Energy Strategy Reviews 26 (2019) 100397

Contents lists available at ScienceDirect

Energy Strategy Reviews

journal homepage: www.elsevier.com/locate/esr

The impact of the global energy transition on MENA oil and gas producers

Simone Tagliapietra[a,b,c]

[a] Research Fellow, Bruegel, Brussels, Belgium
[b] Senior Fellow, Fondazione Eni Enrico Mattei, Milan, Italy
[c] Adjunct Professor, The Johns Hopkins University SAIS Europe, Bologna, Italy

ARTICLE INFO

Keywords:
Energy transition
Geopolitics
Middle East
North Africa
Rentier state

ABSTRACT

Endowed with half of the world's known oil and gas reserves, the Middle East and North Africa (MENA) region is cornerstone of the global energy architecture. The global low-carbon energy transition poses critical questions to MENA oil and gas producers, as it may imply sustained pressure on their development models, which rely heavily on hydrocarbon revenues. Without economic reforms, this may translate into macroeconomic unbalances, and ultimately put at risk established social contracts in the region. The sharp drop in oil prices that began in 2014 fostered MENA hydrocarbon producers to launch ambitious economic reform programmes aimed at increasing the diversification of their economies, notably by developing their non-hydrocarbon sectors. This article argues that – together with the pressing need to create jobs opportunities for a large and youthful population – the possibility of the world moving more aggressively towards a low-carbon future should represent a key argument for the implementation of these economic reform programmes. That is, MENA producers might use the potential prospect of lower global hydrocarbon demand and prices to overcome their rentier state model, and pursue the economic diversification plans never duly implemented in the past.

1. Introduction

Endowed with half of the world's known oil and gas reserves, the Middle East and North Africa (MENA)[1] region has become during the second half of the 20th century a cornerstone of the global energy architecture [1].

Two different forces are currently fostering a restructuring of this architecture: decarbonisation policies and low-carbon technology developments.

The Paris Agreement [2] marked a major step forward in global efforts to address global warming. For the first time, developed and developing countries committed to act in order to limit global average temperature increase to well below 2 °C, and to pursue efforts to further limit this to 1.5 °C above pre-industrial levels. This further reinforced decarbonisation measures already being undertaken in different parts of the world.

Meanwhile, technological advancements have significantly increased the cost-competitiveness of low-carbon technologies such as solar and wind power generation, power storage technologies and electric vehicles [3–5]. This has already started to significantly reshape the global energy system, notably by giving a greater role to solar and wind in the electricity generation mix. Global energy outlooks [4,6,7] generally see these trends continuing in the future. Some outlooks even see these trends gathering further pace, leading to a peak in global oil demand in the 2020s [3,8].

As both the IEA [9] and IRENA [10] outline, this transformation of the global energy system is posing critical questions for many of the world's largest oil and gas producing countries. International climate policies and low-carbon technology advancements might indeed imply sustained pressure on development models that rely heavily on hydrocarbon revenues.

For instance, the IEA [9] estimates that in a scenario consistent with

E-mail address: simone.tagliapietra@bruegel.org.

[1] We define MENA as including the North African countries (Morocco, Algeria, Tunisia, Libya and Egypt), the Levant countries (Jordan, Israel, Lebanon, Syria and Palestine), the Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Saudi Arabia, Qatar and United Arab Emirates), Iraq and Iran.

https://doi.org/10.1016/j.esr.2019.100397
Received 19 February 2019; Received in revised form 20 May 2019; Accepted 25 July 2019

the objective of the Paris Agreement (i.e., the Sustainable Development Scenario), hydrocarbon producers would not only face structurally lower oil prices, but also lower demand as a result of more rigorous policies on fuel switching and efficiency. This could lead to a vast loss in revenue (i.e., between 25 and 40%) for oil and gas producers over the period to 2040 compared with a central scenario (i.e., New Policies Scenario).[2]

Without economic reforms, this would translate into large current account deficits, downward pressure on currencies and lower government spending. A situation that, given the Rentier State configuration of MENA hydrocarbon producers, could put at risk established social contracts in the region and potentially lead to social and political tensions.

The sharp drop in oil prices that began in 2014 fostered MENA hydrocarbon producers to launch ambitious economic reform programmes aimed at increasing the diversification of their economies, notably by developing their non-hydrocarbon sectors. Such plans are nothing new to MENA hydrocarbon producers. They systematically adopted such plans in times of low(er) oil prices, to regularly dismiss them once prices recovered.

This article argues that – together with the pressing need to create jobs opportunities for a large and youthful population – the possibility of the world moving more aggressively towards a low-carbon future should represent a key argument for the implementation of the most recent economic reform programmes. That is, MENA hydrocarbon producers might use the potential prospect of lower global hydrocarbon demand and prices to overcome their rentier state model, and finally pursue the economic diversification plans never duly implemented in the past.

The article is structured as follows: section 2 provides an overview of the macroeconomic context of the MENA region, showing the persistent over-reliance of MENA hydrocarbon exporters on the hydrocarbon rent. Section 3 provides a discussion of the political economy factors standing behind the lack of economic diversification in these countries, notably reviewing the established political economy literature on the subject. Section 4 reviews the economic reform programmes adopted by MENA hydrocarbon exporters since 2015, and discusses the prospects for their implementation. Finally, the article concludes with a call to MENA hydrocarbon exporters to consider economic diversification as an unavoidable pathway, to be pursued in order to guarantee future economic prosperity in any scenario – and therefore even in a low-carbon world scenario.

2. MENA macroeconomic context

Gifted with half of the world's known oil and gas reserves, the MENA region is a bedrock of the world's hydrocarbons supply. In 2017, the region provided 37% of global oil production, and 22% of global gas production. As far as oil is concerned, Saudi Arabia dominates the regional oil landscape, followed by Iran, Iraq, the United Arab Emirates and Kuwait. As far as gas is concerned, Iran leads regional production, followed by Qatar, Saudi Arabia, Algeria and the United Arab Emirates (Table 1).

Table 1
Hydrocarbons production in MENA countries, 2017.
Source: author on BP [6].

Oil (Thousand barrels per day)		Natural gas (Billion cubic metres per year)	
Saudi Arabia	11,951	Iran	223.9
Iran	4,982	Qatar	175.7
Iraq	4,520	Saudi Arabia	111.4
United Arab Emirates	3,935	Algeria	91.2
Kuwait	3,025	United Arab Emirates	60.4
Qatar	1,916	Egypt	49.0
Algeria	1,540	Oman	32.3
Oman	971	Kuwait	17.4
Libya	865	Bahrain	15.1
Egypt	660	Libya	11.5
Tunisia	53	Iraq	10.4
Total regional production: 34,418		*Total regional production: 798.3*	
Total global production: 92,649		*Total global production: 3,680*	

The rent from oil and gas exports to global markets has traditionally been the main contributor to the economies of MENA hydrocarbon producers. For instance, in 2017 this rent contributed to 38% of Iraq's gross domestic product (GDP), to 37% of Kuwait's GDP, to 23 of Saudi Arabia's GDP and to 23 of Oman's GDP. These shares used to be even (much) higher before 2014, the year in which the most recent oil price downward cycle started (Table 2).

It should be noted that in most of MENA hydrocarbon producers, activities in non-hydrocarbon and non-government sectors are also often linked to hydrocarbon and government activities. The main sources of manufacturing value-added indeed tend to include refinery, chemical and other mining/extractive industries, while some non-hydrocarbon sectors, such as construction, depend heavily on government contacts [11].

In these countries, oil and gas are also the primary source of fiscal revenues. Just to provide few examples, in 2017 oil and gas revenue accounted for 67% of fiscal revenues in Saudi Arabia.[3] In the same year, they accounted for 90% of fiscal revenues in Kuwait [9], 75% of fiscal revenues in Qatar[4] and 60% of fiscal revenues in Algeria [12].

Likewise, oil and gas dominate these countries' exports. In 2018, oil and gas accounted for 80% of Saudi Arabia's total exports, for 90% of Kuwait total exports, for 86% of Qatar's total exports, for 95% of Algeria's total exports [12].

In addition to GDP, fiscal revenues and exports, hydrocarbons also heavily impact MENA hydrocarbon producers' labour markets. For instance, in Saudi Arabia, Iraq and Kuwait the public sector wage bill amounts to almost one-fifth of GDP, as 30% of Saudi and Iraqi workforce and 15% of Kuwait workforce are employed in the public sector [9].

This suggests that growth in the working age population over the last two decades has not been matched in these countries by growth in private sector job creation, but rather in public sector employment. In Iraq, for instance, the public sector has grown from 1.2 million employees in 2003 to around 3 million in 2016. This places enormous strain on the state budget, costing over USD 30 billion in salaries in 2016, equivalent to 60% of the country's net income from oil and gas that year [9].

MENA hydrocarbon producers generally have seen relative declines in labour productivity, which suggests that many of the public sector jobs that have been created are not adding significantly to economically productive activity. The balance of employment across the private and public sectors is also shaped in many instances by a large gap in average wages, with public employment offering higher pay: across the Gulf Cooperation Council (GCC) countries, for example, the gap between

[2] For instance, the IEA estimates a cumulative net income loss of USD 7 trillion over the period to 2040 in Russia, Saudi Arabia, Iraq, United Arab Emirates and Nigeria. For comparison, this is more than two-and-a-half times the combined GDP of the Middle East and Nigeria today. According to the IEA, 'Alternatives to oil and gas may gain more rapid momentum. In the case of oil, other countries could follow China's example by adopting stronger efficiency measures and doing more to promote fuel switching away from oil for transport, for example through support for recharging infrastructure or through restrictions on sales of traditional gasoline or diesel vehicles. Continuing cost reductions for solar photovoltaic and wind power, as well as domestic coal resources, could also constrain market opportunities for natural gas in many parts of Asia.' [9]; p. 44).

[3] Author's calculation on Kingdom of Saudi Arabia Ministry of Finance ([30], p. 29).

[4] Author's calculation on Qatar Planning and Statistics Authority ([31], p. 60).

Table 2
Oil and gas rent (% of GDP).
Source: author's elaboration on World Bank, World Development Indicators database, accessed in May 2019, and BP [6].

Country	2013	2014	2015	2016	2017
Algeria	28	24.4	15.9	12	14.5
Bahrain	9.3	8.6	5.1	3.2	3.5
Egypt	9.7	8.2	3.7	2.7	4.8
Iran	26.4	26.3	15.6	12.9	17
Iraq	45.6	45.6	35.1	31.4	38
Kuwait	58.4	55.2	38	32.1	37.1
Libya	52.7	42	28.5	22.3	38.4
Oman	44.9	39.6	23.8	19.7	23.4
Qatar	34.9	30.5	19.9	15.3	18
Saudi Arabia	45.5	41.2	24.2	19.9	23.7
United Arab Emirates	27.2	24.2	14	11.3	13.7
Oil price (USD/barrel)	*109*	*99*	*52*	*43*	*54*

average public and private wages is often between 150% and 250% [13].

All this has contributed to lower the labour productivity of MENA hydrocarbon producers, a trend in clear contrast to the evolutions in MENA oil and gas importing countries (Fig. 1).

This low level of labour productivity is one of the major barriers for economic diversification in MENA hydrocarbon producers, as it prevents the development of an internationally-competitive private sector [14].

It must be noted that public support schemes in these countries are not only based on oversized public sectors, but also on expensive and economically inefficient subsidy schemes, such as those for energy.

Iran's fossil fuel subsidies are the largest in the world, with an estimated value of USD 45 billion in 2017 (i.e., equivalent to 10% of the country's GDP). In the same year, fossil fuel subsidies amounted, for instance, to USD 37 billion in Saudi Arabia, to USD 9 billion in the United Arab Emirates, and to around USD 7 billion in both Iraq and Kuwait [9].

From an economic perspective, high fossil fuel subsidies generate significant economic losses, because oil resources are sold domestically at a fraction of their international market value. From an energy perspective, these subsidies distort the economics of energy and the price signals of energy resources, holding back the competitiveness of renewable energy sources. Furthermore, fossil fuel subsidies lead to the inefficient allocation of resources and to market distortions, by encouraging rent-seeking behaviour and thus excessive production or consumption. Not by coincidence, MENA hydrocarbon producers are among the less energy-efficient countries in the world [9].

Some progress has been made since 2014 in raising residential electricity prices in several MENA hydrocarbon producers, including in Saudi Arabia. But prices are still relatively low, with the average price for residential consumers in Saudi Arabia around 80% lower than the global average in 2016 [9]. When Kuwait took steps to raise electricity prices significantly, including increases for the public sector by 500%, it excluded residential electricity prices, which have been fixed at the same rate for more than 50 years (electricity prices are regulated by law in Kuwait and require parliamentary approval to modify). In many producer economies, electricity prices for residential consumers continue not to cover the cost of supply.

As a result of all these macroeconomic trends, it is not surprising that at present no MENA hydrocarbon producer economy ranks in the top-20 of the World Bank [15] 'Ease of Doing Business' global rankings, a composite measure of indicators that reflect business sentiment.

3. Understanding the interplay of hydrocarbons, economics and politics in MENA oil producers

The previous section illustrated the persistent over-reliance of MENA hydrocarbon producers on the hydrocarbon rent. It also shed light on the peculiar interplay between hydrocarbons, economics and politics in MENA hydrocarbon producers. A unique analytical framework to understand this interplay is represented by the Rentier State Theory (RST), which was first postulated by Hussein Mahdavy in 1970, in the context of a discussion on the evolution of economic development in the Middle East in general, and in Iran in particular. Mahdavy [16] defined as rentier states those countries that receive on a regular basis substantial amounts of external rents, which have little to do with the production processes in their domestic economies.

Building on Mahdavy' seminal study, Hazem Beblawi and Giacomo Luciani in 1987 systematised the RST, and developed it into a widely-accepted tool to interpret the MENA political economy and – more broadly– the political economies of all the world's oil-producing countries. According to the theoretical framework proposed by Beblawi [17], a state is rentier when: i) It relies on substantial external rent to sustain the economy, reducing the pressure to develop a strong productive domestic sector; ii) It has a small proportion of the population engaged in the generation of the rent, while the majority of the population is only involved in the distribution or in the utilisation of it; iii) Its government is the principal recipient of the external rent.

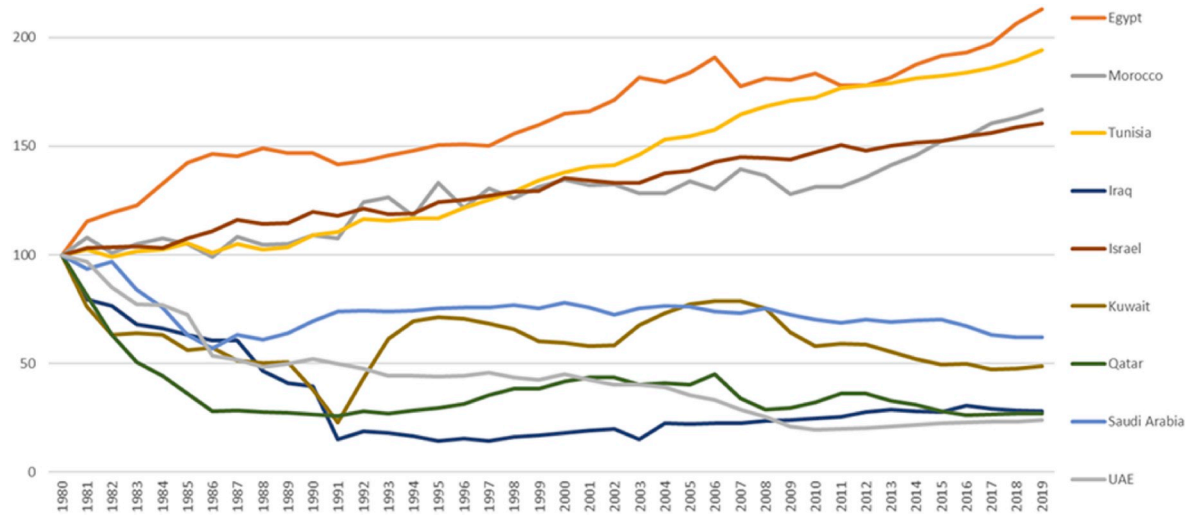

Fig. 1. Labour productivity in selected MENA countries (Index: 1980 = 100).
Source: author's elaboration on The Conference Board, Total Economy database, accessed in May 2019.

Table 3
MENA hydrocarbon producers' economic diversification strategies: key targets. Source: author's elaboration on national plans.

Bahrain – Economic Vision 2030 *(Launched in 2008)*

- Stimulate growth by enhancing productivity and skills.
- Diversify and build the economy by focusing on existing high potential sectors.
- Transform the economy in the longer term by capturing emerging opportunities.

Algeria – New Economic Growth Model (2016–2019) (*Launched in 2016*)
- Boost non-hydrocarbon exports to 9% of total exports by 2019, from less than 5% currently.

Iran - 6th National Development Plan (2016–2021) (*Launched in 2017*)
- 8% economic growth rate.
- Lower share of oil revenues in the budget to 22%.
- Increase power generation capacity by 25 GW.
- Lower energy intensity by 15%.
- Lower unemployment to 8.9% and inflation rate to 7%.

Iraq – Private Sector Development Strategy (2014–2030) (*Launched in 2014*)
- Increase the private sector up to a share of 60% of GDP by 2030.
- Improve the country's business environment, particularly for SMEs.
- Reduce the unemployment rate to 4% or less by 2030.

Kuwait – Kuwait Development Plan 2035 (*Launched in 2017*)
- Develop a prosperous and diversified economy to reduce the country's dependence on oil export.
- Increase the number of small businesses by 3,500.
- Increase investment by 11%.

Oman – Ninth Five-Year Development Plan (2016–2020) (*Launched in 2016*)
- Reduce the contribution of oil in GDP at current prices from 44% in 8th five-year plan to 26% by 2020.
- Create more than 15 million jobs by 2020.
- Focus on the private sector and SMEs.

Qatar – National Vision 2030 (*Launched in 2008*)
- Increase and diversify the participation of Qataris in the workforce.
- Create a business climate capable of stimulating national and foreign investments.
- Managing the optimum exploitation of hydrocarbon resources.
- Expanding industries and services with competitive advantages derived from hydrocarbon industries.
- Create a knowledge-based economy characterised by innovation, entrepreneurship and excellence.

Saudi Arabia – Vision 2030 (*Launched in 2016*)
- Increase the private sector's contribution from 40% to 65% of GDP by 2030.
- Increase SME contribution to GDP from 20% to 35% by 2030.
- Increase foreign direct investment from 3.8% to the level of 5.7% of GDP by 2030.
- Raise the share of non-oil exports in non-oil GDP from 16% to 50% by 2030.
- Increase non-oil government revenue from SAR 163 billion to SAR 1 trillion by 2030.

United Arab Emirates – Abu Dhabi Economic Vision 2030 (*Launched in 2018*)
- Reduce GDP volatility through diversification.
- Enlarge enterprise base.
- Equip the UAE youth to enter the workforce.
- Diversify fiscal revenue sources.

It is thus clear that, as suggested by the macroeconomic context presented in Section 2, MENA hydrocarbon exporters might be considered as rentier states *par excellence*. But how does rentierism impact the political structures of these countries?

The conventional role of the state in providing public goods through taxation blurs in rentier states, as the role of the state becomes providing private favours through the ruler's benevolence. The fundamental principle of democracy, 'No taxation without representation', finds in rentier states its mirror image, 'No representation without taxation'. That is, untaxed citizens are less likely to demand political participation. Beblawi, recalling previous Mahdavy' reflections, also highlighted that a rentier state economy creates a specific mentality – a rentier mentality – on which income is not related to work and risk bearing, but to chance or situation. This is also a reason why, according to Beblawi, rentier states tend to give rise to second-order rents, such as real estate and financial speculation.

Luciani [17] expanded Beblawi's analysis, focusing on the key function of the state in rentier countries to understand the more profound interlinks between oil, economics and politics. Luciani outlined that rentier states might also be defined as allocation states because their key function is to allocate the income received from the rest of the world to their populations. This allocation function of rentier states profoundly differs from that of production states, which have to subtract – via taxation – resources from those that originally possess them, and reallocate them to others in the society on the basis of an asserted common interest – which ultimately requires democratic legitimation. Growth in the domestic economy is thus not a precondition for the existence and expansion of a rentier state, as long as the rent is guaranteed. That is, growth in the domestic economy becomes an essential precondition only in case a rentier state is forced to become a production state.

This mechanism is evident in MENA hydrocarbon producers. Historically, these countries have indeed put in place economic reform programmes aimed at increasing the diversification of their economies at any time oil prices substantially dropped. However, as also outlined by Hvidt [18]; they regularly dismissed these strategies once oil prices recovered. That is, MENA hydrocarbon producers showed in the past a tendency of easily giving-up on their economic reform strategies designed under low-oil price pressure, and fall back on established ways of doing business, namely through patronage and the predominant role of the public sector.

Since the years of the RST formulation, other important contributions have been made in this area of the political economy literature. It is worthwhile to mention, for instance, the work of Lynn Karl [19]; whom put forward the thesis that prolonged mineral booms, where proceeds accrue to the government, not only lead to a loss of financial discipline and deterioration in competitiveness of agriculture and industry, but also shape the character of poorly developed states. They encourage a culture of rent-seeking rather than productive activity and of avoiding both domestic taxation and the political systems of accountability associated with it. The paradoxical legacy of oil wealth is therefore much greater fragility in governmental and civic institutions than in states less well endowed with mineral resources. A work edited by Teitelbaum (2009) also provided a valuable contribution in the field, illustrating how differing national circumstances within the Gulf region have led to significant variations in the speed of political reform.

4. An assessment of MENA hydrocarbon producers' economic reform programmes

The sharp drop in oil prices that began in 2014 created a major financial pressure to MENA hydrocarbon producers. For instance, in Saudi Arabia foreign reserves peaked at over USD 730 billion in 2014, and then fallen by some 30% by 2017. Nearly USD 240 billion was used to cover a large budget deficit created by lower oil export revenues and to defend the currency peg. Despite efforts to consolidate spending, Saudi Arabia is still running a significant deficit, and it has turned to domestic and international bond issuances to help finance its budget [9].

In this situation, all MENA hydrocarbon producers adopted economic diversification strategies (or, in some cases, reinforced already existing strategies), generally aimed at increasing the private sector's role in the economy, developing small and medium enterprises (SMEs), creating jobs and investing in education and innovation (Table 3).

With their focus on the development of the non-hydrocarbon sectors of the economy, these strategies seem to go in the right direction: increase the private sector's share of GDP is indeed an important way to promote higher labour productivity and to stimulate private sector investment and job creation. It should be noted that these strategies also reflect economic policy guidelines generally given to MENA hydrocarbon producers by international economic organisations (e.g. Refs. [11,15]), as well as by academics (e.g., Refs. [18,20,21]).

Unlike in the past, this might well be the right time for MENA hydrocarbon producers to implement these long-awaited strategies. The reason is simple: if in the past the only argument for economic diversification was the risk of oil market volatility, today two additional arguments have emerged.

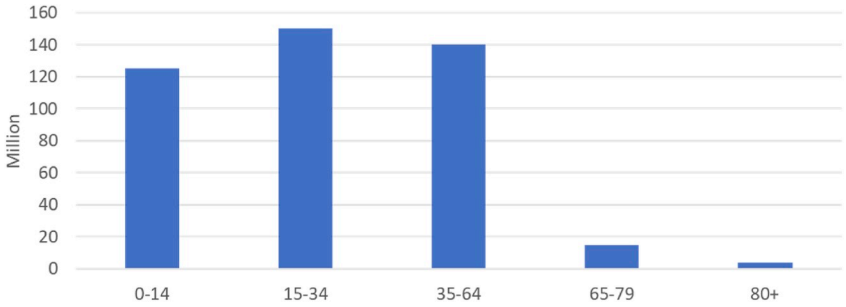

Fig. 2. Population by age group in the MENA region, 2017.
Source: author's elaboration on United Nations, World Population Database, accessed in May 2019.

The first relates to the illustrated uncertainty regarding the speed of the global energy transition, and therefore the long-term sustainability of the hydrocarbons rent. This represents an important argument to domestically justify economic diversification reforms.

The second relates to the pressing need to create jobs opportunities for a large and youthful population. In the MENA region, population growth has averaged 2% per year since 1990 (0.7% points higher than the world average), leading to a population increase of 180 million over the last 25 years. This rate of increase made the MENA region among the youngest in the world: today, 60% of the population is under the age of 25, and the median age is 22 (compared with a global average of 28) (Fig. 2).

With already challenging labour market conditions [22,23], and with large numbers of young citizens set to further join their labour markets in the years ahead due to demographics, MENA hydrocarbon producers have a clear need to diversify their economies and create new productive jobs. Just to provide an idea of the order of magnitude of the challenge, 20 million young people are expected to join the MENA workforce by 2025 [24].

As rightly pointed by MENA hydrocarbon producers' economic diversification strategies, small and medium enterprises (SMEs) could play an instrumental role in tackling this challenge, given their potential to create jobs and foster innovation.

However, SMEs in the MENA region continue to face important obstacles, not least limited access to finance - an area where the region has the largest gap in the world. A recent World Bank/Union of Arab Banks survey of over 130 MENA banks shows that only 8% of lending goes to SMEs across MENA, and even less in GCC countries (2%). This is substantially lower when compared to the middle-income countries lending average of 18% and high-income countries average of 22% [25].

Solving SMEs' financing problem is therefore key for the implementation of economic diversification strategies in the region. The IMF [26] estimates that solving this problem would indeed create more than 15 million new jobs in the region by 2025.

The first action to be taken to unlock financing for SMEs concerns the development of the financial sector. In several MENA hydrocarbon producers, banks are poorly capitalised, since the revenues from oil and gas flow directly from national oil companies to the government, bypassing the domestic banking system. As a result, the economy can be capital-rich and a net international saver in the hydrocarbons sector, but capital-poor and reliant on either foreign lending or family savings in the rest of the economy. A well-regulated and adequately capitalised banking system integrated into global financial markets would then play an important role with this regard. This also entails the development of financial regulatory and supervisory frameworks, with adequate incentives for SME financing.

Secondly, alternative channels of SME financing might be developed [27]. This includes the development of capital market instruments to mobilize savings and channel them to SMEs (directly or through various financial intermediaries); a large and diversified investor base and broader capital market development; adequate financial infrastructure and legal frameworks; and regulatory and supervisory frameworks that support the safe development and integrity of capital markets and fintech-supported SME financing [25]. An important alternative channel of SME financing might be represented by Sovereign Wealth Funds (SWFs).

MENA hydrocarbon producers own some of the largest SWFs in the world (Table 4). These funds could be used to strategically invest in SMEs, instead of being used as tools to perpetuate the rent via financial or real estate speculation. Given their size, SWFs could well be the main driver of economic diversification in these countries, should their investment strategies be refocused on local production and on the expansion of SMEs.

Saudi Arabia has been a first mover in the area. A year after the launch of its 'Vision 2030', the country outlined the key role of the Public Investment Fund (PIF) in the implementation of its economic diversification strategy, and even defined the Fund as 'the engine behind economic diversity' in the country [28]. In this context, the Fund – generally known for its multi-billion investments in companies such as Tesla and Uber – set up a USD 1.1 billion 'fund of funds' to support the development of SMEs in the country [29]. Albeit it is still too early to assess the impact of this move, it seems to pave the way for a new utilisation of SWFs in the region, which should be further developed in the future.

5. Conclusions

This article illustrated the persistent over-reliance of MENA hydrocarbon producers on the hydrocarbon rent. Making use of the

Table 4
MENA Sovereign Wealth Funds.
Source: author's elaboration on Sovereign Wealth Funds Institute, accessed in May 2019.

Sovereign Wealth Fund	Total Assets (USD Billion)
Abu Dhabi Investment Authority	683
Kuwait Investment Authority	592
SAMA Foreign Holdings (Saudi Arabia)	515
Saudi Public Investment Fund	360
Qatar Investment Authority	320
Investment Corporation of Dubai	233
Mubadala Investment Company	226
National Development Fund of Iran	91
Libyan Investment Authority	66[a]
Emirates Investment Authority	45
Oman State General Reserve Fund	18
Mumtalakat Holding	15
Oman Investment Fund	6
Development Fund for Iraq	0.9
Sharjah Asset Management	0.8

[a] Most of these assets have been frozen since 2011 due to United Nations sanctions.

analytical framework provided by the RST, it shown the delicate equilibrium underpinning the interplay of hydrocarbons, economics and politics in these countries – also explaining the historical failure of these countries in diversifying their economies. The article then presented the ambitious economic reform programmes adopted by MENA hydrocarbon producers since the drop in oil prices began in 2014, suggesting a positive view on their implementation prospects. A view based on the assumption that while in the past the only argument for economic diversification was the risk of oil market volatility, today two additional arguments have emerged: the uncertainty regarding the speed of the global energy transition (and therefore the long-term sustainability of the hydrocarbons rent), and the pressing need to create jobs opportunities for a large and youthful population. The combination of these three arguments might well turn out to be decisive in firmly committing MENA hydrocarbon producers' leaderships in implementing their respective economic diversification strategies. The global energy transition might then turn out to be a positive input for MENA hydrocarbon exporters, a stimulus to consider economic diversification as an unavoidable pathway, to be pursued in order to guarantee future economic prosperity in any scenario – and therefore even in a low-carbon world scenario.

References

[1] D. Yergin, The Prize: the Epic Quest for Oil, Money and Power, Simon and Schuster, New York, 1991.
[2] UNFCCC, Paris Agreement, (2015) available online at: www.unfccc.int.
[3] BNEF, New Energy Outlook, (2018) (London).
[4] IEA, World Energy Outlook 2018, IEA/OECD, Paris, 2018.
[5] Lazard, Levelized Cost of Energy and Levelized Cost of Storage 2018, (2018) (Paris).
[6] BP, BP Statistical Review of World Energy 2018, (2018) (London).
[7] EIA, Annual Energy Outlook 2018 with Projections to 2050, (2018) (Washington, D.C).
[8] Carbon Tracker, Statement on BP Energy Outlook 2018, (2018) (London).
[9] IEA, Outlook for Producer Economies, IEA/OECD, Paris, 2018.
[10] IRENA, The Geopolitics of the Global Energy Transformation, (2019) (Abu Dhabi).
[11] IMF, *Economic Diversification in Oil-Exporting Arab Countries*, Prepared by Staff of the IMF for the Annual Meeting of Arab Ministers of Finance, (2016) Manama, April 2016.
[12] CIA, The World Factbook, (2019) (available online).
[13] IMF, Public Wage Bills in the Middle East and Central Asia, (2017) (Washington D.C).
[14] S. Hertog, *The Private Sector and Reform in the Gulf Cooperation Council*, LSE Kuwait Programme on Development, Governance and Globalisation in the Gulf States, The London School of Economics and Political Science, London, 2013.
[15] World Bank, Ease of Doing Business Report 2019, (2019) (Washington, D.C).
[16] H. Mahdavy, Patterns and problems of economic development in rentier states: the case of Iran", in: M.A. Cook (Ed.), Studies in Economic History of the Middle East, Oxford University Press, Oxford, 1970.
[17] H. Beblawi, G. Luciani (Eds.), The Rentier State: Nation, State and the Integration of the Arab World, Croom Helm, London, 1987.
[18] M. Hvidt, *Economic Diversification in GCC Countries: Past Record and Future Trends*, Kuwait Programme on Development, Governance and Globalisation in the Gulf States, (2013) (London).
[19] T. Lynn Kar, Paradox of Plenty, University of California Press, Oakland, 1997.
[20] M.S. Ben Ali (Ed.), Economic Development in the Middle East and North Africa: Challenges and Prospects, Palgrave Macmillan, London, 2016.
[21] G. Luciani (Ed.), Resources Blessed: Diversification and the Gulf Development Model, Gerlach Press, Berlin, 2012.
[22] U. Dadush, M. Demertzis, Youth Unemployment: common Problem, Different Solutions? Bruegel Blogpost, 2018 November 29, Brussels.
[23] ILO, World Employment Social Outlook 2018, (2018) (Geneva).
[24] WEF, Poor Access to Finance Is Holding Back Businesses in MENA, This is how we can help them, Geneva, 2019.
[25] IFC, Overcoming Constraints to SME Development in MENA Countries and Enhancing Access to Finance, (2017) (Washington, D.C).
[26] IMF, Financial Inclusion of Small and Medium-Sized Enterprises in the Middle East and Central Asia, (2019) (Washington D.C).
[27] World Bank, IMF and OECD, Capital Market Instruments to Mobilize Institutional Investors to Infrastructure and SME Financing in Emerging Market Economies, Report for the G20, Washington, D.C. and Paris, 2015.
[28] PIF, The Public Investment Fund Program, (2017) (2018-2020), Riyadh.
[29] Bloomberg, Saudi Sovereign Fund Creates $1.07 Bln "fund of Funds" to Back SMEs, (2017) (London).
[30] Kingdom of Saudi Arabia, Budget Statement Fiscal Year 2019, Riyadh, 2019.
[31] Qatar Planning and Statistics Authority, *Qatar Economic Outlook 2018-2020*, Issue Number 11, Doha, 2018.