Annex 2.1. Impact of Crises on Tourism Activity in MCD Countries

This section describes the analysis underpinning the estimated impact on GDP and employment from a severe 6-month disruption to tourism activity and an event study of the impact of past crises on inbound tourism expenditures in MCD countries.

Impact of a Severe 6-month Disruption to Tourism Activity

The first analysis uses data from the World Tourism Organization and World Travel and Tourism Council. The methodology is described in the IMF Research Department's Special Series on COVID-19 Note: A Simple Guide to Estimating the Impact of COVID-19 on Travel and Hospitality Activity. It starts out with the size of travel and tourism exposure in each country, measured by their contribution to value added and employment. The size of the potential disruption to travel and tourism activity is then calibrated based on observed high-frequency data. The average (monthly) decline in tourism receipts from April to June for MCD tourism-dependent countries was around 77 percent. It is assumed that a similar level of disruption will persist for a period of six months in 2020. In this scenario, for Georgia, the most tourism-dependent country in the region, the impact in 2020 is estimated to be a downward deviation from the baseline GDP in the range of 3.4 and 11.4 percentage points, based

on the direct and overall contribution of travel and tourism activities to GDP. This countryspecific impact I_i was calculated for all MCD tourism-dependent countries as follows:

$I_i = T_{i, Pre-COVID-19} \times \mathcal{O} \times D$

where $T_{i,Pre-COVID-19}$ is the country-specific level of pre-COVID-19 travel and tourism exposure (in percent of GDP or as a share of total employment), $\boldsymbol{\omega}$ is the average percent decline in tourism activity in MCD tourism-dependent countries from April to June due to COVID-19 (assumed at 75 percent), and \boldsymbol{D} is the common duration of disruption (assumed at 0.5 = 6/12months). See Annex Table 2.1.1 for results.

Event Study of the Impact of Past Crises on Tourism

The second analysis consists of an event study of inbound tourism expenditures under past crises, including the global financial crisis, the Arab Uprisings, and the 2014-15 oil price shock. The value of inbound tourism expenditures is normalized to 100 at the time of the shock. Results indicate, for example, that for Egypt and Tunisia tourism expenditures remained significantly below 100 for a protracted period (greater than 5 years) following the global financial crisis and Arab Uprisings.¹ However, for the 2014-15 oil shock, while tourism expenditures also dipped below 100 for Egypt, Jordan and Morocco, the contraction dissipated two years following the shock. The global financial crisis and the Arab Uprisings had on average a deeper and more lasting impact on tourism than the 2014-15 oil shock. See Annex Table 2.1.2.

¹Results for Tunisia reflect not only the impact from the global financial crisis and Arab Uprisings, but also from terrorism incidents in 2015.

Country	2019 Tra	vel and Touris	m Contributio	n to	2020 Forecas	Disruption on ¹		
	GDF	c	Emplo	yment	G)P	Employment	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Georgia	9.1	30.5	7.7	26.6	-3.4	-11.4	-2.9	-10.0
Lebanon	7.1	19.6	6.7	18.8	-2.6	-7.3	-2.5	-7.0
Jordan	5.5	20.5	7.7	20.5	-2.1	-7.7	-2.9	-7.7
Qatar	3.1	9.4	5.0	9.0	-1.2	-3.5	-1.9	-3.4
Bahrain	4.2	9.8	3.9	9.4	-1.6	-3.7	-1.5	-3.5
Azerbaijan	4.4	15.4	4.0	14.1	-1.7	-5.8	-1.5	-5.3
Armenia	4.6	16.3	3.9	14.5	-1.7	-6.1	-1.4	-5.4
Vlorocco	8.1	18.5	7.1	16.3	-3.1	-6.9	-2.7	-6.1
United Arab Emirates	4.9	10.8	5.0	9.6	-1.8	-4.0	-1.9	-3.6
Oman	3.2	6.8	3.5	6.7	-1.2	-2.5	-1.3	-2.5
Kyrgyz Republic	1.5	4.0	1.5	3.8	-0.6	-1.5	-0.5	-1.4
Tunisia	7.0	14.4	6.5	13.2	-2.6	-5.4	-2.4	-5.0
Egypt	5.4	11.0	3.9	8.8	-2.0	-4.1	-1.4	-3.3
Saudi Arabia	3.4	9.4	4.9	8.8	-1.3	-3.5	-1.8	-3.3
Algeria	3.3	6.8	2.9	6.1	-1.3	-2.6	-1.1	-2.3
MCD average	5.2	14.4	5.1	13.2	-2.0	-5.4	-1.9	-4.9
MENAP oil exporters average	4.1	10.0	4.6	9.3	-1.5	-3.8	-1.7	-3.5
MENAP oil importers average	6.6	16.8	6.4	15.5	-2.5	-6.3	-2.4	-5.8
CCA oil exporters average	4.4	15.4	4.0	14.1	-1.7	-5.8	-1.5	-5.3
CCA oil importers average	5.0	16.9	4.3	15.0	-1.9	-6.4	-1.6	-5.6

Sources: World Tourism organization and World Travel and Tourism Council.

Note: CCA = Caucasus and Central Asia; MCD = Middle East and Central Asian Department and MENAP = Middle East, North Africa, Afghanistan and Pakistan.

1. These estimates do not consider the potential mitigating effect from residents substituting foreign travel for domestic burism. The data shows the ranges between direct and total contribution of travel and burism to GDP and employment respectively. Travel and Tourism is measured as the direct and indirect contribution of burism to GDP (or employment) from the World Travel and Tourism Council. The direct impact is defined as GDP (employment) generated by industries that deal directly with burists i.e. hobits, travel agents, airlines, other passenger transport services, and activities of restaurant and leisure industries. It is equivalent to total internal Travel and Tourism spending (by residents and international visitors) within a country less the purchases made by those industries (including imports). The indirect impact (as described by the OECD Tourism Satellite Accounts) is defined as the impacts generated by the intermediate consumption of the producers who are directly in contact with the visitors plus the induced impacts, defined as the impact generated by the production factors implemented by these producers who are in contact with the visitor.

Annex Table 2.1.2. Event Analysis of Impact of Crises on Inbound Tourism Expenditure in MCD Tourism Intensive Countries

	t0	t1	t2	t3	t4	t5	t0	t1	t2	t3	t4	t5	t0	t1	t2	t3	t4
	Global Financial Crisis (2009=100)			Arab Uprising (2010=100)						Oil Price Shock (2014=100)							
Median MENAP Oil Exporters	100	115	125	149	169	180	100	107	127	144	177	204	100	115	125	144	148
Bahrain	100	115	94	94	100	102	100	82	81	87	88	131	100	148	210	229	200
Oman	100	98	139	158	173	180	100	141	161	176	184	210	100	114	121	138	151
Qatar													100	115	119	149	144
United Arab Emirates	100	117	125	149	169	207	100	107	127	144	177	204	100	115	128	138	141
Median MENAP Oil Importers	100	112	95	103	98	96	100	85	92	88	87	88	100	86	87	101	113
Egypt	100	116	79	92	57	68	100	68	79	49	59	51	100	86	41	108	159
Jordan	100	126	125	148	148	159	100	99	117	117	126	113	100	90	90	101	113
Lebanon	100	112	95	103	98	96	100	85	92	88	85	88	100	104	108	118	127
Morocco	100	102	114	106	103	114	100	111	104	100	111	95	100	86	87	100	105
Tunisia	100	96	65	79	77	83	100	68	83	81	87	50	100	58	52	55	73
Median CCA Oil Exporters	100	145	275	483	480	498	100	189	333	331	343	320	100	93	105	118	104
Azerbaijan	100	145	275	483	480	498	100	189	333	331	343	320	100	93	105	118	104
Median CCA Oil Importers	100	122	135	162	195	174	100	145	212	260	221	227	100	103	102	115	124
Armenia	100	122	134	150	159	174	100	110	123	130	143	138	100	96	99	115	124
Georgia	100	137	199	291	357	367	100	145	212	260	268	278	100	104	117	151	178
Kyrgyzstan	100	71	135	162	195	156	100	191	229	276	221	227	100	103	102	103	104
Sources: World Tourism Organization, authoriti	es data and	d IMF staff o	alculations.														

Note: CCA = Caucasus and Central Asia; MENAP = Middle East, North Africa, Afghanistan and Pakistan.

Colored cells equal index value less than 100, representing possible impact of crisis on burism expenditure. A burism intensive country is defined as having inbound burism expenditure as a share of GDP equal or greater than

5 percent of GDP.Event analysis were also done for the 9/11 attack and the Middle East Respiratory Syndrome (MERS) outbreak of 2012, but results were not reported because they did not have significant impact

on inbound tourism expenditures.

Annex 2.2. Stress Testing Corporates' Probability of Default

Stress testing on corporates is performed using the Bottom-up Default Analysis (BuDA) approach, following the Credit Research Initiative (CRI, 2019). The approach first projects macroeconomic variables into credit covariates, and then predicts the firm-level probability of default based on the first-step projections. CRI's BuDA tool provides access to corporates' historical probabilities of default and the credit covariates for the analysis. The CRI's probability of default is a function of credit covariates that include: macroeconomic factors, one-year trailing market return, aggregate distance-to-default (DTD), yield on 3-month government bills, and firm-specific attributes, including DTD, liquidity, net income/total assets, log of market cap/median market cap, relative market-to-book ratio, and idiosyncratic volatility. CRI documents that the accuracy of the one-year forward probability of default is above 70 percent.

Specifically, the analysis projects macroeconomic ("stress") variables into the credit covariates in the following regressions:

$$\Delta X_{i,j,t} = \beta_{i,j,0} + \sum_{k=1}^{n} \beta_{i,j,k} Z_{j,k,t} + \sum_{l=1}^{2} \gamma_{i,j,k} X_{i,j,t-l} + \varepsilon_{i,j,t},$$

where $X_{i,i,t}$ is each credit covariate listed above for firm i, in a country j, at time t. $Z_{j,t}$ are the stress variables that include GDP, CPI, and the oil price return (average spot price). These are estimated based on historical values of the credit covariates and macroeconomic variables, up to end-2019 (pre-pandemic) or to June-2020 (COVID-19). To compute future credit covariates, stress variables are inputted for 2021 onwards, based on pre-pandemic projections and the most recent WEO projections. The stress test estimates the firm-level probability of default across countries. The estimated probability of default over the medium term is robust to the inclusion of financial firms. A sensitivity analysis to the oil price was conducted, assuming the oil price return increases by 1 standard deviation (20 percentage points) in 2020 and 2021, relative to the COVID-19 scenario. Under this scenario, the probability of default differs less than one order of magnitude.

Annex 2.3. Labor Market Analysis

Share of Jobs that can be Performed from Home

To calculate the propensity to work from home in MCD countries, estimates from Dingel and Neiman (2020) and Saltiel (2020) of the percentage of jobs that can be performed from home at the International Standard Classification of Occupations 1 digit (ISCO-1) occupation group level are used.² These estimates are combined with the latest available country-level data from the International Labour Organization on the proportion of workers in each ISCO-1 occupation group. Multiplying the estimates of the share of jobs that can be performed in each occupation group with the proportion of workers in each group and then aggregating, provides an estimate of the share of jobs that can be performed from home in each country.

To estimate the proportion of jobs which can be performed from home for expatriate and national workers in GCC countries, the same approach is followed with data from national authorities on the proportion of expatriates and nationals in each occupation group.

Impact of Unemployment on Individual Labor Market Prospects

Data from the 2010 and 2016 Jordan Labor Market Panel Surveys and the 2012 and 2018 Egypt Labor Market Panel Surveys are used to track how unemployment affects future labor market prospects. Specifically, the data is used to track whether individuals which were unemployed at the time of the earlier surveys, have a higher probability of being unemployed or out of the labor force in the later surveys. To do so, a linear probability model is estimated for each country:

$$uolf_{i,t} = \alpha + \beta u_{i,t-6} + \gamma X_{i,t-6} + \varepsilon_{i,i}$$

Where $uolf_{i,t}$ is an indicator variable, equal to one if individual *i* is unemployed or out of the labor force in year *t*, and zero otherwise.

> $u_{i,t-6}$ is an indicator variable, equal to one if individual *i* is unemployed in year t-6, and zero otherwise.

 $X_{i,t-6}$ is a matrix of controls for individual *i* in year t - 6, including age, sex, region, education, number of siblings, marital status, and wealth.

Individuals who exit the labor force between surveys due to either retirement or disability are excluded.

The coefficient of interest is β , showing how the probability of being unemployed or out of the labor force varies for individuals which were previously unemployed. The estimates of this coefficient using the Egypt and Jordan panel surveys are reported in Annex Table 2.3.1. The estimates are positive and significant, suggesting individuals who were previously unemployed are about 9 and 14 percent more likely to be unemployed or out of the labor force six years later, in Jordan and Egypt, respectively.

Impact of Recessions on Unemployment

The local projection method of Jòrda (2005) is used to calculate the impact of recessions on unemployment over a five-year horizon. To consider the impact of severe recessions, recessions are characterized by whether the annual contraction in GDP was above or below the median contraction for oil exporters and oil importers. The impact on unemployment is then

²These estimates are reported in Gottlieb and others (2020).

Annex Table 2.3.1. Linear Probability Model Estimates

(Probability of being unemployed or out of the labor force)

	(1)	(2)
VARIABLES	Jordan	Egypt
Unemployed t-6	0.093***	0.137***
	(0.022)	(0.011)
Observations	8191	22762
R squared	0.33	0.47

Sources: Egypt Labor Market Panel Survey; Jordan Labor Market Panel Survey; and IMF staff calculations.

Note: The dependent variable is an indicator variable, equal to 1 if the individual is unemployed or out of the labor force, and zero otherwise. The estimates show how the probability of being unemployed or out of the labor force varies for individuals which reported being unemployed in the previous survey. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1"

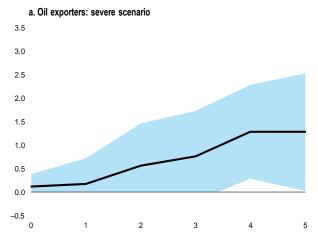
compared for mild and severe recessions by estimating the following specification:

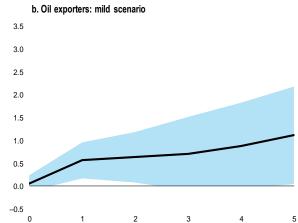
$$\begin{split} u_{i,t+h} - u_{i,t-1} &= \alpha_{i,h} + \delta_{t,h} + \beta_{1,h} Recession_Mild_{i,t} \\ &+ \beta_{2,h} Recession_Severe_{i,t} + \sum_{j=1}^{2} \gamma_{j,h} X_{i,t-j} \\ &+ \varepsilon_{i,t+h} \end{split}$$

Where $u_{i,t+h}$ is the unemployment rate at horizon t + h, α_i is a country fixed effect; δ_t is a time fixed effect; *Recession_Mild*_{*i*,*t*} is an indicator equal to 1 if GDP contracts in year *t* and the size of the contraction is below the median, and zero

otherwise; *Recession_Severe*_{*i*,*t*} is an indicator equal to 1 if GDP contracts in year *t* and the size of the contraction is above the median, and zero otherwise; X_{t-j} is a matrix of controls including GDP growth and changes in unemployment *j* periods before the shock.

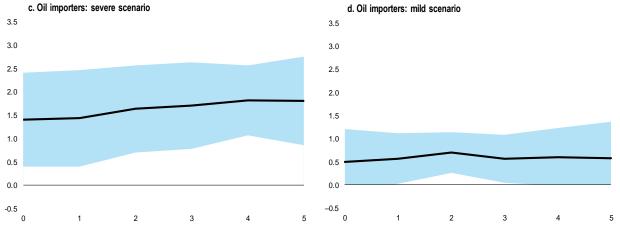
The specification is estimated separately for oil exporters and oil importers, with the results for the coefficients of interest, $\beta_{1,h}$ and $\beta_{2,h}$, shown in Figure 2.3.1 below.





1

Annex Figure 2.3.1. Impact of Mild and Severe Recessions on Unemployment in MCD countries



Sources: International Labour Organization; national authorities; and IMF staff calculations. Note: NCD = Middle East and Central Asia. The solid lines plot the impulse responses of unemployment to a recession shock. A mild recession shock is defined as a year in which annual GDP growth was negative and the size of the contraction is below the median of all recession shock. A severe recession shock is defined as a year in which annual GDP growth was negative and the size of the contraction is above the median of all recession shock is defined as a year 0 is the year 0 is the year of the shock and the blue shaded areas display the 90 percent confidence intervals.

Annex 2.4. Remittances, Poverty and Inequality

Remittances Projections

Remittances were projected for the period 2020-25 for countries receiving remittances inflows of at least 5 percent of GDP, based on estimated elasticities of remittances per capita with respect to sending countries GDP per capita, WEO projections of sending countries GDP per capita, and share of remittances by origin. The elasticity of remittances for MCD countries was estimated following Abdih and others (2012):

$log(RPC_{it}) = \beta_0 + \beta_1 log(YPCR_{it})$ $+ \beta_2 log(YPCS_{it}) + X'_{it}\gamma$ $+ u_i + n_t + e_{it}$

Where RPC_{it} is remittances per capita, $YPCR_{it}$ and $YPCS_{it}$ represent per capita income of remittances receiving and sending countries, respectively, X_{it} is a matrix of other variables that affect RPC_{it} , u_i and n_t are country and year fixed effects and e_{it} is the error term. β_2 is the elasticity of remittances with respect to per capita income of sending countries. The regression results are presented in Annex Table 2.4.1.

Poverty and Inequality Projections

The impact of remittances on poverty and inequality was estimated using the projected remittances in the previous step and regression results following Azizi (2019). The equation below was estimated over 1993–2015, for 80 countries, including 10 MCD countries:

$$log(H_{it}) = \beta_0 + \beta_1 log(RPC_{it}) + \beta_2 log(YPC_{it}) + X'_{it}\gamma + e_{it}$$

Where H_{it} is the poverty or inequality measure, RPC_{it} is remittances per capita, YPC_{it} is per capita income, X'_{it} is a matrix of other variables that affect H_{it} , and e_{it} is the error term. β_1 is the elasticity of remittances with respect to poverty or inequality. To deal with the endogeneity problem, a first stage regression of remittances per capita on instruments was estimated (using as instruments weighted per capita income, unemployment, real interest rate and real exchange rate of sending countries, where the weight is bilateral remittances). Regression results are presented in Annex Table 2.4.1.

Annex Table 2.4.1. Estimations of Remittances, Poverty and Inequality

	Remittances per capita	Receiving country GDP per capita	Remittances per capita	Poverty headcount (\$1.90 PPP)	Gini Coefficient	Remittances per capita	Poverty headcount (\$1.90 PPP)	Gini Coefficient
VARIABLES	OLS-FE	First stage	IV-GMM	OLS	OLS	First stage	IV (7)	IV (8)
GDP per capita in the sending country	(1) 2.530***	(2) 0.442***	(3) 3.016***	(4)	(5)	(6)	(7)	(0)
ODF per capita in the senting country	(0.5360)	(0.0675)	(0.6257)					
GDP per capita in the receiving country	0.837	()	1.838	-1.465***	0.081***		-1.400***	-0.115***
	(0.5733)		(1.3035)	(0.0626)	(0.0139)		(0.0864)	(0.0181)
Per capita remittances				-0.054	-0.0013		-0.141*	-0.029**
				(0.0339)	(0.0064)		-0.0761	(0.0123)
Gini coefficient				3.783***			3.779***	
				(0.2601)			(0.2621)	
Inflation					0.0002			0.0002
					(0.0001)			(0.0001)
Broad money					0.0002			0.0002
					(0.0004)			(0.0004)
Financial development (M2/GDP)	0.444	-0.005	0.340***					
	(0.3041)	(0.0294)	(0.1164)					
FDI per capita					0.001*			-0.00004*
	-0.17	0.062***			(0.00001)			(0.00001)
Nominal effective exchange rate			-0.046					
Intercept	(0.1405)	(0.0195)	(0.0885)	12.855***	-0.202	23.076***	11.415***	0.560*
Intercept				(0.796)	(0.156)	(2.122)	(1.387)	(0.284)
Instruments for GDP per capita of receiving countries are:				(0.790)	(0.150)	(2.122)	(1.307)	(0.264)
2-year lag of private investment ratio		0.052**						
		(0.0206)						
Terms of trade index		0.054						
		(0.0397)						
Instruments for remittances per capita are sending countries:		()						
GNI per capita						1.412***		
						(0.2057)		
Unemployment rate						0.0416		
						(0.0279)		
Labor force participation rate						-0.0102		
						(0.0102)		
Real interest rate						-0.063**		
						(0.02661)		
Real exchange rate (LCU/\$)						-0.247***		
						(0.0471)		
Observations	265	212	212	412	412	412	412	412
F-statistics/Wald test				380.5	15.09	28.76	374.8	15.06
Countries	17	14	14	80	80	80	80	80
R ²	0.596	0.924	0.851	0.737	0.157	0.262	0.733	0.051
Shea R ²		0.051						
Fisher statistic of the instrumentation equation		5.179						
Hansen p-value			0.288					
Country fixed effects	Yes	Yes	Yes					
Years fixed effects	Yes	Yes	Yes					

Sources: World Development Indicators; national authorities and IMF staff calculations.

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Annex 2.5. Scarring Duration Estimations

Data for 30 Middle East and Central Asia countries over 2000–2019 were obtained from different sources, including the *World Economic Outlook* database, the World Development Indicators, and the World Tourism Organization. To ensure that the regression results are representative for a broad group of countries, the dataset also includes 125 other emerging markets and developing countries.

To analyze the effect of the global financial crisis on countries' subsequent GDP levels, the following panel regressions are estimated:

> $\Delta y_{i,t+5} = \alpha + \beta X_{i,t-1} + \delta Z_{i,t-1} + \varepsilon_{i,t}$ $Dur_i = \alpha + \beta X_{i,t-1} + \delta Z_{i,t-1} + \varepsilon_{i,t}$

where t is defined to be 2009.

 $\Delta y_{i,t+5}$ is the difference between the GDP level of country *i* 5 years after (2014), and the level in 2014 implied by a trend estimated using GDP growth during the five years before 2009.

Dur_{*i*} is the number of years it takes for the GDP level of country *i* to reach/surpass the level implied by its pre-crisis trend.

 $X_{i,t-1}$ includes the country's initial conditions at end-2008 to assess what vulnerabilities may hamper the recovery. These include the current account balance and fiscal balance (both defined as percent of GDP); trade openness defined as the sum of exports and imports as percent of GDP; debt to GDP ratio; commodities exports as percent of total exports; unemployment rate; remittances to GDP; percent of population below the poverty ratio at \$1.90 a day (2011 PPP); and tourism arrivals.

 $Z_{i,t-1}$ includes country controls such as dummy for fragile/conflict-affected states, a country's type of monetary regime, the country's average longrun growth rate, and GDP per capita.

Both equations are estimated for the sample which includes emerging markets and developing economies and Middle East and Central Asia countries, depending on each country's data availability.

The coefficients estimated using the global financial crisis, as shown in Annex Table 2.5.1, are then used to generate the fitted values implied in the current crisis, with t set at 2020. Data as of end-2019 is used for $X_{i,end2019}$ and $Z_{i,end2019}$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Level 5 years	Duration						
Current Account Balance	0.843*	-0.0609*	0.828*	-0.0511	1.238***	-0.00161	-0.220	0.133
	(0.453)	(0.0344)	(0.443)	(0.0315)	(0.459)	(0.0588)	(0.934)	(0.145)
Fiscal Balance	0.768	-0.201**	0.759	-0.201**	1.517*	-0.235**	1.100*	-0.490***
	(0.467)	(0.0876)	(0.465)	(0.0862)	(0.869)	(0.113)	(0.647)	(0.129)
Openness (X+M/GDP)	-0.0140	0.0251**	-0.00571	0.0267**	0.00514	0.0181	-0.0763	0.0289*
	(0.0433)	(0.0118)	(0.0459)	(0.0120)	(0.0623)	(0.0132)	(0.0712)	(0.0160)
Debt to GDP	0.127	-0.0236	0.115	-0.0216	0.757	-0.00277	0.131	0.0199
	(0.185)	(0.0272)	(0.187)	(0.0293)	(0.567)	(0.0713)	(0.947)	(0.0940)
Commodities Dependence	-0.000907*	0.000144	-0.000863	0.000127	-0.000948*	0.000211**	0.00105	-0.000379
	(0.000529)	(9.48e-05)	(0.000571)	(9.59e–05)	(0.000520)	(0.000100)	(0.00251)	(0.000253)
Unemployment Rate	-0.572	0.293**	-0.515	0.293**	-0.813*	0.371***	-0.755	0.130
	(0.393)	(0.122)	(0.399)	(0.120)	(0.413)	(0.131)	(0.995)	(0.182)
Remittances to GDP			-3.109	0.370				
			(2.100)	(0.378)				
Poverty					-1.310	0.217		
					(1.838)	(0.356)		
Tourism Arrivals							0.165	1.073
							(4.585)	(0.705)
Constant	-43.19***	14.73***	-42.31***	13.97***	-45.58***	18.76***	-25.93	-3.502
	(12.28)	(2.534)	(14.18)	(2.569)	(12.99)	(2.795)	(79.29)	(10.87)
Observations	126	127	126	127	103	103	75	76
R–squared	0.341	0.316	0.366	0.334	0.418	0.391	0.286	0.382

Annex Table 2.5.1. Regressions of Real GDP Levels after the Global Financial Crisis

Sources: National authorities; and IMF staff calculations.

Note: Robust standard errors are in parentheses. * p < 0.1; ** p < 0.05; *** p < 0.01.