

**ARAB ENVIRONMENT•6**  
**SUSTAINABLE ENERGY**  
PROSPECTS, CHALLENGES, OPPORTUNITIES

المنتدى العربي للبيئة والتنمية  
ARAB FORUM FOR  
ENVIRONMENT AND DEVELOPMENT



البيئة 2013

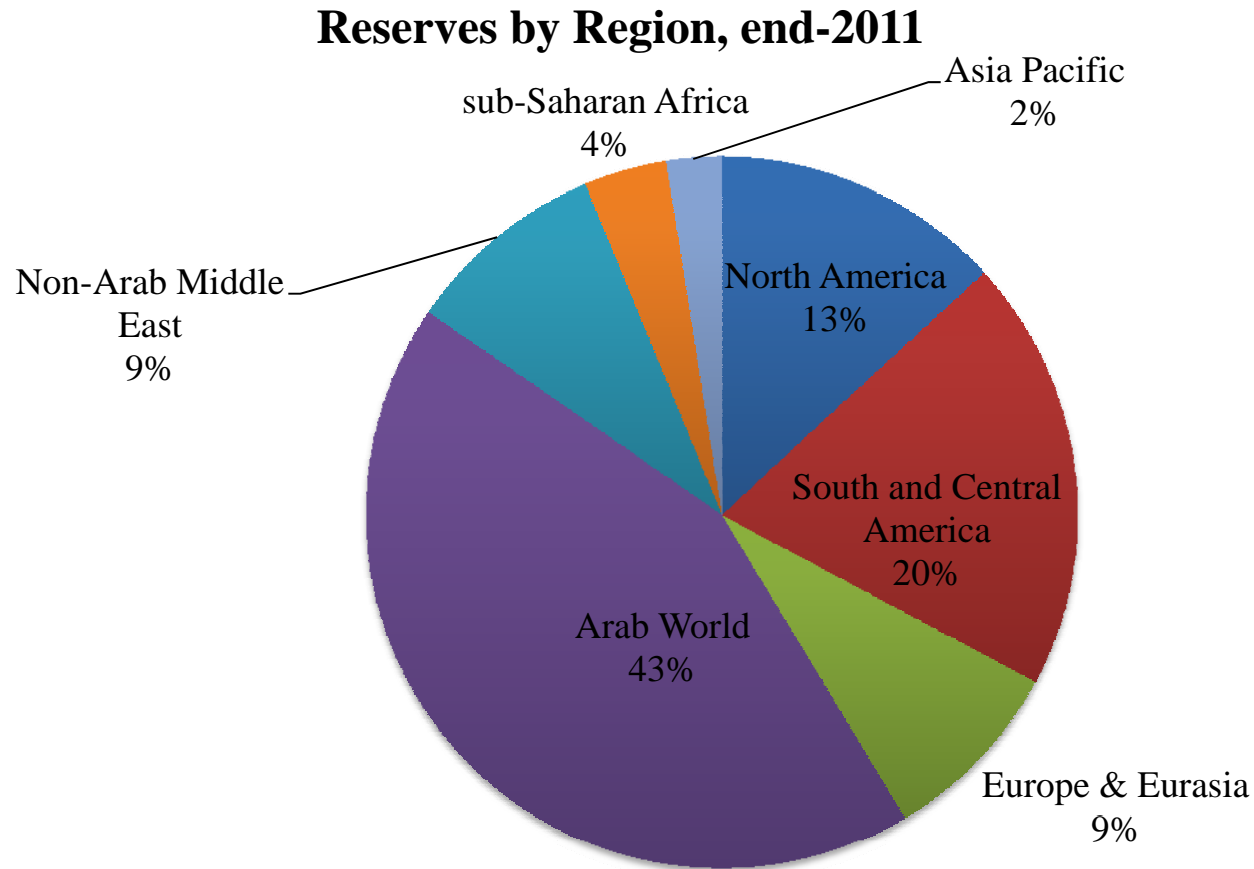
**ARAB ENVIRONMENT 2013**  
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# Arab Oil in the Global and Domestic Context

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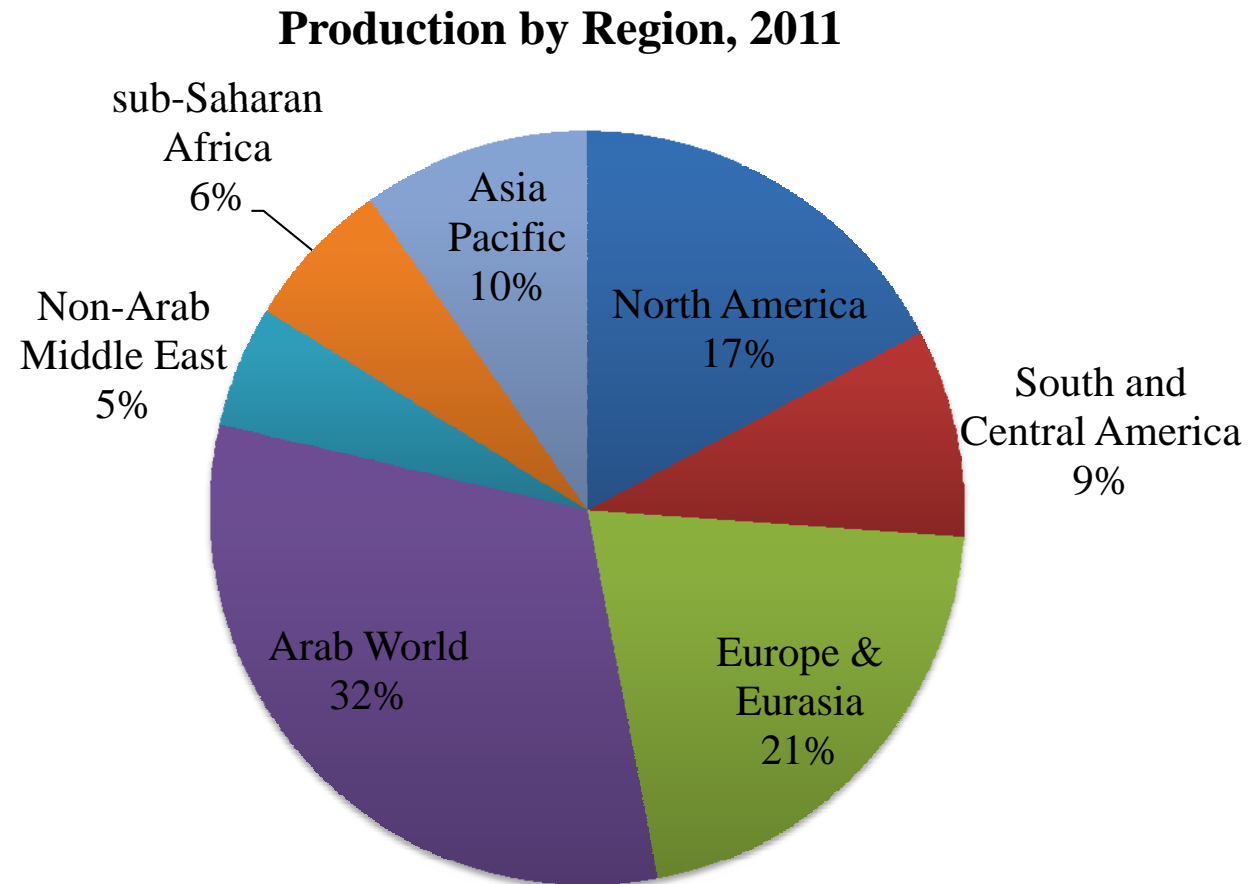
# Role of Arab Oil in International and Domestic Markets

# Arab World Controls the Bulk of World's Proven Reserves



**But Reserves highly concentrated: GCC, Iraq, Libya and Algeria control 98% of Arab World's reserves**

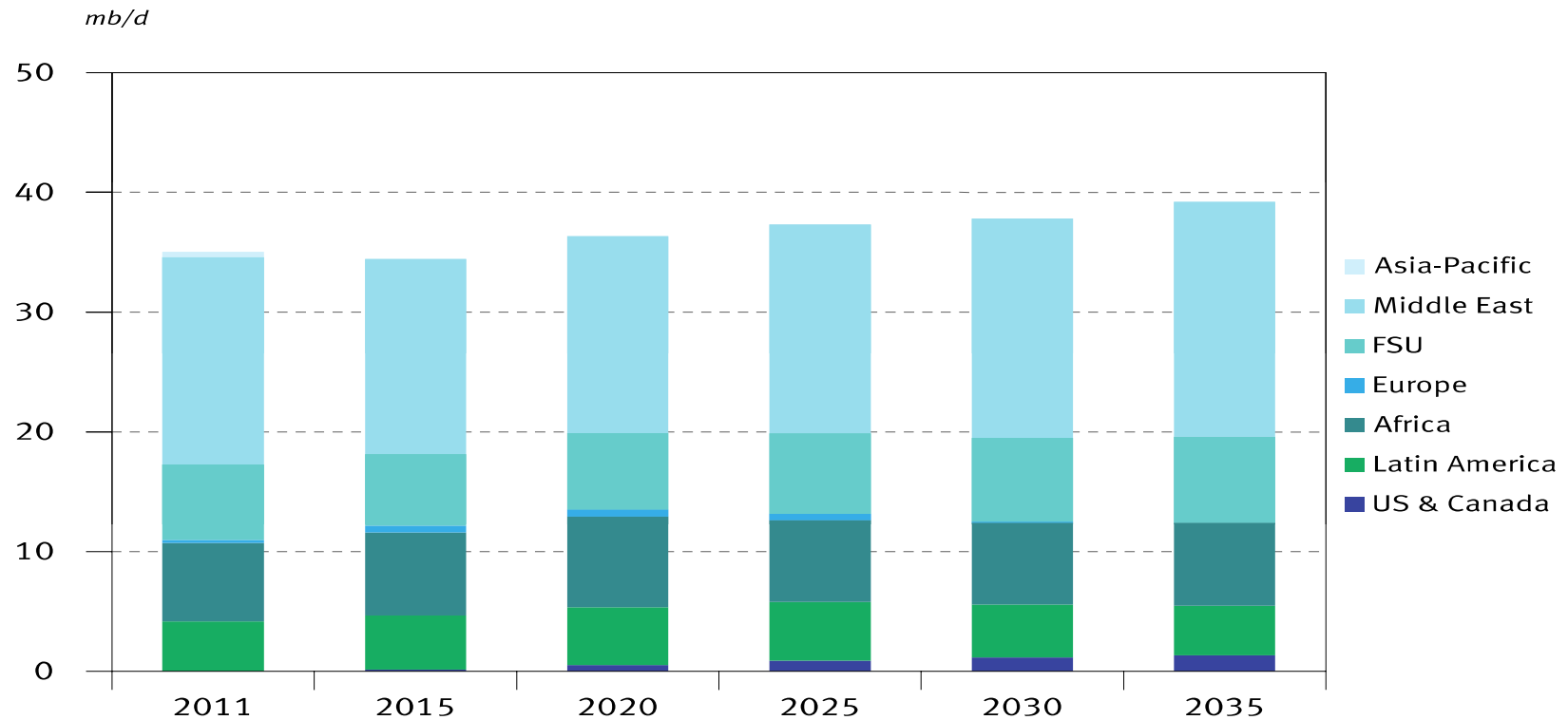
# Arab World Controls Almost Third of World Oil Supply



**Arab world's share in global production did not change in last three decades despite large number of political shocks**

# Dominance in Crude Oil Trade

## Global crude oil exports by origin\*, 2011–2035

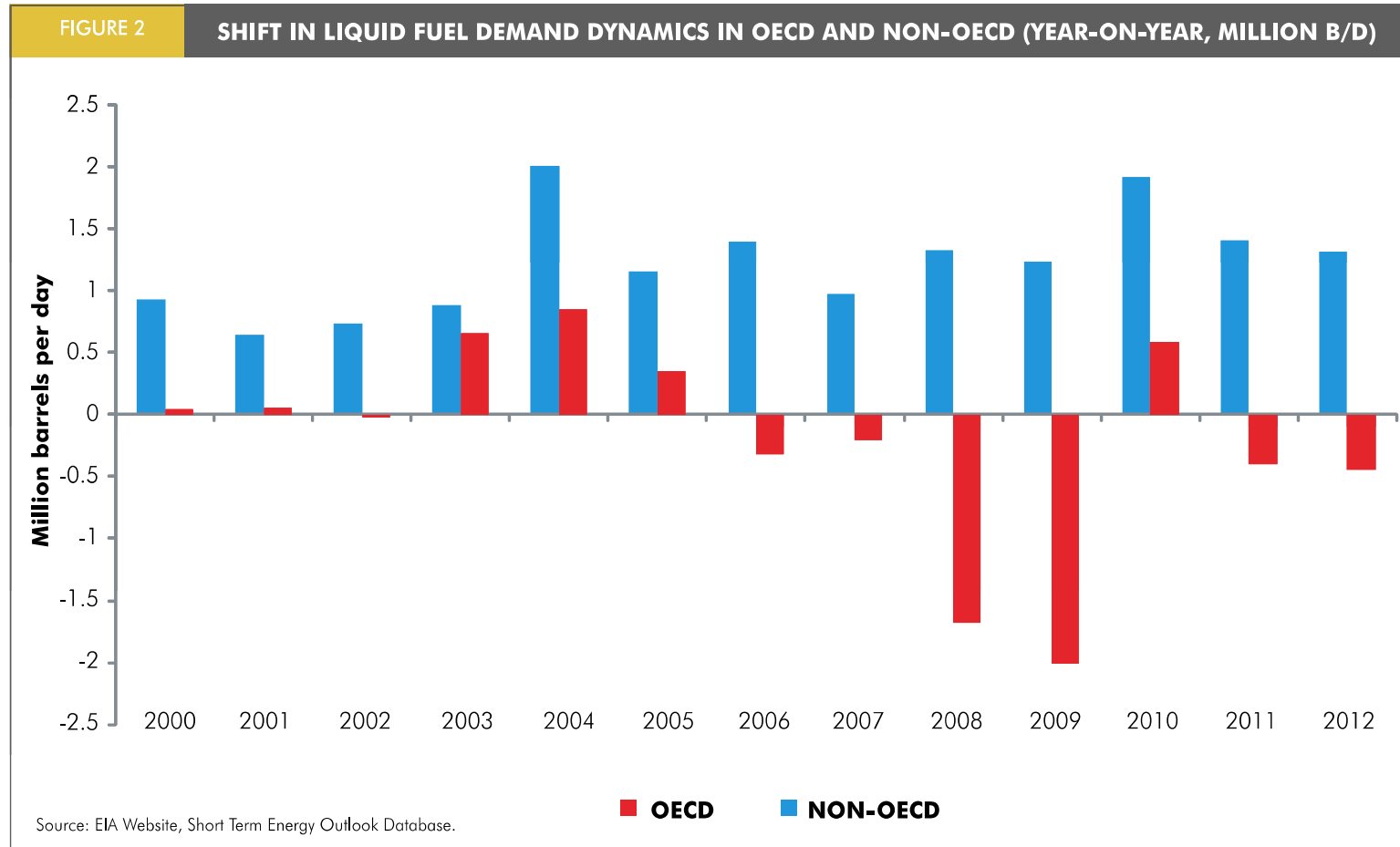


\* Only trade between major regions is considered.

Source: OPEC, World Oil Outlook 2012

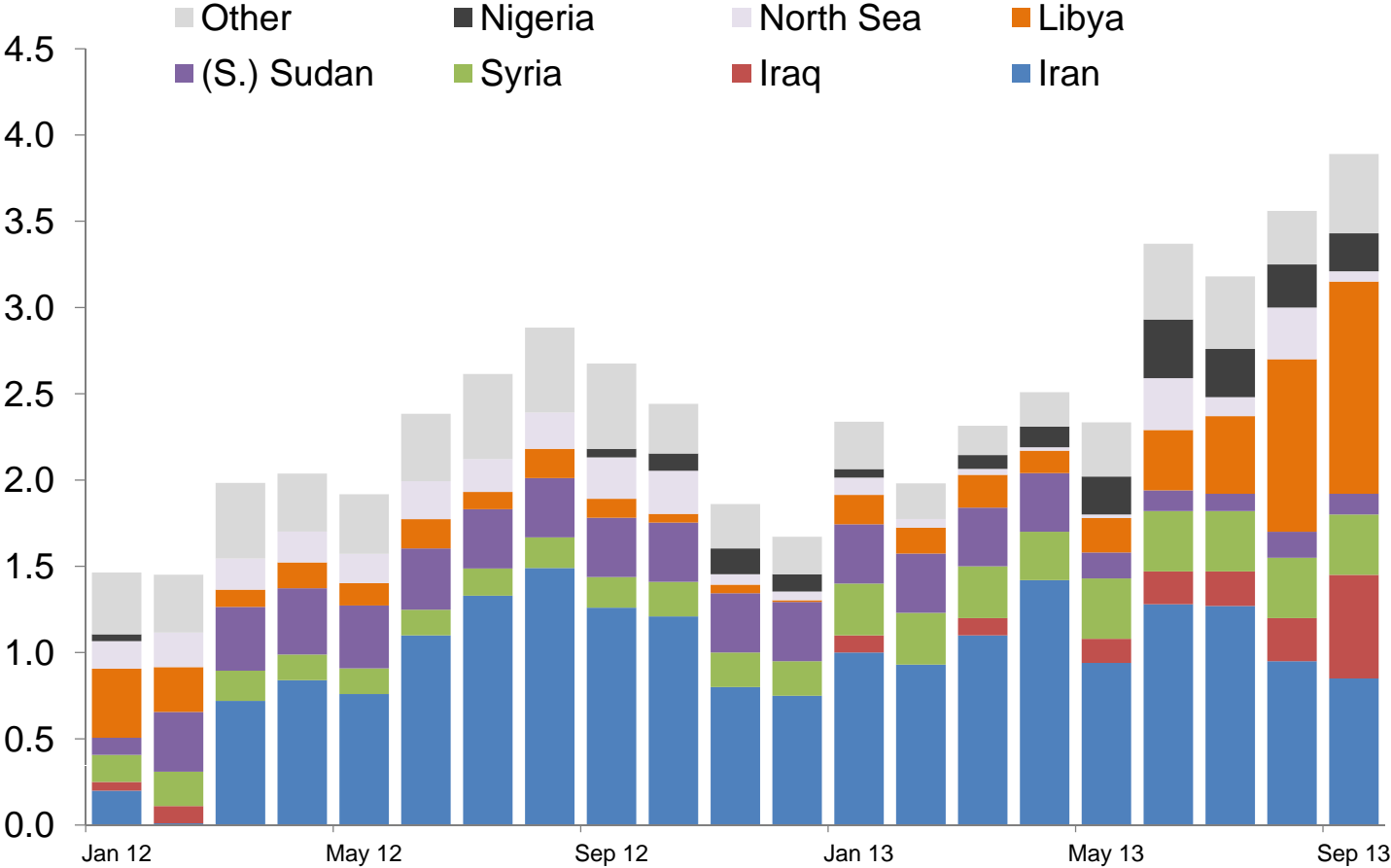
**The Arab world still exports bulk of its production and hence dominates international trade in crude oil (around 40% of crude trade)**

# Shift in Global Oil Demand Dynamics



**For every year in last decade, pace of growth in oil demand in non-OECD outpaced that of OECD, a trend which will consolidate in the future**

# Outages High Mostly from Middle East



**Outages from the region has been high raising concerns among oil importers**

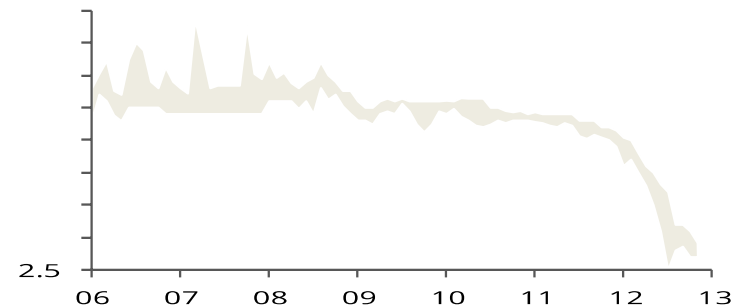
# Swing Producer

**Fig 253: Saudi Arabian oil output, mb/d**

**Fig 261: Libyan oil output, mb/d**

Source: IEA, EIA, Reuters, Bloomberg, Platts, Energy Aspects

**Fig 255: Iranian oil output, mb/d**



Source: IEA, EIA, Reuters, Bloomberg, Platts, Energy Aspects

Source: IEA, EIA, Reuters, Bloomberg, Platts, Energy Aspects

**Saudi Arabia plays an important role as a swing producer balancing the market in period of disruptions and oversupply**



# Low Development Costs

**Table 14.2** ▷ Indicative oil development and production costs in selected countries

	Type of project	Scale of project (mb/d)	Capital cost per barrel of capacity (\$2011/bbl)	Operating cost** (\$2011/bbl)
Iraq	Expansion super giant (south)	1.00	7 000-12 000	2
	New super-giant (south)	1.00	10 000-15 000	2
	Mid-size (north)	0.25	15 000-20 000	2-3
Brazil	Deepwater pre-salt	0.25	70 000-80 000	15-20
Kazakhstan	North Caspian offshore	0.25	70 000-80 000	15-20
Canada	Canadian oil sands with upgrading	0.25	100 000-120 000	25-30

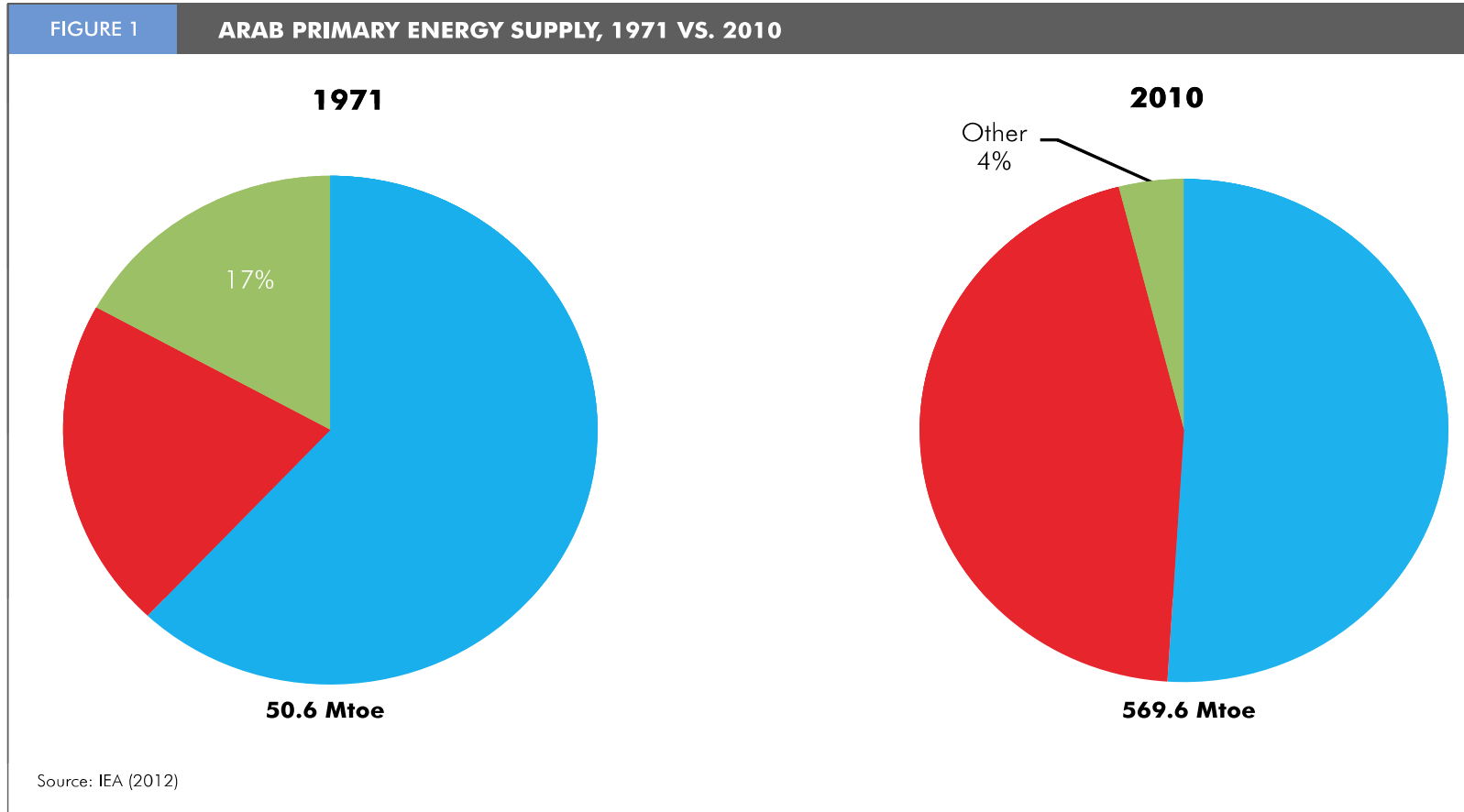
\* Capital cost per barrel of plateau rate production capacity. \*\* Operating cost includes all expenses incurred by the operator during day-to-day production operations but excludes taxes or royalties that might be levied by the government as well as other compensation to the operator, such as remuneration fees.

Source: IEA analysis.

Source: IEA, World Energy Outlook 2012

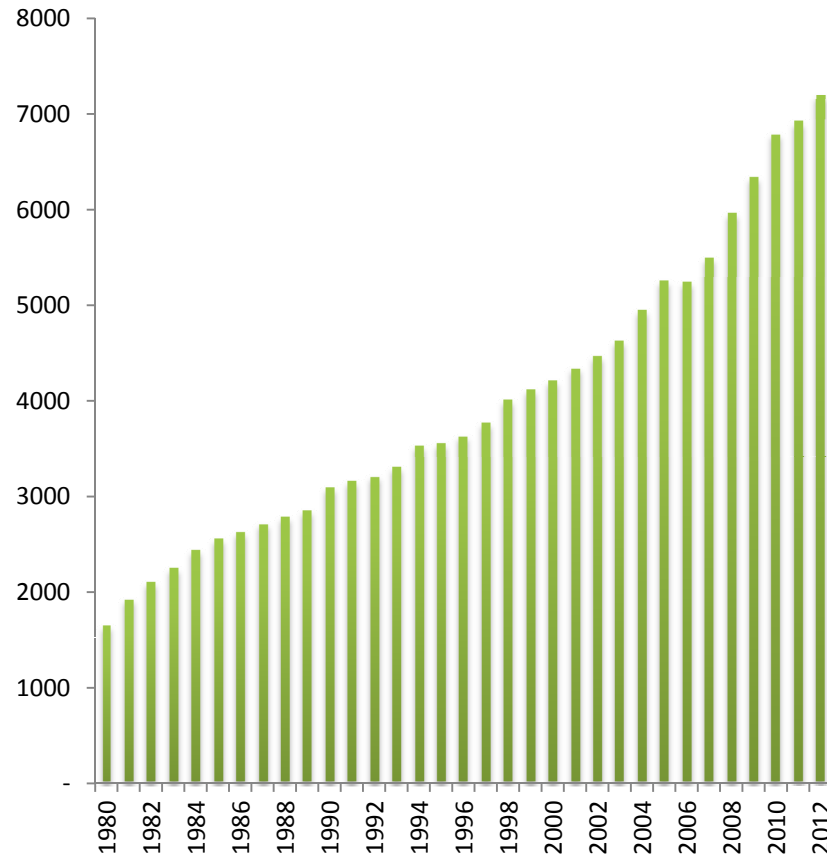
**Gulf oil cheapest in world to extract and therefore can compete at low prices**

# Oil in the Domestic Context

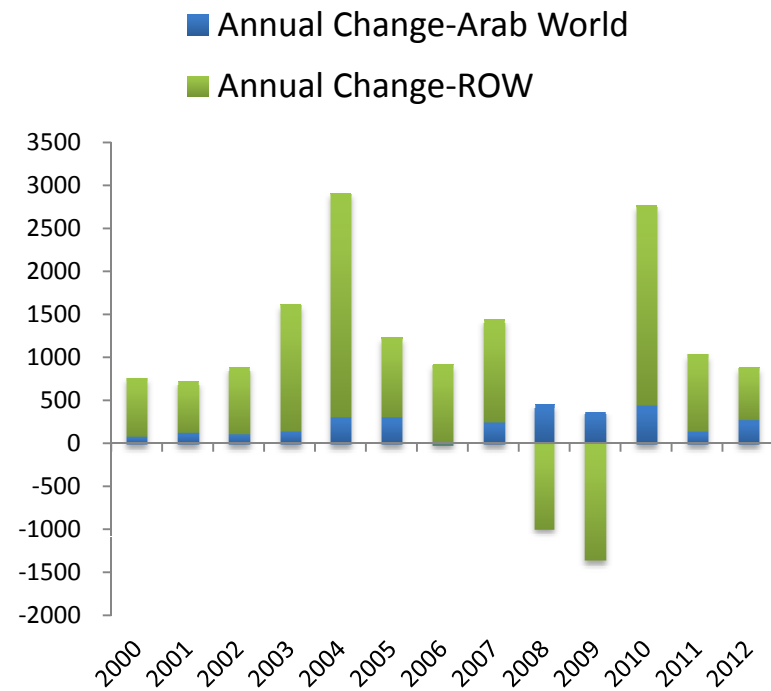


**Despite its decline over the years, oil still constitutes more half of primary energy supplies of the Arab World**

# Region Important Source of Growth Demand



**Arab share of global oil consumption increased from less than 3% in 1980 to more than 8% in 2012**



**Arab countries important source of global demand growth**

# Oil and Development in the Arab World

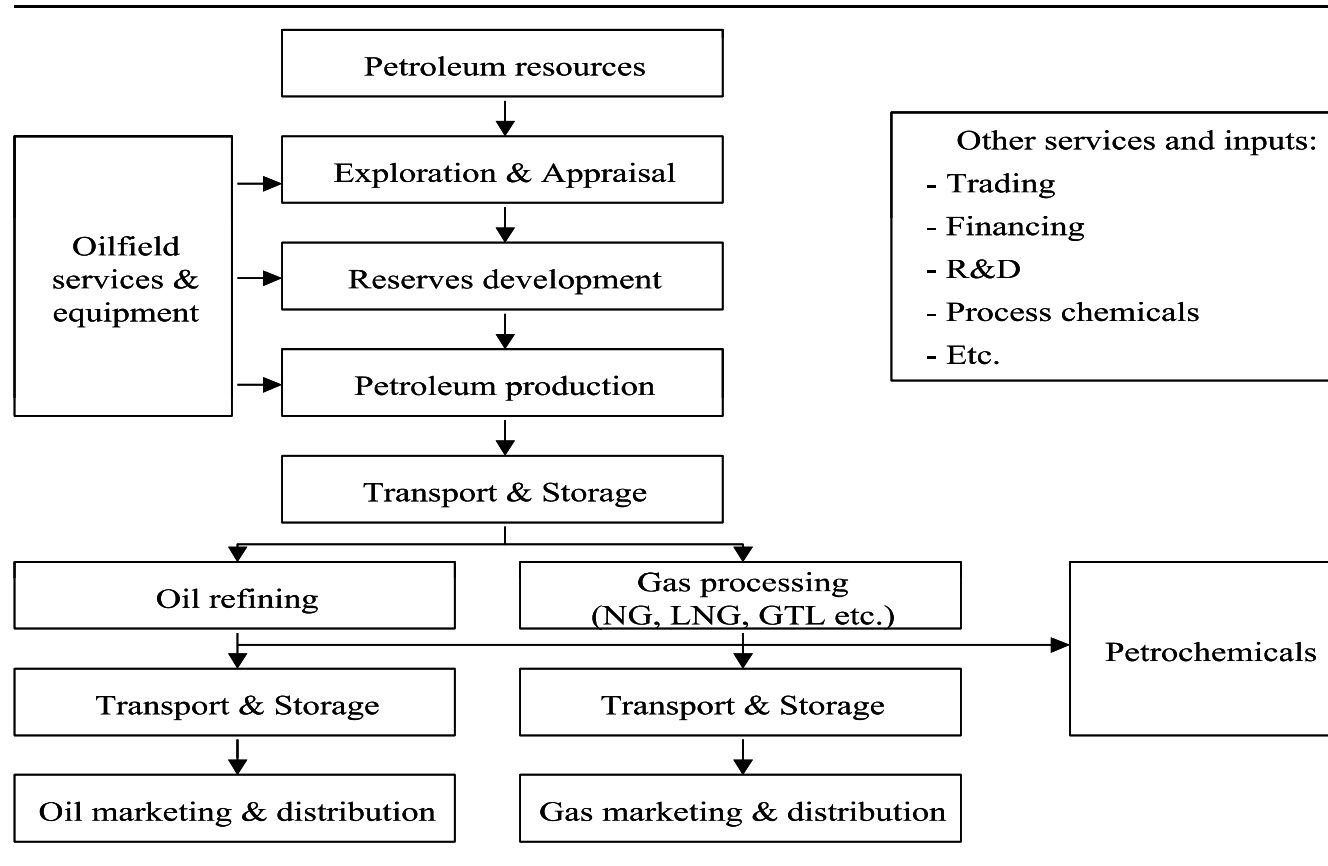
# Oil Wealth: Curse or Blessing?

- Subject of a large and controversial body of literature
- Three general observations
  - Resource-rich economies in region have experienced relatively low per capita GDP growth and high levels of growth volatility
  - In case of GCC economies, per capita growth rates alone do not provide an adequate picture of their achieved levels of overall economic development and social welfare
  - Some Arab oil and gas producers have used their hydrocarbon revenues to spur economic growth and development in more efficient ways than others

**Careful about making wide generalizations about relationship between oil resources, and growth and development in context of Arab world**

# The Framework of Linkages

## Petroleum Value Chain

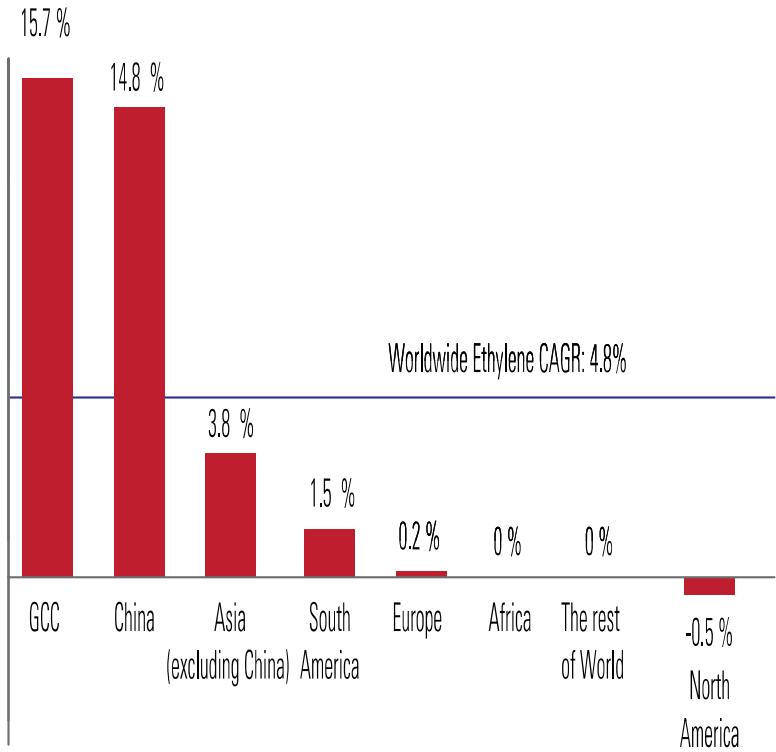


Source: Wolf, 2009

**In theory, oil sector has many linkages and can provide a push for other other key sectors**

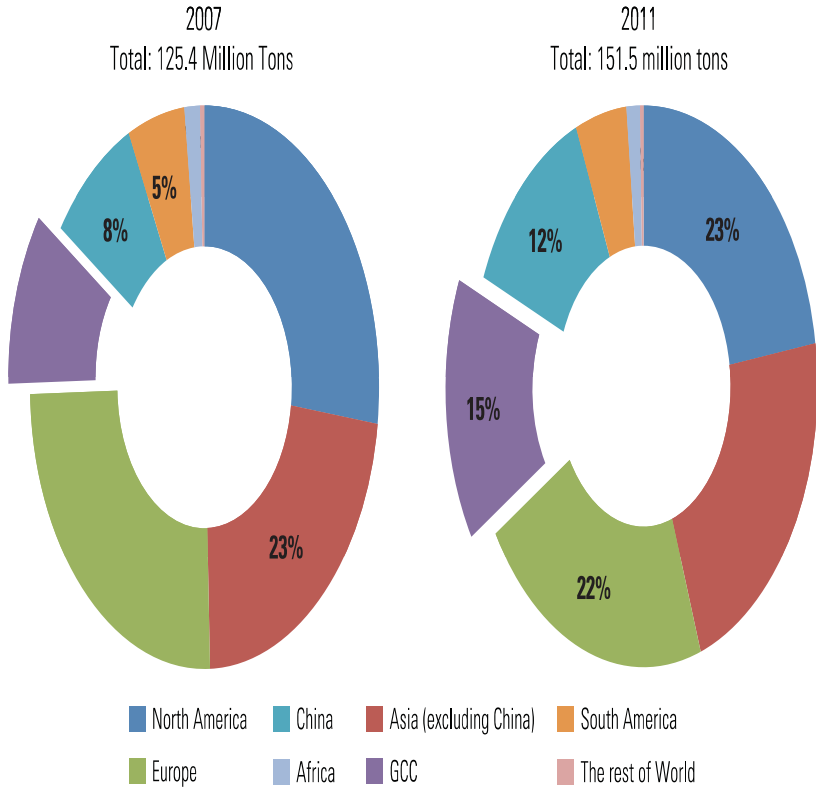
# Forward Linkages: Diversification into Energy Intensive Industries

Worldwide Ethylene capacity growth (CAGR 2007-2011)



Source: Mitsubishi Chemical Techno-Research Corporation (MCTR) and GPCA database

Worldwide Ethylene capacity by region, share (%)



Source: Mitsubishi Chemical Techno-Research Corporation (MCTR) and GPCA database, 2012

**But backward linkages to service sector remain highly underdeveloped**

# Emerging Challenges in the Arab World



# Challenge 1: Investment and Prospects for Capacity Expansion

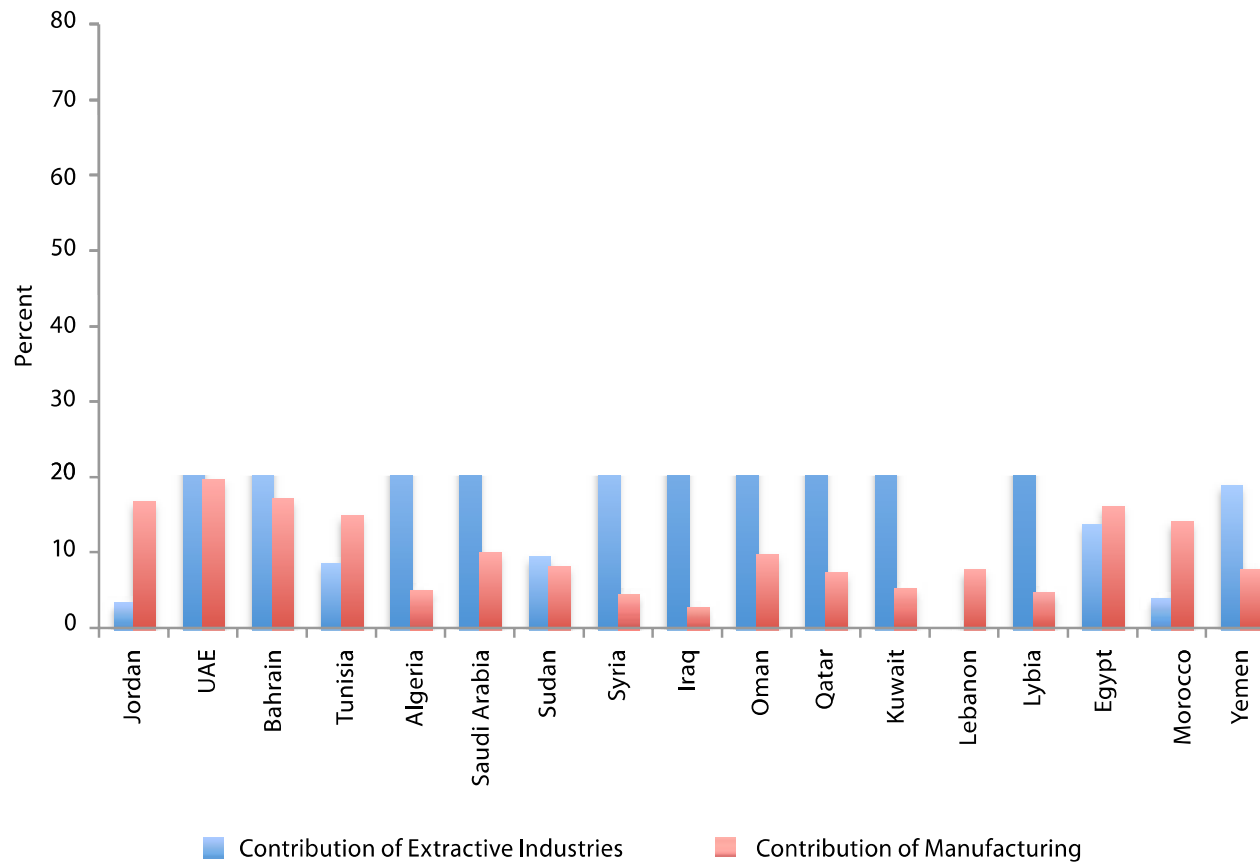
- Two inter-related dimensions
- Regional:
  - Oil revenues continue to play an important role in shaping development path of Arab economies
  - Maintaining a well-functioning oil sector vital to region's economic, social, and political stability
  - For Arab oil producers with declining oil reserves, investment in higher-technology solutions, in order to prolong lifecycle of their producing fields
- Global:
  - International organizations project that much of increase in global oil demand have to be met by increasing supplies from Arab OPEC members
  - Could US tight oil growth change this?

## Do Arab Producers have the Capability to increase Capacity?

- Above ground constraints
  - *Wars and conflict*
  - *Sanctions*
  - *Organisation of oil sector & capability of NOCs*
    - *NOCs in Arab world are not of uniform quality*
  - *Relationship between government and NOC & flow of funds back into sector*
    - *Fiscal system and openness to foreign investment*
  - Inter-generational considerations and optimisation of the reserve base
  - Uncertainty about oil demand
    - Oil substitution policies driven by energy security and climate change agenda
    - Option to wait is high in an environment of high uncertainty

# Challenge 2: Low Level of Economic Diversification

**FIGURE 2: THE CONTRIBUTION OF MANUFACTURING AND EXTRACTIVE INDUSTRIES TO GDP IN 2010**



Source: Arab Monetary Fund

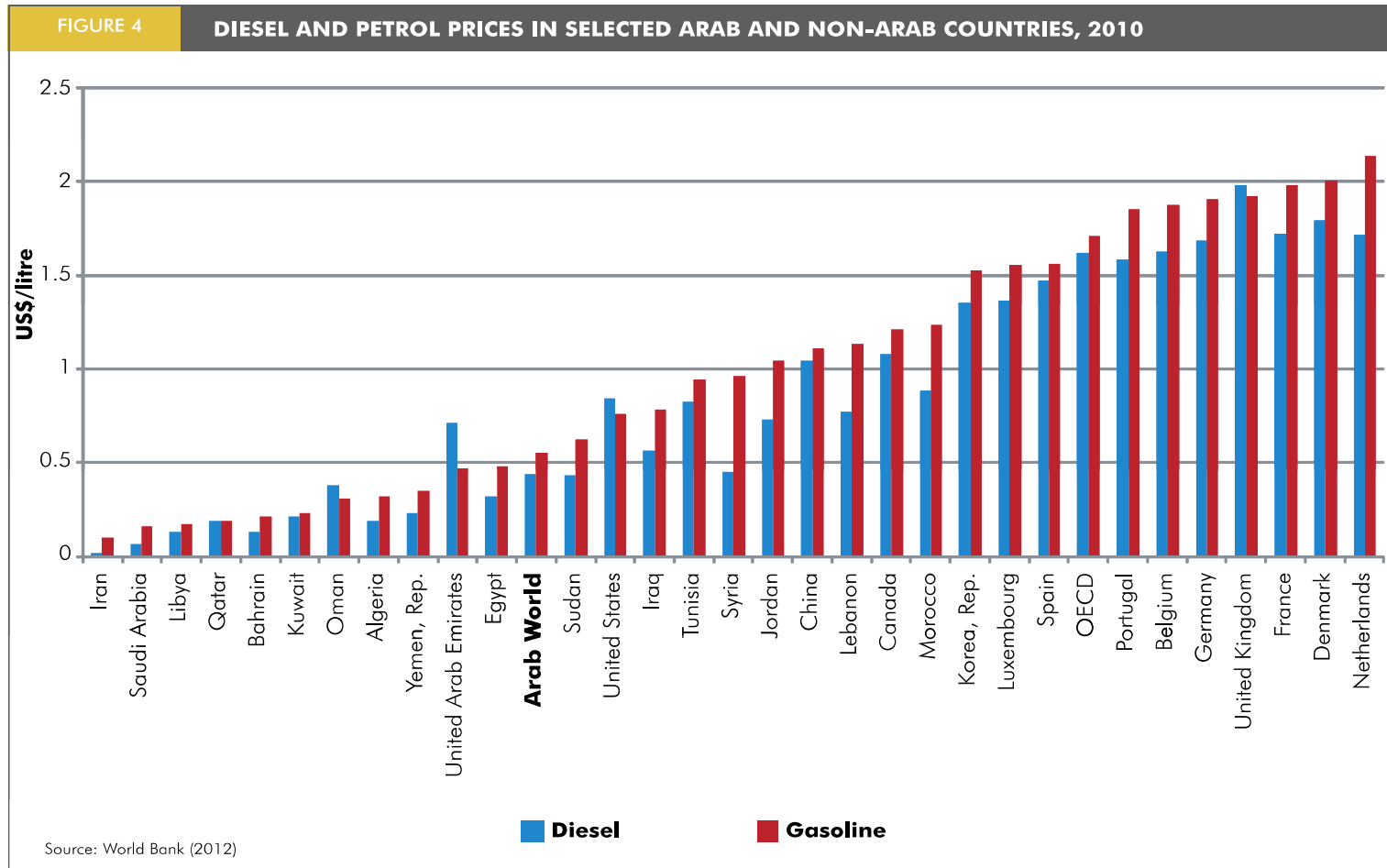
# Elusive Goal of Diversification

- Diversification of resource rich economies key for long-term sustainability
- Challenge of diversification
  - Persistence of vertically integrated state-owned companies promoted by state sector-specific policies and of old-style industrial policies
  - Weakness of private sector enterprise and innovative forces
  - Low pressure for change, even in the presence of serious strains on economic development model
- Diversification into energy intensive industries not very effective in dealing with challenge of job creation and reinforces reliance on energy

## Challenge 3: Rising Oil Consumption

- Rising domestic demand may erode export capability of key producers
- Efficiency measures, diversification of energy sources away from oil and gas
- Pricing reform needed but very challenging especially in aftermath of the Arab Spring
- Low energy prices part of distributive political economy of region

# Petroleum Product Prices Very Low



**More efficient ways to distribute revenues**

# Concluding Remarks

**Oil will continue to be Arab world's most important natural resource**

**Arab world expected to continue to play a key role in global oil market dynamics, dominating international trade in crude oil and holding bulk of the world's reserves and spare capacity**

**But Arab oil producers face many challenges**

- Investing in their energy sectors when faced with high uncertainty;
- Strengthening Arab NOCs' technical and managerial capability;
- Diversifying Arab economies into industries that create jobs;
- Strengthening forward and backward linkages to enhance role of private sector;
- Diversifying domestic energy consumption away from oil towards other sources of energy;
- Rising domestic oil consumption throughout the region;
- Implementation of a potentially painful, and politically risky, reform of domestic energy pricing policies

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**Thank You**