



OFFICE OF THE CHIEF ECONOMIST

Key Themes for Global Energy Markets in 2007

Presented at the IIF Open Program, Tokyo

17 October 2006

Brad Bourland, CFA
Chief Economist

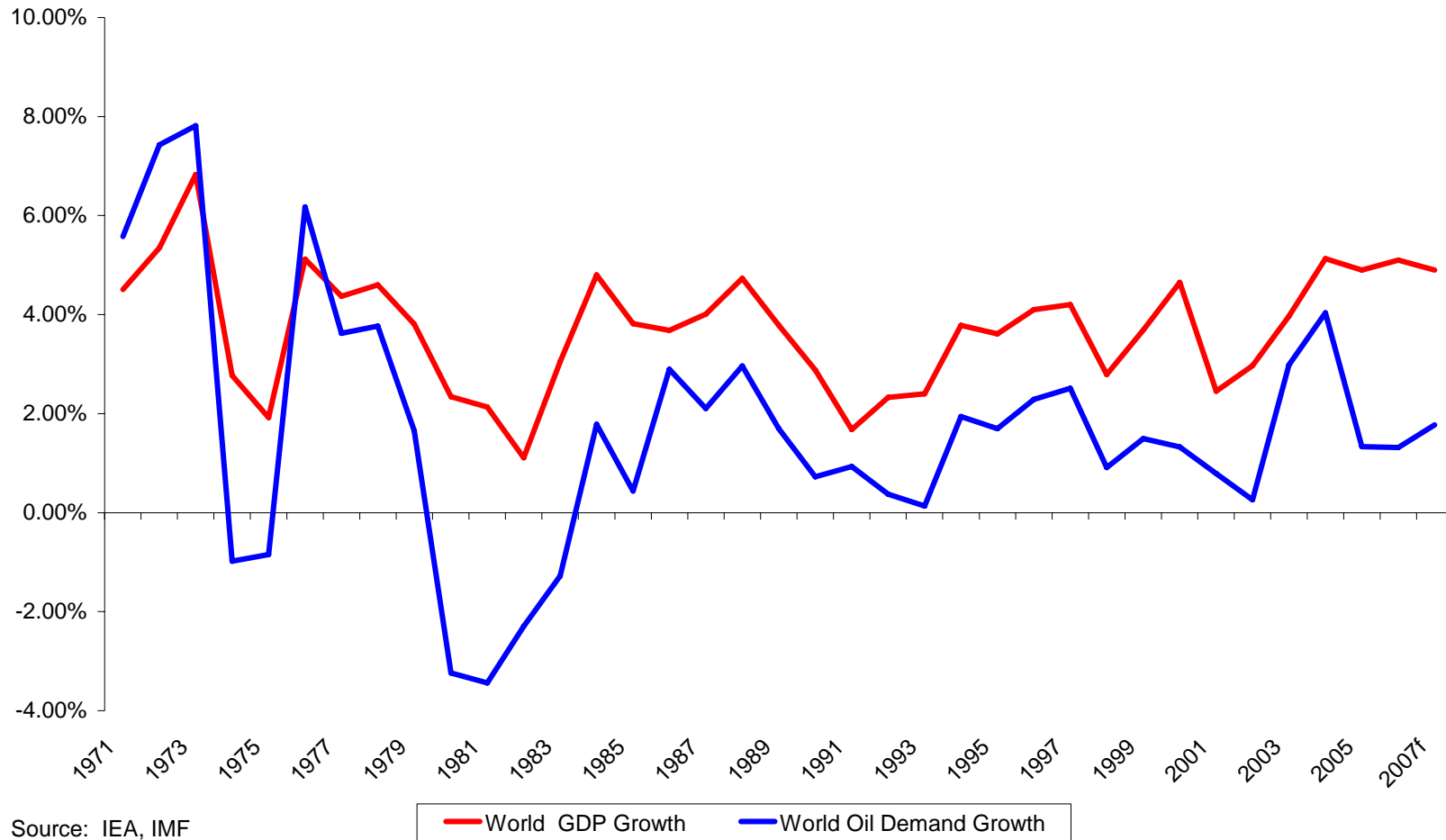
Global Crude Oil Demand and Supply (Million b/d)

	<u>2006</u>	<u>2007</u>	<u>Change</u>
Total Demand	84.7	86.2	1.5
of which:			
United States	20.9	21.2	0.3
China	7.1	7.4	0.4
Total Supply	84.7	86.2	1.5
of which:			
Non-Opec	51.0	52.8	1.8
Opec	33.7	33.4	-0.3

Source: IEA

- IMF forecasts 4.9 % GDP growth, but is a global slowdown occurring?

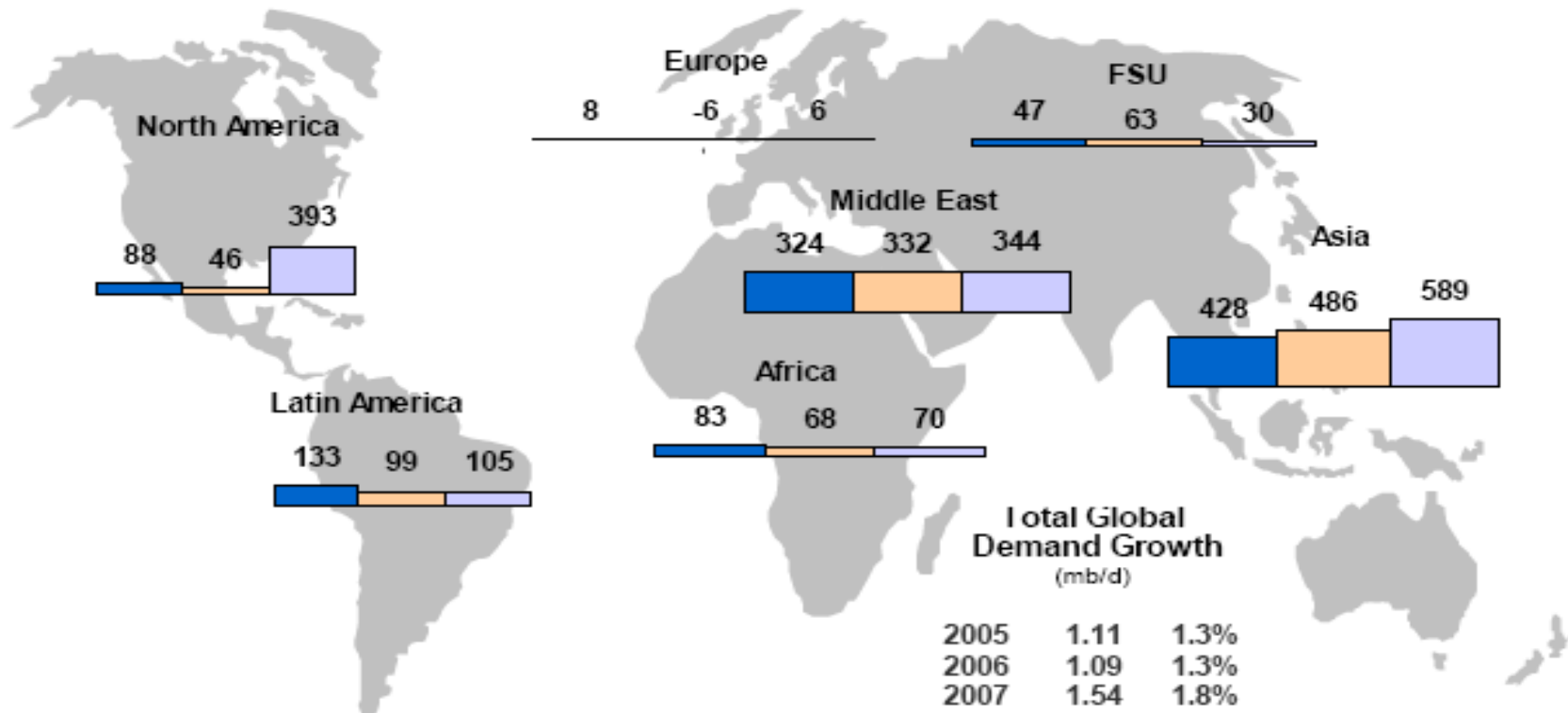
Global GDP and Oil Demand Growth



Source: IEA, IMF

Oil Demand

Global Demand Growth 2005/2006/2007
thousand barrels/day

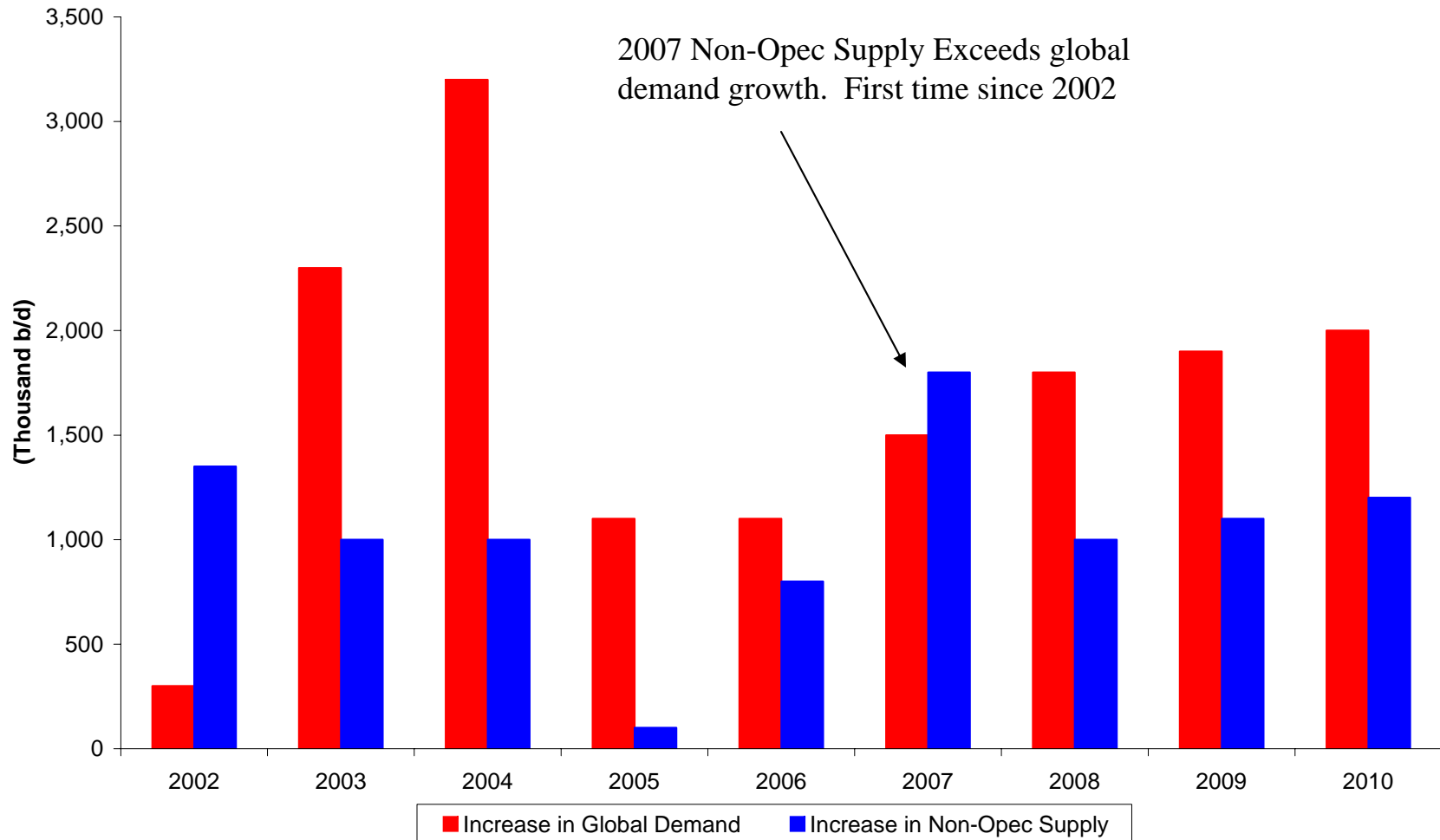


Source: IEA

- The US and China account for about half of global oil demand growth
- India's oil demand growth is not significant (about 50,000 b/d per year)
- Middle East demand growth is significant (about 300,000 b/d per year)
- Demand growth relates primarily to transportation, not power generation
- Demand data is incomplete

Supply in 2007: Opec's Challenging Year

Growth in Global Demand and Non-Opec Supply



Sources of 2007 New Non-Opec Supply

7

- North Sea 700,000 b/d
- Caspian 700,000 b/d
- Angola 400,000 b/d
- Gulf of Mexico 350,000 b/d
- Brazil 300,000 b/d
- Russia 250,000 b/d
- Canada 200,000 b/d

Net 2007 non-Opec addition of 1.8 million b/d after subtracting declines in maturing oilfields

Opec Supply—Who Produces What?

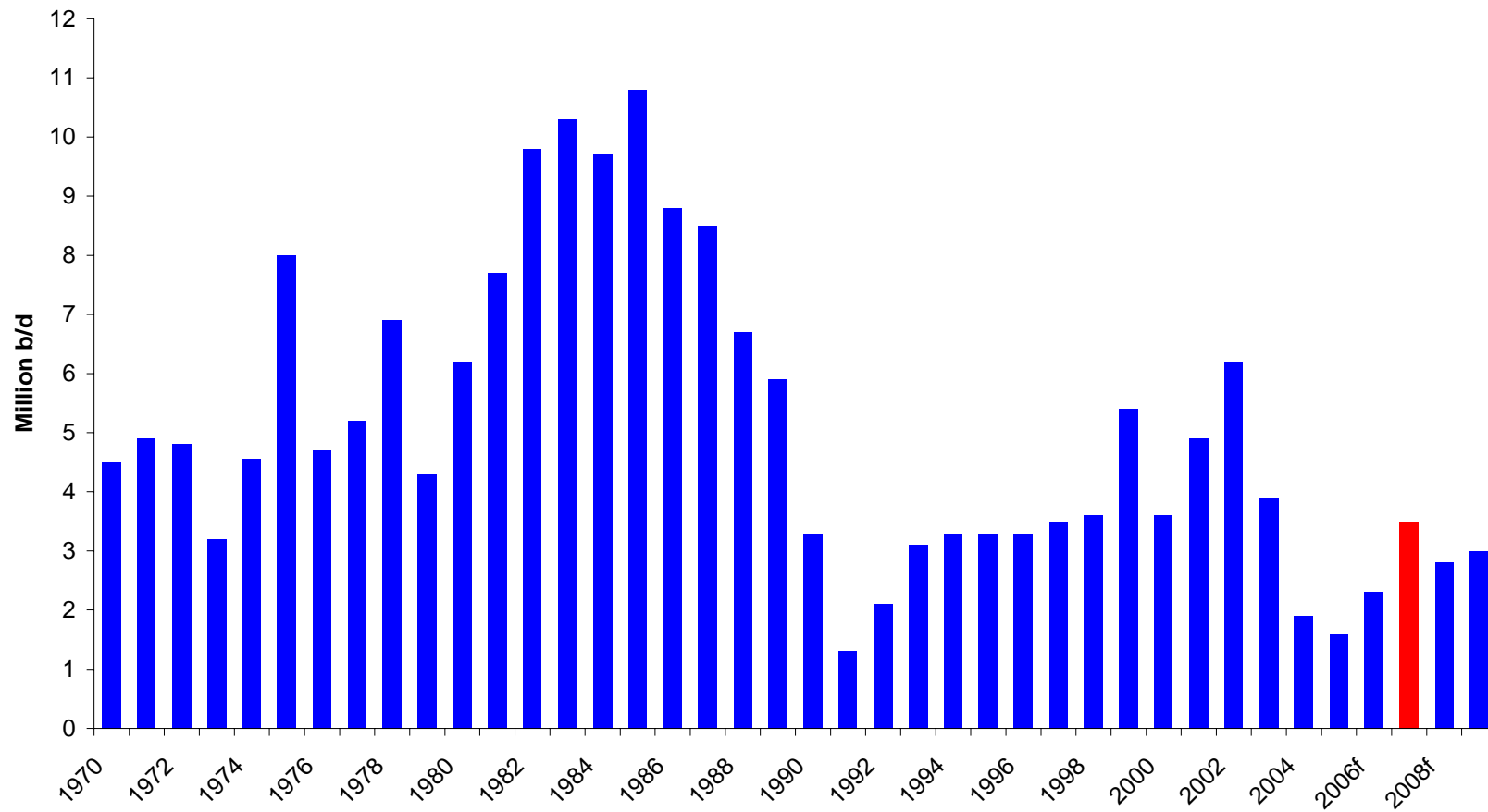
8

Opec Oil Production (Million b/d)

	August 2006 Production
Algeria	1.33
Indonesia	0.86
Iran	4.00
Kuwait	2.50
Libya	1.72
Nigeria	2.27
Qatar	0.84
Saudi Arabia	9.35
UAE	2.64
Venezuela	2.53
Subtotal	28.04
Iraq	2.00
Total Crude Oil	30.04
Opec NGL's	4.70
Total	34.74

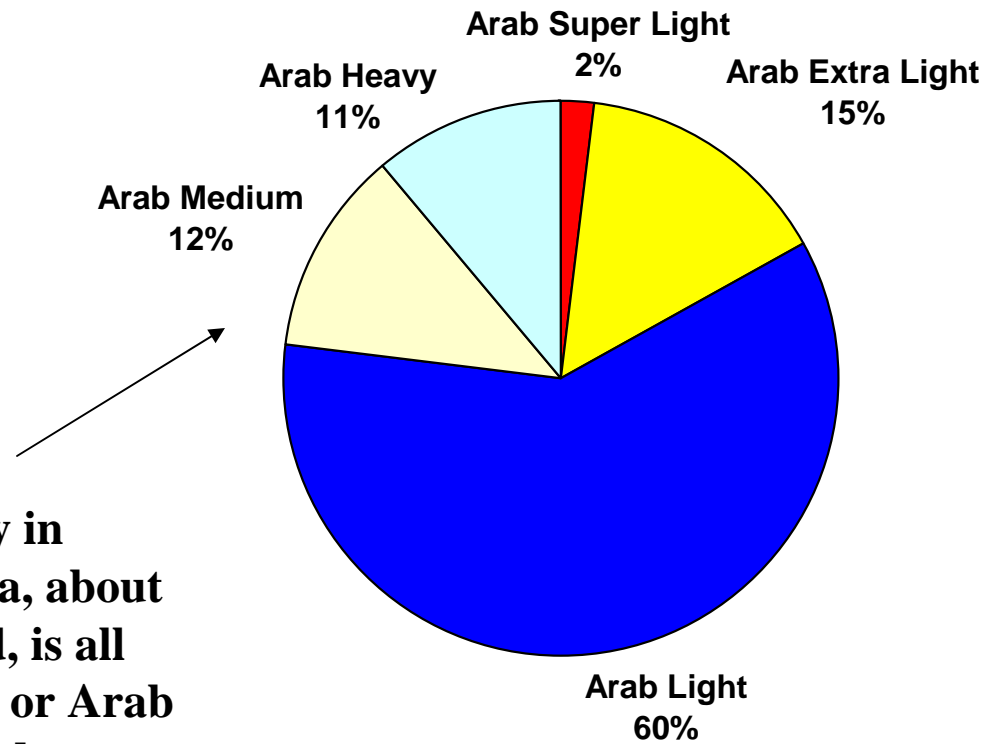
Source: IEA

- Issue for 2007: Excess capacity cushion more precarious than it looks.



Source: IEA, EIA, Samba estimates and forecasts for 2006-2009

Saudi Crude Grades

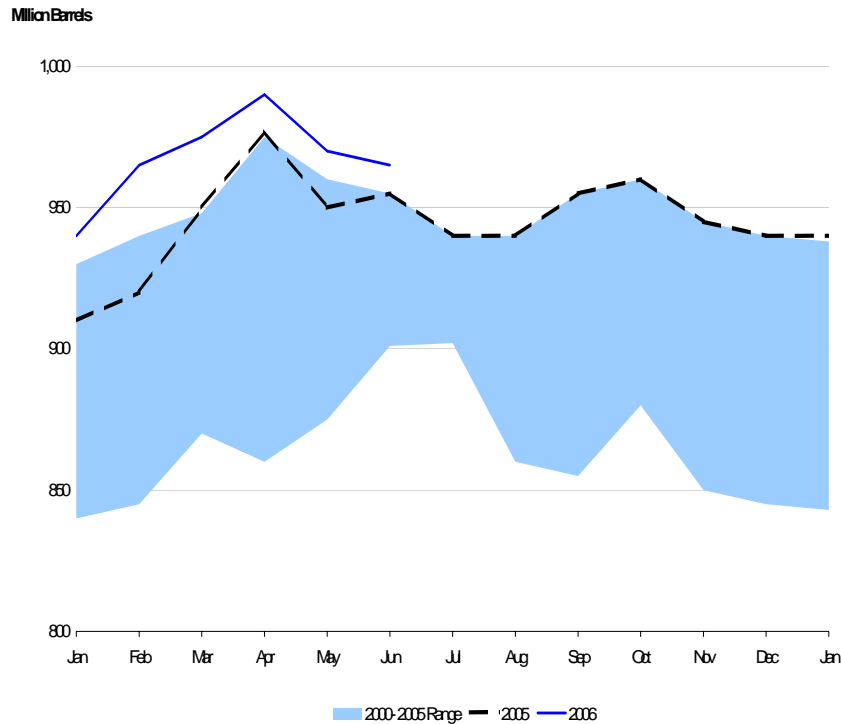


Idle capacity in Saudi Arabia, about 2 million b/d, is all Arab Heavy or Arab Medium crude grades.

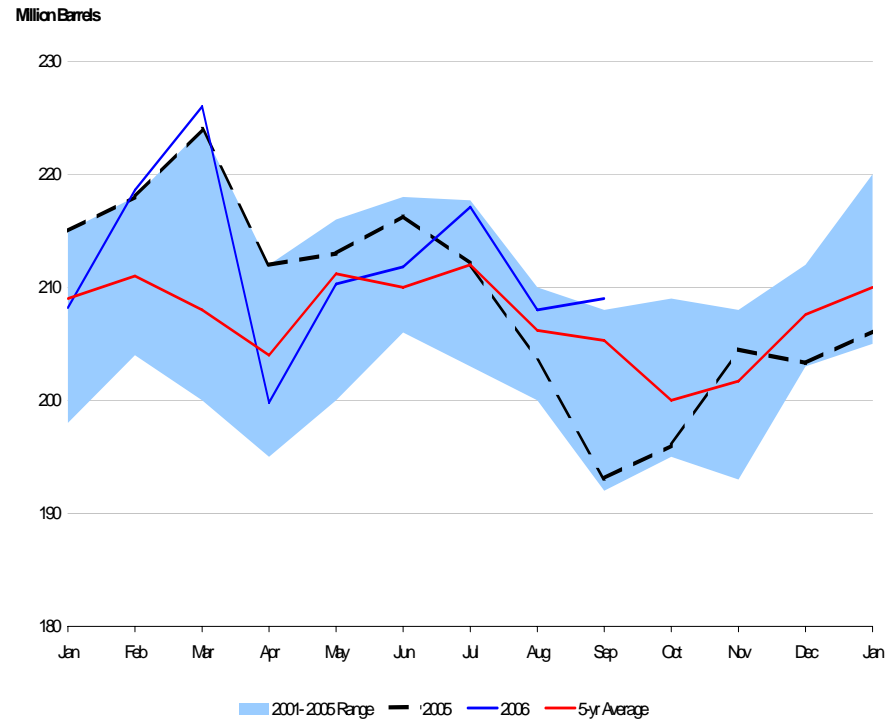
- Opec may need to take 1 – 2 million b/d of production off the market for market balance in 2007
- Opec itself will add 1 million b/d of new production capacity in 2007
- First real test of Opec cohesion in many years
- The challenge not as great as previous ones, however, and Opec should succeed in keeping oil prices above \$50

- 2007 Issue: Inventories remain at relatively high levels, but, as with capacity, this is more precarious than it looks

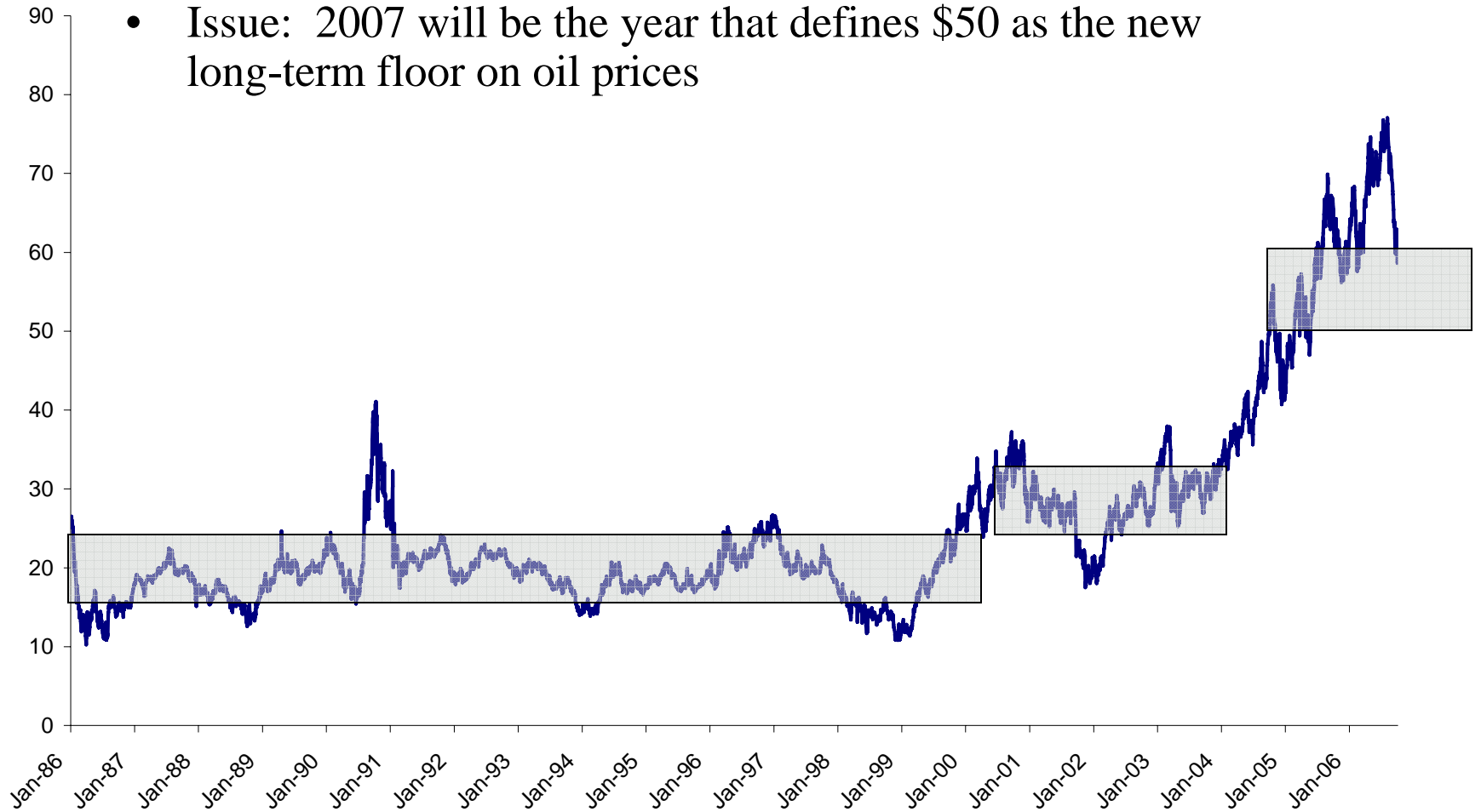
OECD Industry Crude Oil Stocks



US Gasoline Stocks



Oil Prices, 1986-2006

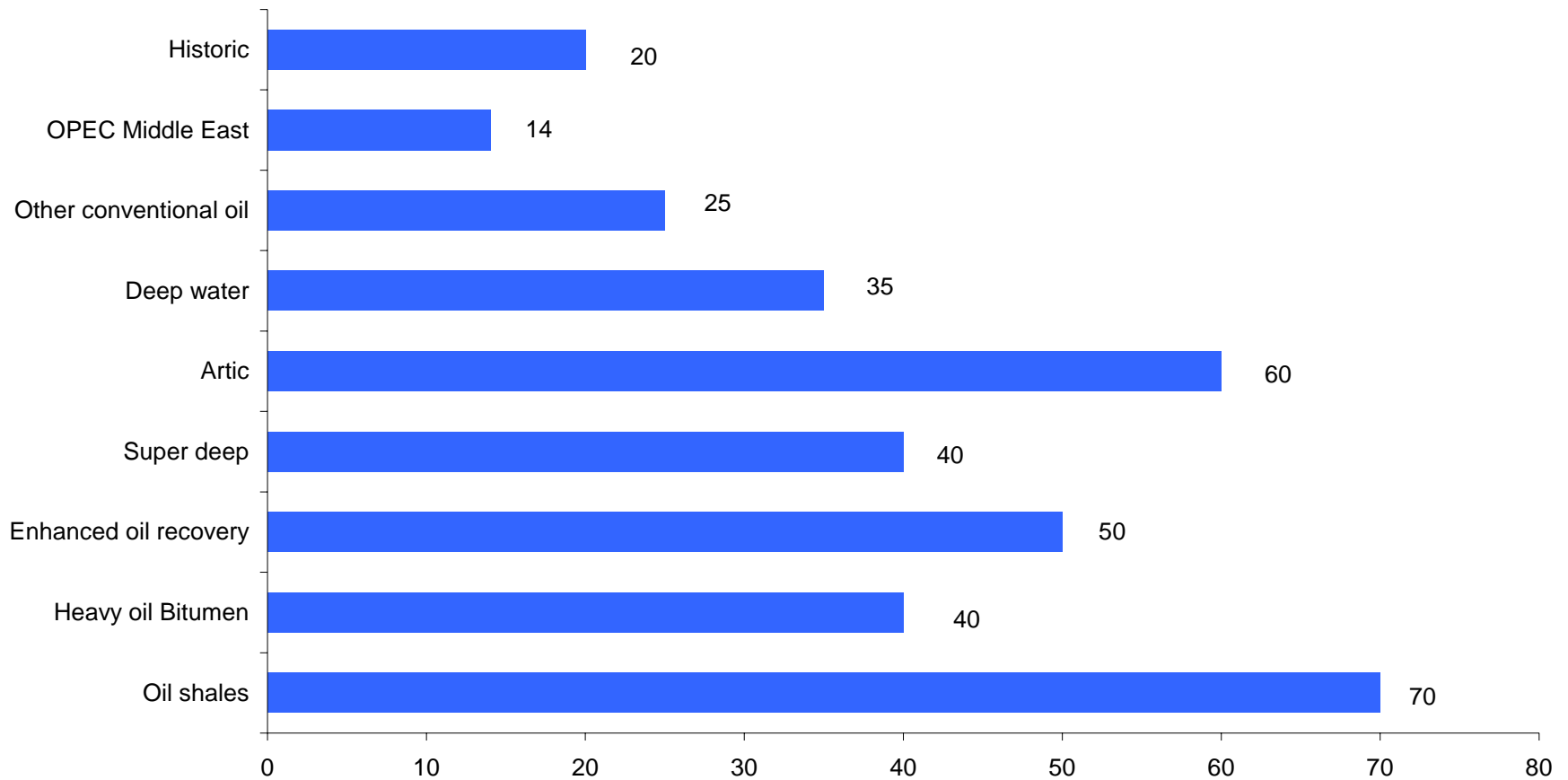


What Precipitated the recent sharp decline from \$78 to \$58?

- High oil and gasoline inventories
- Concern about a US economic slowdown
- Easing of geopolitical risk (Iran, Middle East in general)
- No hurricanes

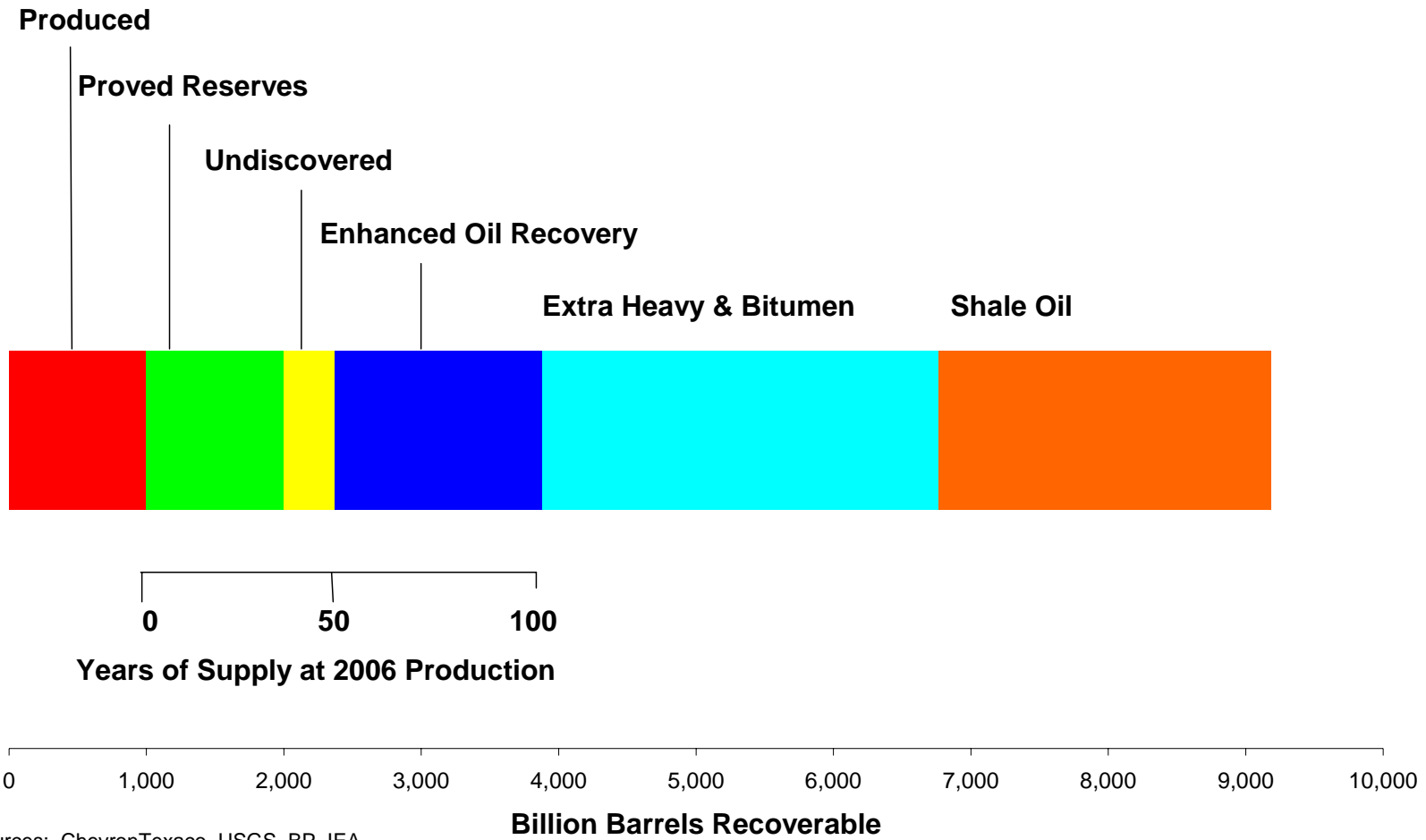
Why \$50 is the new \$20

Oil Price Needed for Extraction (\$/Barrel)



Source: IEA

Global Oil Resource Base



Sources: ChevronTexaco, USGS, BP, IEA

- Weak fundamentals test Opec ability to set a floor at \$50.
Opec succeeds
- Price volatility as important as price level in 2007
- Watch out for price spikes from unexpected supply disruptions—Iraq, Iran, Nigeria, Venezuela, Russia, accidents, weather

Refining Capacity—Not a Key 2007 Issue

Refinery Utilization in OECD Countries

	Utilization Rate
	July '06
OECD North America	
US	90.17
Canada	87.05
Mexico	74.09
Total	88.59
OECD Europe	
France	86.95
Germany	93.32
Italy	81.73
Netherlands	76.54
Spain	93.79
UK	86.00
Other	85.58
Total	86.38
OECD Pacific	
Japan	84.97
Korea	94.26
Other	85.36
Total	87.98
OECD Total	87.70

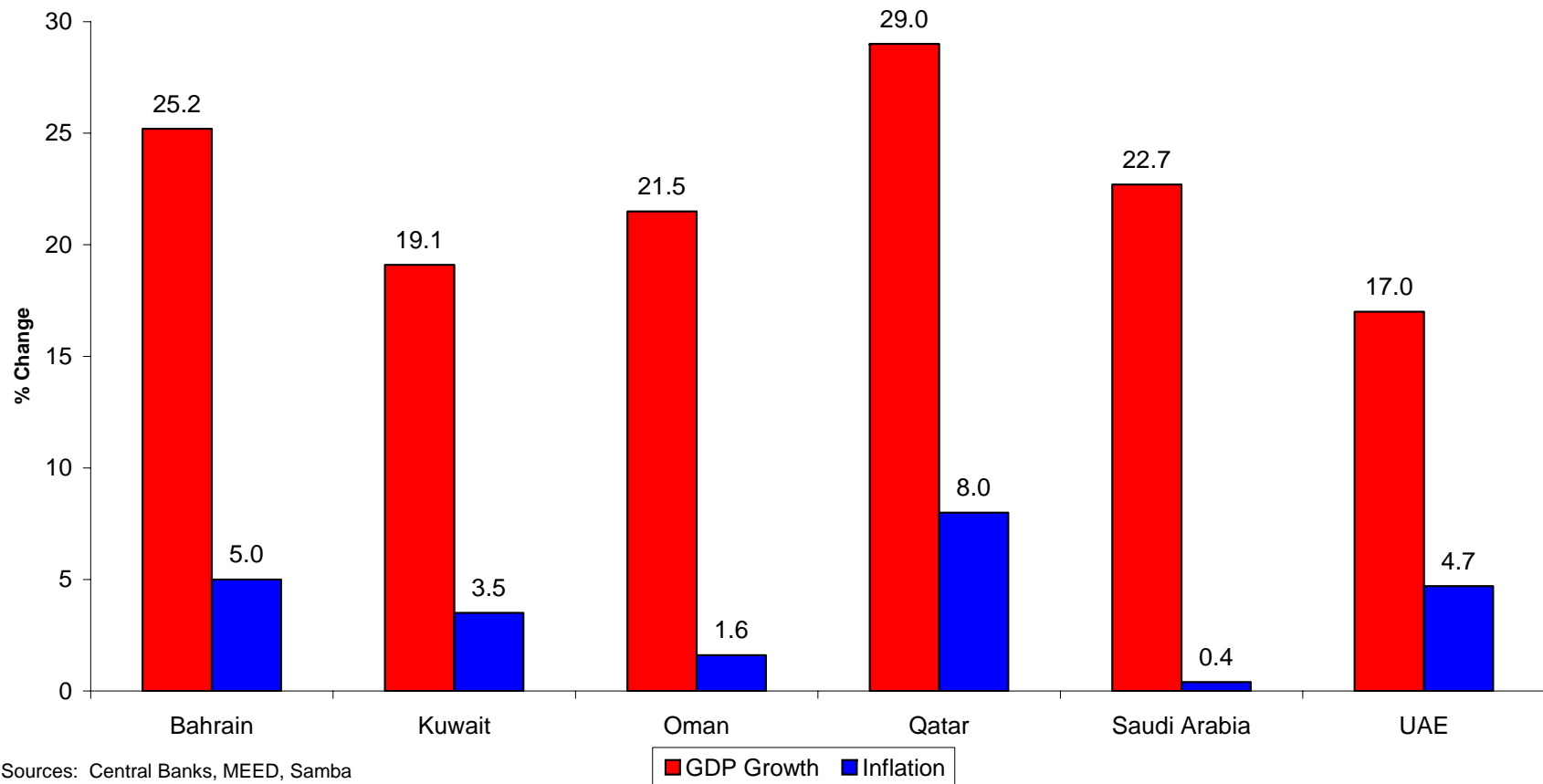
Source: IEA

If remaining proved oil reserves sell for \$50/barrel, then:

- \$13 trillion for Saudi Arabia
- \$24 trillion for GCC
- \$38.5 trillion for OPEC Middle East

The GCC combined has higher current account surpluses than China or Japan 2005-2007

GCC Nominal GDP Growth and Inflation (2005)



- Global GDP growth is uncertain, and is the major factor in the 2007 oil market.
- 2007: Non-Opec's last hurrah--the last year of strong non-Opec supply growth this decade
- Opec's challenge--cutting up to 2 million b/d of production to defend a \$50 floor (they will succeed)
- Don't be fooled by apparently abundant inventories and spare production capacity--these are precarious and vulnerable markets