

Volatility and Macroeconomic Policy in the Middle East and North Africa Region

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Volatility is a Major Problem in the MENA Region

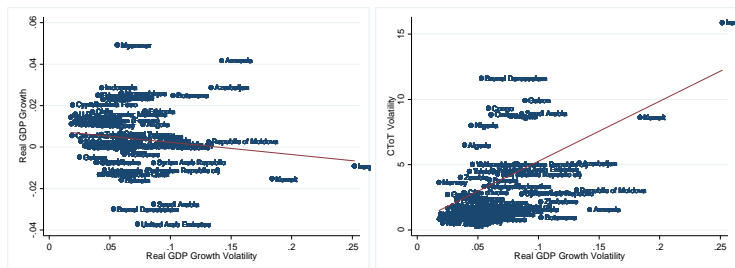
- ▶ It is clear from the MENA region that if commodity price volatility is **not managed properly**, it can result in higher GDP growth volatility and **disappointing long-term economic performance**.
- ▶ GDP growth volatility in the GCC countries has been **at least three times higher** than that of Chile and Norway.



The Volatility Curse

- ▶ While commodity price booms significantly increase economic growth, **volatility affects it negatively** (for more details see Mohaddes and Raissi, 2017). higher volatility in output dampens growth was in fact discussed extensively in the seminal paper of Ramey and Ramey (1995). Moreover, we note that in our sample of 69 commodity-dependant countries, there appears to be a positive association between CToT volatility and GDP growth volatility—which in turn has a negative effect on output growth.
- ▶ Fiscal and current account balances of commodity-exporting countries are affected by swings in resources revenues with **destabilizing effects on the macroeconomy**.

Figure 1: Scatter Plots of GDP Growth and Volatility of CToT against Volatility of GDP Growth, 1981-2014



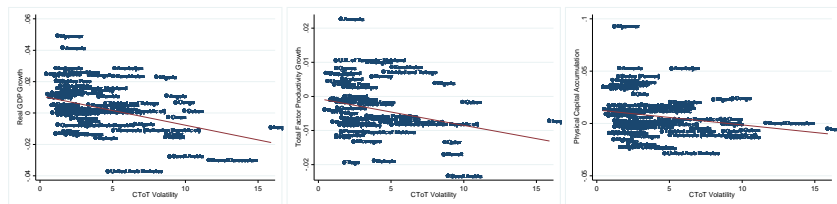
Source: Authors' calculation based on data from Penn World Table Version 9.0 and International Monetary Fund International Financial Statistics databases. These are cross-sectional averages over 1981-2014.

Figure 2 depicts a simple bivariate relationship between CToT volatility and the growth

The Volatility Curse

- ▶ Do natural resource abundant countries have **fewer possibilities for technological progress**?
- ▶ Is the **capital accumulation** another important channel through which volatility affects GDP per capita growth?

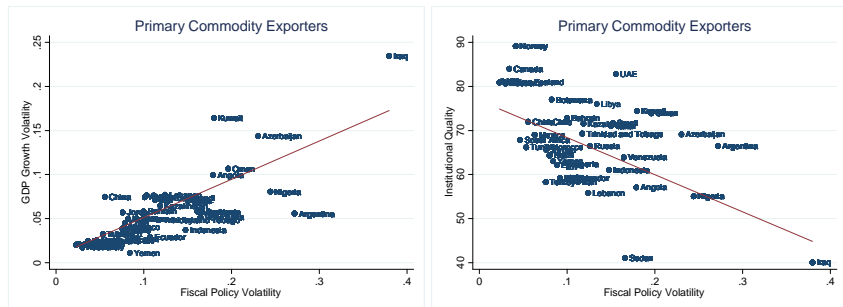
Figure 2: Scatter Plots of CToT Volatility against Real GDP growth, TFP Growth and Capital Accumulation, 1981-2014



Source: Authors' calculation based on data from *Penn World Table Version 9.0* and International Monetary Fund *International Financial Statistics* databases. These are cross-sectional averages over 1981-2014.

The Role of Institutions and Policy Frameworks

- ▶ What is the potential **role of institutions and policy frameworks**, and in particular **fiscal policy**, in dampening the negative effect of commodity price volatility.



Source: K. Mohaddes, J.B. Nugent, and H. Selim (2019), *Institutions and Macroeconomic Policies in Resource-Rich Arab Economies*, Oxford University Press.

Notes: This volatility is interpreted as the component of discretionary policy which is not related to smoothing the business cycle, such as changes in political preferences or the decision by the politicians to generate a short-term boom so as to keep the population happy—as was seen in the GCC following the Arab Spring.

The Role of SWFs and Institutional Quality

Listing the origin of accumulated funds in Table 2, we observe that the majority of these SWFs (19 out of 29) were set-up using revenues from exports of crude oil and gas. A large portion (16 out of 29) was established in countries that are major oil exporters and

- SWFs have been established for a variety of reasons, ranging from **fiscal stabilization** (that is to help smooth the impact on government spending of revenues that are large and volatile), to **long-term saving** for future needs of the economy, or of specific groups such as pensioners, or for future generations.

the fund to finance public expenditure as opposed to just using interest income from the markets for the host.
- **Mohades and Raiss (2017)** show that countries that have a SWF have, on average, performed better when it comes to **mitigating the negative growth effects of CToI volatility** and managed to sustain a higher level of capital accumulation in the face of the extreme volatility in resource revenues.

Table 2: Sovereign Wealth Funds by Origin and Inception

| Country | Origin | Inception | Country | Origin | Inception |
|-------------------|---------------|-----------|-----------------------|---------------|-----------|
| Algeria* | Oil and Gas | 2000 | Mongolia | Minerals | 2011 |
| Angola* | Oil | 2012 | New Zealand | Non-Commodity | 2003 |
| Australia | Non-Commodity | 2006 | Nigeria* | Oil | 2012 |
| Azerbaijan | Oil | 1999 | Norway | Oil | 1990 |
| Bahrain | Oil | 2006 | Oman | Oil and Gas | 1980 |
| Bolivia | Non-Commodity | 2012 | Panama | Non-Commodity | 2012 |
| Botswana | Minerals | 1994 | Peru | Non-Commodity | 1999 |
| Brunei Darussalam | Oil | 1983 | Qatar* | Oil and Gas | 2005 |
| Chile | Copper | 2006 | Russia | Oil | 2008 |
| Gabon* | Oil | 1998 | Saudi Arabia* | Oil | 1952 |
| Ghana | Oil | 2011 | Senegal | Non-Commodity | 2012 |
| Indonesia | Non-Commodity | 2006 | Trinidad and Tobago | Oil and Gas | 2000 |
| Iran* | Oil and Gas | 1999 | United Arab Emirates* | Oil | 1976 |
| Kazakhstan | Oil | 2000 | Venezuela* | Oil | 1998 |
| Kuwait* | Oil | 1953 | | | |

Notes: Some countries have more than one fund, here we have taken the inception year to be that of the first fund, which tends to be the main one. * indicates that the country is a member of the Organization of the Petroleum Exporting Countries (OPEC). Source: Sovereign Wealth Fund Institute.

Is Oil Abundance an Institutional Curse?

In a new volume entitled “**Institutions and Macroeconomic Policies in Resource-Rich Arab Economies**” (Oxford University Press, 2019), Jeff Nugent (USC), Hoda Selim (IMF) and I argue that while:

- ▶ oil revenues over the last half century have greatly **lowered the incentive in resource-rich Arab economies (RRAEs) to develop the institutions** (including political, fiscal and monetary institutions) that have emerged elsewhere,
- ▶ one should note that the GCC countries, because of their revenues (in the form of import duties, fees on religious pilgrims, etc.) and small populations, seem to have **not had that incentive even before oil** was discovered in the region.
- ▶ For instance, prior to oil, given that the current GCC region was largely made up by merchant societies (relatively open to international trade), much of the revenues came from customs duties collected from the merchants, there had thus been little need in these countries to develop the kinds of fiscal institutions capable of raising taxes from the local populations. (Saudi Arabia was an exception as external trade was somewhat less important, and fees obtained from visitors on the Hajj were the most important source of Saudi revenues).

Policy Implications

- ▶ While abundance of oil in itself is growth enhancing there are two main problems with this oil income: one is the volatility of oil revenues, and the second is that it accrues to the government.
- ▶ The fact that oil revenues accrue to the government tends to make the government less immediately accountable for their policies and actions, and increases incentives for **rent-seeking activities**.
 - ▶ Devarajan (2019) shows that in RRAEs accountability is associated with better public expenditure outcomes. To overcome the lack of accountability of governments for oil revenues and also enhance public spending efficiency, he suggests transferring oil revenues directly to citizens and then taxing them.
- ▶ The **quality of institutions** (political, fiscal and monetary) governing macroeconomic policy matter more than the abundance of oil and gas revenues for macroeconomic outcomes including long-run growth and stability.
 - ▶ The undesirable consequences of commodity price volatility can be avoided if resource-rich countries are able to improve the **management of volatility in resource income**: strengthen institutions and policy mechanisms which act as shock absorbers in the face of high levels of oil revenue volatility.

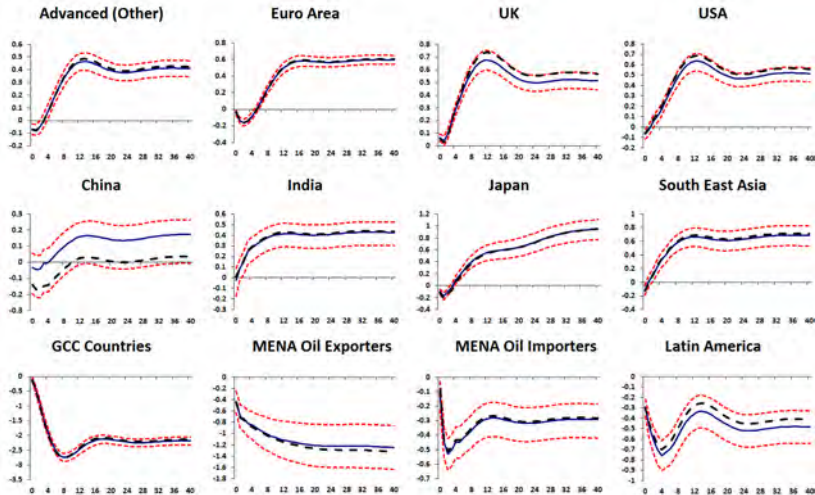
Policy Implications

- ▶ Better conduct of fiscal policy.
 - ▶ **Revenue re-balancing:** raising non-distortionary taxes, such as consumption tax (VAT) and reducing the dependence on oil revenue;
 - ▶ **Improved tax administration;** and
 - ▶ **Spending side:** better targeting of subsidies (electricity, water, petrol). Urgent reforms are needed in the area of energy subsidy – which results in waste, economic distortions and air pollution.
- ▶ **Diversification is key**, but this does not mean petrochemical industries!
 - ▶ It will be **important to reform the economic structure**, increasing transparency and openness to private sector initiatives and foreign investment and improve the business environment in general.
- ▶ **Improving the functioning of financial markets** is also a crucial step as this allows firms and households to insure against shocks, decreasing uncertainty and therefore **mitigating the negative effects of volatility on investment and economic growth**.
- ▶ The **policy choices are not easy** and will most likely require a new social contract.

A New Oil Order?

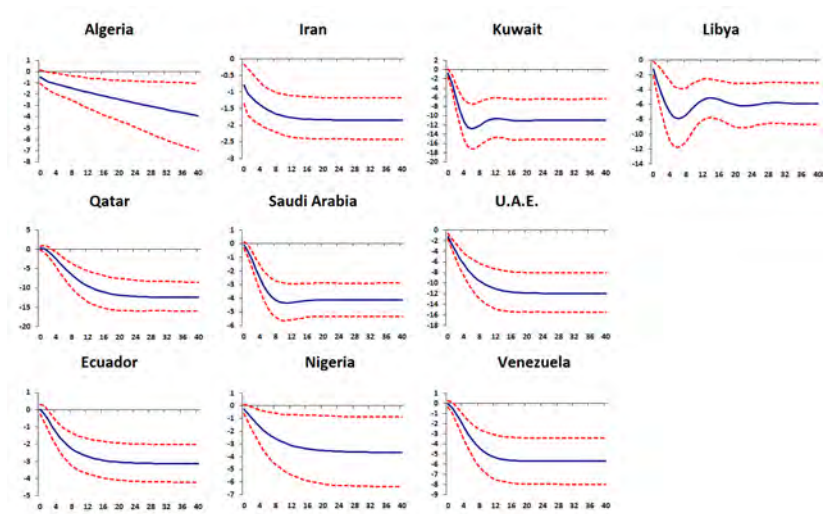
- ▶ The technological advancements over the last decade have not only reduced the costs associated with the production of unconventional oil, but they have also made **extraction of tight oil resemble a manufacturing process** in which one can adjust production in response to price changes with relative ease.
- ▶ This is in stark contrast to other extraction methods such as offshore extraction, which requires **large capital expenditure and lead times**, and more importantly, once the process is up and running changing the quantity produced can be difficult.
- ▶ Therefore, one of the implications of the recent oil revolution is that U.S. production **can play a significant role** in balancing global demand and supply, and this in turn implies that we have potentially entered a **low oil price environment**.

Impact of the U.S. Oil Supply Revolution on Real Output (Mohaddes and Raissi, 2018)



Notes: Figures are median (blue solid) and median target (black long-dashed) impulse responses to a one standard deviation fall in the price of oil, equivalent to an annualized drop of 51% in year 1 and 45% in year 2, together with the 5th and 95th percentile error bands. The impact is in percentage points and the horizon is quarterly.

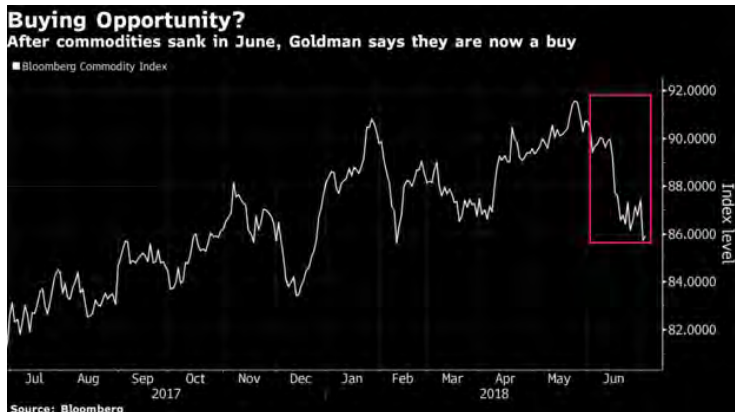
Impact of a Negative Oil Revenue Shock for OPEC Countries (Mohaddes and Raissi, 2018)



Notes: Figures are median generalized impulse responses to a one standard deviation fall in oil revenue, together with 95 percent bootstrapped confidence bounds. The impact is in percentage points and the horizon is quarterly.

A New Oil Order?

- ▶ With oil prices being 50% higher than last year, are we in a low oil price environment?
- ▶ Will the US oil revolution take off anytime soon (again)?



New Source of Volatility: the Trump Factor

- ▶ President Trump is the new “swing factor” in global oil markets.
- ▶ What are the effects of the **competing policy objectives** of the Trump administration on the oil market?
 - ▶ Geopolitical agenda: **sanctions on Iran**;
 - ▶ Domestic political agenda: lowering **American petrol prices**; and
 - ▶ **Trade wars** with China and the EU.

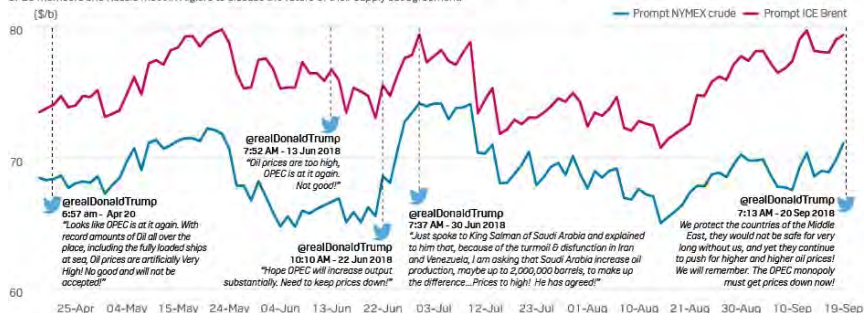


Shale Oil, OPEC or the Trump Factor?

- ▶ Policy reversals? **Waivers** on Iran oil sanctions!
- ▶ Will there be an **oil war**?
- ▶ One thing is for sure: more and more **uncertainty and more volatility**!
- ▶ The new oil order is **not so new after all**, but have different players...!
- ▶ Bottom line: policy makers should think about **volatility** as opposed to (just) **sustained low or high prices**.

US OIL DIPLOMACY BY TWEET

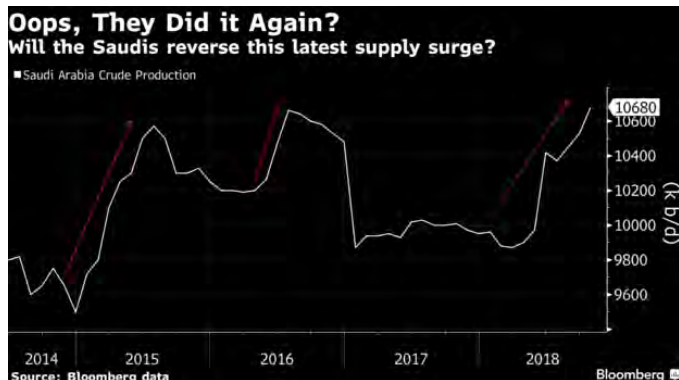
US President Donald Trump has tweeted about OPEC five times since April. The latest message comes days before some OPEC members and Russia meet in Algiers to discuss the future of their supply cut agreement.



Source: S&P Global Platts

What about Saudi Policy?

- ▶ Major source of oil price volatility! Just take the last few years, where an **increase in supply has been quickly reversed**.
- ▶ In 2015: waging a price war against U.S. shale oil producers;
- ▶ In 2016: maximizing sales before OPEC agreements;
- ▶ In 2018: pressure due to sanctions on Iran and President Trump (as discussed).

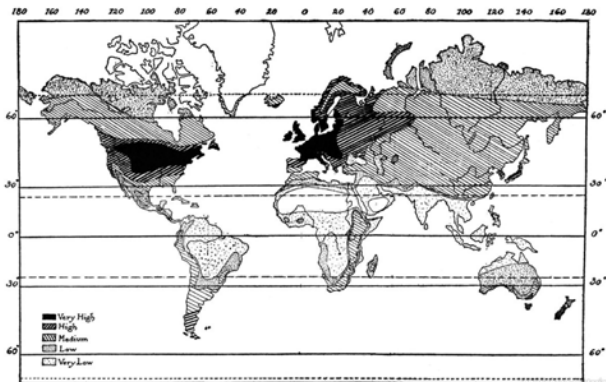


Climate Change Uncertainty

- ▶ The **climate-economy relationship** has been discussed for many centuries and goes back to at least Ibn Khaldun's 14th Century *Muqaddimah*, in which he attributed **poverty** to the **climate**.
- ▶ Economists used to (and some still do) ask the question: Can **climate and/or the weather** explain why some countries are poor and others rich?

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Climate Change Uncertainty

- ▶ The question that more and more economists are now attempting to answer is: do **weather events and climate change** have consequences for **economic growth**?
- ▶ This is important as a careful understanding of the climate-economy relationship is essential to the effective design of **appropriate institutions and macroeconomic policies**, as well as enabling forecasts of how future changes in climate will affect economic activity.
- ▶ This is not about **stranded assets** (which in itself can be substantial), but whether **climate change** has long-run growth effects.
 - ▶ labour productivity?
 - ▶ labour supply?
 - ▶ which sectors?
 - ▶ which regions?

Climate Change Uncertainty and Macroeconomic Policy

- ▶ The Paris Agreement represents an important milestone for the international community's coordination efforts in reducing greenhouse gases and controlling the global average **temperature to less than 2°C above pre-industrial levels**.
- ▶ MENA countries need to act proactively by identifying the related risks to be able to design proper **climate policies** incorporated into their **development strategies** and **fiscal planning** in general.
- ▶ However, designing relevant policies to address climate change challenges largely depends on the understanding of the effect of climate change on economic activity at the macro level.
- ▶ Evidence from our recent study (Kahn et al., 2018: *Climate Change Uncertainty, Adaptation, and Growth*) based on a cross-country study of a panel of 174 countries over the last 50 years and a within-country study of a panel of 48 U.S. states over the period 1963-2016, suggests that the **costs associated with climate change volatility in the MENA region can be substantial!**

Adaptation (IMF SDN, 2015)

- ▶ **Adaptation** and **development strategies** are closely interlinked.
- ▶ Many aspects of **development** (better education, health care, and infrastructure) **facilitate adaptation**.
- ▶ Some **adaptation strategies** (efficient water use, climate-resilient housing, robust crops) **facilitate development** even without climate change.
- ▶ **Close policy integration** is needed.

Concluding Remarks

- ▶ **Volatility** is a major problem in the MENA region and macroeconomic policy has not helped!
 - ▶ A clear **role for institutions and the government** (fiscal policy) in offsetting some of the negative growth effects due to the **volatility curse**.
- ▶ The **new oil order** is a serious challenge for the MENA region:
 - ▶ in particular for oil-exporting countries, as lower oil prices weaken domestic demand as well as external and fiscal balances;
 - ▶ but also for oil importers, as gains from lower oil prices are offset by a decline in external demand/financing by MENA oil exporters given strong linkages between the two groups through trade, remittances, tourism, foreign direct investment, and grants.
- ▶ The costs associated with **climate change volatility** in the MENA region are potentially substantial. Macroeconomic policy could make a big difference!
 - ▶ **water/environmental crisis**, which has been exacerbated by economic policy (i.e. energy subsidies); and
 - ▶ direct effects of climate change volatility in terms of **long-run growth**, and the role of **mitigation** and **adaptation** policies.