



The political and military impact of oil sanctions in the Middle East

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Agenda

1. Aim and motivation
2. Research question
3. Related literature & contribution
4. Data and method
5. Results & robustness checks
6. Conclusion

Aim

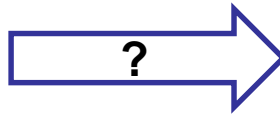
The purpose of this study is

to investigate the economic and political impact of a simulated oil sanction against the Middle East oil rentier states.

to examine the dynamic impacts of negative oil shocks on the military and non-military capabilities as well as the political system of oil exporting countries in the Middle East.

Motivation (Sanctions)

In the post-Cold War world, sanctions have become a common foreign policy tool. However, only a third to half of sanctions are successful.



What determines the success or failure of sanctions is little understood. How do government budget and political conditions change during sanction episodes?

Drezner (2011) argues that we need to pay more attention to the "inner workings" and political economy of autocratic states to understand how the reaction of a rational actor could be to the imposed sanctions.

Motivation (Middle East)

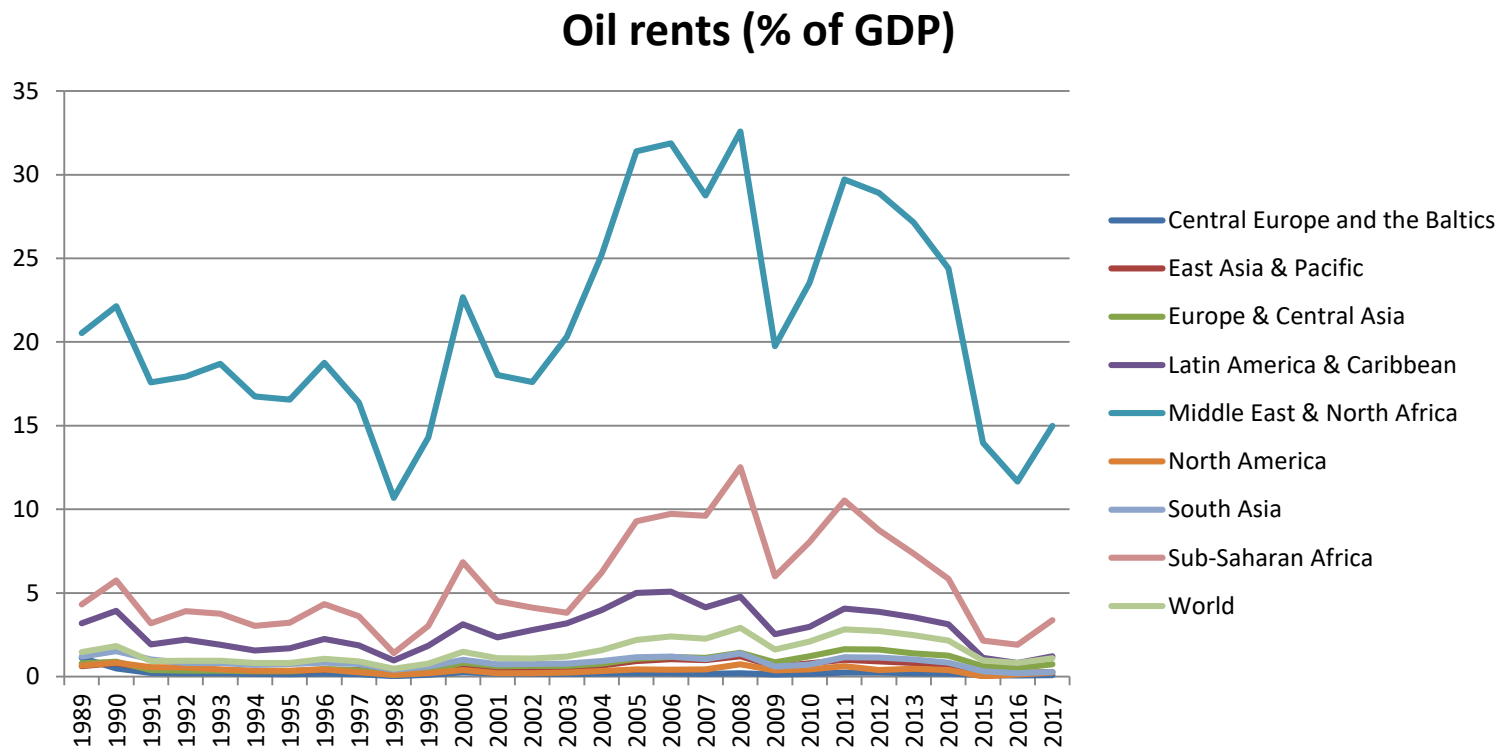


Due to its geopolitical importance, any inter- and intra-state conflict in the Middle East has the potential impact not only on the political stability of the region as a whole but also on the global stability.

Several countries in the Middle East have experienced sanctions pressure imposed by US, EU and UN aimed at reaching a range of foreign policy goals.

Motivation (Middle East)

- Oil rent is an important driver of military spending and political system in the Middle East oil exporting countries because of its impact on the national budgets.



Military spending in the Middle East

Middle Eastern countries with the highest ratio of military expenditures to GDP in the world in 2017: Oman (12% of GDP), Saudi Arabia (10% of GDP), Kuwait (5.8% of GDP), and Bahrain (4.1% of GDP).

The average of the military burden between 2000 and 2014 in different regions: MENA (5.1%), North America (3.6%), Europe and Central Asia (1.9%), East Asia and Pacific (1.6%), Sub-Saharan Africa (1.5%) and Latin America and Caribbean (1.3%). (SIPRI, 2017)

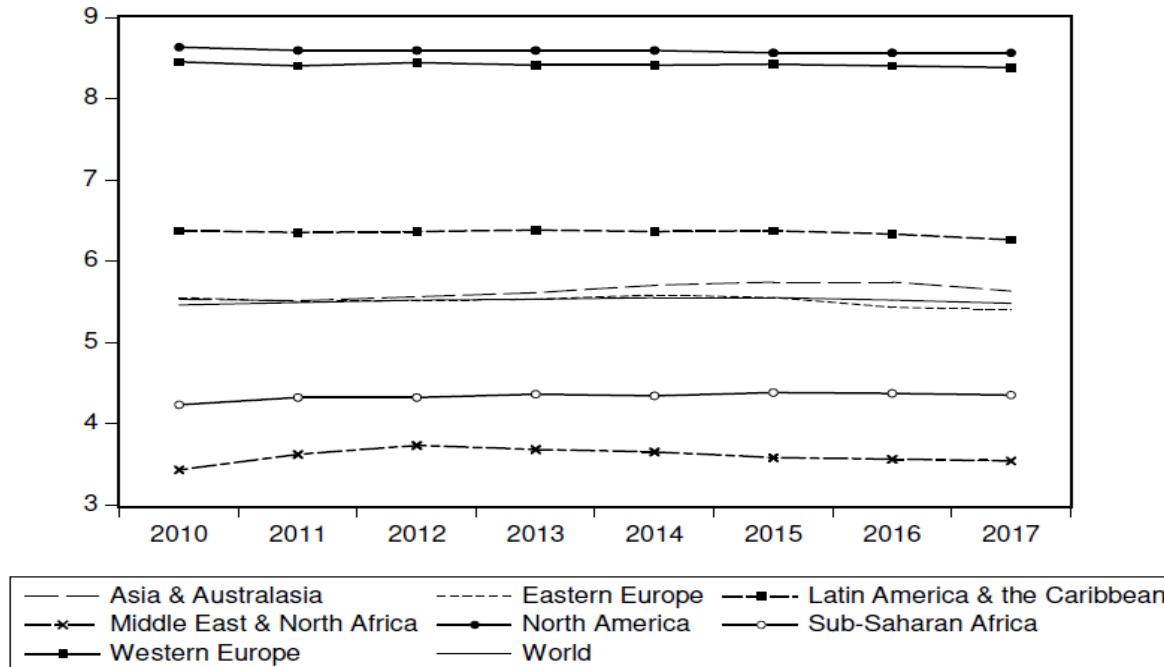
Saudi Arabia has the highest military spending in the Middle East and was the third largest spender in the world in 2017.

Iraq experienced the highest increase in the military expenditures in the world for the period 2006-2015.

Iran's military expenditure decreased continuously (by 31 per cent) between 2006 and 2014.

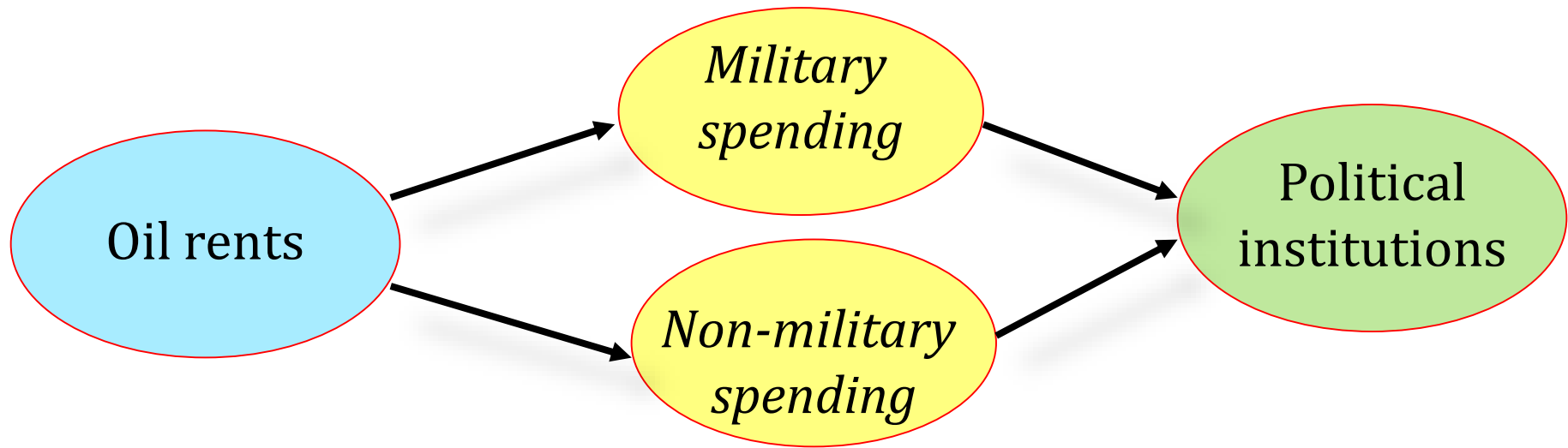
Democracy in the Middle East

- The Middle East countries suffer from poor political institutions, and many of them are frequently involved in conflict.



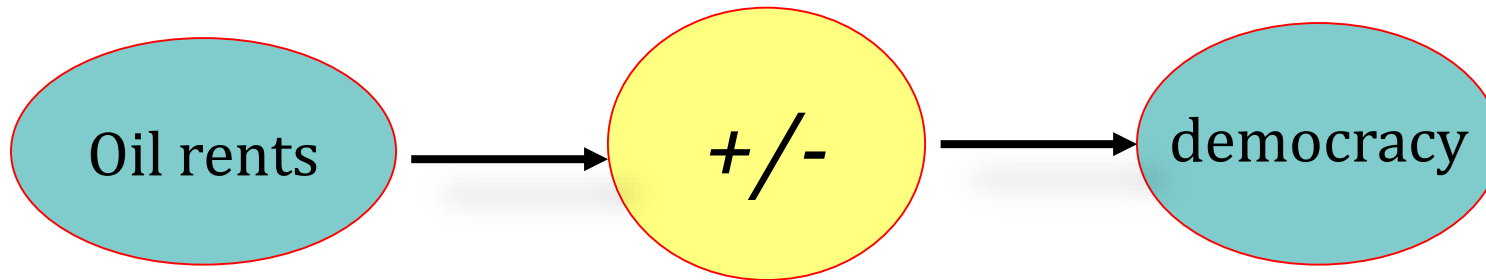
Regional average of democracy scores in different geographical regions of the world (for the period 2010-2017) according to the Economist Intelligence Unit's Democracy Index. Note: This score ranges from 0 to 10 where higher score indicates the higher level of democracy. Source: <https://www.statista.com/statistics>

Research Question



how oil rents affect political institutions in the Middle East oil states through influencing government revenues and expenditures?

Review of literature (I): Oil rents and democracy



negative: Natural Resource Curse hypothesis [Auty, 1993; Sachs and Warner, 1997; Anderson, 1987; Ross, 2001; Jensen and Wantchekon, 2004]

Ross (2001, 2008) introduces three mechanisms to explain how oil rents discourage democracy: rentier effect, repression effect, modernization effect

Positive or inconclusive: Gurses (2009), Haber and Menaldo (2011), Dunning (2008), Caselli and Tesei (2016)

Review of literature (II): Oil rents and military spending

Oil rents are likely to increase military spending in oil rentier states for several reasons:

- 1) The rentier states may develop authoritarian regimes whose survival relies more on keeping control of the revenue-generating infrastructure (Perlo-Freeman and Brauner, 2012).
- 2) Oil revenues prepare a direct source for financing 'potentially controversial expenditures' such as large foreign arms purchases (Ali and Abdellatif, 2015).
- 3) Oil resources may also contribute to international tension and geopolitical conflict.
- 4) Resource-rich countries may have to increase the military expenditures in order to preserve their resources from internal and external rivals.
- 5) There is lack of accountability and transparency with revenues obtained from natural resources (Perlo-Freeman and Brauner, 2012).

Review of literature (III): Sanctions and military spending

Dizaji (2018) shows that lifting the Iran sanctions provides sufficient financial sources for the government which increases its military expenditures through strengthening its autocratic characteristics.

Gershenson (2002) argues that sanctions that hurt the target economies significantly may motivate their governments to terminate conflict.

Strandow (2006), Hultman and Peksen (2017) argue that arms embargoes are likely to decrease the likelihood of conflict, while the threatened and imposed nonmilitary sanctions may not resolve the conflict.

Dizaji and Farzanegan (2019) find that unilateral sanctions do not influence Iran's military expenditures significantly while multilateral sanctions reduce the military spending of Iran.

The contribution of this research

- It develops a dynamic panel VAR model of economic and political fluctuations in the context of oil boycotts.
- It links variations in government financial capabilities with regime evolution.
- It provides an econometric model in order to analyse how negative shocks to oil exports affect macroeconomic and political conditions of Middle East oil exporters.

Data & Methodology

I consider a panel of annual data from 14 Middle East oil rentier states that covers the period 1990-2017.

To analyse the dynamic interrelations among oil restrictions, political institutions, and the military expenditures, the following variables are applied:

(***Oil rents***): oil rents to GDP ratio [Alternatively (***oilprod***): oil production in barrels or (***fuellex***): fuel exports to GDP ratio].

(***def***): defense spending to GDP ratio

(***nondef***): non-defense spending to GDP ratio

(***reven***): government revenues to GDP ratio

(***polity***): polity 2 index [Alternatively V-Dem data set: electoral democracy, liberal democracy, deliberative democracy, egalitarian democracy, and participatory democracy]

Data & Methodology

I consider a panel of annual data from 14 Middle East oil rentier states that covers the period 1990-2017 with respect to the availability of their data.

- ✓ VAR methodology is quite helpful as it deals with all variables as jointly endogenous and does not force any priori restrictions on structural relationships among the variables.
- ✓ Dynamic simultaneous effects can be investigated using VAR approach.
- ✓ Some interactions between the oil rents, military spending and political changes can be tested in the model.

The **Impulse response functions** (IRFs) and the **variance decomposition analyses** (VDC) are two practical instruments of VAR models.

Empirical results

Block exogeneity/Granger-causality tests

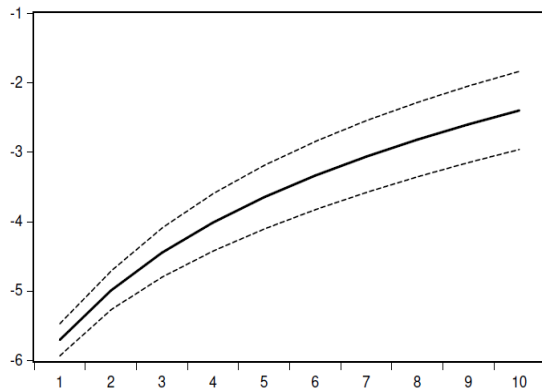
Excluded variable	Dependent variable				
	fuelex	reven	def	nondef	elecdem
fuelex	-	11.63***	0.11	0.16	4.37**
reven	1.01	-	8.92***	24.99***	1.76
def	2.50	2.03	-	1.85	0.27
nondef	0.24	2.41	4.00**	-	2.43
elecdem	0.70	0.14	3.26*	11.05***	-
All variables	6.41	14.50***	22.21***	53.17***	10.56**

Note: The numbers in the table are the Chi-square block exogeneity Wald tests. The null hypothesis states that the excluded variables do not Granger-cause the dependent variable. *, ** and *** denotes significance at the 10%, 5% and 1% level respectively.

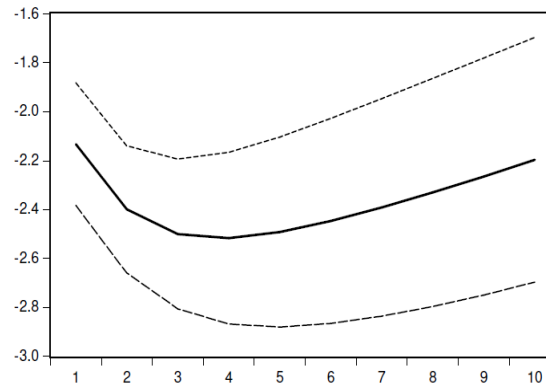
- ✓ I employ an unrestricted panel-VAR model comprising five variables. The vector of endogenous variables in my PVAR model is given by:

$$y_t = [(oilrent/fuelexl/oilprod), reven, def, nondef, (polity2/elecdem)]$$

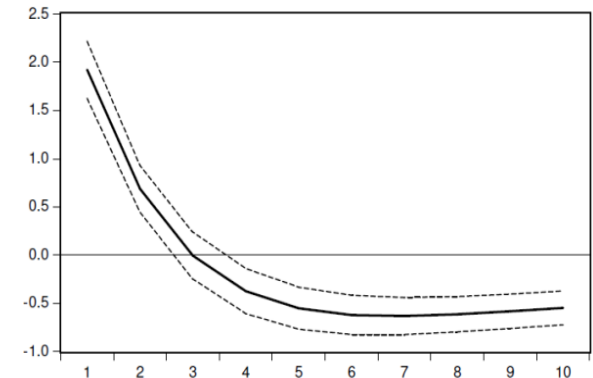
Impulse response functions to a one standard deviation negative shock in oil rents (% of GDP)



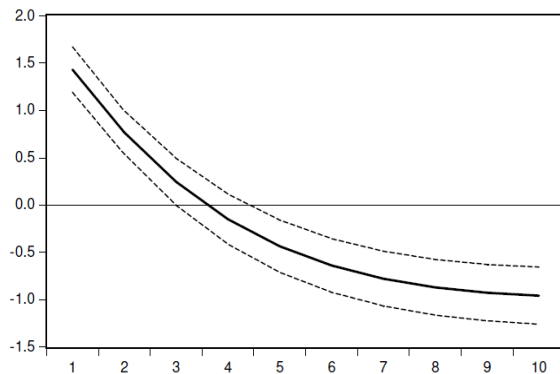
a Response of oil rents
(% of GDP)



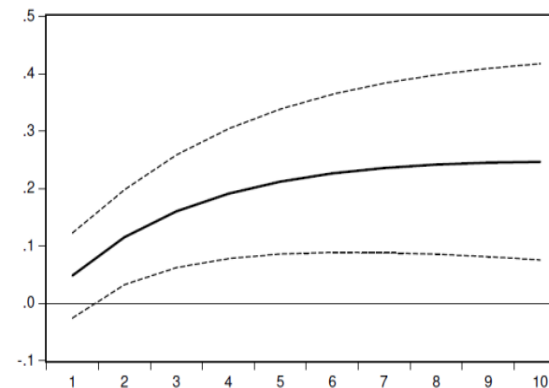
b Response of government
revenues (% of GDP)



c Response of defense
expenditure (% of GDP)



d Response of non-defense
expenditure (% of GDP)



e Response of Polity2

Variance decomposition Analysis

Year	oilrent	reven	def	nondef	polity2
oilrent					
1	100.00	0.00	0.00	0.00	0.00
2	99.73	0.00	0.25	0.00	0.01
5	98.66	0.03	1.14	0.00	0.16
10	97.42	0.06	1.66	0.05	0.81
reven					
1	21.42	78.58	0.00	0.00	0.00
2	26.64	72.89	0.17	0.29	0.01
5	37.45	60.49	0.26	1.75	0.06
10	47.23	49.55	0.25	2.87	0.11
def					
1	12.36	1.59	86.05	0.00	0.00
2	10.63	2.38	86.62	0.31	0.05
5	10.39	3.52	84.00	1.38	0.71
10	13.54	3.52	78.87	1.66	2.41
nondef					
1	11.13	4.40	23.87	60.59	0.00
2	9.18	8.33	23.63	58.78	0.08
5	6.68	19.42	20.33	52.90	0.66
10	11.30	26.52	16.05	44.58	1.56
polity2					
1	0.14	0.06	0.05	0.80	98.95
2	0.48	0.09	0.04	0.92	98.47
5	1.70	0.21	0.12	1.12	96.86
10	3.36	0.43	0.15	1.29	94.76

Robustness checks

▪ Alternative definition for democracy index

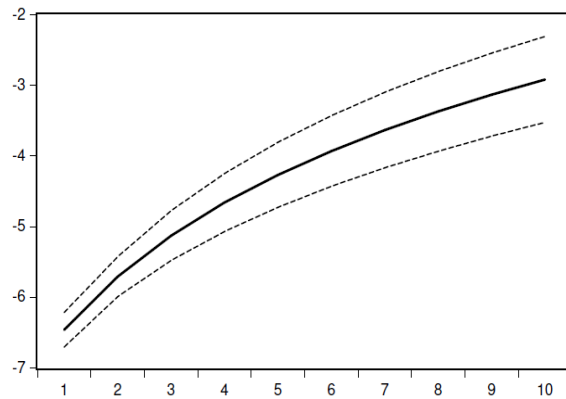
I use an alternative new measure of democracy called **electoral democracy**:

- ✓ This index is on the basis of data from a large number of indexes gathered through the Varieties of Democracy (V-Dem) project.
- ✓ These data are collected from country experts, mainly academics from each country.
- ✓ The electoral part of democracy expresses the core value of making rulers responsive to citizens through competition for the approval of a broad electorate during periodic elections.
- ✓ In the V-Dem concept, electoral democracy is considered as the base of any other conception of representative democracy- liberal, participatory, deliberative, egalitarian.

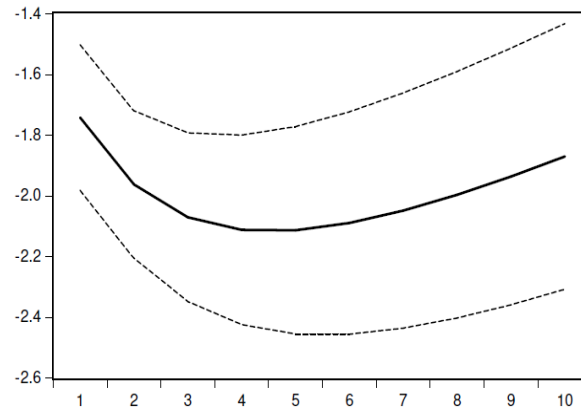
▪ Alternative definition for oil shocks

I replace the oil rents to GDP ratio with fuel exports to GDP ratio and also with the amount of oil production alternatively in different models.

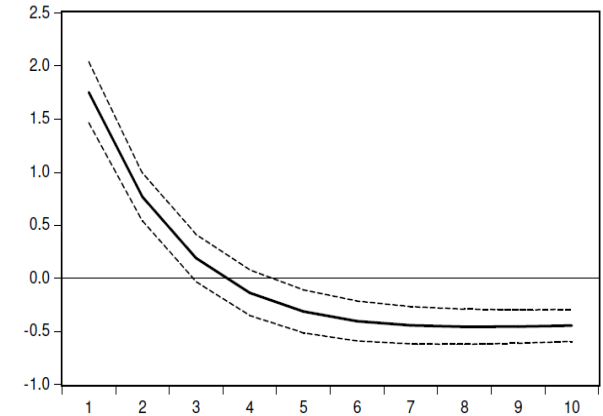
Impulse response functions to a one standard deviation decrease in fuel exports (% of GDP)



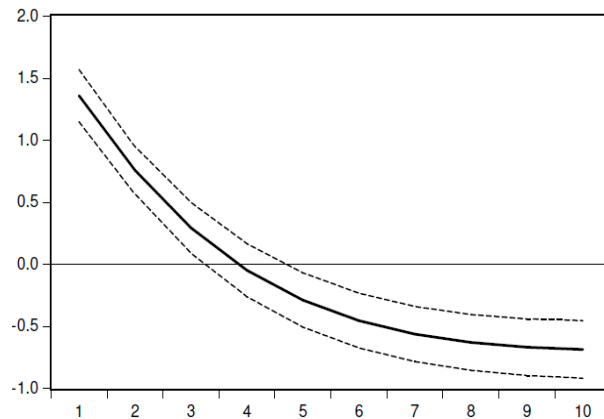
a Response of fuel exports
(% of GDP)



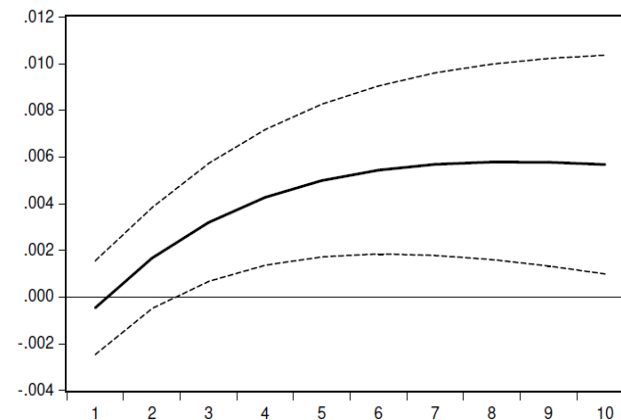
b Response of government
revenues (% of GDP)



c Response of defense
expenditure (% of GDP)

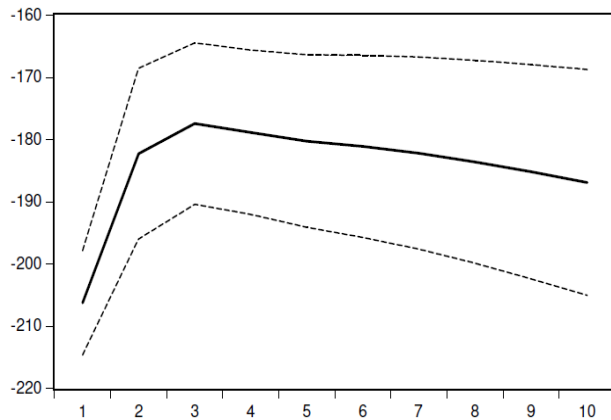


d Response of non-defense
expenditure (% of GDP)

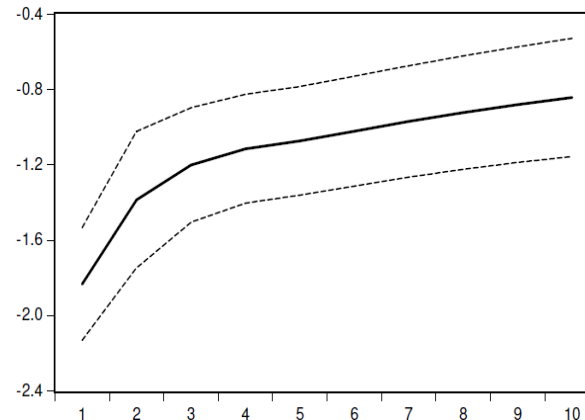


e Response of electoral democracy

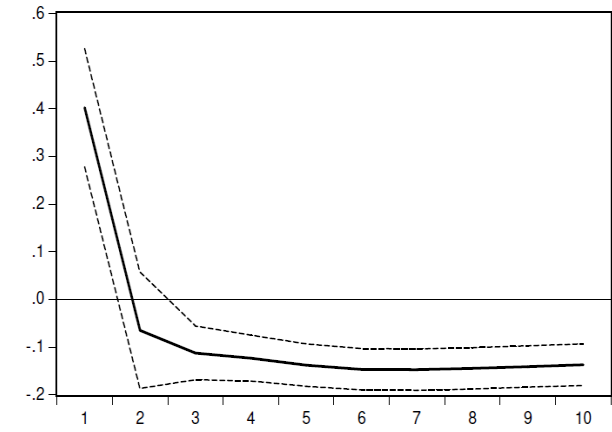
Impulse response functions to a one standard deviation decrease in oil production (in barrels)



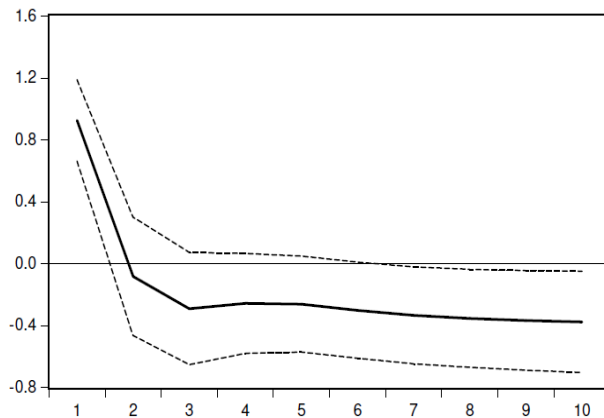
a Response of oil production (in barrels)



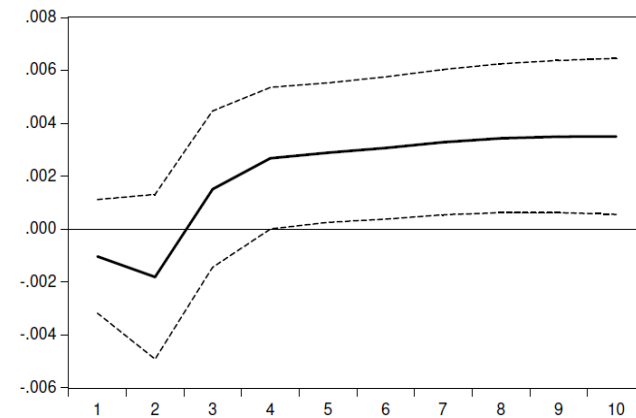
b Response of government revenues (% of GDP)



c Response of defense expenditure (% of GDP)



d Response of non-defense expenditure (% of GDP)



e Response of electoral democracy

Panel generalized impulse responses and variance decompositions using V-DEM democracy indexes

Besides **electoral** component I focus also on the indexes of other components of democracy that propose different approaches for defining democracy:

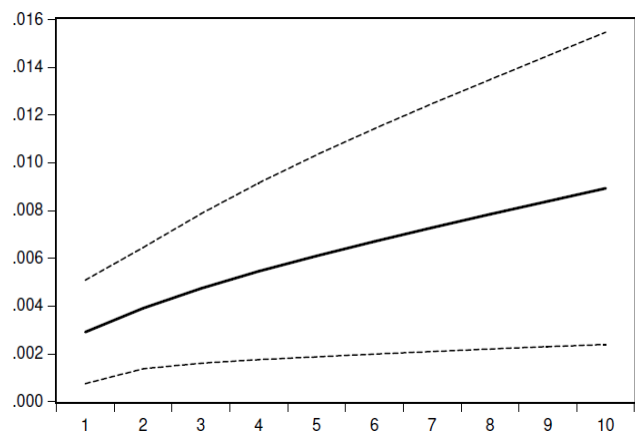
- The **liberal** component of democracy embodies the intrinsic value of protecting individual and minority rights against a potential “tyranny of the majority.”
- The **participatory** component embodies the values of direct rule and active participation by citizens in all political processes.
- The **deliberative** component enshrines the core value that political decisions in pursuit of the public good should be informed by respectful and reasonable dialogue at all levels rather than by emotional appeals, solidary attachments, parochial interests, or coercion.
- The **egalitarian** component holds that material and immaterial inequalities inhibit the actual exercise of formal rights and liberties.

Panel generalized impulse responses

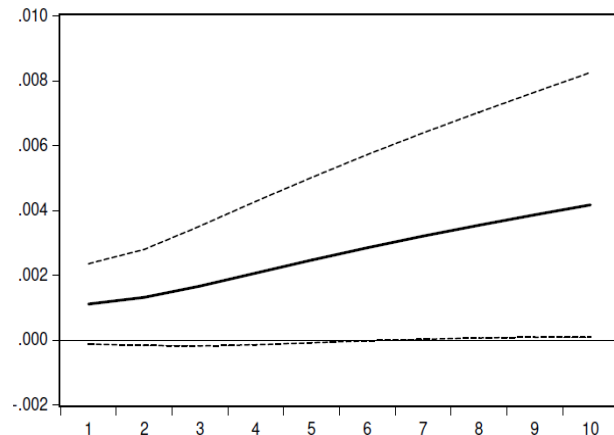
The panel generalized impulse response functions (PGIRFs) offer an orthogonal set of innovations that is independent of the ordering of the variables in the PVAR model.

- ✓ I estimate the panel generalized impulse responses of the mentioned democracy indexes (electoral, liberal, participatory, deliberative, and egalitarian democracy), government revenues (% of GDP), defence expenditure (% of GDP) and non-defence expenditures (% of GDP) to a one standard deviation negative shock in oil rents (% of GDP).
- ✓ The responses of oil rents (% of GDP), government revenues (% of GDP), defence expenditure (% of GDP) and non-defence expenditures (% of GDP) are similar to those which were obtained before.

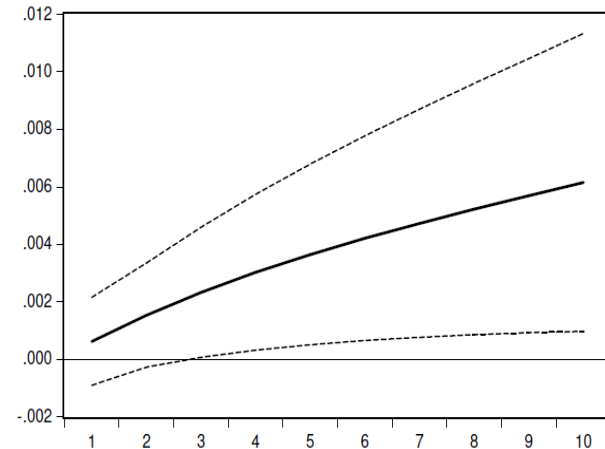
Impulse response functions related to generalized one standard deviation decrease in oil rents (% of GDP).



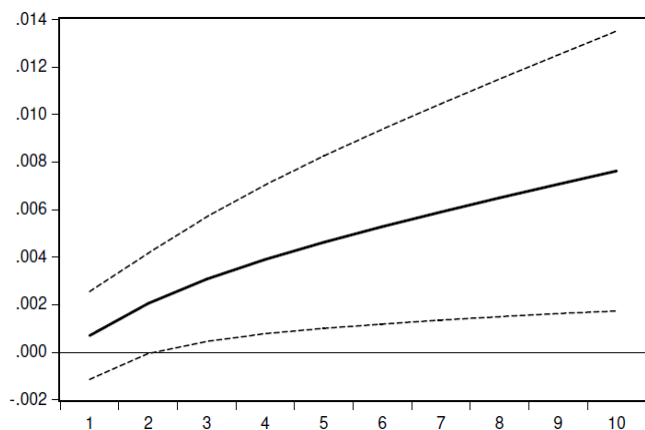
a Response of electoral democracy



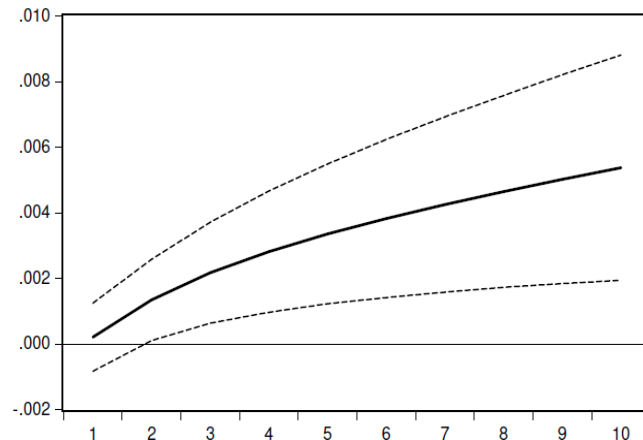
b Response of egalitarian democracy



c Response of liberal democracy



d Response of deliberative democracy



e Response of participatory democracy

Robustness checks

In addition, I have calculated Generalized Panel VAR models employing the fuel exports to GDP ratio and oil production in barrels to capture the impacts of negative oil shocks. The results of estimated PGIRFs by and large agree.

Variance decompositions of different V-DEM democracy indexes

Year	oilrent	reven	def	nondef	elecDEM	liberDEM	delibDEM	egalitDEM	participDEM
elecDEM									
1	0.58	0.15	0.04	0.01	99.20	0.00	0.00	0.00	0.00
10	3.21	0.20	0.22	0.01	87.29	3.30	0.51	0.18	5.04
20	6.09	0.99	0.12	0.00	68.64	9.63	0.57	1.04	12.88
30	8.00	1.80	0.07	0.02	54.01	14.80	0.36	2.78	18.15
liberDEM									
1	0.05	0.04	0.04	0.19	82.04	17.60	0.00	0.00	0.00
10	2.08	0.50	0.03	0.59	64.14	24.74	0.08	1.34	6.45
20	4.21	1.38	0.01	0.49	47.78	27.14	0.05	4.32	14.58
30	5.59	2.08	0.04	0.45	37.52	27.38	0.03	7.68	19.19
delibDEM									
1	0.04	0.10	0.11	0.14	61.86	8.14	29.57	0.00	0.00
10	2.48	0.23	0.05	0.09	58.49	14.35	17.65	0.89	5.73
20	5.22	1.11	0.02	0.08	48.50	18.99	8.99	3.13	13.92
30	6.91	1.19	0.03	0.12	39.84	21.49	4.82	5.90	18.93
egalitDEM									
1	0.26	0.17	0.00	0.03	81.45	2.80	0.70	14.55	0.00
10	1.60	0.44	0.05	0.60	62.55	9.38	1.18	18.11	6.04
20	3.32	1.24	0.08	0.62	45.76	14.83	0.79	19.54	13.78
30	4.50	1.89	0.14	0.61	35.37	18.07	0.44	20.68	18.24
participDEM									
1	0.00	0.02	0.18	0.00	76.47	1.40	0.89	0.22	20.77
10	3.73	0.74	0.20	0.04	65.81	6.37	0.60	0.40	22.06
20	7.31	1.74	0.10	0.03	53.33	12.22	0.34	1.21	23.68
30	9.15	2.42	0.06	0.03	43.98	16.52	0.19	2.86	24.76

Conclusion

- 1) I find that the response of political system to one standard deviation negative shocks to oil rents (% of GDP), fuel exports (% of GDP), as well as oil production (in barrels) in Middle East is positive and statistically significant.
- 2) Contrarily, government revenues (% of GDP), military and non-military expenditures (% of GDP) respond negatively to a negative oil shock.
- 3) These findings are not vulnerable to the ordering of variables in the PVAR analysis and are robust to the different definition of the democracy indexes

The potential oil sanctions could influence the political behavior of Middle Eastern governments positively and decrease their military spending *ceteris paribus*.



Thank you for your attention