



Political Stability, Corruption Control, Rule of Law, Voice and Accountability, and Per Capita Income Nexus in Arab Oil-Exporting Countries

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Abstract

This panel data study examines the relationship between governance and economic growth in 11 Arab oil-exporting countries, over the period 1996 to 2019. Using various panel data instruments, normality tests, slope heterogeneity, panel cross-section dependence, second-generation unit root tests, and long-run cointegration between the variables. The novel method of moment quantile regression (MMQREG) was used for estimation purposes, and three diagnostic tests were used to check the initial estimations.

This exploration produces some interesting conclusions. First, all governance indicators positively all groups (but not those below the mid-income level) and the effect tends to be greater for better-off per capita income. Second, oil rent has a strong positive link to personal income growth, although it decreases as we move from low to high-income countries. Third, civil liberties have a positive and increasing impact on per capita income as we move from lower to upper quartiles. Since per capita growth swiftly responds to the rise and fall of governance predictors, specific policy adjustments are required to maintain sustainable and long-run per capita growth. The novelty of this is incorporating governance indicators and oil rents.

Keywords: Political Stability, Corruption Control, Per Capita Income.

1. Introduction

During the last four decades, investigating the nexus between good governance and growth, whether it is specified as per capita income or growth of the gross domestic product, has been one of the most common research topics that attract researchers [(Mohammad, (2022); Imran et al., (2020); Bernal et al., (2020); Ozpolat & Ozsoy, (2016); Altin et al., (2017); Daniel Kaufmann and Kraay, (1999); Sardar, (1989)]. In fact, it has been of great importance for specialists in the fields of politics, economics, and sociology.

One clear fact in the real world nowadays is that developed countries with high levels of governance indicators enjoy high levels of per capita income while developing countries are lacking both prosperity as well as low level of governance. This uneven growth pattern across the world stimulates researchers and policymakers to investigate whether a high governance level can flourish economic growth. There is no doubt that foreign direct investment, which is one of the growth vehicles, is always attracted by stable and safe environments. Iraq, Syria, and Libya were examples of countries unable to keep the existing foreign direct investment or encourage new foreign investment. This is because they are not able to provide a safe and proper environment. Though the high violence level, political instability, and the lack of other governance indicators were behind it. Moreover, the high level of violence and political instability and the existence of armed groups out of government control resulted in the flight of domestic capital as well as human capital.

The impact of the different dimensions of democracy such as the extent to which citizens can enjoy their freedoms to own, move and travel, along with the enjoyment of their political rights such as freedom to vote, run, and justice in obtaining public office, to the development process is a subject that has not been settled yet, Demirkan and Kaya (2012). Indeed, there are two opinions on this matter, the first of which is the view of the adherents of Marxism, which, according to them democracy is not an integral part of the intention, while the supporters of the liberal school believe that democracy is of great importance in the development process through its contribution to the efficient allocation of scarce resources Helliwell (1992) and Burhart et al. (1994). Furthermore, democracy is one of the most important factors of political stability, because of the peaceful transfer of power, the existence of a parliament representing various forces, parties, and social groups, and the adoption of the formula of political and party pluralism and the rule of law boost the individual to political participation, on which legitimacy is based.

The relationship between political instability and economic growth is unidirectional. On the first direction, uncertainty associated with political instability has a direct impact on economic growth through the impediment of investment, the loss of human capital as a result of, for example, migration, and brain drain, the volatility of fiscal and monetary policies leading to high inflation. In the other direction, unsatisfactory economic performance and an increased degree of inequity may in turn lead to social and political chaos resulting from pessimistic expectations about current and future economic opportunities Bernal-Verdugo et al., (2013).

Concerning the rule of law, it is widely assumed that it is essential for the development process. The rule of law is clearly a multidimensional concept, capturing a variety of discrete components from personal security as well as property rights, Fair and equitable contract enforcement, checks on government and control of corruption, creation, and enforcement of equitable labor laws, and access to opportunity for all. According to the CO-COA report (2007), the rule of law is essential for creating the required conditions that foster the development process. It affords the security that guards individuals' basic political and human rights. But the rule of law also affords entrepreneurs and small business owners the needed confidence to enter the official economy and contribute to economic growth and development.

According to Alesina, Ozler, Roubini & Swagel (1992), Political instability as represented by the rapid changes in the political regimes would create uncertainty about the orientations of the new government and the policies it would adopt. This uncertainty will increase investors' fears and thus affect the likelihood of exiting the country or reducing the size of their investments. De Haan and Siermann (1996) argue that instability would hinder economic growth through two channels first the brain drains channel and second discouraging investment due to the increased capital flight.

The literature on political instability and development shows a negative impact on the fundamental determinants of economic growth, such as investment in physical and human capital, and retardation in total factor productivity. The uncertainty about the future associated with political instability leads to a decline in investment and thus a decrease in capital accumulation, as well as a reduction in the research and development activity of enterprises and Governments, slowing down the process of technological progress. Violence, civil unrest, and strikes also disrupt the normal course of action in various projects and markets, reduce the number of hours worked, and even destroy some of the production capacities that already exist, all of which have a negative impact on productivity

growth. Uncertainty about the future may also lead to individuals dipping their investments in education and thus declining human capital. According to. [Abu Murad & Alshyab (2019); Awan, U., R. et al., (2018); Cristian (2012); Aisen, Ari & Veiga, (2011); Kirmanoglu (2003); Haan & Siermann (1996); Acemoglu and Robinson, (2010); Kaufmann and Kraay, (2002)]. Political instability can affect several macroeconomic variables such as GDP growth, private investment, inflation, and unemployment. While, some other studies [Quibria, (2006), Kurtz et al. (2007)] ended with different results.

The Worldwide Governance Indicators (WGIs) initiated by Kaufmann and Kraay in 1996, is very likely to be the most commonly used indicators by economists and policymakers for quantifying countries' institutions and overall quality of governance. Table 1. explores the six governance indicators and how they are measured.

Table 1 Indices of Good Governance and its Measurements.

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- **Voice and accountability.** Measured by means of the degree to which a country's citizens are able to elect their government. in addition to freedom of expression, involvement, and the press.
 - **Political stability and absence of violence** the probability that a government will be destabilized by unauthorized or violent means, together with terrorism
 - **Government effectiveness.** quantified through the quality of public services, the quality of policy construction, the capacity of civil services, and their independence from political pressure.
 - **Regulatory quality.** It is expressed numerically through the government's ability to develop valued policies and regulations, as well as its capability of advancing private sector development.
 - **Rule of law.** It is expressed quantitatively by the extent to which residents feel confident in adhering to the rules of social conduct, including the extent to which property rights are respected and considerations attached to the courts and police, and the risk of crime.
 - **Control of corruption.** It is measured by the extent to which the power of society can be employed to serve personal purposes, including both petty and grand forms of corruption, and to the extent to which the elite acquires the state.
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Sources: Emara and Chiu (2016), Kaufmann et al. (2010), Singha and Singh (2022).

This paper aims to contribute to the present literature by investigating whether the governance indicators (Political Stability, Control of Corruption, Voice & Accountability, and Rule of Law) impact economic growth represented by the growth of per capita income in 11 Arab oil-exporting countries. The novelty of this work is derived from (a). investigating a group of homogenous countries over a relatively long period with annual

regularity data. (b). we employ an econometric methodology that fits our data properties after a rigorous examination of our data characteristics. (c) we include additional two important control variables in our analysis.

The rest of this paper contains five sections following the introduction. Section 2 discusses and synthesizes the literature related to this study. Section 3 presents the methodology adopted in this study and the data. The estimation results are presented and discussed in Section 4, followed by Conclusion and policy recommendations in Section 5.

2.1 Review of some selected studies and hypotheses development

Since the initiation of the six indices related to governance in 1996 up to now, the number of studies on the impact of government on performance has grown. Some of it has tended to study their impact collectively or unilaterally on per capita income, some on the growth of the economy, and some others on the possibility of attracting foreign direct investment. However, the results are heterogeneous not only because of different measures of governance quality indices, but also the different estimation methods used, region or country coverage, and sample periods. Table 2 gives a summary of selected studies on the topic ordered from the oldest to the most recent.

Table 2. Summary of selected studies

Author(s)	Publication date	Period	country/region	indicator(s)	Hamper Stimulates Not significant
Mehanna et al.	2010	1996–2005	23 MINA countries	VOA, CC, GE	Hamper
			24 MINA countries	PS, RL, RQ	Hamper
Gani	2011	1996-2005	84 economies	PS, GE	Stimulates
				RL, RQ	Not sign.
Demirkan&Kaya	2012	1980-2006	Turkey	CL	Stimulates
Ata, et al.	2012	2009	30 OECD countries	VOA, RL	Stimulates
Tarek and Ahmed	2013	1998-2011	30 developing countries	PS, RQ, VAC	Stimulates
				CC	Hamper
Han et al.	2014	1998-2011	Developing Asian countries	GE, PS, CC, RG, VOA, RL	Stimulates
Bayar	2016	2002-2013	European economies	PS, CC, RG, VOA, RL	Stimulates

				RQ	Hamper
Maune	2017	1968-2015	Zimbabwe	PS, VOA, GE	Stimulates
				CC	Hamper
Al Mamun et al.	2017	1980-2012	50 oil-exporting economies	QOG	Stimulates
Alam, et al.	2017	2002-2015	81 countries	GE	Stimulates
Hadj Fraj et al.	2018	1996-2012	50 developed & emerging	GE, PS, CC, RG, VO A,RL	Hamper
Abdelbary& Benhin	2019	1995-2014	Arab economies	RQ	Hamper
Mahmood	2021	1996-2019	Saudi Arabia	CC	Not sig.
				GE	Stimulates
ŞAŞMAZ and SAĞDIÇ	2020	2002-2018	European transition economies	GE	Stimulates
				RL, CC	Not sign.
Mohammad	2022	1996-2019	10 of the world's largest economies	GE	Stimulates
Farooque et al.,	2022	2009–2020	40 African & MENA	MGOV	Stimulates
Al-Faryan & Shil	2022	1985–2020.	Saudi Arabia	CPI	Stimulates
Azim	2022	2002-2020	218 countries	GE, PS, CC ,RG, VO A,RL	Stimulates
Kesar, A., et al	2022	2002-2022	BRICS	RQ	Hamper
				CC, GE	Stimulates
Altaee et al.,	2022	1981-2017	GCC	OR	Stimulates

Notes: MGOV: mean value of the governance index; VOA: voice and accountability, PS: political stability and absence of violence/terrorism; GE: government effectiveness, RQ: regulatory quality, RL: rule of law; and CC control of corruption; CPI: Corruption Perceptions Index; CL: civil liberties; OR: oil rent; QOG consists of three indicators: control of corruption, law & order, and bureaucracy quality.

Based on the abovementioned arguments, this study intended to test the following hypotheses:

- H1. Per capita income is positively affected by political stability indicators.*
H2. Per capita income is positively affected by corruption control indicators.
H3. Per capita income is positively affected by rule of law indicator.
H4. Per capita income is positively affected by voice and accountability indicators.
H5. Per capita income is positively affected by civil liberties.

H6. Per capita income is positively affected by oil rent.

3. Data and methodology

3.1. Data

In this empirical inquiry, we will use panel data ranging from 1996 to 2019. The time horizon was chosen, given the available data. The choice of the countries covered the 11 Arab Oil Exporting Countries (Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Tunisia). Table 3 the symbol, definition, and source of the variables.

Table 3: Variables' sources, definitions, and symbols

Symbol	Variable	Source
<i>PCIncome</i>	per capita income (2017 ppp US\$)	UNU-WIDER
<i>PoltStab</i>	Political stability	WGI
<i>CorCon</i>	Control of corruption	WGI
<i>RullLaw</i>	Rule of law	WGI
<i>CivLibr</i>	Civil liberties	Freedom House
<i>OilRent</i>	Oil rent as a percentage of GDP	WDI
<i>VOAC</i>	Voice and accountability	WGI

Note: WDI refers to world development indicators (<https://databank.worldbank.org>), WGI refers to world governance indicators (<https://info.worldbank.org/governance/wgi/>), civil liberties from freedom house (<https://freedomhouse.org/>) and UNU-WIDER: United Nations University World Institute for Development Economics Research (<https://www.wider.unu.edu>).

Except for governance indicators, all the data are in a natural log. Taking a log of such data is an accepted econometric exercise. But, the data on *oltStabCorCon*, *VOAC*, and *RullLaw* are on a scale of -2.5 to 2.5. Natural negative indicators cannot be taken. Thus, governance indicators are not in log form.

3.2 Model

This study aims to examine the per capita income nexus with political stability, corruption control, rule of law, the voice of accountability, civil liberties, and oil rent.

The empirical model used in this study is specified as

$$PCIncome = f(CorCon, PoltStab, RullLaw, CivLibr, OilRent, VoAC) \dots\dots(1)$$

or econometric estimation, Eq. (1) s converted to the following form:

$$PCIncome_{it} = \beta_{it} + \beta_1 CorCon_{it} + \beta_2 PoltStab_{it} + \beta_3 RullLaw_{it} + \beta_4 CivLibr_{it} + \beta_5 OilRent_{it} + \beta_6 VoAC_{it} + \varepsilon_{it} \dots\dots(2)$$

Where β_{it} are the constant terms; β_i coefficients of the dependent variable concerning the corresponding independent variable; ε_{it} are the residual terms. Moreover, 't' and 'i' in the subscript denotes time series and cross-sections accordingly.

3.4 Estimation approaches

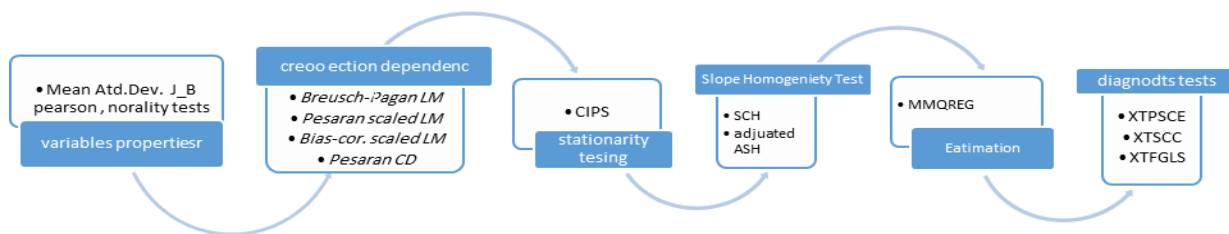
For econometric investigation, this study uses two main suitable econometric techniques. The first technique used is Machado and Silva (2019) novel method of moments quantile regression (MMQREG). The quantile regression is appropriate when the dataset possesses irregularly distributed.

According to Usman et al., (2022), one of the limitations of the MMQREG is that it failed to account for the cross-sectional dependence in the series. Thus, it's important to investigate the robustness of our results using some other techniques that could account for cross-sectional dependence. In this research, we employ, three methods of xtgl, xtsc and xtpsc to estimate model (2).

3.5 Econometrics process

In order to accomplish the task envisaged by this study and test the hypotheses, the following logical steps were followed.

Figure 1 Econometrics process



4. Results and Discussion

4.1. Preliminary Analysis

The first step in our analysis is to explore the main properties of the variables included in the panel. Figures stated in table (4) includes the mean as a central tendency measure, the standard deviation as a measure of variation. In addition, the Jarque–Bera test along with skewness and kurtosis to demonstrates whether the data is normality distributed.

The second panel in the table include the partial correlation coefficients among variables. At a glance, some concern may arise from the 0.838 correlation coefficient between corruption control and rule of law but the VIF value of 4.71 shown in the upper line of the third panel give confidence that the estimates will not be affected by the multicollinearity problem. By the same logic, one can justify the high correlation coefficient between the voice of accountability and civil liberties. Furthermore, according to Menard

(2001) a value of VIF less than 5 give the assurance that our estimates will not be affected by the multicollinearity problem.

Table 4. Descriptive statistics, Correlation coefficient, and multicollinearity diagnostics.

Iables	Per Capita Income	Corruption Control	Political Stability	Civil Liberties	Oil rent	Voice &Accountabilit	Rule of Law
Acronym	PCIncome	CorCon	PoltStab	CivLibr	OilRent	VoAC	RulLaw
Mean	7.778	-0.269	-0.515	-0.341	1.719	2.823	-1.122
Minimum	11.892	1.559	1.224	0.952	1.946	4.200	0.304
Maximum	4.653	-1.693	-3.180	-2.090	1.099	0.019	-2.050
Stad.Dev.	2.188	0.784	1.126	0.842	0.176	0.993	0.500
Skewness	0.289	0.106	-0.457	-0.544	-0.923	-0.768	0.201
Kurtosis	1.705	2.127	2.355	2.094	5.071	2.647	2.803
Jarq.-Bera	22.125	8.886	13.763	22.053	84.638	27.318	2.208
Obs	264	264	264	264	264	264	264
<i>Correlation Matrix</i>							
PCIncome	1.000	0.720	0.663	-0.134	0.351	0.361	0.647
CorCon		1.000	0.777	-0.329	0.049	0.479	0.838
PoltStab			1.000	-0.374	0.003	0.591	0.676
CivLibr				1.000	0.258	-0.818	-0.404
OilRent					1.000	-0.112	-0.028
VoAC						1.000	0.453
RulLaw							1.000
<i>Diagnostics of multicollinearity</i>							
VIF		4.71	4.49	3.86	3.70	3.08	1.13
Tolerance		0.212	0.223	0.259	0.271	0.325	0.882

In the lower pane of Table 4, we reported the pairwise correlation coefficients. Pearson correlation coefficient measures the degree and direction of association between the variables included in the used panel. Civil liberties are the only variable associated negatively with all other variables.

4.1.1 Empirical results from Tests of normal distribution

According to Osborne and Waters (2002) highly skewed or kurtotic variables, or with substantial outliers variables i.e., Non-normally distributed variables, can distort relationships and significance tests. Therefore, it seems reasonable to test the normality of the variables. Two normality tests were performed for this porous. Shapiro-Francia W' test and Shapiro-Wilk test.

The results of both tests are shown in table (5). The findings from Table 5 suggest that p-values in both tests are smaller than 0.01, indicating that all the tested variables are significantly not normally distributed. Furthermore, the tail of the data distribution encompasses vital information. Accordingly, the classical

ordinary least squares method may erode the relationship between variables and will give biased and non-robust results Simionescu et al., (2022).

Table 5: normality tests

Variable	Shapiro–Wilk W test		Shapiro–Francia W'	
	z-stat.	Prob>z	Z-stat	Prob>z
Eco.growth	6.484	0.00***	5.921	0.00***
CorCon	3.767	0.00***	3.313	0.00***
PoltStab	5.042	0.00***	4.563	0.00***
CivLibr	5.726	0.00***	4.389	0.00***
OilRent	6.253	0.00***	5.747	0.00***
VoAC	3.552	0.00***	3.194	0.00***
RulLaw	6.223	0.00***	5.686	0.00***

Note: ***, **, * refer to 0.01 present significant level.

4.3 Empirical results from cross-sectional dependence

As a result of globalization and being renter economies various financial, social, economic, and environmental, among others characteristics have been shared by the countries included in the panel. As for the unit root tests, the first-generation panel unit root tests assume that cross sections (countries, organizations, companies, etc.) are independent. However, this assumption in many situations doesn't hold in practice. The macroeconomic time series of different units can be influenced by the same event, a shock in the oil price is a typical example, and, thus, cause dependence among individual countries. Thus, cross-sectional dependence is a crucial diagnostic task that researchers should investigate before accomplishing the unit root tests [Musah et al., (2020); Ntarmah, (2022)].

To this end, four tests will employ: Breusch and Pagan (1980) LM test, Pesaran (2004) scaled LM test, Pesaran (2004) CD test, and Baltagi et al. (2012) bias-corrected scaled LM test. Table 6 below proposes rejection of the null hypothesis of no cross-sectional dependence, i.e., there is cross-section dependence among the regressors at a 1% level of significance for the Breusch-Pagan LM, Pesaran Scaled LM, and Bias-corrected scaled LM tests. Pesaran CD test gives insignificant results in one case.

Table 6. Cross-sectional Dependence Tests.

	Breusch-Pagan		Bias-corrected scaled	
	LM	Pesaran scaled LM	LM	Pesaran CD
Eco.growth	546.146***	46.829***	46.590***	6.206***
CorCon	305.946***	23.927***	23.688***	1.616
PoltStab	465.730***	39.162***	38.922***	1.181

CivLibr	269.699***	20.471***	20.232***	6.002***
OilRent	817.585***	72.691***	72.451***	28.078***
VoAC	501.791***	42.600***	42.361***	2.519**
RulLaw	1164.482***	105.75***	105.546***	34.095***

Note: ***, **, * refer to 0.01, 0.5, and 0.1 present significant levels respectively.

Based on the CSD test results, we need to advance our analysis with tests and estimation techniques that account for cross-sectional dependence.

4.1.2 Empirical results from conclusions from the slope homogeneity test

Another essential topic that is often well-thought-out in investigating panel data is slope homogeneity. Overcoming such issues may result in ineffective and inaccurate estimates [(Breitung, 2005; Yousaf et al., (2022)]. In this paper two tests were adopted, the Swamy (1970) $\tilde{\Delta}$ and the Pesaran and Yamagata (2008) adjusted version homogeneity tests $\tilde{\Delta}_{\text{adjusted version}}$.

The null hypothesis of the test revealed that the regression slopes coefficients are homogenous, while the alternative hypothesis assumes that the slopes coefficients are heterogenous.

Table 7. Slope Heterogeneity results

	Delta	p-value
$\tilde{\Delta}$	11.429***	0.000
$\tilde{\Delta}_{\text{adjusted version}}$	13.872***	0.000

Note: *** indicates that the parameter is significant at a 1% level.

The result of the slope heterogeneity is reported in Table 7. The small value of P-value permits the null hypotheses rejection and it can be concluded that the slope coefficients are heterogenous.

4.1.3 Empirical results from 2nd Generation Unit Root Tests

Based on the results reached from the cross-section tests it becomes important to use the second-generation unit root tests. In this study, we employ the CIPS test. this test account for the CSD problem.

Table 8. CIPS Unit Root Testing (Pesaran, 2007).

	Level		1st -Diff.	
	alpha	alpha&trend	alpha	alpha&trend
Eco.growth	-0.726	-0.825	-2.558** -4.765	-2.754**
CorCon	-1.536	-2.755**	***	-4.646***
PoltStab	-1.126	-2.191	-4.571***	-4.706***
CivLibr	-1.730	-2.507	-4.635***	-4.654***

OilRent	-1.728	-2.336	-4.738***	-4.710***
VoAC	-0.807	-1.822	-4.336***	-4.475***
RulLaw	-2.786	-3.239	-4.004***	-3.904***

Note, *** denotes significance at the 1% sig, ** denotes significant at the 5% sig level.,

CIPS unit root test results are presented in Table 7. The results show that all the variables in the panel are non-stationary at a 1% significant level, except CorCon, which is stationary at a 5% probability level. However, based on the results, the variables are concluded to be I (1) at least at the 5% significant level. Thus, we undertake a cointegration test by means of the Westerlund test and Pedroni test to determine whether there is a long-run relationship among the non-stationary variables or not, the null hypothesis of both tests is no cointegration. The panel cointegration test result is presented in Table 9.

Table 9. Westerlund (2007) ECM-based and Pedroni (1999, 2004) cointegration tests

<i>Westerlund test for cointegration</i>		
Statistic	p-value	
2.188	0.014	
<i>Pedroni Cointegration test</i>		
	Statistic	p-value
Modified variance ratio	-2.7397	0.0031***
Modified Phillips–Perron t	3.5632	0.0002***
Augmented Dickey-Fuller t	1.7360	0.0413**

Note, *** denotes significance at the 1% sig, ** denotes significance at the 5% sig level, and * refers to the 10 per cent sig level.

Both cointegration tests confirm the presence of cointegration between the per capita income and the regressors.

4.2 Empirical results from the MMQREG approach

Table 10 shows the estimation results obtained from MMQREG at the 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, and 90th quantile levels. Results imply that the effects of independent variables on the per capita income are positive and are clearly heterogeneous.

Firstly, the effect of corruption control on the per-capita is clearly heterogeneous and significantly asymmetric in Figure 2. The coefficient first increases from 0.66 at the 10th quintile to 0.785 at the 50th quintile and then increases to 0.925 at the 95th quintile. The positive coefficient means that corruption control will increase per capita as we move to the upper quantiles.

Table 10: Results of MMQREG

<i>Variab</i>		<i>10th.</i>	<i>20th.</i>	<i>30th.</i>	<i>40th.</i>	<i>50th.</i>	<i>60th.</i>	<i>70th.</i>	<i>80th.</i>	
<i>le</i>	<i>Locat.</i>	<i>scale</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>90th.Q</i>

CorCo	0.766*				0.686*	0.743*	0.785*	0.816*	0.847*	0.890*	0.925*
n	**	0.100	0.606*	0.661*	*	**	**	**	**	**	**
	(3.860	(0.90	(1.980	(2.530	(2.830	(3.560	(4.060	(4.320	(4.460	(4.410	(4.230
)))))))))))
	-										
PolSt	0.474*	0.164	0.738*	0.649*	0.607*	0.513*	0.445*	0.394*	0.343*	0.272*	
ab	**	**	**	**	**	**	**	**	**	**	0.215
	(4.580	2.850	(4.610	(4.780	(4.770	(4.640	(4.350	(3.980	(3.430	(2.560	(1.910
)))))))))))
CivLi	2.635*						2.972*	3.555*	4.137*	4.960*	5.611*
br	*	1.887	-0.390	0.630	1.112	2.192*	**	**	**	**	**
	(3.280	(4.21	(-0.310)	(0.600	(1.120	(2.510	(3.680	(4.580	(5.250	(5.980	(6.520
)))))))))))
OilRe	0.673*	-	0.807*	0.762*	0.741*	0.693*	0.658*	0.633*	0.607*	0.570*	0.542*
nt	**	0.083	**	**	**	**	**	**	**	**	**
	(8.480	1.890	(6.590	(7.300	(7.610	(8.240	(8.460	(8.360	(7.950	(7.040	(6.240
)))))))))))
RulLa		0.322				0.629*	0.762*	0.862*	0.961*	1.102*	1.213*
w	0.705*	**	0.189	0.363	0.445*	*	**	**	**	**	**
	(3.830	(3.14	(0.660	(1.500	(1.960	(3.190	(4.180	(4.880	(5.380	(5.830	(6.100
)))))))))))
VoAC	0.758*						0.789*	0.844*	0.899*	0.976*	1.037*
	*	0.177	0.473	0.569	0.615	0.716*	*	*	*	*	*
	(2.450	(1.03	(1.000	(1.400	(1.630	(2.210	(2.620	(2.880	(3.040	(3.110	(3.060
)))))))))))
	-										
Interc.	2.885*	1.735	5.667*	4.728*	4.285*	3.291*	2.574*	2.038*	1.503	0.746	0.147
	**	**	**	**	**	**					
	(2.830	3.060	(3.600	(3.540	(3.420	(3.010	(2.550	(2.090	(1.520	(0.710	(0.130
)))))))))))

Note: Numbers parenthesis are t stat. *** denotes significance at the 1% sig, ** denotes significance at the 5% sig level, and * refers to the 10 per cent sig level.

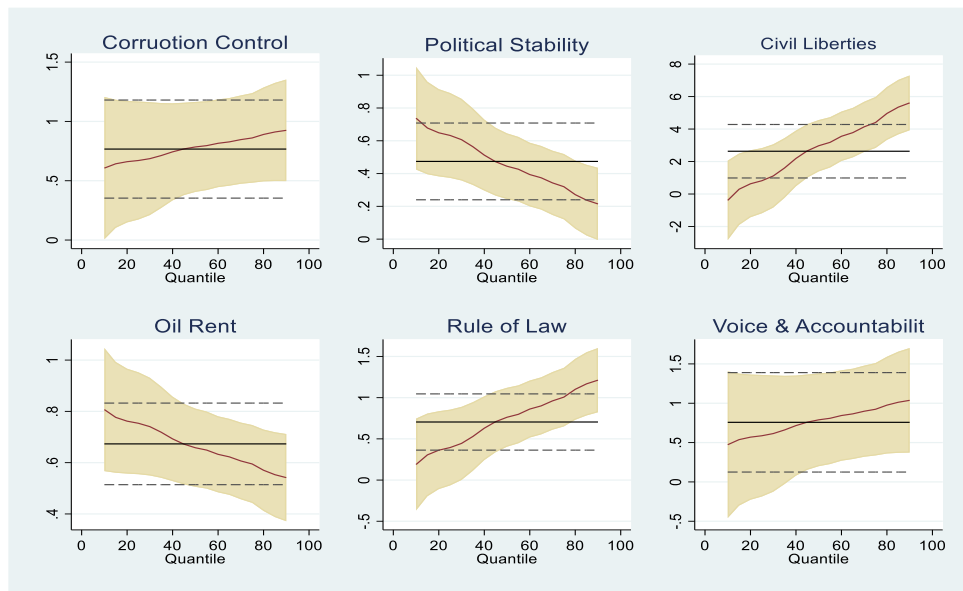
Secondly, as the second graph in Figure 2 shows and as what is reported in Table 10 the impact of political stability on the per capita income is also significantly heterogeneous. There is a significant asymmetric in the response of per capita income to political stability at different quintiles. It seems that political stability has a stronger effect on the low level of per capita income countries in comparison with those with high level per capita income countries.

Thirdly, civil liberties the effect of civil liberties on per capita income is statistically insignificant in the 10th to 40th quartiles and then changes to be statistically significant and increasing in value. With regards to the oil rent our estimates indicate that oil rent has decreasing positive impact on the per capita income, from 0.8 in the 10th quartile to 0.5 in the 90th quartile. This might be a sign of an oil resource curse.

Fourthly, the coefficients of the rule of law for all the quartiles in Table 10 are positive, but not significant, at the 5 per cent level up to the 50th quartile which provides convincing evidence for the strong impact of the rule of law in the upper half of per capita distribution.

Fifthly, with regards to the voice of accountability which is measured by means of the degree to which a country's citizens are able to elect their government. in addition to freedom of expression, involvement, and the press. Our results show no impacts to this variable in all quartiles below the 50th quartile.

Figure 2. Quantile graphs



4.3 Empirical results from robust checks using three alternative models

According to existing literature, quantile regression has three advantages over ordinary Least Squares regression first: it makes no assumptions about the distribution of the target variable, second, it intends to resist the influence of outlying observations, and third, it allows for the estimation of the effect of the regressors at different points of the distribution of per capita income. However, there are some limitations of the estimates using the MMQREG, that is it failed to account for the cross-sectional dependence problem. Thus, it is important to employ some estimation techniques that could control for the cross-section problem. In this study, we use the xtglm, xtsc and xtpsc.

The xtglm (Feasible generalized least squares) command permits estimation in the existence of AR (1) autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels. The xtpsc developed by Beck and Katz (1995), to fit a situation were often used panels with where $N < T$, assuming that the disturbances are, heteroscedastic and contemporaneously correlated across panels.

Finally, the xtsc estimates pooled OLS/WLS and fixed effects (within) regression models. it reports D-K standard errors which are robust to cross-sectional dependence, heteroskedasticity, and autocorrelation with a moving average, Hoechle, (2007).

The three suggested diagnosis tests (The xtgl the feasible generalized least squares, the xtsc regression with Driscoll-Kraay standard errors, and the xtpcse linear regression, correlated panels corrected standard errors) are reported in Table 12. All the parameters are significant at a 5% significant level. Furthermore, the results of all three models are consistent with that obtained from the quantile regression.

Table 12. estimated xtgl, xtsc and xtpcse models.

	xtgl	xtpcse	Xtsc
CorCon	0.729*** (0.041) (17.610)	0.799*** (0.220) (3.630)	0.799** (0.334) (2.390)
PolStab	0.433*** (0.019) (23.010)	0.462*** (0.087) (5.290)	0.462*** (0.077) (6.000)
CivLibr	2.098*** (0.157) (13.380)	2.832*** (0.577) (4.900)	2.832*** (0.705) (4.020)
OilRent	0.687*** (0.021) (33.190)	0.673*** (0.049) (13.790)	0.673*** (0.049) (13.800)
RulLaw.	0.771*** (0.034) (22.770)	0.685*** (0.139) (4.930)	0.685** (0.242) (2.830)
VoAC	0.557*** (0.056) (9.960)	0.807*** (0.198) (4.080)	0.807*** (0.217) (3.720)
Interc	3.502*** (0.196) (17.860)	2.602*** (0.742) (3.500)	2.602** (0.957) (2.720)

Note, *** denotes significance at the 1% sig, ** denotes significance at the 5% sig level, and * refers to the 10 per cent sig level. Numbers in parenthesis are t statistics, and numbers below the estimated parameter are its standard error.

5. Conclusion and policy recommendations

The present study examined the role played by political stability, control of corruption, rule of law, voice of accountability and civil liberties as well as oil rent on the growth of per capita income over the period 1996–2019. The study used a balanced panel data sample covering 11 Arab oil-exporting countries.

findings from MMQREG estimated results provide sufficient evidence that (1) that corruption control will increase per capita income as we move to the upper citations of the per capita distribution. (2) political stability has a positive and significant impact on per capita income. There is a significant asymmetric in the response of per capita income to political stability at different quantiles excluding the 90th quantile. It seems that political stability has a stronger effect on the low level of per capita income countries in comparison with those with high level per capita income countries., (3) Civil liberties the effect of civil liberties on per capita income is statistically insignificant in the 10th to the 40th quartiles and then turned to be statistically significant and increasing in value. With regards to the oil rent our estimates indicate that oil rent has decreasing positive impact on the per capita income, from 0.8 in the 10th quantile o 0.5 in the 90th quantile. This might be a sign of an oil resource curse., and (4) our results justified the use of the quantile regression instead of other conditional mean approaches.

Based on the empirical results obtained, we, recommend that in the bid to increase per capita income in the Arab oil exporting countries, policymakers should adopt appropriate governance reforms, but it is important to emphasize that the nature and type of reforms required vary from country to country depending on per capita income level. In terms of suggested policy, priorities of governance reform are likely to be country-specific. Low-income countries should attempt tighter control of corruption, and the rule of law, due to their inability to reap the benefits of these two indicators compared to countries with an income level centred in or higher than the 50th quartile. Countries with high levels of income are more likely to grasp their governance improvement efforts succeed. Moreover, countries with Middle- and high incomes seem likely to gain considerable rewards from their civil liberties practices. Accordingly, it makes sense to recommend their authorities to expand such practices.

ئارامىي سياسى، جله وكردى گندهلى، سهروه پى ياسا، به شدارى كردن و بهر پى سيارى به تى، ناوه ندى داها تى دهسكه وتوى تاك له دهوله تانى عه ره پى هه نارده كارى نهوت

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پوخته

ئهم ليكۆلینه وهیه ئه و داتا و پيوهرانه دهگرته خۆى، كه په يوهسته به په يوه ندى نيوان حوكمرانى و گه شهى ئابوورى له ١١ دهوله تى عه ره پى هه نارده كارى نهوتى له ماوهى سالانى نيوان ١٩٩٦ بۆ ٢٠١٩ تاقیده كاته وه له ريگهى به كارهينانى ئامرازى جورا و جورى ليكۆلینه وهى داتاكانه وه. ئه زمونى دۆخى ئاسايى، ناتهبايى چه ماوه پى، پشتبهستن به پانيلى پانه برگه پى، ئه زمونه كانى ره گى يه كهى له نه وهى دوهم، ته واو كارى هاوبه شى دريژ خايه ن له نيوان گورا وه كان. شيوازى نوى بۆ چه ماوه پى كاتى چه ندى تى (MMQREG) به مه به ستى خه ملاندن به كارهينرا، سى تاقى كرده وهى ناسينه وه بۆ پشكنينى خه ملاندنه سه ره تاييه كان به كارهينران.

ئهم ليكۆلینه وهیه چه نده نجامى جىگهى بايه خ به ره مه ده هينيت. يه كه م، هه مو ئامازه كانى حوكمرانى باش ئه ريئيه بۆ هه مو گروه كان (به لام ئه وانه نين كه داها تيان كه متره له ئاستى ناوه ندى) و كارى گه ره كه زياتر ده بيت بۆ باشتر كردنى داها تى دهسكه وتوو. دوهم، به رخۆرى نهوت په يوه ندى به كى ئىجابى به هيزى هه يه به گه شه كردنى داها تى كه سيبه وه، هه رچه نده ئه مه كه مه ده بيته وه كاتى كه له وه دهوله تانى كه داها ته كه يان نزمه به ره وه دهوله تانى داها تى به رز ده چين. سيبه م، ئازاديه مه ده ندى به كان كارى گه رى ئه ريئيان هه يه و زياتره له سه ر داها تى تاك، له كاتى كدا كه له تويزى چاره كى نزمه وه ده چين به ره وه تويزى چاره ك به رز. به ره چا و كردنى ئه وهى گه شه كردنى دهسكه وتى تاك به خيرا پى وه لام ده داته وه بۆ به رزبونه وه و دارمانى چاوه روانى له حوكمرانى باش، هه مو ار كردنى سياسه تى ديارى كراوى پا به ندى كارانه ده خوازيت بۆ پاراستنى گه شهى به رده وام و دريژ خايه نى دهسكه وتى تاك. ده ره نجامى نوى ليره دا برى تيبه له تى كه لكردنى ئامازه كانى حوكمرانى باش و به رخۆرى نهوت.

كليله وشه كان: ئارامىي سياسى، جله وكردى گندهلى، داها تى دهسكه وتوى تاك.

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