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MENA CRISIS TRACKER

MENA Crisis Tracker – 10/25/2021

The MENA Crisis Tracker is a weekly newsletter that provides information on public health indicators, expected economy-wide losses, and social consequences of the ongoing COVID-19 crisis in the Middle East and North Africa. COVID-19's spread, fatality, and economic costs are particularly difficult to ascertain when testing is far from universal. Data transparency is key to facilitate context-specific policy responses, which require tradeoffs between public health outcomes and socio-economic conditions in the short run. But publicly available data must be interpreted with caution because testing is far from universal. In addition to presenting COVID-19 related indicators with caveats, the Tracker provides links to publicly available research on the economics of the pandemic and potential policy responses.

Highlights from this edition[1]:

- **Missing Data Alert**: In the absence of universal testing, general mortality rates during 2021 can be compared to pre-pandemic mortality as a proxy for the public health consequences of the pandemic. Unfortunately, MENA countries do not offer publicly available data on deaths.
- High-income MENA countries lead in testing per capita – see Public Health Tracker. Testing data for Algeria, Yemen, and Syria has been updated using Worldometer data, but WB staff cannot corroborate the information using official government sources. Many MENA countries have positivity rates above the WHO's recommendation of 5% or lower.
- The Tracker presents information on vaccination efforts across MENA. See last section under Public Health Tracker.
- Global evidence indicates that testing per person tends to rise with income per capita, after controlling for population size and the quality of public health systems. This finding confirms that developing economies are at a disadvantage relative to rich countries. See What Is Correlated with Testing per Capita.
- Expected macroeconomic losses due to the pandemic have surged since March 2020, reaching 6.1% of MENA's 2019 GDP as of October 3rd, 2021 relative to the counterfactual scenario of no crisis. The expected GDP losses are highest for Lebanon, with an expected accumulated loss in 2021 equivalent to 9.3% of its 2019 GDP. See Macroeconomic Costs.
- The economic losses have increased poverty relative to the counterfactual scenario without the crisis. Yet estimates of increases in the number of poor people might be underestimated. See Poverty and Social Costs.
- In many MENA countries, food prices have risen by more than 20 percent since February 14th, 2020. See Insights from the MENA Welfare Observatory.
- Insights from Academia includes a new paper that shows how social norms, namely risk taking, patience, and trust, can explain the heterogenous effects of policy responses on behavior change during the pandemic.

[1] The editor for the October 18th, 2021 edition is Christina A. Wood, Senior Economist, Office of the Chief Economist for MENA. Excellent data assistance provided by Rana Lotfi.

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I. Public Health Tracker

Under the hypothetical of universal testing, the spread of the virus is measured by the number of COVID-19 cases per capita, and its fatality rate is tracked by the number of deaths per capita. Given that the incidence of testing around the world and in MENA is far from universal, indicators of the spread are neither strictly reliable nor comparable across countries. In fact, it is likely that countries with more widespread testing will present higher rates of spread and fatality. Hence the degree of testing itself must be tracked to put the indicators of the spread and deaths in perspective. Testing is tracked by two indicators: the number of tests per capita and the test positivity rate (number of positive cases over total tests) which tends to decline with the incidence of testing. Table 1 provides a summary of the indicators and their caveats.

Table 1: Summary of Public Health Indicators

	Indicator	Caveats
Testing	Tests per capita	Testing data is sparse for some economies
	Test positivity rate (number of positive cases over total tests)	Emerging rule-of-thumb: Test-positivity rate should be below 5 percent
Spread	Number of COVID-19 cases per capita	Testing is not universal; many cases may be missed
Fatality	Deaths due to COVID-19 per capita	COVID-19 deaths may be misattributed, or at-home deaths may be missed; deaths may be underestimated

Missing data alert: Given that testing is not universal, an arguably more trustworthy indicator of the fatality rate is the difference between total deaths reported during the spread and pre-pandemic mortality trends. Currently, most MENA countries do not provide readily accessible historical or recent data on the number of deaths (due to any cause). This alone indicates that MENA faces a transparency challenge.

Another caveat to keep in mind is that each country may be at a different stage of the pandemic. A country may seem to be faring better than another, although at the peak of the outbreak it may suffer more. Without universal testing, the true spread of the virus can only be understood by random population testing.[1][2] Notably, reported numbers are susceptible to selection bias, since it is common for only those with symptoms to be tested. Random population testing has only been undertaken in a few places. In New York State, random testing of 3000 individuals revealed that 14 percent were carriers of the COVID-19 antibody as of April 23.[3] In Indiana, random population

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7138654/

[2] https://www.medrxiv.org/content/10.1101/2020.04.09.20059360v2

[3] https://www.reuters.com/article/us-health-coronavirus-usa-new-york-idUSKCN2252WN

testing in April suggested that the virus had a 2.8% prevalence rate in the state, implying that for every officially reported case of COVID-19, 10 cases were unreported.[4] In a state in southern Brazil, a program was launched to randomly test 18,000 people. A significant upward trend was observed over the course of three surveys, with an increase in seroprevalence from 0.135% in the first round to 0.222% in the third during the early days since the arrival of the virus in southern Brazil. [5]

In the MENA Region, few studies have tried to assess the seroprevalence of antibodies against SARS-CoV-2. In Al-Madinah, Saudi Arabia, after studying samples from 1,212 healthy blood donors between mid-May and mid-July, 2020, a study showed a seroprevalence of 19.3%.[6] In Iran, and based on a larger sample size of 8,902 individuals, random testing conducted between April and June 2020 showed a seropositivity rate of 17.1%.[7] A second study conducted in Iran's Guilan province during April 2020, based on 551 individuals, exposed an even higher seroprevalence of 22%.[8] However, it is important to notice that seropositivity rates may largely vary depending on the population and the surrounding circumstances. In Jordan, after studying 746 healthy blood donors living under strict lockdown measures between January and June 2020, it was found that none of the individuals carried COVID-19 antibodies. Still, it is possible that the spread of the virus could be much higher than reported by official statistics.

News Highlights:

- Smart COVID-19 modelling tool launched to assess visitor safety at Dubai Expo 2020.
- Egypt's hotels back to full capacity, tourism official says.
- Tunisia imposes COVID-19 vaccine pass on Tunisians and all foreign visitors.
- Gulf's Covid-19 death rate far lower than Europe's 'due to young population'.
- GCC e-Pharmacies Markets Report, 2016-2020 & 2021-2026 - ResearchAndMarkets.com.
- Middle East box office revenue to cross $800 million in 2021 as 4th META Cinema Forum opens.

[4] https://www.medrxiv.org/content/10.1101/2020.04.09.20059360v2

[5] https://www.nature.com/articles/s41591-020-0992-3

[6] https://www.sciencedirect.com/science/article/pii/S1319562X20306641

[7] https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30858-6/fulltext

[8] https://www.medrxiv.org/content/10.1101/2020.04.26.20079244v1

The information below covers data for the date ending: October 25, 2021.

1. Testing as of October 25, 2021.

Table 2 presents each country's tests per million of population and the test-positivity rate. Test positivity rates have improved slightly in a few countries yet remained largely unchanged in most countries since January 2021. A low test-positivity rate in cases of low tests per million, or a high test-positivity rate suggests that testing is selective and insufficient relative to the spread of the disease.

Based on last week's data, Arabian gulf countries continue to lead the region in terms of having the highest tests per million in the region, specifically the UAE (9,084,693), Oman (4,737,987) and Bahrain (3,829,608). These three, joined by Saudi Arabia, also have the lowest test-positivity rates below the 5% recommended by the WHO.

Three countries, Syria, Algeria and Yemen, have consistently lacked reliable testing data over the course of the pandemic, have not been providing official updates, and have low tests per million. While the Worldometer database occasionally has updated testing data for these three countries, World Bank staff are unable to corroborate this data from the Worldometer database using official, government sources.

Lebanon has not released new testing data since September 6th, 2021; Oman has not released new testing data since September 13th, 2021, and Egypt has not released new testing data since September 20th, 2021. Iran has not released new testing data since October 11th, 2020.

Table 2. COVID-19 Tests per Million of Population as of October 25, 2021

Country	Tests/1M	Total Tests	Tests last week	Cases/Tests
United Arab Emirates	9,084,693	91,274,022	1,971,436	1
Oman	4,737,987	25,000,000	-	1
Bahrain	3,829,608	6,812,218	124,239	4
Kuwait	1,080,597	4,704,177	121,477	9
Jordan	1,039,473	10,743,914	196,859	8
Qatar	994,972	2,793,687	36,702	9
Saudi Arabia	846,069	30,055,828	308,906	2
Lebanon	704,503	4,780,275	-	13
West Bank and Gaza	495,659	2,605,470	34,475	16
Iran	381,950	32,619,228	-	18
Iraq	378,636	15,676,909	135,995	13
Morocco	267,066	10,010,695	80,299	9
Tunisia	254,016	3,043,299	20,183	23
Libya	252,015	1,762,521	24,441	20
Djibouti	232,132	233,716	2,780	6
Egypt*	35,221	3,693,367	-	9
Yemen*	8,644	265,253	-	4
Syria*	5,736	103,566	-	40
Algeria*	5,143	230,861	-	89
MENA Region	**536,839**	**246,409,006**	**3,057,792**	**6**

Source: Authors' calculations based on data from Worldometer (https://www.worldometers.info/coronavirus/). Color coordination done as follows: 0-5% Green, 6-10% Yellow, 11-19% Orange, 20% + Red. "-" means data is not currently available. Countries should aim to be below the 5 percent test positivity rate threshold, according to a May 12th advisory statement by the World Health Organization. * = World Bank staff have not been able to corroborate the data reported in the Worldometer database.

2. Spread of COVID-19 as of October 25, 2021

Table 3 presents the number of reported COVID-19 cases per million of population, cases in the past week and percentage change in cases last week compared to the preceding week. Bahrain (155,479), Kuwait (94,762), Lebanon (94,000) and Qatar (84,948) have the highest rates, although two of these countries, Bahrain and Kuwait, posted percentage reductions in weekly cases (-2% and -23%, respectively), while Lebanon and Qatar posted moderate percentage increases in weekly cases, of 5% and 17%, respectively.

In countries with ongoing conflicts such as Iraq, Libya, Syria, and Yemen, weak testing capacity could often lead to fewer reported positive cases and paint a potentially misleading picture of low spread. In this regard, Libya (-5%), Iraq (-7%) and Yemen (-3%) reported moderate decreases in positive cases, whereas Syria (14%) reported a moderate increase in positive weekly cases. Eight other MENA countries reported decreases in Covid cases last week compared to the preceding week, ranging from -6% in Saudi Arabia, to -31% in the UAE. Lastly, Jordan (24%), Oman (22%) and Egypt (2%) reported low to moderate increases in weekly covid cases.

Table 3. Total Cases per Million Population as of October 25, 2021

Country	Cases/1M	Total Cases	Cases Last Week	Cases last week relative to previous week
Bahrain	155,479	276,571	453	-2%
Kuwait	94,762	412,527	195	-23%
Lebanon	94,000	637,819	3,910	5%
Qatar	84,948	238,518	589	17%
Jordan	82,374	851,410	9,921	24%
West Bank and Gaza	80,110	421,103	3,137	-31%
United Arab Emirates	73,582	739,284	698	-15%
Iran	68,627	5,860,844	76,029	-7%
Tunisia	59,403	711,693	787	-27%
Oman	57,645	304,163	109	22%
Libya	50,563	353,626	3,636	-5%
Iraq	49,423	2,046,274	10,821	-7%
Morocco	25,192	944,277	2,145	-27%
Saudi Arabia	15,433	548,252	321	-6%
Djibouti	13,360	13,451	55	-75%
Algeria	4,585	205,822	536	-22%
Egypt	3,096	324,619	6,163	2%
Syria	2,299	41,515	2,429	14%
Yemen	315	9,678	152	-3%
MENA Region	**32,552**	**14,941,446**	**122,086**	**-6%**

Source: Authors' calculations based on data from Worldometer (https://www.worldometers.info/coronavirus/). Color coordination done as follows: Any % decrease is Green, 0-24% increase is Yellow, 25-49% increase is Orange, 50%+ is Red.

3. COVID-19 Fatality as of October 25, 2021

Table 4 shows the deaths per million of population, and the last week's percentage change in deaths relative to the preceding week. A limitation of this measure is that it may underreport deaths by not counting deaths that occur at home, or by misattributing COVID-19 deaths to other causes. Due to either case, the numbers reported may be underestimates. Tunisia (2,100) has the highest rate in the region, followed by Iran (1,466) and Lebanon (1,246). All three countries joined five other MENA countries— West Bank and Gaza, Morocco, Saudi Arabia, Djibouti and Algeria—in posting declines in Covid-related deaths last week relative to the preceding week, ranging from -5% to -60%. Jordan, Libya, Iraq, Qatar and Egypt had zero to moderate increases, Kuwait, UAE, Syria and Yemen had high increases, while Bahrain and Oman had elevated increases although from very low bases.

Table 4. COVID-19 Fatality Rate – Deaths/Million population as of October 25, 2021

Country	Deaths/1M	Total Deaths	Deaths last week	Deaths last week relative to previous week
Tunisia	2,100	25,154	56	-20%
Iran	1,466	125,223	1,148	-23%
Lebanon	1,246	8,453	28	-30%
Jordan	1,060	10,951	72	6%
West Bank and Gaza	831	4,368	51	-37%
Bahrain	783	1,393	2	100%
Oman	779	4,110	5	67%
Libya	716	5,006	123	14%
Kuwait	565	2,461	4	33%
Iraq	555	22,961	205	6%
Morocco	390	14,612	68	-22%
Saudi Arabia	247	8,778	15	-17%
Qatar	217	609	1	0
United Arab Emirates	212	2,130	10	43%
Djibouti	180	181	2	-60%
Egypt	174	18,285	315	15%
Syria	139	2,504	96	43%
Algeria	131	5,890	18	-5%
Yemen	60	1,840	36	38%
MENA Region	**577**	**264,909**	**2,255**	**-12%**

Source: Authors' calculations based on data from Worldometer (https://www.worldometers.info/coronavirus/). Color coordination done as follows: Any % decrease is Green, 0-24% increase is Yellow, 25-49% increase is Orange, 50%+ is Red. "—" indicates not applicable due to change from 0 cases the previous week.

4. COVID-19 Vaccinations as of October 25, 2021

Countries in the MENA region face mixed prospects of vaccine rollout in 2021-22. Arabian Gulf countries such as the UAE, Qatar, and Bahrain lead the region in the percent of the population vaccinated at 86%, 75.7%, and 65.1%, respectively (Table 5).

Data on vaccine doses administered has been inconsistent across the region. While most MENA countries have been consistently updating their vaccination numbers, other countries have been slow to release updated figures.

Table 5. COVID-19 Vaccinations as of October 25, 2021

Country	% of population vaccinated	Cumulative COVID-19 vaccine doses administered	Vaccine Contracts	Vaccine clinical trial participation (Y/N)	Vaccine imports through COVAX Facility (Y/N)
Algeria	9.0%	14.08 million by September 25th	Sputnik V, AstraZeneca, and Sinopharm	N	Y
Bahrain	65.1%	2.74 million by October 24th	Pfizer and BioNTech, Sinopharm, AstraZeneca	Y	N
Djibouti	2.6%	92,097 by September 30th	Sputnik V	N	Y
Egypt	7.4%	20.18 million by October 19th	40m from Sinopharm, AstraZeneca	Y	Y
Iran	33.9%	79.53 million by October 23rd	Sputnik V	N	N
Iraq	7.9%	8.51 million by October 17th	1.5m doses – Pfizer, Sinopharm, 1m Sputnik V	N	Y
Jordan	33.8%	7.35 million by October 24th	3m doses - Pfizer and BioNTech	Y	Y
Kuwait	21.3%	2.38 million by July 3rd	1m doses - Pfizer, BioNTech, AstraZeneca	N	Y
Lebanon	21.6%	3.19 million by October 24th	2.1m Pfizer, AstraZeneca	N	Y
Libya	4.9%	1.81 million by October 21st	$9.6 million of vaccines contracted with WHO	N	N
Morocco	56.5%	45.25 million by October 19th	65 million - Sinopharm and AstraZeneca	Y	Y
Oman	50.1%	5.68 million by October 23rd	370,000 Pfizer-BioNTech doses, AstraZeneca	N	N
Qatar	75.7%	4.81 million by October 24th	Pfizer-BioNTech and Moderna	N	Y
Saudi Arabia	59.9%	45.27 million by October 24th	Pfizer-BioNTech	Y	Y
Syria	2.0%	902,519 by October 12th	5,000 doses received	N	Y
Tunisia	36.4%	8.89 million by October 23rd	2m doses – Pfizer, 1m Sputnik	N	Y
UAE	86.0%	95.23 million by October 23rd	Sinopharm and Pfizer	Y	Y
West Bank & Gaza	22.5%	2.3 million by October 10th	37,440 Pfizer and 24,000 AstraZeneca delivered through COVAX	N	Y
Yemen	0.2%	356,173 by September 27th	2.3 million doses with COVAX	N	Y

Source: Data on vaccination from Our World in Data (https://ourworldindata.org/covid-vaccinations). The Pfizer-BioNTech vaccine has been approved by the WHO for emergency use. Other vaccines have been approved on a national level as follows: Sinopharm in China, UAE, Bahrain, and Egypt; Sputnik V in Russia, West Bank and Gaza, Algeria, and Paraguay; AstraZeneca vaccine in the UK, India, Argentina, Morocco, Kuwait, and Mexico.

II. What Is Correlated with Testing per Capita?

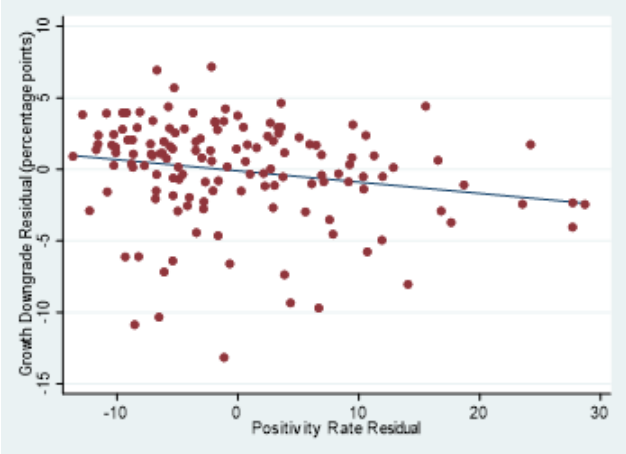
Using data on testing as of October 25, 2021 we can draw some insights about the correlates of testing across countries. The regression results reported in Table 6 below show that countries that are richer, have better health security and capabilities, or are smaller, tend to test more per capita. The regional fixed effects (not presented in Table 6) show that the Gulf Cooperation Countries group has the largest coefficient, followed by South Asia, then Europe and Central Asia. These are the only regions with statistically significant coefficients relative to East Asia and the Pacific, besides Sub-Saharan Africa reporting a negative coefficient. The conclusion is that richer countries test more, but there are no scale effects from being a larger economy. Arabian gulf countries on average appear to have more testing per capita than countries from other regions apart from South Asia after controlling for population size and GDP per capita.

Table 6. Correlates of Testing per Capita – Scale vs. Per Capita Income

Model	**OLS**		
Outcome Variable	**Log of Tests per Million of Population (as of October 25, 2021)**		
	(1)	**(2)**	**(3)**
Log of GDP per capita (constant 2010 US$), 2018	0.743***	0.731***	0.580***
	(0.085)	(0.087)	(0.087)
Log of Population, 2018	-0.248***	-0.269***	-0.285***
	(0.061)	(0.065)	(0.056)
Global Health Security Index, 2019	0.032***	0.031***	0.029***
	(0.010)	(0.010)	(0.010)
Days since the 100th case (October 24, 2021)		0.001	0.001
		(0.001)	(0.001)
Constant	8.776***	8.684***	10.488***
	(1.196)	(1.192)	(1.092)
Region Fixed Effects	NO	NO	YES
Number of observations	163	163	163
Adjusted R2	0.728	0.728	0.769

note: *** p<0.01, ** p<0.05, * p<0.1, Robust Standard Errors. East Asia & Pacific omitted.

Figure 1: Change in Forecasts October '20 - October '19 vs Total Positivity Rates (Cases/Tests %)



Note: Y axis is the difference in growth projections (using IMF WEO data) for year 2020, October 2020 minus October 2019. X axis is the total positivity rate is a percentage calculated by dividing total number of cases by total number of tests (using Worldometer data). Sample includes all countries for which data is available.

On the right, we introduce several control variables: log of GDP per capita in 2019 (in USD, October 2020 WEO), total trade value in GDP in 2019 (percent), days since first positive case until Nov. 30, 2020 (JHU), and tourism as a % of export in 2018 (WDI).

	Growth Downgrade (Oct 2020 minus Oct 2019)	
	-1	-2
Total positivity rate as of Dec 7, 2020	-0.0309	-0.0786***
	-0.0337	-0.0277
Log of GDP per capita in 2019		-1.583***
		-0.458
Tourism (% of exports in 2018)		-0.126***
		-0.0187
Trade (% of GDP in 2019)		-0.0055
		-0.0045
Days from the first confirmed case as Nov 30		-0.0038
		-0.0067
Constant	-9.072***	1.296
	-0.614	-1.726
Observations	139	139
R-square	0.00413	0.389

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

The downward trendline in Figure 1 that demonstrates the relationship between change in growth forecasts and total test positivity rate reveals a negative correlation between the two variables. Using a global sample for which data is available, regression results indicate that, even after controlling for log of GDP, tourism, and trade, a higher test positivity rate means a lower GDP growth forecast. As reported in Table 6, countries that are more developed tend to have higher incidences of testing. Figure 1 shows that countries who have maintained a low overall test positivity rate are likely to have a growth forecast.

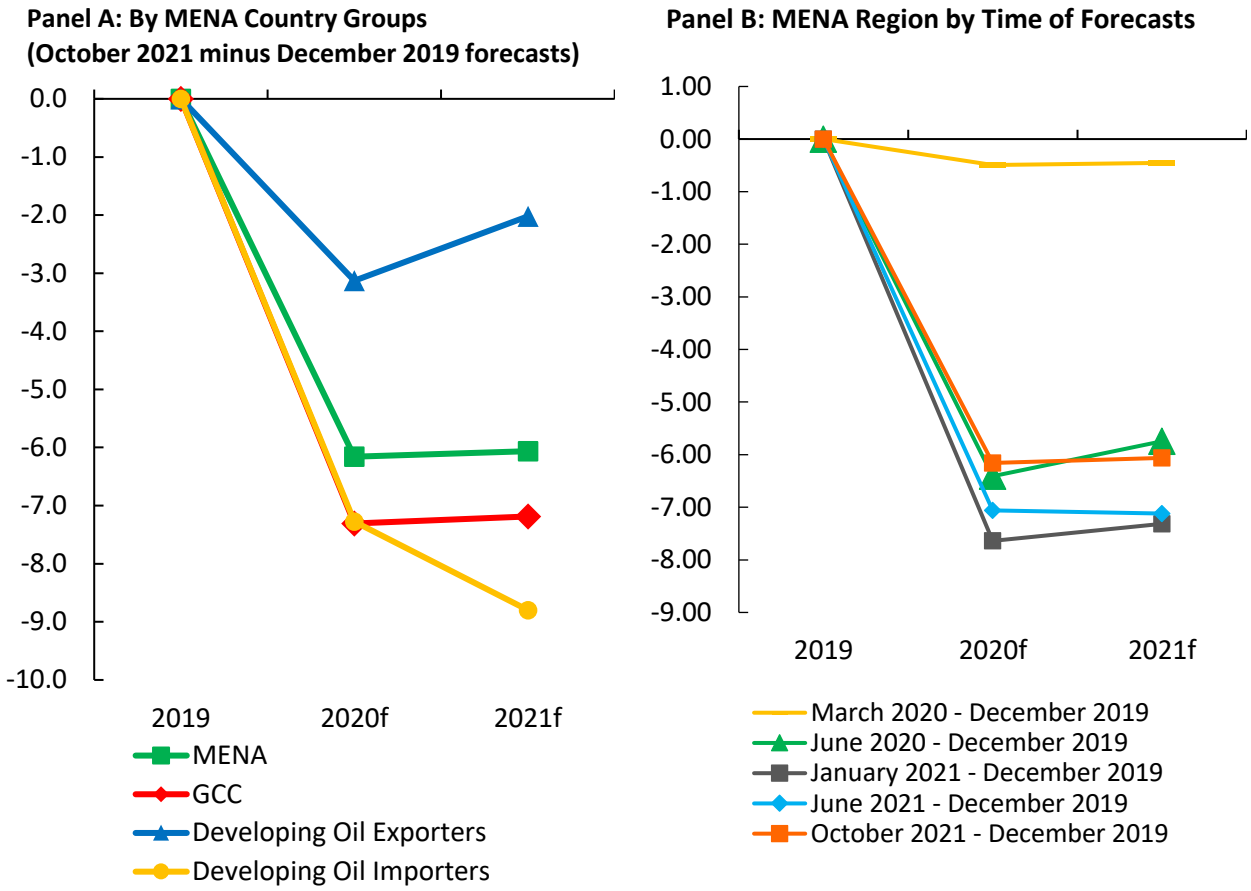
III. Macroeconomic Costs

Updated consensus growth forecasts by the private sector were released on October 5th, 2021 containing information available through October 3rd, 2021. We compute the effect of the crisis on the level of economic activity (GDP) as the growth downgrade for 2020 plus the impact of the changes in growth forecasts for 2021. MENA's 2021 GDP level reflects a downgrade of 6.1 percentage points on average (see Panel A of Figure 2).

The largest GDP-level downgrade in 2021 is seen in forecasts for Developing Oil Importers (8.8 percentage points lower than what was implied by the forecasts of December 2019), followed by GCC (7.2 percentage points) and Developing Oil Exporters (2.0 percentage points). These GDP-level downgrades can be interpreted as the expected macroeconomic costs of the COVID-19 pandemic and oil price collapse as a percent of MENA's 2019 GDP.

The expected GDP losses for 2021 have remained substantial as more information became available. In addition, the recovery in GDP level in 2021 will not be a V-shaped recovery (Panel B of Figure 2). The 2020 GDP level downgrade for MENA, using the baseline December 2019 forecasts, was 0.5 percentage points in March, 1.8 percentage points in April, 5.1 p.p. in May, 6.4 p.p. in June, 6.9 p.p. in July, 7.3 p.p. in August, 7.5 p.p. in September, 7.7 p.p. in October, 7.4 p.p. in November, and 7.5 p.p. in December. Then, in 2021, the GDP level downgrade for MENA has been 7.6 percentage points in January of 2021, 7.3 p.p. in February, 7.5 p.p. in March, and 7.2 p.p. in April, 7.4 p.p. in May, 7.1 p.p. in June, 7.2 p.p. in July, 6.6 p.p. in August, 6.2 p.p. in September and 6.1 p.p. in October. This recent trend reflects private sector forecasters' improving views on average, of the cost of the crisis during 2020 and into 2021.

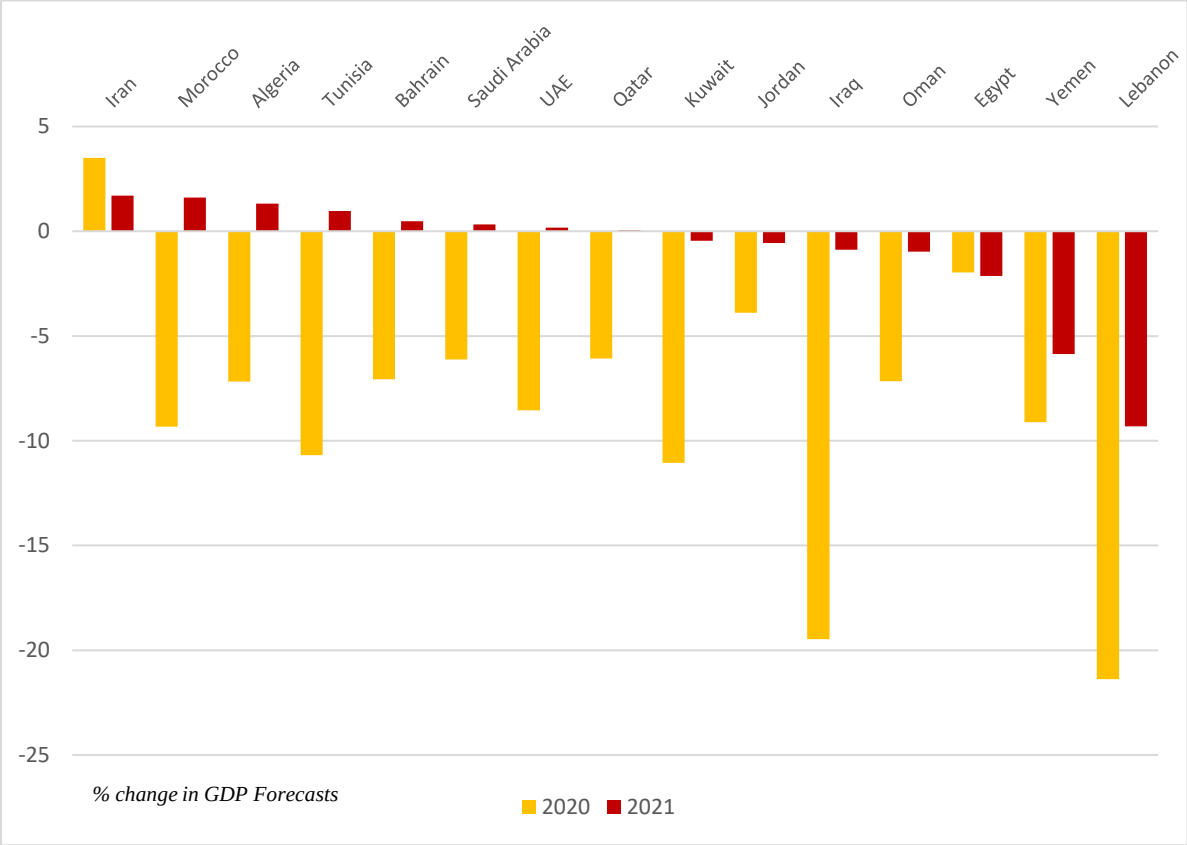
Figure 2. Not a V-Shape Recovery Relative to the Counterfactual of No Crisis: The Expected GDP Losses of the Crisis



Sources: World Bank Staff calculations based on data from Focus Economics.
Notes: "*GCC"* includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE. "*Developing Oil Exporters*" includes Algeria, Iran, Iraq, and Yemen. "*Developing Oil Importers"* includes Egypt, Jordan, Lebanon, Morocco, and Tunisia. "*MENA*" includes countries in all three groups. Data for Egypt correspond to its fiscal year, running from July 1 to June 30 in Egypt.

Figure 3 presents expected GDP-level downgrades by various private sector forecasters for each country. The 2021 GDP-level forecasts for half the countries were still downgraded, yet now better off than the 2020 GDP-level forecasts computed in December 2019. Lebanon has the largest downgrade. Moreover, Figure 3 also reveals that the expected GDP losses during 2020 are expected to be recovered during 2021 for half of the countries. The other half of MENA countries' GDPs are expected to improve relative to the forecast downgrade shown in September 2021 but remain below their no-crisis counterfactual levels.

Figure 3. Recovery Relative to the Counterfactual of No Crisis: Expected GDP-Level Downgrades of the Crisis by Country in 2020 and 2021



Source: World Bank Staff calculations based on data from Focus Economics. Note: Data for Egypt corresponds to fiscal years (July 2019 -June 2020, and July 2020 – June 2021) not calendar years, which makes it not comparable to the data from other countries.

IV. Poverty and Social Costs

The crisis shock will increase poverty in 2021. The uncertainty of the magnitude of the economic shock caused by the pandemic, as well as the uncertainty of the distribution of its effects on household per capita consumption, imply that any estimate of the expected percent changes in poverty due to the pandemic relies on restrictive assumptions. Tables 7 and 8 present alternative estimates of expected percent changes in poverty headcounts for 8 developing MENA economies. Both tables show estimated impacts of the pandemic by applying poverty-rate-to-growth elasticities to changes in GDP forecasts by Focus Economics. In both sets of estimates, the elasticities are based on the assumption that the economic shock is "inequality-neutral," which means that they rely on the assumption that all households are impacted by a constant proportion of the GDP shock equal to 0.85, which is known as the "pass-through rate."

Table 7 uses a common elasticity for the eight MENA countries at each poverty threshold, which is the median elasticity for the sample of MENA countries listed in the table at each poverty line. These elasticities were estimated with pre-crisis data by Mahler, Lakner, Aguilar and Wu (2020).[2] In contrast, the estimates reported in Table 8 allow for the poverty-to-GDP elasticities to vary across countries as well as across poverty thresholds. These estimates were provided to the Tracker by the World Bank's MENA Poverty team.

Lastly, please note that if a country has negligible pre-crisis poverty rates at low poverty-line thresholds, the absolute change in poverty rates (the number of poor people as a share of the population) can also be negligible. This is the case of Lebanon in Tables 7 and 8.

[2] The median MENA regional inequality-neutral elasticity for the international poverty rate ($1.9 in 2011 PPP) is -4.8, for the lower middle-income poverty rate ($3.2 in 2011 PPP) is -3.3, and for upper middle-income poverty rate ($5.5 in 2011 PPP) is -2.3. All these MENA-specific elasticities are larger in absolute values than median elasticities for the world as provided by World Bank Economist, Daniel Mahler of the Development Economics Data Group (DECDG) on May 1, 2020. The median global elasticities are lower: -1.4 for the $1.9 threshold (1.4% decline in $1.90 headcount ratio per 1% increase in GDP), the median elasticity for $3.2 is -1.2, and the median elasticity for $5.5 is -0.9.

Table 7. Estimates of Increases in Poverty Headcounts due to the Crisis based on Private-Sector Growth Forecasts as of October 2021 and Median MENA Poverty Elasticities (percentage of pre-crisis poverty rates)

Country	Change in Forecasts (%)	% Change in Poverty Rates Due to the Crisis GDP Losses		
		International poverty rate ($1.9 in 2011 PPP)	Lower middle-income poverty rate ($3.2 in 2011 PPP)	Upper middle-income poverty rate ($5.5 in 2011 PPP)
	2021	2021	2021	2021
Algeria	1.3	-6.1	-4.3	-3.0
Egypt	-2.1	10.2	7.0	4.8
Iran	1.7	-8.2	-5.6	-3.9
Iraq	-0.9	4.3	3.0	2.1
Jordan	-0.6	2.9	2.0	1.4
Lebanon	-9.3	44.6	30.7	21.4
Morocco	1.6	-7.7	-5.3	-3.7
Tunisia	1.0	-4.8	-3.3	-2.3

Source: MNACE Staff calculations based on data from Focus Economics and poverty-GDP elasticities by Daniel Mahler (World Bank, DECDG). The median MENA regional inequality-neutral elasticity for the international poverty rate ($1.9 in 2011 PPP) is -4.8, for the lower middle-income poverty rate ($3.2 in 2011 PPP) is -3.3, and for upper middle-income poverty rate ($5.5 in 2011 PPP) is -2.3. * indicates that pre-crisis poverty rates at the indicated thresholds were estimated at zero. Forecasts for Egypt are based on data from its fiscal year of 2021, which runs from July 1st, 2020 to June 30, 2021.

Table 8. Estimates of Increases in Poverty Headcounts due to the Crisis based on Private-Sector Growth Forecasts as of October 2021 using Varying Elasticities (percentage of pre-crisis poverty rates)

	Change in forecasts (%)	% Change in Poverty Headcount Due to Expected GDP Losses from the Crisis		
Country	2021	International poverty rate ($1.9 in 2011 PPP)	International poverty rate ($3.2 in 2011 PPP)	International poverty rate ($5.5 in 2011 PPP)
Algeria	1.3	17.5	29.2	17.5
Egypt	-2.1	14.8	10.9	3.4
Iran	1.7	-17.0	-13.6	-9.4
Iraq	-0.9	131.9	66.6	27.5
Jordan	-0.6	1.3	15.6	12.4
Lebanon	-9.3	0	—	194.8
Morocco	1.6	23.6	23.4	17.5
Tunisia	1.0	53.9	41.8	27.9

Source: World Bank Staff calculations based on data from Focus Economics and varying poverty-GDP elasticities. "—" indicates that pre-crisis poverty rates at the indicated thresholds were estimated at zero.[3]

As mentioned, the estimates of the impact of the crisis on the number of poor people presented in Tables 7 and 8 rely on the weak assumption that the impact is "inequality neutral." Yet, it is likely that some individuals or households will be more severely affected than others. Across the region, those at risk of falling into poverty are probably self-employed, informal sector workers who lack social protection, and individuals working in sectors directly hit by the COVID-19 crisis. Migrant workers—for example in GCC countries—are excluded from safety nets available to citizens. In addition, the crisis is affecting some industries more than others, which implies that the economic risk of individuals depends on their sector of employment. For example, hard-hit sectors include tourism, retail, textile, and garment industries, which are particularly salient for the economies of Lebanon, Tunisia, Morocco, and Egypt. Individuals whose livelihoods are tied to these sectors are probably at a higher risk of falling into poverty. Thus, the estimates of the expected increases in the number of poor people need to be interpreted with a grain of salt. But it suffices to say that poverty is expected to rise, possibly by large numbers.

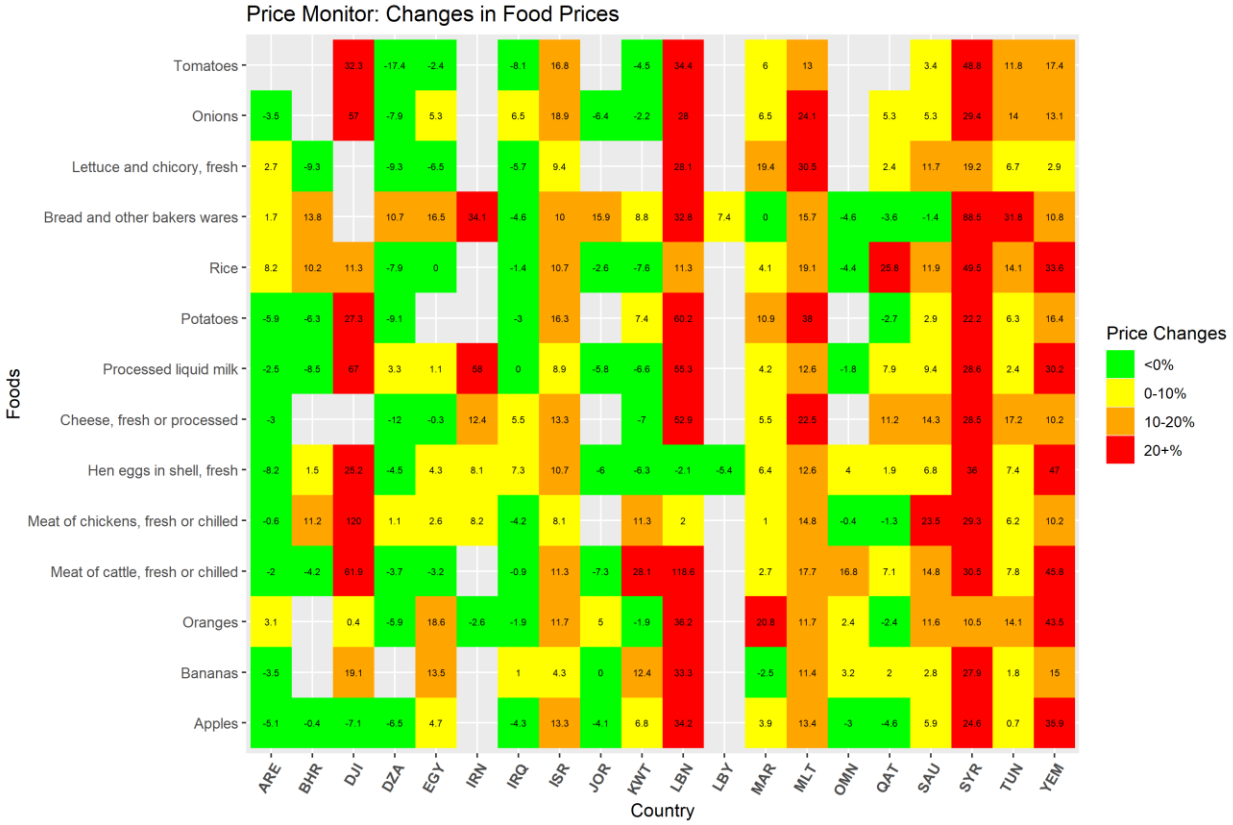
[3] The estimates of the increase in the number of poor people relative to the counterfactual scenario of no crisis are based on simulations. The results are sensitive to the pre-Covid distribution of household consumption per capita. In the case of Lebanon, the original data come from the 2011/2012 household survey. The poverty rates since then were estimated by applying a pass through of GDP per capita growth to household per capita consumption, assuming that all households were affected by the same proportion -- the inequality-neutral shock assumption. Earlier this month, the revised 2011 purchasing power parities data (released in May 2020 from the International Comparison Program (ICP)) was updated in the poverty calculation. The result was that measured poverty in 2011 and all subsequent years were estimated to be lower than previously thought. More importantly, the distribution of per capita consumption at the bottom tail (low levels of per capita consumption) is flat, and thus the poverty elasticity with respect to GDP shocks also fell. This explains why the current estimates in Table 8 for Lebanon and other countries are lower than those previously reported in this Tracker.

V. Insights from the MENA Welfare Observatory (Poverty Team)

1. Food Price Changes

COVID-19 poses considerable risks to already vulnerable populations. One of these risks come from rising food prices, which have come under stress due to breakdowns in global supply chains. Food-price inflation is assessed here by analyzing changes in food prices since February 2020 (prior to COVID-19) across the MENA region, for five food categories: carbohydrates, diary, fruits, meats, and vegetables. Across the region food prices have been rising (see Figure 4). In most countries price increases have been modest (5% or less) but in Djibouti, Iran, Lebanon, Syria, Yemen, and even Malta prices of staples have increased by more than 20 percent since February 14th, 2020. Lebanon, Djibouti, Syria, and Yemen have been particularly hard hit, with prices increasing across the board between February 14th, 2020 and October 26th, 2021. Since food expenditures tend to account for a large share of poor households' consumption relative to rich households, food inflation tends to be regressive.

Figure 4: Food Price Changes between February 14th, 2020 and as of October 26th, 2021



Note: WB calculations based on food price data from the FAO.

VI. Insights from Academia

1. Policy Responses, Social Norms, and Behavior Change in the Time of COVID-19
by Amira El-Shal and Eman Moustafa

Abstract Inducing behavior change is a missing factor in the face of viral threats. Using a difference-in-differences fixed-effects strategy, we estimate the effects of government containment, closure, and economic policy responses to COVID-19 on changes in human mobility behavior in 132 countries, while accounting for the disease risk and the public perception of this risk. We also show how social norms, namely risk taking, patience, and trust, can explain the heterogenous effects of policy responses on behavior change. Our estimates indicate that the stringency of containment and closure policies decreases human mobility. Economic policies lead to a less significant decline. Stronger adjustment in the public mobility behavior originates from their risk perception rather than being policy induced. Examining behavioral heterogeneity, we find that risk-averse populations and who exhibit more patience pre act and lower their mobility independent of public policies. Economic support triggers negative behavior changes in high time-preference settings, where we observe increased mobility, contrary to where populations are more patient. Risk communication elicits positive behavior change among risk-averse and impatient populations, who reduced their mobility. This effect varies by trust in politicians.

2. Macroeconomic Effects of Pandemic-Induced Fiscal Stimulus.
Video presentation by Pierre-Olivier Gourinchas of his new paper with Şebnem Kalemli-Özcan, Veronika Penciakova, and Nick Sander

Most nations adopted expansionary fiscal policies in response to the economic disruption associated with the COVID-19 pandemic, but the extent and nature of these policies differed from country to country. One important source of variation was the extent to which policies were targeted to workers or firms that were particularly hard-hit by shutdowns or reductions in consumer demand. Whether tax and spending programs that are not well-targeted can provide broadly diffused benefits remains an open question. Using data from 27 nations, this issue is investigated in the authors' paper Fiscal Policy in the Age of COVID: Does it 'Get in all of the Cracks?'. A key finding is that expansionary fiscal policy during the pandemic significantly reduced the failure rates of small and medium-sized businesses. Gourinchas summarizes their findings in the video above.

3. Telemigration and Development: On the Offshorability of Teleworkable Jobs.
by Richard Baldwin and Jonathan I. Dingel

The Covid-19 pandemic has introduced huge numbers of employers and employees to remote work. How many of these newly remote jobs will go overseas? The rough quantification is based on two observations: 1) offshore work is trade in services, and 2) the number of telemigrants being the volume

of this trade divided by the average wage. Combining these with gravity-model estimates, a rough prediction is possible of the number of new telemigrants that would arise from lower barriers to trade in services. Telemigration seems unlikely to be transformative when it comes to the development paths of most emerging economies. The baseline service trade flows are modest, and the standard gravity model restricts modest changes to have modest impacts. There are no tipping points in structural gravity models. Finally, a simple model is formulated of telemigration in which small changes can have large consequences. The key is to assume that latent comparative advantage takes a different shape than typically assumed in quantitative trade models. Given this, small changes in trade costs can generate large and asymmetric increases in the exports of service tasks from low-wage nations. The paper raises many questions for future research. It suggests that making the optimistic case for telemigration-led development will be harder than one might have thought. At the very least, it suggests that making the case would require substantial departures from the standard gravity-based account typically employed in empirical exercises.

4. The Political Economy of the COVID-19 Fiscal Stimulus Packages of 2020.
by Joshua Aizenman, Yothin Jinjarak, Hien Nguyen, and Ilan Noy

Almost all countries announced fiscal support programs once COVID-19 hit. However, there was significant diversity in the magnitude and composition of these fiscal stimulus programs. These differences were determined by myriad political, financial, social, and economic factors - these factors are the paper's focus. The paper explores what were the factors that are associated with the structure of the fiscal programs that governments chose to adopt in the early stage of the pandemic in 2020. This question is answered using details about the fiscal programs that were announced by 98 governments in the first six months of the pandemic, together with a large set of explanatory variables. Maybe not surprisingly, the paper finds that politics played a very significant part in determining the size and composition of the fiscal programs. Governments and societies that are less polarized and more capable were able to mobilize more fiscal resources. Also, it was governments with bigger debt loads that announced bigger programs, but that sovereign spreads were not so clearly associated with the size of these program plans. There is a limit, however, to what can be gleaned from these cross-country comparisons. Ultimately, the understanding of the politics and political-economy considerations that led to the specific content of each fiscal program will have to rely on information about the actual deliberations in each government's halls of power, should these ever become public.

5. The best policies to fight pandemics: Five lessons from the literature so far.
by Jean-Charles Bricongne, Baptiste Meunier

While repeated waves of Covid-19 infections are prolonging the global pandemic, the literature is drawing tentative lessons from the various measures implemented. This column highlights five. (1) A stringent and early lockdown seems more efficient. (2) Although a comparison across measures is econometrically challenging, the cancelling of public events stands out as one of the

most efficient. (3) While the merits of geographical targeting seem mixed, numerous models advocate for targeting by age and type of job. (4) Even without a lockdown, pandemics affect economic activity through voluntary social distancing. (5) Relaxing a lockdown should be done gradually even during vaccine roll-out, as avoiding a resurgence relies on rigorous sanitary measures.

VII. Useful Resources for Information on COVID-19

COVID-19 & Government Response Trackers	Description	Link
World Bank	World Bank COVID-19 Operations Projects	https://www.worldbank.org/en/about/what-we-do/brief/world-bank-group-operational-response-COVID-19-coronavirus-projects-list
Worldometer	Daily updates of data on COVID-19 spread, fatalities, and testing per capita	https://www.worldometers.info/coronavirus/
Coronavirus News Tracker	Daily updates on COVID-19 media coverage including the levels of panic and misinformation	https://coronavirus.ravenpack.com/
WHO Tracker	Daily updates of new COVID-19 cases, total confirmed cases, and death totals	https://covid19.who.int/
Our World in Data	Visualization and downloadable data on daily COVID-19 statistics	https://ourworldindata.org/coronavirus
Bloomberg Live	COVID-19 visuals including global map of travel restrictions	https://www.bloomberg.com/graphics/2020-coronavirus-cases-world-map/
Johns Hopkins Coronavirus Research Center	COVID-19 totals of cases, deaths, and testing with visuals	https://coronavirus.jhu.edu/map.html
Financial Times Coronavirus Tracker	Visualization of COVID-19 daily deaths per country including government response stringency index	https://www.ft.com/coronavirus-latest
Oxford University	Government response Tracker	https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker
Ugo Gentilini (World Bank Social Protection Expert)	Social Protection Response to COVID-19	https://www.ugogentilini.net/

Worldwide Lockdown Dataset	Dataset of lockdowns by country	https://www.kaggle.com/jcyzag/covid19-lockdown-dates-by-country#countryLockdowndates.csv
IMF	Global Fiscal Support Monitor with a breakdown of country-specific fiscal responses to COVID-19	https://blogs.imf.org/2020/05/20/tracking-the-9-trillion-global-fiscal-support-to-fight-COVID-19/
The Guardian	COVID vaccine tracker: when will a coronavirus be ready?	https://www.theguardian.com/world/ng-interactive/2020/aug/31/covid-vaccine-tracker-when-will-a-coronavirus-vaccine-be-ready
Human Mobility Data	**Description**	**Link**
Cuebiq	Analysis of mobility and shelter in place analysis by tracking movement of its users through their devices (mostly US so far). Cuebiq maintains direct relationships with 80+ apps that reach a diverse base of anonymous, opted-in users, giving the ability to collect accurate and precise SDK location data at scale on a daily basis.	https://www.cuebiq.com/visitation-insights-covid19/
Facebook Disease Prevention Maps	Mobility patterns tracked using Facebook data	https://dataforgood.fb.com/tools/disease-prevention-maps/
Satellite Data (to capture COVID-19 effects)	**Description**	**Link**
ESA: Sentinel 5P	Air Pollution Maps	https://earth.esa.int/web/guest/missions/esa-eo-missions/sentinel-5p
NASA Goddard: Black Marble	Night Lights maps	https://blackmarble.gsfc.nasa.gov/#home

Social media and Crowd-sourced data	Description	Link
Premise	Custom questions as part of on-going micro-surveys, for example perceptions of social distancing measures, government support, livelihood impacts	https://www.premise.com/
Google Trends	High frequency data COVID-19 related searches	https://trends.google.com/trends/story/US_cu_4Rjdh3ABAABMHM_en
Waze	Crowd-sourced data on quarantine-related road closures, medical testing centers, and emergency food distribution centers	https://www.waze.com/covid19