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LOOKING BEYOND PETROLEUM: A STRONGER CASE FOR ECONOMIC DIVERSIFICATION IN MENA REGION [1]

1. It is widely admitted that specialization in a single economic sector, understood as the antonym of diversification, is a source of high risks. If the single sector involves natural resources extraction such as petroleum these risks stem first and foremost from the exposure to the uncertainties of the international markets. The resulting vulnerability to external factors, together with other "resource curse" pathologies such as "Dutch disease" (the crowding out of the non-petroleum tradable sector as a result of the appreciation of the real exchange rate) or "rent-seeking" (the process by which some economic agents influence or manipulate governments' economic policies to their sole interests and benefits) are well documented in economic literature. According to Andrew Rosser (2006:7) who reviewed extensively the topic: [2]

> Rather than a blessing, this literature has suggested that [dependence on an abundant natural resource] increases the likelihood that countries will experience negative economic, political and social outcomes including poor economic performance, low levels of democracy, and civil war.

Among the wide variety of policy recommendations on how to avoid these conditions, a great deal emphasize economic diversification to reduce natural resource dependence and support sustainable long-term economic growth and employment creation.

2. Although economic diversification has often been discussed within the MENA region, it has neither been translated into concrete governments' policies - barring very few exceptions - nor has the urgency for it gained enough momentum. In order to provide a stronger case for it, this commentary highlights three critical issues: The first is the false sense of abundance of petroleum resources. Indeed, in the absence of significant alternative assets, petroleum revenues will hardly meet fast growing fiscal demands. The second is the daunting task of stabilizing these revenues in a context of unrelenting oil markets volatility. The third is the petroleum industry's inability to provide sufficient jobs, which is at variance with its strong economic weight. This being established, the key question becomes what should constitute a viable pattern of diversification in the MENA countries.

MENA overwhelming dependence on petroleum

3. As usual in this commentary, the MENA region is defined to include the Arab world and Iran. However, as the focus will be on oil and gas producing countries, it is relevant to note that in 2006 these countries represented 82% of the total MENA population and 91% of its aggregate GDP.

4. One should also define diversification, which means different things to different economists. Those involved in political economy would agree that it is the process that leads to a growing range of economic outputs being produced. They would further add diversification of export markets and that of fiscal revenue sources. In this sense diversification can be relatively easily measured. In 2006, the petroleum sector

(oil, gas and hydrocarbon derivatives) accounted for 36% of total value added of the MENA region, 82% of export revenues and 71% of governments' fiscal receipts, making the region still overwhelmingly dependent on petroleum.

5. Obviously, the above averages conceal significant variations shown in the 3-D Figure below (flattened to two dimensions for clarity). Each key country is plotted using the share of its petroleum industry in a) GDP, b) exports and c) fiscal revenues. The least diversified countries - those lying above MENA average - are Qatar, Kuwait, Saudi Arabia and Oman. Within the GCC area, the UAE appears relatively more diversified. In between lies countries endowed with additional natural resources or assets such as Algeria and Iran. By comparison, Norway – which has had a consistent policy of reduction of its dependence on petroleum revenues – can be seen as having achieved a significant degree of diversification. [3]

Petroleum share in GDP — APICORP Research
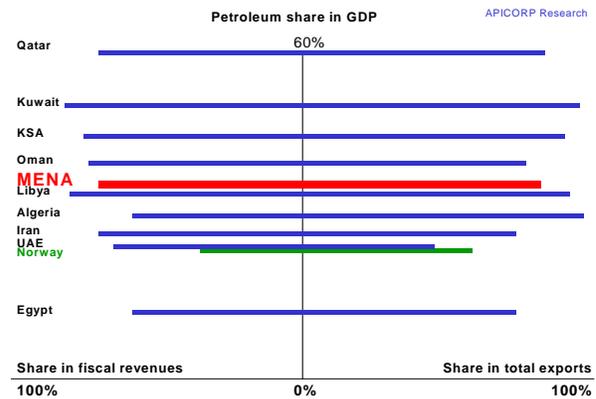
The limits to petroleum rents

6. As mentioned earlier, the first critical issue that needs to be highlighted is the limited extent of the petroleum rents to meet long-term fiscal demands in face of rapidly expanding populations. The main determinants of petroleum rents (simply defined as revenues above factor costs) are very complex and difficult to discuss in any detail here. However, to facilitate a long-term trend analysis, assumptions need to be made regarding reserves, production and costs. These factors, together with the evolution of exports and prices, and how revenues are shared between governments and the petroleum industry, are briefly discussed below.

7. *Reserves.* MENA's proven oil and gas reserves total 190 billion toe (58% crude oil and 42% natural gas). Their life expectancy (the ratio of proven reserves to current production) is about 100 years starting in 2006. Although this ratio is static (in the sense that it does not account for future discoveries), it provides a timeframe for the analysis.

8. *Domestic demand.* Domestic primary energy demand is assumed to be met by domestic production. This demand, including the own use of the petroleum industry, will continue to grow at an average rate of 4% per year until 2015 and decrease by steps, first to 3.5% until 2030, then 3% until 2050, moderating much further afterwards.

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[1] This commentary has been prepared to support a communication by APICORP to the 7th Doha Forum on Democracy, Development and Free Trade (23-25 April 2007). This is a generalization to the MENA region of an original analysis developed by Ali Aissaoui in *Algeria: The Political Economy of Oil & Gas*, Oxford Institute for Energy Studies (2001).
[2] Andrew Rosser (April 2006), *The Political Economy of the Resource Curse: A Literature Survey*, Centre for The Future State & Institute of Development Studies, Working Paper no. 268.

[3] Øystein Noreng (November 2004), "Norway: Economic Diversification and The Petroleum Industry", *MEES* Vol. 47 No 45.
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9. Exports. Petroleum exports - a mix of crude oil, condensate, oil products, LPG and natural gas (in both LNG and pipeline gas) - can be expected to continue to build up in line with recent trends at 2.5% per year until 2015, then be constrained by a plateau in overall production the following 30 years or so, before declining with production at a rate of 1.35% per year.

10. Price structure. Despite deregulation and liberalization of the main international markets, prices of the MENA export products are assumed to continue moving together. Taking into account the price structure of recent years, the resulting ratio of the average export price (in $/boe) to the price of Brent (taken as a benchmark) (in $/bl) is set at 0.75.

11. Petroleum rents. These are captured through taxation. With a current average full cost of production of $3/boe, a royalty on production of 16.25% and a tax on profit tax 75%, governments' share of the value of production is expected to be around 65%. Furthermore, as domestic prices are set against the industry's average costs, the rent basically derives from the value of exports.

12. The figure below illustrates a "base case" scenario where production is increased until 2015 to a plateau to be sustained over 30 years (a costly assumption in the absence of major new discoveries). Despite the mitigating effect of discounting, this scenario highlights the critical period around 2045 as the inflection points after which production ceases to meet part of domestic requirements and therefore exports.
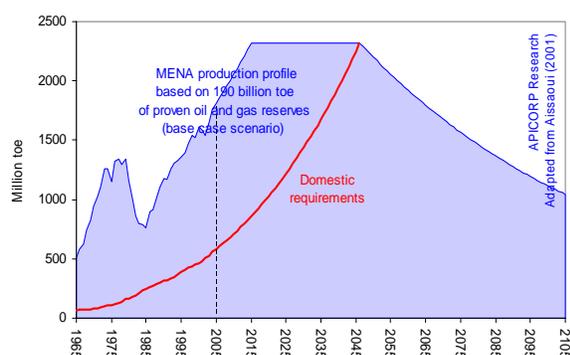
13. This rather simple but illustrative scenario provides a broad range of expected revenues. Based on a discounting factor of 10% reflecting expected inflation, the net present values (NPV) of export-generated rents vary from 2.53 to 4.42 of current GDP (2006) (Table below). However, these possible outcomes cannot be translated into policy guidelines, unless population dynamics is factored in.

Period 2006-2045	Export generated rents assuming a nominal discounting factor of 10%		
Dated Brent price (US$/bl)	40.0	55.0	70.0
MENA export price (US$/boe)	30.0	41.25	52.5
NPV of revenues (Billion $)	3,820	5,250	6,680
NPV of revenues over 2006 GDP	2.53	3.47	4.42

APICORP Research – Adapted from Aissaoui (2001)

14. By mid-century, MENA's population would have more than doubled, increasing from 408 million in 2006 to 828 million in 2050. To maintain the rent per capita constant at its 2006 level of $6850 over the next 40 years or so, the MENA region needs a much higher price than the current $60 per barrel of light sweet crude. The resulting NPV of $10,920 per capita corresponds to a price of $90/boe for the export mix, that is $120/bl for Dated Brent.

15. As governments can hardly influence world energy markets to that extent, securing higher petroleum rents through higher oil prices is probably not realistic. A more viable option is to consider capturing additional rents downstream in the domestic market. But will this make a difference?

Will downstream rents make a difference?

16. In simulating the rents generated by the exploitation of hydrocarbons, it has so far been assumed that energy supply to the domestic market is priced at cost recovery level. However, MENA governments can capture, through a more appropriate domestic pricing regime, the portion of the resource rents so far relinquished to the downstream industry, particualrly the petrochemical sector.

17. In a context where the region's governments are keen to articulate new policies to shape future energy consumption patterns, energy prices should become key instruments. This is more notable for natural gas whose current prices are far too low by any measure (Table below).

	2006 Average base price (US$/MBtu)	Expected annual escalation for the period 2007-2011	Annual escalation to increase price to US$1.50 in 2011
Algeria	0.65	3.0%	18%
Egypt	1.00	A[1]	8%
Iran	0.75	-	15%
Kuwait	1.25[2]	3.7%	4%
Libya	0.50	-	25%
Oman	0.80	2.0%	13%
Qatar	1.25[2]	-	4%
Saudi Arabia	0.75	1.2%	15%
UAE	1.10	2.0%	6%
UAE Dolphin	1.30	1.7%	3.0%

[1] Actual price from netback value of exported final products
[2] Assumption for new gas-based export projects

APICORP Research - Industry estimates

18. Ideally, gas prices should be determined by competitive markets. However, in spite of a move towards price deregulation, such a prospect remains distant. For the time being, the MENA average weighted price (currently US$0.90/Mbtu) is well below the replacement cost of some US$1.50/mBtu or the average netback export price of US$4.00/mBtu (under the 2006 oil price conditions). At constant prices, the respective differences of US$0.60/mBtu and US$3.10/mBtu give the corresponding net benefits available to the government to appropriate. Based on future volumes of tradable gas on the domestic market (roughly half the primary energy demand), the NPV value of non-captured rent varies from 0.13 to 0.65 of current GDP (2006) (Table below).

Period 2006-2045	Non-captured domestic rent assuming a discounting factor of 10%	
Price differentials ($/MBtu)	0.60	3.10
NPV of revenues (Billion $)	190	980
NPV of revenues over 2006 GDP	0.13	0.65

APICORP Research – Adapted from Aissaoui (2001)

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19. Accordingly, although based on sounder pricing policies that could result in more efficient allocation of petroleum resources, capturing the portion of the resource rents so far relinquished to the downstream industry will not make a great impact on future fiscal revenues.

The daunting task of stabilizing revenues

20. Whatever the outlook for enhancing petroleum fiscal revenues, these will continue to be subject to unpredictable adverse developments in the world oil and gas markets. Therefore, the most challenging task facing governments in the region is stabilizing export-generated petroleum revenues, which can be envisaged along three main paths:

21. *Stabilizing oil prices.* This path, followed by OPEC member countries, has led to a collective oil production management policy. Although OPEC has gained enough market power and sophistication to be able to protect its members' economic interests against price downside risk, its capacity to stabilize prices in this way is bound to be inefficient without broader consensus and stronger discipline (see *Econmic Commenatry* Vol. 2 No. 2).

22. *Removing price uncertainties.* Making revenues more predictable can be done through hedging. However, the only well documented example of a large hedging by a sovereign oil producer is the case of Mexico (on the eve of the 1991 Gulf war). Even though this experience has been reported as reasonably cost-effective for the Mexican Treasury, it may not be relevant for other producers. The issue is not so much the cost-benefit of a discrete operation than the need to ensure continuity of fiscal policy within a long-term framework.

23. *Smoothing income flows.* This can be achieved through stabilization funds. In these schemes, hydrocarbon revenues in excess of budget requirements are saved to reduce the impact of fluctuating receipts. Algeria, Iran, Libya, Oman and Qatar have all established such funds under various denominations. Others, such as Kuwait, set up funds designed to meet the need of future generations. What the MENA governments have so far achieved with these funds appears to be mixed. Suffice to read IMF literature to note that success depends on the institutional framework, the degree of adherence to the fiscal objectives and operational guidelines, and transparency and accountability.

The inability to provide sufficient jobs

24. Whatever the prospect for the petroleum rents and the extent of their exposure to the volatility of international markets, the one critical issue the expansion of the petroleum industry cannot solve directly is the region's severe unemployment. Despite the paucity of official data, tentative statistics from international organizations put these rates between 12% (ILO) to 15% (IBRD), double the world's average. Furthermore, their distribution is skewed towards the most populated countries, which exhibit unemployment rates higher than 25%. In addition, most countries in the GCC area have been relying heavily on imported labor, while the domestic labor pool is expanding.

25. So far policy prescriptions to tackle unemployment seem to have focused on boosting economic growth. Recent performance – a modest average real growth of 4.1% during the decade 1996-2006 (Table below) - has been insufficient to reduce the number of unemployed and absorb new entrants into the labor market. According to these policies, given a population growing at a rate of 1.6% and an active population growing at 3.6% per year, it would take a sustained 7% to 8% growth of GDP over the next decade to stabilize then reverse current aggravating trends.

	Unit	MENA	World
Population	mn	406	6,500
Population growth	%	1.58	1.14
Employment to population ratio	%	47	61
Labor force participation	%	54	66
Real GDP Growth 1996-2006	%	4.1	4.6
Employment growth 1996-2006	%	3.6	1.6
Unemployment	%	12.2	6.7
APICORP Resaerch using ILO database			

26. However, as long as the petroleum sector remains the main economic engine, growth alone cannot reverse the trend of rising unemployment. The most apparent cause is the low labor content of the value added of this sector, which is highly technological and capital intensive and extraordinarily productive. As noted before, while the value added of the petroleum industry represents 36% of the region's aggregate GDP, its contribution to employment when counting in all petroleum-related activities is less than 5%.

What possible pattern of diversification?

The following suggests a possible pattern of diversification:

27. *Diversification inside the petroleum industry.* Both APICORP's medium term and the IEA's long term reviews of energy investments in the MENA region have underscored much higher levels of capital requirements.[4] This will involve even greater requirements of goods and services by the petroleum industry. In this context the MENA private sector should be encouraged to seize such opportunities within the framework of policies aimed at developing oil services and oil supply industries with local content.

28. *Diversification outside the petroleum industry.* Improved productive capacity of the private sector is also a must outside the petroleum sector. This should help stimulate greater non-petroleum output, bring new fiscal resources to complement the petroleum rents, contribute to the expansion of export markets beyond petroleum products and offer longer-term solutions to unemployment through the promotion of more labor-intensive activities.

29. *Regional cooperation* is a further means of diversification. Its potential stems from the economic and social diversity of key countries and areas within MENA. This should enhance the complementarity of their economies in terms of labor markets and sources of goods and services.

Conclusions

30. Three main arguments have been advanced to make a stronger case for economic diversification in the MENA region and to focus attention on its urgency. The first has established the limited extent of the petroleum revenues to meet long-term fiscal demands in face of fast growing populations. The second has highlighted the difficulty of stabilizing these revenues in face of extreme market volatility. The third has shown the extent of unemployment and the limited impact economic growth can make as long as the petroleum sector remains dominant.

31. Economic diversification is the key. It is a long-term process that has to be set on an urgent timetable, combining strategy, policy and politics. The strategy should embrace the three-pronged pattern suggested. Policy should focus on further improvement of the investment climate and involvement of the private sector. Politics should seek to enhance the political feasibility of the resulting reforms.

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[4] For APICORP review see *Economic Commentary* Vol. 1 No. 10. For the IEA review see the 2006 *World Energy Outlook* [2005-2030].