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MENA Bölgesi'nde Refah, Cinsiyet Eşitliği ve Ekonomik Kalkınma

Prosperity, Gender Equality and Economic Development in the MENA Region

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MENA Bölgesi'nde Refah, Cinsiyet Eşitliği ve Ekonomik Kalkınma

Öz

Bu çalışmada makroekonomik temeller, refah ve cinsiyet eşitliği faktörlerinin ekonomik kalkınma üzerindeki etkileri 18 Orta Doğu ve Kuzey Afrika (MENA) ülkesinde incelenmiştir. MENA bölgesi ülkeleri son yıllarda ortalama zenginlik ve refah seviyelerinde ilerlemeler yaşamış olsalar da, bu olumlu değişiklikler bölgenin kalkınma ve ekonomik büyüme sıralamasında diğer dünya bölgelerinin gerisinde kalmasını engellemeye yeterli olmamıştır. 2009 ve 2019 zaman periyodu için bir panel veri analizi yapılmıştır. Bu dönem aynı zamanda Arap Baharı öncesi ve sonrasına denk gelir. Refah ve cinsiyet eşitliğinin farklı yönlerinin MENA bölgesinde büyümeyi nasıl etkileyebileceğini anlamak için geniş bir gösterge yelpazesi kullanılmıştır. Bu şekilde ampirik analizde kolektif ve kapsayıcı bir yaklaşım benimsenmiştir. Bağımlı değişkenlerden biri olan üretken kapasite, doğal kaynak kiraları, GSYİH ve çalışma çağındaki nüfusun etkilerini içeren bileşik bir gösterge olarak hesaplanır. Ana tahminlerde iki bileşik gösterge, ekonomik ortam ve kurumlar kullanılmıştır. Pazar erişimi ve altyapısı, yatırım ortamı, işletme koşulları ve ekonomik kalite, ekonomik ortam değişkenini oluşturmak için entegre edilmiştir. Yönetim, emniyet ve güvenlik ve kişisel özgürlük, kurumlar değişkenini oluşturmak için birleştirilmiştir. Daha sonra, bu iki bileşik göstergenin bileşenleri, bir sağlamlık kontrolü analizi gerçekleştirmek için tahminlerde ayrı ayrı kontrol edilmiştir. Ayrıca ampirik tahminlerde, 2011'deki Arap Baharı hadisesi, kadınların işgücüne katılım oranı, doğrudan yabancı yatırım (FDI), işsizlik oranı, doğal kaynak kiraları, ulusal parlamentodaki kadınların yüzdesi de kontrol edilmiştir. Kadınların işgücüne katılımının, doğrudan yabancı yatırımın, sosyal sermayenin, doğal kaynak kiralarının, eğitimin, daha iyi bir ekonomik ortamın ve emniyet-güvenlikteki iyileştirmelerin ekonomik büyümeyi, toplam faktör verimliliğini ve üretim kapasitesini olumlu etkileyebileceği bulunmuştur. Öte yandan, kurumların genel kalitesi ve ulusal parlamentolardaki kadın temsilcilerin oranının, bu MENA ülkelerinde ekonomik kalkınmayı önemli ölçüde etkilemediği gözükmektedir.

Anahtar Kelimeler: Refah, Esenlik, Cinsiyet Eşitliği, Ekonomik Kalkınma, MENA Ülkeleri

Prosperity, Gender Equality and Economic Development in the MENA Region

Abstract

In this study, the effects of macroeconomic fundamentals, prosperity, and gender equality factors on economic development are examined in 18 Middle East and North Africa (MENA) countries. Even though the MENA region countries have gone through advancements in the average wealth and prosperity levels in recent years, these positive changes have not been sufficient to prevent the region to fall behind other world regions in the rankings of development and economic growth. A panel data analysis is carried out for the time duration 2009 and 2019. This period coincides with both before and after the Arab Spring period. A wide spectrum of indicators is used to understand how different aspects of prosperity and gender equality can affect growth in the MENA region. In this way, a collective and comprehensive approach is adopted in the empirical analysis. One of the dependent variables, the productive capacity is calculated as a compound indicator which accounts for resource rents, GDP and working-age population. Two composite indicators, economic environment and institutions are used in the main estimations. Market access and infrastructure, investment environment, enterprise conditions, and economic quality are integrated to generate the variable economic environment. Governance, safety and security, and personal freedom are compounded to create the variable institutions. Later, these two composite indicators' components are controlled individually in the estimations in order to carry out a robustness check analysis. It is found that female labor force participation, foreign direct investment, social capital, natural resource rents, education, a better economic environment, and improvements in safety-security can positively affect economic growth, total factor productivity and productive capacity. On the other hand, the overall quality of institutions and proportion of women representatives in national parliaments do not seem to significantly impact economic development in these MENA countries.

Keywords: Prosperity, Well-being, Gender Equality, Economic Development, MENA Countries

Introduction

The Middle East and North Africa (MENA) region countries have experienced improvements in the average prosperity level in the last decade. Nevertheless, the paces of advancements in prosperity and economic growth in the region have usually remained below the rates in other regions of the world. In various studies, the MENA region is also identified as the world region having the highest inequality both between countries and within countries (Alvaredo et al., 2019, p.690-693). Most of the macroeconomic and socioeconomic problems the region goes through are long-run issues. MENA countries have experienced macroeconomic instability, fiscal unsustainability, natural resource curse, governance incapability, political instability, regional conflicts and gender inequality in both pre- and post-World War II periods (Yousef, 2004, p.91-92).[1]

When we look at the areas experiencing positive and negative changes in the MENA region, increase in school enrolment and completion rates in all education levels generate advancements in education which is an essential factor to build a highly educated labor force and make the transition from a natural resource-dependent economy to a knowledge-based economy. Moreover, reflecting these positive changes in education, there are improvements in economic, business environments, particularly in market access, conditions for enterprises and infrastructure (e.g., information technology infrastructure, network coverage and internet usage). Despite these positive developments, safety-security and fiscal sustainability remain sensitive areas where more improvements should be achieved (Legatum Prosperity Index, 2019) [2].

In this study, we investigate the influence of macroeconomic, gender equality and prosperity indicators on economic development in 18 MENA countries using a panel data analysis covering the period 2009-2019. This duration covers both pre- and post-the Arab Spring period. We work with a wide variety of indicators, for instance, we use ten prosperity pillars to examine the relative impacts of various prosperity strands on economic development in the MENA region. Nonetheless, some macroeconomic and socioeconomic variables stand out due to their significant impacts on the region countries' economic development such as female labor force participation, education, foreign direct investment, and social capital, among others.

Literature Review

[1] Yousef (2004) provides a thorough analysis about the economic challenges the MENA region have gone through since 1950.
[2] 2019 Legatum Prosperity Index™, www.prosperity.com (Retrieved: 10.09.2020).

In this section, we prefer to highlight important economic development perspectives specific to the empirical analysis in this paper since the economic development literature is rather widespread covering numerous strands of research. Rode (2013, p.1479-1481) investigates the effects of social capital, quality of institutions and economic freedom on subjective well-being. Farid and Lazarus (2008, p.1053-1058) argue that social capital, freedom and economic justice can have significant influences on subjective well-being, and those increases in subjective well-being have a positive impact on work productivity in developing countries. Tabellini (2010, p.710-711) also emphasizes the favorable influence of social capital on economic development in the regions of Europe. Acemoglu et al. (2001, p.1370-1377; 2003, p.50-59) highlight the causal effect of institutional factors on economic development differences across countries.

The impact of natural resource rents and rentier state on economic growth and development in the MENA region and the world have been analyzed in various studies (Beblawi, 1987, p.383-384; Bellin, 1994, p.427-428; Levins, 2012, p.1-2; Van der Ploeg, 2011, p.367-369). Prichard et al. (2018, p.295-296) examine the relationship between taxation, natural resource abundance and democracy. They argue that natural resource abundance, especially oil abundance, has a negative and destabilizing impact on democracy through the channel of changes in government revenues. Moreover, there are numerous works discussing the negative nexus between natural resource abundance (particularly oil abundance), economic development, democracy, and capability of governance which is identified as political resource curse in the related literature (Ramsay, 2011, p.507-508; Ross, 2001, p.325-329; Ross, 2015, p.239-241; Sandbakken, 2006, p.137-142; Tsui 2011, p.92-95; Ulfelder, 2007, p.995-996).

In a study done for developing countries, Potrafke and Ursprung (2012, p.405-406.) find that advancements in social and economic globalization have a positive and statistically significant effect on the social institutions, and these social institutions can support gender equality and diminish oppression on women. Furthermore, there are studies which well document the significant and essential participation of women into the labor market and market economy through different endeavors, and its positive impact on economic development in MENA countries (Moghadam, 2005, p.110-113; Karshenas and Moghadam, 2001, p.54-56; Karshenas, 1997, p.1-3; Momani, 2016, p.1-4).

Data Analysis

We investigate the impact of a wide range of macroeconomics, gender and economic wellbeing indicators on economic development in 18 MENA countries during the 2009-2019 period. Since we want to account for the unobserved country-specific effects, we adopt a panel data fixed effects model. We use four indicators as dependent variables to measure economic development. These dependent variables are GDP per capita growth rate from the World Bank's World Development Indicators (WDI) (2020), total

factor productivity (growth of total factor productivity) from the Conference Board Total Economy Database™ (2020)[3], productive capacity computed by the authors' own calculations based on Stephen Brien's article (2019), and the natural logarithm version of productive capacity.

The growth of total factor productivity can be used as a statistic to account for the change in economic development (e.g., Chen, 1997, p.18-20, and Limam and Miller, 2004, p.1-5). For example, Baier et al. (2002, p.23-24) find out that in three of the nine world regions total factor productivity growth accounts for approximately 20% of average GDP growth. The change in total factor productivity can be defined as the difference between GDP growth, and contributions of labor quantity, labor quality and capital services to GDP growth (TED, 2020).

Brien (2019) discusses using productive capacity as an alternative statistic to GDP per capita in order to assess economic development. Following his computation, productive capacity is calculated as,

$$\frac{GDP - resource\ rents}{working\ age\ population} \quad (1)$$

Therefore, productive capacity accounts for GDP, resource rents and working-age population trends. Since some MENA countries have relatively high, dynamic working-age populations (e.g., Bahrain, Qatar, United Arab Emirates), and resource rents make up an important percent of national income in some countries in the region, this characteristic of productive capacity that it encompasses resource rents and working-age population dynamics indicates that it can perform as a better indicator to count for economic development in the MENA region.

We use ten out of the twelve pillars from the Legatum Prosperity Index™ 2019 dataset to measure the effects of various strands of prosperity on economic development. Each pillar is a composite index which encompasses different aspects of well-being. The health index includes mortality rates, health outcomes, disease and other risk factors, and quality of health care systems. The education variable measures adult population skills, and enrolment, education outcomes and educational quality in the pre-primary, primary, secondary, and tertiary stages. The social capital index quantifies social norms, civic participation, trust in institutions, and relative strength of personal and social relationships.

The safety and security variable calculates both the short-run and long-run destabilizing effects of war, crime, conflict, and terror on the security and

[3] The Conference Board Total Economy Database™, July 2020 (2020), https://conference-board.org/data/economydatabase/total-economy-database-productivity#:~:text=All%20series%20must%20be%20cited,Database%E2%84%A2%2C%20July%202020%E2%80%9D (Retrieved: 08.09.2020).

safety of people. The personal freedom index assesses the levels of individual liberties, social tolerance and legal rights. The governance variable rates degrees of government's corruption control, government efficiency, checks and balances, and limitations on executive power. We also equally weigh the safety and security, personal freedom and governance pillars, and generate a composite institutional quality indicator.

The investment environment index evaluates the degrees of easy access to and sufficient protection of investments. The enterprise conditions variable calculates at what level regulations allow businesses to be founded, competitive and successful. The market access and infrastructure index computes degrees of various distortions in the market economy, and the quality of infrastructure which supports an open economy. The economic quality variable quantifies levels of workforce engagement and capacity of the economy to create a sustainable national wealth. In order to prevent multicollinearity, we just use the elements of fiscal sustainability, productivity and competitiveness, dynamism (we leave out macroeconomic stability and labor force engagement) to redefine the economic quality variable and use it in the estimations in this narrowed down version. Then, we equally weigh the investment environment, enterprise conditions, market access and infrastructure and economic quality indices, and create a compound economic environment variable.

In the estimations, we also control for the incidence of the Arab Spring in 2011, female labor force participation, foreign direct investment (FDI), unemployment, resource rents, percentage of women in the national parliament from the World Bank's World Development Indicators (WDI) 2020 dataset.

Empirical Analysis

Estimation Results

The main equation we use can be summarized as the following:

$$y_{it} = \beta_0 + \beta_1 x_{it} + u_i + \varepsilon_{it}, \quad (2)$$

where y_{it} is one of the four dependent variables which are GDP per capita growth rate, total factor productivity growth, productive capacity, and natural logarithm version of productive capacity (ln productive capacity from now on) (GDP growth, TFP, pro. capacity, ln pro. capacity, respectively in Tables 1 and 2); x_{it} is the vector of independent variables that show variation over countries and years; u_i is the individual country level effect, and ε_{it} is the disturbance term. The models are estimated with year fixed effects (the ones where we do not control for the occurrence of the Arab Spring in 2011) and robust standard errors. Table 1 demonstrates the estimation results for the above-mentioned benchmark model.

A rise in education level appears to positively affect all the four dependent variables, and the positive effects on total factor productivity, productive capacity and ln productive capacity are also statistically significant. An

increase in social capital level may cause a rise in productive capacity. Improvements in economic environment which is a computed composite variable of investment environment, enterprise conditions, market access and infrastructure, and economic quality indices may cause rises in GDP per capita growth, productive capacity and ln productive capacity, additionally the influence on ln productive capacity is statistically significant at 5% degree.

The Arab Spring in 2011 incidence is found to negatively impact economic development in MENA countries, and this negative impact on ln productive capacity shows 1% statistical significance. Female labor force participation is found to positively affect all economic development dependent variables with varying degrees of statistical significance. A rise in foreign direct investment (FDI) may cause an increase in GDP per capita growth, total factor productivity and productive capacity, and the effect on GDP per capita growth is statistically significant at the 5% level.

Resource rents are found to be positively correlated with GDP per capita growth and total factor productivity, nonetheless these correlations do not turn out to be statistically significant. We observe a similar situation with the influence of the percent of women in the national parliament, even though its influence on economic development appears to be positive it does not show statistical significance. The impacts of years 2010, 2011, 2012, 2013, and 2014 on ln productive capacity are found to be negative and statistically significant at 5% and 1% (these are the years of and surrounding the Arab Spring), probably due to the economic, social volatility and uncertainty the Arab Spring causes. On the other hand, the influences of years 2016 and 2017 on ln productive capacity turn out to be positive and significant at 1% level.

Robustness Checks

As robustness checks, we break down the two composite indicators, economic environment and institutions, into their components, and control for these components individually in the estimations. Hence, we examine the relative effects of economic quality, enterprise conditions, investment environment, and market access and infrastructure which are components of the economic environment separately, and also governance, personal freedom, safety-security which are components of institutions separately. The other variables we control for remain the same as in the benchmark model. Table 2 reports these estimation results.

Advancements in education appear to have a positive effect on productive capacity and ln productive capacity with statistical significance at 5% and 1% levels. We find that, with statistical significance, when social capital increases this can lead to a rise in productive capacity. Improvements in economic quality are found to positively affect GDP per capita growth, total factor productivity, and productive capacity, yet the statistical significance

remains weak. Developments in investment environment and market access-infrastructure can have a positive and significant (at 10% and 1% levels) influence on ln productive capacity.

Improvements in safety-security may cause an increase in GDP per capita growth, productive capacity; and with statistical significance at 5% and 1% levels in ln productive capacity. The happening of the Arab Spring seems to have a negative impact on economic development through all four dependent variables. This negative impact on productive capacity and ln productive capacity is also significant at 5% and 1% levels. An increase in female labor force participation appears to positively affect GDP per capita, total factor productivity, productive capacity, and ln productive capacity at differing significance levels.

A more open, globally integrated economy through surges in FDI can lead to increases in GDP per capita, total factor productivity and productive capacity again with varying statistical significance. Considering the impact of natural resource rents on economic development, when natural resource rents increase this may cause GDP per capita growth and total factor productivity to increase. In the models where we control for the occurrence of the Arab Spring in 2011 these positive relationships between natural resource rents, and GDP per capita growth and total factor productivity turn out to be statistically significant at 5% level. Similar to the results in Table 1, the percent of women in the national parliament appears to be positively correlated with economic development indicators, but without any statistical significance. Regarding the specific year effects, the years 2011 and 2012 show a negative influence on ln productive capacity at 10% significance level, whereas years 2016 and 2017 demonstrate a positive effect on ln productive capacity at 5% significance level.

Table 1. Regression Results – Benchmark Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GDP growth	GDP growth	TFP	TFP	pro. capacity	pro. capacity	ln pro. capacity	ln pro. capacity
education	0.0000329	0.00192	0.371	0.644*	110.8**	93.58**	0.0326***	0.0183**
	(0.00312)	(0.00351)	(0.265)	(0.360)	(39.44)	(35.78)	(0.00859)	(0.00641)
health	0.000961	-0.0038	-0.473	-0.942	97.11	94.22	-0.0213	-0.0241
	(0.00610)	(0.00593)	(0.449)	(0.875)	(105.0)	(105.8)	(0.0175)	(0.0171)
social capital	-0.00161	-0.00245	-0.26	-0.447	54.33*	51.05	-0.00221	-0.00371
	(0.00104)	(0.00152)	(0.222)	(0.376)	(28.61)	(30.38)	(0.00297)	(0.00293)
economic environment	0.00166	0.000778	-0.128	-0.329	27.04	28.88	0.0272**	0.0251**
	(0.00437)	(0.00501)	(0.357)	(0.430)	(51.08)	(54.13)	(0.0119)	(0.0118)
institutions	-0.000575	-0.00095	-0.514	-0.54	-15.74	-6.498	-0.0024	0.00502
	(0.00198)	(0.00267)	(0.577)	(0.645)	(28.36)	(30.44)	(0.00503)	(0.00489)

Arab Spring	-0.0202		-0.763		-124.6		-0.11***	
	(0.0211)		(1.660)		(88.18)		(0.0254)	
female labor	1.124***	1.092***	80.09	88.53*	15578.4**	15160.2*	3.51***	3.18***
	(0.355)	(0.352)	(46.08)	(48.04)	(7122.0)	(7448.5)	(0.813)	(0.697)
FDI	0.626**	0.59**	35.15	20.75	4215.7	5043.9	-1.074	-0.318
	(0.226)	(0.252)	(23.17)	(31.29)	(3451.6)	(3513.8)	(0.725)	(0.575)
unemployment	-0.0013	-0.338	-24.36	-67.42	8213.5*	7730.8*	0.545	0.258
	(0.431)	(0.486)	(34.17)	(65.43)	(4377.4)	(4060.2)	(1.239)	(0.947)
resource rents	0.5	0.667	40.26	66.94				
	(0.312)	(0.425)	(23.24)	(43.80)				
women in parliament	0.163	0.148	8.063	6.12	2247.5	2181.9	0.178	0.103
	(0.204)	(0.212)	(10.56)	(12.23)	(1553.7)	(1481.9)	(0.362)	(0.298)
year effects		yes		yes		yes		yes
constant	-0.481	-0.145	22.53	56.86	-19278.1*	-18226.3*	4.899***	5.9***
	(0.477)	(0.317)	(54.01)	(83.29)	(9721.8)	(10140.7)	(1.109)	(1.464)
Observations	175	175	175	175	175	175	175	175
R^2	0.116	0.170	0.060	0.147	0.599	0.614	0.629	0.756

Note: Robust standard errors are given in parentheses. *, **, *** indicate that the effects of independent variables on dependent variables are statistically significant at 10%, 5% and 1% levels, respectively (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Table 2. Regression Results – Robustness Checks

	(1) GDP growth	(2) GDP growth	(3) TFP	(4) TFP	(5) pro. capacity	(6) pro. capacity	(7) ln pro. capacity	(8) ln pro. capacity
education	-0.00152	0.00184	0.157	0.709	106.4***	102.9***	0.0204***	0.0175**
	(0.00458)	(0.00460)	(0.413)	(0.509)	(32.45)	(29.41)	(0.00671)	(0.00751)
health	0.001	-0.00946	-0.745	-1.988	71.77	39.76	-0.0205	-0.0351**
	(0.00747)	(0.00569)	(0.714)	(1.550)	(87.28)	(83.92)	(0.0137)	(0.0143)
social capital	-0.00159	-0.0027	-0.257	-0.476	54.09**	44.72*	-0.00263	-0.00498
	(0.00135)	(0.00173)	(0.231)	(0.364)	(22.94)	(22.00)	(0.00329)	(0.00335)
economic quality	0.0201	0.0265	3.496	4.633	155.2	296.1*	-0.061***	-0.0244
	(0.0290)	(0.0302)	(4.034)	(4.580)	(164.9)	(162.2)	(0.0193)	(0.0173)
enterprise conditions	-0.00124	-0.000112	-0.417	-0.177	-18.18	-19.12	0.000762	-0.000546
	(0.00250)	(0.00284)	(0.390)	(0.234)	(27.24)	(28.13)	(0.00449)	(0.00409)
investment environment	0.000735	0.000697	-0.416	-0.586	-31.9	-22.28	0.00253	0.00825*
	(0.00411)	(0.00453)	(0.398)	(0.583)	(26.17)	(24.21)	(0.00524)	(0.00432)

market access-infrastructure	0.00266	-0.00441	0.608	-0.451	58.76	38.95	0.0267***	0.0178*
	(0.00300)	(0.00617)	(0.531)	(0.557)	(35.73)	(50.94)	(0.00610)	(0.00951)
governance	-0.00733	-0.00831	-0.92	-1.044	-47.17	-73.02*	0.00709	-0.000418
	(0.0105)	(0.0103)	(1.046)	(1.063)	(42.01)	(37.73)	(0.00897)	(0.00883)
personal freedom	0.00119	0.0000136	-0.239	-0.368	-12.28	-11.78	-0.00669	-0.00731
	(0.00259)	(0.00223)	(0.244)	(0.290)	(19.09)	(17.24)	(0.00655)	(0.00613)
safety security	0.0004	0.00058	-0.041	-0.017	4.053	7.406	0.00411**	0.00517***
	(0.000691)	(0.000912)	(0.106)	(0.136)	(10.47)	(9.627)	(0.00171)	(0.00161)
Arab Spring	-0.0203		-1.094		-181**		-0.0863***	
	(0.0227)		(2.002)		(82.21)		(0.0293)	
female labor	0.912**	0.797*	53.71	49.83	14975.5**	13463.6**	3.947***	3.441***
	(0.397)	(0.418)	(46.91)	(42.43)	(6041.5)	(6100.9)	(0.467)	(0.443)
FDI	0.71*	0.708**	48.37	37.14	4685.6	5295.2*	-0.832	-0.458
	(0.346)	(0.299)	(33.52)	(24.93)	(3300.8)	(2846.7)	(0.556)	(0.430)
unemployment	0.282	0.0826	8.737	-17.75	8958	10388*	-0.205	0.296
	(0.842)	(0.707)	(63.43)	(63.76)	(5429.9)	(4933.9)	(1.036)	(1.008)
resource rents	0.372**	0.564	19.47**	50.58				
	(0.165)	(0.337)	(8.708)	(29.74)				
women in parliament	0.193	0.198	12.4	13.46	2212.7	2503.8	-0.0148	0.0745
	(0.244)	(0.255)	(18.19)	(19.76)	(1838.7)	(1698.7)	(0.229)	(0.195)
year effects		yes		yes		yes		yes
constant	-0.361	0.566	58.22	169.9	-16447.9*	-13387.1	5.437***	6.952***
	(0.503)	(0.621)	(84.98)	(163.3)	(8147.0)	(8083.3)	(0.910)	(1.288)
Observations	175	175	175	175	175	175	175	175
R^2	0.131	0.190	0.103	0.198	0.635	0.671	0.746	0.803

Note: Robust standard errors are given in parentheses. *, **, *** indicate that the effects of independent variables on dependent variables are statistically significant at 10%, 5% and 1% levels, respectively (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Conclusion

We analyze the effect of prosperity, gender equality and macroeconomic variables on economic development in 18 MENA countries during the duration 2009-2019 in a panel data model framework. We calculate productive capacity to account for economic development using GDP, natural resource rents and working-age population based on the method in Brien (2019). We create a compound indicator measuring the quality of institutions by equally weighing the prosperity pillars of safety and security, personal freedom and governance. Similarly, we create a composite indicator for economic environment by equally weighing the prosperity pillars of economic quality, investment environment, market access and infrastructure, and enterprise conditions.

According to the estimation results in Table 1, advancements in education can exert a positive and statistically significant effect on total factor productivity, productive capacity and ln productive capacity. An increase in social capital level can have a positive influence on productive capacity.

Improvements in economic environment can positively impact ln productive capacity at the statistical significance level of 5%. The occurrence of the Arab Spring in 2011 appears to negatively influence all the dependent variables, GDP per capita growth, total factor productivity, productive capacity, and ln productive capacity being statistically significant at 1% level.

Female labor force participation appears to show a positive effect on all economic development indicators with statistical significance. A positive and significant (at 5% level) correlation between FDI rate GDP per capita growth is also found. A rise in natural resource rents may have a positive impact on GDP per capita growth and total factor productivity, yet it does not have any statistical significance. Similarly, the percent of women in the national parliament exerts a positive effect on the economic development variables, yet without any statistical significance. The year effects for the years surrounding the Arab Spring (before and after) demonstrate a negative and statistically significant impact on ln productive capacity.

For robustness checks, we break down the composite institutional quality and economic environment indicators into their components and control for these components individually in the estimations. Table 2 shows these results which are generally like the ones in Table 1. Investment environment, market access and infrastructure, and safety-security exert positive and statistically significant effects on ln productive capacity. In the models where we control for the happening of the Arab Spring in 2011, the positive influence of natural resource rents on GDP per capita growth and total factor productivity is statistically significant at 5% level. We are aware that the length of the time period we use (2009-2019) may affect the nature and statistical significance of the estimation results. Nevertheless, the data for the prosperity indicators are available for this time period.
Similar results have been found in different studies. Abdychev et al. (2015, p.2) examine the determinants of productivity growth in a group of middle-income sub-Saharan African countries. They argue that alongside the well-explored economic factors such as trade openness and macroeconomic stability targeted public spending on education, structural transformation of institutions, providing small and medium-sized enterprises with access to finance, and reduction of regulations on firms contribute to productivity growth.

In another work, Isaksson (2007, p.3) provides a detailed literature review about the determinants of total factor productivity. He emphasizes that a rise in human capital accumulation will increase total factor productivity through the channel of absorptive capacity, and moreover trade reforms will positively influence total factor productivity through the channel of access to intermediate goods and foreign capital.

Our results show that, in the MENA region, policymakers and executives can plan and implement the kind of policies which will generate and

support advancements and improvements in education, market economy, business environment for foreign investment, female labor force participation, gender equality, safety and security, and social capital to achieve higher levels of macroeconomic stability and economic development.

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Appendix

Table 3. Country List

Algeria

Bahrain

Egypt, Arab Rep.

Iran, Islamic Rep.

Iraq

Israel

Jordan

Kuwait

Lebanon

Libya

Morocco

Oman

Qatar

Saudi Arabia

Tunisia

Turkey

United Arab Emirates

Yemen, Rep.