

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.

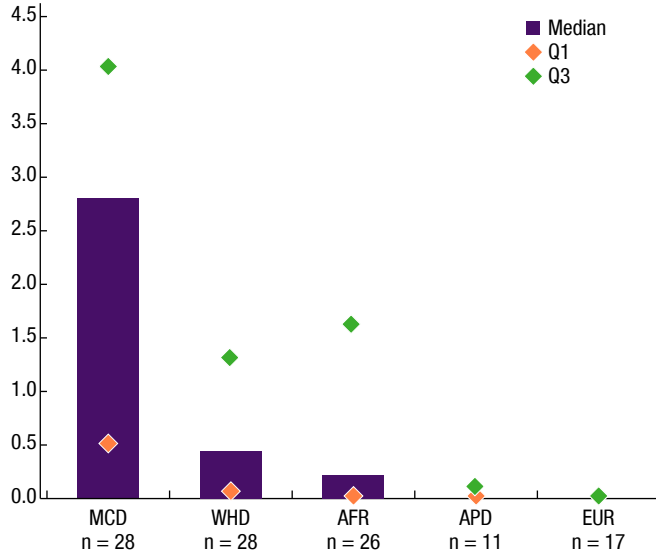
For the purposes of this paper we use a traditional definition of “social spending.” In line with IMF (2019b) we define as “social” all public spending on social protection (social insurance and social assistance), education services, and health services (Figure 1). This may understate the amount of 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 and

¹This 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)

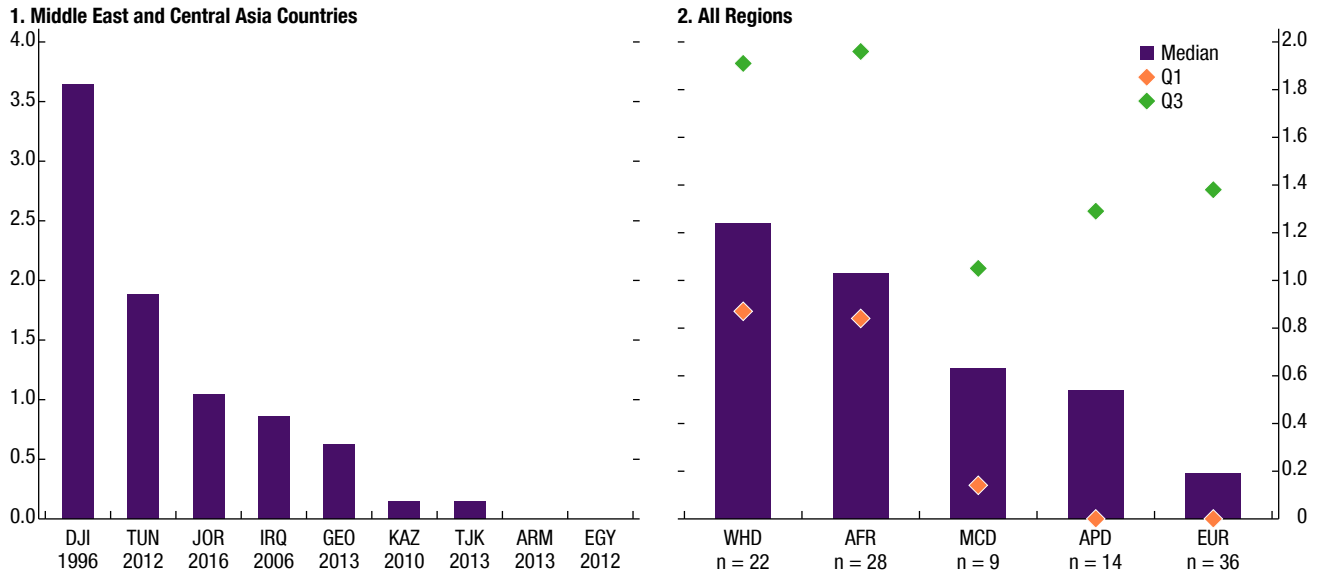


Sources: IMF, FAD Country-level Energy Subsidies by Energy Product and Externality Component; and IMF staff calculations.
 Note: Pre-tax energy subsidies are estimated as the amount by which the cost of supplying energy products exceeds the price paid by its users. They do not take into account foregone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

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

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.

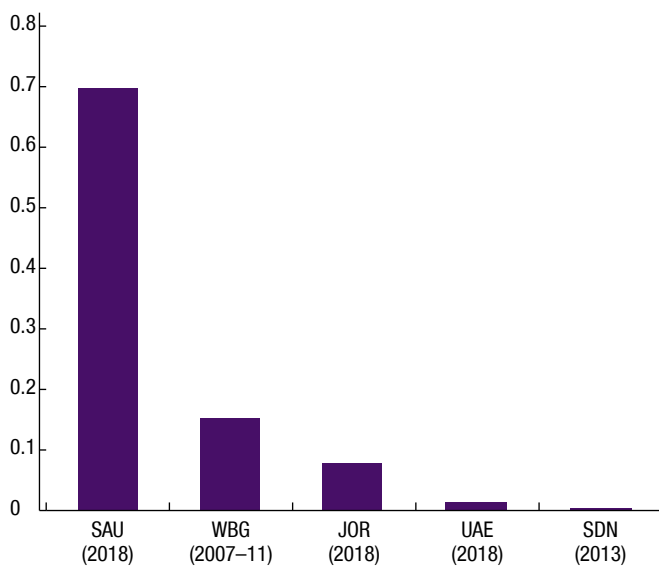
a greater number of people. In the case of excess wage bill spending, Middle East and Central Asia countries appear to be in line with other country groups on average.

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

²Zakat 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).

³Noor and Pickup (2017).

Annex Figure 3. Zakat Contributions
(Percent of GDP)



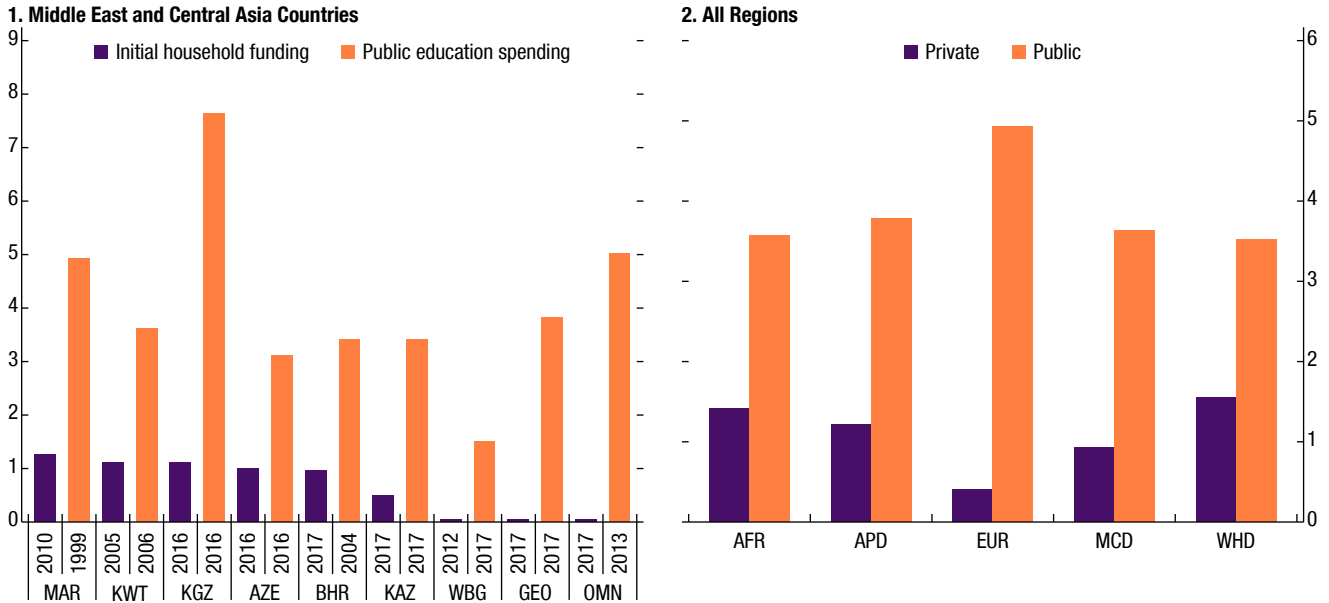
Sources: International Policy Centre for Inclusive Growth Working Paper #168; Jordan National Zakat Fund; Palestinian Zakat Fund; UAE Zakat Fund; Saudi General Authority for Zakat and Tax; and IMF staff calculations.
Note: Data do not capture Zakat contributions through other channels, such as direct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

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 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

⁴However, 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.

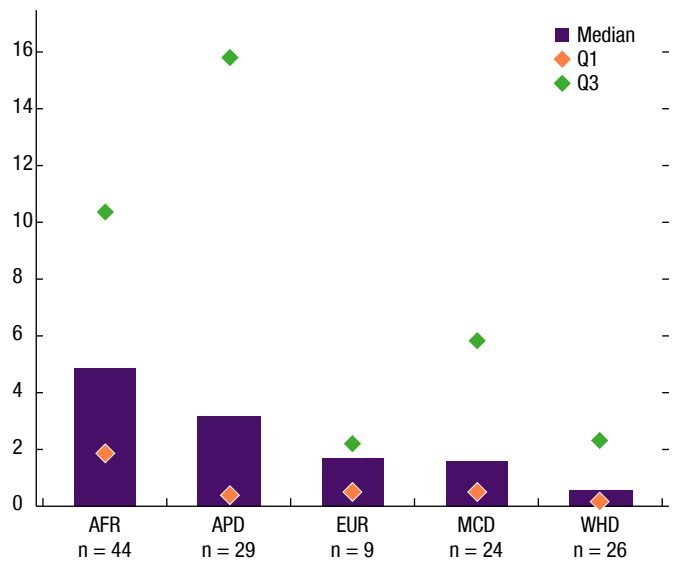
Annex Figure 4. Funding of Education
(Percent of GDP)



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

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 development 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.

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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) [<i>t</i> -1]	0.021*** (0.005)	0.015*** (0.006)	0.022** (0.010)	0.003* (0.010)
Inflation, consumer prices (Annual percent)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	0.000 (0.000)
GDP per Capita (Log) [<i>t</i> -1]	0.069*** (0.003)	0.130*** (0.010)	0.122*** (0.006)	0.014* (0.007)
Urbanization (Log)	0.019*** (0.006)	0.164*** (0.032)	0.186*** (0.012)	0.138 (0.000)
Domestic credit to private sector (Percent of GDP) (Log)	0.003 (0.003)	0.001 (0.003)	0.001 (0.001)	-0.001 (0.002)
Government Effectiveness (Log)	0.028** (0.002)	-0.010** (0.000)	-0.001 (0.000)	0.001 (0.005)
Trade, percent GDP (Log)	-0.001* (0.000)	0.001** (0.009)	0.017*** (0.003)	0.001 (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.

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

²Includes 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) [<i>t</i> -1]	-0.1888*** (0.018)	-0.073*** (0.022)	-0.386*** (0.104)	0.009 (0.011)
Inflation, consumer prices (Annual percent)	-0.001 (0.001)	0.001 (0.000)	-0.000 (0.000)	0.000 (0.000)
Government Effectiveness (Log)	-0.253*** (0.017)	0.042 (0.037)	-0.010** (0.085)	0.013 (0.003)
Domestic credit to private sector (Percent of GDP) (Log)	-0.027** (0.017)	-0.087*** (0.017)	-0.076*** (0.010)	-0.014 (0.011)
Private Health Expenditure as percent of GDP (log)	0.047*** (0.017)	0.055 (0.035)	-0.134** (0.053)	0.003 (0.003)
GDP per Capita (Log) [<i>t</i> -1]	-0.222*** (0.015)	-0.530*** (0.068)	-0.457*** (0.035)	-0.035* (0.018)
Access to safe water (Log)	-0.132* (0.068)	-0.524*** (0.177)	-0.820*** (0.129)	-0.058 (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.

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

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

Variables	Output Efficiency Score				
	(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*** (0.002)	0.041*** (0.007)	0.002 (0.021)	0.005 (0.022)	0.047* (0.024)
GINI Index	-0.000 (0.000)	-0.001 (0.001)	-0.005** (0.002)	-0.007*** (0.002)	-0.009*** (0.002)
General government final consumption expenditure (Percent of GDP)	0.000 (0.000)	-0.002** (0.001)	0.003 (0.003)	0.003 (0.003)	0.000 (0.003)
Inflation	0.000 (0.000)	-0.001 (0.001)	0.002 (0.002)	0.003 (0.002)	-0.002 (0.002)
Population (log)	-0.000 (0.001)	-0.000 (0.003)	-0.007 (0.008)	0.002 (0.010)	0.002 (0.007)
Urbanization (Log)	0.005 (0.004)	0.025** (0.012)	0.103*** (0.037)	0.127*** (0.047)	-0.002 (0.035)
HIV/AIDS Prevalence	-0.026*** (0.004)	-0.132*** (0.017)	-0.081* (0.043)	-0.178*** (0.062)	0.006 (0.038)
Arab Regions (Base: EMs)	-0.011** (0.005)	-0.013 (0.018)	-0.238*** (0.058)	-0.173** (0.077)	0.049 (0.092)
Advanced Economies	-0.002 (0.004)	0.007 (0.017)	0.109** (0.048)	0.044 (0.046)	0.016 (0.039)
Low Income Developing Countries	-0.011** (0.005)	-0.026 (0.016)	-0.197*** (0.042)	-0.204*** (0.052)	-0.034 (0.032)
Constant	0.979*** (0.016)	0.890*** (0.065)	0.556*** (0.209)	0.460* (0.256)	0.981*** (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** (0.002)	0.028*** (0.007)	-0.021 (0.021)	-0.020 (0.023)	0.025 (0.026)
Domestic credit to private sector as percent of GDP (Log)	0.011*** (0.002)	0.029*** (0.009)	0.074*** (0.021)	0.083** (0.032)	0.069*** (0.025)
GINI Index	-0.000 (0.000)	-0.001* (0.001)	-0.005*** (0.002)	-0.006*** (0.002)	-0.009*** (0.002)
General government final consumption expenditure (Percent of GDP)	-0.000 (0.000)	-0.002** (0.001)	0.001 (0.003)	0.002 (0.003)	-0.001 (0.003)
Population (Log)	-0.001* (0.001)	-0.002 (0.003)	-0.012 (0.008)	-0.002 (0.010)	-0.003 (0.007)
Urbanization (Log)	0.005 (0.003)	0.024** (0.012)	0.103*** (0.038)	0.122** (0.049)	-0.007 (0.035)
HIV/AIDS Prevalence	-0.020*** (0.004)	-0.114*** (0.017)	-0.038 (0.041)	-0.133** (0.057)	0.041 (0.044)
Inflation	0.001*** (0.000)	0.000 (0.001)	0.004 (0.002)	0.005** (0.002)	-0.000 (0.002)
Advanced Economies	-0.002 (0.003)	0.008 (0.015)	0.095** (0.047)	0.020 (0.046)	-0.001 (0.037)
Low Income Developing Countries	-0.008** (0.004)	-0.018 (0.014)	-0.181*** (0.040)	-0.189*** (0.045)	-0.020 (0.033)
MENA	-0.009** (0.004)	-0.008 (0.015)	-0.236*** (0.049)	-0.191** (0.075)	0.032 (0.083)
Constant	0.953*** (0.016)	0.816*** (0.069)	0.385* (0.215)	0.200 (0.296)	0.844*** (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)	(7)	(9) ¹
Public Health Spending as percent of GDP (Log) [$t-1$]	-0.414*** (0.134)	-0.358*** (0.120)	-0.259** (0.123)	-0.187* (0.108)	-0.200* (0.107)		
Public Education Spending as percent of GDP (Log) [$t-1$]	-0.793*** (0.229)	-0.664*** (0.232)	-0.513** (0.215)	-0.588*** (0.186)	-0.580*** (0.189)		
Public Social Spending (Log) [$t-1$]						-0.521** (0.229)	-2.128*** (0.332)
Inflation, consumer prices (annual percent)	0.003 (0.004)	0.002 (0.004)	0.000 (0.004)	-0.002 (0.002)	-0.003 (0.002)	-0.003*** (0.001)	-0.006*** (0.001)
Urbanization (Log)		-3.006*** (0.528)	-2.369*** (0.626)	-2.440*** (0.525)	-2.485*** (0.526)	-2.862*** (0.640)	-1.069* (0.551)
Domestic credit to private sector (Percent of GDP) (Log)			-0.265** (0.127)	-0.211* (0.110)	-0.223** (0.111)	-0.131 (0.095)	-0.054 (0.045)
Government Effectiveness				-0.179 (0.140)	-0.154 (0.128)	-0.311* (0.168)	-0.557*** (0.103)
Trade (Percent of GDP)					0.003 (0.002)	0.004* (0.002)	0.002 (0.001)
Constant	2.869*** (14.950***)	14.950*** (2.000)	13.014*** (2.256)	13.189*** (1.923)	13.172*** (1.950)	14.659*** (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.¹Instruments are share of agriculture in GDP and ethnic tensions index.

SOCIAL SPENDING FOR INCLUSIVE GROWTH IN THE MIDDLE EAST AND CENTRAL ASIA

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)	-0.000 (0.000)	-0.004 (0.006)	0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)
Urbanization (Log)	0.593*** (0.065)	0.591*** (0.068)	-1.886 (2.978)	0.858*** (0.327)	0.405*** (0.080)	0.379*** (0.075)
Domestic credit to private sector (Percent of GDP) (Log)	0.001 (0.013)	-0.005 (0.012)	0.244 (0.295)	-0.028 (0.034)	0.014** (0.006)	0.016** (0.007)
Government effectiveness (Log)	-0.001 (0.002)	-0.001 (0.002)	0.005 (0.014)	-0.001 (0.003)		
Trade, percent GDP (Log)	-0.024 (0.018)	-0.028 (0.018)	0.165 (0.231)	-0.042 (0.030)	-0.028** (0.013)	-0.023 (0.016)
External Conflict (E)	0.001 (0.003)	0.001 (0.003)	0.010 (0.027)	-0.003 (0.005)	-0.004 (0.003)	-0.003 (0.004)
Internal Conflict (D)	-0.003 (0.003)	-0.003 (0.003)	0.015 (0.025)	-0.006 (0.004)	-0.004*** (0.001)	-0.004*** (0.001)
Social spending (PPPS/capita, log, $t-1$)		0.005 (0.005)				
Social spending (Percent of GDP, log)			-0.356 (0.425)		0.003 (0.014)	
Social spending (PPPS/capita, log)				0.051 (0.061)		-0.003 (0.018)
Corruption ($t-1$)					-0.001 (0.006)	-0.004 (0.007)
Socialspending#Corruption					0.001 (0.001)	0.001 (0.001)
Constant	-1.648*** (0.335)	-1.648*** (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** (0.061)	0.145** (0.056)	0.127** (0.050)	0.159*** (0.057)	0.119** (0.053)	0.153*** (0.055)	0.152** (0.059)	0.136** (0.053)	0.841** (0.365)
Access to safe water (Log)	2.136*** (0.336)	1.432*** (0.378)	1.196*** (0.395)	1.587*** (0.345)	1.301*** (0.409)	1.626*** (0.359)	1.630*** (0.357)	1.951*** (0.264)	1.386*** (0.325)
Inflation, consumer prices (Annual percent)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.001* (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)
Fertility Rate [$t-1$]		-0.214*** (0.063)	-0.151** (0.062)	0.032 (0.042)	-0.148** (0.059)	0.028 (0.042)	0.032 (0.042)	0.021 (0.046)	0.014 (0.031)
Urbanization (Log)			0.830*** (0.312)	1.044*** (0.228)	0.825** (0.318)	1.056*** (0.224)	1.044*** (0.236)	1.026*** (0.245)	1.153*** (0.169)
Bureaucracy Quality				0.065 (0.054)					
Government Effectiveness					0.037 (0.043)				
Democratic Accountability						-0.013 (0.018)	-0.013 (0.018)	-0.021 (0.017)	-0.003 (0.013)
GDP per Capita (Log) [$t-1$]							0.009 (0.044)	-0.025 (0.056)	-0.124* (0.069)
Domestic credit to private sector (Percent of GDP) (Log)								0.009 (0.017)	-0.037 (0.028)
Constant	-5.391*** (1.484)	-1.699 (1.755)	-4.080** (1.776)	-7.485*** (1.296)	-4.551*** (1.731)	-7.471*** (1.334)	-7.526*** (1.329)	-8.512*** (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** (0.103)		2.030*** (0.709)	
Inflation, consumer prices (annual percent)	-0.001* (0.001)	-0.001* (0.001)	-0.006** (0.003)	-0.006** (0.003)
Urbanization (Log)	1.847*** (0.634)	1.847*** (0.634)	2.493*** (0.745)	2.493*** (0.745)
Government Effectiveness: Estimate	0.024 (0.070)	0.024 (0.070)	-0.031 (0.106)	-0.031 (0.106)
GDP per Capita (Log) [$t-1$]	0.449*** (0.140)	0.211 (0.158)	0.655*** (0.197)	-1.375** (0.652)
Fertility Rate [$t-1$]	-0.489*** (0.120)	-0.489*** (0.120)	-0.459*** (0.139)	-0.459*** (0.139)
Domestic credit to private sector (Percent of GDP) (Log)	0.121* (0.069)	0.121* (0.069)	-0.314* (0.173)	-0.314* (0.173)
Development assistance and aid (Log)	0.000 (0.001)	0.000 (0.001)	-0.001 (0.002)	-0.001 (0.002)
External Conflict (E)	-0.029 (0.025)	-0.029 (0.025)	-0.013 (0.039)	-0.013 (0.039)
Internal Conflict (D)	-0.008 (0.015)	-0.008 (0.015)	0.008 (0.016)	0.008 (0.016)
Public Education Spending per capita (Log, $t-1$)		0.238** (0.103)		2.030*** (0.709)
Constant	-7.144*** (2.504)	-6.049** (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.

SOCIAL SPENDING FOR INCLUSIVE GROWTH IN THE MIDDLE EAST AND CENTRAL ASIA

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 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 $\lambda \rightarrow 0$, there is no contribution of inefficiency (this reduces the estimation back to OLS) while when $\lambda \rightarrow \infty$, 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.

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

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

In percentage terms:

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

¹If the inputs are perfectly efficient, $u_i = 0$. In that case, there is no dampening of inputs in producing outputs ($e^{-u_i} \rightarrow 1$). On the other hand, as $u_i \rightarrow \infty$, any amount of input cannot be used to produce any output, as $e^{-u_i} \rightarrow 0$. 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,

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

$$\Delta x'_{ijt} = \frac{1}{\beta_j} \frac{\Delta E_i}{E_i}$$

Here x'_{ijt} is the j th input while β_j is the coefficient with j th input.

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

Kingdom of Bahrain¹

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.

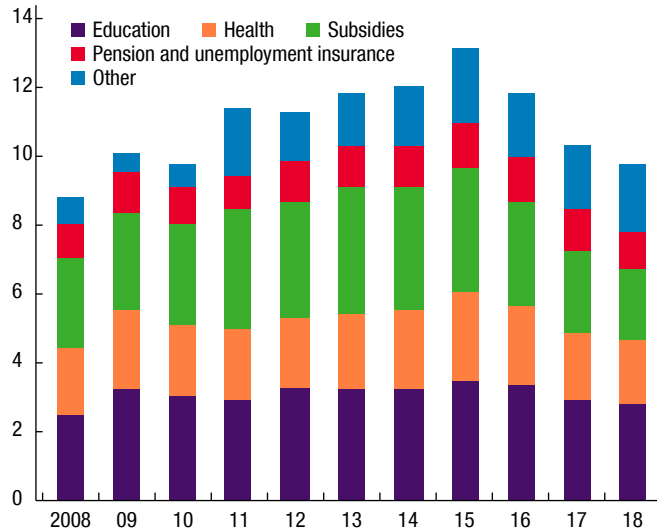
Recent Trends in Social Spending

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

¹Prepared by Mohammed Zaher.

²Social 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.

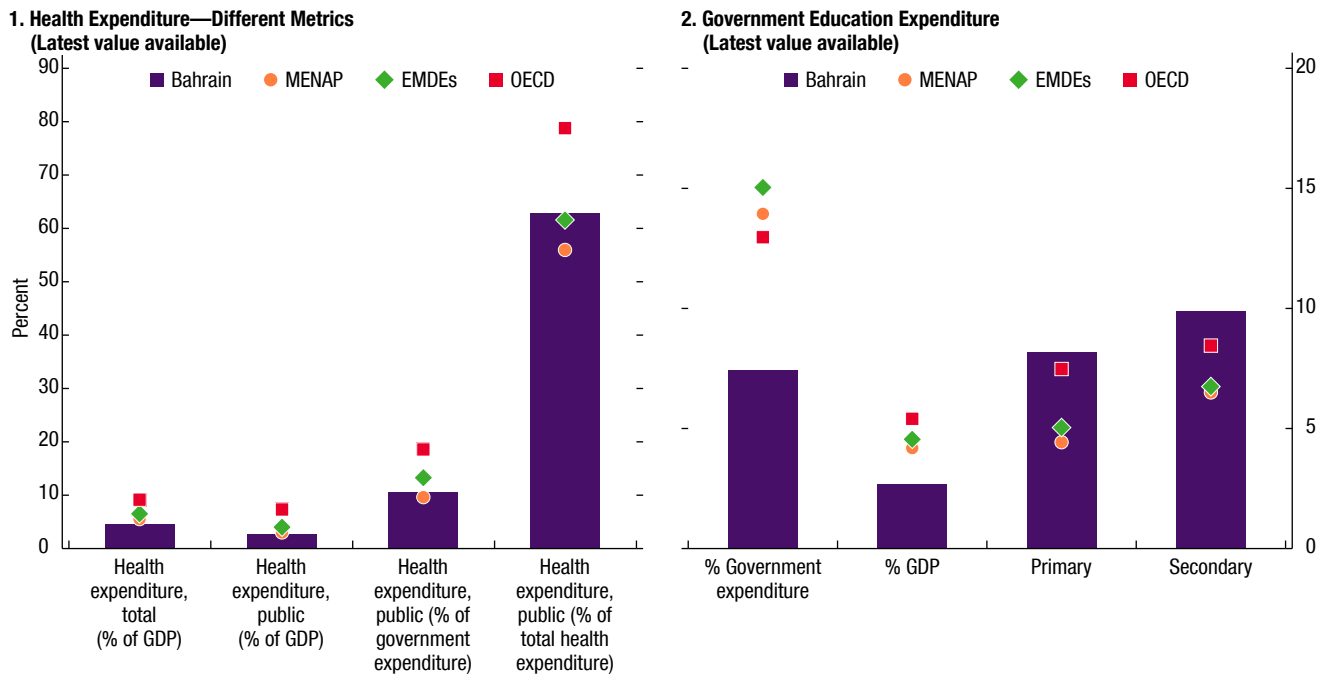
arguably understate the true extent of social support given fuel subsidies and generous public employment seen in many GCC countries including Bahrain. Spending on education and health consumes almost half of social spending related outlays, followed by subsidies. However, the urgent need to restore 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 tertiary 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

³The 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



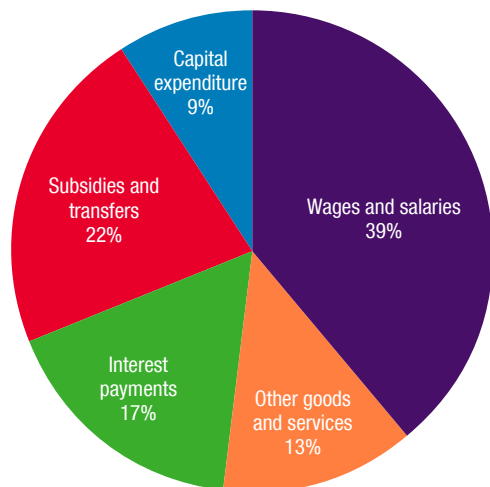
Sources: World Bank ASPIRE Database; World Bank, Education Statistics; World Health Organization, Global Health Expenditures Database; IMF, FAD Expenditure Assessment Tool; and IMF staff calculations.

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.

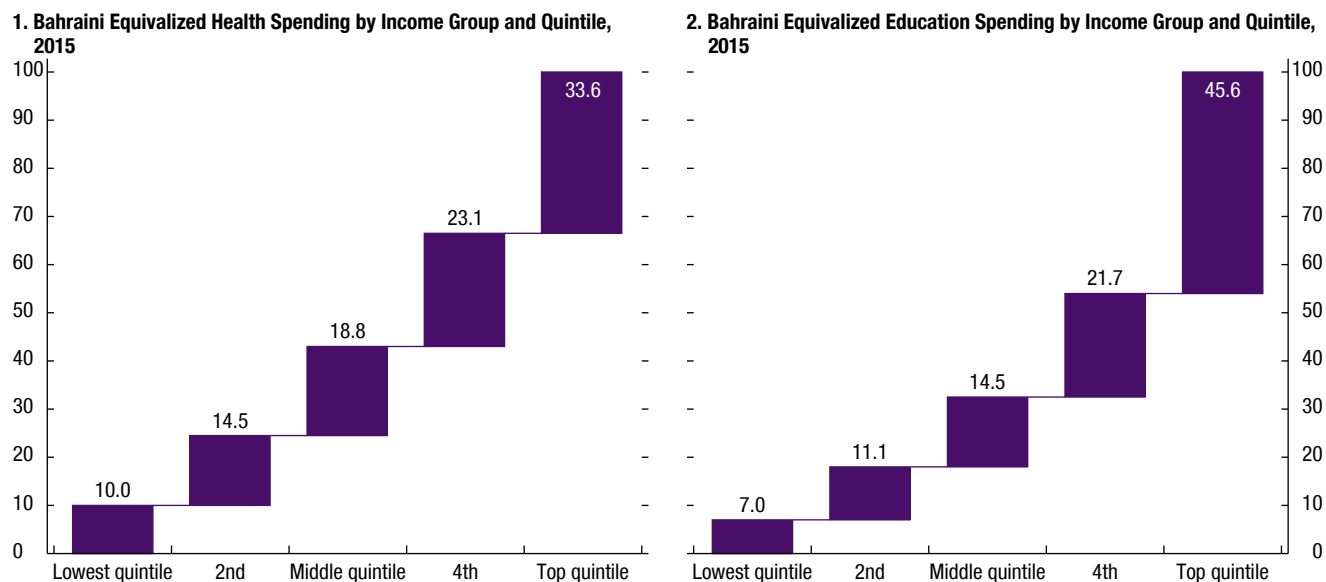
support to enhance the productivity and training of the national workforce. Several innovative programs are provided to Bahraini individuals and businesses which include training, financing, grants, advisory, entrepreneurship support, and others. The Training and Wage Support Program provides financial 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-

⁴These 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.

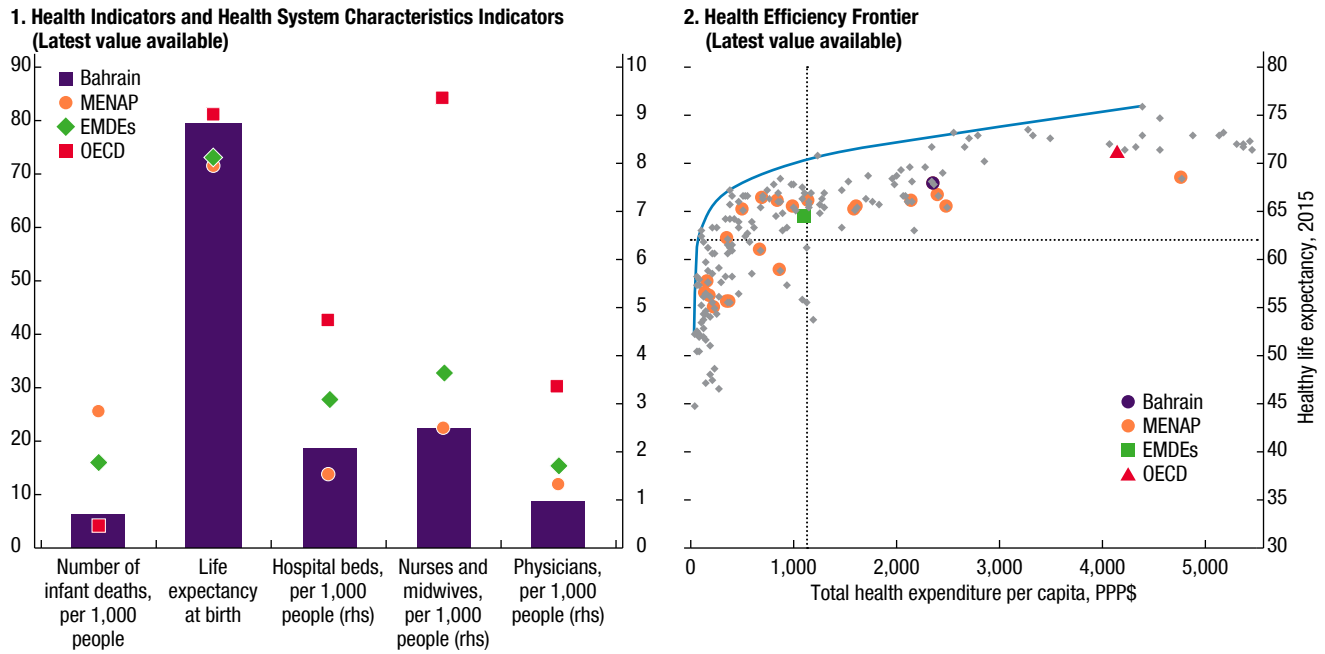
ingness by Bahrainis to invest in their own (or their children's) health and education. While spending gaps remain, private spending on health and education has increased from 7 percent of total household spending in 2005 to 11.5 percent in 2015. The lowest two income quintiles of Bahrainis account for 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



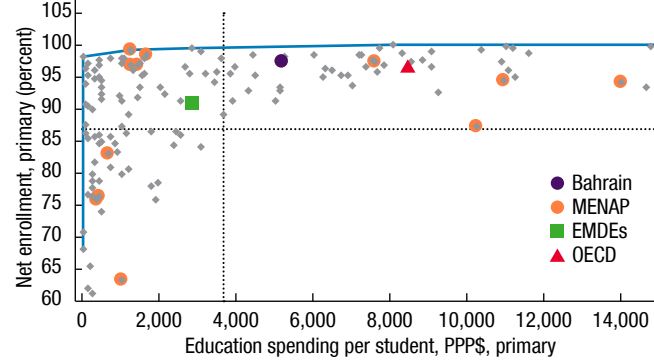
Sources: IMF, FAD Expenditure Assessment Tool; World Health Organization, Global Health Expenditures Database; and IMF staff calculations.

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).

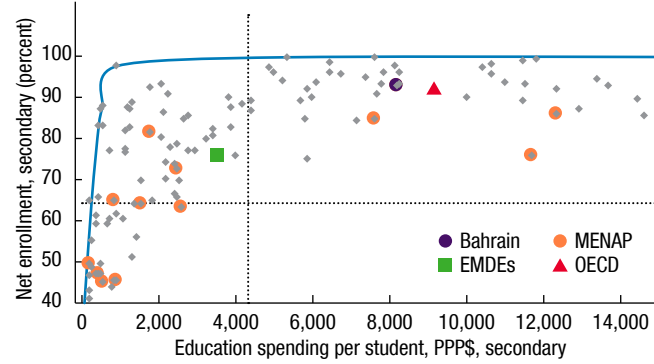
Education outcomes also reflect major progress. Net primary and secondary enrollments in Bahrain are exceptionally high, exceeding the respective ratios in OECD countries. Primary completion rate in Bahrain is also high at 98 percent by end 2018, above the 91.3 percent average for the MENA region and 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

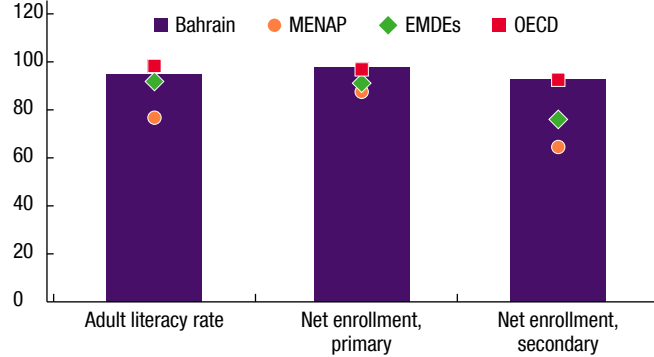
1. Government Education Spending and Outcome, Primary
(Latest value available)



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

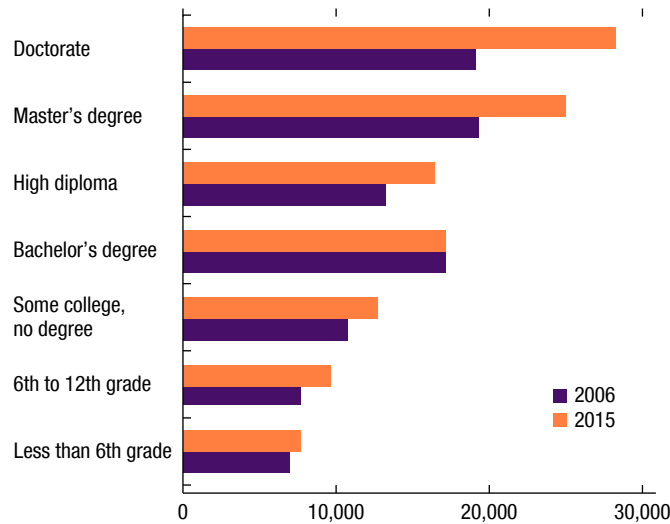


3. Education Indicators
(Latest value available)



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

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



Sources: National authorities; and IMF staff calculations.

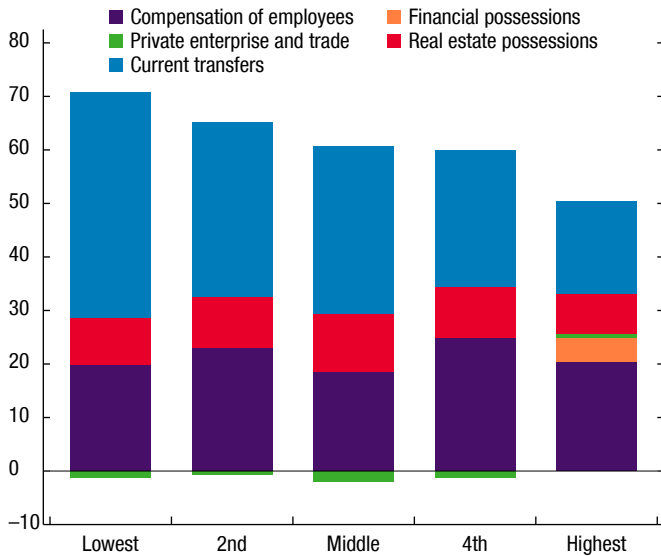
Dividends from education are substantial and on the rise. Annex Figure 12 shows that households' earnings in Bahrain increase with their education level, though education attainment is only one factor in determining an individual's income. The education premium has increased significantly between 2006 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

⁵There 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.

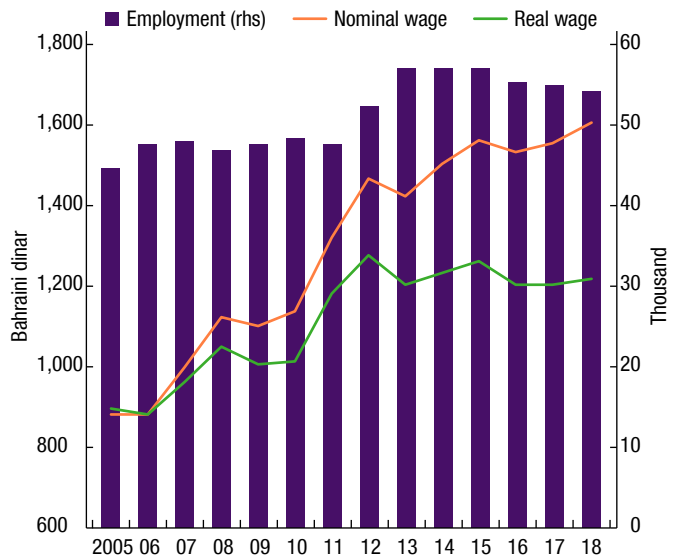
⁶The calculation of "Equivalentization" follows the method outlined in OECD (2011).

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.

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

Republic of Armenia⁸

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/TIMSS¹⁰ 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.

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

⁹Defined 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.

¹⁰Note 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 TIMSS 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 TIMSS 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 schooling¹² 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

¹¹TIMSS 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).

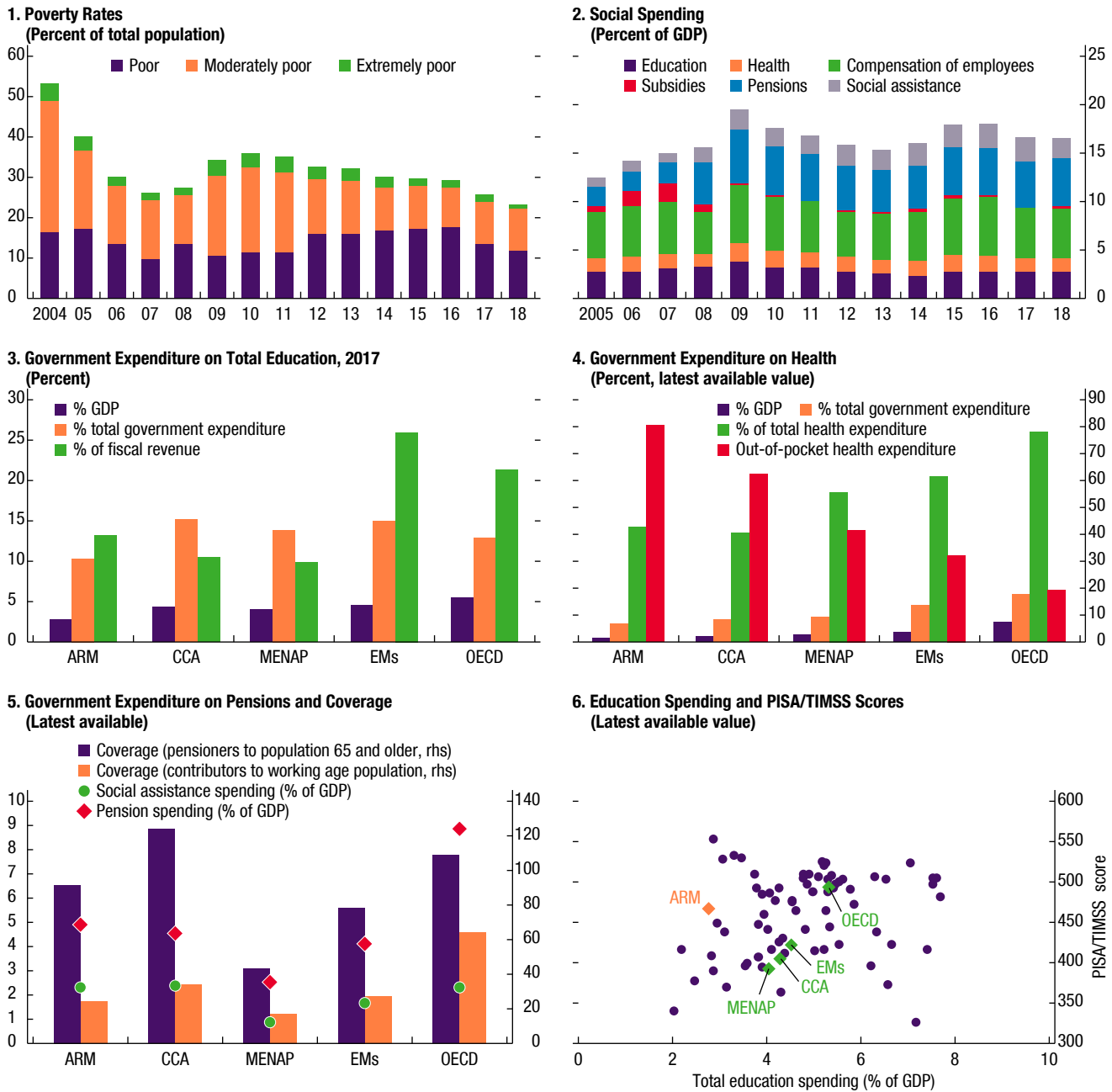
¹²The learning-adjusted years of schooling is a component of the World Bank Human Capital Index. It attempts to capture the quality of education, reflecting that children in some countries learn less than others, despite being in school for the same time. It multiplies estimated years of schooling by 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 SBA¹³ 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.

¹³The 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 Tunisia¹⁴

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.

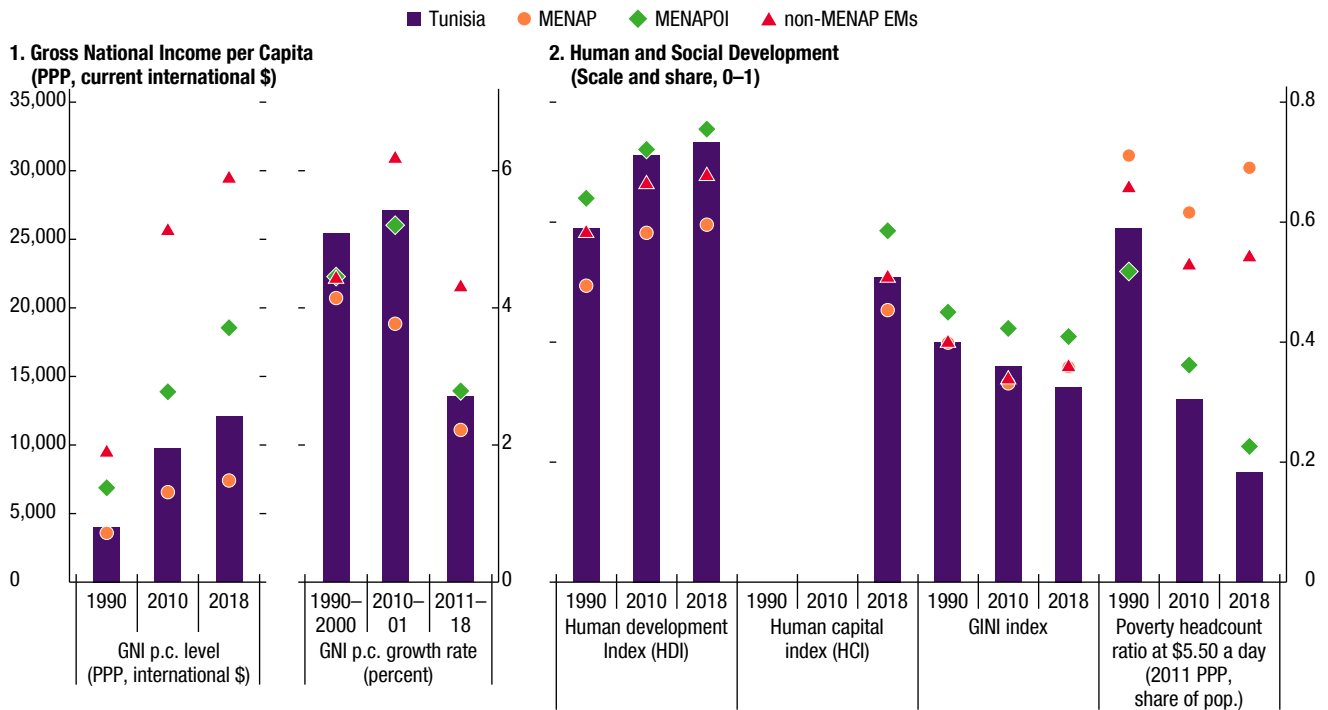
¹⁴Prepared by Kerstin Gerling.

¹⁵Several 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.

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

¹⁷This 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, 1990–2018¹



Sources: World Bank WDI; UNDP; and IMF staff calculations.

¹Simple 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.

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

¹⁹Improved 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.

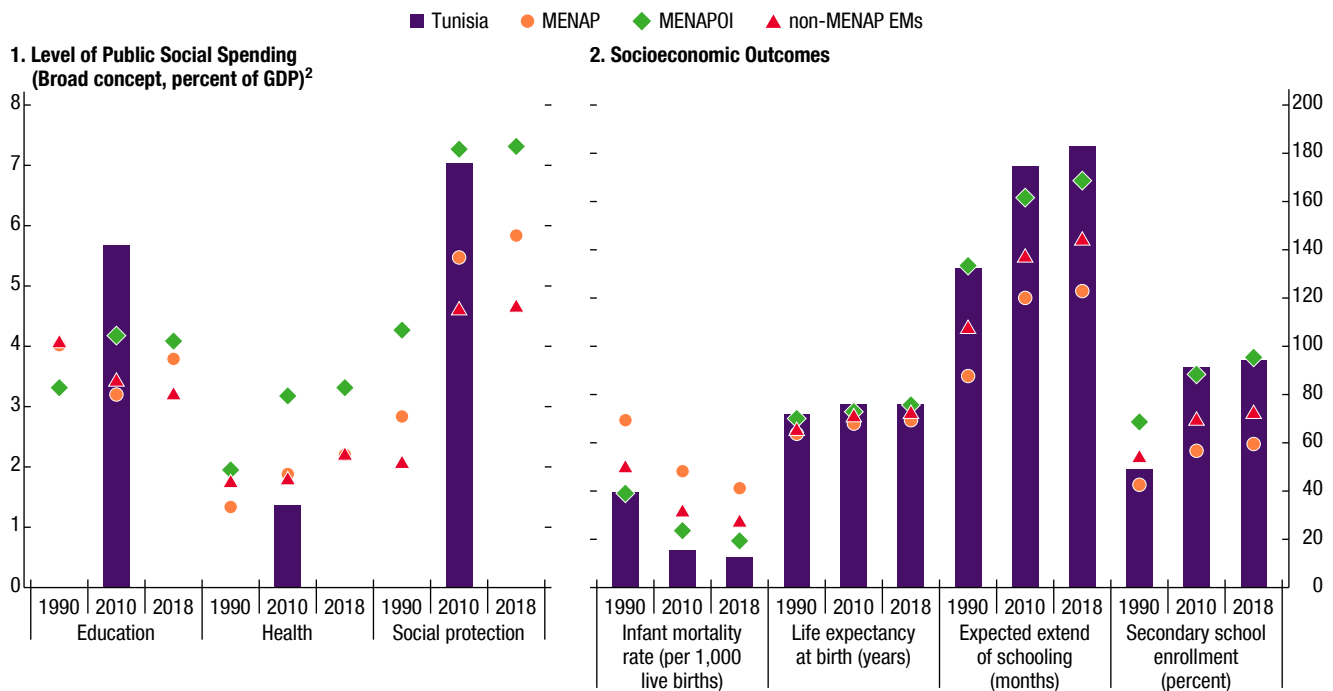
- **Public services.** Their effectiveness in addressing supply-side constraints remains limited, especially those emanating from deficiencies in education, health care, and labor market regulations and programs.
- **Social security.** The system's coverage remains too narrow. Only 37 percent of Tunisians 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

²⁰Old-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.

²¹PNAFN (*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).

²²Private 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, 1990–2018¹



Sources: World Bank, World Development Indicators; UN Development Programme; and IMF staff calculations.

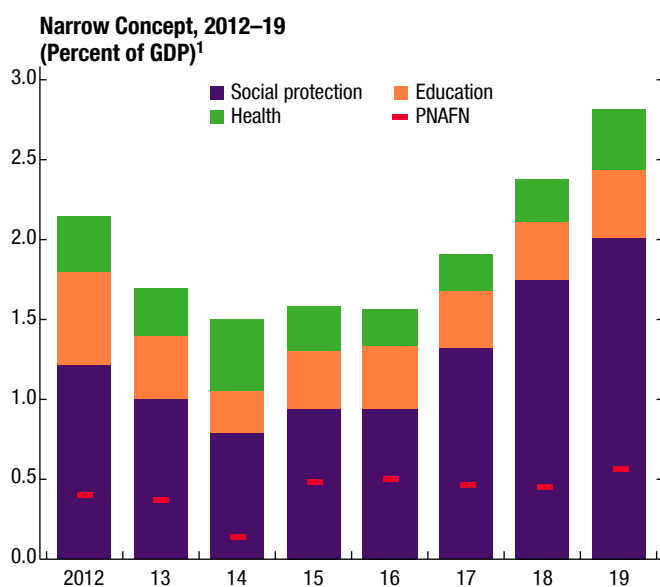
¹Simple averages using country data for the indicated year or the last available observation within +/- three-year window.

²Comprising 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.

¹Under 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.

¹Under 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

²³The private pension fund has never received budget transfers.

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

²⁵The 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.

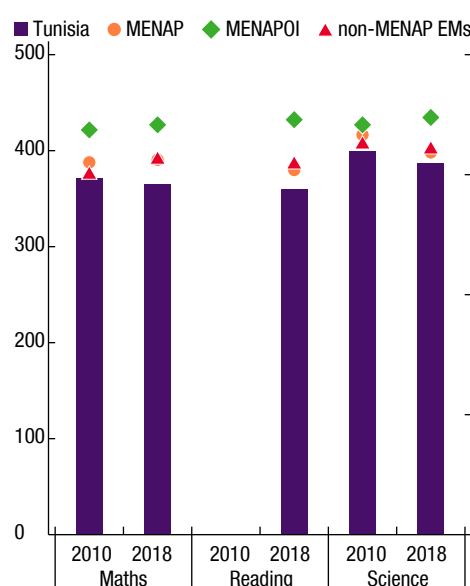
²⁶Tier 1 involves minimum income and minimum health coverage for all citizens, at a cost of 3.5 percent of GDP as estimated by the ILO; Tier 2 involves a mandatory contributory system with a ceiling on benefits; and Tier 3 would be an optional or compulsory complementary system.

²⁷To 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 Efficiency¹

- 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 fall 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.

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

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