 3. Regression Results for Child Mortality Rate Outcome

	FE		2SLS[1]	
	% of GDP	Per capita	% of GDP	Per capita
Public Health Spending (log, $t-1$)	**−0.059**	**−0.059**	**−0.398**	**−0.002**
Private Health Spending (Log, $t-1$)	−0.012	−0.012	−0.033	−0.01
Inflation, Consumer Prices (annual %)	0	0	−0.001	**−0.001**
Government Effectiveness	0.032	0.032	0.003	**−0.092**
Domestic Credit to Private Sector (% of GDP) (Log)	**−0.086**	**−0.086**	**−0.078**	0.053
GDP per Capita (Log) [$t-1$]	**−0.513**	**−0.454**		
Access to Safe Water	**−0.498**	**−0.498**	**−1.3**	**−0.967**
Fertility Rate [$t-1$]	**0.092**	**0.092**	0.029	**0.329**
Urbanization (Log)	**−0.893**	**−0.893**	**−0.816**	−0.008
Observations	2,208	2,208	2,233	2,226
R-squared	0.669	0.669		
Number of Countries	171	171	167	167

Source: IMF staff estimates.

Note: FE = fixed effects; 2SLS = two-stage least squares.

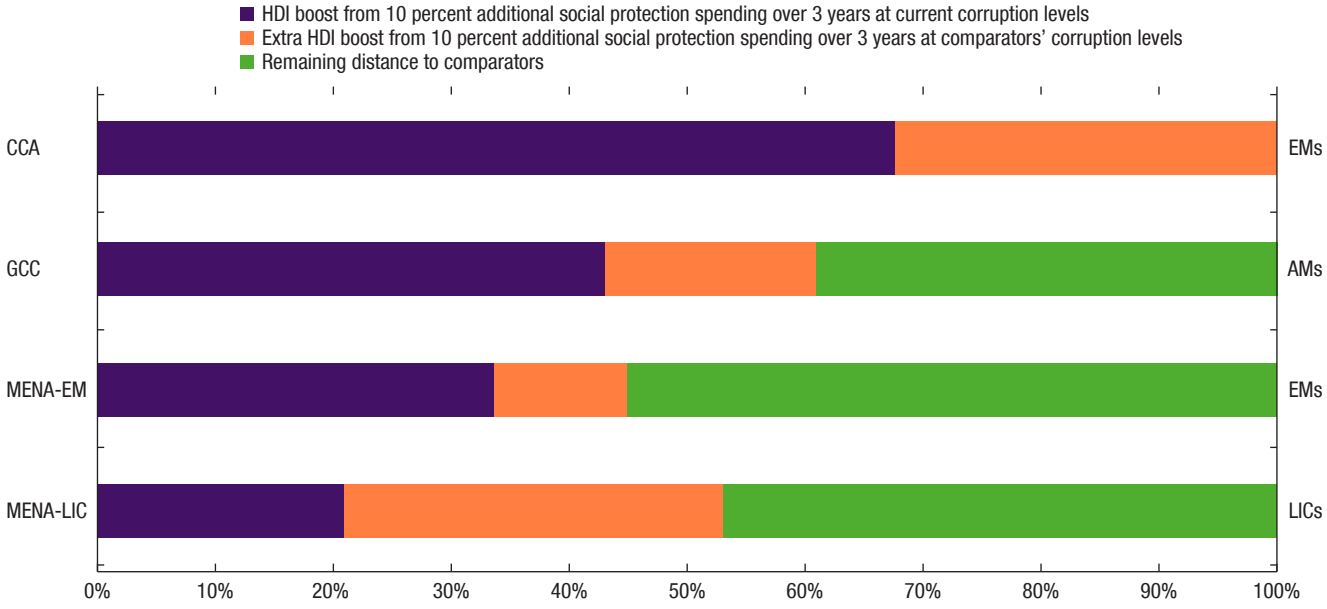
[1]Instruments are a share of agriculture in GDP and log of population growth. For 2SLS regressions public health spending is used at time *t*. Bolded coefficients are significant at least at 5 percent level.

Such analysis cannot reveal which type of social spending (health, education, social protection) is relatively more important. To do that, we looked at aggregate measures of well-being such as the HDI. We find that public spending on social protection has the largest, distinct, and most statistically significant impact on HDI relative to either health or education spending. One possible explanation for this result is that, perhaps, social protection schemes have the most immediate effect on lifting people out of poverty, while health and education spending take more time to bear fruit. When it comes to reducing poverty, spending on education seems to matter more than spending on health care (larger and more statistically significant estimated coefficient) (Annex 3, Annex Table 8).

We find that the quality of institutions matters for translating social spending into socioeconomic outcomes and for reducing poverty rates. For example, using the most conservative estimated coefficient in the SGMM, the results suggest that a 10 percent higher PPP dollars per capita social protection spending (if sustained for 3 years) can close 20–40 percent of the HDI gap between MENAP countries and their comparators and up to 65 percent of the gap between CCA countries and EM peer average (Figure 16). The analysis also reveals that governance matters for the impact of additional social spending on outcomes. For example, if MENAP countries can boost their survey-based governance indicators to those of their peers, the same increase in social protection spending can close 45–60 percent of the gap and completely close the gap for CCA countries and EM average.

These conclusions are supported by case studies of countries from the region. Drawing country-specific policy advice from any econometric model has its limitations, as the exercise was conducted on a global sample, and, as noted

Figure 16. Estimated Boost to HDI from Additional Social Protection Spending and Improved Governance
(2018 or latest available)



Sources: The International Country Risk Guide; United Nations Development Programme; World Development Indicators; and IMF staff calculations and estimates.
Note: HDI = Human Development Index.

in Annex 1, data coverage and quality can differ across countries. As shown in Chapter 6, the quality of social spending matters for translating limited fiscal resources into higher socioeconomic outcomes. To bridge the gap between empirical analysis and country specific developments, Annex 6 outlines the experience of Bahrain, Armenia, and Tunisia. This allows for a more granular analysis and policy recommendations.

- ***Bahrain.*** Bahrain's experience demonstrates how social spending has helped support inclusive growth and human development. Education outcomes, as reflected by net primary and secondary enrollments and literacy rate, put Bahrain at par with AE averages, while life expectancy increased by 4.4 years over the last 25 years to 77 years and infant mortality rate is getting closer to the AE average. In addition to better education and health outcomes, social spending in Bahrain contributed to a significant reduction in income and gender inequality and placed the country among the "Very High Human Development" group. However, social spending in Bahrain would benefit from further improvement in efficiency. For example, lowering the high teacher–student ratio[8] would free resources to equip teaching

[8]Bahrain has 8.22 teachers per 100 students, compared to 5.1 in EMs, 7.6 in the GCC, and 7.8 in AEs.

and non-teaching staff with better educational materials, training, and other forms of professional support. The health sector would also benefit from enhanced competition between public and private hospitals.

- ***Armenia.*** Armenia's social protection programs helped reduce poverty rates by 30 percentage points from 2004 to 2018 and promote greater equality, as the Gini coefficient dropped from 37.5 to 34.4 in 2018. The targeting of social protection works well through a well-designed system of identification and selection of beneficiaries. However, only a small segment of the poor is reached by the program. This suggests that if Armenia had a greater budgetary allocation for social protection, such programs could more effectively help the poor.
- ***Tunisia.*** Likewise, past social spending has helped improve socioeconomic outcomes in Tunisia. Over the past three decades, Tunisia's HDI increased by 30 percent, putting the country in the high human-development category and the upper half of countries globally. By 2018, the expected years of schooling rose beyond 15 years, secondary-school enrollment reached more than 90 percent, and life expectancy climbed to almost 76 years. However, the level and performance of social spending remain a critical issue. Educational programs fail to address the growing skills mismatch with private sector requirements, PISA scores are still weak, and a rising share of the education spending goes to the payroll, leaving very little room for investment in latest technologies, training, and curriculum. In health, regional disparities persist in terms of access, headcount deployment, and management, while spending inefficiencies stem from a high and rigid wage spending, a subsidy system for pharmaceutical products, and not enough emphasis for preventive care. The social security system lacks adequate coverage, and social assistance programs remain fragmented, fail to cover a significant part of the low-income population and informal sector employees, and disproportionately benefit the better-off in the urban areas (Annex 6, Box 2). Policy priorities therefore are (1) more and better-targeted social spending, (2) a financially viable social security system, and (3) institutional and governance reforms to improve spending quality.

CHAPTER

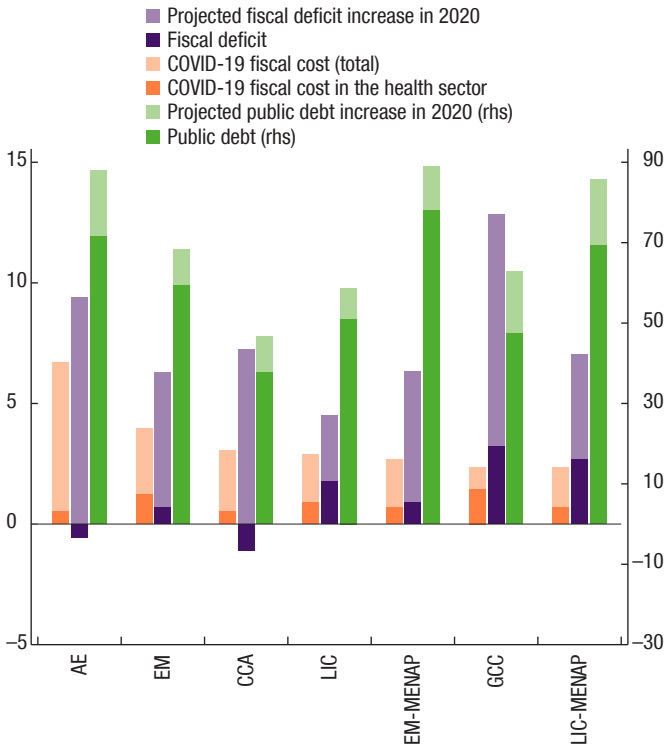
6 Increasing the Efficiency of Social Spending in the Region

Most countries may not be able to permanently sustain higher levels of social spending without efforts to create fiscal space (Figures 17 and 18; Box 1). Public debt in MENAP EMs and LICs was high even before the pandemic and is now projected at close to 90 percent of GDP on average in 2020 (IMF 2020). Hence, sustaining the higher levels of social spending made necessary by the pandemic without further increasing the public debt burden will require efforts at reprioritizing current spending and/or mobilizing additional revenues (IMF 2018). Several governments in the region will also likely need to focus on increasing spending efficiency (Annex 4). Specific recommendations, however, will depend on individual country circumstances (see Annex 6).

In fact, the efficiency of social spending has generally been low in the region. The efficiency of social spending can be measured by a variety of techniques, both parametric and nonparametric. Nonparametric techniques, such as Data Envelopment Analysis (DEA) and Free Disposal Hull (FDH), simply plot countries according to their spending and their outcomes and draw an "upper envelope," or frontier, that gives the best outcome that countries can achieve for any level of spending. Figure 19 shows an example of health and education spending efficiency frontiers using the nonparametric approach. The vertical distance by which countries fall short of this frontier is then taken as a measure of their inefficiency (strictly speaking, "output inefficiency").[1] This is a data-driven exercise, requiring no assumptions. On the other hand, "parametric" approaches—such as Stochastic Frontier Analysis (SFA)—enable a distinction between inefficiency and statistical noise, but require the imposition of a functional form on the input-output relationship. Both parametric and nonparametric approaches have their advantages and disadvantages and

[1]Output inefficiency provides an estimate of how much outputs can be boosted given the current level of social spending.

Figure 17. Fiscal Space and COVID-19 Fiscal Cost, 2019–20
(Percent of GDP)



Sources: IMF, *World Economic Outlook*; IMF, COVID-19 Country Surveys; national authorities; and IMF staff calculations.

have been widely used in the literature.[2] (Annex 5 for a technical discussion of SFA.)

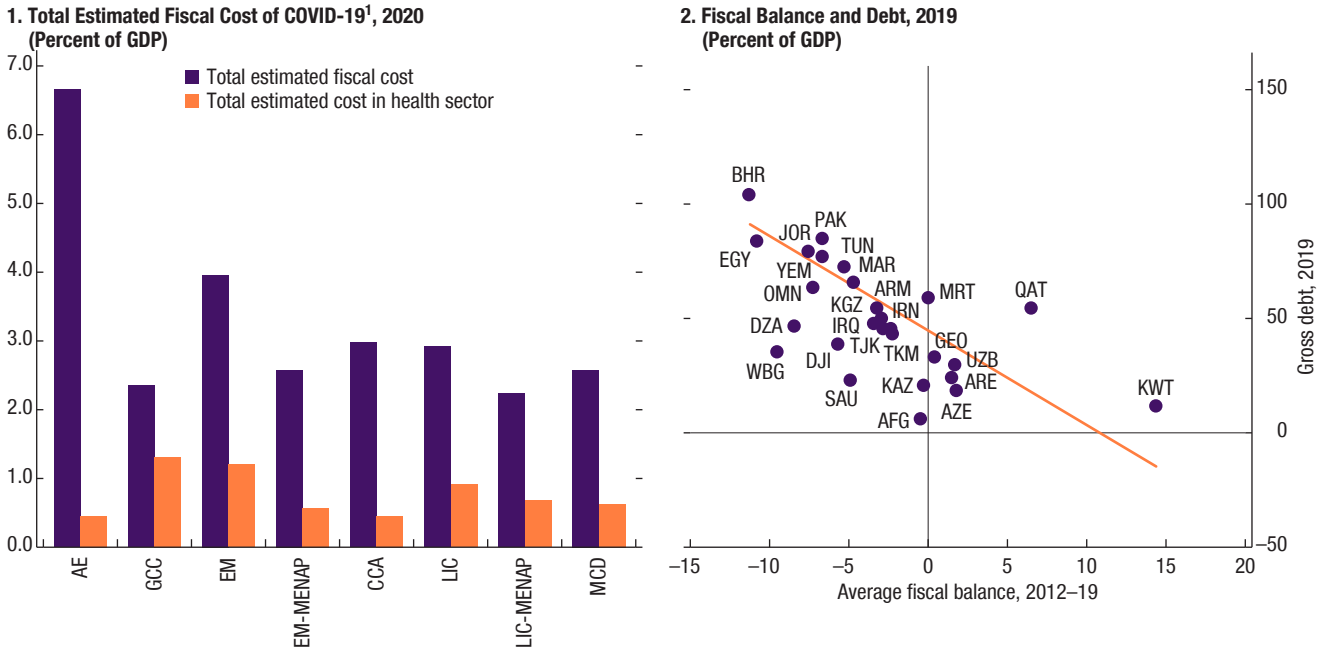
Nonparametric approaches confirm that spending efficiency can be improved in the region. We report FDH estimates of public education and health efficiency scores from the international benchmarking study by Herrera and Ouedraogo (2018). In education spending, MENAP-EMs achieve less "bang for their buck" than their global EM peers; the same can be said for MENAP-LICs relative to the global LIC average and GCC countries relative to AEs (Figure 20). If spending efficiency in Mauritania, for example, were increased to the global frontier, the average years of schooling could double.[3]

The SFA approach also confirms this assessment (Figure 21). Regional LICs on average are somewhat less efficient than their global income peers in both

[2]See Sutherland and others (2007) and Herrera and Ouedraogo (2018) for a detailed overview of both approaches.

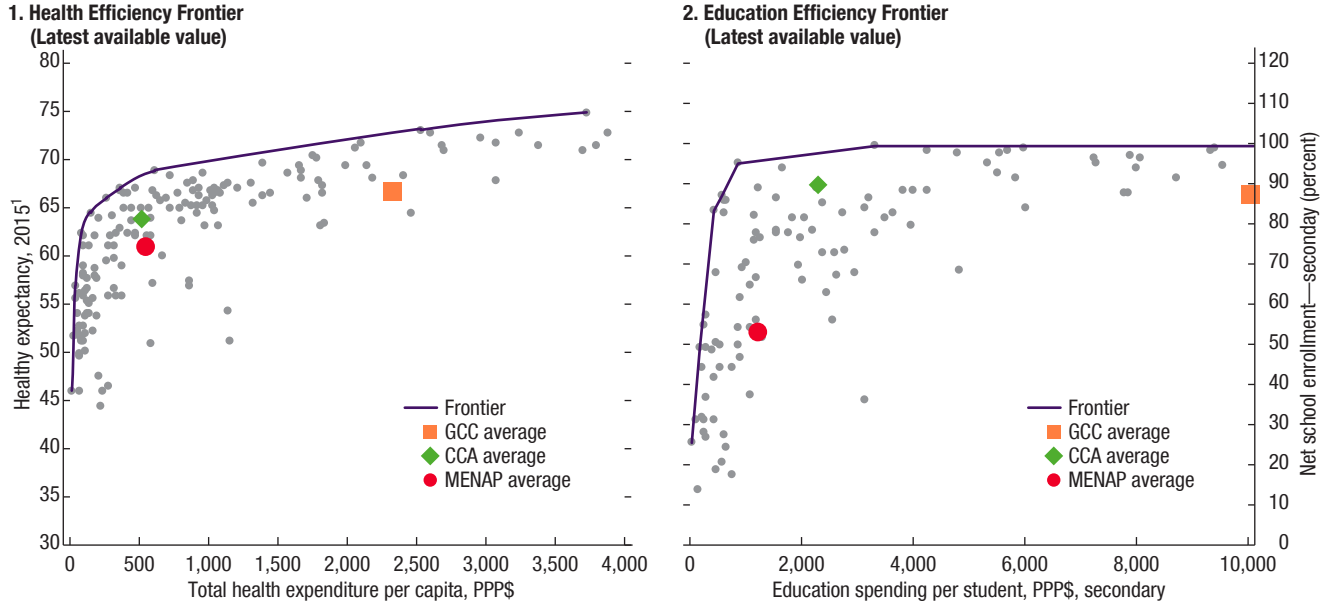
[3]All of these are, of course, general statements, and a finding of overall inefficiency at the country level may mask significant variation in efficiency across spending programs and ministries.

Figure 18. Fiscal Balance, Debt, and Estimated Cost of COVID-19 Response



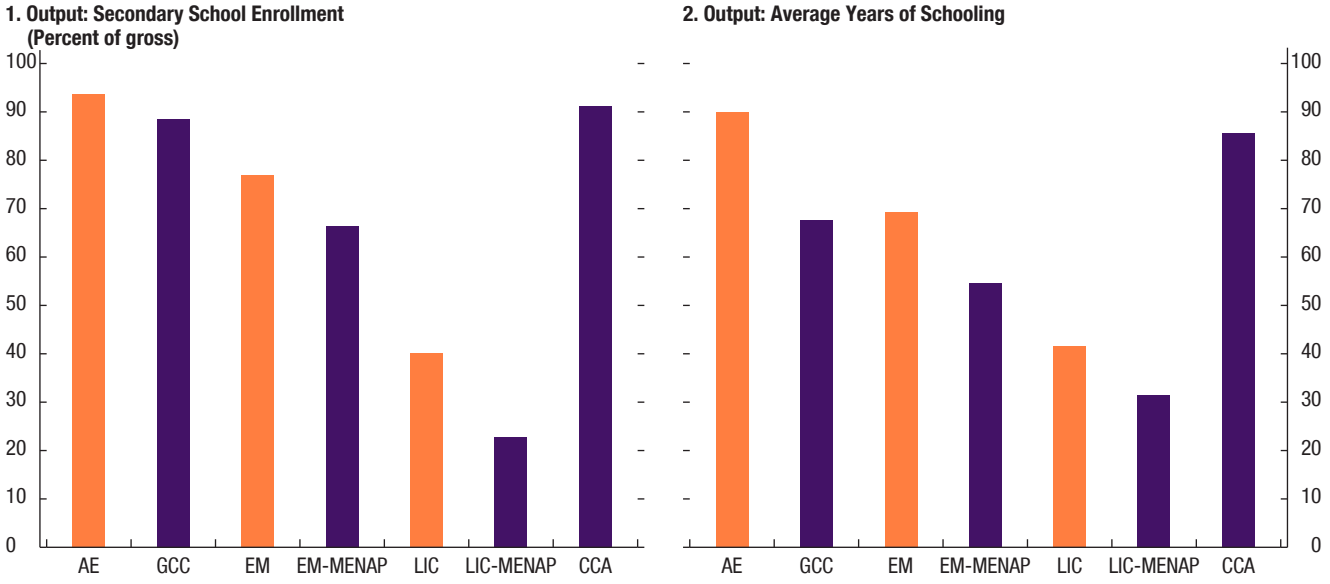
Sources: IMF, COVID-19 Country Surveys; IMF, *World Economic Outlook*; national authorities; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Response to the survey question "please specify above-the-line or on-budget measures in response to COVID-19 directly affecting the government budget balance or financing needs in gross terms: Additional spending or foregone revenue: Total estimated fiscal cost (and of which estimated cost in the health sector)."

Figure 19. Efficiency Frontiers in Nonparametric Approach



Sources: IMF, FAD Expenditure Assessment Tool (EAT); World Bank; and World Health Organization.
[1]Healthy life expectancy (HALE) is a measure of health expectancy that applies disability weights to health states to compute the equivalent number of years of life expected to be lived in full health.

Figure 20. Output Efficiency Scores from Nonparametric Approach[1]
(2018 or latest value available)



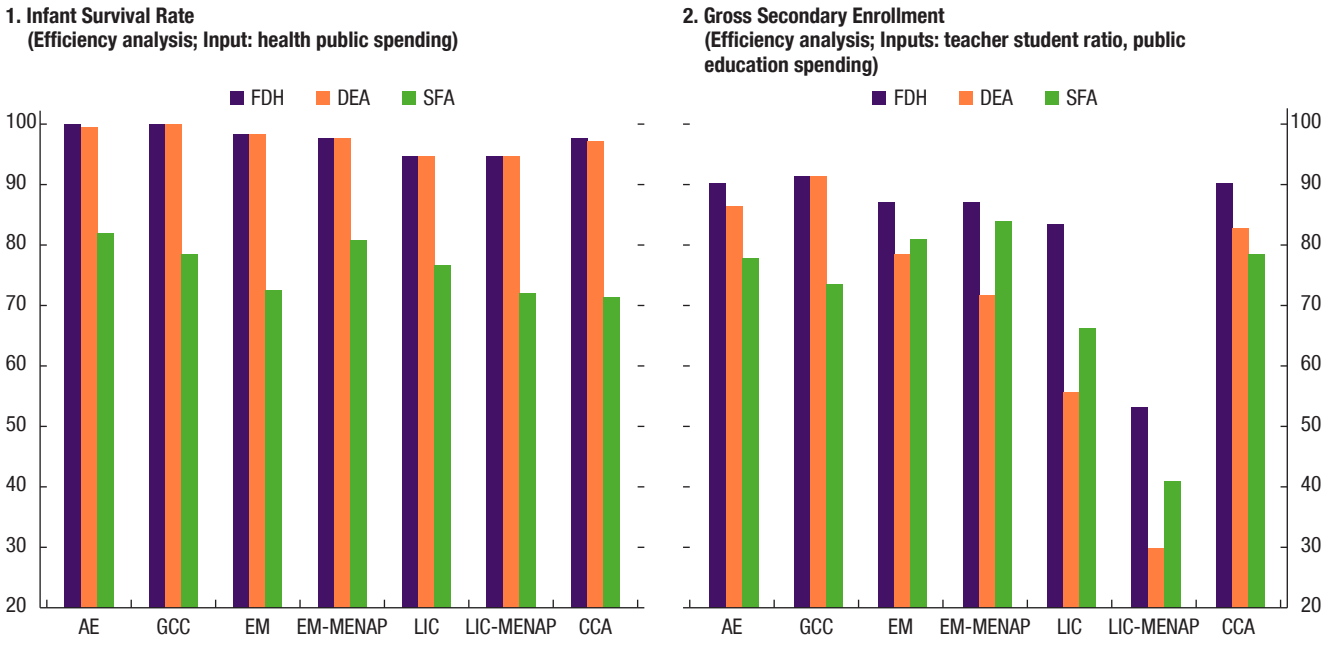
Sources: Herrera and Ouedraogo (2018); and IMF staff calculations.
[1]Efficiency scores range from 0 to 100, where 100 represents the most efficient level.

health and education spending. The GCC economies appear to be somewhat less efficient than global AEs, and CCA countries are less efficient than EM peers. Efficiency in education spending for EMs in the region is broadly in line with global peers but exceeds global peers in health spending efficiency.

Therefore, even without increasing outlays, boosting the efficiency of spending would help significantly improve socioeconomic outcomes (Figure 22).[4] For example, life expectancy at birth could increase by three years in Kuwait if the existing resource envelope was spent at the efficiency level of advanced economies. Under higher social spending efficiency, Afghanistan's HDI could reach the level of the Kyrgyz Republic, and infant mortality in Iraq would drop from 31 per 1,000 live births to 27 per 1,000 live births. If the region could bring its social spending efficiency to the average efficiency level of advanced economies, even without any extra spending, it could close 34 percent of the HDI outcome gap, and 20 and 10 percent of the outcome gaps in secondary school enrollment and life expectancy, respectively. Of course, these are model-driven conclusions, and in reality, achieving such a boost in spending efficiency cannot happen overnight. The next section shows that

[4]Figure 22 refers to a hypothetical socioeconomic outcome that could be achieved under higher efficiency, leaving all other parameters unchanged. For LICs (blue bars) higher efficiency means achieving EM average efficiency. For EMs in the region, higher efficiency means moving to the AE average.

Figure 21. Spending Efficiency—Parametric and Nonparametric Approaches[1]
(2018 or latest value available)



Sources: Herrera and Ouedraogo (2018); and IMF staff calculations.
Note: DEA = data envelopment analysis; FDH = free disposal hull; SFA = stochastic frontier analysis.
[1]Efficiency scores range from 0 to 100, where 100 represents the most efficient level.

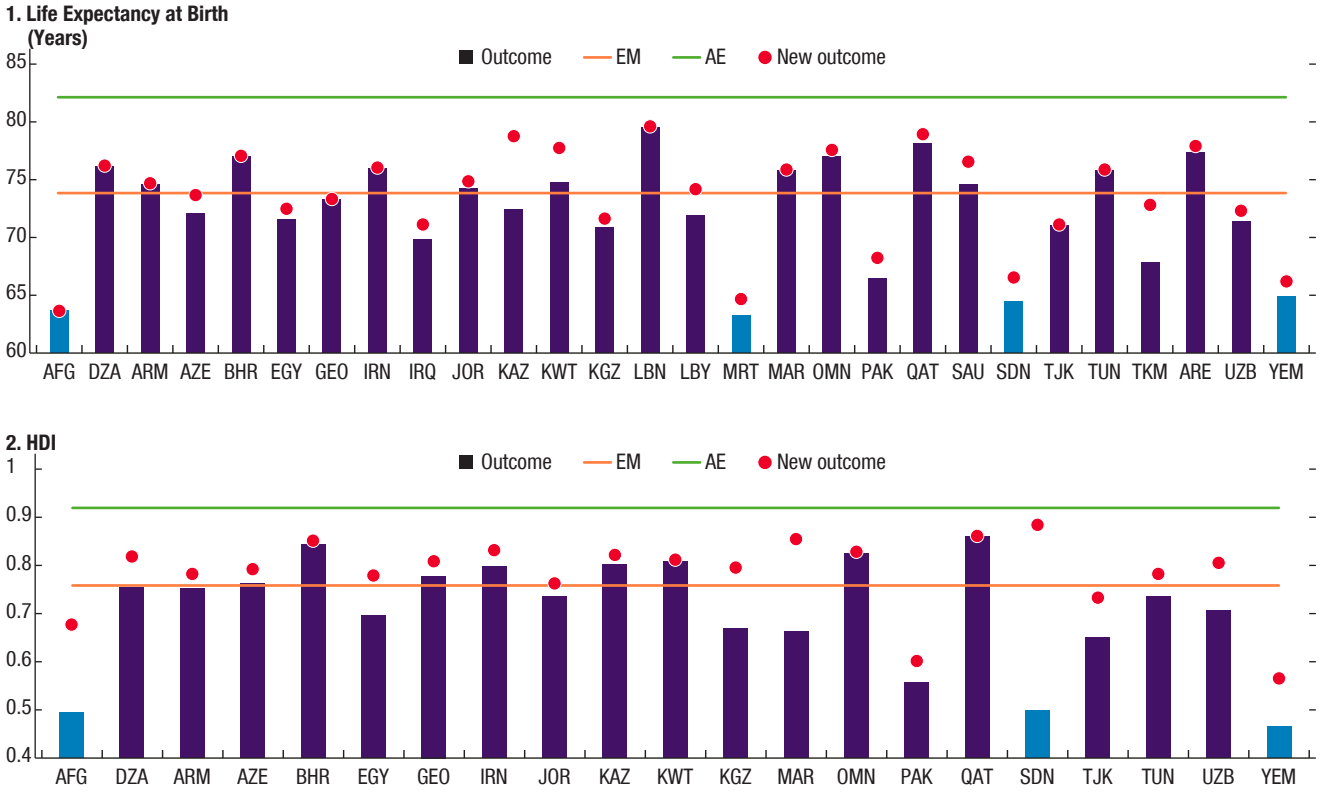
better institutional quality and financial inclusion are associated with higher spending efficiency. Individual country experiences also show that better targeted social protection programs, good coverage of social safety nets, avoiding duplication of programs, and monitoring outcomes can help improve the efficiency of spending. Some countries in the region (for example, Iraq and Saudi Arabia) are making efforts on this front, but further improvement is still needed.[5] Most countries in the region are working on improving financial inclusion.

There is also scope to increase the efficiency of public health care spending in the region (Figure 23). This is especially the case in Kazakhstan, Kuwait, and Pakistan. Health care spending in Azerbaijan is particularly inefficient at attaining a lower infant mortality rate, but is doing a better job at improving life expectancy at birth. Afghanistan is able to achieve better-than-expected

[5]In 2018, the Iraqi government undertook efforts to clean up records of the Public Distribution System by removing duplicate entries and deceased participants. Nevertheless, in 2019 about 38.2 million people participated in the program, equivalent to estimates of the entire population of Iraq. Saudi Arabia recently introduced the Citizen Account Program (a well-targeted social protection tool) and its Etimad program is trying to improve efficiency and inclusiveness of social spending.

Figure 22. Socioeconomic Outcomes under Higher Efficiency

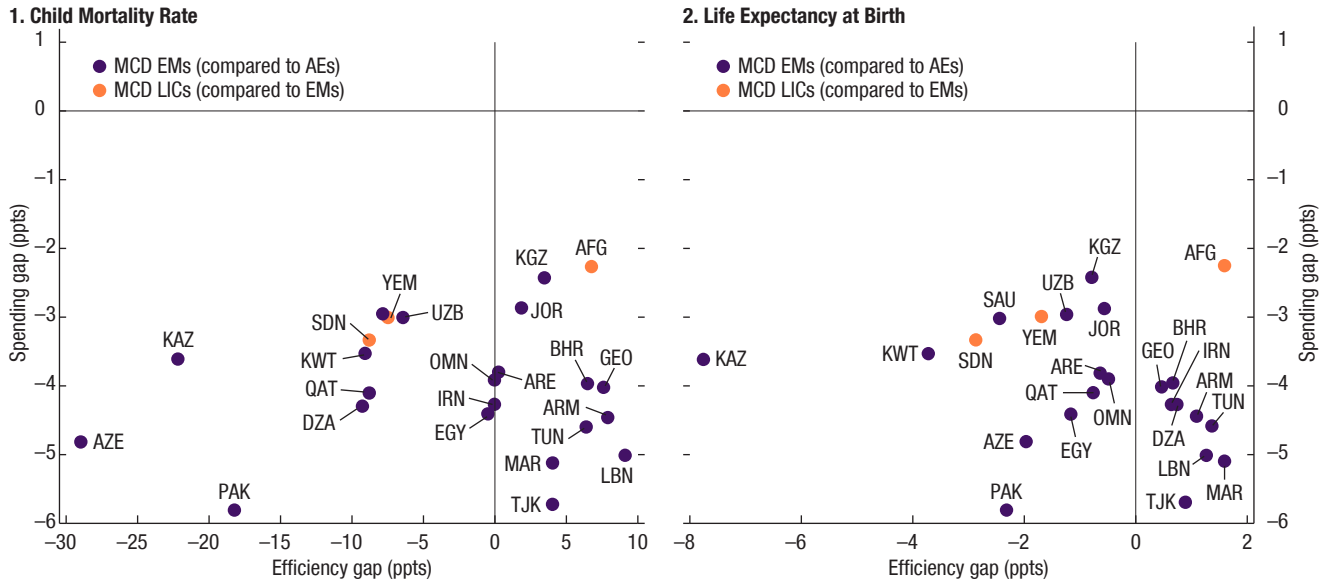
(2018 or latest value available)



Sources: UN Development Programme, World Development Indicators; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. HDI = Human Development Index.

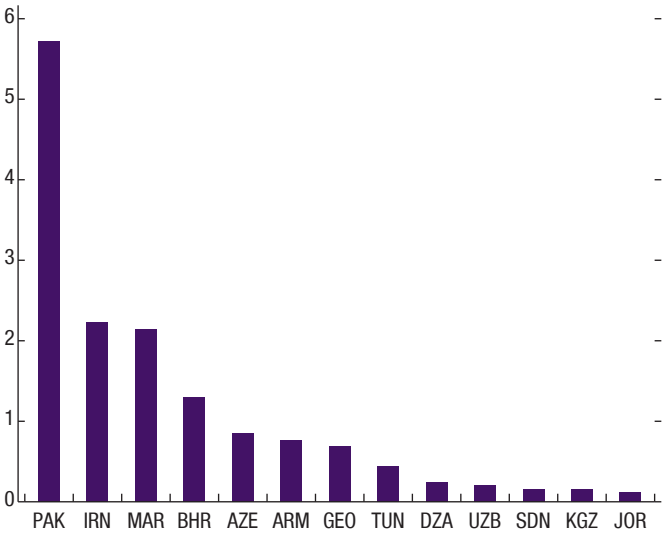
Figure 23. Health Care Spending Adequacy and Efficiency

(2018 or latest value available)



Sources: World Development Indicators; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. ppts = percentage points.

Figure 24. Increase in Life Expectancy if COVID-19 Health Spending Is Incorporated into Permanent Government Expenditure
(Years)



Sources: World Development Indicators; and IMF staff estimates.
Note: Data labels use International Organization for Standardization (ISO) country codes.

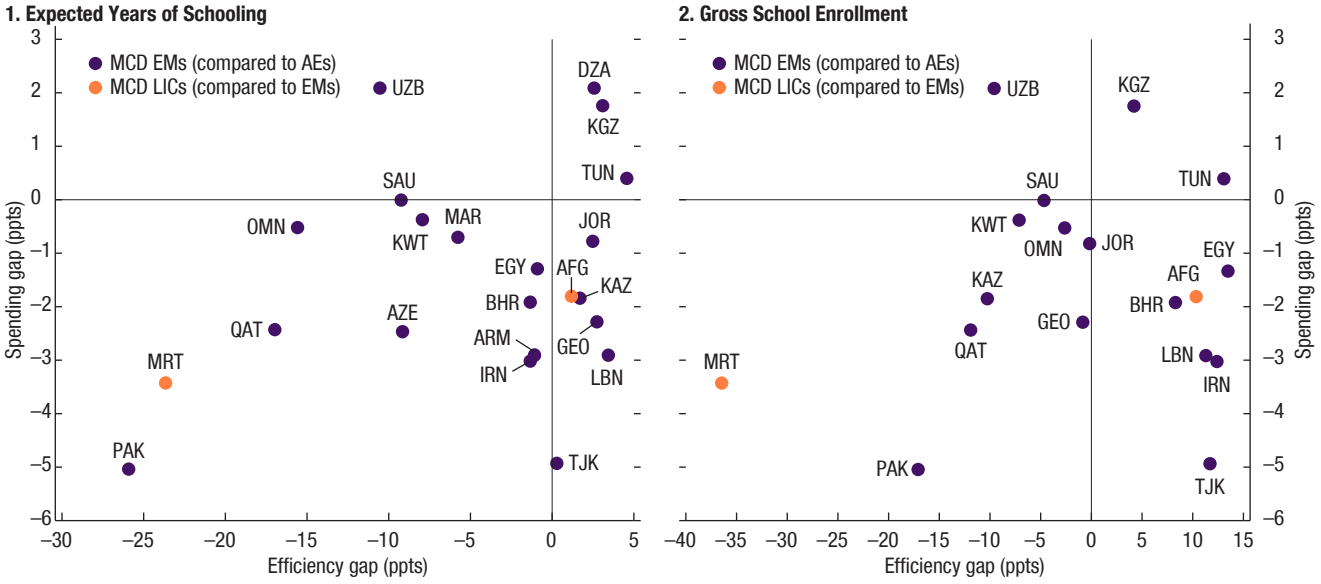
health outcomes for its level of spending. Increased investment in primary health care to enable early diagnosis and prevention of chronic illnesses is a more efficient way to spend fiscal resources, especially when compared to costly subsidies for medical treatment abroad. Investing in the human resources for primary health care will also offer a gender dividend, given that many primary health care workers in the region tend to be female.

In response to the COVID-19 pandemic, many countries have increased public outlays on health care and social protection.[6] Much of this increase is temporary and will be rolled back once the health crisis abates, but an interesting thought experiment is to consider the impact on health indicators if the region sustainably spent at the current levels. Our SFA model suggests that life expectancy would increase substantially in certain countries, with the increases even larger if countries were able to raise their health spending efficiency at the same time (Figure 24). This is not to say that current levels of spending should be sustained—as discussed in Box 1, this depends on the available fiscal space and competing policy priorities—but again, additional spending can have a powerful effect on outcomes.

Although education spending in the Middle East and Central Asia is relatively higher and more efficient than health care spending, there is still scope for efficiency gains (Figure 25). Our estimates suggest that Kuwait, the Kyr-

[6]IMF emergency financing operations have helped to support outlays on health and social protection in a dozen countries in the region.

Figure 25. Education Spending Level and Efficiency
(2018 or latest value available)



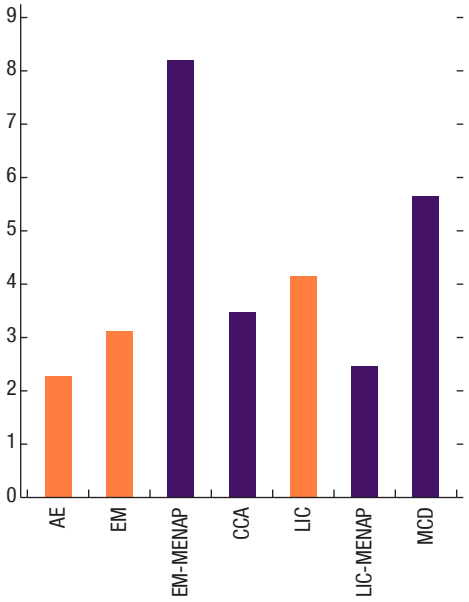
Sources: World Development Indicators; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. ppts = percentage points.

gyz Republic, Saudi Arabia, and Uzbekistan, are spending in line with global peers on education, and should focus primarily on boosting efficiency. Lebanon, Mauritania, Pakistan, and Tajikistan are not spending enough and could see their gross school enrollment and expected years of schooling rise with larger education budgets. In countries that are spending both inefficiently and not enough (Mauritania, Pakistan, Qatar), priority should be given to addressing spending efficiency before increasing its level to maximize impact per dollar spent. As countries that are efficient but are not spending enough increase their level of spending, they may witness a decrease in their efficiency scores due to diminishing marginal returns. Indeed we find evidence of decreasing returns to scale. Therefore, any additional spending needs to be calibrated in a way that preserves efficiency and achieves better outcomes per dollar spent. Promoting high-quality education, starting in the early years and setting the right teaching policies, provides an opportunity for efficiency savings over time. The World Bank Human Capital Project demonstrates the benefit of investing in the early years to improve human capital.

Box 1. The COVID-19 Crisis in the Middle East and Central Asia

The COVID-19 pandemic is still unfolding but appears to be disproportionately impacting the most vulnerable groups and threatening development achievements of recent decades**.** The unprecedented public health emergency and the associated lockdown measures have resulted in job losses and interrupted access to health and education services. According to World Bank estimates, the crisis has pushed 10 million households in the MENA region into poverty, of which 3 million were pushed into extreme poverty (Gerszon and others 2020).

Figure 1.1. Female-to-Male Ratio of Time Devoted to Unpaid Domestic, Volunteer, and Care Work, 2014
(24-hour period)



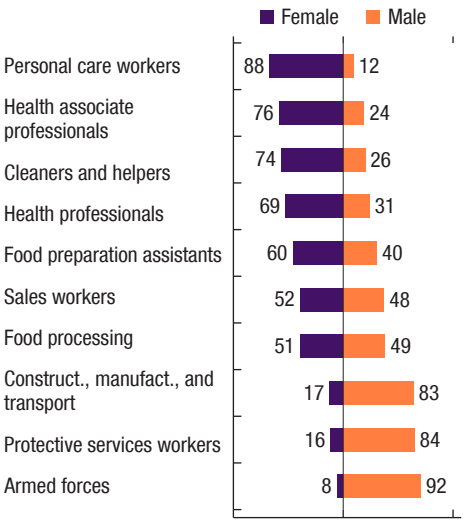
Sources: OECD Gender, Institutions, and Development Database (2014); and IMF staff calculations.
Note: Data for GCC are not available.

The crisis has had a disproportionate impact on women. Job losses were predominately concentrated in the service sector, which tends to employ more women. More women also work in the informal sector, complicating their ability to claim unemployment benefits or access social protection schemes. The disproportionate burden of childcare and eldercare on women even in normal times has been further magnified by the pandemic, as schools closed, and family members got ill. More females are on the front lines of fighting the pandemic as well, as 69 percent of health professionals are female (Figures 1.1 and 1.2; Grown and Sánchez-Páramo 2020).

Governments in the region have announced sizeable increases in health and social protection spending aimed at mitigating the impact of COVID-19. As of June 2020, fiscal measures averaged 2.6 percent of GDP, including 0.6 percent of GDP in the health sector. While country heterogeneity is significant, the size of the fiscal response is generally lower than in global peers, perhaps reflecting limited fiscal space and, in the case of health spending, lower rates of infection due to successful containment measures. However, Iran's additional health spending to combat the crisis, at 2.2 percent of GDP, is among the highest in the world, reflecting the high infection rate. Moreover, some countries in the region have extended social protection to previously uncovered groups during the crisis (ILO 2020), both through social insurance and tax-financed benefits, but additional efforts would be needed to sustain these measures and to transform emergency measures into sustainable elements of the national social protection system.

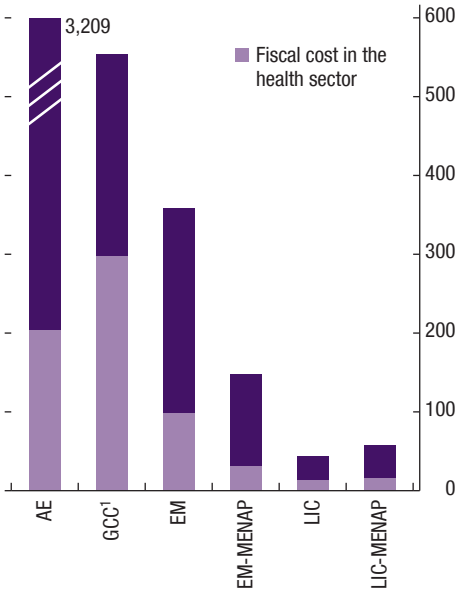
Box 1. The COVID-19 Crisis in the Middle East and Central Asia *(continued)*

Figure 1.2. Female and Male Employment on the Frontlines
(Percent, globe averages, 2018 or latest available)



Sources: International Labour Organization Statistics; and IMF staff calculations.

Figure 1.3. Fiscal Cost of COVID-19, 2020
(US dollars per capita)



Sources: IMF, COVID-19 Country Surveys; national authorities; and IMF staff calculations.
[1]Fiscal cost in the health sector is available only for Bahrain.

To prevent a deterioration in socioeconomic indicators, governments' COVID-19 responses should proactively target vulnerable groups, including women, informal sector workers, and refugees. World Bank simulations of the pandemic suggest that children on average will lose 0.6 years of schooling, adjusted for quality, risking a deterioration in education outcomes and lifelong earnings. Given the uneven impact of the crisis on women, there is a high risk that gender inequality will widen, and progress achieved over the past two decades will be reversed. Encouragingly, Egypt, Mauritania, and Pakistan targeted financial support to vulnerable women through broader social assistance schemes, while Algeria gave priority for exceptional leave to pregnant women and women raising children (Gentilini and others 2020). There has also been insufficient focus on refugees in the pandemic response initiatives in most countries (International Rescue Committee 2020). Refugees in many Middle East and Central Asian countries are not eligible for national social assistance schemes, which often require documentation. While multilateral institutions such as the World Bank, United Nations, and EU have been trying to mobilize funding to fill in some gaps, special provisions for targeted support, both nationally and internationally, are necessary (Figure 1.3).

CHAPTER

7 Drivers of Efficiency: Institutions and Governance

Institutional quality may be behind the region's relatively low spending efficiency (Figure 26). Unpacking the drivers of efficiency is critical to offering practical advice to policymakers. There is a strong correlation between spending efficiency and indicators of institutional quality, such as government effectiveness, the control of corruption, and the rule of law. Stronger transparency and accountability over the use of public resources minimizes wasteful spending and promotes efficiency. This is consistent with findings in the literature as well (Rajkumar and Swaroop 2008; Albino-War and others 2014; IMF 2018).

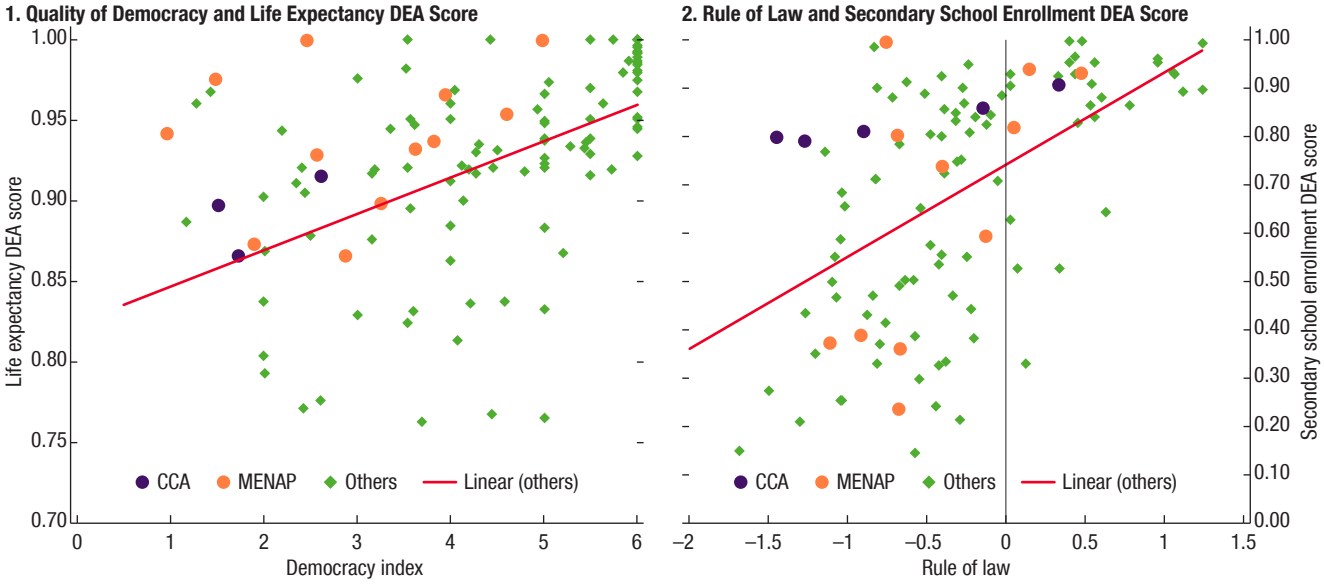
A more formal analysis confirms the finding that improving institutional quality is key to improving spending efficiency (Table 4). Using efficiency scores for public health and public education from non-parametric techniques, we estimate the following equation using the Tobit technique, as the dependent variable is censored (ranges between 0 and 1).

$$E_i = \alpha + B_1(Inst)_i + B_2(Z)_i + \mu_r + \varepsilon_i$$

in which E_i refers to efficiency scores for country i. We estimate five models in which efficiency scores of two health-related outcomes (infant survival rate, life expectancy) and three education related outcomes (expected years of schooling, secondary-school enrollment, quality of math and science index) are used as dependent variables. These efficiency scores come from Herrera and Ouedraogo (2018) and are an average of the 2009–15 time period. The term *Inst* refers to institutional quality, proxied, in different specifications, by a range of World Bank indicators of government effectiveness, the control of corruption, the rule of law, and the strength of democracy.[1] Z refers to

[1]In the interest of parsimony, only the results with the control of corruption are shown in Annex 3.

Figure 26. Efficiency and Institutional Quality
(2018 or latest value available)



Sources: Herrera and Ouedraogo (2018); World Governance Indicators; and IMF staff calculations.
Note: DEA = data envelopment analysis.

Table 4. Drivers of Efficiency
(Output Efficiency Score)

Variables	Infant Survival Rate	Life Expectancy	Expected Years of Schooling	Secondary School Enrollment	Quality of Math and Science
Control of Corruption	**0.004**	**0.028**	−0.021	−0.02	0.025
Domestic Credit to Private Sector as Percent of GDP (Log)	**0.011**	**0.029**	**0.074**	**0.083**	**0.069**
GINI Index	0.000	−0.001	**−0.005**	**−0.006**	**−0.009**
General Government Final Consumption Expenditure (% of GDP)	0.000	**−0.002**	0.001	0.002	−0.001
Population (Log)	**−0.001**	−0.002	−0.012	−0.002	−0.003
Urbanization (Log)	0.005	**0.024**	**0.103**	**0.122**	−0.007
Inflation	**−0.02**	**−0.114**	−0.038	**−0.133**	0.041
HIV/AIDS Prevalence	**0.001**	0	0.004	**0.005**	0
MENAP	**−0.009**	−0.008	**−0.236**	**−0.191**	0.032
Advanced Economies	−0.002	0.008	**0.095**	0.02	−0.001
Low-Income Developing Countries	**−0.008**	−0.018	**−0.181**	**−0.189**	−0.02
Constant	**0.953**	**0.816**	**0.385**	0.2	**0.844**
Observations	124	124	101	89	104
Log likelihood	375.5	204.9	80.92	57.24	73.57
F-statistic	**44.72**	**70.15**	**34.79**	**54.04**	**10.74**

Source: IMF staff estimates.
Note: Bolded coefficients are significant at least the 5 percent level.

a vector of control variables that are averaged at the 2009–15 time period; μ_r denotes regional dummies; and ε represents the error term that follows a normal cumulative distribution function.

The results suggest scope for improving efficiency in the region. The MENAP region in particular is less efficient than the global EM average in its social spending, and this is consistent across many different social outcomes. Efficiency could be improved by strengthening governance, which is discussed at greater length in the upcoming IMF paper on governance in the Middle East and Central Asia (IMF, forthcoming). Spending efficiency is also positively correlated with the level of urbanization, given economies of scale. Addressing infectious diseases in some countries would also boost the productivity of the workforce and improve efficiency. Higher levels of inclusion and financial deepening are also associated with improved spending efficiency. Access to banking services allows households to both save for a rainy day and to borrow in emergencies. This ability to smooth consumption prevents deterioration in socioeconomic outcomes, as households as less likely to withdraw children from school, forego medical care, or cut down on nutritious intake. Financial deepening also helps facilitate delivery of social transfers and reduce opportunities for corruption thereby helping achieve bigger bang for the buck (Annex 3, Annex Table 7).

Standard metrics of either socioeconomic outcomes or efficiency may not fully capture the impact of social spending on the very poor. Aggregate measures of secondary-school enrollment and life expectancy do not reveal whether the improvements are observed across the population or instead disproportionately benefit relatively richer segments of the population. Previous work has shown that many socioeconomic programs in the region do not sufficiently benefit the poor, youth, women, refugees, and the rural population (Purfield and others 2018). Spending tends to be more efficient where it is more equally distributed and focused on achieving universal access.

Case studies allow us to explore in more detail why social spending efficiency is low in the region (see Annex 6). For example, schools and vocational training in Bahrain and Tunisia often do not adequately address the growing skills mismatch between what they teach and what is needed by the private sector. In Tunisia health care systems leave little room for preventive care; the administrative costs are relatively high, while a subsidy system for pharmaceutical products encourages overprescription. Existing programs suffer from fragmentation and insufficient coverage of low-income and informal sector employees, and they disproportionately benefit the better-off in urban areas. Some of these inefficiencies are being addressed in the ongoing social protection reforms.

The COVID-19 crisis has prompted many governments to come up with innovative and efficient solutions in administering social protection. Jordan has used mobile wallets to transmit transfers to recipients. Kazakhstan has allowed customers to open bank accounts via a mobile app, which could then be used to receive government cash transfers and make purchases. Morocco has been able to reach informal workers via SMS message to administer modest cash transfers. These new technologies have helped countries in the region improve the efficiency with which social assistance is delivered to its intended recipients.

CHAPTER

8 Takeaways and Policy Implications

This paper highlights the importance of increasing both the size and efficiency of social spending to achieve more inclusive growth in the Middle East and Central Asia. Although socioeconomic outcomes are determined by a number of factors, we find—using a variety of econometric techniques and a global sample spanning nearly 20 years of data—that public social spending can have an appreciable impact on outcomes. At the same time, we document that countries in the region generally lag their global income peers in socioeconomic outcomes. This reflects many factors, including the high incidence of conflict and fragility in the region, but also lower levels of public spending on health, education, and social protection, as well as a relative inefficiency of spending compared to global peers.

The current crisis has further underscored the importance of social spending and demonstrated the region's ability to quickly mobilize additional outlays on health and social protection. The COVID-19 pandemic has brought to the fore the need for robust health care systems and frameworks for channeling targeted financial support to the vulnerable. Most countries in the region are expected to temporarily boost spending on health and social protection in 2020 to deal with the unfolding pandemic. They have also demonstrated ingenuity at delivering social protection through digital solutions.

Prioritization of social spending will need to continue post-COVID. While some COVID-related spending will likely be scaled back once the crisis abates, the need for adequate social spending more generally remains. Our estimates suggest that increases in social spending would result in sizeable improvements in outcomes. Sustaining—and potentially increasing—education spending is also important to mitigate the impact of the crisis on learning outcomes, especially for children most at risk of being left behind.

Efforts to create fiscal space for social spending should therefore continue. Given the region's gaps with peers in socioeconomic outcomes, there is a

need in many countries to create more fiscal space—including through budget reprioritization and enhanced revenue mobilization—to permit increased allocations for social spending while ensuring fiscal sustainability. Before the current crisis, many countries in the region had already started to take measures to create fiscal space for social spending, including by undertaking fiscal reforms together with strengthening targeted outlays on social safety nets (Armenia, Egypt, Tunisia, Jordan, Pakistan, Oman, Saudi Arabia), mobilizing and diversifying revenues (Bahrain, Saudi Arabia, United Arab Emirates), strengthening tax administration, and rationalizing tax exemptions (Djibouti, Morocco). These efforts will need to continue following the crisis.

Greater efforts are needed to boost social spending efficiency. Given the competing priorities for limited public resources, social spending should be used efficiently and targeted appropriately. This includes both countries that are able to generate fiscal space and countries that face a fixed spending envelope so that each dollar spent has a larger impact on socioeconomic outcomes. Our analysis suggests that efficiency can be raised by strengthening institutions, improving governance, and controlling corruption. Greater spending efficiency could deliver better inclusive growth outcomes even at the same spending levels. Innovative approaches adopted by governments during the COVID-19 crisis in administering social protection benefits should continue to fully capitalize on the benefits that digital solutions can offer in terms of spending efficiency and inclusion. Efforts to promote financial deepening and inclusion would also help strengthen spending efficiency, including by helping households withstand crises, simplifying payment delivery, and reducing opportunities for corruption.

Improving outcomes would also require identifying existing gaps that impede access to social services. This includes gender gaps that hinder access to education and health care and institutional factors that keep vulnerable groups outside the reach of formal social safety nets. It would also call for increased investments in primary health care, as early diagnosis and prevention of chronic illnesses is the least costly and most efficient way to improve health outcomes.

Finally, measurement issues discussed in this paper suggest a need for better data on non-public spending with a social component and socioeconomic outcomes. The traditional definition of social spending used in this paper—necessitated by data availability and allowing for better cross-country comparisons—may understate the amount of social spending individual countries engage in. While measurement issues are unlikely to bias comparisons between countries in the Middle East and Central Asia region and their global peers, more comprehensive data on social spending outside of the public sector and more comprehensive and timely data on socioeconomic outcomes will allow evidence-based approaches for richer and more tailored policy advice.

Annex 1. Defining and Measuring Social Spending

There are different ways to measure social spending. While some elements of public spending on the wage bill and subsidies may have a social component, it is difficult to isolate this component in a manner that accounts for cross-country differences. Similarly, some social spending is carried out not by the government but by households or NGOs and aid agencies.

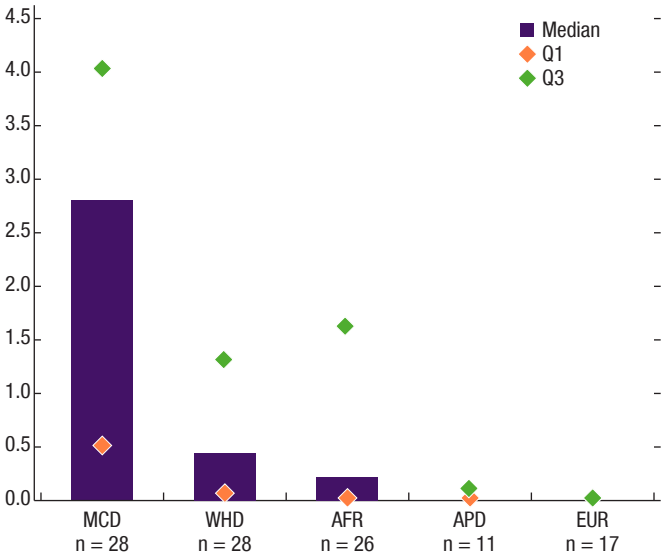
For the purposes of this paper we use a traditional definition of "social spending." In line with IMF (2019b) we define as "social" all public spending on social protection (social insurance and social assistance), education services, and health services (Figure 1). This may understate the amount of social spending individual countries engage in but allows for a better cross-country comparison.

Other forms of government spending or policies may affect outcomes in a way similar to social spending. For example, capital spending on sanitation and clean energy should have an impact on health outcomes, as should regulations concerning workplace safety or food and medicines. Requiring individuals to contribute to private pension schemes can be a partial substitute for a public pension system and therefore reduce poverty amongst the elderly.

This annex addresses the issues outlined above. The efficiency of spending as estimated in this paper is a relative concept: a country's spending is deemed more (less) efficient to the extent that it has better (worse) outcomes than other countries for a given measured spending level.[1] Insofar as there are factors other than measured budgetary social spending which affect the outcomes we consider, our estimates of spending efficiency could be biased. However, the portion of Middle East and Central Asia countries' public

[1]This is in terms of output efficiency. In terms of input efficiency, a country is deemed more (less) efficient to the extent that it spends less (more) than other countries for a given outcome level.

Annex Figure 1. Pre-Tax Energy Subsidies, 2017
(Percent of GDP)

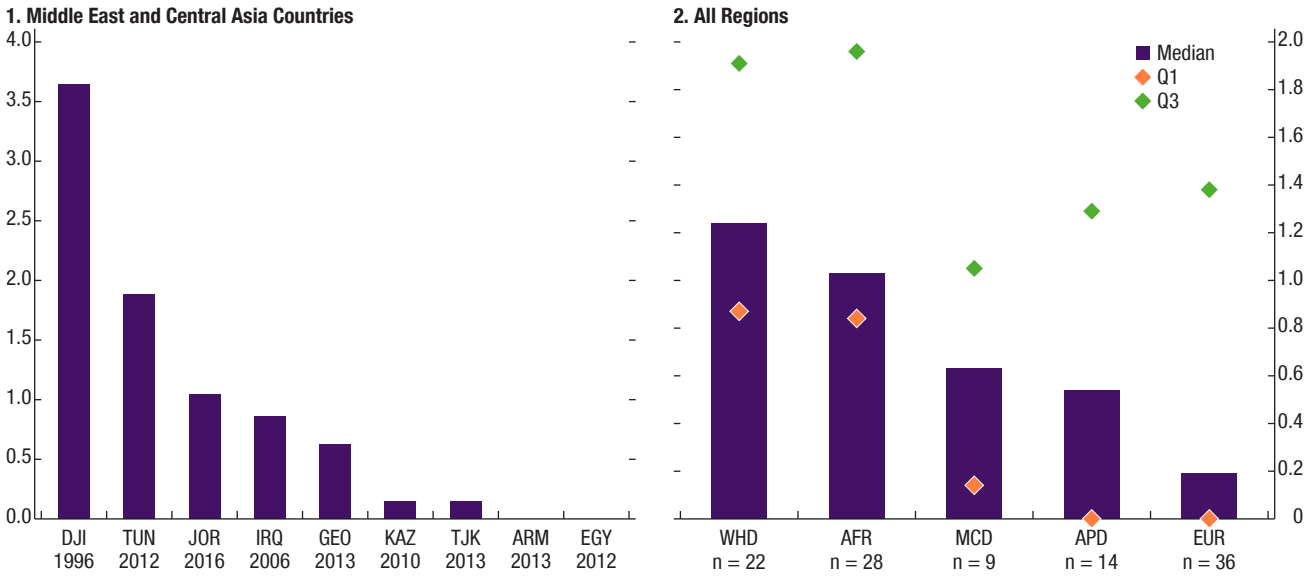


Sources: IMF, FAD Country-level Energy Subsidies by Energy Product and Externality Component; and IMF staff calculations.
Note: Pre-tax energy subsidies are estimated as the amount by which the cost of supplying energy products exceeds the price paid by its users. They do not take into account foregone revenue from unduly low taxation and are not always explicitly included in government budget figures.

and private spending with social aspects not included in budgetary social spending seems broadly to occupy the middle ground compared to other country groups or should matter little due to other considerations. Therefore, the (relative) efficiency we consider should be robust to such issues.

Budgetary spending with social aspects. Higher public employment and/or average compensation of public employees than is justified by the extent of public service provision is a form of social protection benefiting public employees. Subsidies, such as energy subsidies, can also be a form of social protection as they amount to a universal transfer to households, albeit one that tends to be greater for better-off households. There is evidence of excess spending on the public wage bill and considerable spending on energy subsidies in a number of Middle East and Central Asia countries (Annex Figures 1 and 2), however this should have little or no effect on the outcome variables considered in this paper. Such spending is in effect a transfer which mainly benefits relatively well-off households, allowing them, for example, to spend more on (private) education and health care which should have little or no effect on overall education and health outcomes, especially considering that the funds could go to improving public education and health care for a greater number of people. In the case of excess wage bill spending, Middle East and Central Asia countries appear to be in line with other country groups on average.

Annex Figure 2. Excess Wage Bill
(Percent of GDP)



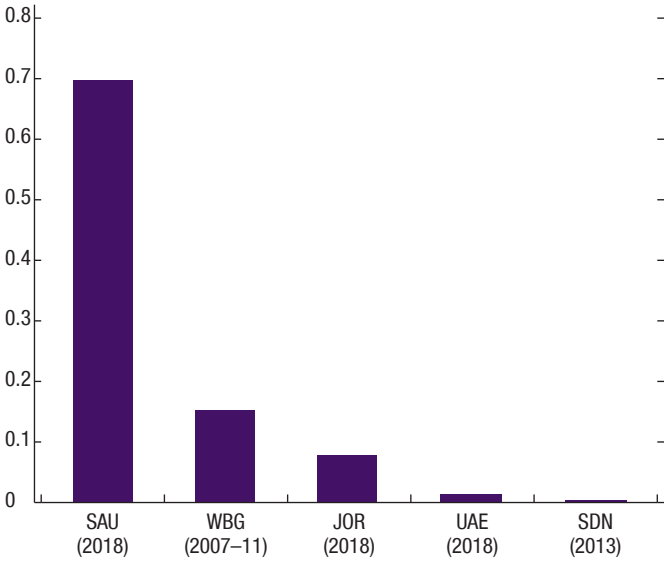
Sources: IMF Public-Private Sector Wage Premium Dataset; IMF Government Compensation and Employment Dataset, 2016; Worldwide Bureaucracy Indicators, World Bank; and IMF staff calculations.
Note: "Excess wage bill" is defined as the amount by which the government wage bill exceeds what it would be if the public wage premium over the private sector were zero. The public wage premium is the amount by which public-sector pay exceeds private-sector pay for comparable levels of education, experience, etc. This concept of the excess wage bill implicitly assumes no public-sector employment surplus or deficit. Negative estimates of the wage premium are set to zero. The excess wage bill (*EWB*) is calculated as $EWB = WB \times WP/(1 + WP)$, where *WB* is the actual wage bill and *WP* is the public-sector wage premium over the private sector (percent of private-sector earnings). Data labels use International Organization for Standardization (ISO) country codes.

Household "social spending." Household spending may have effects similar to that of budgetary social spending (at least for the households with sufficient resources to undertake such spending). This includes charitable spending, such as zakat contributions.[2] However, charitable spending appears either to be small, or to be part of the government's budget and therefore should be captured by budgetary social spending data; for example, zakat contributions in Saudi Arabia are large because it is mandatory and collected like a tax (Annex Figure 3). One estimate is that only a quarter of total zakat contributions are made through formal certified organizations.[3] However, even this suggests that total (formal and informal) contributions remain small relative to other forms of social spending, especially if one assumes that countries with mandatory contributions have much lower informal contribution levels. Private spending on education and health care, which is substantial in many Middle East and Central Asian countries (especially for health care), can also be a partial substitute for government spending in those areas (Annex

[2]Zakat is one of the five pillars of Islam and is considered a religious duty for Muslims to donate a portion of the wealth they have accumulated over the course of a year to those in need, whether through financial or in-kind contributions (Machado, Bilo, and Helmy 2018).

[3]Noor and Pickup (2017).

Annex Figure 3. Zakat Contributions
(Percent of GDP)



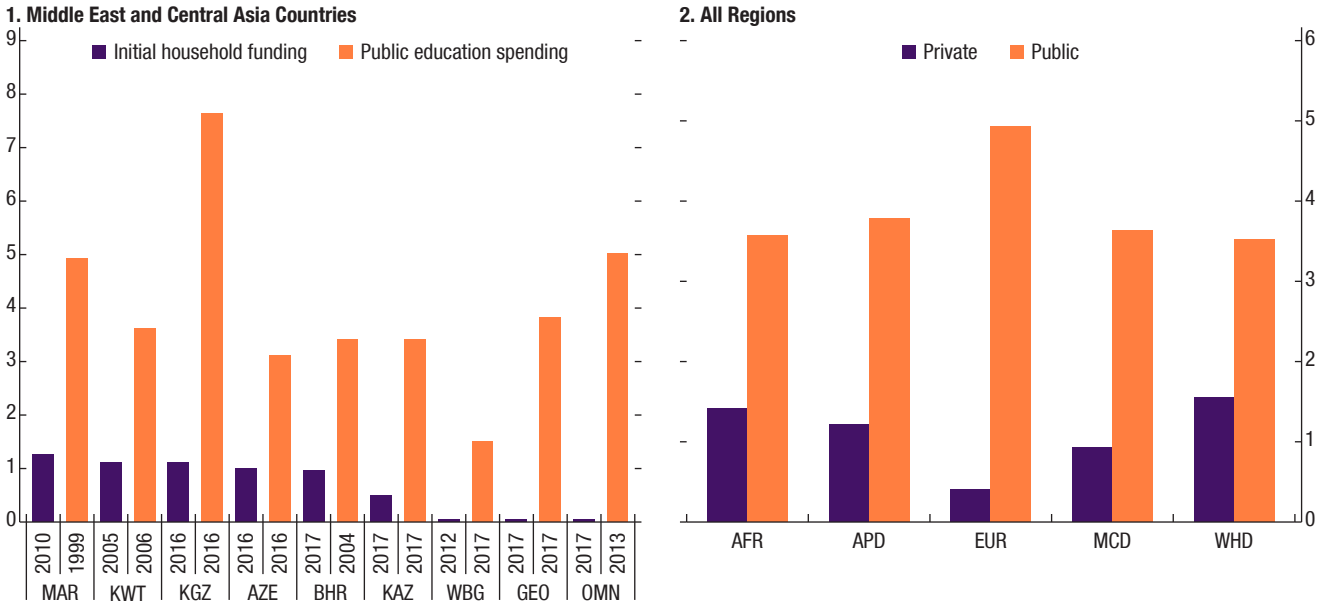
Sources: International Policy Centre for Inclusive Growth Working Paper #168; Jordan National Zakat Fund; Palestinian Zakat Fund; UAE Zakat Fund; Saudi General Authority for Zakat and Tax; and IMF staff calculations.
Note: Data do not capture Zakat contributions through other channels, such as direct person-to-person donations. WBG is the annual average for 2007–11. Data labels use International Organization for Standardization (ISO) country codes.

Figure 4, Figure 6).[4] Our regression analysis therefore controls for private health spending. The scarcity of data on private education spending prevents us from similarly controlling for such spending. However, the limited data available suggest that private education spending is small relative to public education spending, while the ratio of the two is broadly in line with other country groups, and therefore any bias in our results should also be small.

Social spending financed from abroad. Services which fall under "social spending" may be financed and/or directly provided by official donors or international non-governmental organizations (NGOs). On-budget aid for social spending should already be covered by our measures of social spending, while at least some aid (whether on- or off-budget) may be for purposes other than social spending purposes. However, off-budget aid or NGO spending for social programs could bias our results if they affect the outcome variables which we consider but are not reflected in the measures of social spending used in our analysis. Nonetheless, Middle East and Central Asia countries occupy the middle ground in terms of overall net official develop-

[4]However, it cannot be expected that private spending can compensate for low public spending in terms of generating outcomes for the poorest segments of the population.

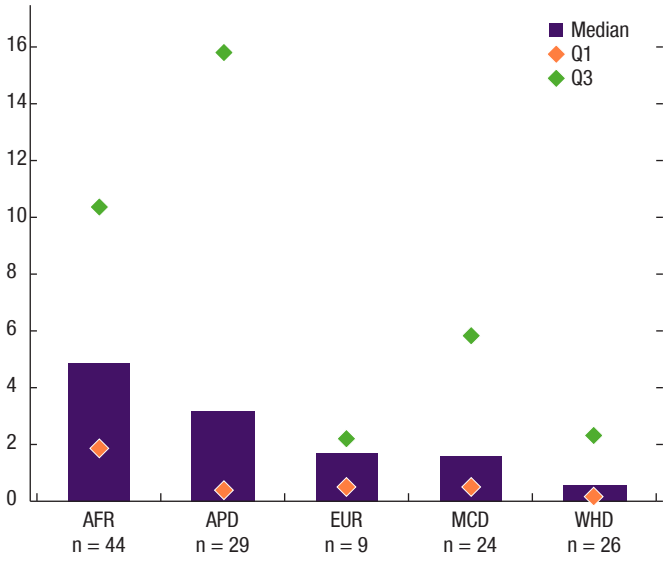
Annex Figure 4. Funding of Education
(Percent of GDP)



Sources: IMF, FAD Expenditure Assessment Tool; UNESCO; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.

ment assistance and official aid received compared to other regions (Annex Figure 5), suggesting that any omitted spending is, on average, similar to that in other regions.

Annex Figure 5. Net Official Development Assistance and Official Aid Received, 2018
(Percent)



Sources: IMF, *World Economic Outlook*; World Bank; and IMF staff calculations.
Note: Very high values in APD are for small island states.

Annex 2. Data Sources and Coverage

Data on government key economic variables were sourced mainly from the IMF World Economic Outlook (WEO) database. The indicators included GDP (nominal, real, and PPP), government expenditure (total, current, capital, and compensation of employees), inflation, trade-to -GDP ratio, compensation of public sector employees. The WEO aggregates for public wage bills and other fiscal indicators were for the general government.

Data on social spending were collected from several other sources. Public health and education spending came from the IMF Fiscal Affairs Department (FAD) Expenditure Assessment Tool. It was supplemented by data from IMF Government Finance Statistics (GFS) and World Bank World Development Indicators (WDI). The data on social spending are sometimes not available for certain time periods and countries as highlighted in Annex Table 1.

Data on socioeconomic indicators were collected from external databases. The World Bank WDI database was used to retrieve indicators of school enrollment and life expectancy at birth. Infant mortality rate, HDI, and expected years of schooling came from UNDP databases. Data on government effectiveness and the control of corruption came from the World Bank World Governance Indicators (WGI) database.

The emerging market and LIC economies country group corresponds to the WEO definition. The full list of countries can be located at the WEO portal on the IMF website: https://www.imf.org/external/pubs/ft/weo/2017/01/weodata/groups.htm.

Country grouping used in the papers are in Annex Table 2. The table provides classification of countries in the region by LIC-MENAP, EM-MENAP, CCA, and GCC, and the ISO code used in the figures and tables.

Annex Table 1. Data Sources and Coverage

Variable Description	Source	Time Dimension	World Coverage	MCD Coverage
Human development Index (HDI)	UNDP	1990–2017	188	30
Life expectancy at birth, total (years)	WDI	1990–2017	191	32
Mortality rate, infant (per 1,000 live births)	UNDP	1990–2017	191	31
Expected years of schooling (years)	UNDP	1990–2017	190	30
School enrollment, primary (Percent gross)	WDI	1990–2017	168	27
School enrollment, secondary (Percent gross)	WDI	1990–2017	149	25
PISA: Mean performance on the mathematics scale	PISA	2000, 2003, 2006, 2009, 2012, 2015	69	8
Public health spending (Percent of GDP)	WDI	2000–16	187	30
Public education spending (Percent of GDP)	WDI	1990–2017	125	20
Public social protection spending (Percent of GDP)	GFS	1990–2017	88	13
Compensation of Employee (Percent of GDP)	EAT-FAD	2000–17	175	29

Source: IMF staff.
Note: Coverage refers to the maximum number of countries in the data in a given year between 1990–2017.

Annex Table 2. MCD Countries Classification

Country	ISO code	Classification
Afghanistan	AFG	LIC-MENAP
Djibouti	DJI	LIC-MENAP
Mauritania	MRT	LIC-MENAP
Somalia	SOM	LIC-MENAP
Sudan	SDN	LIC-MENAP
West Bank and Gaza	WBG	LIC-MENAP
Yemen	YEM	LIC-MENAP
Algeria	DZA	EM-MENAP
Egypt	EGY	EM-MENAP
Iran	IRN	EM-MENAP
Iraq	IRQ	EM-MENAP
Jordan	JOR	EM-MENAP
Lebanon	LBN	EM-MENAP
Libya	LBY	EM-MENAP
Morocco	MAR	EM-MENAP
Pakistan	PAK	EM-MENAP
Syria	SYR	EM-MENAP
Tunisia	TUN	EM-MENAP
Armenia	ARM	CCA
Azerbaijan	AZE	CCA
Georgia	GEO	CCA
Kazakhstan	KAZ	CCA
Kyrgyz Republic	KGZ	CCA
Tajikistan	TJK	CCA
Turkmenistan	TKM	CCA
Uzbekistan	UZB	CCA
Bahrain	BHR	GCC
Kuwait	KWT	GCC
Oman	OMN	GCC
Qatar	QAT	GCC
Saudi Arabia	SAU	GCC
United Arab Emirates	ARE	GCC

Source: IMF staff.

Annex 3. Detailed Regression Results

Annex Table 3. Regression Results for Human Development Index

	Human Development Index (HDI)			
	Pooled OLS	**FE**	**2SLS[1]**	**SGMM[2]**
Public Social Spending (Log) [*t*–1]	0.021***	0.015***	0.022**	0.003*
	(0.005)	(0.006)	(0.010)	(0.010)
Inflation, consumer prices (Annual percent)	−0.001***	−0.001***	−0.001***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
GDP per Capita (Log) [*t*–1]	0.069***	0.130***	0.122***	0.014*
	(0.003)	(0.010)	(0.006)	(0.007)
Urbanization (Log)	0.019***	0.164***	0.186***	0.138
	(0.006)	(0.032)	(0.012)	(0.000)
Domestic credit to private sector (Percent of GDP) (Log)	0.003	0.001	0.001	−0.001
	(0.003)	(0.003)	(0.001)	(0.002)
Government Effectiveness (Log)	0.028**	−0.010**	−0.001	0.001
	(0.002)	(0.000)	(0.000)	(0.005)
Trade, percent GDP (Log)	−0.001*	0.001**	0.017***	0.001
	(0.000)	(0.009)	(0.003)	(0.001)
Observations	1,260	1,160	1260	1247
R-squared	0.955	0.803	0.779	
Number of Countries	119	119	90	117

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 2SLS = two-stage least squares; FE = fixed effects; OLS = ordinary least squares; SGMM = systems generalized method of moments.

[1]Instruments are share of agriculture in GDP and ethnic tensions index.

[2]Includes lagged dependent variables, public social spending at time *t*, year dummies.

Annex Table 4. Regression Results for Child Mortality Rate

	Child Mortality Rate (Log)			
	Pooled OLS	FE	2SLS[1]	SGMM[2]
Public Health Spending as percent of GDP (Log) [*t*–1]	−0.1888***	−0.073***	−0.386***	0.009
	(0.018)	(0.022)	(0.104)	(0.011)
Inflation, consumer prices (Annual percent)	−0.001	0.001	−0.000	0.000
	(0.001)	(0.000)	(0.000)	(0.000)
Government Effectiveness (Log)	−0.253***	0.042	−0.010**	0.013
	(0.017)	(0.037)	(0.085)	(0.003)
Domestic credit to private sector (Percent of GDP) (Log)	−0.027**	−0.087***	−0.076***	−0.014
	(0.017)	(0.017)	(0.010)	(0.011)
Private Health Expenditure as percent of GDP (log)	0.047***	0.055	−0.134**	0.003
	(0.017)	(0.035)	(0.053)	(0.003)
GDP per Capita (Log) [*t*–1]	−0.222***	−0.530***	−0.457***	−0.035*
	(0.015)	(0.068)	(0.035)	(0.018)
Access to safe water (Log)	−0.132*	−0.524***	−0.820***	−0.058
	(0.068)	(0.177)	(0.129)	(0.147)
Observations	2,262	2,262	2,156	2,237
R-squared	0.917	0.682	0.587	0.666
Number of Countries	171	171	169	172

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 2SLS = two-stage least squares; FE = fixed effects; OLS = ordinary least squares; SGMM = systems generalized method of moments.

[1]Instruments are share of agriculture in GDP and ethnic tensions index.

[2]Includes lagged dependent variables, public social spending at time *t*, GNI per capita; and year dummies.

Annex Table 5. Regression Results for HDI
(SGMM conducted on three-year averages)

Variables	(1) HDI	(2) HDI	(3) HDI	(4) HDI	(5) HDI	(6) HDI	(7) HDI	(8) HDI
HDI ($t-1$)	0.923***	0.936***	0.938***	0.937***	0.967***	0.969***	0.979***	0.969***
	(0.0173)	(0.0196)	(0.0367)	(0.0311)	(0.0275)	(0.0264)	(0.0193)	(0.0188)
Social protection spending (PPP $ / capita, log, $t-1$)	−0.000539							
	(0.00131)							
Social protection spending (percent of GDP, log, $t-1$)		−0.000244						
		(0.00196)						
Total social spending (PPP $ / capita, log, $t-1$)			0.00525	0.00491*				
			(0.00565)	(0.00277)				
Total social spending (percent of GDP, log, $t-1$)					0.00569	0.00373		
					(0.00967)	(0.00410)		
Total social spending (percent of GDP, $t-1$)							−0.000224	0.000244*
							(0.000419)	(0.000147)
Corruption ($t-1$; higher value = lower corruption)	−0.00633*	0.000185	0.00396	0.00225	0.00424	0.00198	−0.00246	0.00123
	(0.00372)	(0.00242)	(0.0121)	(0.00172)	(0.00932)	(0.00163)	(0.00333)	(0.00173)
Social spending variable x corruption	0.00114***	0.00125**	−0.000198		−0.000734		0.000144	
	(0.000415)	(0.000582)	(0.00132)		(0.00293)		(0.000127)	
Urbanization (log)	0.00260	0.000662	−0.00482	−0.00497*	−0.00194	−0.00238	−0.000328	0.000131
	(0.00437)	(0.00349)	(0.00319)	(0.00299)	(0.00344)	(0.00368)	(0.00388)	(0.00367)
Credit (% of GDP, log)	0.000771	0.00100	−0.00270	−0.00267	−0.00258*	−0.00256	−0.00277*	−0.00239*
	(0.00140)	(0.00133)	(0.00184)	(0.00184)	(0.00156)	(0.00158)	(0.00145)	(0.00129)
Constant	0	0	0	0	0	0	0.0450***	0.0389***
	(0)	(0)	(0)	(0)	(0)	(0)	(0.0133)	(0.0121)
Observations	545	545	337	337	337	337	337	337
Number of countries	108	108	88	88	88	88	88	88

Sources: IMF staff estimates.
Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. HDI = Human Development Index; PPP = purchasing power parity; SGMM = systems generalized method of moments.

Annex Table 6. Drivers of Efficiency

	Output Efficiency Score				
Variables	(1) Infant Survival Rate	(2) Life Expectancy	(3) Expected Years of Schooling	(4) Secondary School Enrollment	(5) Quality of Math and Science
Control of Corruption	0.008***	0.041***	0.002	0.005	0.047*
	(0.002)	(0.007)	(0.021)	(0.022)	(0.024)
GINI Index	−0.000	−0.001	−0.005**	−0.007***	−0.009***
	(0.000)	(0.001)	(0.002)	(0.002)	(0.002)
General government final consumption expenditure (Percent of GDP)	0.000	−0.002**	0.003	0.003	0.000
	(0.000)	(0.001)	(0.003)	(0.003)	(0.003)
Inflation	0.000	−0.001	0.002	0.003	−0.002
	(0.000)	(0.001)	(0.002)	(0.002)	(0.002)
Population (log)	−0.000	−0.000	−0.007	0.002	0.002
	(0.001)	(0.003)	(0.008)	(0.010)	(0.007)
Urbanization (Log)	0.005	0.025**	0.103***	0.127***	−0.002
	(0.004)	(0.012)	(0.037)	(0.047)	(0.035)
HIV/AIDS Prevalence	−0.026***	−0.132***	−0.081*	−0.178***	0.006
	(0.004)	(0.017)	(0.043)	(0.062)	(0.038)
Arab Regions (Base: EMs)	−0.011**	−0.013	−0.238***	−0.173**	0.049
	(0.005)	(0.018)	(0.058)	(0.077)	(0.092)
Advanced Economies	−0.002	0.007	0.109**	0.044	0.016
	(0.004)	(0.017)	(0.048)	(0.046)	(0.039)
Low Income Developing Countries	−0.011**	−0.026	−0.197***	−0.204***	−0.034
	(0.005)	(0.016)	(0.042)	(0.052)	(0.032)
Constant	0.979***	0.890***	0.556***	0.460*	0.981***
	(0.016)	(0.065)	(0.209)	(0.256)	(0.183)
Observations	125	125	102	89	105

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Annex Table 7. Drivers of Efficiency
(Output Efficiency Scores)

Variables	(1) Infant Survival Rate	(2) Life Expectancy	(3) Expected Years of Schooling	(4) Secondary School Enrollment	(5) Quality of Math and Science
Control of Corruption	0.004**	0.028***	−0.021	−0.020	0.025
	(0.002)	(0.007)	(0.021)	(0.023)	(0.026)
Domestic credit to private sector as percent of GDP (Log)	0.011***	0.029***	0.074***	0.083**	0.069***
	(0.002)	(0.009)	(0.021)	(0.032)	(0.025)
GINI Index	−0.000	−0.001*	−0.005***	−0.006***	−0.009***
	(0.000)	(0.001)	(0.002)	(0.002)	(0.002)
General government final consumption expenditure	−0.000	−0.002**	0.001	0.002	−0.001
(Percent of GDP)	(0.000)	(0.001)	(0.003)	(0.003)	(0.003)
Population (Log)	−0.001*	−0.002	−0.012	−0.002	−0.003
	(0.001)	(0.003)	(0.008)	(0.010)	(0.007)
Urbanization (Log)	0.005	0.024**	0.103***	0.122**	−0.007
	(0.003)	(0.012)	(0.038)	(0.049)	(0.035)
HIV/AIDS Prevalence	−0.020***	−0.114***	−0.038	−0.133**	0.041
	(0.004)	(0.017)	(0.041)	(0.057)	(0.044)
Inflation	0.001***	0.000	0.004	0.005**	−0.000
	(0.000)	(0.001)	(0.002)	(0.002)	(0.002)
Advanced Economies	−0.002	0.008	0.095**	0.020	−0.001
	(0.003)	(0.015)	(0.047)	(0.046)	(0.037)
Low Income Developing Countries	−0.008**	−0.018	−0.181***	−0.189***	−0.020
	(0.004)	(0.014)	(0.040)	(0.045)	(0.033)
MENA	−0.009**	−0.008	−0.236***	−0.191**	0.032
	(0.004)	(0.015)	(0.049)	(0.075)	(0.083)
Constant	0.953***	0.816***	0.385*	0.200	0.844***
	(0.016)	(0.069)	(0.215)	(0.296)	(0.210)
Observations	124	124	101	88	104
F Statistic	44.72***	70.15***	34.79***	45.92***	10.74***
Log Likelihood	375.5	204.9	70.92	60.68	73.57

Source: IMF staff estimates.
Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Annex Table 8. Regression Results for Poverty Rate (FE)

	Poverty Rate (3.2$ a day PPP)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)[1]
Public Health Spending as percent of GDP	−0.414***	−0.358***	−0.259**	−0.187*	−0.200*		
(Log) [*t*–1]	(0.134)	(0.120)	(0.123)	(0.108)	(0.107)		
Public Education Spending as percent of GDP	−0.793***	−0.664***	−0.513**	−0.588***	−0.580***		
(Log) [*t*–1]	(0.229)	(0.232)	(0.215)	(0.186)	(0.189)		
Public Social Spending (Log) [*t*–1]						−0.521**	−2.128***
						(0.229)	(0.332)
Inflation, consumer prices (annual percent)	0.003	0.002	0.000	−0.002	−0.003	−0.003***	−0.006***
	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)
Urbanization (Log)		−3.006***	−2.369***	−2.440***	−2.485***	−2.862***	−1.069*
		(0.528)	(0.626)	(0.525)	(0.526)	(0.640)	(0.551)
Domestic credit to private sector			−0.265**	−0.211*	−0.223**	−0.131	−0.054
(Percent of GDP) (Log)			(0.127)	(0.110)	(0.111)	(0.095)	(0.045)
Government Effectiveness				−0.179	−0.154	−0.311*	−0.557***
				(0.140)	(0.128)	(0.168)	(0.103)
Trade (Percent of GDP)					0.003	0.004*	0.002
					(0.002)	(0.002)	(0.001)
Constant	2.869***	14.950***	13.014***	13.189***	13.172***	14.659***	
	14.950***	(2.000)	(2.256)	(1.923)	(1.950)	(2.511)	
Observations	13.014***	799	769	732	729	616	573
R-squared	13.189***	0.276	0.344	0.362	0.381	0.298	0.001
Number of Countries	130	130	126	122	120	90	68
Number of Instruments*							2
Cragg-Donald Wald F statistic							45.01

Source: IMF staff estimates.
Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. FE = fixed effects.
[1]Instruments are share of agriculture in GDP and ethnic tensions index.

Annex Table 9. Regression Results for IHDI (FE)

	IHDI					
	(1)	(2)	(3)	(4)	(5)	(6)
Social spending (Percent of GDP, log, *t*–1)	−0.005					
	(0.004)					
Inflation, consumer prices (annual percent)	−0.000	−0.000	−0.004	0.001	−0.000	−0.000
	(0.000)	(0.000)	(0.006)	(0.001)	(0.000)	(0.000)
Urbanization (Log)	0.593***	0.591***	−1.886	0.858***	0.405***	0.379***
	(0.065)	(0.068)	(2.978)	(0.327)	(0.080)	(0.075)
Domestic credit to private sector	0.001	−0.005	0.244	−0.028	0.014**	0.016**
(Percent of GDP) (Log)	(0.013)	(0.012)	(0.295)	(0.034)	(0.006)	(0.007)
Government effectiveness (Log)	−0.001	−0.001	0.005	−0.001		
	(0.002)	(0.002)	(0.014)	(0.003)		
Trade, percent GDP (Log)	−0.024	−0.028	0.165	−0.042	−0.028**	−0.023
	(0.018)	(0.018)	(0.231)	(0.030)	(0.013)	(0.016)
External Conflict (E)	0.001	0.001	0.010	−0.003	−0.004	−0.003
	(0.003)	(0.003)	(0.027)	(0.005)	(0.003)	(0.004)
Internal Conflict (D)	−0.003	−0.003	0.015	−0.006	−0.004***	−0.004***
	(0.003)	(0.003)	(0.025)	(0.004)	(0.001)	(0.001)
Social spending (PPP$/capita, log, *t*–1)		0.005				
		(0.005)				
Social spending (Percent of GDP, log)			−0.356		0.003	
			(0.425)		(0.014)	
Social spending (PPP$/capita, log)				0.051		−0.003
				(0.061)		(0.018)
Corruption (*t*–1)					−0.001	−0.004
					(0.006)	(0.007)
SocialspendingXCorruption					0.001	0.001
					(0.001)	(0.001)
Constant	−1.648***	−1.648***				
	(0.335)	(0.342)				
Observations	399	399	382	382	777	777
R-squared	0.395	0.395	−31.623	−0.255	0.408	0.419
Number of Countries	64	64	58	58	110	110

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. FE = fixed effects; IHDI = Inequality-adjusted Human Development Index.

Annex Table 10. Regression Results for Secondary School Enrollment (FE)

	Secondary School Enrollment								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)
Public Education Spending as percent of GDP (Log) [*t*–1]	0.138**	0.145**	0.127**	0.159***	0.119**	0.153***	0.152**	0.136**	0.841**
	(0.061)	(0.056)	(0.050)	(0.057)	(0.053)	(0.055)	(0.059)	(0.053)	(0.365)
Access to safe water (Log)	2.136***	1.432***	1.196***	1.587***	1.301***	1.626***	1.630***	1.951***	1.386***
	(0.336)	(0.378)	(0.395)	(0.345)	(0.409)	(0.359)	(0.357)	(0.264)	(0.325)
Inflation, consumer prices (Annual percent)	0.000	0.000	0.000	−0.000	0.001*	−0.000	−0.000	0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Fertility Rate [*t*–1]		−0.214***	−0.151**	0.032	−0.148**	0.028	0.032	0.021	0.014
		(0.063)	(0.062)	(0.042)	(0.059)	(0.042)	(0.042)	(0.046)	(0.031)
Urbanization (Log)			0.830***	1.044***	0.825**	1.056***	1.044***	1.026***	1.153***
			(0.312)	(0.228)	(0.318)	(0.224)	(0.236)	(0.245)	(0.169)
Bureaucracy Quality				0.065					
				(0.054)					
Government Effectiveness					0.037				
					(0.043)				
Democratic Accountability						−0.013	−0.013	−0.021	−0.003
						(0.018)	(0.018)	(0.017)	(0.013)
GDP per Capita (Log) [*t*–1]							0.009	−0.025	−0.124*
							(0.044)	(0.056)	(0.069)
Domestic credit to private sector (Percent of GDP) (Log)								0.009	−0.037
								(0.017)	(0.028)
Constant	−5.391***	−1.699	−4.080**	−7.485***	−4.551***	−7.471***	−7.526***	−8.512***	
	(1.484)	(1.755)	(1.776)	(1.296)	(1.731)	(1.334)	(1.329)	(1.001)	
Observations	1,500	1,494	1,494	1,147	1,372	1,147	1,130	1,071	1,061
R-squared	0.470	0.528	0.563	0.607	0.560	0.606	0.608	0.641	
Number of Countries	171	167	167	123	160	123	121	119	109
Number of Instruments									2
Cragg-Donald Wald F statistic									3.17

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. FE = fixed effects.

Annex Table 11. Regression Results for Tertiary School Enrollment (FE)

	Tertiary School Enrollment			
	(1)	(2)	(3)	(4)
Public Education Spending percent of GDP(Log, *t*–1)	0.238**		2.030***	
	(0.103)		(0.709)	
Inflation, consumer prices (annual percent)	−0.001*	−0.001*	−0.006**	−0.006**
	(0.001)	(0.001)	(0.003)	(0.003)
Urbanization (Log)	1.847***	1.847***	2.493***	2.493***
	(0.634)	(0.634)	(0.745)	(0.745)
Government Effectiveness: Estimate	0.024	0.024	−0.031	−0.031
	(0.070)	(0.070)	(0.106)	(0.106)
GDP per Capita (Log) [*t*–1]	0.449***	0.211	0.655***	−1.375**
	(0.140)	(0.158)	(0.197)	(0.652)
Fertility Rate [*t*–1]	−0.489***	−0.489***	−0.459***	−0.459***
	(0.120)	(0.120)	(0.139)	(0.139)
Domestic credit to private sector	0.121*	0.121*	−0.314*	−0.314*
(Percent of GDP) (Log)	(0.069)	(0.069)	(0.173)	(0.173)
Development assistance and aid (Log)	0.000	0.000	−0.001	−0.001
	(0.001)	(0.001)	(0.002)	(0.002)
External Conflict (E)	−0.029	−0.029	−0.013	−0.013
	(0.025)	(0.025)	(0.039)	(0.039)
Internal Conflict (D)	−0.008	−0.008	0.008	0.008
	(0.015)	(0.015)	(0.016)	(0.016)
Public Education Spending per capita (Log, *t*–1)		0.238**		2.030***
		(0.103)		(0.709)
Constant	−7.144***	−6.049**		
	(2.504)	(2.524)		
Observations	608	608	599	599
R-squared	0.716	0.716	−0.062	−0.062
Number of Countries	86	86	77	77

Source: IMF staff estimates.

Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. FE = fixed effects.

Annex 4. Social Spending Policies in Response to COVID-19 Crisis

Annex Table 12. Key Social Spending Policies in Response to COVID-19 in the Middle East and Central Asia Region
(As of June 4, 2020)

Afghanistan	The government allocated 0.5 percent of GDP as part of its emergency response to the pandemic, of which a fifth (0.1 percent of GDP) was used to address urgent health needs such as establishing testing facilities, setting up specialized hospital wards, and procuring critical medical supplies. Budget amendments were submitted to parliament to allocate around 1.4 percent of GDP to support short-term employment programs, purchasing of extra hospital beds, and distributing bread to the most vulnerable households. The authorities are collaborating with the World Bank to provide cash and in-kind transfers to the most vulnerable households as part of a social relief package for food security. Overall, the government is projecting to spend approximately 2 percent of GDP on the pandemic response, with about one third directed towards health expenditure.
Algeria	Congress has passed a supplementary law that provides approximately US$544 million to mitigate the health and economic impact of the pandemic, of which 5.3 percent is designated for medical supplies, 24 percent as a bonus for health workers, and 13 percent for the development of the overall health sector. Around 30 percent of the package is reserved for unemployment benefits, and 16 percent for transfers to poor households.
Armenia	The government announced multiple support packages directly targeted at social spending including (1) Educational support, (2) Cash transfers to families who lost their jobs, and vulnerable households (the unemployed, pregnant women, families with children), (3) Utility support, and (4) additional social security support for existing beneficiaries. Authorities timely allocated $37.2 million to as many as 2 million beneficiaries"
Azerbaijan	The authorities have increased spending on public health by a total of US$ 4.8 million, created a COVID-19 response fund financed with US$11.8 million, and plans on providing US$1.9 billion to businesses impacted by the pandemic.
Bahrain	A stimulus package worth US$1.5 billion was mobilized to respond to the socio-economic impact of the pandemic, including payment of employee salaries and expanded liquidity funds to support SMEs. An additional US$14.5 million was issued to support lower income and vulnerable households.
Djibouti	The government has announced a response package of 2.4 percent of GDP, which includes increases in health spending and emergency support to households and businesses impacted by the pandemic. Food vouchers were also distributed to the most vulnerable of the population.
Egypt	A total of US$6.13 billion has allocated by the government to alleviate the impact of the pandemic. Approximately US$528 million has been allocated to support the healthcare sector, by providing immediate medical supplies and disbursing bonuses to medical staff working on the frontline of the COVID-19 crisis. Monthly grants for three months totaling US$93 (1500 EGP) has been extended to day-laborers and irregular workers, and pensions increased by 14 percent. Targeted cash transfers were also set up to reach vulnerable families.
Georgia	Targeted social assistance packages have been deployed to assist those who have lost their jobs or are on unpaid leave due to the pandemic (around 200 GEL per month for six months), as well as providing subsidies for employers and firms to retain their workforce. Financial assistance will also be provided to vulnerable families, and persons with severe disabilities, and pensions will increase. The government also announced temporary subsidy measures on gas, electricity and utilities, as well as on imported staple products to keep their prices stable.
Iran	Additional funding of 2 percent of GDP was allocated towards the health sector. Other measures include subsidizing loans for affected firms and vulnerable households (around 4.4 percent of GDP), providing cash transfers to vulnerable households (0.3 percent of GDP) and increasing contribution to the unemployment insurance fund amounting to 0.3 percent of GDP.
Iraq	A fund was created to support the efforts of the Ministry of Health, totaling US$37 million. Nearly US$250 million spent on direct cash payments to individuals that do not receive salaries or benefits from the government.

Jordan	The government allocated US$71 million of additional spending to purchase health equipment and supplies. A temporary cash transfer program of US$114 million for the unemployed and self-employed was instituted.
Kazakhstan	A crisis package totaling US$13 billion (9 percent of GDP) was announced, and includes an increase in pension and social benefits, additional health spending, and support for employment and businesses impacted by the pandemic.
Kuwait	The government assigned US$1.6 billion (1.4 percent of GDP) to support efforts in fighting the spread of COVID-19 and ease the economic impact of the pandemic.
Kyrgyz Republic	Authorities mobilized a health sector plan, costing a total of US$16 million (0.2 percent of GDP) to provide training for health-care workers and procure medical equipment and tests. An additional US$15 million (0.2 percent of GDP) was used to mitigate the economic impact by postponing tax payments, creating temporary tax exemptions on property and land, and placing time-bound price controls on essential foods. A second package of US$540million (7 percent of GDP) is being discussed, which will include tax exemptions for SMEs, food security to vulnerable groups, and subsidized credit.
Lebanon	Parliament approved an allocation worth US$792 million from the 2020 budget to social safety nets.
Libya	The Government of National Accord announced US$ 356 million (about 1 percent of GDP) in emergency spending related to COVID-19.
Mauritania	An emergency fund totaling US$290 million (4.3 percent of GDP) was set up for the procurement of medical supplies, provide social protection and subsidies to poor households, and support small businesses
Morocco	The authorities have created a fund amounting to 2.7 percent of GDP dedicated to the management of the pandemic and will include the cost of upgrading medical facilities and supporting impacted businesses and households. It targeted support to about 5 million partially unemployed and informal sector workers, using digital delivery. The program was financed by a special new Fund with contributions from both private and public sector.
Oman	The government announced several measures to support the economy, including employee retainment schemes, temporary tax cuts and fuel subsidies, and postponement of electricity and water fees.
Pakistan	A relief package worth US$7.3 billion has been announced to respond to the impact of the pandemic, including elimination of import duties on emergency health equipment, approved cash disbursements to daily wage workers (US$457 million), cash transfers to low-income families (US$915 million), accelerated tax refunds to the export industry (US$610 million), and financial support to SMEs and the agriculture sector (US$610 million).
Qatar	A US$20.6 billion program was introduced to help assist small businesses and hard-hit sectors. The authorities have conducted widespread COVID-19 testing in the most impacted area and are providing free healthcare to those affected.
Saudi Arabia	In order to increase the resources available to the Ministry of Health to combat COVID-19, the government created budgetary allocations totaling US$12.5 billion. An additional package worth US$18.7 billion was announced to support the private sector.
Somalia	Introduction of a three-month tax holiday or reduced consumption taxes on basic commodities (rice and flour), and an initial US$2.9 million funding-for-lending support for medium and small enterprises through commercial banks.
Sudan	The financing needs to cope with COVID-19 related health care is about US$150 million, and the government is working with a multitude of donors to secure the necessary funding. External donors supported Sudan with US$202 million, covering healthcare and food security, among others.
Tajikistan	The government is planning to provide cash transfer assistance to minim wage workers and vulnerable households and social groups. The government is providing free medical care COVID-19 patients, in addition to sick leave and compensation benefits to citizens. Health workers will also expect to receive additional pay
Tunisia	An emergency plan of US$710 million (1.8 percent of GDP) was announced. The plan includes US$35 million allocation for the acquisition of equipment for public hospitals, US$158.4 million in cash transfers to the vulnerable population, and US$106 million in support to those who are temporarily unemployed due to the COVID19 shock.
Turkmenistan	The government is planning on revising the State budget spending to increase health spending for preventing an outbreak of COVID-19 and to provide support to businesses.
United Arab Emirates	The authorities have so far announced about US$7.2 billion (2 percent of GDP) in various fiscal measures, including support to the private sector, reduction of government fees, and additional water and electricity subsidies.
West Bank and Gaza	The Palestinian Authority is planning to spend US$119 million to cover short-term critical gaps related to COVID-19. This includes recruitment of medical personnel, and the purchase of medical equipment and tests. An additional US$5.8 million will be used to support workers and for unemployment benefits. The government also distributed food baskets and paid direct financial assistance to households as well as laborers impacted by the pandemic.
Yemen	The government has assigned limited budget resources to respond to the COVID-19 crisis.

Sources: National authorities, IMF Policy Tracker: Policy Responses to COVID-19, and IMF staff.

Annex 5. Technical Annex for Stochastic Frontier Analysis of Social Spending Efficiency

Stochastic Frontier Analysis (SFA) requires an explicit assumption of the functional form through which the inputs are generating the output, and an assumption about the distribution of the inefficiency term. In most practical applications, and in our case, the output frontier is estimated using Cobb-Douglas form:

$$\ln y_{it} = \alpha + x_{it}^{'}\beta + \varepsilon_{it}$$

The error term, ε_{it}, is composed of two components: a white noise component that arises due to idiosyncratic shocks that the countries face, data errors, and/or measurement errors v_{it}, and the inefficiency component u_{it}.

$$\varepsilon_{it} = v_{it} - u_{it}$$
$$v_{it} \sim N(0, \sigma_v^2)$$
$$u_{it} \sim F$$

While the white noise is normally distributed with variance σ_v^2, assumptions need to be made on the distribution of technical inefficiency for estimation. As the (in)efficiency term is positive, exponential, half-normal, truncated normal or gamma distributions are used for the inefficiency term, u_{it}. With these assumptions on distribution of both the white noise and the inefficiency term, the combined error term ε_{it} is skewed, and this skewness is used to disaggregate the white noise from inefficiency using maximum likelihood estimations. To be specific, the outputs are produced using the following functional form, which also incorporates inefficiency component:

$$y_{it} = e^{\alpha + x_{it}^{'}\beta} e^{v_{it}} e^{-u_{it}}$$

The first exponential on the right hand side (RHS) is the deterministic component, the second is white noise, while the third component inefficiency. Bigger the efficiency as measured by e^{-u_i}, smaller the dampening effect of inefficiency on inputs in producing outputs.[1]

The ratio of standard deviation of inefficiency estimators σ_u, and white noise σ_v gives us an estimator λ, that measures the relative contribution of inefficiency and white noise in the estimates of the regression standard error. Very small or very large values of λ make inferences more difficult, as if $\lambda \to 0$, there is no contribution of inefficiency (this reduces the estimation back to OLS) while when $\lambda \to \infty$, everything not explained by inputs is inefficiency (non-stochastic, non-parametric estimations, for example, DEA).

Within SFA, depending on structure of data, we can use panel data for estimations or cross-sectional data for estimations. As the time series data are not sufficiently long, a "hybrid" of the two approaches is used, where the countries are grouped according to departments within IMF, and estimators are estimated using department and time dummies.

In the SFA estimations of efficiency of spending on education, health and on social safety nets, the (in)efficiency estimates would be assumed to follow a half normal distribution, and the efficiency will be estimated using the method proposed by Jondrow and others (1982).

As SFA is governed by a functional form, a benefit of SFA, particularly for policy advice, is that we can run counterfactuals (what-if type analysis). For example, once estimators are obtained, the counterfactual inefficiency values can be used to estimate the effect of reducing inefficiency on the output, or while keeping output constant, the effect of reducing inefficiency on input.

$$e^{-u_i} = E_i = \frac{y_{it}}{e^{\alpha + x'_{it}\beta} e^{-v_{it}}}$$

$$\Delta y_{it} = \Delta E_i \left(e^{\alpha + x'_{it}\beta} e^{-v_{it}} \right)$$

In percentage terms:

$$\frac{\Delta y_{it}}{y_{it}} = \frac{\Delta E_i}{E_i}$$

[1]If the inputs are perfectly efficient, $u_i = 0$. In that case, there is no dampening of inputs in producing outputs ($e^{-u_i} \to 1$). On the other hand, as $u_i \to \infty$, any amount of input cannot be used to produce any output, as $e^{-u_i} \to 0$. Therefore, while the inefficiency estimates can take on values between 0 (no inefficiency) and infinity (totally inefficient), the efficiency estimates, E_i will vary between 0 (total absence of efficiency) and 1 (totally efficient).

In case of economizing on inputs while keeping output the same,

$$\Delta E_i = \frac{y_{it}}{e^{\alpha + x_{it}^{'}\beta} e^{-\nu_{it}}} \cdot \beta \Delta x_{it}^{'}$$

$$\Delta x_{ijt}^{'} = \frac{1}{\beta_j} \frac{\Delta E_i}{E_i}$$

Here $x_{ijt}^{'}$ is the *j*th input while β_j is the coefficient with *j*th input.

Annex 6. Case Studies: Social Spending Challenges in Selected Countries

Kingdom of Bahrain[1]

Bahrain's social welfare programs have been quite generous and aim to share oil wealth and promote equity. The Bahraini economy is largely dependent on oil, and the derived wealth has been distributed over time among citizens through generous transfers and subsidized public sector jobs. The ultimate objective of Bahrain's 2030 Economic is to improve living standards by promoting more attractive employment opportunities and higher wages. Generally, social spending in Bahrain covers a broad range of programs including health care, education, subsidized food and energy, and universal support for housing and employment in the private sector. Moreover, Bahrain has a variety of social welfare programs targeted to support low-income families, including unemployment benefits and insurance, disabled, elderly, and widowed, wage subsidies, and loans and grants. The public sector is a major employer of nationals, while the public pension system provides retirees with generous retirement benefits despite sustainability concerns.

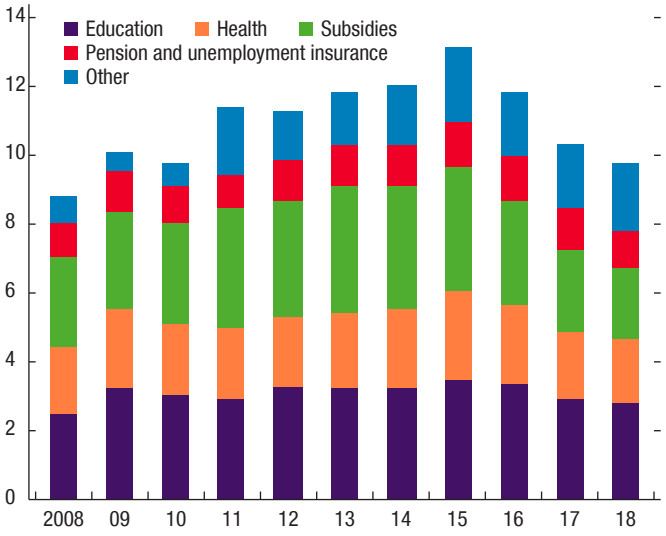
Recent Trends in Social Spending

Public social spending has increased rapidly, from a high base. To promote inclusive and sustainable growth, social spending in Bahrain has been scaled up over the last decade, rising from 8.8 percent of GDP in 2008 to 13.1 percent in 2015 and remained about 10 percent of GDP in 2018 (Annex Figure 6).[2] As described in Annex 1 and mentioned further below, these figures

[1]Prepared by Mohammed Zaher.

[2]Social spending derived from the closing accounts of the budget and incorporates government spending on education, health, cost of living allowance, support to low-income families, food and electricity subsidies, subsidized housing, contribution to pension system, and unemployment insurance.

Annex Figure 6. Social Spending
(Percent of GDP)



Sources: National authorities; and IMF staff calculations.

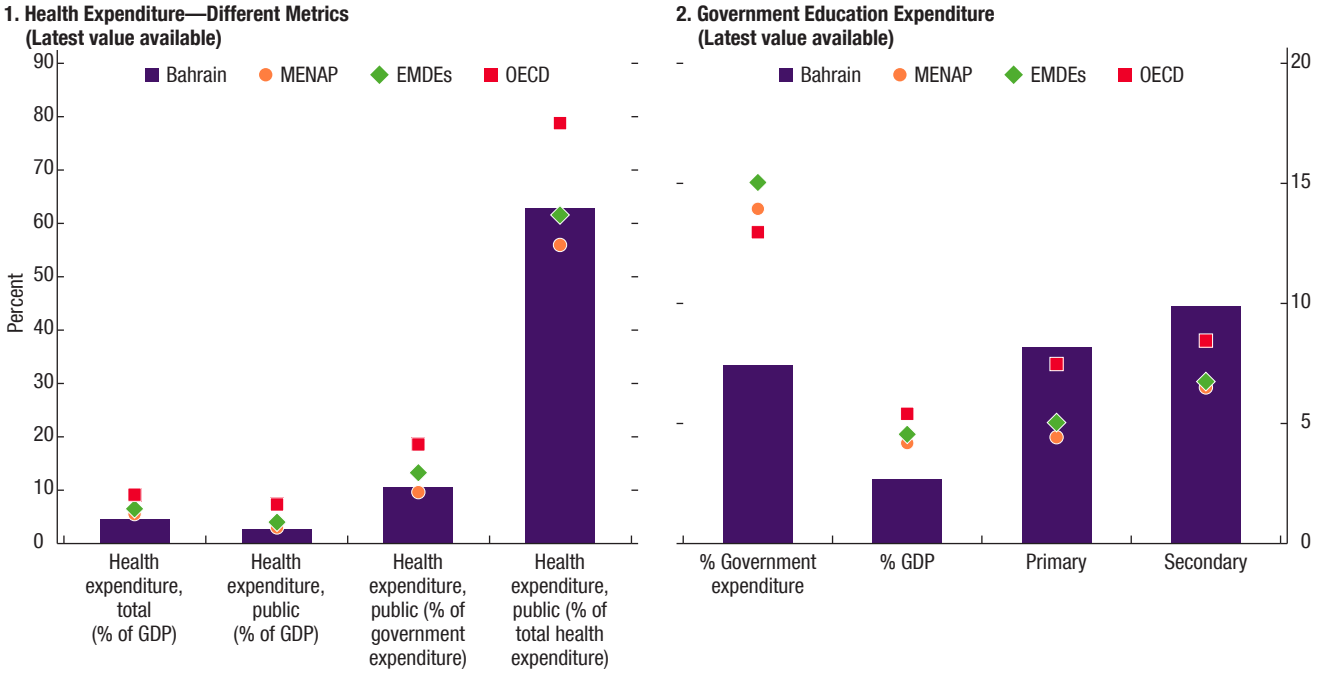
arguably understate the true extent of social support given fuel subsidies and generous public employment seen in many GCC countries including Bahrain. Spending on education and health consumes almost half of social spending related outlays, followed by subsidies. However, the urgent need to restore fiscal sustainability could limit available resources to fund existing social welfare programs.[3]

Social spending in Bahrain, however, remains low in some key areas when compared to other regions. For example, Bahrain's health care spending per capita is close to US$1,200, slightly below the MENAP average and substantially below the OECD average, partly because of the young demographic structure of Bahrain's population. While government expenditure per student is nearly twice the levels seen in MENAP and other emerging market economies, it remains 40 percent lower than the OECD average for primary education and 20 percent lower for territory education (Annex Figure 7). Other social spending outlays (especially unemployment benefits and family related spending) appear modest when compared to their average in OECD countries.

Social spending is boosted by public sector employment. The government sector absorbs more than a third of employed nationals, with relatively high

[3]The Fiscal Balance Program announced in early October 2018 introduced a voluntary retirement scheme for civil servants, aims to improve targeting of cash subsidies and transfers.

Annex Figure 7. Public Expenditure on Health and Education



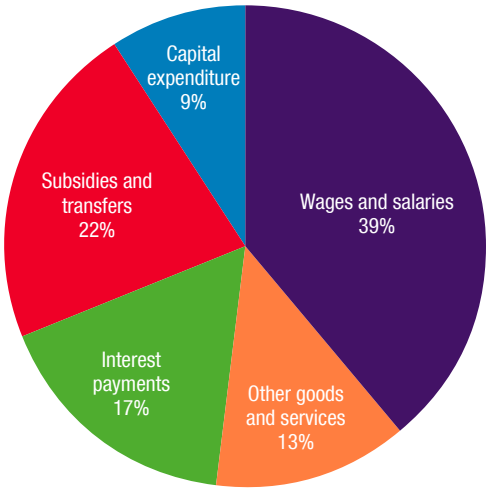
Sources: World Bank ASPIRE Database; World Bank, Education Statistics; World Health Organization, Global Health Expenditures Database; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.

compensation compared to the private sector. Wages alone account for about 40 percent of government outlays, having increased to more than 10 percent of GDP in 2018, representing one of the highest public wage bills in the world. The wage bill is also more than quadruple the size of public development spending (Annex Figure 8).

Pension in Bahrain is a regressive transfer system, albeit it remains a powerful social protection tool. As of the end of September 2019, the number of pensioners has reached 80,000, compared to 150,000 government and private sector employees. Early retirement is prevalent in Bahrain, where 30 percent of pensioners are younger than 50, and 65 percent are younger than 60. The ratio of pension-to-wage before retirement, known as the replacement rate, is high by international standards, with workers receiving about 80 percent of their gross monthly salary upon retirement. The unfunded actuarial liabilities of the system are above 35 percent of GDP and represent the largest public contingent liability.

The government financially supports SMEs and employment in the private sector. A dedicated public authority, Tamkeen, was established in August 2006 to foster the development and growth of enterprises and provide

Annex Figure 8. Structure of Expenditures
(Percent of total expenditures, 2018)



Sources: National authorities; and IMF staff calculations.

support to enhance the productivity and training of the national workforce. Several innovative programs are provided to Bahraini individuals and businesses which include training, financing, grants, advisory, entrepreneurship support, and others. The Training and Wage Support Program provides financial supports for enterprises wishing to hire, train and/or increase the salaries of their Bahraini employees. Since its inception, Tamkeen has invested BD1.5 billion (10 percent of 2018 GDP) with more than 200,000 citizens and 50,000 companies being financially supported.

External grants remain an important complement for social spending. In 2011, the GCC countries announced an aid package (GCC Development Fund) worth US$10 billion, more than one-third of Bahrain's GDP, to support higher social spending in Bahrain by upgrading the country's housing and infrastructure and creating jobs over 10 years. Projects for an amount of US$7.5 billion have so far been committed in the area of housing, social development, health, education, and infrastructure.

Private spending on health and education has been rising. Private spending on health nearly doubled between 2005 and 2016, reaching 1.8 percent of GDP and accounting for about 40 percent of total health spending. Spending on education also increased by more than 20 percent during the same period to 1.2 percent of GDP.[4] These trends indicate an increasing will-

[4]These estimates were derived from the Household Income and Expenditure Surveys for Bahrain, of 2005/06 and 2014/15 vintages. The calculation of "equivalization" follows the method outlined in OECD (2011).

Annex Figure 9. Bahraini Equivalized Spending by Income Group and Quintile, 2015

Sources: National authorities; and IMF staff calculations.

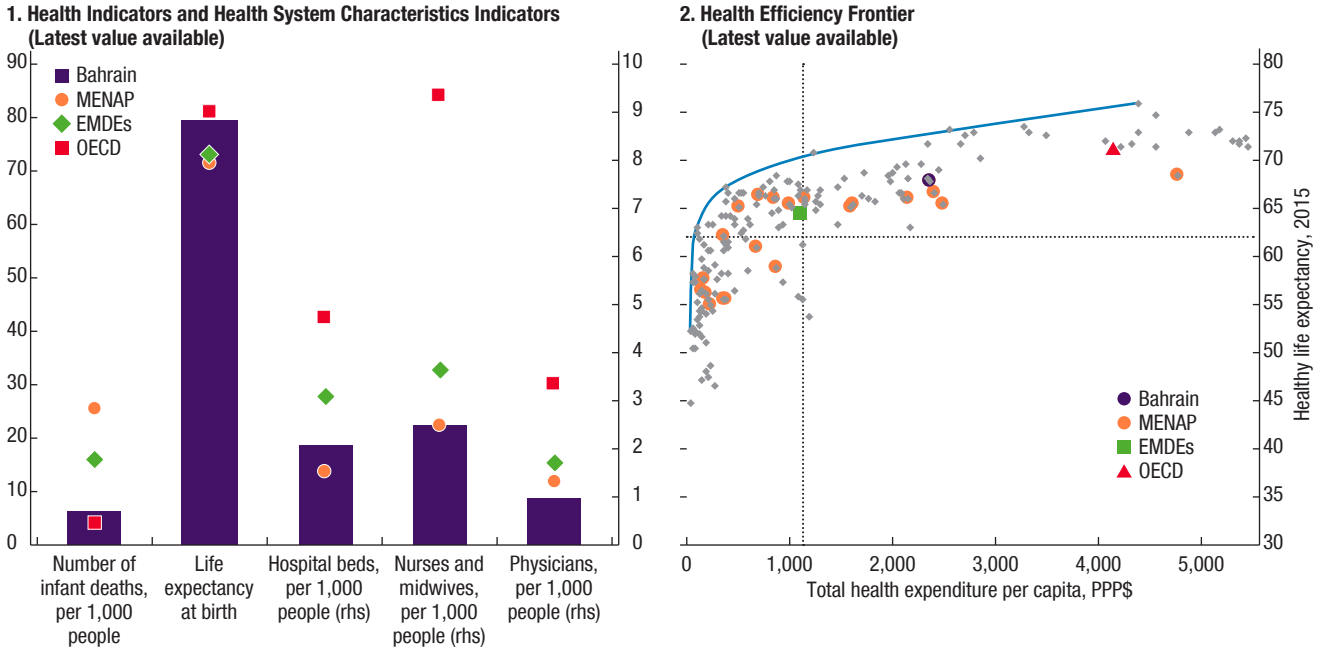
ingness by Bahrainis to invest in their own (or their children's) health and education. While spending gaps remain, private spending on health and education has increased from 7 percent of total household spending in 2005 to 11.5 percent in 2015. The lowest two income quintiles of Bahrainis account for less than 25 percent of total health and education spending, while the top two quintiles' share was close to 60 percent for health and 70 percent for education spending (Annex Figure 9).

Social Spending Outcome: Preliminary Assessment

Bahrain scores high on the Human Development Index (HDI). Bahrain ranked at the 45th position in the 2019 HDI out of a total of 189 countries, which places Bahrain in the "Very High Human Development" group. Between 1990 and 2018, Bahrain's HDI value increased by 21 percent (from 0.694 to 0.838), which is above the average for Arab countries (0.703) and close to the 0.875 average of the very high human development group. This high ranking reflects Bahrain's continued quality improvement in the areas of health, education, and standard of living.

This increased spending on health has been accompanied by major improvements in health outcomes. Over the last 25 years, life expectancy has increased by about 4.5 years to 77 years. This compares to 73 years in EMs

Annex Figure 10. Health Indicators and Outcome



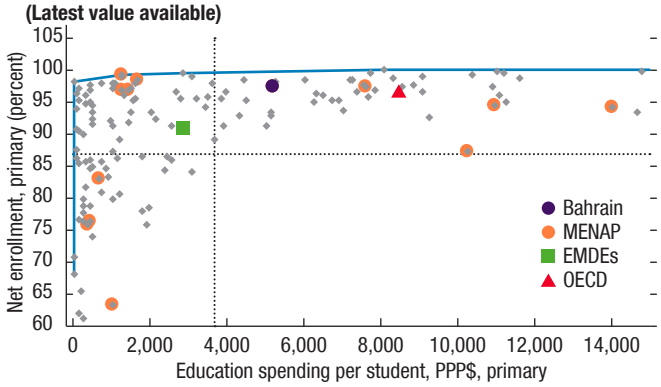
Sources: IMF, FAD Expenditure Assessment Tool; World Health Organization, Global Health Expenditures Database; and IMF staff calculations.

and 81 years in OECD countries. Infant mortality at birth has declined significantly in Bahrain, dropping from more than 19 per 1,000 births in 1990 to 6 in 2015, compared to 17 in EMs and 4 in advanced economies. However, total per capita health spending (in PPP-adjusted terms) in Bahrain is more than double the EMs' level, suggesting spending inefficiencies relative to the EMs (Annex Figure 10).

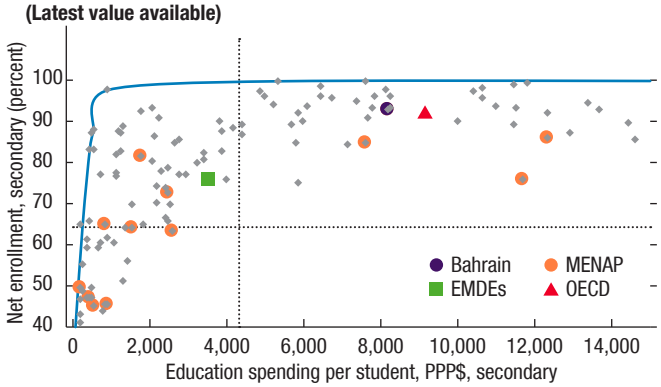
Education outcomes also reflect major progress. Net primary and secondary enrollments in Bahrain are exceptionally high, exceeding the respective ratios in OECD countries. Primary completion rate in Bahrain is also high at 98 percent by end 2018, above the 91.3 percent average for the MENA region and almost at par with the OECD average. The literacy rate among the youth (age 15–24) has jumped from 86 percent in 1980 to 99.7 percent in 2018, or 10 percent above the average for the MENA region. However, the teacher-student ratio for Bahrain is about 9 per 100 students, much higher than the MENAP average, while in OECD and in EM countries the ratio is about 8 and 5, respectively (Annex Figure 11). This finding indicates that there is scope to enhance education spending efficiency in Bahrain by reducing the teacher-student ratio.

Annex Figure 11. Education Indicators and Outcome

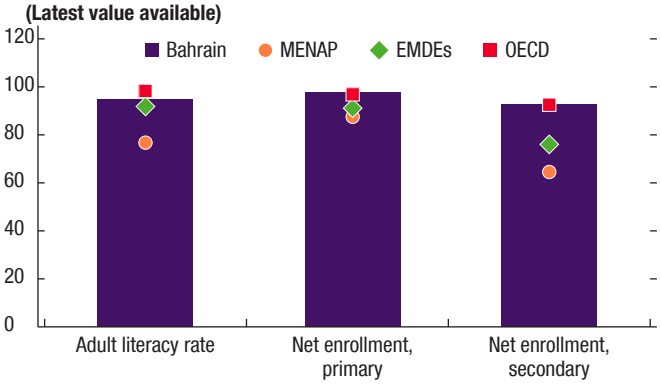
1. Government Education Spending and Outcome, Primary
(Latest value available)



2. Government Education Spending and Outcome, Secondary
(Latest value available)



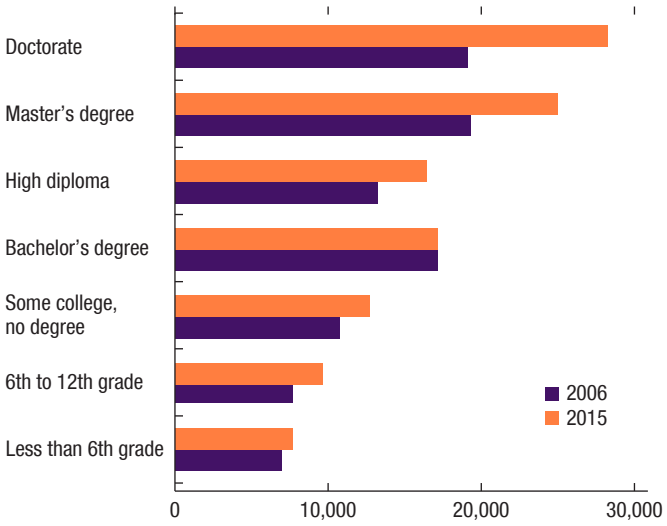
3. Education Indicators
(Latest value available)



Sources: IMF, FAD Expenditure Assessment Tool; World Bank ASPIRE Database; World Bank, Education Statistics; and IMF staff calculations.

Dividends from

Annex Figure 12. Average Household Income by Educational Attainment of Householder
(Bahraini dinars)



Sources: National authorities; and IMF staff calculations.

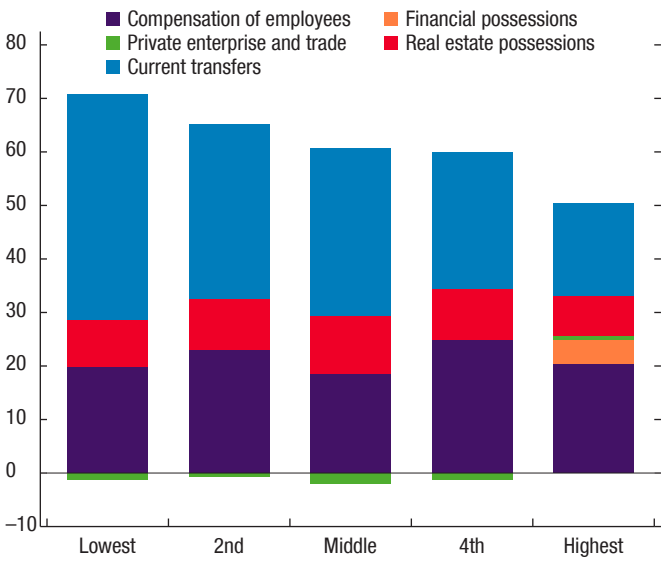
education are substantial and on the rise. Annex Figure 12 shows that households' earnings in Bahrain increase with their education level, though education attainment is only one factor in determining an individual's income. The education premium has increased significantly between 2006 and 2015 for people with graduate degrees, while the average monthly income of a bachelor's degree holder remained close to BD1,600. Graduates of tertiary education earn on average more than double the people who completed only up to upper secondary education. The demand for higher education in Bahrain continued to grow in line with the authorities' vision to produce graduates with skills and knowledge required in the global knowledge economy. The proportion of the adult population with tertiary education is particularly growing fast. In 2016, the gross enrollment ratio in the tertiary education has reached 50 percent of tertiary school-age population, up from 28 percent in 2005.

Social spending has reduced income inequality and poverty.[5] The Lorenz curve shows that the Gini coefficient for equivalized household income declined 3 percentage points since 2005, to 32 percent in 2015.[6] This was

[5]There is no evidence of extreme or absolute poverty in Bahrain in the narrow sense of the absolute level of income as commonly defined. In this note, a household is considered to be relatively poor if its equivalized income is less than 50 percent of median income of households. This implies a poverty rate of about 2.6 percent of total households.

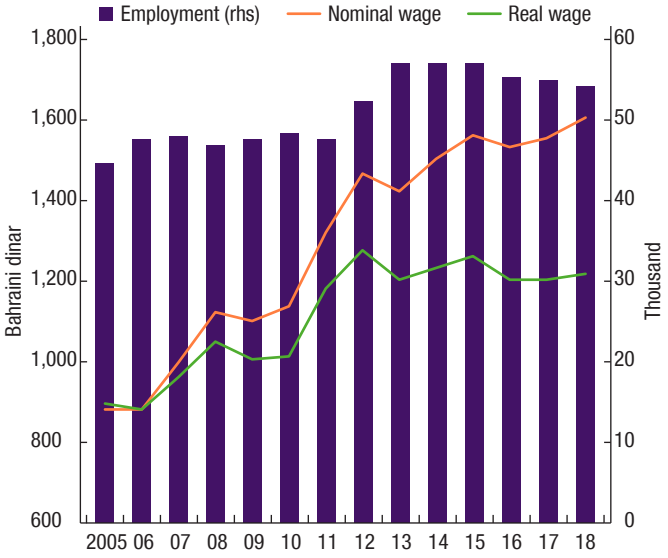
[6]The calculation of "Equivalization" follows the method outlined in OECD (2011).

Annex Figure 13. Contributions to Household Equivalized Income Growth, 2005–15
(Cumulative percentage change)



Sources: National authorities; and IMF staff calculations.

Annex Figure 14. Government Employment of Nationals and Average Wage Rate



Sources: National authorities; and IMF staff calculations.

four points below the median for emerging and developing economies, slightly higher than for emerging Europe, and on par with several countries in the MENA region. The reduction in inequality was driven by labor income growth at the bottom of the income distribution as well as the increase in social programs (Annex Figure 13). Excluding current transfers (mainly pension, social security, and unemployment insurance) from household's income, income inequality would have been higher by 4.2 percent in 2015 and 1.9 percent in 2005, indicating higher dependence of the bottom of income distribution on social insurance.

Higher wages and employment support consumption. Wages and salaries account for 54 percent of average household income in 2015, down from 62 percent in 2005. While employment in the public sector has grown by 1.5 percent annually during the period, average pay was higher by 6.5 and 3.0 percent in nominal and real terms, respectively (Annex Figure 14). Wages in the private sector increased by about one-third during the same period. These developments appear to be in line with Bahrain's Economic Vision which aims to ensure that every Bahraini household has at least twice as much real disposable income by 2030 compared to 2008. Moreover, the wage of a public sector employee accounts for 75 percent of total income and is 40 percent higher than average wage in the private sector. Higher wages for civil servants were in part reflected in 7 percent higher consump-

tion relative to other households. With the relatively high growth in private sector employment, about 2.5 percent annually over the last decade, Bahrain continues to have one of the lowest unemployment rates in the region (below 4 percent over the last decade).

Social spending boosted gender equality. Consistent with the authorities' vision to empower Bahraini females and consolidate the principle of equal opportunities, gender income inequality appears moderate in Bahrain as a female income is on average 10 percent less compared with the income of a household headed by a male, after adjusting for the size of the household. Bahraini female workers in the public sector also represent 48 percent of total Bahraini workers. While a female earns on average 30 percent less in wages and salaries than a male, she receives more from public social protection spending. In particular, only 47 percent of a female gross income comes from wages and salaries compared to 60 percent for a male.

Conclusion and Policy Implications

Social spending in Bahrain has provided high-quality socioeconomic outcomes. Although social spending is largely at par with the MENA average, it remains low when compared to OECD countries. Bahrain's fiscal sustainability concerns constrain increases to social spending. Introducing a direct taxation regime—corporate income tax, property tax, and personal income tax—could better insulate current programs, expand social spending plans going forward, and enhance the redistributive role of fiscal policy to promote equity.[7] Consideration could also be given to improve the efficiency of government social spending, especially on health and education. Reducing the high teacher-student ratio, for example, could help achieve a sizable reduction in the education wage bill which accounts for more than 87 percent of the education current expenditure. Considering the very limited expenditure on education-supporting goods and services, part of the wage bill saving could be allocated to support better performance of teaching and non-teaching staff, finance learning materials, and boost capital investment in the sector. An effective implementation of the recently approved medical insurance law would also boost efficiency and encourage competition among public hospitals and between public and private hospitals and improve health care quality.

[7]The high level of taxation in OECD countries ensures a stable financing source for their large welfare programs.

Republic of Armenia[8]

Armenia's social protection programs have played a key role in promoting equality and reducing poverty rates. While the majority of poverty reduction can be attributed to strong growth and an improvement in the standards of living, Armenia's public social spending has been consistent, and has contributed to increases in inclusive growth in the country. Poverty rates declined by 30 percentage points from 2004 to 2018, accompanied by a decrease in the Gini coefficient from 37.5 to 34.4. During the period of 2005–18, public social spending averaged about 11 percent of GDP. As part of Armenia's precautionary Stand-By Arrangement (SBA) with the IMF, the authorities maintain an indicative target floor on social spending.[9]

Education and health spending are low compared to peers. Education spending averages 2.7 percent of GDP in 2017, compared to 4.3 percent in the CCA, and 4 percent in the MENAP and emerging market economies. Education spending is also low across the board in primary, secondary, and tertiary per capita levels. Health spending is only 1.9 percent of GDP, on the same level as the CCA, but lower compared the MENAP at 3 percent and 4 percent in emerging markets. Out-of-pocket health expenditure is the highest among peers, at 80 percent of total health expenditure in contrast to 32 percent in emerging market counterparts.

Expenditure on social assistance and pensions in Armenia is higher than peers. On average, social assistance spending in Armenia stands at 2.4 percent of GDP, on par with OECD levels, and higher than in MENAP and emerging market countries. Pension spending reached 4.9 percent of GDP in 2018, and authorities have introduced pension reforms. Such spending has helped Armenia make progress with reducing poverty and inequality.

Armenia spends less than peers on education and health, but achieves good outcomes, suggesting that spending is relatively efficient. Despite comparatively low spending on education, Armenia performs better in PISA/TIMSS[10] than the average in the CCA, MENAP, and other emerging market peers. Net enrollment in primary and secondary school is also comparable, albeit slightly lower, to OECD levels. Enrollment in Armenia stands at 92 and 88 percent in primary and secondary school respectively, while OECD enrollment is 97 and 93 percent, and emerging market are at 91 and 76 percent.

[8]Prepared by Rayah Al-Farah and Moataz El Said.

[9]Defined as spending on the family benefit program and lump-sum financial aid, one-time childbirth benefits, and childcare benefits for children younger than two years. The authorities continue to meet this indicative target.

[10]Note that while TIMSS and PISA scales are different, both are centered around 500, with a standard deviation of 100.

Life expectancy at birth is in line with emerging market average at 74 years, while infant mortality of 11.6 per 1,000 people is half of the MENAP average of 25.3, and below the CCA average of 19.8 and emerging markets at 16.3. This suggests relative efficiency in education and health spending.

While education spending can be considered relatively efficient in comparison to peers, it is important to note that there remains room for improvement. While PISA/TIMSS scores are higher in Armenia contrasted to the averages in MCD and emerging market peers, results have stagnated over the years and remain below OECD levels. The highest TIMMS score for math and science of 470 was obtained in 2003 for Armenia,[11] and later results in 2011 and 2015 (452 and 466, respectively) have not recovered to that level. Studies have also shown that there is a widening achievement gap in TIMMS score over time related to the socioeconomic background of students in Armenia (Caro and He 2018). Furthermore, the expected years of schooling of a child at the age of 4 in Armenia is 11.1 years, but the learning-adjusted years of schooling[12] is only 7.9 years, suggesting some learning inefficiency. There is also a distinct gap in preschool enrollment between urban and rural areas. Overall, 30 percent of children under the age of 5 in Armenia are enrolled in preschool. This number drops to 17 percent in rural villages, as compared to 35 percent in urban settings.

Social safety net system is well-targeted but does suffers from insufficient coverage. Armenia's Family Benefit Program (FBP) is a well-targeted cash-based social safety net system that accords priority to the very poor and the most vulnerable social groups such as the elderly, persons with disabilities, single mothers, orphans, and poor families with multiple children. This program is means-tested on income and other proxies for poverty risk factors. Targeting of the FBP is done using the household poverty and vulnerability scoring formula to rank applicants in terms of their expected poverty. The FBP achieves a good targeting performance—about 72 percent of the program resources go to the poor. However, the program coverage of the poor is low as less than one-third of the poor and about 12 percent of the population are covered (World Bank 2011). Increasing budget allocation to the program would extend benefits to the poor. In addition to the FBP, there are other small social assistance programs and benefits. These include universal cash transfers

[11]TIMSS 2007 scores are available for Armenia (mean score for math and science for eighth and fourth graders were 493). However, the results were exceptionally high and are not considered valid (Khachatryan, Petrosyan, and Terzyan 2013).

[12]The learning-adjusted years of schooling is a component of the World Bank Human Capital Index. It attempts to capture the quality of education, reflecting that children in some countries learn less than others, despite being in school for the same time. It multiplies estimated years of schooling by the ratio of the most recent harmonized test scores from major international student achievement testing programs (TIMSS/PIRLS, PISA, SACMEQ, PASEC, LLECE, and EGRA).

to expectant mothers and working mothers with infants younger than two, free access to health care for the poor, and social care services.

To support the economy and lessen the short-term impact of COVID-19, the authorities have taken several measures to preserve progress on inclusive growth and safeguard existing social spending (Annex Figure 15). Armenia's drawing on the augmented precautionary SBA[13] provided additional financial support to mitigate the pandemic and support affected households and businesses. This includes direct social assistance transfers to the most vulnerable, labor subsidies to SMEs to retain employees, and short-term subsidized government-sponsored loans to selected enterprises heavily affected by the crisis.

[13]The Executive Board approved the authorities' request to augment access under Armenia's SBA arrangement by 100 percent of quota (SDR128.80 million or about US$175 million), bringing overall access under the SBA arrangement to SDR308.8 million (about 240 percent of Armenia's quota).

Annex Figure 15. Social Spending in Armenia

Sources: ASPIRE Database; IMF, Expenditure Assessment Tool; national authorities; OECD; Social Snapshot and Poverty in Armenia 2019; UNESCO; World Health Organization; and IMF staff calculations.
Note: In panel 1, the poor are defined as those with consumption per adult falling below $US88 a month, moderately poor are those who fall below $US73 a month, and the extremely poor are below $US51 a month.

Republic of Tunisia[14]

Despite remarkable improvements in Tunisians' living standards over the past three decades, wide economic and social disparities persist with negative effects on inclusive growth and risks to economic stability. To address this challenge, the authorities have reinforced efforts to improve the adequacy, efficiency, and sustainability of social policies since the mid-2010s. Specifically, they have: (1) strengthened social assistance by scaling up benefit levels, widening coverage, and building up administrative capacity for better targeting; (2) improved the financial viability of the social security system by adopting a pension reform and shoring-up the funding of the health care fund; and (3) pursued institutional and governance reforms. These initiatives were supported by two IMF arrangements during 2013–19. Moreover, the authorities have started reflections on a new comprehensive social safety system, which could be implemented over the medium term.

The Challenge

Tunisia saw improvements in living standards over the past three decades (Annex Figure 16). Its gross national income (GNI) per capita grew on average above 5 percent per year over 1990–2010, stronger than that in regional and EM peer groups. Poverty, as measured by the headcount ratio at US$5.50 per day, fell by two-thirds to 18 percent over the past three decades; and inequality receded as measured by the Gini coefficient that fell to a reading of 0.33.[15] Over the same period, the HDI increased by 30 percent, putting Tunisia in the high human-development category and at rank 91 out of 189 countries.

Progress, however, has slowed after the Revolution and has remained uneven (Figure 1). Growth fell dramatically in the 2010s relative to the preceding decade and unemployment persisted at 15 percent, mainly affecting the young and women. Together with uneven access to quality public services, these trends have not helped alleviate social conditions for many Tunisians, particularly among low-income households and in the interior regions.[16] The World Bank Human Capital Index (HCI) shows that a child born in Tunisia in 2018 will only be 51 percent as productive when she grows up as she could be if she enjoyed complete education and full health.[17] This is below what would be predicted for Tunisia's income level.

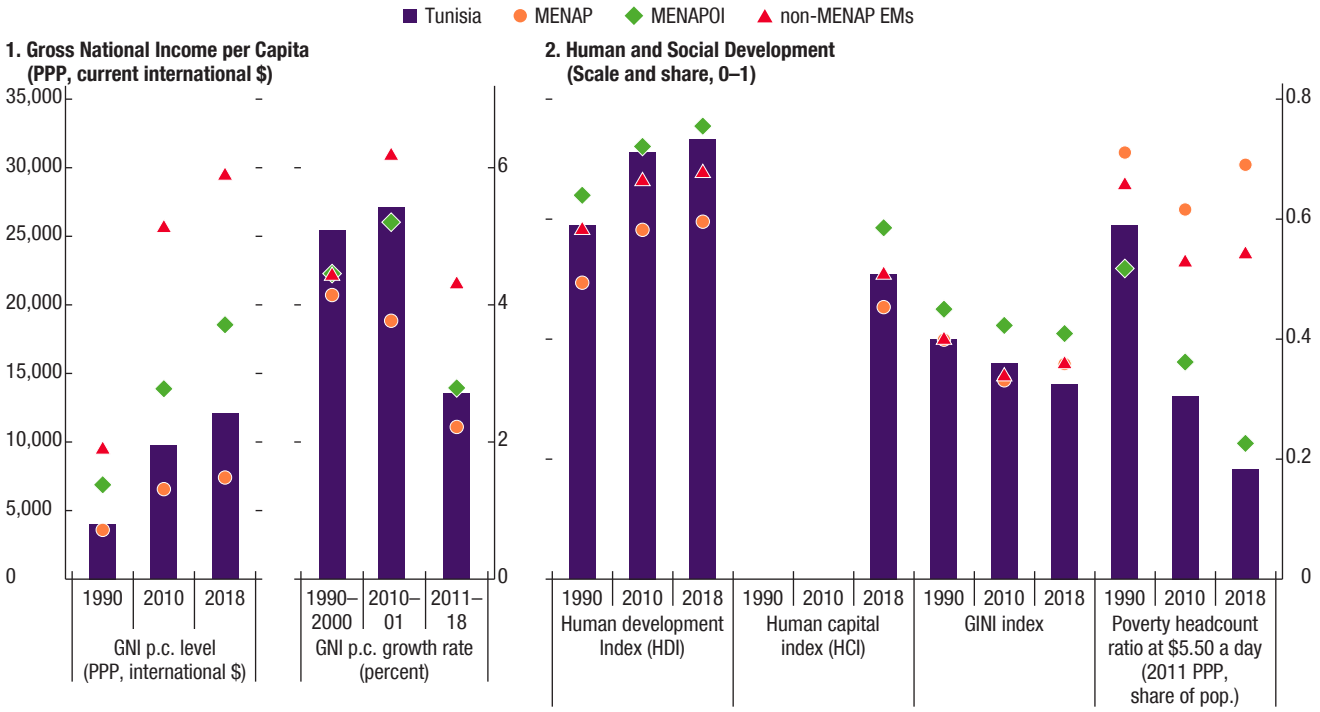
[14]Prepared by Kerstin Gerling.

[15]Several caveats undermine the reliability of inequality indicators, including their reliance on tax income data, so not accounting for under-declaration from formal sources and avoidance by informal sources.

[16]Poverty levels range from a tenth in Greater Tunis to a third in the center-west (World Bank 2015a).

[17]This reflects relatively (1) poor learning outcomes (as measured in internationally recognized aggregate tests), (2) limited access to preschool programs, and (3) high school dropout rates (especially at the secondary level).

Annex Figure 16. Socioeconomic Indicators, 1990–2018[1]



Sources: World Bank WDI; UNDP; and IMF staff calculations.
[1]Simple averages using country data for the indicated year or the last available observation within –/+ three-year window.

Improving social spending thus remains a crucial challenge for Tunisia. Better social protection and public services could help address today's most pressing issues:[18] low and not sufficiently inclusive growth,[19] elevated social tensions, and weak trust in the government amid domestic security pressures and regional instability. The authorities have acknowledged that meeting this challenge entails (1) more and better-targeted social spending; (2) a financially viable social security system; and (3) institutional and governance reforms to improve spending quality. This note discusses this challenge in some detail: it will assess the performance of social spending, present the authorities' reform agenda, and offer some lessons learned.

[18]Recent opinion surveys show widespread negative and deteriorating perceptions of the economic and social situation, job opportunities, trustworthiness of government, and corruption in state agencies.

[19]Improved access to opportunity can spur not only social and intergenerational mobility, but also productivity growth through a better allocation of resources in the economy. This is the key to generating more wealth per capita, and thus to creating not only more, but also higher-quality jobs.

Social Spending Performance

On the surface, Tunisia enjoys both relatively high social spending and good socioeconomic outcomes (Annex Figure 17). Total public social spending—comprising current and capital spending, including on wages and subsidies—amounted to 14 percent of GDP in 2010. This was well above the average in MENAP and EM peers, mainly on account of more outlays for education. The spending helped Tunisia achieve better socioeconomic outcomes than its peers by 2018: expected years of schooling rose beyond 15 years, secondary school enrolment reached more than 90 percent, life expectancy climbed to almost 76 years; and the infant mortality rate fell below 1.2 percent.

Looking more closely though, the performance of social spending remains an issue. Tunisia's social protection rests on two pillars: (1) three contributory schemes, including the public and private pensions funds (CNRPS and CNSS), the public health fund (CNAM),[20] and (2) several noncontributory public programs, notably the direct cash transfer scheme (PNAFN) and two health care programs (AMG1 and AMG2).[21] This system of interventions suffers from resource constraints, fragmentation, as well as governance weaknesses. As a result, it has not been able to span an adequate, efficient, and sustainable social safety net over those in need.

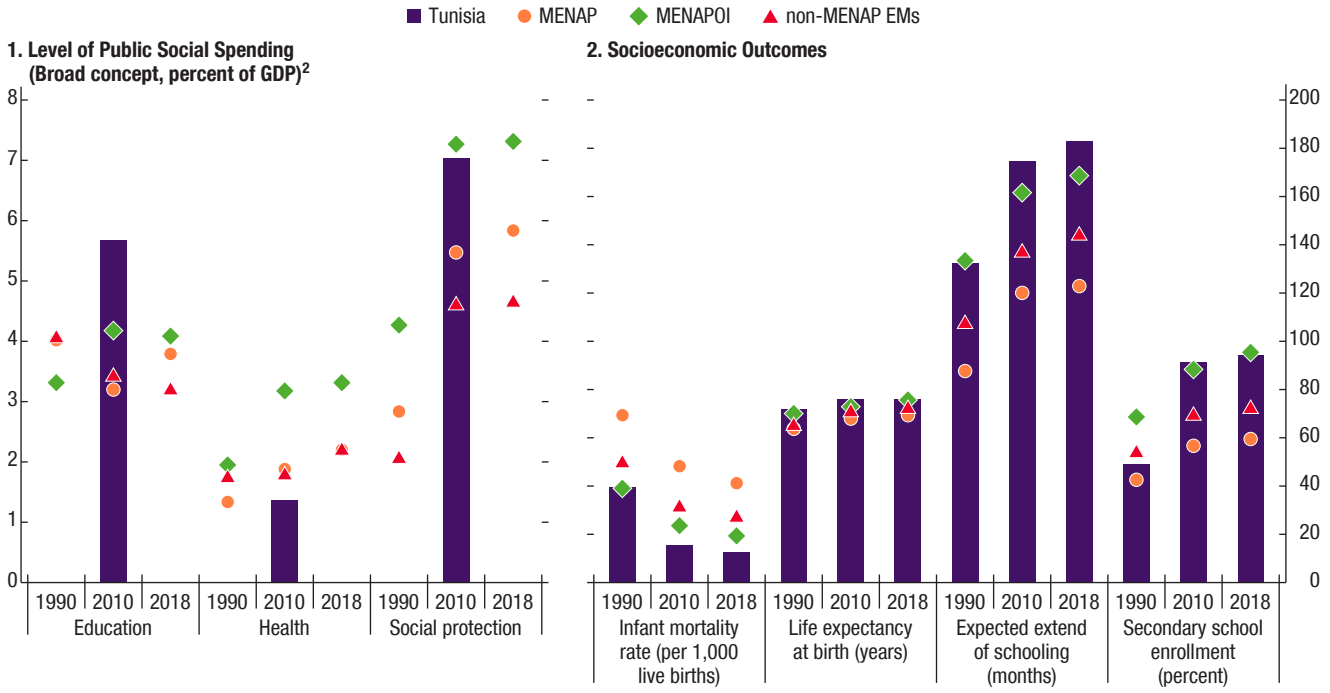
- ***Public services.*** Their effectiveness in addressing supply-side constraints remains limited, especially those emanating from deficiencies in education, health care, and labor market regulations and programs.
- ***Social security.*** The system's coverage remains too narrow. Only 37 percent of Tunisians contribute to the pension system and only half are covered by public health insurance (World Bank 2015a).[22] A national unemployment insurance scheme does not exist. Moreover, social security suffers from deficits and arrears. Demographic change and financing gaps are posing threats to its sustainability. Declining fertility and increased life expectancy have resulted in an aging population, and unfavorable economic conditions over much of the 2010s have made it difficult for social security to collect

[20]Old-age, invalidity, death, and family benefits are provided by the CNRPS (*Caisse Nationale de Retraite et de Prévoyance Sociale*) for the public sector and the CNSS (*Caisse Nationale de Sécurité Sociale*) for the private sector. Risks of sickness, accident and occupational disease are covered by the CNAM (*Caisse Nationale de l'Assurance Maladie*) for both public and private sector contributors.

[21]PNAFN *(Programme National d'Aide aux Familles Nécessiteuses*) gives unconditional cash transfers for needy families, elderly, and disabled—since 2007 with an additional cash transfer for PNAFN households with children of school age (PPAS, *PNAFN-Programme d'Allocations Scolaires*). Two health care programs (*Aide Médicale Gratuite*) provide access to public medical institutions either free of charge (AMG1) or at a reduced rate (AMG2).

[22]Private sector interventions (insurance companies and mutual benefit organizations) remain very limited and take the form of complementary and optional management of health care coverage.

Annex Figure 17. Tunisia: Social Spending Performance, 1990–2018[1]

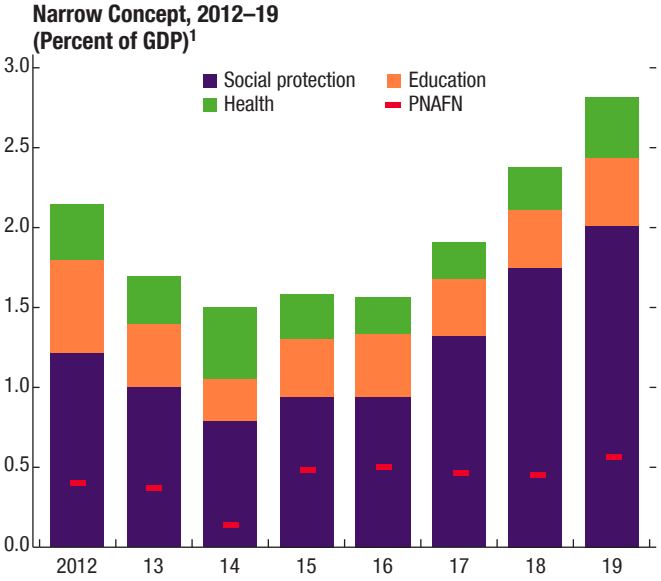


Sources: World Bank, World Development Indicators; UN Development Programme; and IMF staff calculations.
[1]Simple averages using country data for the indicated year or the last available observation within –/+ three-year window.
[2]Comprising current and capital spending, that is, including wages and subsidies.

sufficient contributions from employers and employees to maintain current levels of pension and health benefits (for example, up to 80 percent replacement income). The situation is likely to worsen in the years ahead with growing life expectancy and the weak cash flow of many state-owned enterprises. Moreover, the pension funds' arrears to the public health fund, which otherwise could cover its costs, undermine the provision of basic health services in hospitals and pharmacies.

- ***Social assistance programs.*** Existing programs are fragmented and face difficulties in raising sufficient funding to cover their needs (Annex Figure 18 and Annex Table 13). They also fail to cover a significant part of the low-income population and informal sector employees, and disproportionately benefit the better-off in urban areas. In fact, nearly a quarter of Tunisians are net beneficiaries of rather generous social transfers that represent up to one-fifth of total income. However, only two in five of these beneficiaries live below the national poverty line. This mainly reflects sizeable subsidies on food and energy (about 4.3 percent of GDP in 2019) that mostly accrue to the better-off: energy subsidies benefit rich households up to 30 times more than those with lower income. Moreover, about

Annex Figure 18. Tunisia: Social Spending



Sources: Tunisian authorities; and IMF staff calculations.
Note: PNAFN = Programme National d'Aide aux Familles Nécessiteuses.
[1]Under the IMF programs, defined as spending on social transfers and key ministries' capital expenditures.

Annex Table 13. Social Transfers and Capital Investment, 2019
(Millions of Tunisian dinar)

Generalized subsidies	**4,938**
Energy products	3,138
Food products	1,800
Social spending (narrow concept)[1]	**3,273**
Transfers	**1,671**
PNAFN	629
School and university transport	437
University scholarships	188
Occasional help for low-income families	78
Social work	71
Health care arrears	64
Pensions (combatants, disabled	51
Family allowances	45
Friendly grants	30
Grants to associations of the disabled	23
Indemnity	16
Various social interventions	14
Home Improvement Fund	12
Social rehabilitation	11
Social solidarity fund	2
Capital investment	**1,602**
National Employment Fund	431
Regional Development Program	382
Ministry of Education	293
Ministry of Health	288
Ministry of Youth and Sports	80
Ministry of Social Affairs	44
Ministry of Women and Family Affairs	20

Sources: Tunisian authorities and IMF staff calculations.
Note: PNAFN = Programme National d'Aide aux Familles Nécessiteuses.
[1]Under the IMF programs, defined as spending on social transfers and key ministries' capital expenditures.

15 percent of households live below the national poverty line, yet only 9 percent receive cash transfers under the country's main social assistance program PNAFN and free health care under the AMG1 program. Household survey data further indicate substantial leakage from these programs to non-poor households (more than 50 percent of covered households may not be poor). An additional 20 percent of the population receive subsidized health care under the AMG2 program.

Ongoing Reform Agenda

The Tunisian authorities have accelerated social protection reforms over the past decade. This effort has resulted from a social dialogue that followed the immediate post-Revolution era, when the government—faced with high unemployment, social pressures, and inadequate social safety nets—had used the public wage bill and subsidies for energy and food products as inefficient substitutes for targeted social policies. The social protection reforms—supported by the IMF Stand-By Arrangement (SBA) and Extended Fund Facility (EFF) over 2013–19—have focused on the immediate improvement

of coverage for low-income households and, in parallel, on reforms that enhance the resource allocation, sustainability, and efficiency of the social safety net in a context of significant resource constraints (Annex Figure 18). It is worth noting that the SBA and EFF programs have both included a floor on social spending (which comprises spending on social transfers as well as key ministries' capital expenditures). This floor was elevated from an indicative target to a quantitative performance criterion starting in September 2018—the first in an EM program case.

- ***2013–15: First steps toward more adequate and sustainable social spending.*** The authorities started several multiyear reforms, notably: (1) an increase in the level of social spending from 2015 and (2) a dialogue with social partners on a pension reform that would eliminate the need for sizeable budget transfers to the pension funds.
- ***2016–19: The implementation of a more comprehensive reform agenda.*** The four main workstreams have included:
  - *Increasing social spending.* Spending on social programs (excluding general subsidies, key ministries' wage bills, and transfers to the social security system) increased from 1.6 percent of GDP in 2016 to 2.8 percent of GDP in 2019, mainly to finance a scaling-up of social assistance to low-income households. Specifically, the authorities raised the benefits levels for PNAFN recipients (0.1 percent of GDP) in January 2018 and broadened its coverage from 250,000 to 285,000 households (about 10 percent of the total population compared to 15 percent of the population below the poverty line) since June 2018; improved the supply of free and subsidized health care (0.1 percent of GDP) since March 2019; and provided financial support for low-income households' unpaid energy bills and for investment in health care infrastructure (0.2 percent of GDP) in 2019. In addition, the authorities augmented seasonal cash transfers to low-income families at various occasions (for example, Ramadan and the beginning of the school year), reduced social tariffs for low-volume electricity users, and augmented social integration programs.
  - *Improving infrastructure for a better targeting of social assistance programs.* This strand of work has involved (1) adopting legislation (that is, the "AMEN" law) that guides the transition toward a targeting system by early 2019; (2) building and validating a database of low-income households (registering more than 800,000 households, a quarter of all Tunisian households, half of whom were already surveyed over 2016–19); and (3) issuing electronic cards for medical care with a unique social identifier and a payment card for cash transfers to the current beneficiaries of the health care and PNAFN programs. In parallel, the work has focused on establishing the administrative capacity and infrastructure necessary

for a targeting system (including the interoperability with the social security registries, a scoring model, and modular administration software).

- *Addressing liquidity pressures in the social security funds.* A first-stage reform of the public pension fund (CNRPS) became effective in May 2019, involving higher contribution rates for employers and employees and a gradual increase by two years in the retirement age from 60 to 62. A government decree applying the same reform elements to the private pension plan (CNSS) remains pending. As a result of these reforms, from 2020 onward, the authorities expect no further need for transfers to the public pension fund beyond the yield of the social solidarity contribution.[23] They also started discussions with social partners on a second-round pension reform that could involve deeper parametric change to ensure long-term financial viability. Further changes in the contribution system,[24] reinforced recovery efforts by the pension funds, and some arrears clearance by the government helped address short-term liquidity pressures in the social security funds.
- *Boosting spending efficiency through institutional and governance reforms.* The authorities have intensified their fight against corruption in the past five years, mainly by advancing anti-corruption legislation (including laws to protect whistleblowers and improve access to information, combined with stronger social accountability and more space for civil society). Challenges remain in making these laws effective, devoting more financial and human resources to the prosecution of corruption, and improving the independent judiciary (Transparency International 2019). Moreover, the authorities work on improving the quality and effectiveness of the public administration, notably through strengthening institutional capacity and digitalization (including that for targeting, see above).

The authorities have also started reflections on a new comprehensive social safety system, which could be implemented over the medium term. They intend to introduce a social protection floor ("socle social") as advocated by the International Labour Organization (ILO).[25] The objective is a nationally defined set of basic social security guarantees to alleviate and prevent poverty, vulnerability, and social exclusion through (1) universal access to essential health care and income security at least at a nationally defined minimum level (horizontal dimension) and (2) the progressive achievement of higher levels of protection within comprehensive social security systems (vertical dimension). This project would involve unifying under one roof Tunisia's

[23]The private pension fund has never received budget transfers.

[24]Contributions are now directly channeled to the public health fund rather than through the public pension fund.

[25]The medium-term vision was first laid out in Tunisia's National Development Plan 2016–21. A first draft law on the *Social and Solidary Economy* was adopted in the Council of Ministers in December 2019.

existing contributive and non-contributive schemes; and could allow for a more efficient delivery of social security guarantees in a three-tier system.[26] However, progress has been slow amid a fierce debate about the adequate level of a social protection floor and in the presence of limited fiscal space.

Lessons Learned

Tunisia's remarkable, yet uneven socioeconomic progress has recently slowed. Over the past three decades, living standards and human development indicators have improved and fare above levels seen in peer countries. At the same time, wide economic and social disparities persist across income groups and regions, with adverse effects on social stability and inclusive growth. Moreover, needs increased in the post-Revolution era, amid a slowdown in growth, stubbornly high unemployment, and persistent structural deficiencies.

Improving social spending is critical for addressing this challenge. The associated efforts need to ensure (1) adequacy of spending, which calls for spending increases given the population's growing social needs; (2) efficiency of the various programs in achieving the desired socioeconomic outcomes, which often calls for better targeting of beneficiaries; and (3) the financial sustainability of the programs in a context of demographic change and budget consolidation.

The authorities have already made important progress, but more work lies ahead. Recent achievements include (1) first steps in strengthening social assistance by scaling up benefit levels, widening coverage, and building up administrative capacity for better targeting; (2) an improvement in the financial viability of the social security system that will eliminate or significantly reduce the need for ad hoc budget transfers, mainly through the public pension reform and the shoring-up of funding for the health care fund; and (3) some progress on the efficiency of social spending by pursuing institutional and governance reforms.

Further efforts are needed to achieve a better social safety net. Tangible progress, however, will take time. Tunisia's experience shows that building consensus around reforms in the area of social policy is a complex challenge, especially in the presence of powerful vested interests, limited fiscal space,[27] and large gaps in infrastructure and technical capacity.

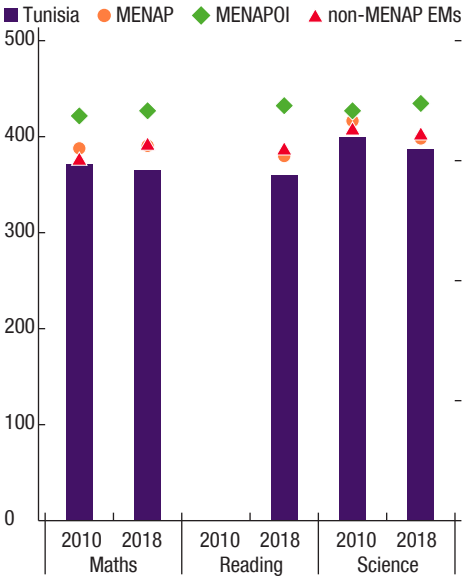
[26]Tier 1 involves minimum income and minimum health coverage for all citizens, at a cost of 3.5 percent of GDP as estimated by the ILO; Tier 2 involves a mandatory contributory system with a ceiling on benefits; and Tier 3 would be an optional or compulsory complementary system.

[27]To create fiscal space, Tunisia started reorienting current spending from the public wage bill and regressive energy subsidies to social and capital infrastructure spending.

Box 2. Tunisia: Social Spending Efficiency[1]

- ***Education.*** Schools and vocational training fail to address the growing skills mismatch among the low- and high-skilled workers in the face of the evolving needs of the private sector. Relative to regional and EM peers, Tunisia produces weak, and since the Revolution even deteriorating educational outcomes as measured by the Program for International Student Assessment (PISA, Figure 2.1). This reflects weaknesses in learning processes and content, and in the use of education spending. The wage share is high and has further grown from 88 to 93 percent over 2012–17, leaving only 4 percent for investment. Since 2005, the teacher headcount and their real wages have grown on average by 1.1 and 3.1 percent per year, respectively, while the number of students dropped by 0.5 percent in primary and by 1.7 percent in secondary education. This made the teacher-student ratio rise to levels seen in high-income countries, while teachers' hourly work declined below that in peer countries. School administration has also become a payroll cost driver.
- ***Health.*** Regional disparities persist in terms of access, headcount deployment, and management. Besides, vulnerabilities arise from out-of-pocket expenditures, notably for the less well-off. Technical and allocative inefficiencies weigh on health care inputs and output choices. They mainly emanate from (1) high and rigid wage spending (with more than three-fourths directed to permanent staff), (2) a subsidy system for pharmaceutical products (burdened by deficits and arrears accumulation), (3) little room for preventive care (with curative in- and outpatient care assuming three-quarters of health expenditures already), and (4) deficiencies in the referral system.
- ***Labor market insertion programs.*** They perform poorly (with an average placement rate of 20 percent) owing to weaknesses in targeting, governance, and implementation. Further challenges arise from rigid labor market regulations, insufficient job creation in the formal private sector, high labor taxes, and large disparities between public and private sector compensation. At the same time though, precarious employment in the informal sector has grown (providing no coverage by social security and thus little protection from risks and shocks), fueled by poor access to finance and difficulties in crossing over into a highly regulated formal private sector.

Figure 2.1. PISA Test Results, 2010 and 2018
(Average score, 0–600)



Sources: OECD; PISA; and IMF staff calculations.
Note: PISA = Programme for International Student Assessment.

[1]See World Bank (2015, 2015b, and 2018).

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