State-led Development and Youth Unemployment in the Arab and non-Arab Countries

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Abstract

High youth unemployment has been projected to be a key challenge for Arab countries. Salehi-Isfahani (2012) explains this projection in terms of the inability of the state to create sufficient employment opportunities. In this research, we empirically examine this projection in Arab countries in comparison to non-Arab countries. Fixed effects estimates show that state-led development consistently increases youth unemployment in Arab and non-Arab countries, both high- and middle-income. The results suggest that the worsening influence of state-led development on youth unemployment is not region-specific.

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1. Introduction

The Arab countries of the MENA region adopted a state-led development path in the sixties and seventies.[2] Since then, the Arab governments have become a key labor force employer (Cammett *et al.*, 2015). As a result of the choice to adopt a state-development path, a few employment challenges have manifested themselves in the form of high youth unemployment, low skills and productivity of labor, and long waiting times between graduation and landing the first job in the government and public sector (Salehi-Isfahani, 2012).

The high youth unemployment challenge of the Arab countries associated with the state-led development path is the focus of this research. In this research, we discuss the development of youth unemployment over time in Arab countries. We then examine empirically the determinants of the youth unemployment rate. The empirical model explains youth unemployment in terms of macroeconomic variables (the lagged unemployment rate, the GDP growth rate, the inflation rate, and a measure of state-led development), human capital (quality of education), labor market institutions (labor market flexibility and efficiency), and governance (corruption control).

In estimating the empirical model, we use panel data on 13 Arab countries and 87 non-Arab countries for 2007-2017. The countries are distinguished by income level. We adopt fixed effects panel model to account for time-invariant, country-specific effects. Empirical evidence shows that state-led development increases youth unemployment in Arab and non-Arab countries, both high- and middle-income. The results suggest that the worsening influence of state-led development on youth unemployment is not region-specific.

The paper contributes to the youth unemployment and MENA economic development literature in three respects. First, it examines Salehi-Isfahani's (2012) projection about the unemployment challenge that state-led development poses for Arab countries. The empirical evidence lends support to this projection.

Second, this research extends the recent examination of the relationship between labor market institutions and gender-based youth unemployment in the Gulf Cooperation Council (GCC) countries. This recent research shows that flexible labor markets reduce female youth unemployment rates in the GCC countries. The current research extends the investigation of this relationship further by abstracting from gender distinctions.

Third, this paper in effect shows that the negative influence that state-led development has on youth unemployment does not restrict itself to the MENA region or Arab countries, as Salehi-Isfahani (2012) projected. The influence holds in Arab and non-Arab countries alike and regardless of income level.

The rest of the paper is structured as follows. In section 2, we discuss the development of youth unemployment in Arab countries. Section 3 provides a brief literature review of the (recent) youth unemployment literature. Section 4 specifies the empirical model and the estimation methodology. Sections 5 and 6 present and discuss the empirical results, while section 7 concludes.

2. Youth and Youth Unemployment in the Arab Countries

To assess the high youth unemployment manifestation of state-led development in the Arab countries that Salehi-Isfahani (2012) projects, we start by profiling the share of youth in the total population over time. Table 1 provides data on the share of youth (ages 15-24) in the population since the sixties, when Arab countries embarked on a state-led development strategy. The table

distinguishes the Arab countries into high- and middle-income countries. The former group comprises the oil-rich Gulf Cooperation Council (GCC), while the latter group comprises the remaining Arab countries.

Table 1. Share of Youth in Population in the Arab Countries (ages 15-24; in percent)

	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2020	1960-1999	2000-2020	Change
High-income (GCC) countries									
Bahrain	18.1	21.9	18.2	16.8	17.7	13.3	18.8	15.5	-3.3
Kuwait	19.9	18.0	17.9	16.6	16.7	11.8	18.1	14.3	-3.8
Oman	19.0	18.4	16.8	17.4	22.2	16.1	17.9	19.2	1.3
Qatar	20.8	21.1	17.0	14.1	16.0	14.4	18.2	15.2	-3.0
Saudi Arabia	18.4	18.3	18.4	17.6	18.6	15.7	18.2	17.2	-1.0
UAE	21.7	21.7	15.8	16.5	17.2	12.1	18.9	14.7	-4.3
Average	19.6	19.9	17.4	16.5	18.1	13.9	18.4	16.0	
Middle-income (non-GCC) countries									
Algeria	17.2	19.7	20.3	21.5	22.6	16.8	19.7	19.7	0.0
Djibouti	20.2	18.3	20.4	20.0	21.0	19.5	19.7	20.3	0.5
Egypt	17.0	18.8	18.8	18.8	20.8	18.1	18.3	19.5	1.1
Iraq	16.9	18.3	19.5	21.3	20.3	20.1	19.0	20.2	1.2
Jordan	19.2	17.8	20.5	21.7	20.5	19.3	19.8	19.9	0.2
Lebanon	15.8	20.2	20.7	21.0	18.7	18.4	19.4	18.6	-0.9
Libya	17.2	16.8	19.4	22.3	21.9	17.6	18.9	19.7	0.8
Mauritania	18.4	18.9	19.9	20.1	20.5	19.5	19.3	20.0	0.7
Morocco	15.8	19.5	21.4	20.4	20.3	17.4	19.3	18.9	-0.4
Somalia	18.2	18.9	19.2	18.7	17.9	20.2	18.7	19.1	0.3
State of Palestine	19.3	18.2	20.0	19.6	20.2	21.3	19.3	20.8	1.5
Sudan	18.5	18.7	19.3	20.0	19.5	20.0	19.1	19.7	0.6
Syria	16.6	19.7	19.9	21.5	21.9	19.5	19.4	20.7	1.2
Tunisia	16.1	19.8	20.5	19.8	20.3	15.8	19.0	18.0	-1.0
Yemen	19.3	17.9	18.6	18.5	21.4	21.9	18.6	21.7	3.1
Average	17.7	18.8	19.9	20.3	20.5	19.0	19.2	19.8	

In the 15 middle-income Arab countries, the average share of youth in the population increased slightly from an average of 19.2 percent of the total population in the earlier four decades (1961-1999) to 19.8 percent in the last two decades. Youth share increased in 11 of the 15 countries (Djibouti, Egypt, Iraq, Jordan, Libya, Mauritania, Somalia, Palestine, Sudan, Syria, and Yemen).

In the six high-income GCC countries, the average share of youth declined to 16 percent in the last two decades compared to 18.4 percent in the earlier four decades. One exception is Oman, however, where youth share increased from 17.9 percent to 19.2 percent.

With the share of youth increasing slightly in the middle-income Arab countries but decreasing in the high-income GCC countries, the question of whether Arab countries suffered a high youth unemployment rate, as Salehi-Isfahani (2012) projected, arises. Table 2 presents the average youth unemployment rates in Arab countries.

Table 2. Youth Unemployment Rates in Arab Countries (in percent)

Country	1991-2000	2001-2010	2011-2019
High-income (GCC) countries			
Bahrain	3.5	3.8	5.0
Kuwait	5.7	5.3	10.2
Oman	10.2	10.2	12.0
Qatar	1.7	1.6	1.3
Saudi Arabia	25.1	24.9	29.2
UAE	5.0	6.4	7.4
Total	8.5	8.7	10.9
Middle-income (non-GCC) countries			
Algeria	34.4	47.1	21.8
Djibouti	18.2	19.5	21.2
Egypt	26.0	27.5	24.5
Iraq	15.8	16.9	16.8
Jordan	37.3	31.3	28.9
Lebanon	18.9	21.2	17.8
Libya	44.4	46.5	48.8
Mauritania	13.7	14.2	14.9
Morocco	20.0	19.1	17.8
Somalia	21.3	21.9	21.2
State of Palestine	15.4	31.2	36.3
Sudan	27.1	28.4	28.7
Syria	12.4	21.5	20.1
Tunisia	30.1	30.2	29.5
Yemen	16.4	19.1	22.1
Total	23.4	26.4	24.7

Data suggests the average youth unemployment rate increased in middle-income Arab countries from 23.4 percent in 1991-2000 to 26.4 percent in 2001-2010. However, the rate declined to 24.7 percent in the post-Arab Spring period (2011-2019). The Arab Spring started in Tunisia and Egypt in December 2010 and February 2011, respectively. The average youth unemployment rates were higher in Algeria, Jordan, Libya, and Tunisia compared to the other middle-income Arab countries.

In the high-income GCC countries, in contrast, the average youth unemployment rate followed an upward trend over the past three decades. The rate increased slightly from 8.5 percent in 1991-2000 to 8.7 percent in 2001-2010 but increased by about two percentage points to nearly 11 percent following the Arab Spring. Among the six high-income GCC countries, average youth unemployment rates were higher in Saudi Arabia.

Based on these statistics, high youth unemployment can certainly be considered a challenge in middle-income Arab countries, as Salehi-Isfahani (2012) projected. However, in the high-income GCC countries, youth unemployment seems to be relatively less of a

challenge despite its increase in recent years.

Accordingly, we explore empirically the factors, which drive youth unemployment in Arab countries. These include state-led development - the variable of interest, in addition to macroeconomic (total unemployment, growth and inflation rates), human capital (quality of education), labor market institutions, and governance (control of corruption) variables. These variables build on the review of the recent literature, which we turn to in the next section.

3. Determinants of Youth Unemployment – A Brief Literature Review

Providing a comprehensive review of the determinants of youth unemployment literature is beyond the scope of this paper. We review only recent studies of determinants of youth unemployment.

In a study of 28 European Union (EU) countries in 2008-2018, Bal-Domańska (2021) identifies the determinants of youth (un)employment in terms of economic, structural and technological change, labor regulations, and knowledge factors. Economic factors include economic development, GDP growth rate, job creation and employment. According to Okun's law, the GDP growth rate reduces the (total) unemployment rate. The youth unemployment rate, a component of the total unemployment rate, is also sensitive to economic growth. Structural and technological factors pertain to the structural and sectoral transformation of the economy. Structural and technological change can be beneficial to youth, if youth are equipped with modern technological skills.

Labor regulations pertain to the flexibility of labor markets. Reformed labor market regulations support job creation and youth employment.[3] The success of labor market reforms rests on the adopted labor market model whether it is flexible, rigid, or flexicure (Sahnoun and Abdennadher, 2019). Similarly, Bernal-Verdugo et al. (2012) find that labor market flexibility, in particular hiring and firing policies and hiring costs, reduces unemployment, youth unemployment and long-term unemployment.

Knowledge factors pertain to education and vocational training. Knowledge-based economies are favorable to youth employment, and education is key to increasing youth employment rates (Bal-Domańska, 2021; Caroleo et al., 2017; International Labor Organization, 2017). Vocational training provides the necessary skills for youth (Korber 2019). Earlier Caroleo et al. (2017) stressed the importance of education, training and labor market regulations.

In another study of the 28 EU countries, Mursa et al. (2018) provide an interesting overview of the determinants of youth unemployment. They discuss the difficulties that youth face in the transition from the education system to the labor market. The education system may not equip youth with the needed labor market skills (Dietrich 2012) through training and apprenticeships in particular (Görlich and Katznelson 2018). Chitiba (2012) attributes this gap to the public education monopoly. Labor market policies, in particular employment protection, hinder the hiring of youth and the firing of existing unproductive or incompetent employees (Dietrich 2012).

Bayrak and Tatli (2018) adopt a macroeconomic and growth approach in explaining youth unemployment in OECD countries. Okun's law accounts for the negative relationship between GDP (growth) and youth unemployment, as Bal-Domańska (2021) points out. The Phillips curve explains the trade-off between the inflation rate and unemployment. They add that productivity, as a source of growth, increases youth unemployment in the short run but reduces it in the long run. They find a negative relationship between youth unemployment and growth rate, inflation rate, and gross savings.[4] However, there is a positive relationship between youth unemployment and labor productivity.

Focusing on labor markets as the main determinant of youth unemployment, a few studies found that labor market flexibility reduced unemployment (Agnello et al., 2014; Bernal-Verdugo et al., 2012, 2013). Other studies did not support this relationship, however (Liotti, 2020, 2022).

Agnello et al. (2014) found that labor market flexibility reduced youth unemployment, especially in the long term. Bernal-Verdugo et al. (2012) found that improved labor market regulations and institutions' quality had a statistically significant negative impact both on the level and change of unemployment outcomes for total, youth, and long-term unemployment. Using a reduced form model to examine the static effects of labor market flexibility on youth unemployment, they regressed the youth unemployment rate on a composite labor market flexibility index, a time measure of demand pressure, government size, the degree of trade openness, the degree of urbanization, population density, a financial crisis dummy, and the lagged unemployment rate. They found that a one standard deviation improvement in the composite labor market flexibility indicator reduced the youth unemployment rate by 1.41 percentage point. A similar regression containing the hiring and firing regulations index instead showed a reduction in the youth unemployment rate by 0.78 percentage points.

Estimating the dynamic nature of the relationship between labor market flexibility and the change in the youth unemployment rate, they found that an improvement in the composite labor market indicator of one standard deviation reduced the youth unemployment rate by a half percentage point. In addition, the hiring and firing regulations and the mandated costs of hiring had statistically significant negative effects.

In contrast to the improving influence on youth unemployment, a recent study by Liotti (2020) found no evidence of improvement in youth unemployment in association with flexible labor markets in Italy. Liotti (2022) found that economic growth and investment in active labor market policies reduced youth unemployment in 28 European countries.

Based on these studies, we plan to explain the youth unemployment rate in terms of macroeconomic, human capital, labor market, and governance variables. We turn to the empirical model in the next section.

4. Empirical Model

Building on the important historical role of state-led development in the Arab countries and the above empirical studies and considering the persistent nature of unemployment, we estimate the empirical model expressed in equation (1):

$$YUR_{it} = \beta_0 + \beta_1 UR_{it-1} + \beta_2 SLEAD_{it} + \beta_3 GROWTH_{it} + \beta_4 INFLATION_{it} + \beta_5 EDUCATION_{it} + \beta_6 LABOR_{it} + \beta_7 CORRUPTION_{it} + \varepsilon_{it} \qquad (1)$$

where YUR is the youth unemployment rate, as modeled by the ILO[5] The youth unemployment rate is calculated as the percentage of the total labor force ages 15-24 who are unemployed. As opposed to youth unemployment rate statistics produced by national statistics authorities, the methodology adopted by ILO in calculating the youth unemployment rate is characterized by being consistent across countries and data is available for the sample period (2007-2017).[6,7]

UR is the lagged total unemployment rate, as the time subscript $t-1$ indicates. It captures the persistent influence (of the previous year's state of the economy) on the (current) youth unemployment rate.[8] The lagged UR is expected to have a positive coefficient, suggesting that a poor previous state of the economy (high UR) continues to worsen the youth unemployment rate.

SLEAD accounts for state-led development and the major employment role the government and public sector play in hiring employees. We measure state-led development by the general government's final consumption expenditures (as a percentage of GDP). This is similar to Bernal-Verdugo (2012).[9] Although *SLEAD* can expand employment opportunities and therefore reduce youth unemployment, a bloated government and public sector apparatus – a component of government final consumption expenditures – may not be able to absorb youth employment fully. Accordingly, youth unemployment may increase. Therefore, the sign of the *SLEAD* coefficient is ambiguous.

GROWTH is economic growth and accounts for Okun's law similar to Dietrich and Möller (2016), Dixon *et al.* (2017), and Marelli *et al.* (2013). It is measured by the annual real GDP growth rate (in percent). Dietrich and Möller (2016) examine the causes of youth unemployment in European countries and explain adult and youth unemployment rates primarily in terms of current and lagged growth rates. They find that the growth rates reduce both unemployment rates. When the growth rates fall below the trend rate, unemployment rates increase in Mediterranean countries. In revisiting the relationship between the unemployment rate and the output gap, Dixon *et al.* (2017) use data on 20 OECD countries for the period 1985-2013 to explain the unemployment rates for young, prime-age, and older workers. They find that the output gap reduces the unemployment rates. Marelli *et al.* (2013) examine youth and total unemployment rates in 27 high-income developed countries for the period 1980-2009. They find that the (lagged) growth rate reduces youth and the total unemployment rate.[10] Accordingly, we expect a negative coefficient of *GROWTH*.

INFLATION is the inflation rate and accounts for the Phillips curve similar to Bayrak and Tatli (2018). The inflation rate is measured by the annual percentage change of the consumer price index. We expect a negative *INFLATION* coefficient reflecting the negative relationship between inflation and unemployment rates.

EDUCATION is the quality of education. Education has been accounted for in Bal-Domańska (2021), Caroleo *et al.* (2017), Marelli *et al.* (2013), and Marelli and Vakulenko (2016), among other studies. It is measured by the Global Competitiveness Report's quality of education index (log). We expect to have a negative coefficient, since education provides the knowledge and training necessary for employment. However, quality education may result in over-qualification of youth or create mismatches between skills youth possess and the needed labor market skills. Therefore, education quality may increase the youth unemployment rate. The expected coefficient of *EDUCATION* is ambiguous accordingly.

LABOR is labor market flexibility and efficiency. It is measured by the labor market efficiency pillar's overall score from the World Economic Forum's Global Competitiveness Index (GCI), as well as individual indicators of the flexibility and efficiency components of the labor market pillar. Of the flexibility component, we use labor-employer relations (C), wage determination flexibility (WF), and hiring and firing practices (HF). Of the efficient use of talents, we use the link between pay and productivity (PP) and the reliance on professional management (PM). All indicators are expressed in log forms.

The nature of labor-employer relations can be cooperative or confrontational. A perfectly cooperative relation gets the highest score of seven, while a confrontational relation gets the lowest score of one. Wages can be determined flexibly at the firm level with the highest score of seven. Alternatively, they can be determined through a unionized bargaining process with the lowest score of one. Hiring and firing practices refer to the flexibility of these practices. Employers can flexibly determine them. If they do, this practice gets the highest score of seven. Alternatively, regulations can determine these practices with the lowest score of one. Linking pay to productivity refers to the extent labor pay is related to productivity. The link between pay and productivity can be strongly related to the highest score of seven. On the other extreme, they can be completely unrelated with the lowest score of one. Reliance on professional management refers to how senior management is selected. If the selection is based on merit and qualifications, the

highest score of seven is assigned. If, on the other hand, the selection is based on kinship and friendship, the lowest score of one is assigned. The overall labor market efficiency pillar indicator is a summary measure of the flexibility and efficiency in retaining talent components. The best flexible and efficient performance receives the highest score of seven, while the lowest performance gets the lowest score of one.

We expect the flexibility and efficiency components of the labor market to help youth find and accept available jobs. Flexible and efficient labor components also encourage employers to create more jobs, as a result of the minimum barriers to laying off workers if the need arises. Therefore, we expect negative coefficients of the *LABOR* index and individual indicators. *CORRUPTION* is the control of corruption in the economy. The absence of corruption encourages more (private) investment and job creation. It also helps in the professional management of labor relations and hiring. Therefore, we expect that better control of corruption reduces youth unemployment.

In examining youth unemployment in five MENA countries –Algeria, Egypt, Lebanon, Morocco, and Tunisia – using micro data, Fakih *et al.* (2020) find that perceptions about corruption increase the probability of youth unemployment. Similarly, Ndji*é et al.* (2019) examine the influence of governance and macroeconomic variables on youth unemployment in Africa and find that the control of corruption reduces the youth unemployment rate.

The error term, *ε*, in the empirical model comprises the effect of omission of country-specific effects and a disturbance term. The subscripts *i* and *t* indicate country and time, respectively. To capture the time-invariant country effects, we adopt fixed effects estimation methodology.

As indicated above, data on *LABOR* and *EDUCATION* is obtained from the Global Competitiveness Index (GCI) of the Global Competitiveness Report of the World Economic Forum. The dependent variable, *YUR*, and the remaining explanatory variables *UR*, *GROWTH*, *SLEAD*, *INFLATION,* and *CORRUPTION* are obtained from the World Development Indicators of the World Bank. We use panel data on 100 Arab and non-Arab countries during the period 2007-2017.[11] Of the 100 countries, 13 are Arab countries of which six are high-income, GCC countries, while the remaining are middle-income countries. Of the 87 non-Arab countries, 41 are high-income countries and 46 are middle-income. The period 2007-2017 is selected due to the availability of GCI labor efficiency pillar data.

5. Empirical Results

Table 3 provides the means for the empirical model variables for the Arab countries. The table shows that the mean youth and total unemployment rates are higher in the middle-income Arab (non-GCC) countries than in the high-income GCC countries. The mean youth unemployment rate in the former group is more than 2.5 times the mean for the latter group, while the mean total unemployment rate is nearly five-fold. The means of *SLEAD* and *GROWTH* are higher in the high-income GCC countries than in the middle-income Arab countries, while the mean *INFLATION* is lower. Similarly, the means of *EDUCATION*, *LABOR*, and *CORRUPTION* are also higher in the high-income GCC countries.

Table 3. Empirical Model Period Averages for Arab Countries (2007-2017)

Country	YUR	UR	SLEAD	GROWTH	INFLATION	EDUCATION	LABOR	CORRUPTION
	High-income (GCC) Arab countries							
Bahrain	5.23	1.16	14.79	4.28	2.35	4.51	4.66	2.48
Kuwait	11.74	2.10	18.31	1.43	4.32	3.62	4.17	2.85
Oman	14.04	3.66	21.96	4.45	3.34	3.90	4.40	2.64
Qatar	1.01	0.32	14.81	9.18	3.31	5.62	4.96	3.01
Saudi Arabia	28.87	5.59	22.63	3.44	3.76	4.21	4.34	2.50
UAE	6.63	2.28	10.37	2.92	2.73	5.15	5.03	3.28
Total	11.25	2.52	17.14	4.28	3.31	4.50	4.59	2.79
	Middle-income Arab countries							
Algeria	25.33	10.72	18.12	2.92	4.96	3.03	3.28	1.86
Egypt	30.23	11.19	11.26	4.19	12.82	2.66	3.20	2.00
Jordan	30.28	13.39	16.92	3.72	3.72	4.43	4.02	2.88
Lebanon	19.02	8.33	12.98	4.31	2.58	4.97	3.87	1.55
Libya	49.35	19.38	10.93	4.70	6.58	2.40	3.26	1.26
Morocco	19.12	9.27	18.76	3.89	1.47	3.73	3.62	2.68
Tunisia	34.00	14.92	18.22	2.70	4.14	4.47	3.74	2.42
Total	28.48	12.01	15.84	3.80	5.66	3.64	3.57	2.03

Notes: All variables are in levels. LABOR is the overall labor market efficiency index.

Within the high-income GCC countries, youth and total unemployment rates and state-led development are the highest in Saudi Arabia and Oman. In the middle-income countries, after Libya, Tunisia has the highest youth and total unemployment rates. Libya experienced internal conflict for most of the study period.

Table 4 provides the correlation matrix for the empirical model variables for both income groups of the Arab countries. *YUR*, the dependent variable, is positively and significantly correlated with state-led development in the high-income GCC countries but insignificantly correlated in the other middle-income group. *GROWTH* is insignificantly correlated to *YUR* in both groups. Human capital, labor market flexibility, and corruption control are negatively correlated to *YUR* in both income groups. However, labor market flexibility has a higher correlation in absolute terms in the case of the high-income GCC countries.

Table 4. Correlation Matrix

	YUR	UR	SLEAD	GROWTH	INFLATION	EDUCATION	LABOR	CORRUPTION
	High-income (GCC) countries							
YUR	1.000							
UR	**0.953**	1.000						
SLEAD	**0.625**	**0.517**	1.000					
GROWTH	-0.229	-0.223	**-0.278**	1.000				
INFLATION	0.068	0.081	-0.242	0.221	1.000			
EDUCATION	**-0.530**	**-0.488**	**-0.468**	**0.309**	**-0.274**	1.000		
LABOR	**-0.556**	**-0.431**	**-0.672**	**0.263**	-0.042	**0.774**	1.000	
CORRUPTION	**-0.321**	**-0.302**	-0.007	-0.157	**-0.259**	**0.435**	**0.339**	1.000
	Middle-income (non-GCC) countries							
YUR	1.000							
UR	**0.962**	1.000						
SLEAD	-0.078	0.066	1.000					
GROWTH	-0.010	-0.026	-0.156	1.000				
INFLATION	**0.260**	0.090	**-0.471**	-0.066	1.000			
EDUCATION	**-0.435**	**-0.288**	0.176	-0.123	**-0.426**	1.000		
LABOR	**-0.291**	-0.147	0.101	-0.015	**-0.365**	**0.837**	1.000	
CORRUPTION	**-0.308**	-0.179	**0.502**	-0.035	-0.215	**0.419**	**0.376**	1.000

Notes: All variables are in levels. Bold fonts indicate statistical significance at the 5 percent significance level.

5.1. Estimation Results for The Arab Countries

We present the fixed effects estimation results for the Arab countries in table 5. The top panel shows the results for high-income countries, while the lower panel shows the results for middle-income countries.

Table 5. LSDV/FE estimation results for the Arab countries

	LE		C	WF	HF	PP	PM
	High-income (GCC) countries						
L.UR	2.594***		2.713***	2.557***	2.694***	2.254***	2.512***
	(0.884)		(0.757)	(0.760)	(0.802)	(0.790)	(0.830)
SLEAD	0.246***		0.283***	0.214***	0.282***	0.216***	0.253***
	(0.072)		(0.057)	(0.056)	(0.056)	(0.044)	(0.052)
GROWTH	0.065		0.072	**0.080***	0.071	0.036	0.070
	(0.044)		(0.045)	(0.041)	(0.043)	(0.035)	(0.044)
INFLATION	0.017		0.010	-0.012	0.013	0.074	0.012
	(0.046)		(0.050)	(0.044)	(0.049)	(0.052)	(0.046)
EDUCATION	5.348		4.131	**5.678***	4.309	**9.224***	5.872*
	(3.281)		(3.039)	(2.745)	(3.329)	(3.436)	(3.015)

LABOR	-2.474	1.356	**-10.536***	0.362	**-8.320****	-3.099
	(6.203)	(3.134)	(6.145)	(2.205)	(4.135)	(3.196)
CORRUPTION	**-3.850****	**-4.312****	**-3.567****	**-4.191****	**-3.456****	**-3.929****
	(1.654)	(1.707)	(1.458)	(1.659)	(1.587)	(1.509)
Constant	-2.462	-6.871	12.078	-5.566	0.915	-2.250
	(8.983)	(4.828)	(11.265)	(4.604)	(5.040)	(5.790)
Observations	60	60	60	60	60	60
R-squared	0.987	0.987	0.988	0.987	0.988	0.987
Countries	6	6	6	6	6	6
F test	296.29***	294.38***	313.32***	293.63***	321.18***	297.98***
	Middle-income countries					
L.UR	**1.034****	**1.044****	**1.103****	**1.047****	**1.075****	**1.061****
	(0.309)	(0.320)	(0.323)	(0.310)	(0.303)	(0.321)
SLEAD	**0.477***	**0.596****	0.457	**0.560****	**0.483***	0.436
	(0.252)	(0.246)	(0.285)	(0.259)	(0.279)	(0.298)
GROWTH	**-0.776***	**-0.863****	**-0.834****	**-0.798****	**-0.758****	**-0.796****
	(0.390)	(0.390)	(0.366)	(0.353)	(0.355)	(0.359)
INFLATION	0.023	0.047	0.050	0.043	0.008	0.030
	(0.089)	(0.094)	(0.097)	(0.087)	(0.090)	(0.084)
EDUCATION	3.799	-1.506	1.199	-0.435	6.096	3.934
	(6.492)	(5.872)	(5.093)	(5.588)	(8.686)	(5.134)
LABOR	-4.043	5.048	5.618	2.736	-4.629	-3.228
	(9.507)	(5.936)	(6.377)	(4.106)	(8.617)	(4.406)
CORRUPTION	4.127	**4.791***	3.957	4.309	**4.679***	4.190
	(3.258)	(2.823)	(2.654)	(2.700)	(2.771)	(2.848)
Constant	5.090	-2.868	-5.108	-0.085	2.040	4.043
	(12.266)	(11.782)	(12.124)	(10.553)	(10.725)	(11.399)
Observations	58	58	58	58	58	58
R-squared	0.914	0.915	0.915	0.915	0.915	0.915
Countries	7	7	7	7	7	7
F test	36.11***	36.52***	36.51***	36.32***	36.22***	36.24***

Notes: Robust standard errors in parentheses. F-test statistics are based on the standard errors. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

In both high- and middle-income Arab countries, the coefficients of the lagged total unemployment rate L*UR* indicate that it is positively associated with *YUR* suggesting persistence in last year's unemployment on the current year's youth unemployment rate. In both income groups, state-led development increases youth unemployment. In the high-income GCC countries, *SLEAD* coefficients are positive and statistically significant at the one percent level in all labor market specifications. For example, in the first specification, an increase in government consumption by one percentage point increases the youth unemployment rate by

approximately a quarter (0.246) of one percentage point. In the middle-income Arab countries group, *SLEAD* has a positive and statistically significant influence in only four specifications. Although the statistical significance is at the five percent level at most, the magnitude of the coefficients is higher than in the high-income GCC countries. For example, in the first specification, an increase in government consumption by one percentage point increases the youth unemployment rate by approximately half (0.477) of one percentage point.

The influence of macroeconomic variables, *GROWTH* and *INFLATION*, is insignificant in the high-income GCC countries. In contrast, *GROWTH* reduces the youth unemployment rate in the middle-income Arab countries group in all specifications. An increase in the growth rate by one percentage point reduces the youth unemployment rate by about 0.8 percentage points.

EDUCATION increases the youth unemployment rate in the GCC countries but only in three specifications and at the five percent statistical significance level at most, while labor market flexibility reduces it in only two specifications. The coefficients of these variables are insignificant in the middle-income Arab countries group.

Finally, the influence of an improvement in the control of corruption is mixed in the two income groups. In the high-income GCC countries, an improvement in corruption control reduces the youth unemployment rate in all specifications. An improvement in corruption control by one percent reduces the youth unemployment rate by about 0.4 percentage points. In the middle-income Arab countries group, the influence of corruption control is in the opposite direction, where better corruption control surprisingly increases the youth unemployment rate. However, this influence shows in only two specifications and at a ten percent significance level.

5.2. Estimation Results for the non-Arab Countries

We present the estimation results for the non-Arab countries in table 6. In both income groups, like in the Arab countries, the coefficients of the lagged total unemployment rate L.*UR* indicate that it is positively associated with *YUR*, suggesting persistence in last year's unemployment on the current year's youth unemployment rate.

Table 6. LSDV/FE estimation results for non-Arab countries

	LE	C	WF	HF	PP	PM
High-income countries						
L.UR	1.630***	1.603***	1.642***	1.638***	1.619***	1.599***
	(0.077)	(0.077)	(0.078)	(0.077)	(0.077)	(0.078)
SLEAD	0.511***	0.482***	0.506***	0.531***	0.450***	0.474***
	(0.132)	(0.130)	(0.132)	(0.128)	(0.133)	(0.133)
GROWTH	-0.557***	-0.536***	-0.560***	-0.562***	-0.550***	-0.565***
	(0.093)	(0.093)	(0.094)	(0.094)	(0.093)	(0.094)
INFLATION	-0.028	-0.046	-0.028	-0.032	-0.024	-0.001
	(0.081)	(0.080)	(0.081)	(0.079)	(0.080)	(0.080)
EDUCATION	10.143***	12.285***	9.617***	8.934***	10.371***	10.376***
	(3.204)	(3.086)	(2.937)	(3.221)	(2.984)	(2.969)
LABOR	-3.339	-11.706***	-1.213	0.581	-5.155***	-7.903***

	(4.174)	(3.093)	(2.201)	(1.769)	(1.909)	(2.967)
CORRUPTION	-7.437***	-6.752***	-6.964***	-7.082***	-7.447***	-7.155***
	(1.983)	(1.960)	(1.997)	(1.928)	(1.979)	(1.946)
Constant	-4.759	3.507	-8.022	-9.570	-1.917	4.048
	(7.829)	(6.358)	(6.207)	(5.811)	(6.541)	(7.321)
Observations	408	408	408	408	408	408
R-squared	0.948	0.950	0.948	0.948	0.949	0.949
F test	161.00***	180.38***	162.81***	160.77***	168.23***	165.08***
Middle-income countries						
L.UR	1.200***	1.204***	1.206***	1.181***	1.199***	1.207***
	(0.111)	(0.114)	(0.112)	(0.107)	(0.114)	(0.112)
SLEAD	0.127*	0.126*	0.141*	0.139*	0.147*	0.137*
	(0.077)	(0.075)	(0.078)	(0.074)	(0.077)	(0.075)
GROWTH	-0.209***	-0.218***	-0.214***	-0.206***	-0.212***	-0.217***
	(0.041)	(0.041)	(0.042)	(0.039)	(0.041)	(0.041)
INFLATION	-0.077***	-0.079***	-0.083***	-0.085***	-0.079***	-0.078***
	(0.024)	(0.024)	(0.025)	(0.023)	(0.024)	(0.026)
EDUCATION	1.837	2.865*	1.628	2.076	2.343	2.220
	(1.490)	(1.639)	(1.490)	(1.471)	(1.643)	(1.552)
LABOR	-7.641***	-4.087*	-5.349***	-3.854***	-1.941	-2.240
	(2.355)	(2.451)	(1.883)	(1.235)	(1.934)	(2.111)
CORRUPTION	-0.553	-0.572	-0.686	-0.435	-0.687	-0.682
	(0.666)	(0.668)	(0.675)	(0.652)	(0.685)	(0.667)
Constant	21.580***	15.534***	19.092***	15.939***	12.686***	13.048***
	(3.950)	(4.154)	(4.250)	(3.284)	(3.506)	(3.788)
Observations	433	433	433	433	433	433
R-squared	0.976	0.976	0.976	0.977	0.976	0.976
F test	631.52***	686.89***	708.98***	787.16***	583.68***	554.38***

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

In both income groups, state-led development increases youth unemployment. In the high-income non-Arab countries, *SLEAD* coefficients are positive and statistically significant at the one percent level in all labor market specifications. In the first specification, for example, an increase in government consumption (percent of GDP) by one percentage point increases the youth unemployment rate by approximately half (0.511) a percentage point. In the middle-income group, the coefficient of *SLEAD* is much lower compared to the high-income group. It is also of lower statistical significance (ten percent level) in all specifications.

The influence of *GROWTH* is significant in the high-income non-Arab countries unlike in the high-income Arab countries group where growth has no influence. In the first specification, for example, an increase in the growth rate by one percentage point reduces the

youth unemployment rate by 0.5 percentage points. *GROWTH* also reduces the youth unemployment rate in the middle-income group albeit at a lower magnitude. In the first specification, for example, an increase in the growth rate by one percentage point reduces the youth unemployment rate by 0.2 percentage points.

INFLATION reduces the youth unemployment rate only in the middle-income group. In the first specification, for example, an increase in the inflation rate by one percentage point reduces the youth unemployment rate by about 0.1 percentage points.

EDUCATION increases the youth unemployment rate in the high-income countries similar to the high-income GCC countries. There is no influence in the middle-income countries group, in contrast.

The influence of flexible labor markets is apparent in both income groups. In both groups, flexible labor markets reduce youth unemployment rates. In the high-income group, labor-employer cooperation, which is an aspect of labor market flexibility, and the link between pay and productivity and reliance on professional management, which are aspects of labor market efficiency reduce youth unemployment rates. In the middle-income groups, apart from the overall labor market index, labor-employer cooperation, wage determination flexibility, and ease of hiring and firing reduce youth unemployment rates. These aspects pertain to labor market flexibility.

Finally, the influence of an improvement in the control of corruption on reducing the youth unemployment rate shows only in the high-income group and in all specifications. This is similar to the high-income GCC countries. However, there is an insignificant influence in the middle-income group.

6. Discussion

The empirical results show that state-led development, as measured by government consumption (as a percent of GDP) increases youth unemployment rates in both Arab and non-Arab countries alike. However, this worsening influence is stronger in high-income countries. Youth unemployment has been found to increase in Mediterranean EU countries – but as a result of government austerity measures (Hanappi 2015). Austerity measures are being adopted to control the rising debt associated with bank bailouts. In the Arab countries, In the case of Arab countries, the increase in youth unemployment can be explained by a bloated government apparatus thanks partly to the retirement age and protected government jobs. The quality of education and inadequacy of job market skills may make it difficult for youth to find jobs. This is mostly the case in middle-income countries. In the high-income GCC countries, the highly paid government jobs raise youth reservation wages and discourage youth from accepting jobs in the private sector, which pay lower wages and salaries.

The influence of growth on youth unemployment – Okun's law - is surprisingly insignificant in the high-income GCC countries. Growth, high or low, may not matter much to youth unemployment given the government's commitment to the politically-driven social contract. However, in middle-income Arab countries, Okun's law seems to be valid a result similar to Dietrich and Möller (2016) in the case of European countries. Growth is associated with the expansion of (private sector) economic activity, which helps create job opportunities for youth. In non-Arab countries, growth reduces youth unemployment rates regardless of the income groups these countries belong to. This result is also similar to Dietrich and Möller (2016) and Marelli et al. (2013).

The improvement in the youth unemployment rate in association with inflation or the Phillips curve holds only in middle-income non-Arab countries. This result is different from Bayrak and Tatli (2018) who find that the Phillips curve holds in high-income OECD countries. The result does not hold for high-income Arab or non-Arab countries, or for middle-income Arab countries.

Empirical evidence shows that education increases youth unemployment in the high-income non-Arab countries group. We wonder if quality education can result in the over-qualification of youth, creating a mismatch between the skills that youth possess and the labor-market skills that are needed in those countries. We think that this result shall be investigated in future research.

The positive influence of flexible and efficient labor markets on reducing youth unemployment seems to be primarily existent in the non-Arab countries regardless of their income levels. In both groups, flexible labor markets reduce youth unemployment rates. In the high-income group, labor-employer cooperation, which is an aspect of labor market flexibility, and the link between pay and productivity and reliance on professional management, which are aspects of labor market efficiency reduce youth unemployment rates. In the middle-income groups, apart from the overall labor market index, labor-employer cooperation, wage determination flexibility, and ease of hiring and firing reduce youth unemployment rates. These aspects pertain to labor market flexibility.

Empirical evidence of this research shows that pay and productivity reduce the youth unemployment rate in high-income GCC countries. In a recent research on the GCC countries, Mina (2021) also finds that linking pay to productivity reduces the total youth and female youth unemployment rates, a result consistent with the empirical evidence of this research.

Control of corruption reduces youth unemployment in high-income Arab and non-Arab countries but not in middle-income countries. The absence of corruption encourages more (private) investment and job creation. The empirical evidence on middle-income Arab countries is inconsistent with the findings of Fakih et. al (2020) on youth unemployment in Algeria, Egypt, Lebanon, Morocco, and Tunisia. The empirical evidence on middle-income non-Arab countries, which include African countries, is also inconsistent with the findings of Ndjié et al. (2019) on youth unemployment in Africa.

7. Conclusion

This article examines Salehi-Isfahani's (2012) projection that high youth unemployment is a challenge in Arab countries. Statistics show that youth unemployment is more of a challenge in non-GCC countries compared to the GCC countries. We then examine empirically the determinants of youth unemployment in Arab and non-Arab countries by income level separately. Empirical evidence suggests that state-led development increases youth unemployment regardless of the region and income level.

In estimating the empirical model, we use panel data on 13 Arab countries and 87 non-Arab countries for 2007-2017. The countries are distinguished by income level. We adopt fixed effects panel model to account for time-invariant, country-specific effects. Empirical evidence shows that state-led development increases youth unemployment in Arab and non-Arab countries, both high- and middle-income. The results suggest that the worsening influence of state-led development on youth unemployment is not region-specific.

The paper contributes to the youth unemployment and MENA economic development by examining Salehi-Isfahani's (2012) projection about the unemployment challenge that state-led development poses for the Arab countries and extending recent examination of the relationship between labor market institutions and gender-based youth unemployment in the Gulf Cooperation Council (GCC) countries.

Footnotes

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[2] The MENA region Arab countries, as defined by membership of the Arab League, include Algeria, Djibouti, Egypt, Iraq, Jordan, Lebanon, Libya, Mauritania, Morocco, Somalia, Sudan, Syria, Tunisia, State of Palestine, and Yemen in addition to the six oil-rich Gulf Cooperation Council (GCC) countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE.

[3] Labor market regulations include minimum wages, non-wage costs, employment protection legislation, and permanent contracts rigidities (Votinius, 2014).

[4] Savings finance investment, expand physical capital, and increase employment.

[5] Youth unemployment can also be measured using youth unemployment relative to adult and total unemployment (Caroleo et al. 2017). To account for the lack of integration of youth into the labor market, the share of young people in neither education nor employment (NEET), of which the unemployed comprise a sub-group has been used (Martin, 2009). However, the number of observations on the Arab countries is limited.

[6] In another research, the author tabulates the magnitude of missing observations problem resulting from the use of GCC national statistical authorities' data during the same study period.

[7] The use of ILO data available for the whole sample period likely enhances the efficiency of coefficient estimates.

[8] Dietrich (2013) and Bal-Domańska (2021) account for the current total unemployment rate.

[9] Bernal-Verdugo et al. (2012) however took the log of this percentage.

[10] Their empirical model includes labor market reform index, economic reform index, inflation, real interest rates, population aged 0-14, education, part-time employment, unemployment benefits, employment tax, and expenditures on active labor market policies.

[11] The sample of 101 non-Arab countries is provided in Appendix A.

Appendix

Appendix A: Empirical Model Variables Period Averages for Sample Countries (2007-2017)

Country	YUR	UR	SLEAD	GROWTH	INFLATION	EDUCATION	LABOR	CORRUPTION
High-income (GCC) Arab countries								
Bahrain	5.23	1.16	14.79	4.28	2.35	4.51	4.66	2.48
Kuwait	11.74	2.10	18.31	1.43	4.32	3.62	4.17	2.85
Oman	14.04	3.66	21.96	4.45	3.34	3.90	4.40	2.64
Qatar	1.01	0.32	14.81	9.18	3.31	5.62	4.96	3.01
Saudi Arabia	28.87	5.59	22.63	3.44	3.76	4.21	4.34	2.50
UAE	6.63	2.28	10.37	2.92	2.73	5.15	5.03	3.28
Total	11.25	2.52	17.14	4.28	3.31	4.50	4.59	2.79
Middle-income Arab countries								
Algeria	25.33	10.72	18.12	2.92	4.96	3.03	3.28	1.86
Egypt	30.23	11.19	11.26	4.19	12.82	2.66	3.20	2.00
Jordan	30.28	13.39	16.92	3.72	3.72	4.43	4.02	2.88
Lebanon	19.02	8.33	12.98	4.31	2.58	4.97	3.87	1.55
Libya	49.35	19.38	10.93	4.70	6.58	2.40	3.26	1.26

Morocco	19.12	9.27	18.76	3.89	1.47	3.73	3.62	2.68
Tunisia	34.00	14.92	18.22	2.70	4.14	4.47	3.74	2.42
Total	28.48	12.01	15.84	3.80	5.66	3.64	3.57	2.03
	High-income non-Arab countries							
Australia	11.61	5.34	17.89	2.76	2.37	5.29	4.79	4.60
Austria	9.80	5.16	19.78	1.19	1.90	5.01	4.60	4.72
Belgium	20.73	7.79	23.55	1.36	1.90	5.77	4.43	4.59
Brunei Darussalam	23.42	7.19	21.97	-0.22	0.26	4.58	4.96	2.53
Canada	13.34	7.06	20.77	2.08	1.64	5.61	5.34	5.00
Chile	18.92	7.68	12.32	3.20	3.46	4.12	4.59	4.47
Croatia	34.67	13.08	20.13	0.37	1.78	4.12	3.99	2.62
Cyprus	22.63	9.97	17.31	1.07	0.98	4.88	4.51	3.97
Czech Republic	14.46	5.66	19.49	1.92	2.01	4.65	4.53	2.64
Denmark	13.04	6.33	25.85	0.83	1.55	5.39	5.28	5.49
Estonia	18.00	8.85	19.21	1.44	3.14	5.14	4.95	3.40
Finland	19.70	8.09	23.41	0.67	1.58	5.95	4.82	5.74
France	22.46	9.14	23.65	0.93	1.15	5.08	4.32	4.50
Germany	8.79	5.89	19.34	1.44	1.40	4.98	4.56	5.00
Greece	41.20	18.61	21.01	-2.26	1.28	3.74	3.73	2.14
Hungary	21.08	8.40	20.55	1.10	3.35	4.22	4.27	3.00
Iceland	10.52	4.82	23.93	2.45	5.03	5.58	5.21	5.23
Ireland	21.67	10.93	16.38	4.09	0.78	5.10	4.93	3.90
Israel	11.68	6.86	22.66	3.64	1.58	4.59	4.71	3.36
Italy	32.32	9.78	19.61	-0.31	1.45	4.07	3.60	2.53
Japan	7.14	3.99	19.59	0.62	0.30	4.65	4.94	4.07
Korea	8.79	3.19	14.67	3.32	2.30	4.90	4.29	2.95
Latvia	22.43	12.09	18.11	1.04	3.49	4.47	4.66	2.43
Lithuania	21.04	10.63	17.89	2.38	3.14	4.65	4.44	2.53
Luxembourg	17.10	5.35	16.59	2.58	1.75	4.73	4.76	5.00
Malta	12.52	5.88	18.34	4.46	1.73	5.13	4.25	3.50
Netherlands	10.71	5.48	25.11	1.14	1.56	5.60	4.86	5.00
New Zealand	14.60	5.50	18.99	2.23	1.91	5.37	5.22	5.50
Norway	8.95	3.46	21.49	1.32	2.07	5.19	5.02	5.26
Panama	7.88	3.17	11.39	7.09	3.53	3.55	4.15	2.00
Poland	21.71	8.37	18.30	3.72	2.03	4.21	4.33	2.88
Portugal	27.41	11.49	19.02	0.26	1.32	4.55	4.06	3.88
Singapore	9.52	4.10	9.73	4.96	2.26	6.08	5.78	4.53
Slovak Republic	27.20	11.94	18.48	3.17	1.75	4.01	4.33	2.64
Slovenia	15.46	7.51	19.27	1.31	1.74	4.85	4.17	3.26
Spain	41.91	19.35	19.56	0.62	1.50	4.38	4.03	3.86
Sweden	21.60	7.48	25.54	1.88	1.15	5.36	4.82	5.26
Switzerland	8.14	4.45	11.70	1.72	0.15	6.01	5.82	4.76
United Kingdom	16.99	6.38	20.25	1.25	2.22	5.22	5.33	4.40
United States	13.85	6.76	15.34	1.50	1.80	5.25	5.55	4.07
Uruguay	21.50	7.39	13.22	4.27	7.99	4.02	3.66	3.75

Uruguay								
Total	17.98	7.68	18.72	1.86	2.23	4.89	4.66	3.88
	Middle-income non-Arab countries							
Albania	30.93	14.89	11.03	3.33	2.39	4.05	4.23	1.96
Angola	14.74	6.59	17.11	4.63	14.77	1.99	3.84	1.60
Armenia	33.33	16.79	11.71	3.49	4.29	3.57	4.50	1.64
Azerbaijan	13.75	5.36	10.78	5.20	7.90	3.57	4.77	1.50
Bangladesh	9.49	4.26	5.33	6.34	7.37	3.13	3.85	2.82
Bolivia	5.53	2.72	14.87	4.92	5.91	3.04	3.42	1.97
Botswana	35.13	18.89	19.30	4.27	6.38	3.60	4.50	3.65
Brazil	18.51	8.37	19.27	2.04	5.91	3.30	4.01	2.45
Bulgaria	20.29	9.12	16.40	2.42	3.07	3.89	4.38	2.21
Cameroon	5.88	3.64	11.71	4.35	2.21	3.60	4.11	2.53
China	10.12	4.56	15.46	8.80	2.81	4.42	4.58	2.10
Colombia	19.45	9.67	13.99	3.87	4.30	3.75	4.16	2.66
Costa Rica	19.47	7.97	16.37	3.91	5.26	4.62	4.49	2.41
Côte d'Ivoire	7.57	5.21	11.58	5.28	2.03	3.65	4.16	1.94
Dominican Rep.	13.90	6.20	10.14	5.09	4.33	2.94	3.98	1.91
Ecuador	8.91	3.73	13.42	3.28	3.76	3.40	3.55	2.51
El Salvador	10.10	4.85	15.78	2.02	2.11	3.23	3.95	2.33
Gabon	35.85	20.14	14.05	3.52	2.47	2.93	4.22	1.96
Ghana	11.33	5.57	9.75	6.69	13.38	3.73	4.12	2.31
Guatemala	5.31	2.96	10.32	3.45	4.81	3.23	4.08	1.91
Honduras	8.75	4.83	16.05	3.46	5.60	3.11	3.66	2.00
India	20.26	5.45	10.62	6.81	7.85	4.49	4.10	2.45
Indonesia	17.46	5.24	9.18	5.54	5.66	4.43	4.10	3.13
Iran	25.73	11.75	10.87	2.79	18.27	3.66	3.20	1.64
Jamaica	31.67	12.55	15.17	0.04	8.72	3.74	4.32	1.99
Kenya	7.34	2.90	14.14	5.20	9.64	4.09	4.62	1.35
Malaysia	10.75	3.25	12.79	4.89	2.53	5.09	4.81	2.53
Mexico	8.67	4.50	11.72	2.10	4.13	3.43	3.88	1.96
Mongolia	12.57	5.58	13.42	7.48	10.14	3.39	4.50	2.00
Myanmar	1.92	0.85	16.89	8.31	9.91	2.56	4.16	1.55
Namibia	41.48	20.76	25.42	3.89	6.27	3.02	4.46	2.76
Nicaragua	9.32	5.50	14.05	4.19	7.26	2.90	3.94	1.98
Nigeria	10.19	4.61	7.50	4.89	11.28	3.34	4.45	1.50
Pakistan	3.79	1.88	10.55	3.83	9.21	3.60	3.51	2.00
Paraguay	10.66	4.70	9.97	4.73	5.09	2.46	3.79	1.50
Peru	7.29	3.62	11.57	5.23	3.19	3.18	4.38	2.33
Philippines	9.24	3.38	10.27	5.70	3.44	4.09	4.01	2.20
Russia	15.65	6.07	18.31	1.87	8.72	4.09	4.47	1.74
Senegal	10.76	8.33	13.85	4.59	1.72	4.09	4.03	2.18
South Africa	50.78	24.97	20.01	2.08	6.05	3.22	4.01	2.58
Sri Lanka	18.98	4.64	10.53	5.74	7.99	4.25	3.63	2.47
Thailand	3.44	0.74	16.01	3.30	1.91	4.15	4.55	1.93

Turkey	18.24	9.93	14.20	5.09	8.39	3.72	3.56	2.46
Ukraine	18.57	8.13	18.55	-0.62	14.61	4.11	4.33	1.80
Venezuela	13.50	6.46	12.49	2.07	72.74	3.30	2.92	1.00
Viet Nam	4.99	1.54	6.05	6.11	8.42	3.78	4.49	2.72
Total	17.53	8.25	14.42	4.17	6.97	3.63	4.13	2.11

Notes: All variables are in levels.

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