

APICORP at DIFC-OECD EmNet Meeting  
Dubai, 12 December 2011

**Some Further MENA Issues**  
**Medium-term Microeconomic Challenges;**  
**Long-term Macroeconomic Threats**



By Ali Aissaoui, Senior Consultant  
Arab Petroleum Investments Corporation

# Outline of presentation

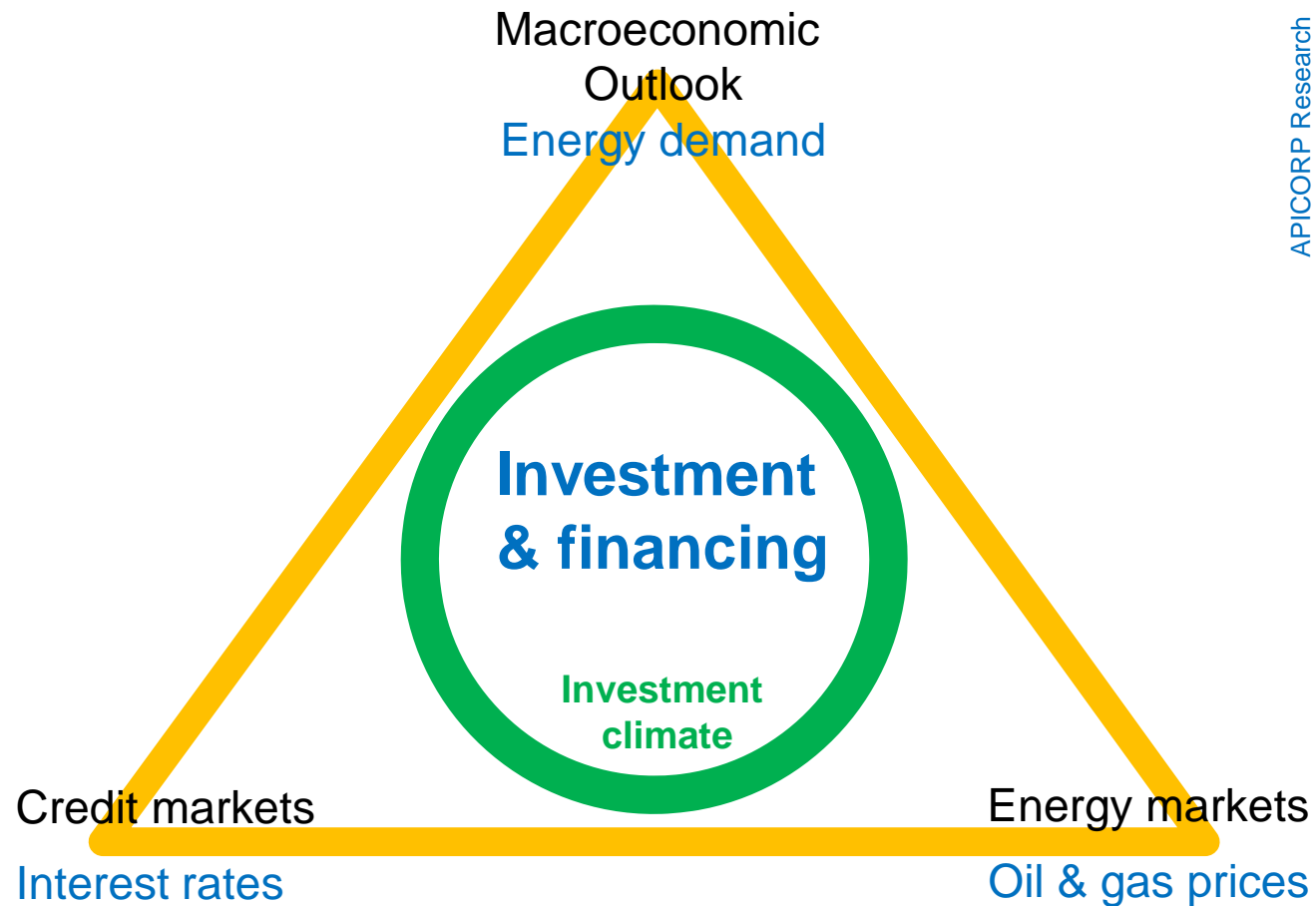
- Medium-term Microeconomic Challenges:

Focus on the investment climate, energy investment and the funding challenges facing corporations

- Long-term Macroeconomic Threats:

Focus on the impact of the global energy security-climate change nexus and the need to step up economic diversification

# Our approach to corporate investment and financing



APICORP Research

# Credit ratings have tended to reflect on-going socio-political turmoil in parts of the region

- Bahrain, Tunisia and Egypt downgraded
- Libya suspended
- GCC countries are expected to retain their higher investment grades with only Bahrain's credit outlook still negative

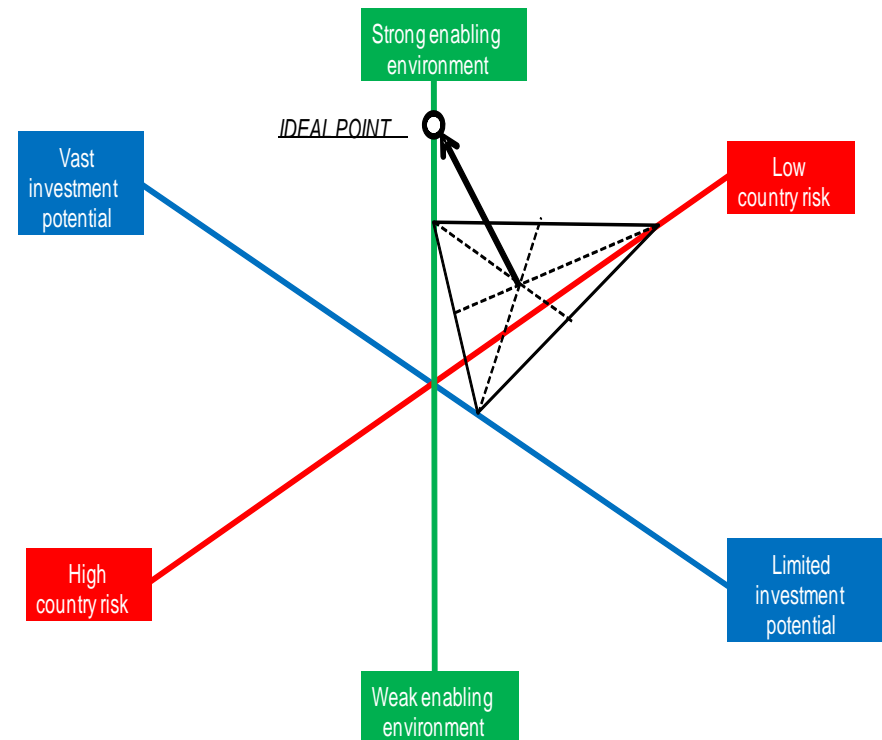
	Rated countries	Pre- turmoil	Current rating	Current outlook
Investment grade	Kuwait	Aa2	Aa2	Stable
	Qatar	Aa2	Aa2	Stable
	UAE	Aa2	Aa2	Stable
	Saudi Arabia	Aa3	Aa3	Stable
	Oman	A1	A1	Stable
	Bahrain	A3	Baa1	Negative
	Tunisia	Baa2	Baa3	Negative
Speculative	Morocco	Ba1	Ba1	Stable
	Jordan	Ba2	Ba2	Negative
	Egypt	Ba1	B1	Negative
	Lebanon	B1	B1	Stable
	Libya <sup>1</sup>	Suspended	Suspended	Suspended

<sup>1</sup> Libya is rated by Fitch and S&P

APICORP Research's Compilation - Data as of 1st December 2011

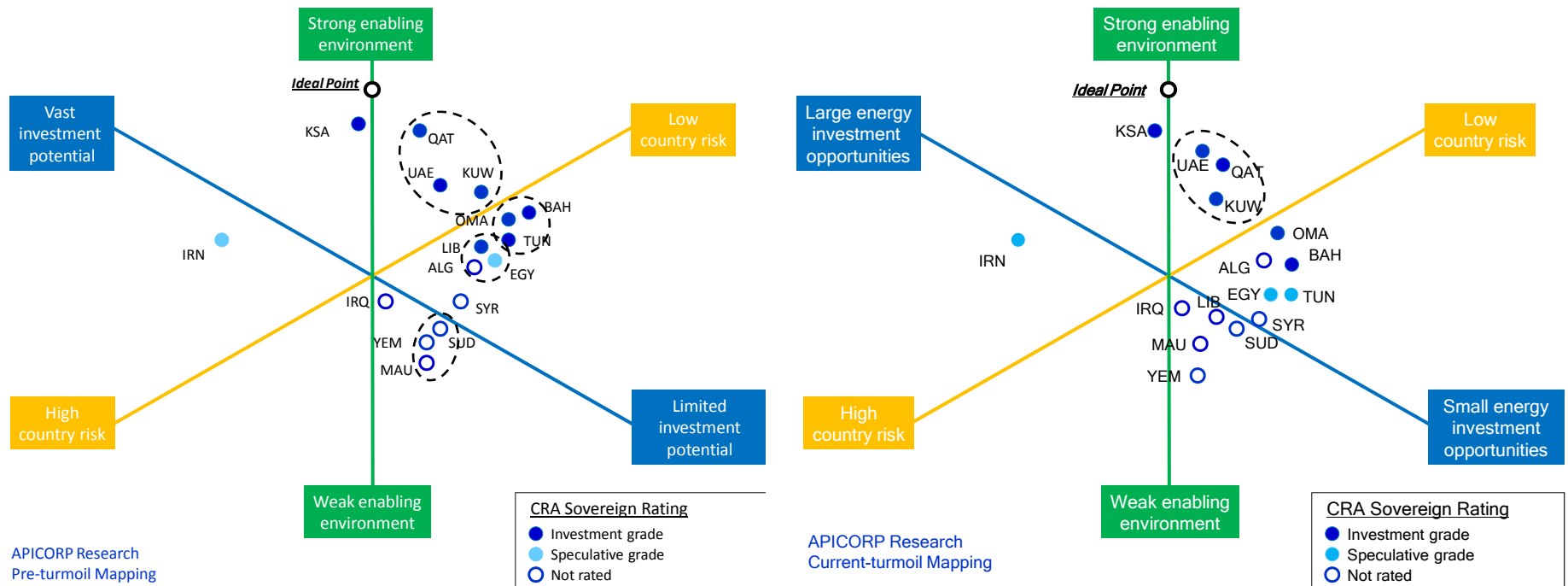
# Our “perceptual mapping” offers a more comprehensive picture

- Use an MDS analysis
- Three attributes:
  - potential investment
  - country risk
  - enabling environment
- A two dimensional representation of a 3-D space
- Note the “ideal point”



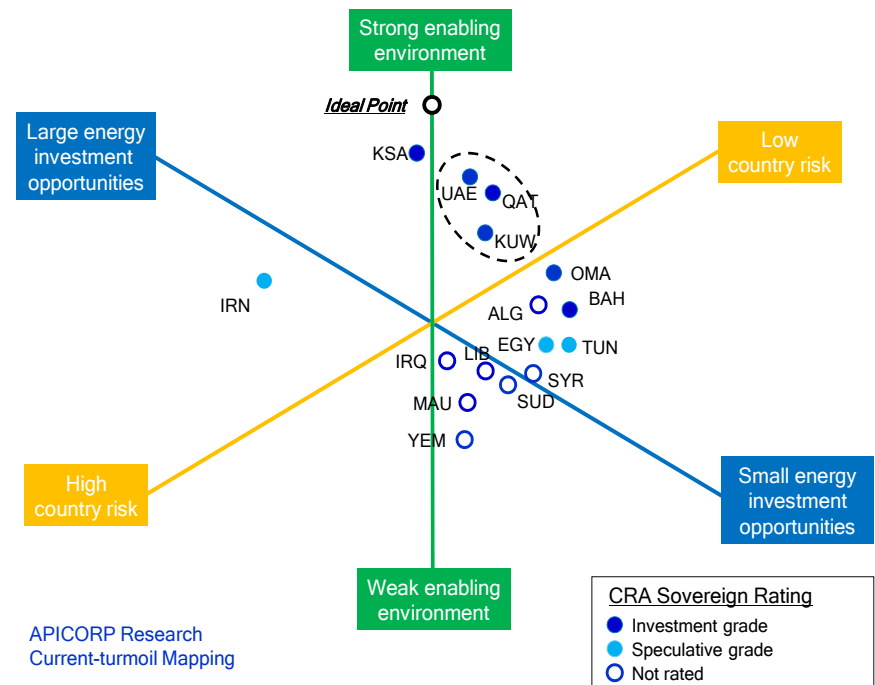
APICORP Research

# A pre- and current-period-turmoil snapshots point to significant position changes vs. the “ideal point”



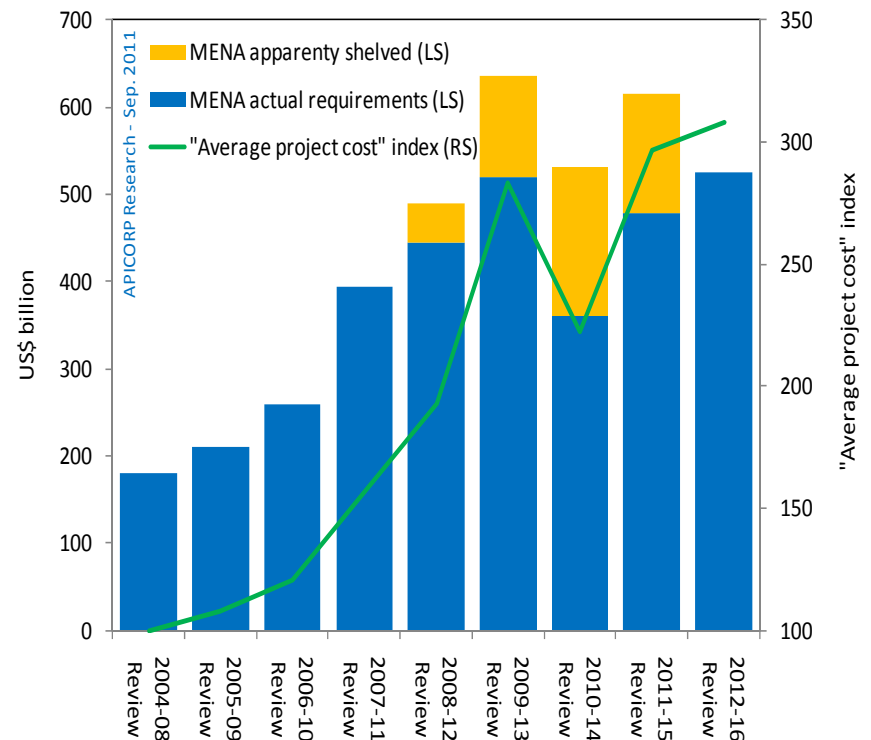
# Current picture

- Saudi Arabia near the “ideal point”
- UAE, Qatar and Kuwait move back nearer to each other
- Iran and Iraq in an odd position
- Dislocation of the rest of clusters
  - Egypt, Libya and Syria break out of the Algerian cluster
  - Tunisia and Bahrain out of that formed of Oman
  - Yemen out of that of Mauritania



## Impact on MENA energy investment: broken momentum, mixed outlook (\*)

- Energy investment for the period 2012-16 appears on a downtrend
- Our standpoint is mixed: \$525bn
  - is higher than the \$478bn actual requirements found in the last review
  - But remains well below the potential of \$615bn identified on that occasion

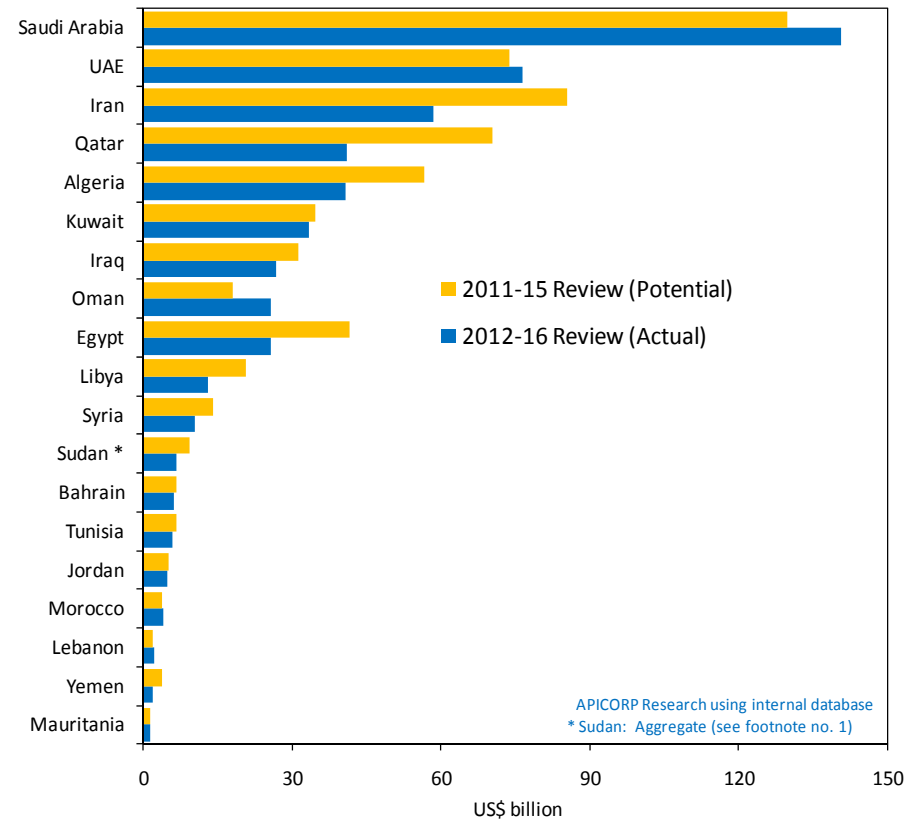


(\*) A detailed analysis of MENA/Arab energy investment outlook is provided in APICORP's *Economic Commentary* dated Sep-Oct 2011.



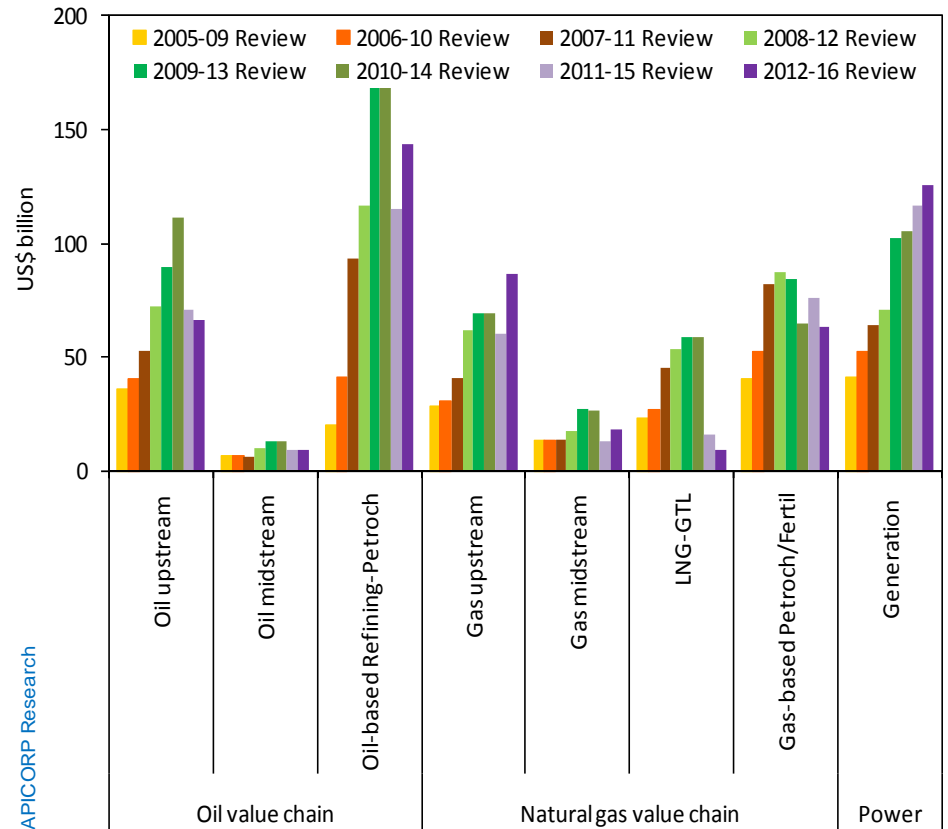
# Country pattern: unbalanced regional distribution

- Two-thirds of energy investment in Saudi Arabia, UAE, Iran, Qatar and Algeria
- None of which has faced the upheaval witnessed in Tunisia, Egypt, Libya, Yemen, Syria and to a lesser extent Bahrain
- GCC: 54% of MENA total with KSA, UAE & Oman above potential

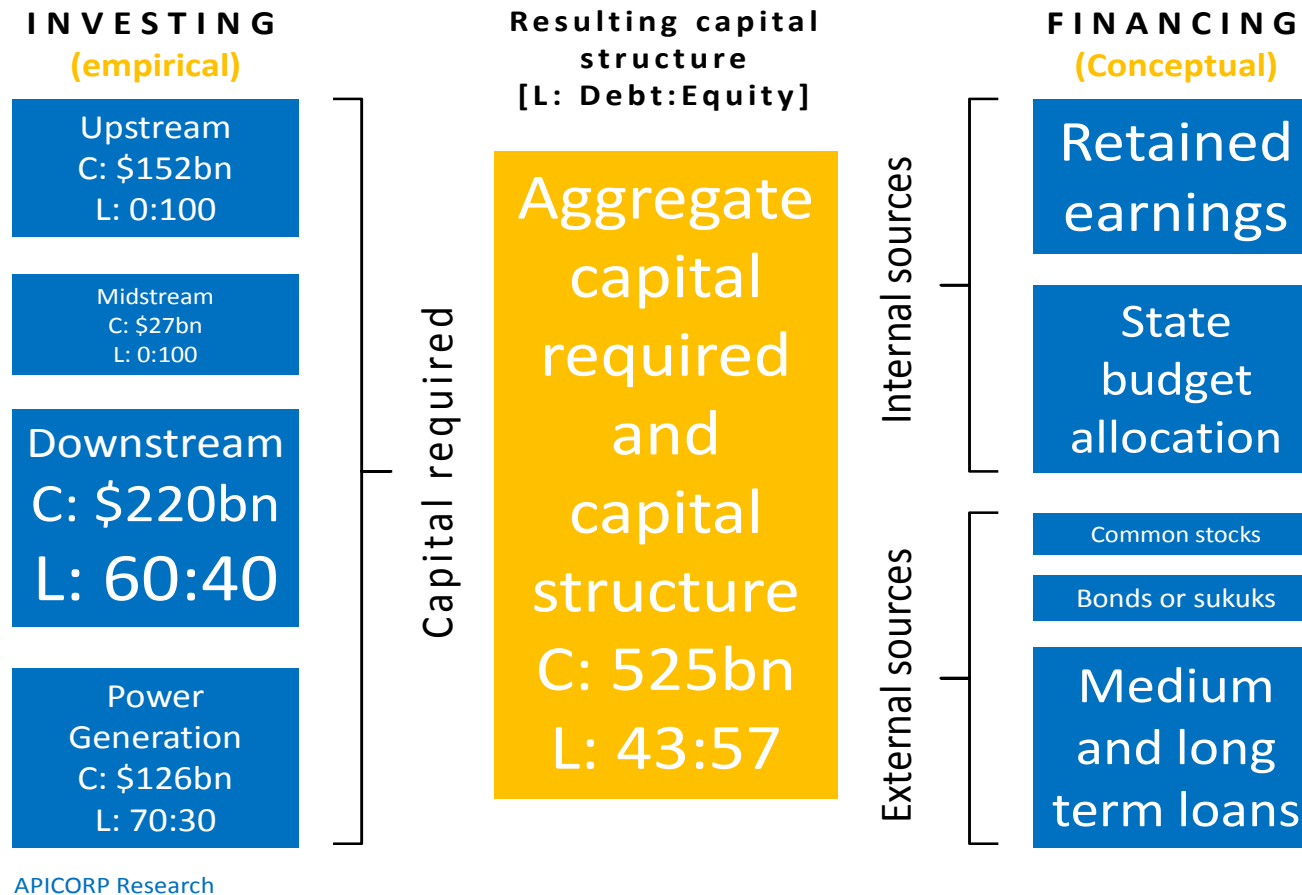


# Sectoral pattern: prominence of the oil downstream and steady growth of the power-water sector

- Distribution of investment
  - 42% in the oil value chain
  - 34% in the gas value chain
  - 24% in power/water
- Most salient link:
  - oil downstream sector
- Most steady growth:
  - power/water sector

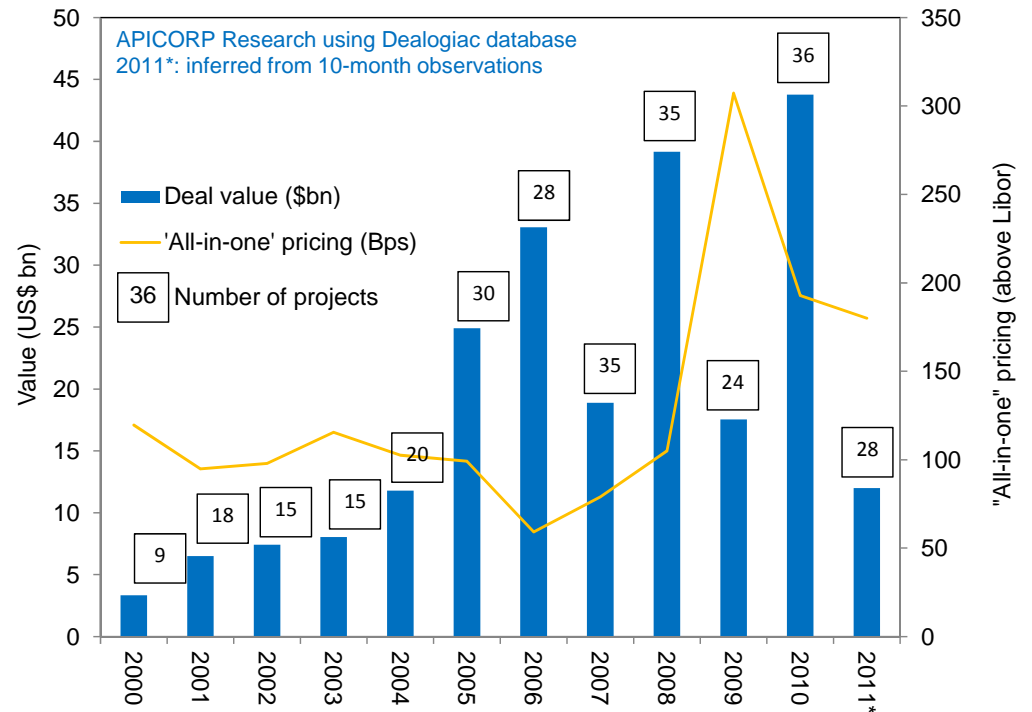


# Investment & Financing: Capital structure (empirical), financing (conceptual)



# External financing: Collapsing loan market

- Recovery in 2010 reached a record but was short-lived
- Collapsing loan demand and supply in 2011 and persistently high borrowing cost
- Shortfall could be even larger if the sources of local public investment funds dry up



# Summing up Part I

- Socio-political turmoil blurred the energy investment climate
- Energy investment: broken momentum, mixed outlook
- Corporations facing many challenges with funding most critical
- Given the level and structure of capital stemming from the review:
  - Internal financing is conditional to OPEC basket above \$90/bbl
  - External financing – predominantly loans - likely to be daunting

# Outline of presentation

- Medium-term Microeconomic Challenges:

Focus on the investment climate, energy investment and the funding challenges facing corporations

- Long-term Macroeconomic Threats:

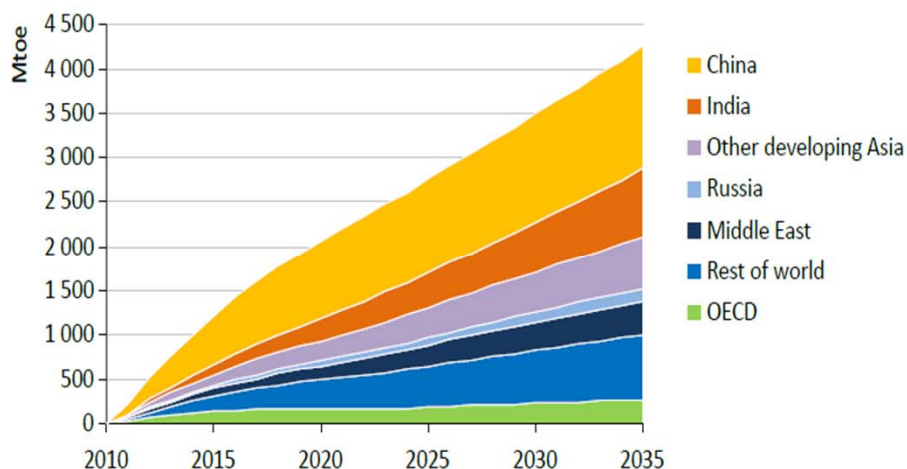
Focus on the impact of the global energy security-climate change nexus and the need to step up economic diversification

# Energy security-climate change nexus and oil

Higher global energy needs but lowest increment for oil among fossil fuels

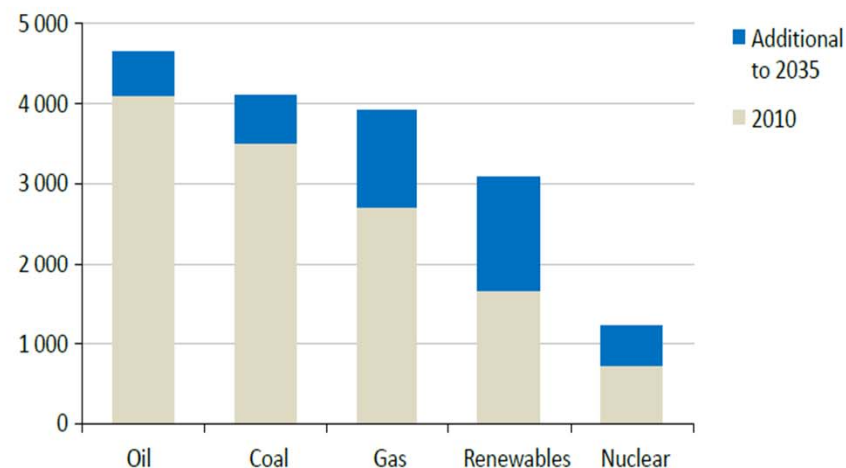
(Insights from : IEA's 2011 WEO, "Current Policies Scenario")

Growth in primary energy demand in the New Policies Scenario



*Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth*

World primary energy demand



*Renewables & natural gas collectively meet almost two-thirds of incremental energy demand in 2010-2035*

© OECD/IEA 2011

# Economic diversification: A recurrent MENA concern, better articulated within GCC

- Long-term consensual visions to guide their diversification agenda
- Common principles: globalization, competitiveness, social progress
- Ultimate goal: leverage non-renewable hydrocarbon resources for sustainable development and prosperity
- Central questions: What paths on the journey to that destination?
  - How pressing is the urgency for economic diversification perceived?
  - What are the drivers of policies and how they translate into strategies?
  - What are the main problems, challenges, and handicaps?

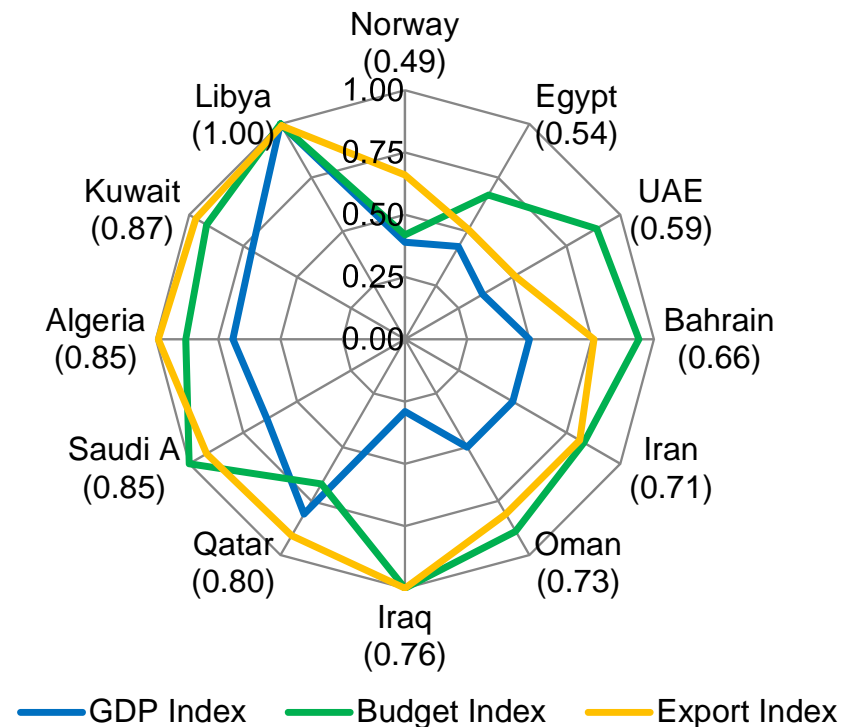


# Defining economic diversification: best by antonyms

- **Concentration** on a given economic sector, measured by a pseudo-Herfindahl-Hirschman index
- **Dependence** on a single source of income, measured by a combination of the shares of petroleum in
  - Exports earnings
  - Fiscal revenues
  - Value added to GDP
- Dependence better reflects the structural anomalies, imbalances and vulnerabilities within MENA

# Measuring it: A still long way to go!

- Libya (combined index of 1.00) the most dependent within MENA
- Egypt (combined index of 0.54) the least dependent
- Norway (combined index of 0.49) serves here as an external benchmark

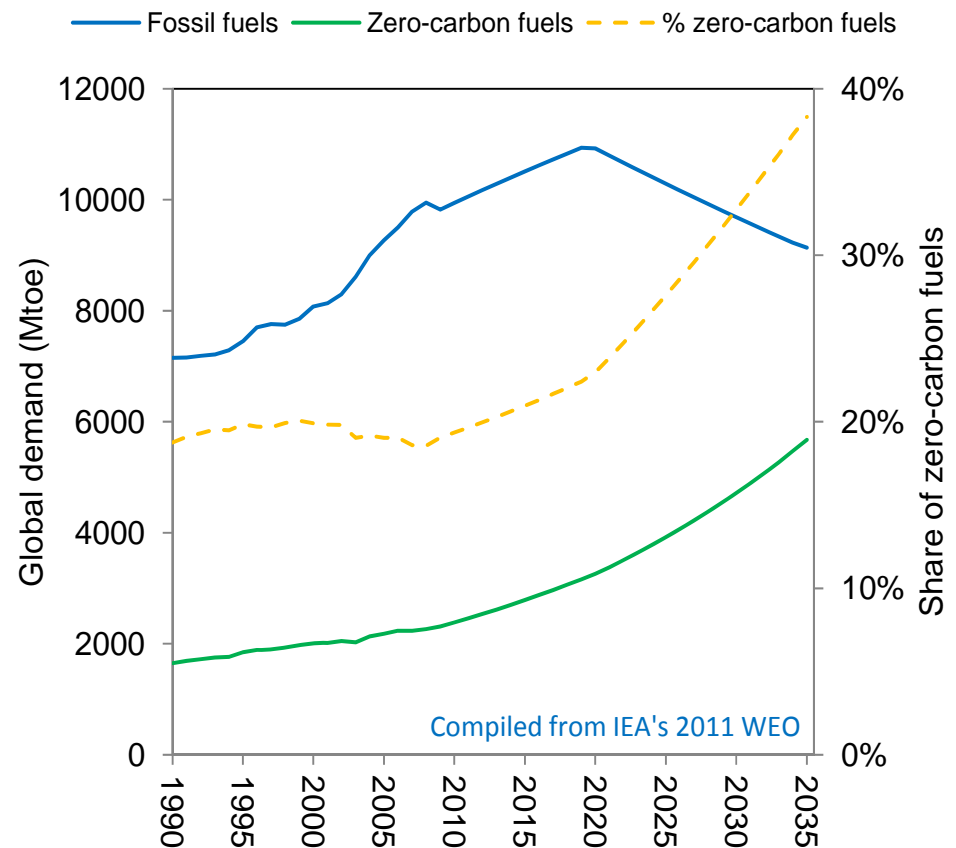


# Four arguments for stepping up diversification

## First, limits to growth of petroleum exports

Insights from IEA's 2011 WEO, 450 Scenario

- Focus on energy-related CO<sub>2</sub> emissions, consistent with stabilizing all GHGs at 450 ppm
- Key mitigators include energy efficiency, renewables, biofuels, nuclear and CCS
- Demand for fossil fuels (coal, oil and natural gas) likely to peak around 2020



# 2<sup>nd</sup> Argument: Petroleum fiscal unsustainability

## PIH model and basic assumptions

### Fiscal Sustainability – Using Permanent Income Hypothesis

The economic literature on the use of Milton Friedman's PIH is extensive, but dominated by the IMF's empirical case studies.

PIH provides a simple framework for assessing fiscal sustainability. Accordingly, sustainable government spending (GC), at any time  $t$ , is determined by the annuity value of expected financial and hydrocarbon revenues along the formula:

$$GC_t = GC = r \left[ F_{t-1} + \sum_{n=0, N} T_{t+n} (1+d)^{-n} \right]$$

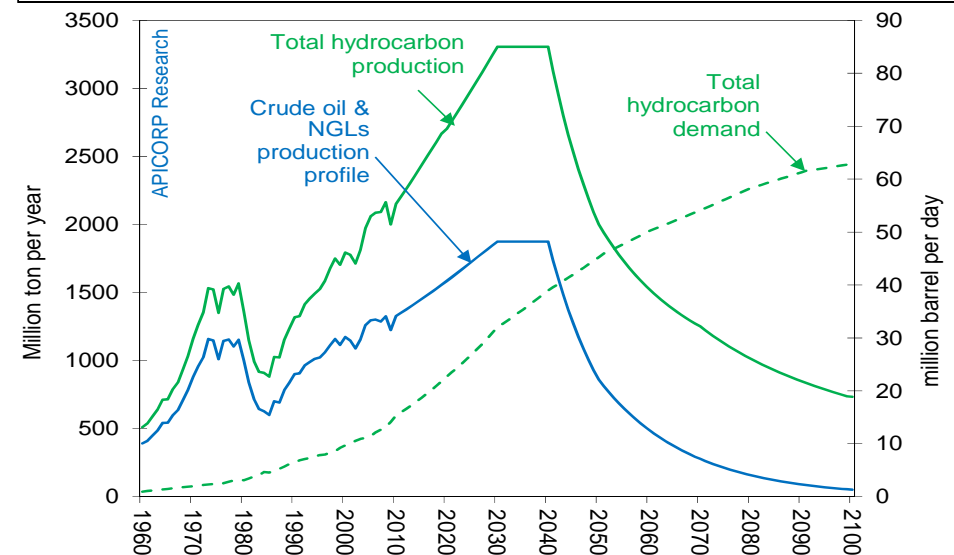
Where:

- $F_{t-1}$  : Financial assets;
- $T_n$  : Royalty and hydrocarbon taxes;
- $r$  : Real rate of return on hydrocarbon wealth;
- $d$  : Discount factor,
- $N$  : Number of years to depletion.

The discount rate ( $d$ ), which should reflect specific risks, is different from the rate of return ( $r$ ) on accumulated financial assets.

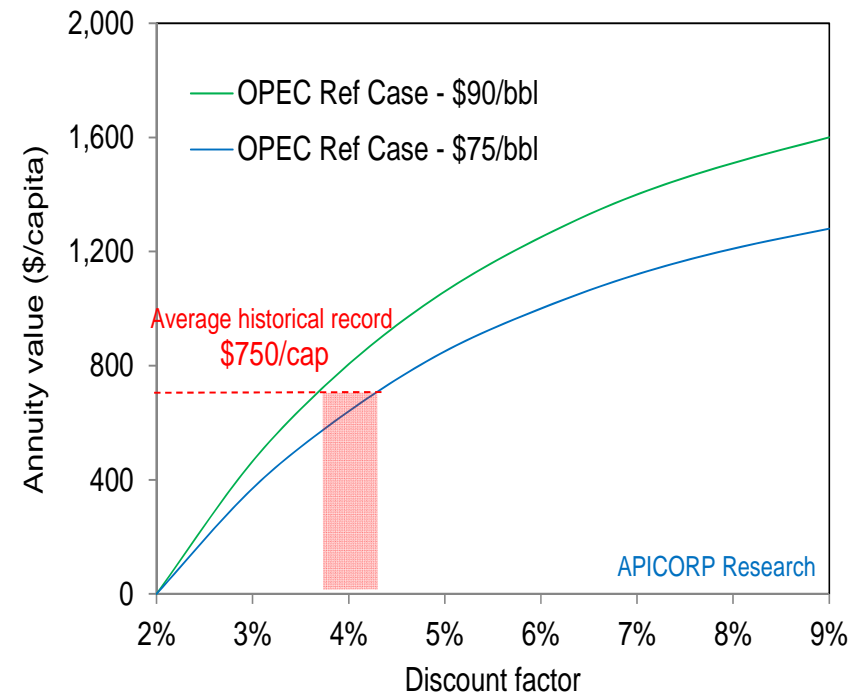
Reference date: 2010	Assumptions	Remarks
Proven hydrocarbon reserves	185 Gtoe + 25% reserve growth and Y-to-F	Y-to-F: Yet to find from undiscovered resources
R/P ratio	95 years	Simulation horizon : 2100
Petroleum production profiles	Crude oil & NGLs	Tuned to the OPEC's Reference Case (2010 WOO)
Hydrocarbon export prices	0.70 of Dated Brent	Prices moving together in the long run
Domestic pricing	At average cost	No rent extracted on domestic consumption
Governments' take	70% of export take	Past 5-year calibration, declining to 65% in 2030
Discount factor	5% real	Up-pricing of risks - Long term horizon
Population	440 million in 2010, doubling in 2050	Dynamics depends on labor imports within GCC

APICORP Research using statistics from OPEC, IEA, BP and own assumptions



# Resulting sustainable governments' spending

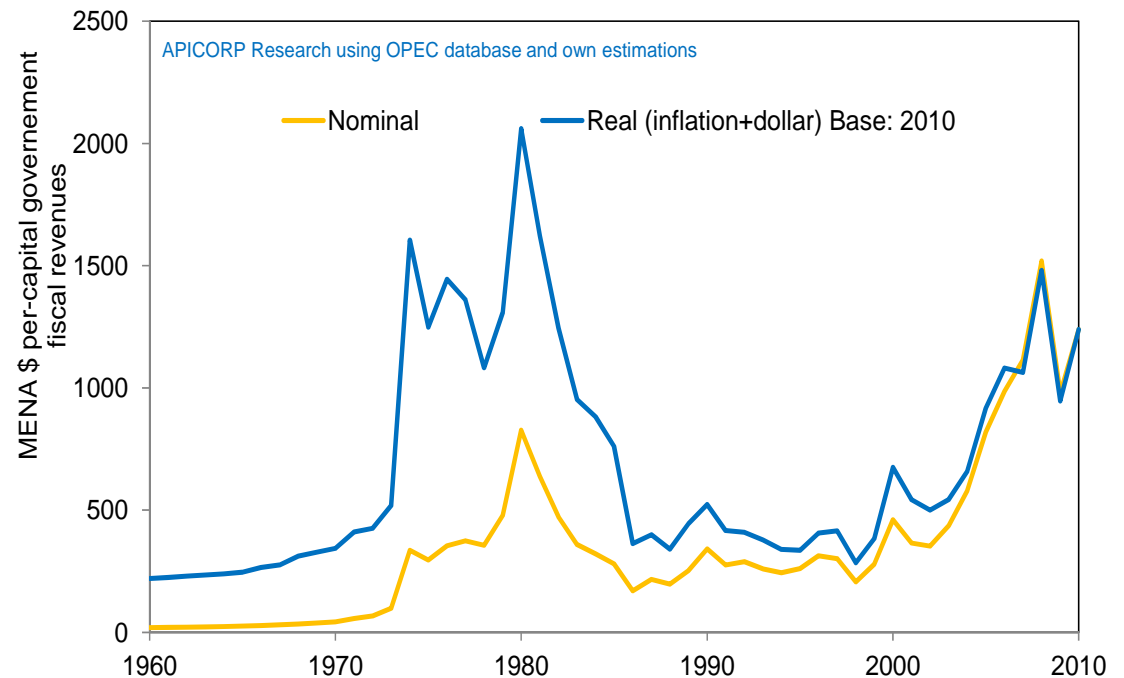
- Real sustainable spending near to historical record: an average of \$750/cap (adjusted from inflation and appreciation or depreciation of US\$)
- False assurance that accumulated financial assets could ensure fiscal and macroeconomic sustainability at historic rent level



# 3<sup>rd</sup> argument: daunting task of stabilizing petroleum export-dominated fiscal revenues

## Which avenue?

- Balancing the oil market to ensure price stability?
- Removing price uncertainty through hedging?
- Smoothing income flows using a stabilization fund?



## 4<sup>th</sup> argument: Inability of the dominant petroleum sector to create sufficient jobs

- VA of petroleum >50% of GDP- Petroleum employment <5% of TE
- **Very low employment-to-population ratios**
- Massive import of labor
- In the Saudi context: Extremely high female unemployment

2009 estimates	Unit	World	GCC	KSA	Saudi males	Saudi female	Total Saudis	Non Saudis
Population	mn	6,799	41.8	28.7	11.0	10.5	21.5	7.2
Working age population (15 years +)	%	68.7	67.8	65.9	61.9	62.0	61.9	77.8
<b>Employment-to-population ratio<sup>1</sup></b>	%	62.0	53.9	41.1	45.3	7.7	26.9	74.7
Official unemployment <sup>2</sup>	%	6.5	5.1	5.6	8.3	24.7	11.0	0.4
<sup>1</sup> Proportion of the working-age population that is employed								
<sup>2</sup> Proportion of labor force that is unemployed and "actively seeking a job"								
APICORP Research using data from ILO and local sources								

## Summing up Part II

- Serious impact of global energy security-climate change nexus
- Economic diversification: a solution to a growing threat
- Better articulated within GCC but slow progress
- Four arguments for stepping up the process
- First three may not be so compelling as to create a sense of urgency
  - First: post-Kyoto agreement anticipated to be weak
  - Second: Financial assets could support fiscal sustainability
  - Third: OPEC perceived as efficient in stabilizing oil markets?
- Fourth argument is strong enough to warrant drastic and rapid changes
  - Inability of the petroleum sector to provide sufficient jobs!