

International Oil Market Outlook: U.S.-China Dialogue

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International Oil Market Drivers

Fundamentals

- ◆ Erosion in OPEC spare capacity
- ◆ Higher price volatility above \$25 encourages speculation on the upside
- ◆ More bearish outlook for rest of year and into 2005

Psychological Factors

- ◆ Terror premium
- ◆ Stability in Saudi Arabia, Iraq
- ◆ OPEC policy

OPEC production capacity has fallen, not increased, since 1979

Opec Production and Spare Capacity, 1979-2003 (in mmb/d)

Member Country	1979	1983	1990	1997	1998	2000	2001	2003
Saudi Arabia	10.84	11.30	8.00	9.65	9.80	9.50	9.90	10.15
Iran	7.00	3.00	3.10	3.70	3.70	3.75	3.80	3.80
Iraq	4.00	1.50	3.60	2.30	2.80	2.90	3.05	2.20
Kuwait*	3.34	2.80	2.40	2.40	2.40	2.40	2.40	2.50
UAE	2.50	2.90	2.20	2.40	2.40	2.40	2.45	2.50
Qatar	0.65	0.65	0.40	0.71	0.72	0.73	0.75	0.75
Venezuela	2.40	2.50	2.60	3.45	3.30	2.98	3.10	2.50
Nigeria	2.50	2.40	1.80	2.00	2.05	2.10	2.30	2.30
Indonesia	1.80	1.60	1.25	1.40	1.35	1.35	1.30	1.15
Libya	2.50	2.00	1.50	1.45	1.45	1.45	1.45	1.45
Algeria	1.23	1.10	0.75	0.88	0.88	0.88	0.88	1.15
Total	38.76	31.75	27.60	30.34	30.85	30.44	31.38	30.45
Call on Opec	34.01	16.65	22.20	27.59	25.85	30.04	28.23	29.20
Spare Capacity	4.75	15.10	5.40	2.75	5.00	0.40	3.15	1.25

Opec can replace all
Iraqi/Kuwait oil in 1990

Economic boom
erodes capacity in 1997

Demand bumps
up against capacity

Fundamental Outlook

- Capacity expansions within OPEC and expected growth within non-OPEC countries could contribute to a gradual softening of prices in 2005.

- Depends on
 - ◆ Oil demand trends.
 - ◆ Improvements in stability in the Persian Gulf.

Projected OPEC Capacity

Country	2003	2005	2010 *
Saudi Arabia	10.15	10.50	11.0
Iran	3.80	4.10	5.0
Iraq	2.3	2.7	4.5
Kuwait	2.4	2.6	3.0
UAE	2.5	2.5	2.5
Qatar	0.75	0.80	0.80
Venezuela	2.5	2.6	3.5
Nigeria	2.3	2.7	3.0
Indonesia	1.00	1.00	0.5
Libya	1.45	1.3	2.0
Algeria	1.15	1.6	1.5
TOTAL	30.3	32.4	34.3

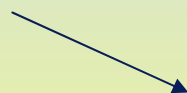
*optimistic scenario

Growth in 2005 non-Opec supply is a critical factor to fundamentals

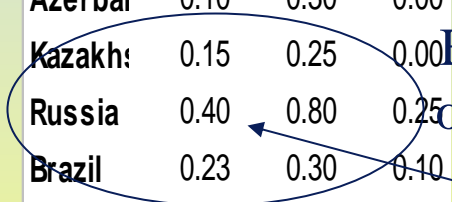
2005
NON-OPEC SUPPLY OUTLOOK

	Base	High	Low
Canada	0.12	0.20	0.08
Mexico	0.15	0.20	0.00
US	0.15	0.15	-0.15
Norway	-0.05	0.00	-0.15
UK	-0.12	0.00	-0.20
Denmar	-0.02	0.00	-0.03
Azerbai	0.10	0.30	0.00
Kazakh:	0.15	0.25	0.00
Russia	0.40	0.80	0.25
Brazil	0.23	0.30	0.10
Colomb	-0.02	0.00	-0.05
Ecuador	-0.02	0.03	-0.03
Angola	0.30	0.40	0.20
Chad	0.05	0.07	0.00
Egypt	-0.04	0.00	0.05
Eq. Guir	0.00	0.15	-0.05
Gabon	-0.02	0.00	-0.03
Total	1.36	2.85	-0.01

How robust will Russia be? Depends on politics, taxes, not geology



When does the Baku-Ceyhan line open ? (Scheduled May 2005)



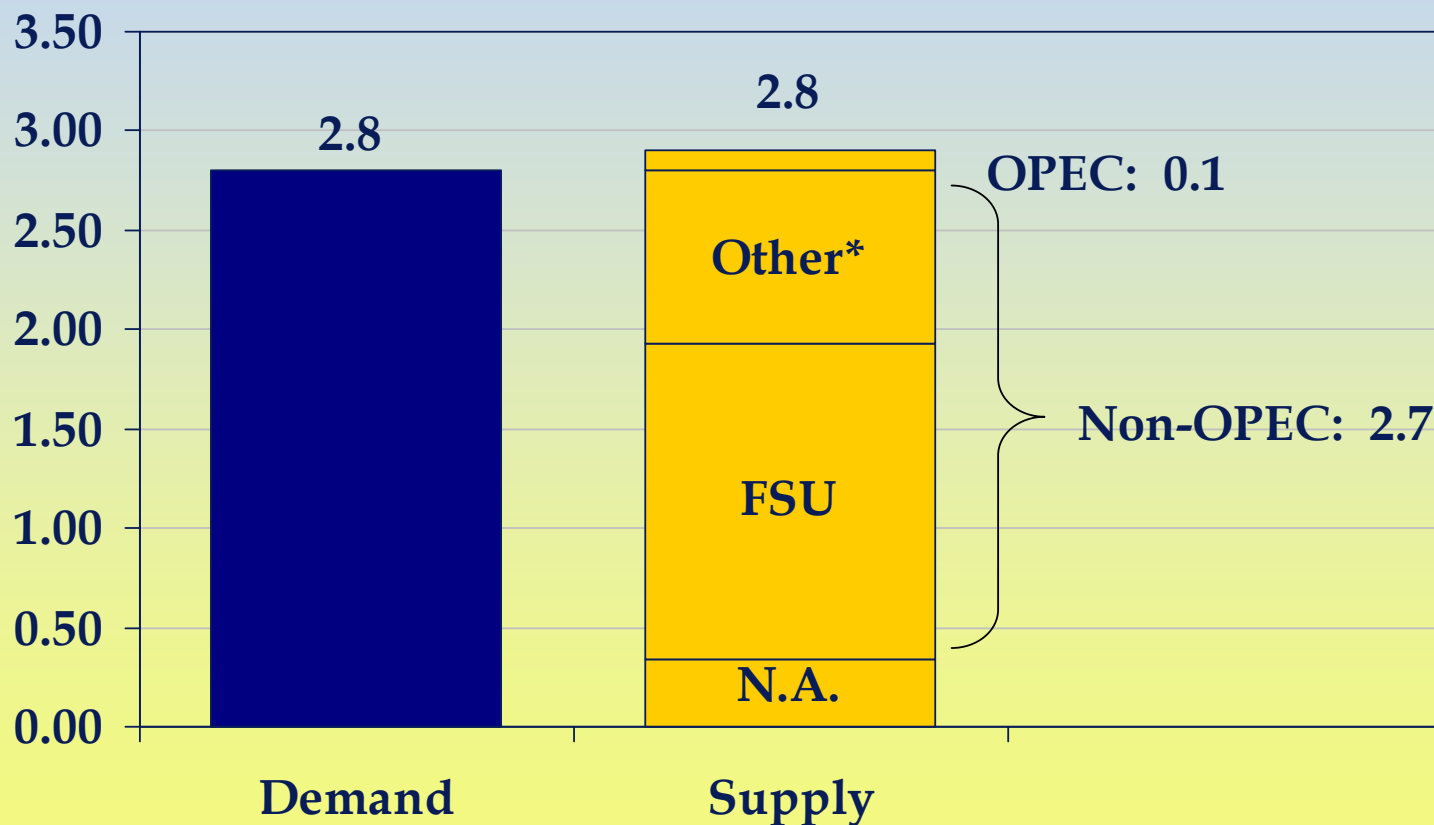
Will W. African developments come in as forecast?



Lower Oil Price Scenario

World Oil Supply/Demand Balance Typical Forecast 2002-2005

Cumulative Growth in MMBD for Full Period



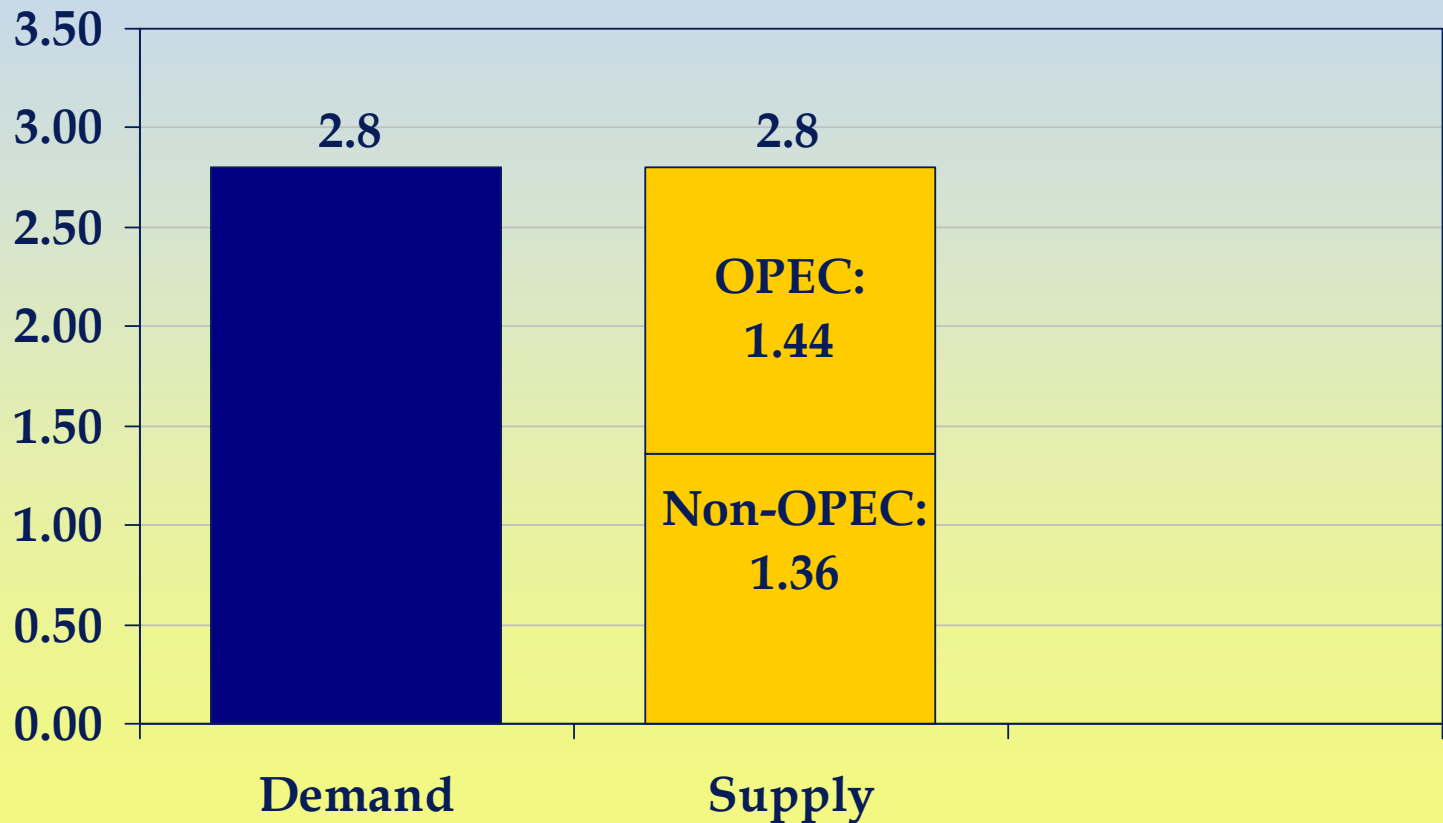
* Non-OPEC other supply includes processes gain

** OPEC supply is incremental production including NGLs

Strong Oil Price Scenario

World Oil Supply/Demand Balance Median Forecast 2002-2005.

Cumulative Growth in MMBD for Full Period



* Non-OPEC other supply includes processes gain

** OPEC supply is incremental production including NGLs

Psychological Factors

Psychological factors are likely to outweigh market fundamentals

Stability in Persian Gulf will be a key driver to oil prices, especially conditions in Saudi Arabia

Any increase in frequency or scale of terror attacks on energy facilities will also set a psychological tone to oil markets

Saudi Arabia

From Osama Bin Laden's Letter to the
American People:

"You steal our wealth and oil at paltry prices because of your international influence and military threats. This theft is indeed the biggest theft ever witnessed by mankind in the history of the world."

--Osama Bin Laden

Energy Facilities Are Being Targeted

- March 2003, armed hijackers commandeer a chemical tanker off the coast of Sumatra, Indonesia; reports of terrorists wanting to learn to pilot vessels and learn diving
- Singapore authorities arrest two dozen members of the Jemaah Islamiyah network; confessions of two aborted terrorist attacks on supertankers in the Malacca Straits; wanted to sink a tanker in the Phillips channel and block international commerce; were planning attack on Jurong Island petchem hub
- Bombing of French oil tanker Limburg off coast of Yemen
- June 2002 al-Qaeda operatives arrested in Morocco, suspected of plotting raids on US and British tankers in the Strait of Gibraltar
- May 2002, cell phone detonated explosive device attached to tanker truck in Israel's central fuel and gas depot north of Tel Aviv
- Summer 2002, group of Saudis arrested for involvement in sabotage plot against Saudi oil facilities
- Spring 2004 attack at industrial complex at Saudi Red Sea port of Yanbu
- May 2004 bloody attack on residential compound in Khobar, Saudi Arabia shakes expatriate community, including those working in oil industry, exodus of personnel begins

Saudi Arabia

- Stability in Saudi Arabia is the driving factor behind the future of oil price volatility.

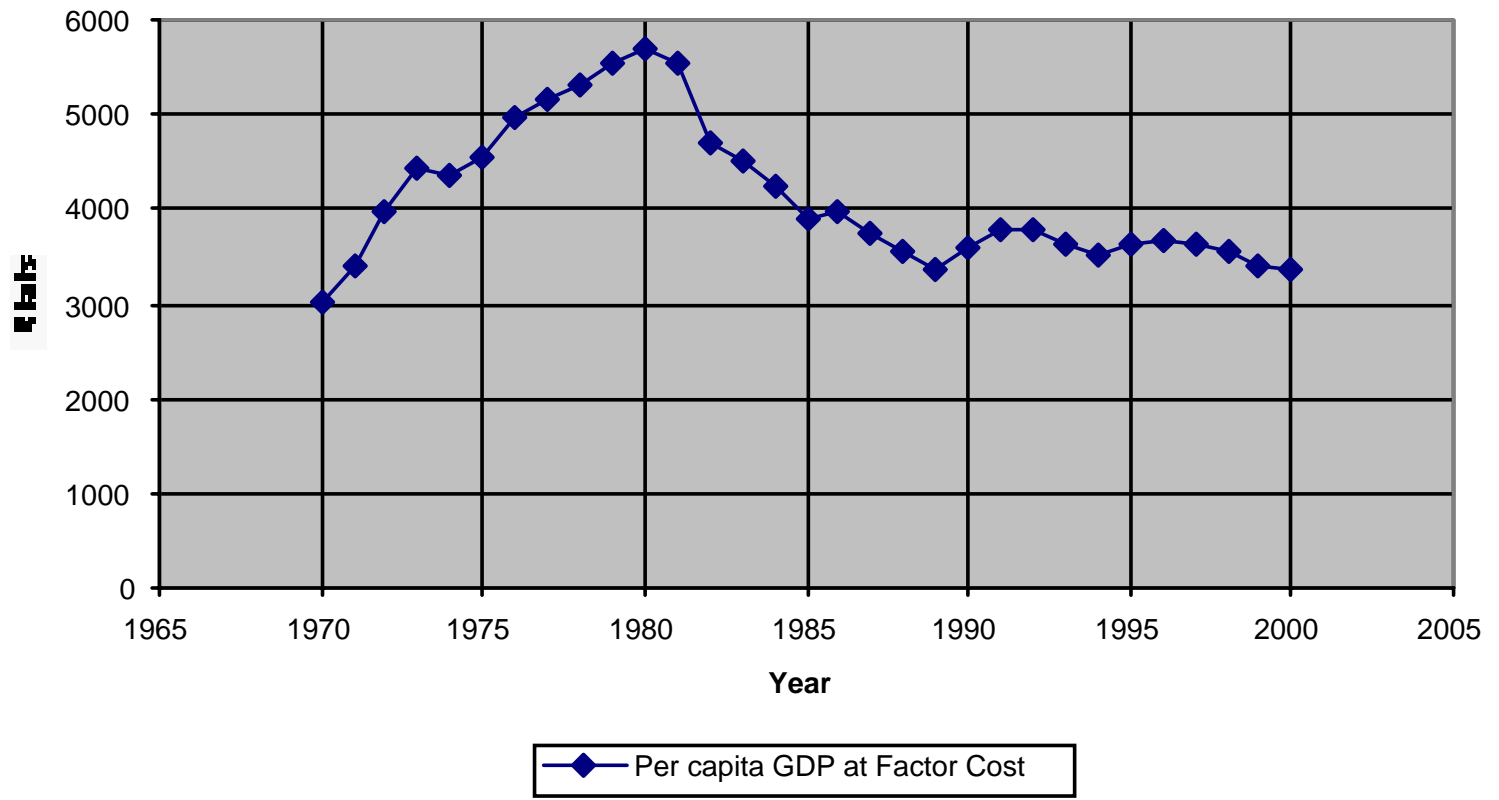
- Current demographic trends will encourage Saudi Arabia to seek higher oil prices for domestic political reasons.
 - ◆ Per capita income has fallen since 1980 and is expected to continue.
 - ◆ The kingdom will need increasing amounts of money to meet basic social services.

Saudi Arabia

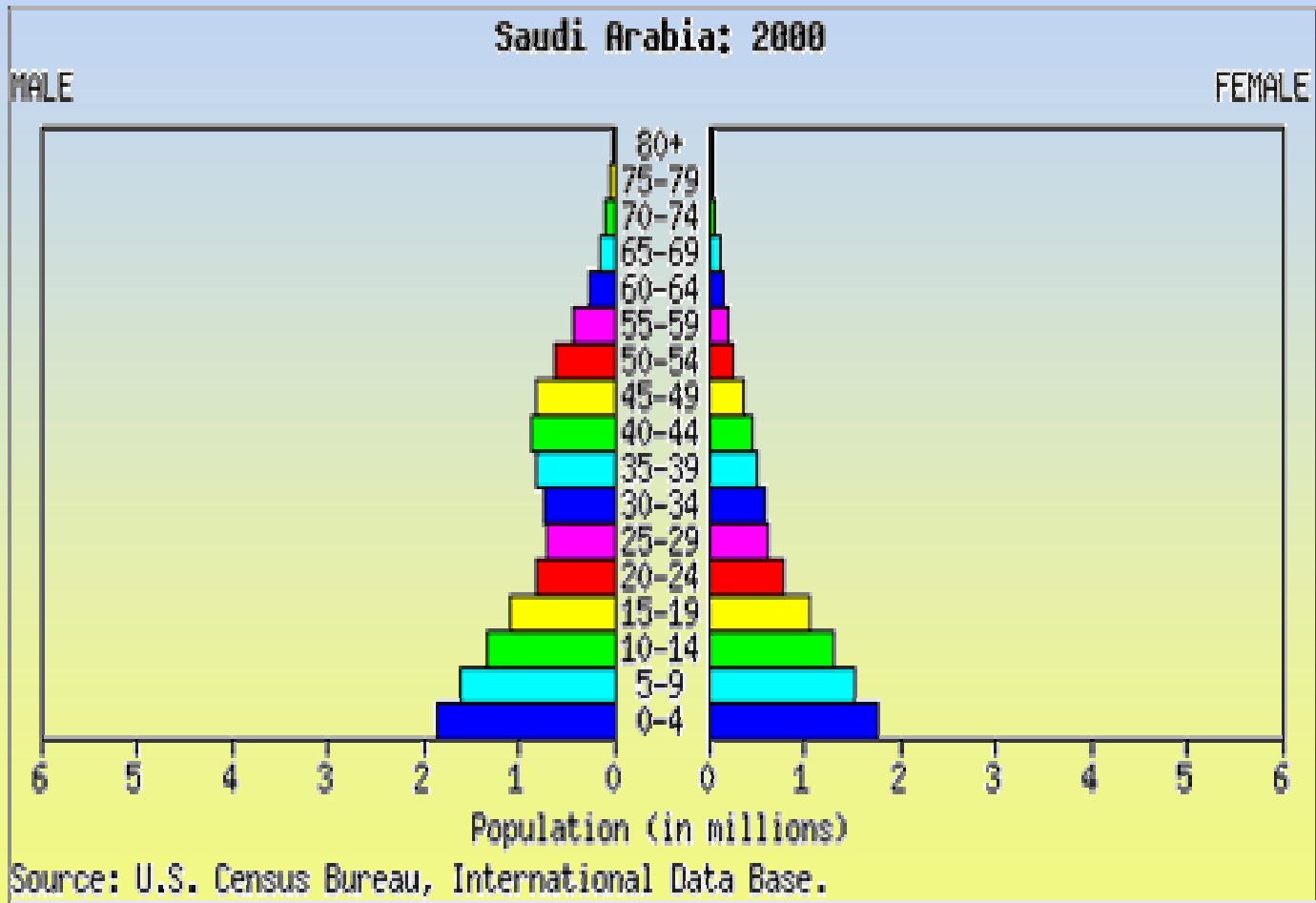
- The Saudi response.
 - ◆ Increased 2004 budgetary spending.
 - ☞ Education and vocational training by 87%.
 - ☞ Social welfare by 45%.
 - ◆ Crown Prince Abdullah has supported
 - ☞ Municipal elections for half the members of each municipal council.
 - ☞ Legal reforms favoring the rights of individuals in Saudi courts.
 - ☞ Creation of a Saudi journalist organization.
 - ◆ More extreme crackdown on terrorist cells.

Saudi Per Capita Income Falling

Figure 2: Saudi Per Capita Income in Constant 1970 Prices

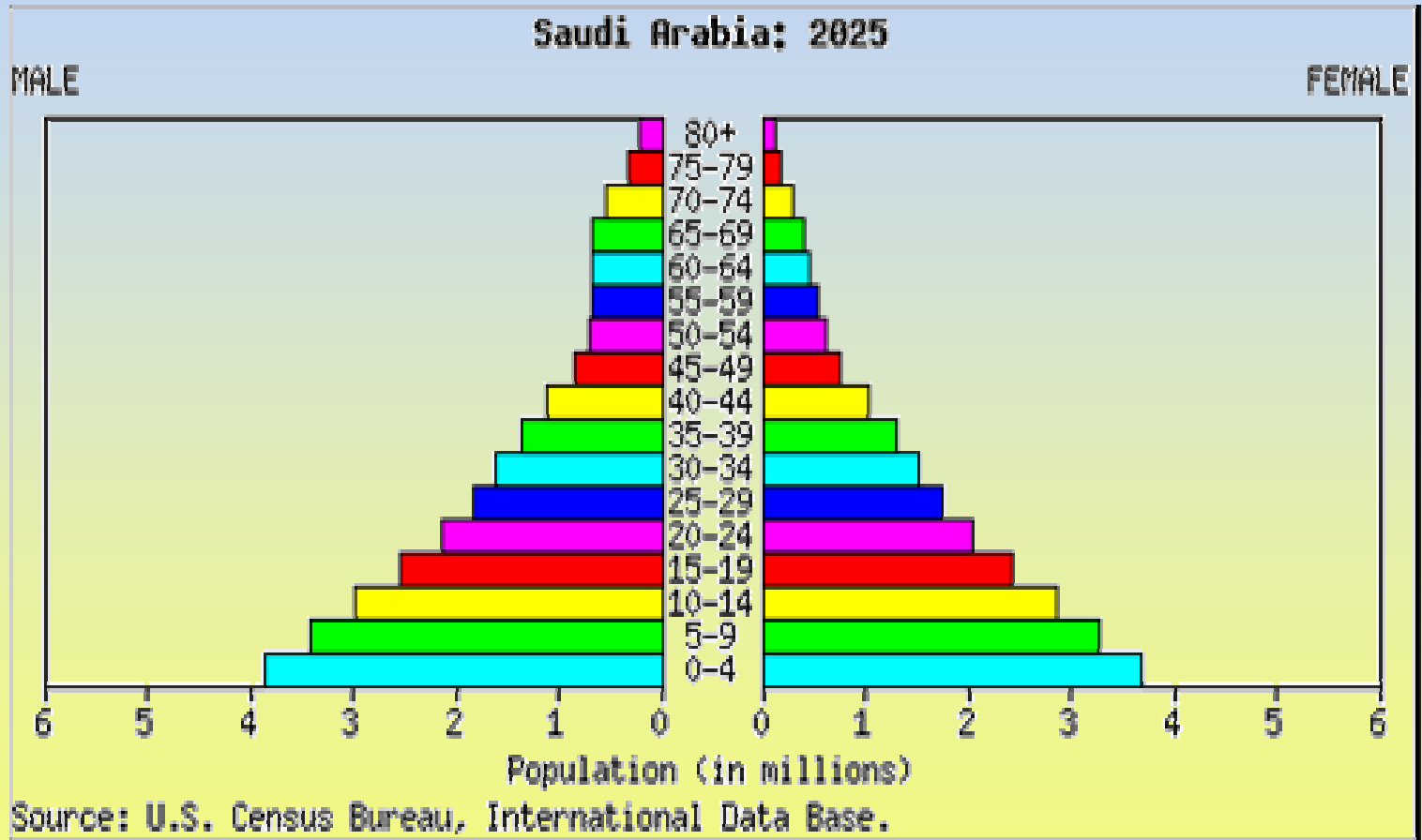


Saudi Population 2000



Saudi population 2025

U.S. Census Bureau Projections



Factors Driving Future Iraqi Capacity

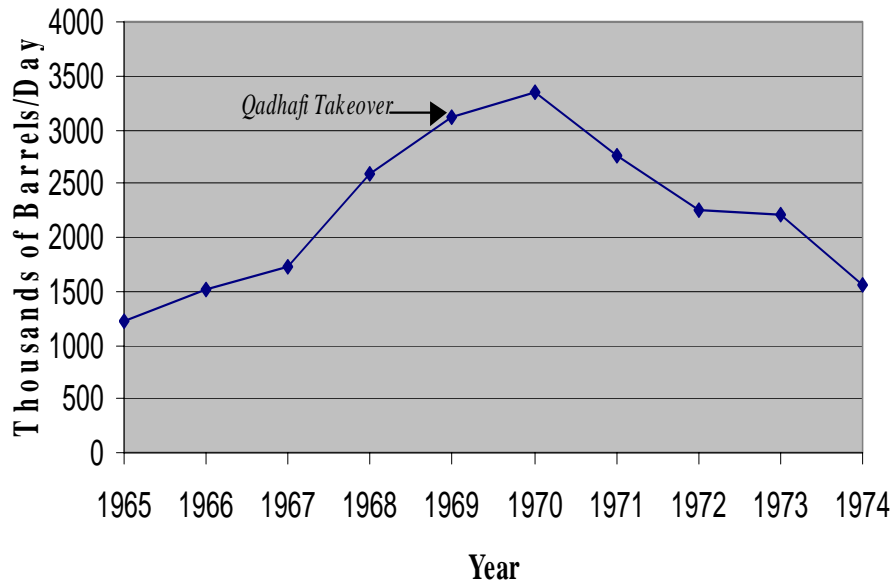
- Obstacles to major increases in Iraqi oil production rates include:
 - ◆ Repairing Export Facilities.
 - ◆ Creating Petroleum Law, Natural Resources Law, Environmental, Health, Safety laws: Requires Legitimate and Recognized Parliament.
 - ◆ Resolving Legality of Hussein-regime's "Post-sanctions Contracts" and New Contracts Will Have to be Resolved.
 - ◆ Determining how to Pay for Expansion.
 - ◆ Completing Industry Reorganization: Properly Defining Role of State, Ministry, Industry Regulators, State energy companies, Parliamentary Oversight Committees, private sector participants, Foreign contractors and investors, Audit and Control Agencies.
 - ◆ Reestablishing Stability and Order in the New Regime.
 - ◆ Retaining Top Iraqi Oil Technocrats, Instituting Suitable Management Structure and Recruiting and Training New, Young Technicians and Managers.

Conclusions

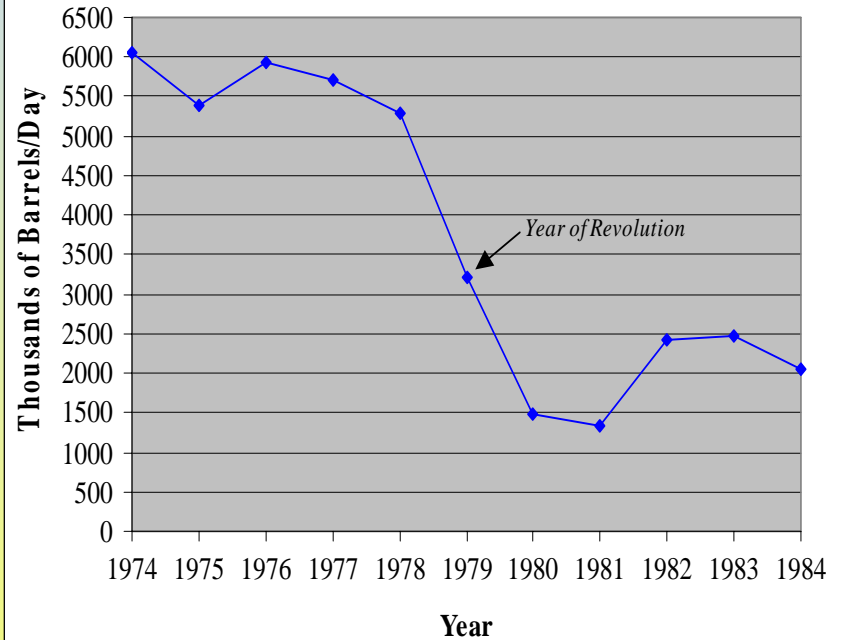
- It can not be taken as given that Saudi or Iraqi oil production capacity will definitely cover long term demand growth.
- Political factors will play a critical role in determining the ability and willingness of Saudi Arabia and Iraq to meet rising demand.

Iran and Libya - The 'Lessons' of Regime Change, Thwarted Potential

Libyan Oil Production
Pre/Post Qadhafi



Iranian Oil Production
Pre/Post Revolution

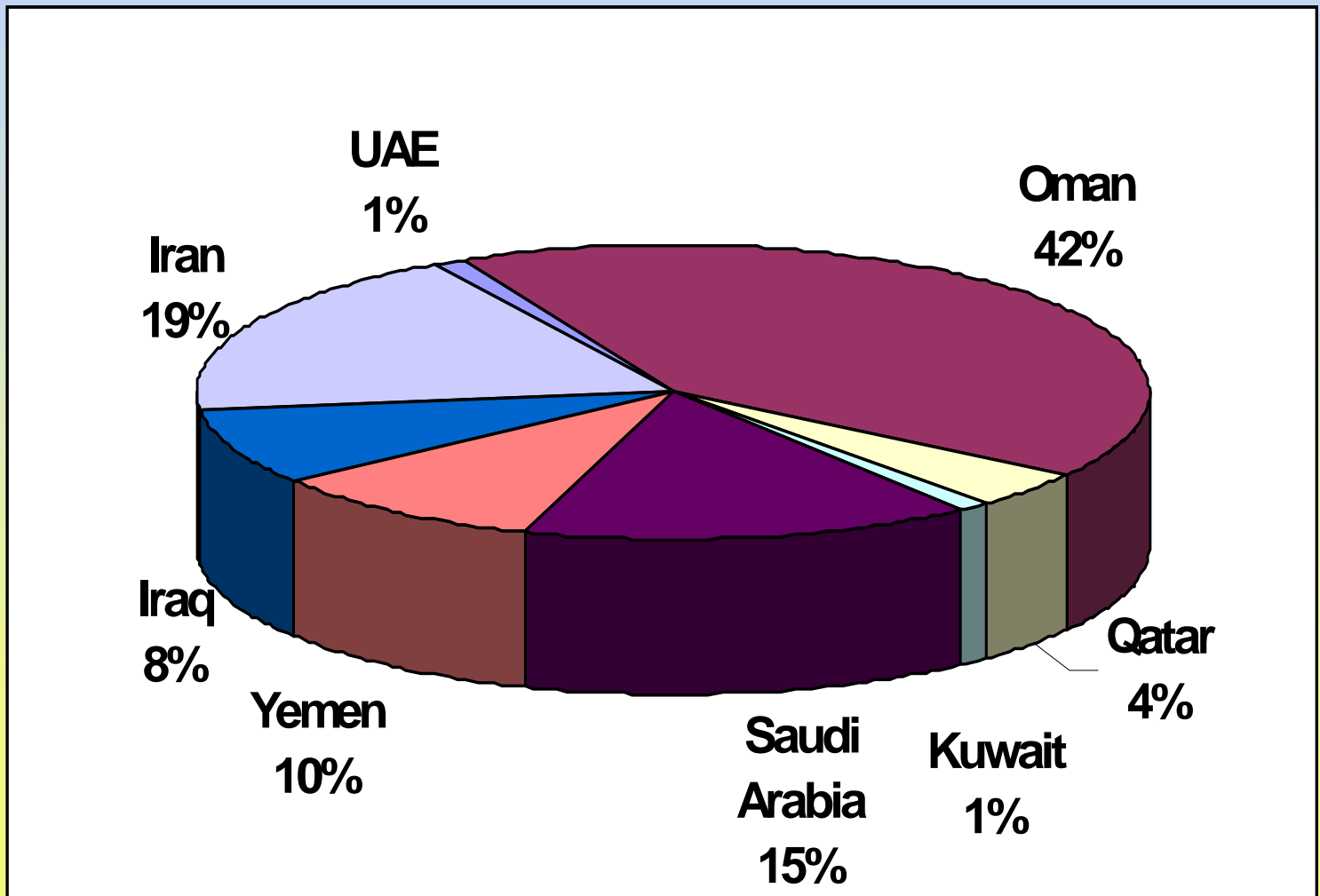


Asian Reliance on Middle East and African Oil Imports To Grow Over Time

Year	2001	2010	2020
Asian Demand	20.0	29.0	37.5
Local Supply	6.0	6.4	4.7
Imports	14.0	22.6	32.8

Source: IEA, EIG

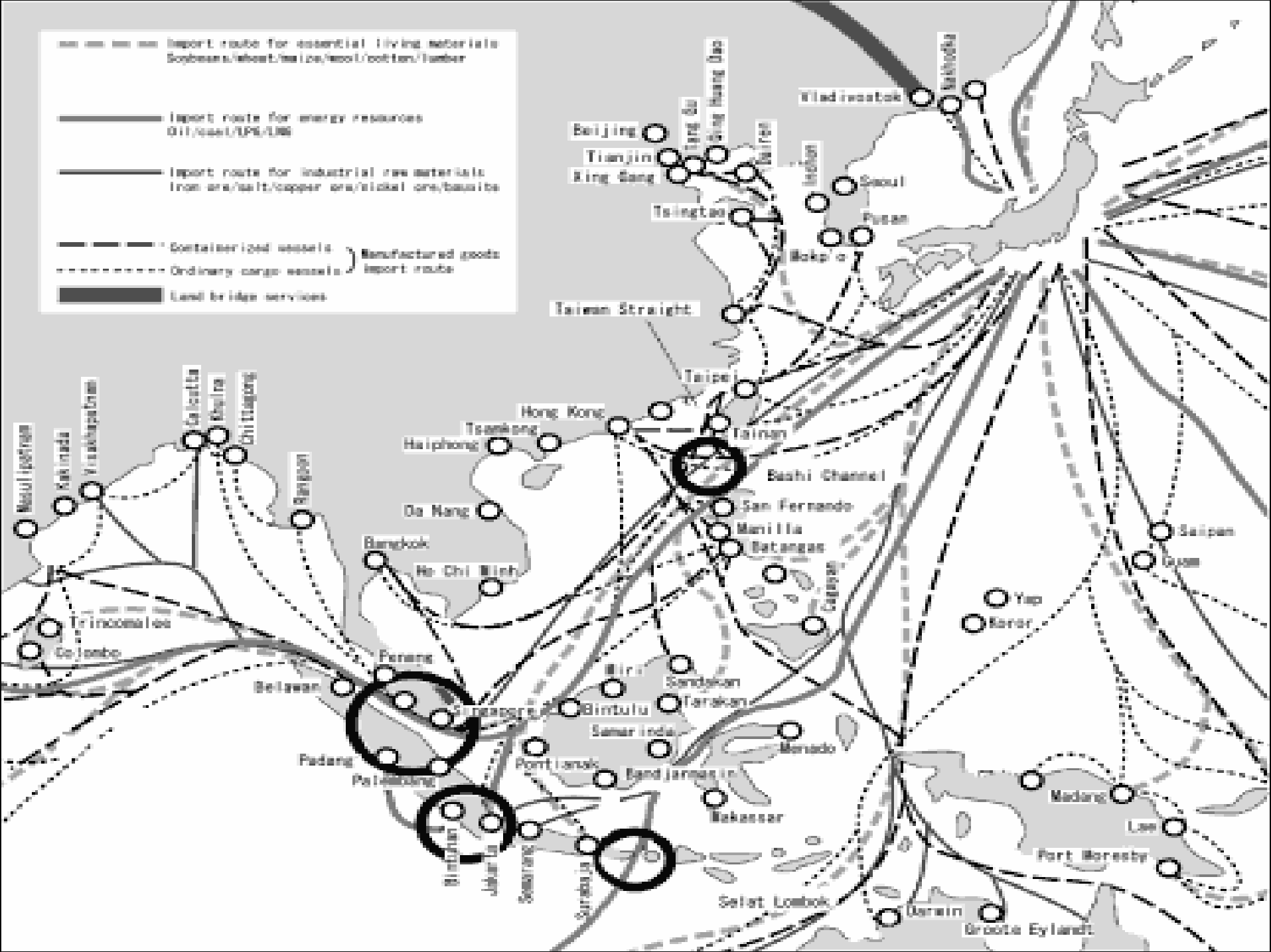
China Oil Imports from Middle East 2000



Key Questions

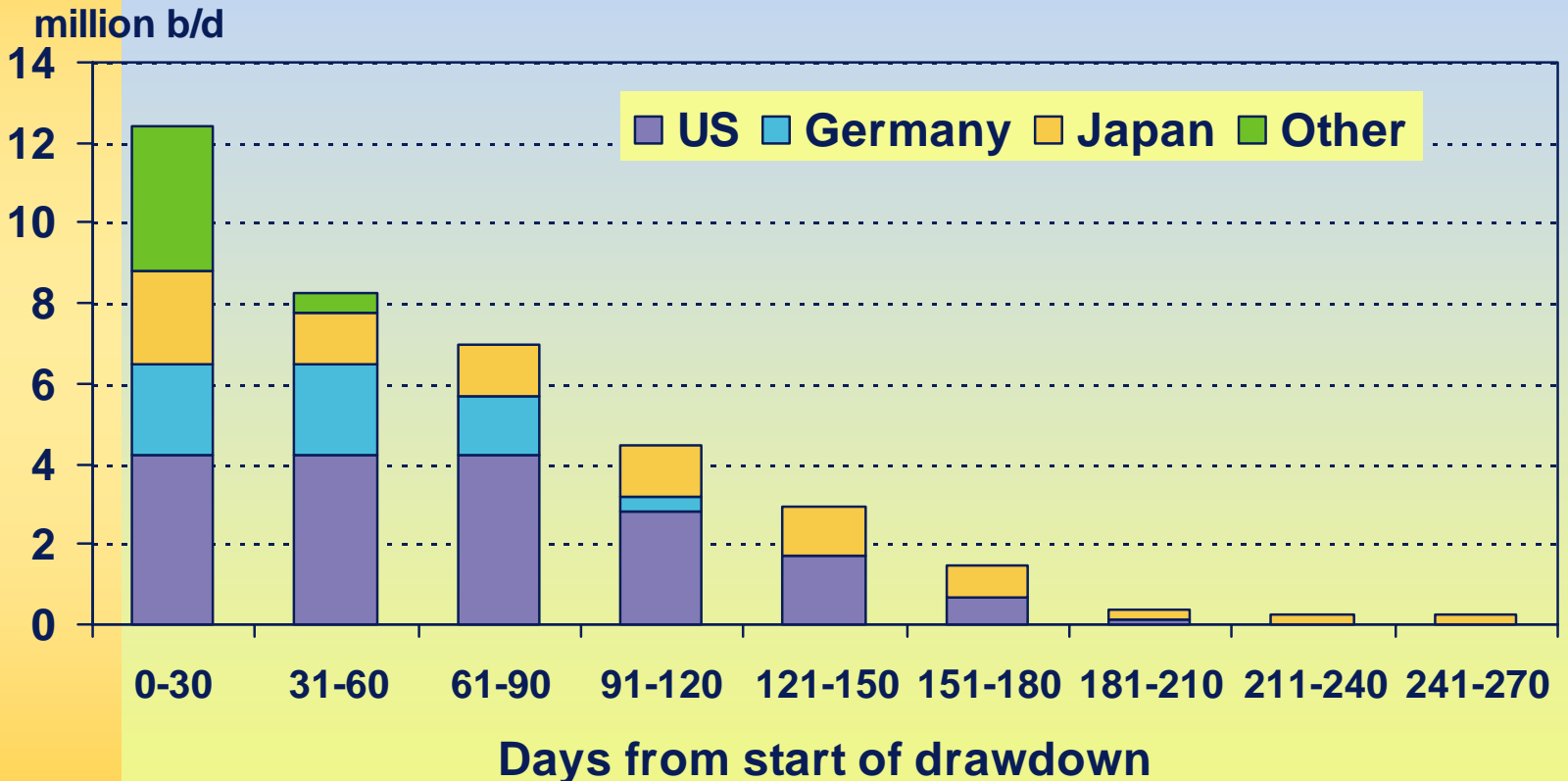
- What if the disruption is caused by internal instability or political event in a major oil exporting country or region (such as happened in 1973, 1979 and 1990)?
- Oil supplies will be priced at **global** market related pricing, no matter where it comes from. Will small equity oil margins really help prevent economic dislocation in the event of a major price run up?
- What about other ill-effects from a price run-up such as loss of export markets or debt crises?

- Import route for essential living materials
Soybeans, wheat, maize, wool, cotton, lumber
- Import route for energy resources
Oil, coal, LPG, LNG
- Import route for industrial raw materials
Iron ore, salt, copper ore, nickel ore, bauxite
- Containerized vessels
- Ordinary cargo vessels
- Manufactured goods import route
- Land bridge services



Emergency preparedness

Maximum withdrawal profile from OECD Strategic Reserves

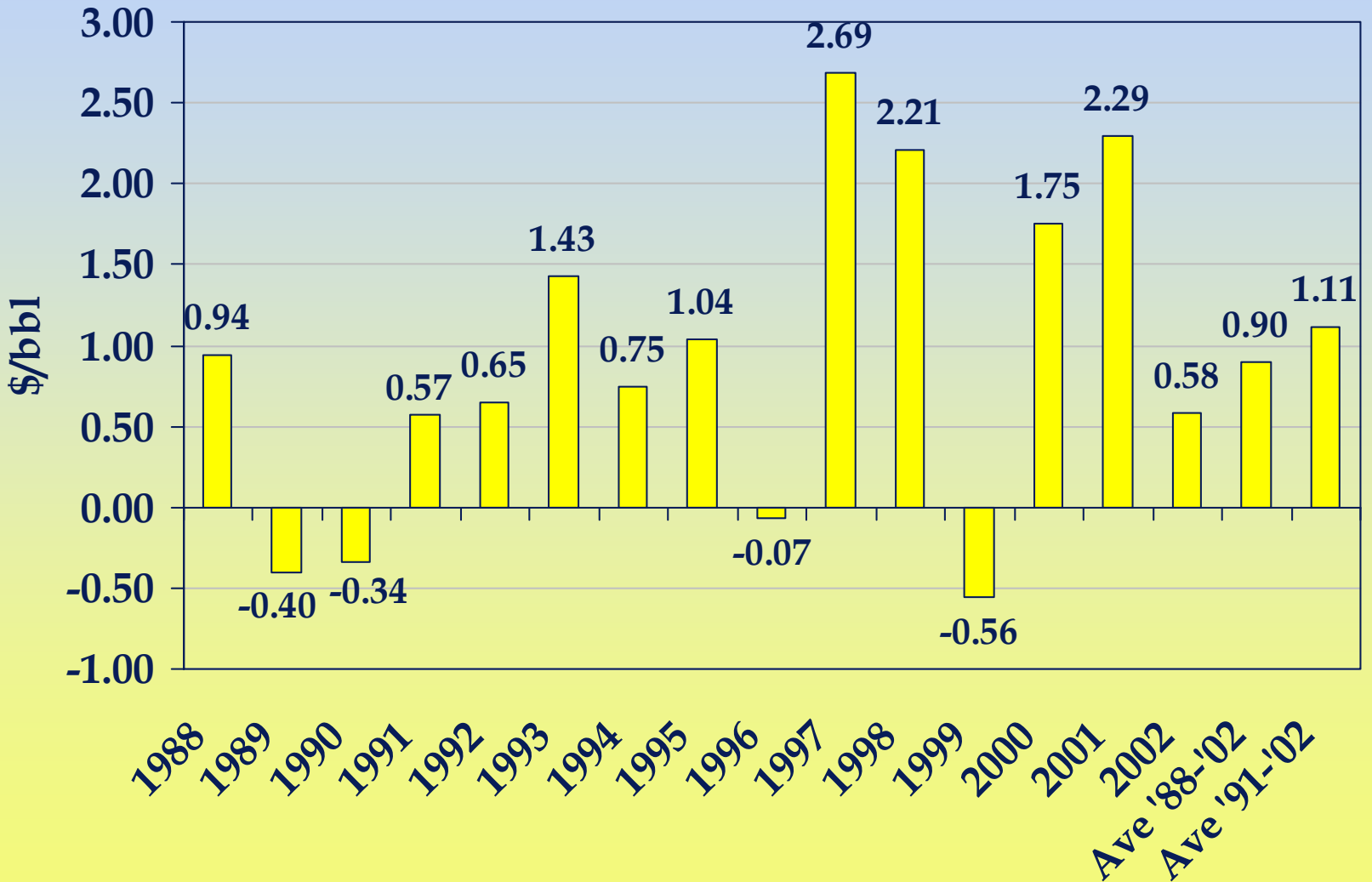


Source: IEA

Asian Price Premium

Table 1: Asia premium: Arab Light - 34		
Year	USD/barrel	As % of Europe
1988	0.94	7.10
1989	-0.40	-2.39
1990	-0.34	-1.56
1991	0.57	3.42
1992	0.65	3.78
1993	1.43	10.03
1994	0.75	5.15
1995	1.04	6.65
1996	-0.07	-0.37
1997	2.69	16.79
1998	2.21	22.18
1999	-0.56	-3.15
2000	1.75	6.96
2001	2.29	10.98
2002	0.58	2.44
Average 1988-2002	0.90	5.87
Average 1991-2002	1.11	7.07

Asian Price Premium



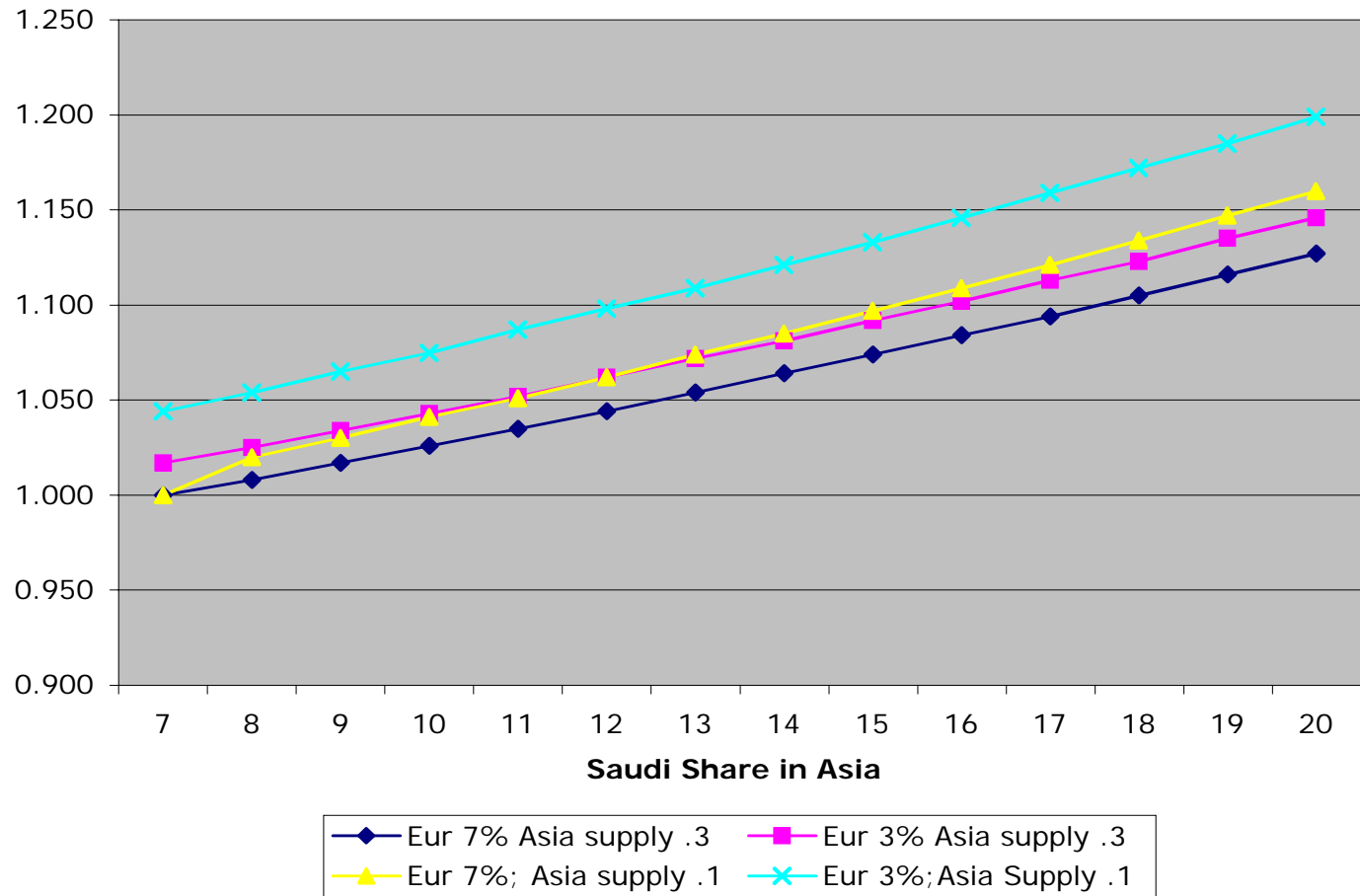
Explaining the Asian Price Premium

- Saudi price discrimination
- Conditions for successful price discrimination:
 - must possess power to set price
 - must be able to identify separate markets in which the price elasticity of demand differ
 - must prevent arbitrage by third parties. That is, prevent others from buying in the low price market and reselling in the higher priced market.

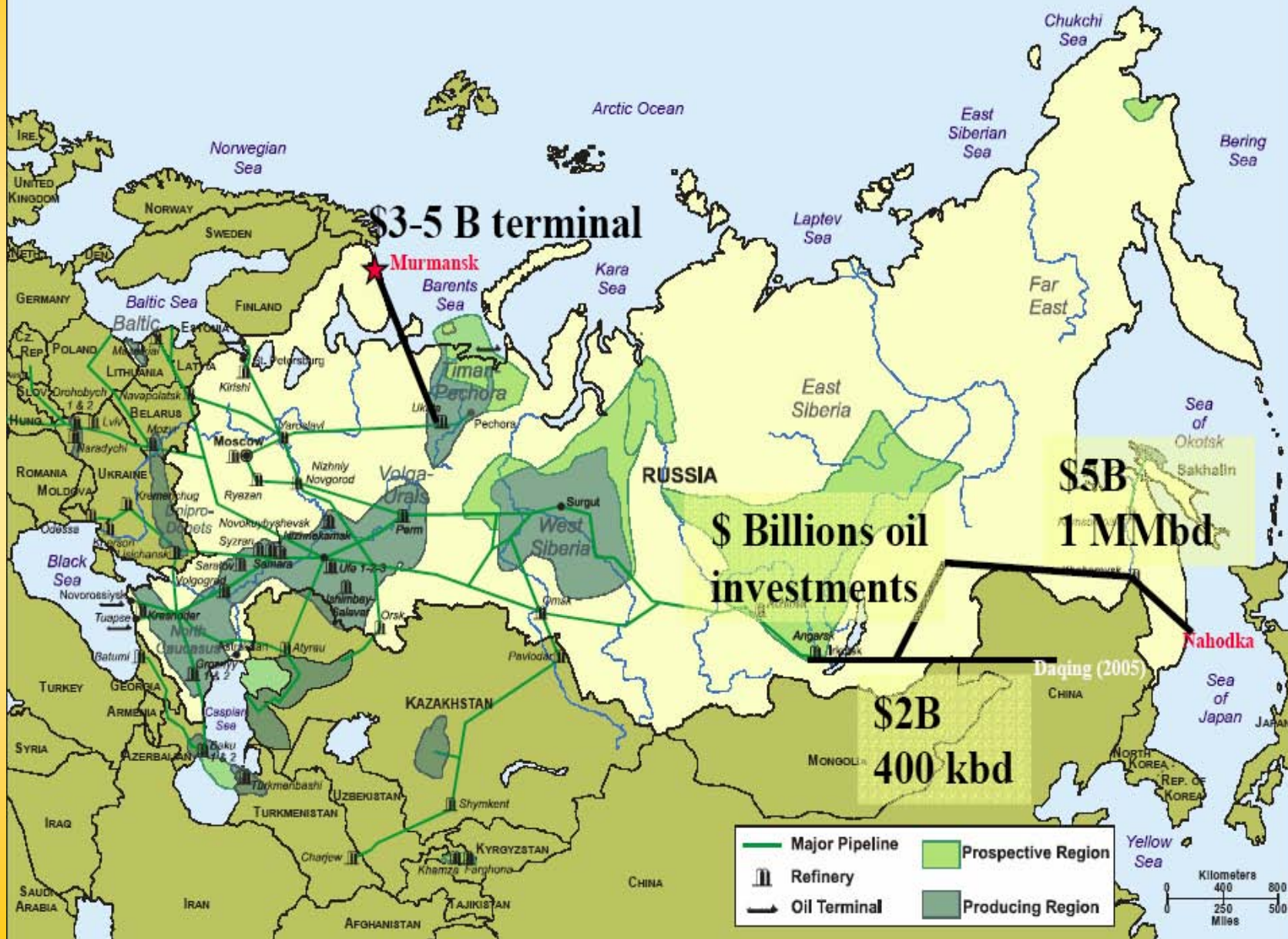
Controlling Asian Supply

- Saudi Arabia prevents resale of its exports with contracts barring resale without approval. Exporters must pay the formula price based on the destination of the crude.
- There are no other Middle East producers that could (or will) exploit higher Asian prices by significantly increasing their exports to Asia.
- The alternative to Saudi oil is West African crude that is disadvantaged in Asian market because:
 - transport costs
 - higher priced lighter, sweeter crude
 - extra price risk

Figure 1: Asia Premium



Russian Pipelines



Significance of Increases in Russian Exports-Long Run Scenario

- Russian oil will primarily be exported westward through Europe, the Baltic Sea and the Mediterranean.
- Asian import growth will increase Asian reliance on Middle East exports.
- Effect of growing Asia imports from Middle East on Saudi share likely to depend more on output increases in Iran and Iraq and not on Russian exports which will be limited.
- The Saudi share in Asia unlikely to diminish. More likely to decline in Europe - continuing (strengthening) conditions for price discrimination.

“No single Western nation can cope with the energy problem by pursuing an isolationist or nationalist strategy, for both it and the countries most important to it would all likely wend up worse off. Problems would be inescapably transmitted through the international economy. Neither planning for dealing with a military crisis in the Arabian/Persian Gulf nor meaningful domestic responses during a supply disruption are likely to be effective without coordination with other Western countries. Nor can the consequences –whether they be balance of payments difficulties, Third World debt, economic slump, or protectionism—be effectively countered without cooperation. The failure of cooperation can be costly, as was discovered in 1973-1974 and again in 1979.”

--Daniel Yergin, *Global Insecurity* 1980

Cooperation on Asian Premium

Ways to eliminate the Asian premium:

- end destination based pricing
 - challenge right of international oil companies to accept Saudi destination pricing
 - change marker crude ?
- reduce Saudi share of Asian market
 - import more oil from countries other than Saudi Arabia
 - import more products produced from non-Middle East crude
 - promote inter-fuel competition
 - de-link LNG and coal prices from crude
 - promote conservation and energy efficiency (gas-electric hybrid cars - especially in China and other developing economies)
 - develop clean coal and other technologies that reduce the demand for oil

US-China Dialogue on Environment and Energy Policy

- 1. U.S.-China cooperation projects: Carbon sequestration, hydrogen dialogue, futuregen, clean coal.
- 2. Need to enhance the scale of joint projects. Variety of approaches will be necessary. Energy efficiency, renewables, new technologies...
- 3. Dialogue on transportation sector policy would help both countries
- 4. Countries that have not committed yet to key infrastructure have golden opportunity to opt for cleaner alternatives
- 5. Coordination on stockpiling and emergency stockpiling systems management is a must.
- 6. Common interest in preventing terrorist groups from disrupting oil shipments in Strait of Malacca and elsewhere.