



IEEJ: October 2005

# Organization of the Petroleum Exporting Countries

## Market Changes and World Oil Outlook

by

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# 45 years of OPEC



This year OPEC is celebrating:

- 45 years since founding
- 40 years in Vienna



## OPEC's objectives are today as valid as they were in 60's

Stable markets  
Reasonable prices  
Steady revenues  
Secure supply  
Fair returns to investors

**Short, medium and long terms**



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# Outcome of recent OPEC Conference

## The 137<sup>th</sup> Ministerial Conference agreed to:

- Make available to the market spare capacity of ~ 2mb/d, should it be called for, for a period of three months, starting 1 October 2005
- Review market developments at its next Meeting in Kuwait on 12 December

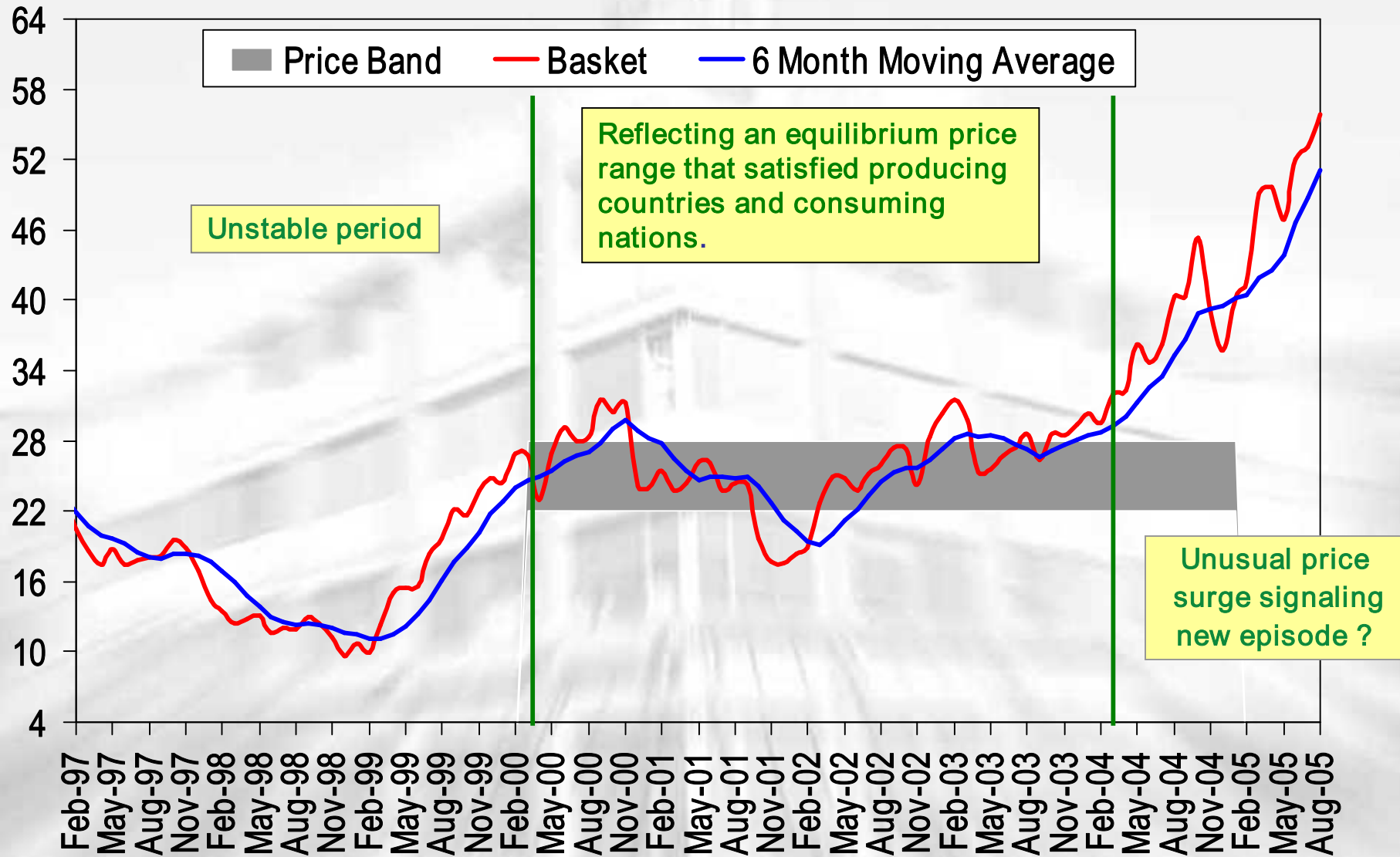
What are the reasons behind this decision?





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# OPEC Reference Basket nominal price (\$US/b)





# Current oil market assessment

## ◆ Key features of the present oil market

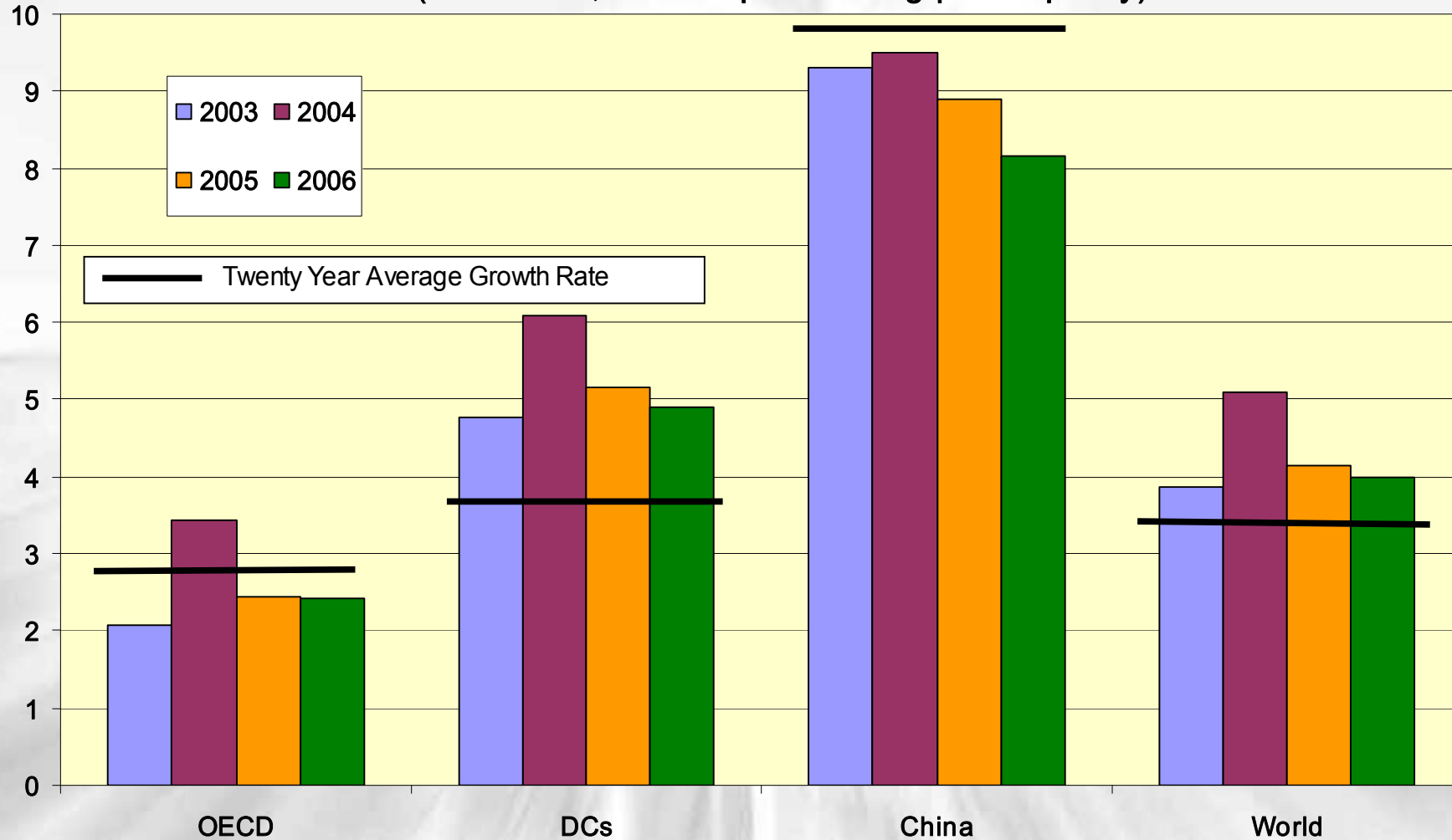
- ⇒ Continued strong economic growth & high demand
- ⇒ Supply chain tightness
  - OPEC & non-OPEC oil supply
  - Downstream bottlenecks
- ⇒ Persistent price volatility: enhanced by geopolitical tensions, increasing speculative activity in Futures market
- ⇒ Impact of Hurricane Katrina



# Economic & oil demand growth

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Rates of Economic Growth  
(real terms, at 1995 purchasing power parity)





## Economic outlook to 2006: World Economy

- ◆ **Global Growth:** In the first half of 2005 global growth was in the region of 4%. Japan grew strongly, North America also performed well but Europe continued to lag.
- ◆ 3Q growth began steadily but the impact of Hurricane Katrina will affect North American growth in the final quarter. High oil prices may also depress growth prospects in Europe and Asia (excluding Japan).
- ◆ If the oil price is maintained at \$55/b for the remainder of 2005 and 2006, the rate of growth of global GDP in 2006 might be reduced to 3.9%. This would be 0.2% below the expected 4.1% outturn for this year.





## Economic outlook to 2006: Major OECD

- ◆ **USA:** Hurricane Katrina has lowered the forecast growth rate for 2005 to 3.4%. Lower growth in consumer spending is expected to reduce the growth rate for 2006 to 3.0%.
- ◆ **Japan:** In the first half of 2005 GDP growth was 4.5%. The steady improvement in domestic demand should allow the growth rate for 2005 to reach 1.7% and possibly 2%. Growth of about 2% should also be achievable in 2006.
- ◆ **Euro-zone:** First quarter growth was encouraging at 1.6% annualized but growth slowed to 1.2% in the second quarter. For the year as a whole GDP growth is unlikely to exceed 1.1%. GDP is expected to grow slightly faster at 1.5% in 2006.



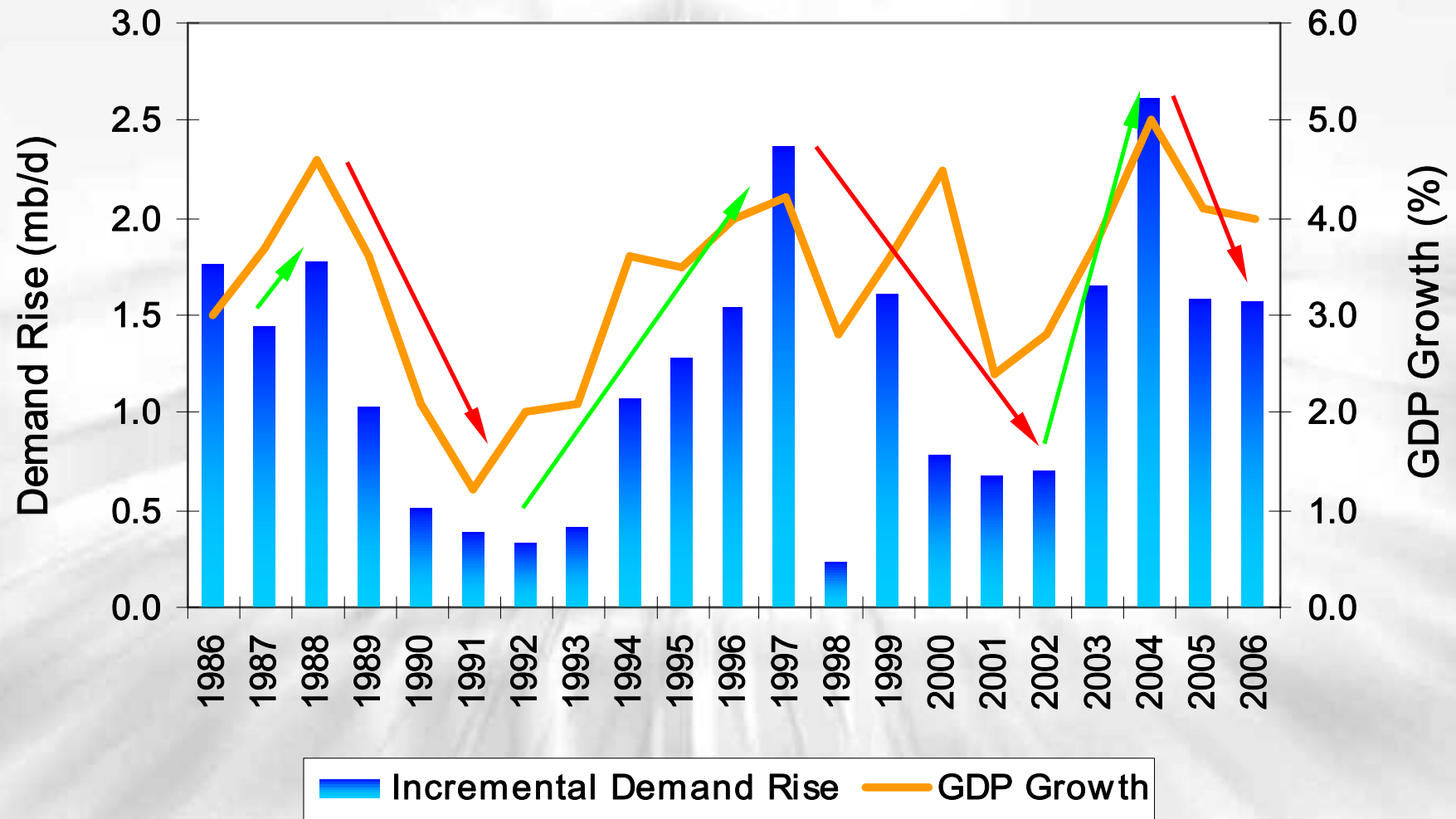
## Economic outlook to 2006: China and Korea

- ◆ Data for the first half of 2005 showed no slowdown in GDP growth in **China** which was 9.5%.
- ◆ Economically advanced regions are showing some weakness but industrial production continues to expand at about 16%. Lower GDP growth of 8.8% is expected for '05 with further deceleration to 8% next year as export growth may slow.
- ◆ Higher energy and input costs may affect profitability of over-extended companies. Chinese banking system may face some strains as economy slows
- ◆ **Republic of Korea**: Real GDP rose by only 3% in the first half of 2005 as a result of a downturn in the global IT cycle. In 2006 growth may be affected by both by higher energy costs and slower growth in the USA and China.



# Economic and oil demand growth

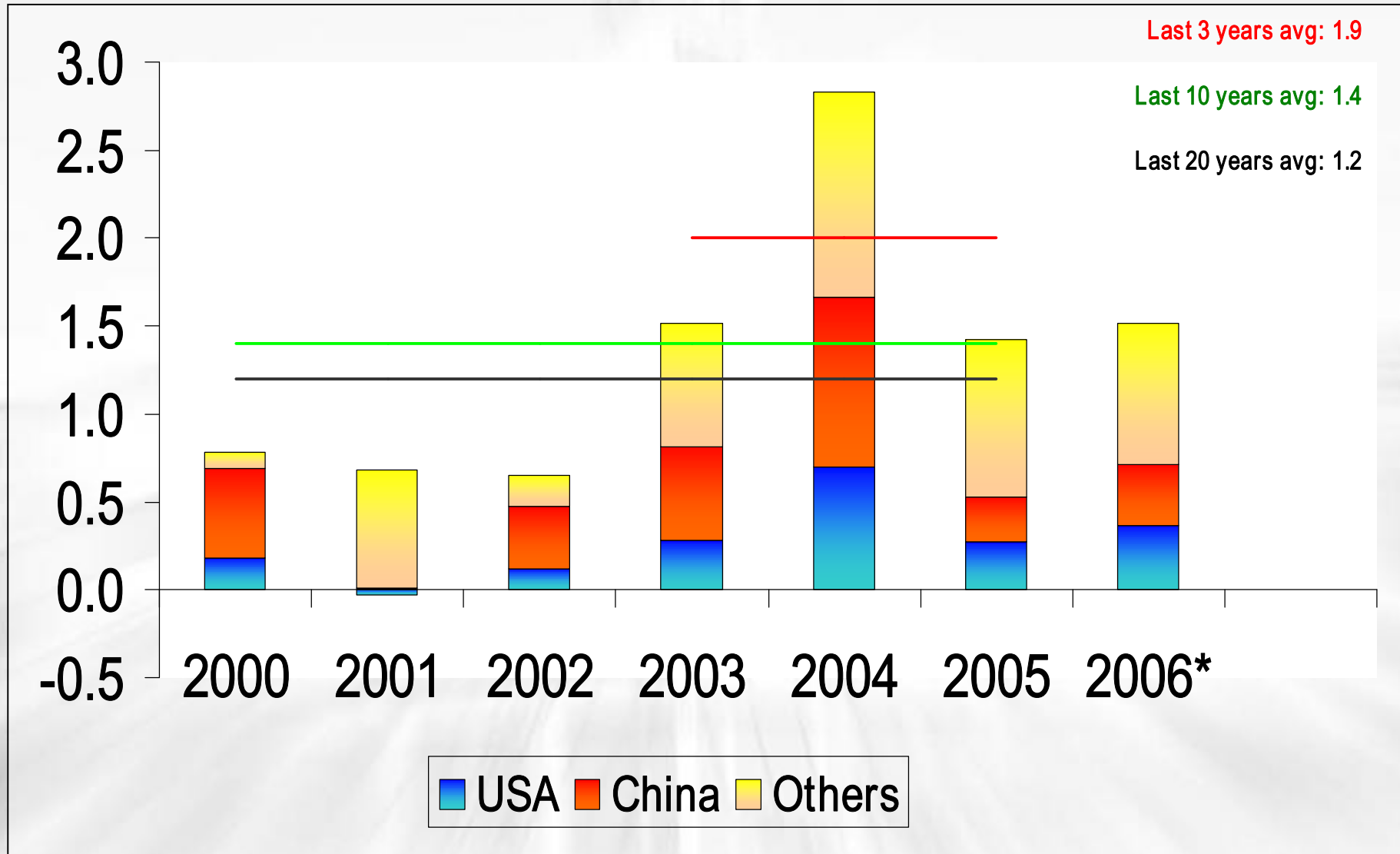
- Exceptionally high World GDP growth at 5.1% in 2004
- This lead to the highest record growth of oil demand since 1976





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# Largest contributors to growth in world oil demand (mb/d)

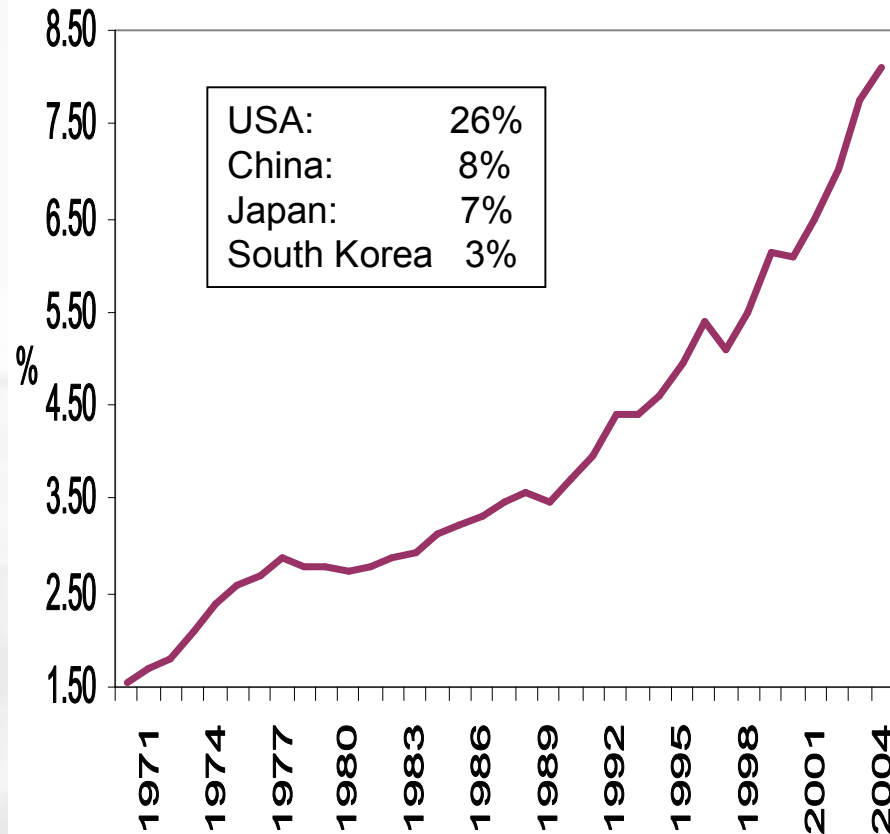




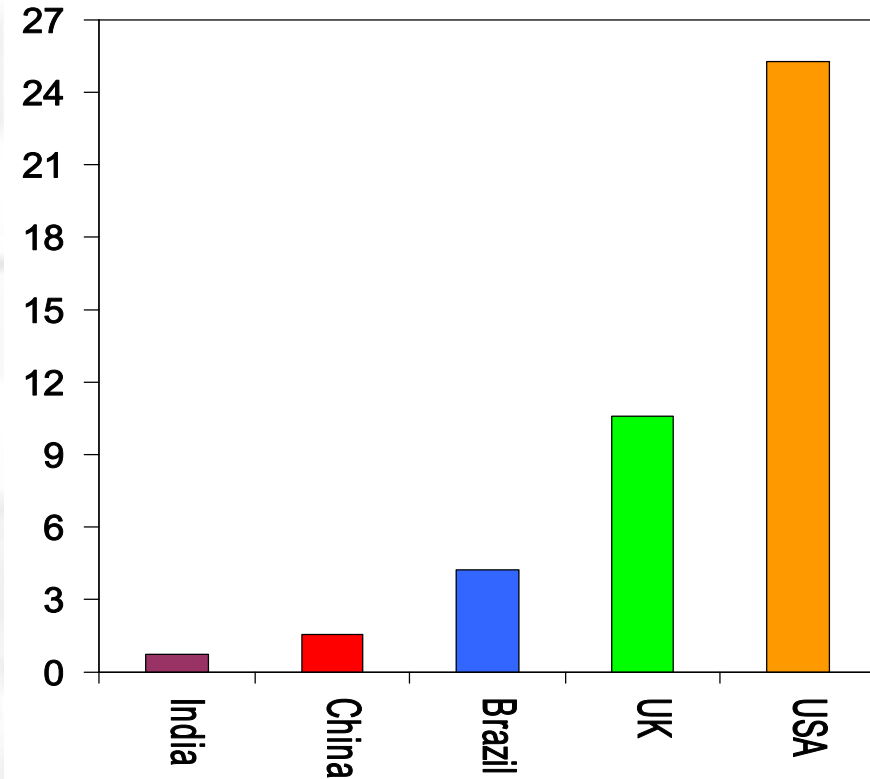
# China has become the second largest oil consumer

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### China's share in world oil consumption (%)



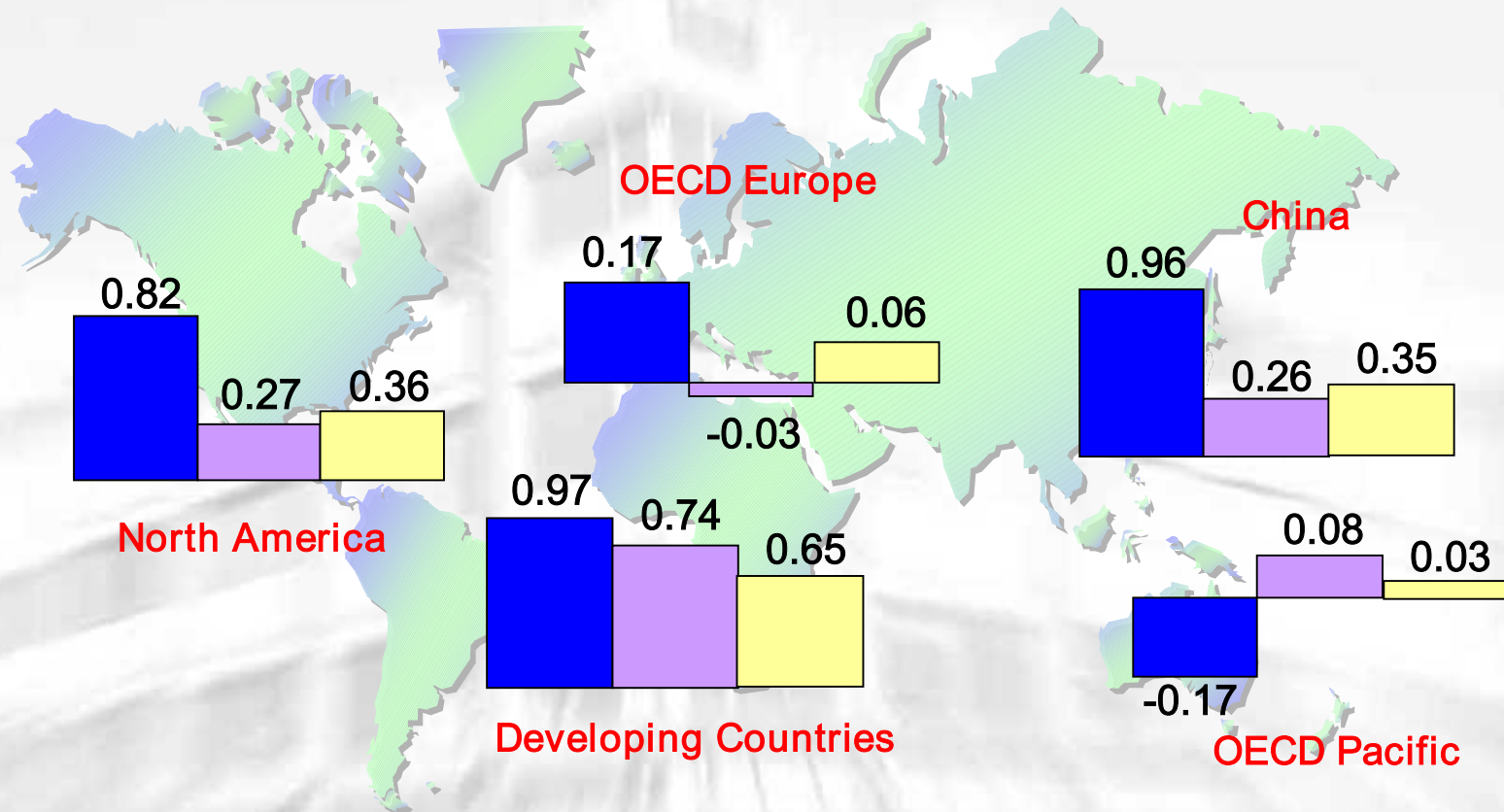
### Oil demand, barrels per capita per year





# World Oil Demand Growth Forecast 2004-2006, mb/d

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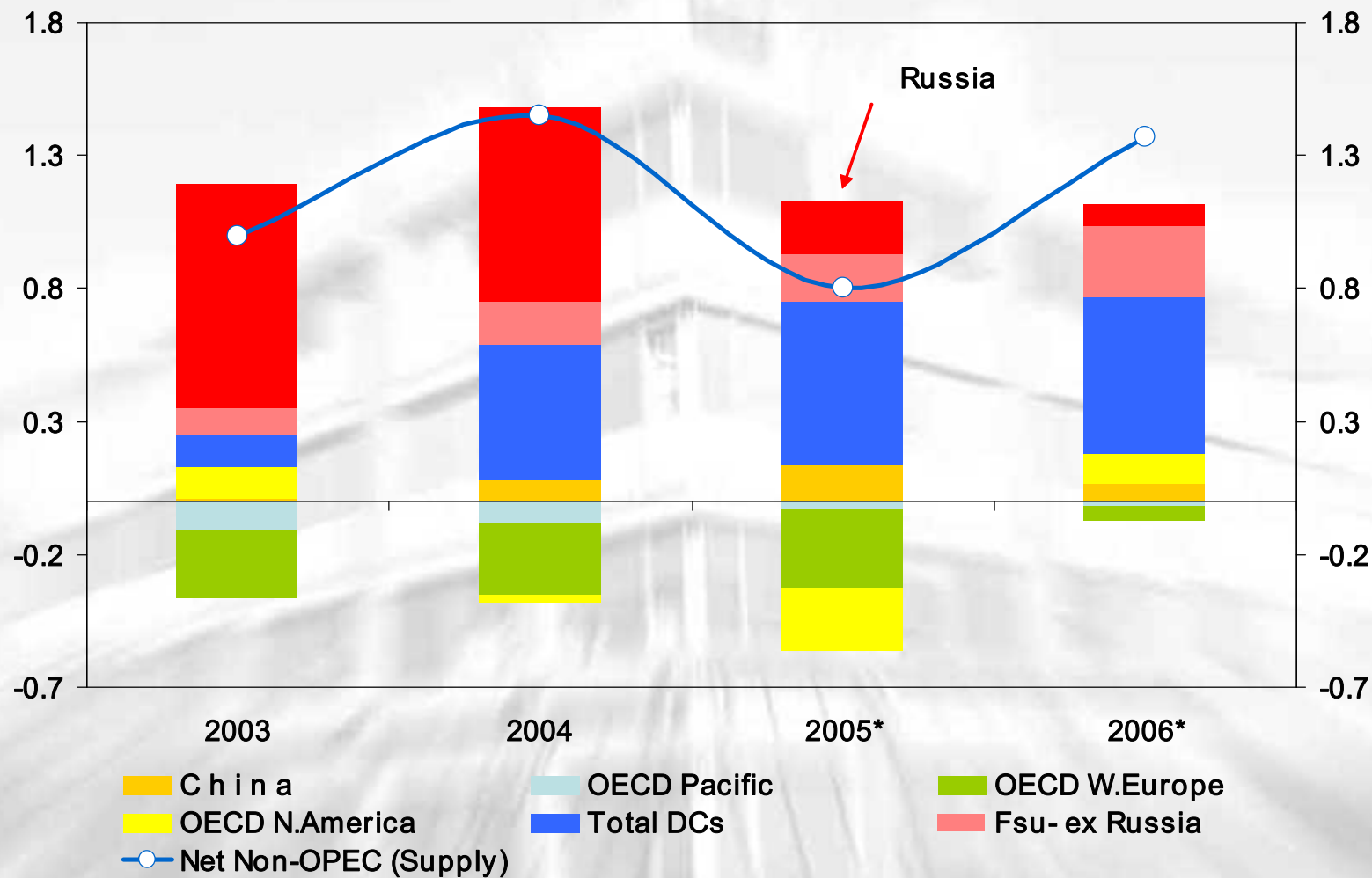


y-o-y change (mb/d)					
	1Q	2Q	3Q	4Q	Year
2004	1.9	4.0	2.7	2.8	2.8
2005	1.9	1.0	1.2	1.6	1.4
2006	1.7	1.4	1.5	1.5	1.5



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# Non-OPEC growth year-on-year change (mb/d)



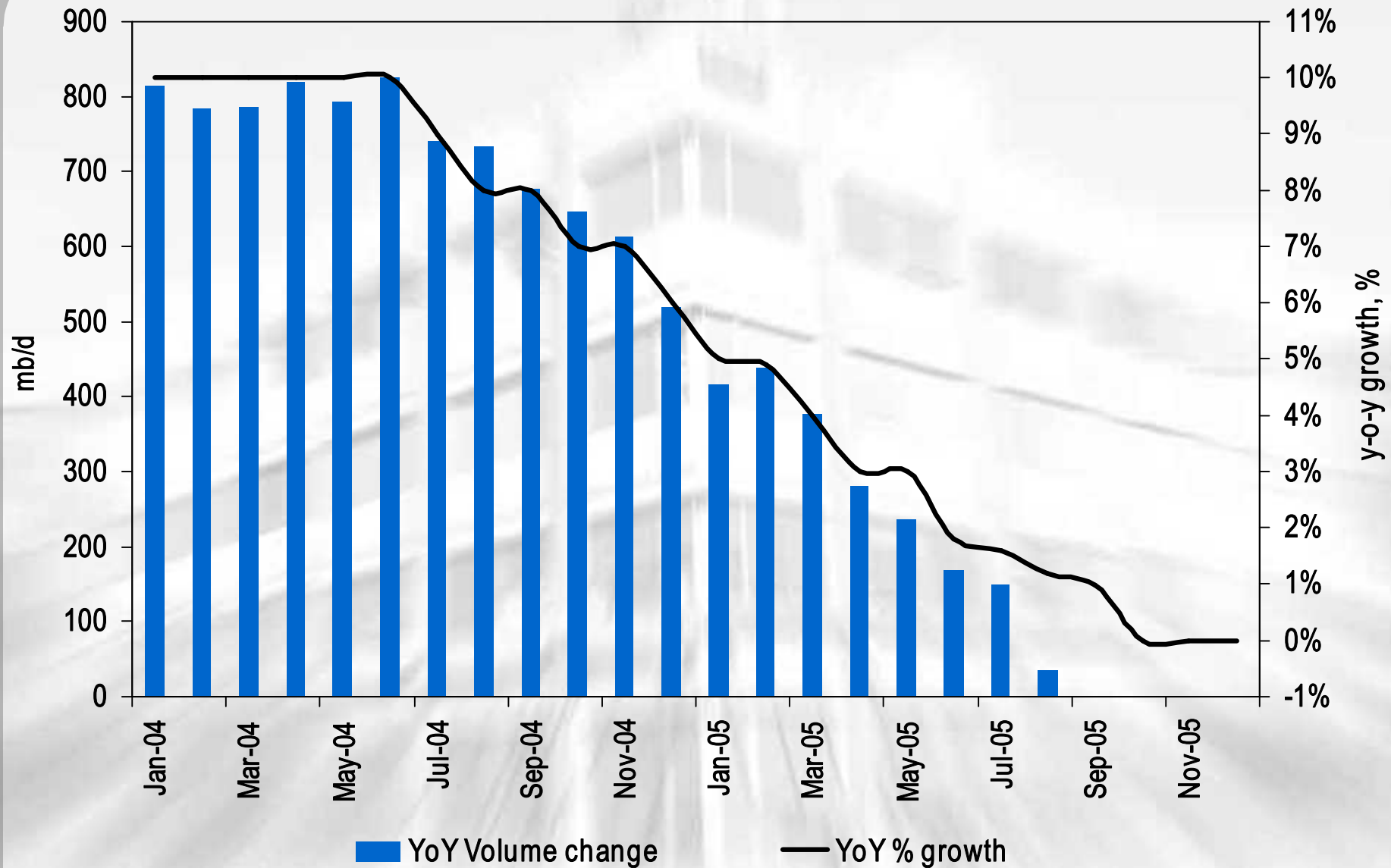
\* Projected. Data includes OPEC NGL & non-conventionals.

Source: OPEC



# Slowing pace of Russian oil supply growth

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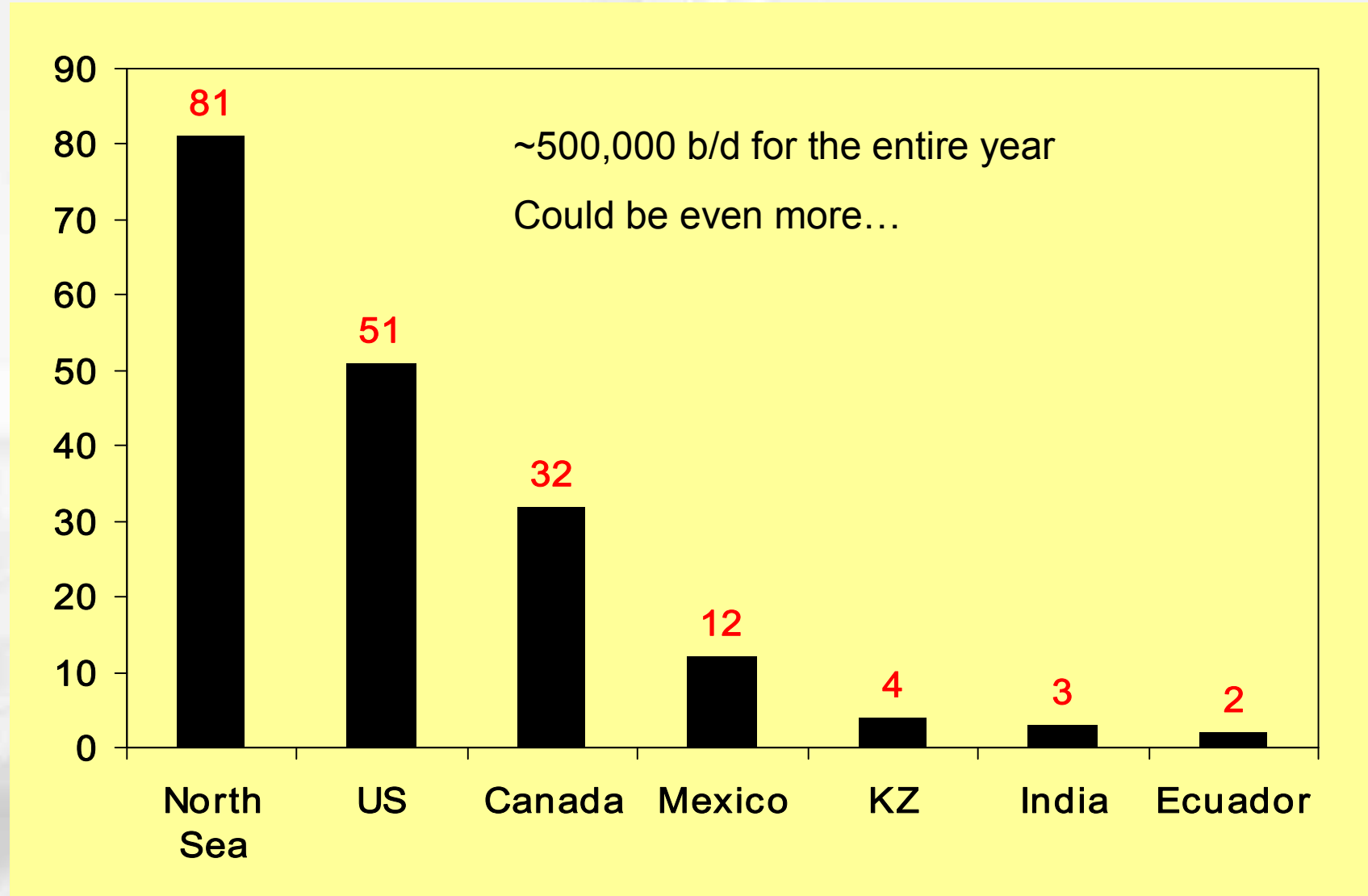
Source: OPEC





# 2005: estimated production losses (mb)

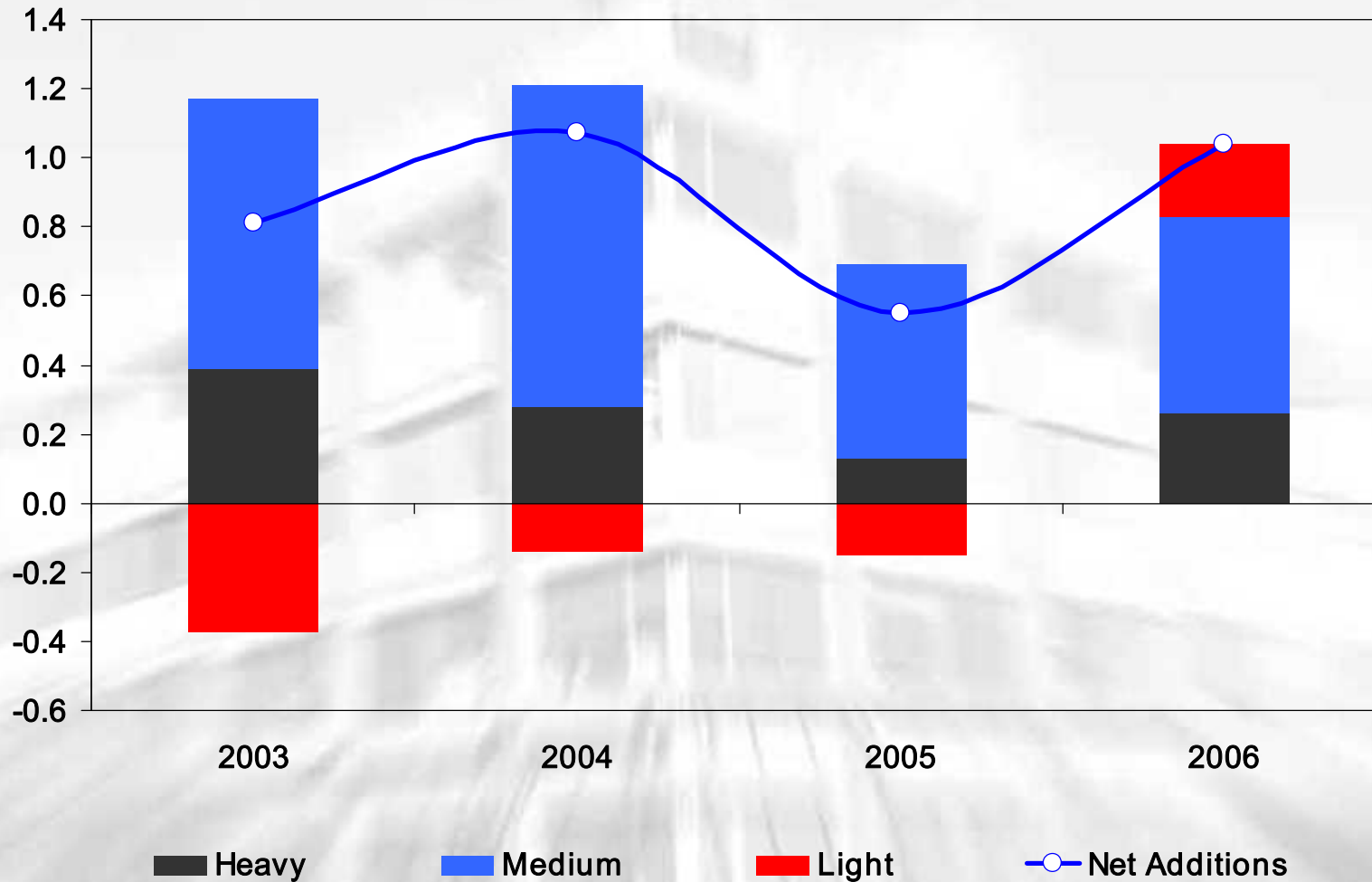
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# Quality of non-OPEC production 2003-2006 year-on-year change (mb/d)

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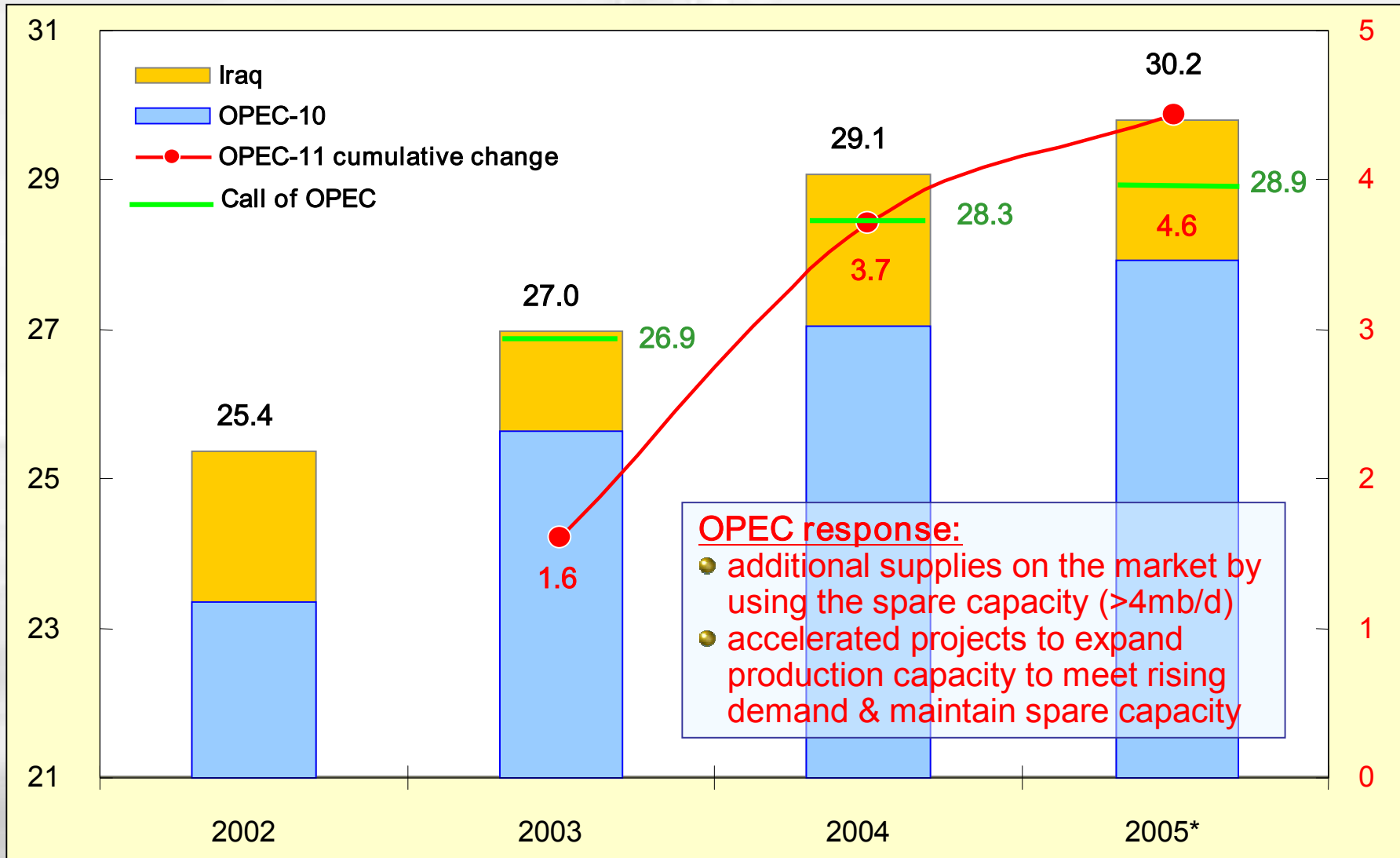
Source: OPEC; Heavy <26, Medium 26-35, Light > 35



# OPEC crude oil production, 2002-2005

(based on secondary sources, mb/d)

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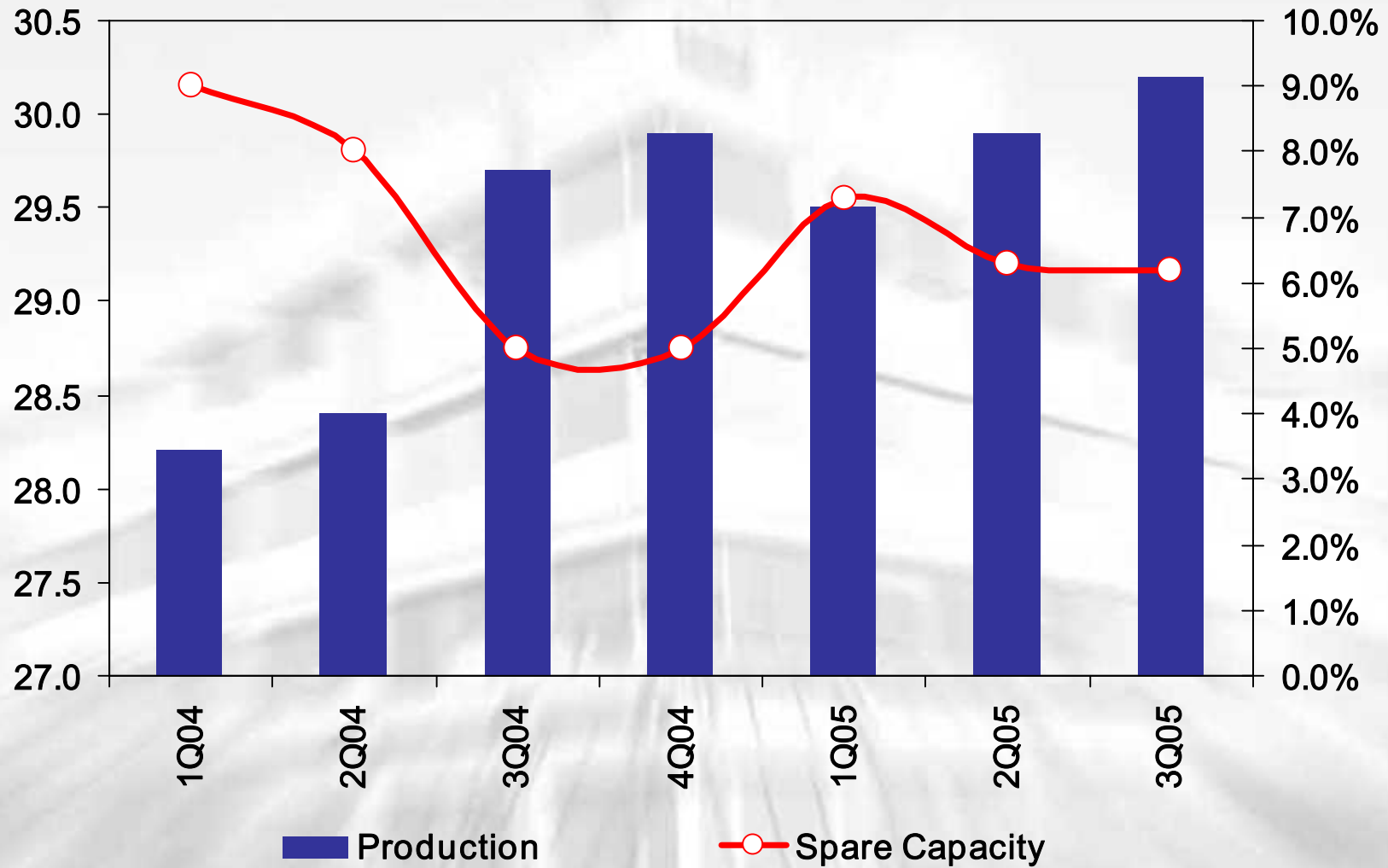
Note: OPEC production excludes OPEC NGL & non-conventional oil (estimated to be 4.2 mb/d in 2005).

\* / As of August 2005, OPEC production is assumed to be at July level of 30.2 mb/d.



# OPEC production (mb/d) vs spare capacity (%)

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Source : OPEC, 3Q based on latest OPEC production, capacity av of SS



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# OPEC capacity by country, tb/d (end 2005 to end 2006)

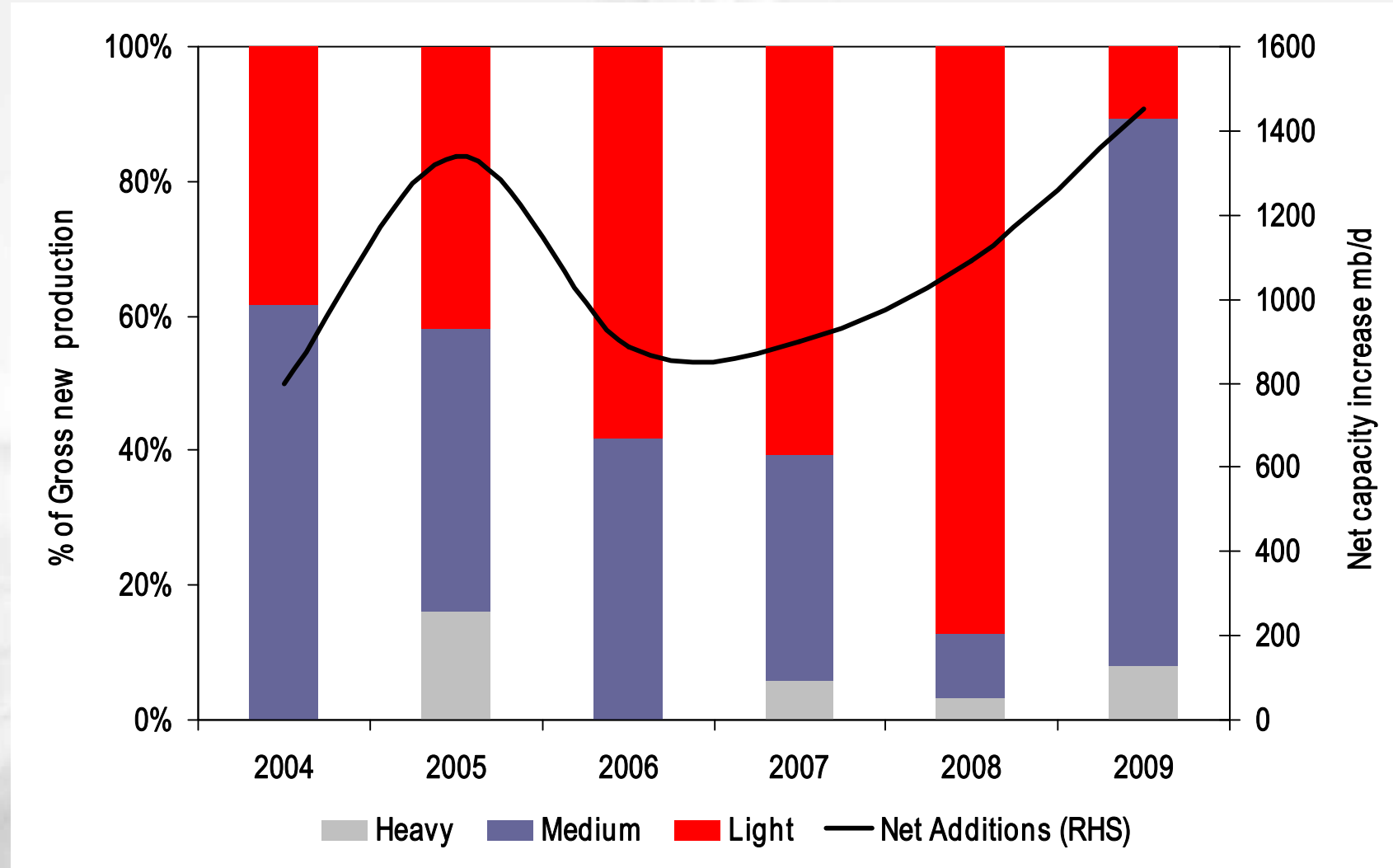
	End 2005	End 2006	Change
Algeria	1400	1470	+70
Indonesia	970	920	-50
Iran	4170	4280	+110
Kuwait	2750	2750	
Libya	1720	1740	+20
Nigeria	2600	2900	+300
Qatar	875	900	+25
Saudi Arabia	11000	11200	+200
UAE	2600	2700	+100
Venezuela	2900	3000	+100
OPEC 10	30985	31860	+875
Iraq	2200	2200	
Total OPEC 11	32985	34060	+875
OPEC 11 + NGLs, Con	37195	38630	+1235

Source: OPEC, secondary sources (Iraq 2.2)



# OPEC Expansion – Crude Quality

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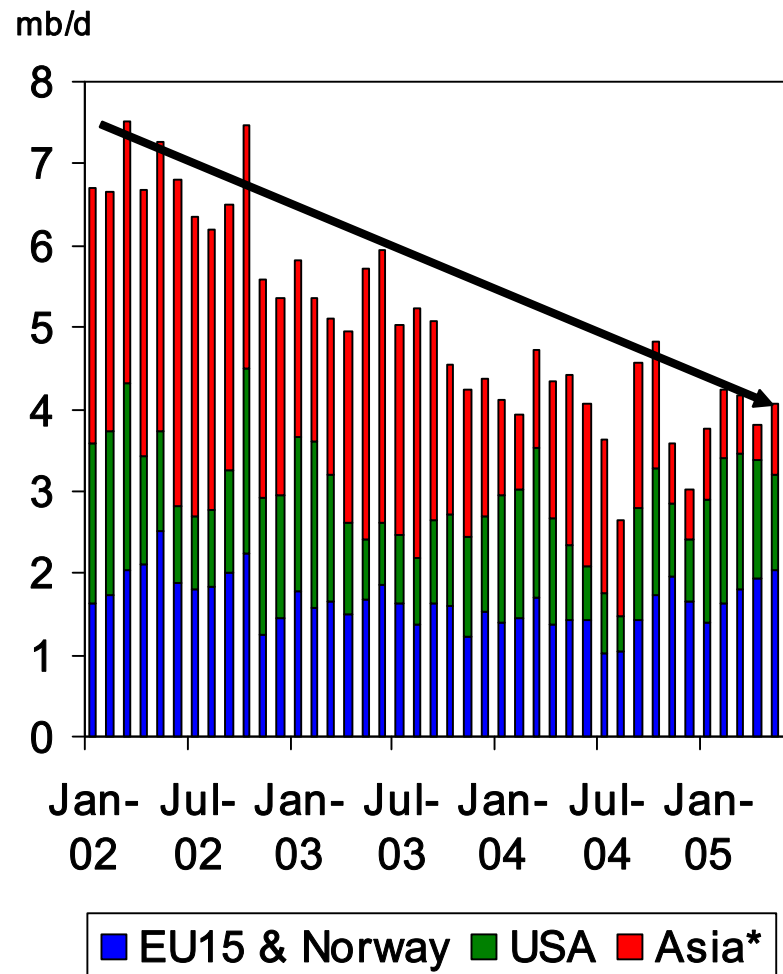
Source: OPEC; Heavy <26, Medium 26-32, Light > 32



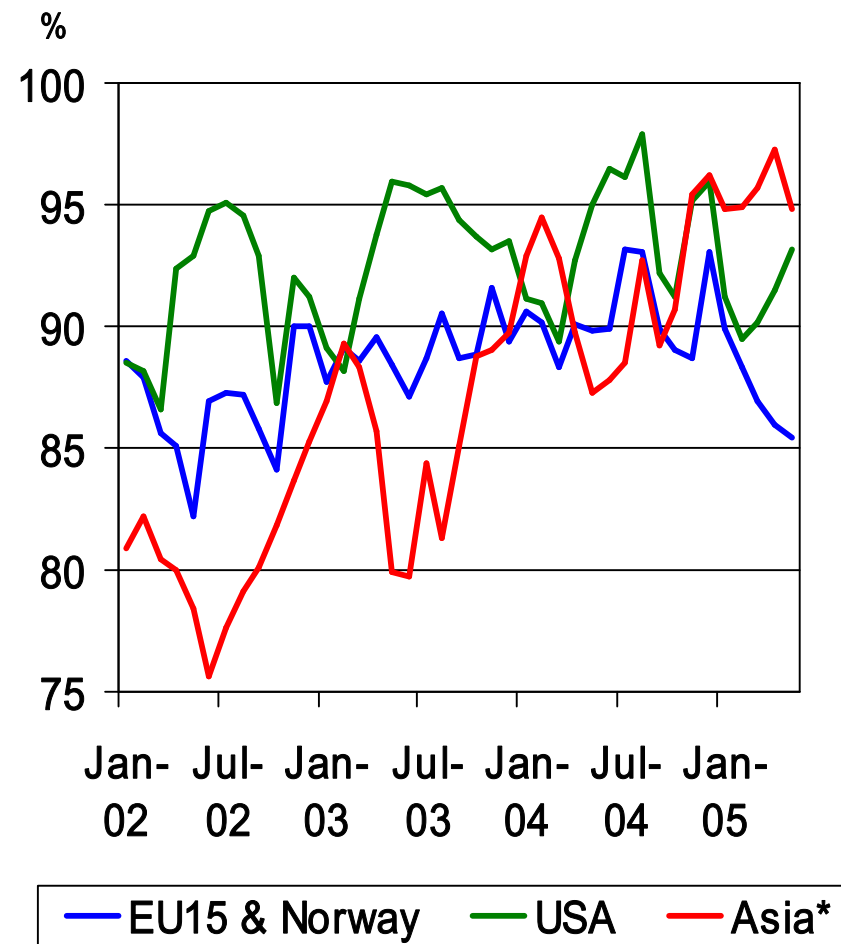
# Overloading of Refining Industry

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### Shrinking Refining Spare Capacity in key refinery regions



### Increasing Refinery Utilization Rate in key markets



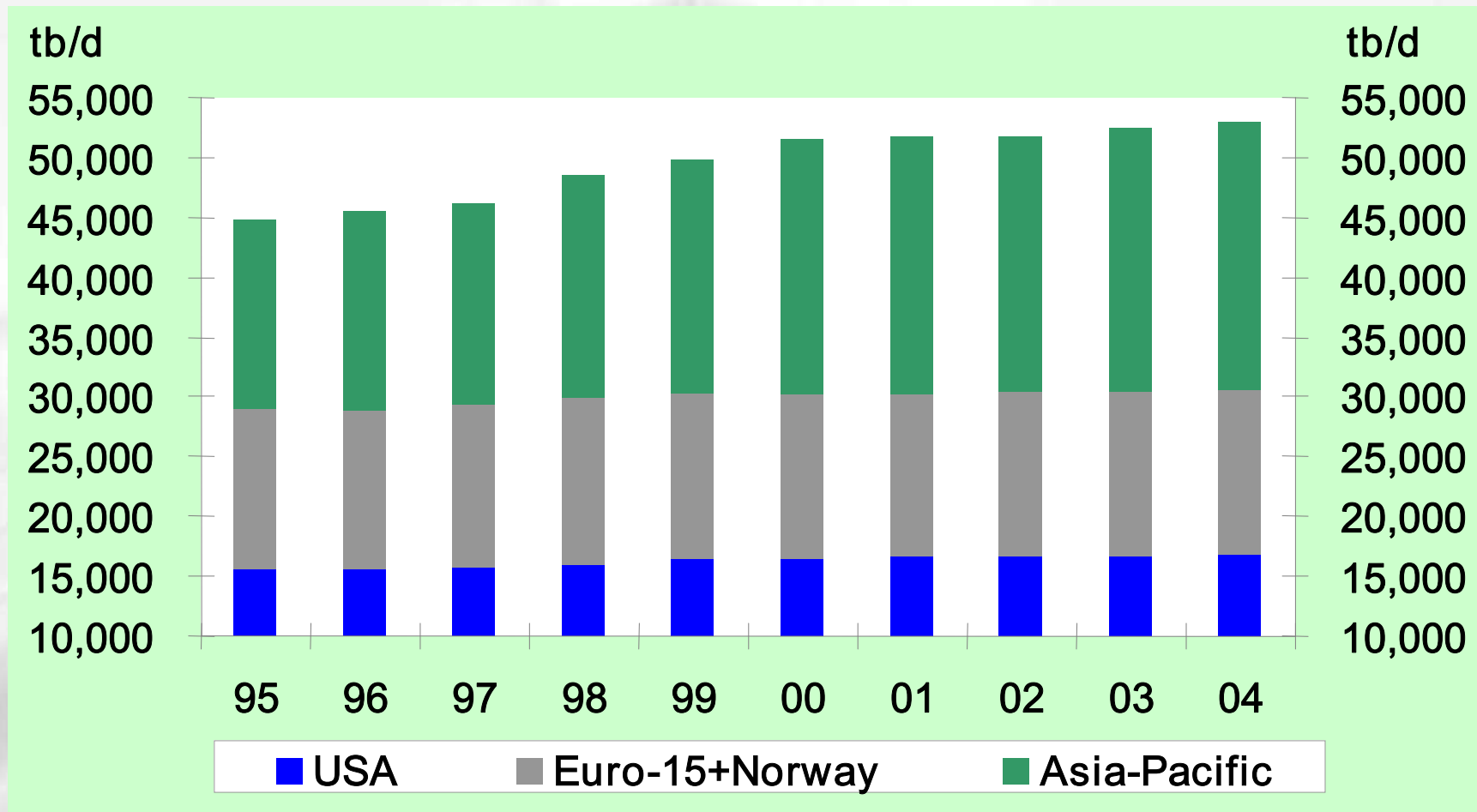
\*/Asia = Japan, South Korea, China, India and Singapore. For some Asian countries May is estimated.



# Refinery Capacity and Configuration in the Major Consuming Areas/Regions

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## Distillation capacity in major consuming areas

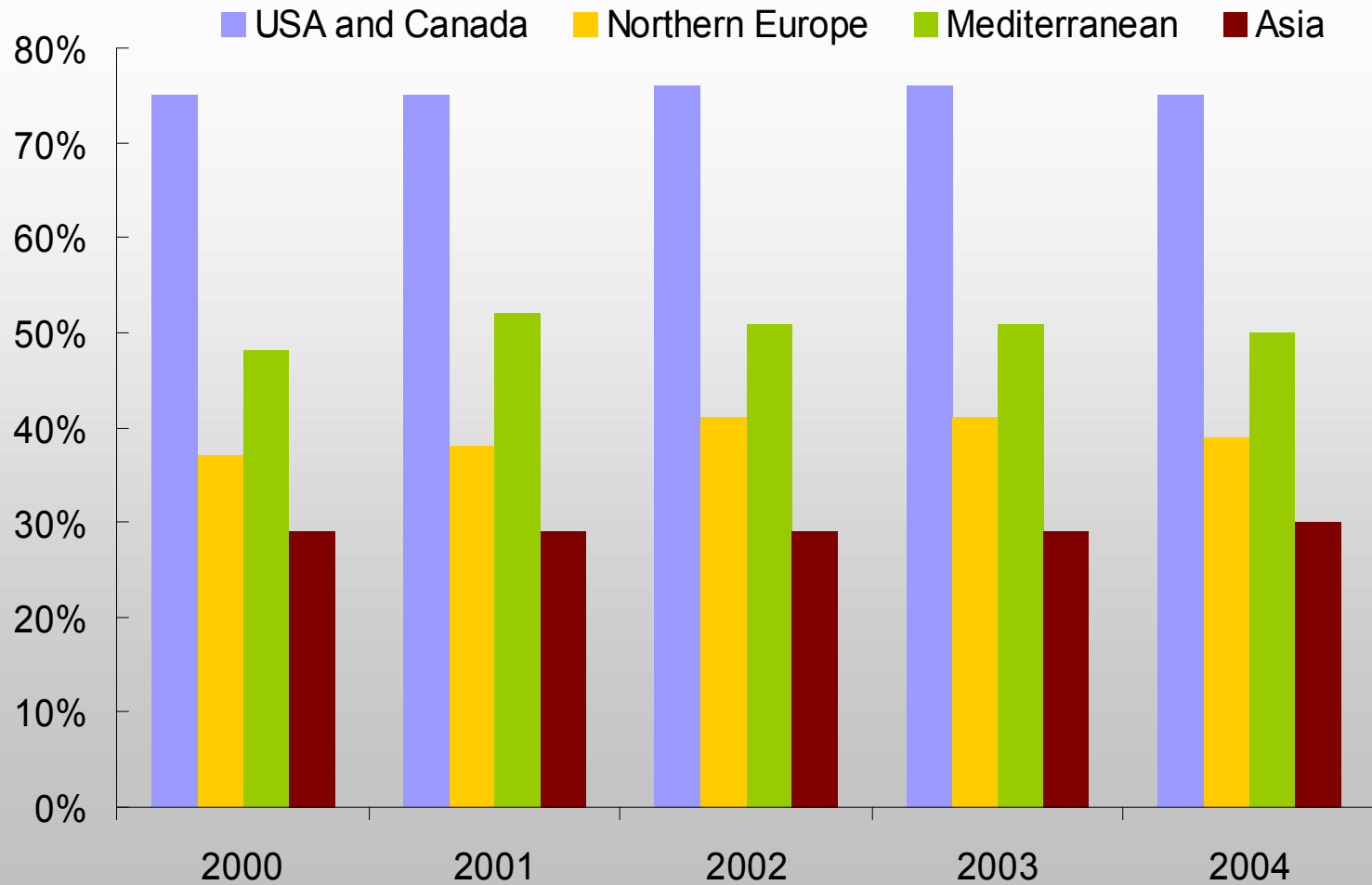






# Ratio of conversion to total refinery capacity

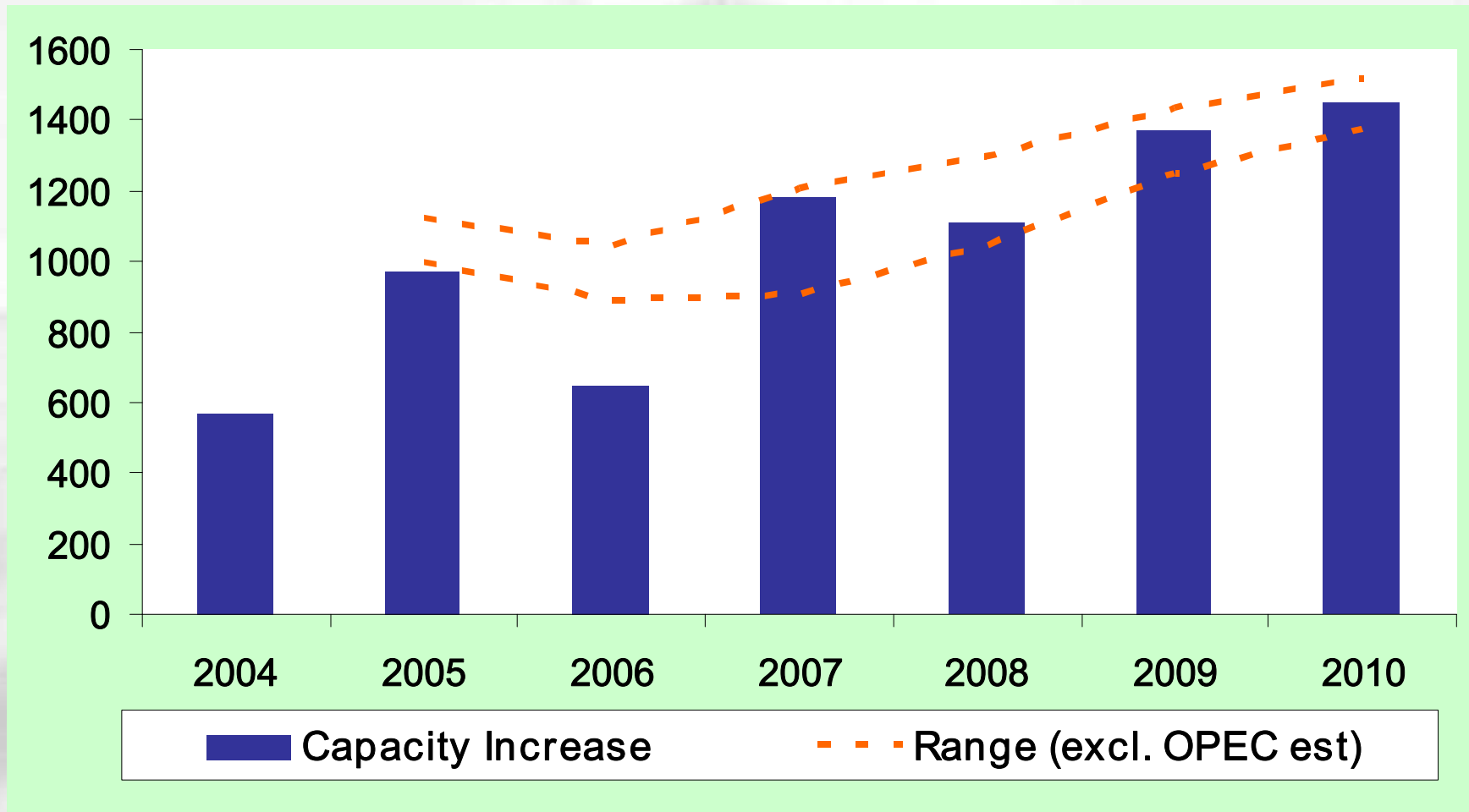
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## Refining Capacity Expansion Projects or Plans for the Medium Term

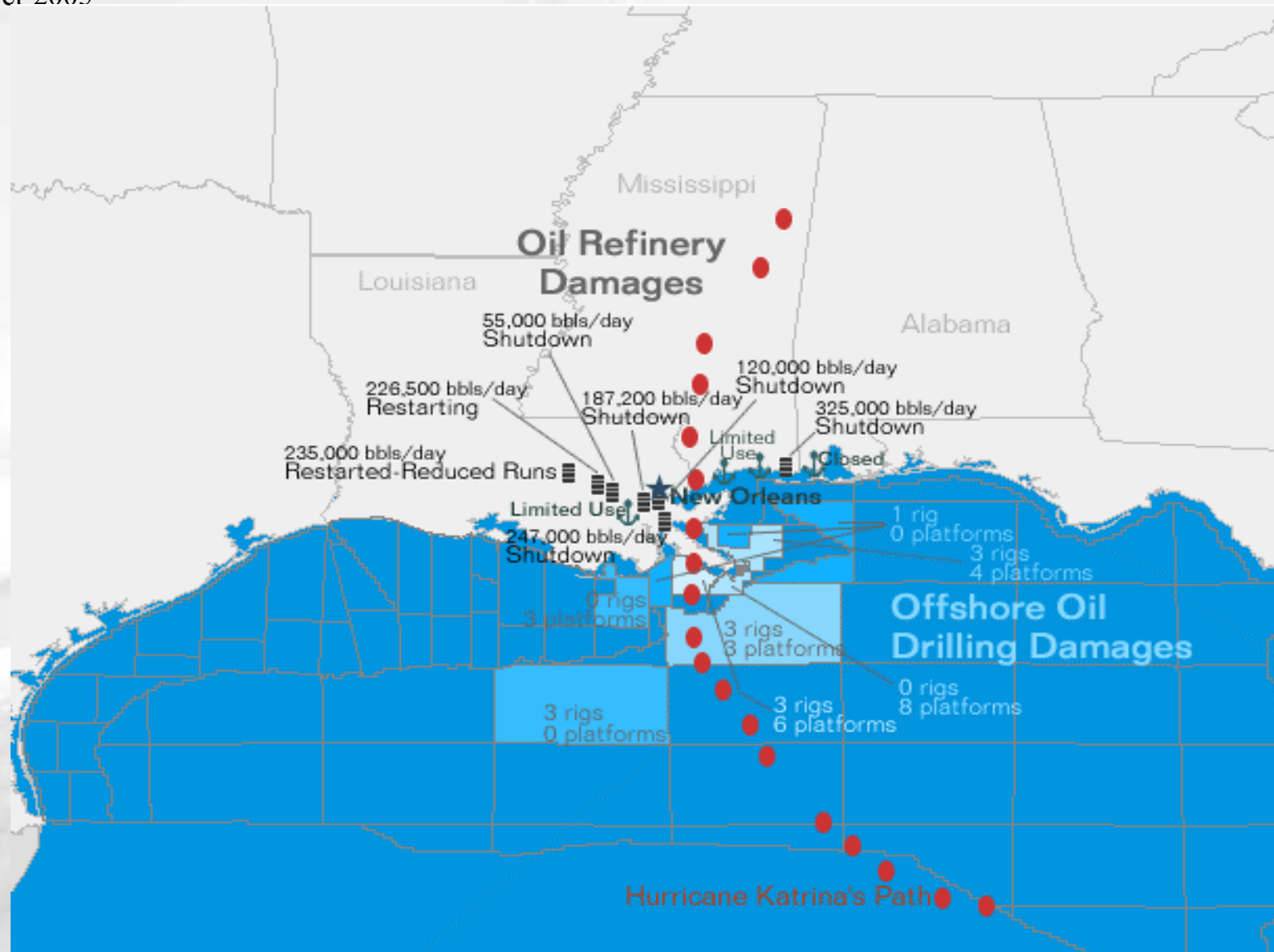
### Crude distillation capacity (CDU) expansion (tb/d)





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# Impact of Hurricane Katrina



Source: MMS



# Impact of Hurricane Katrina

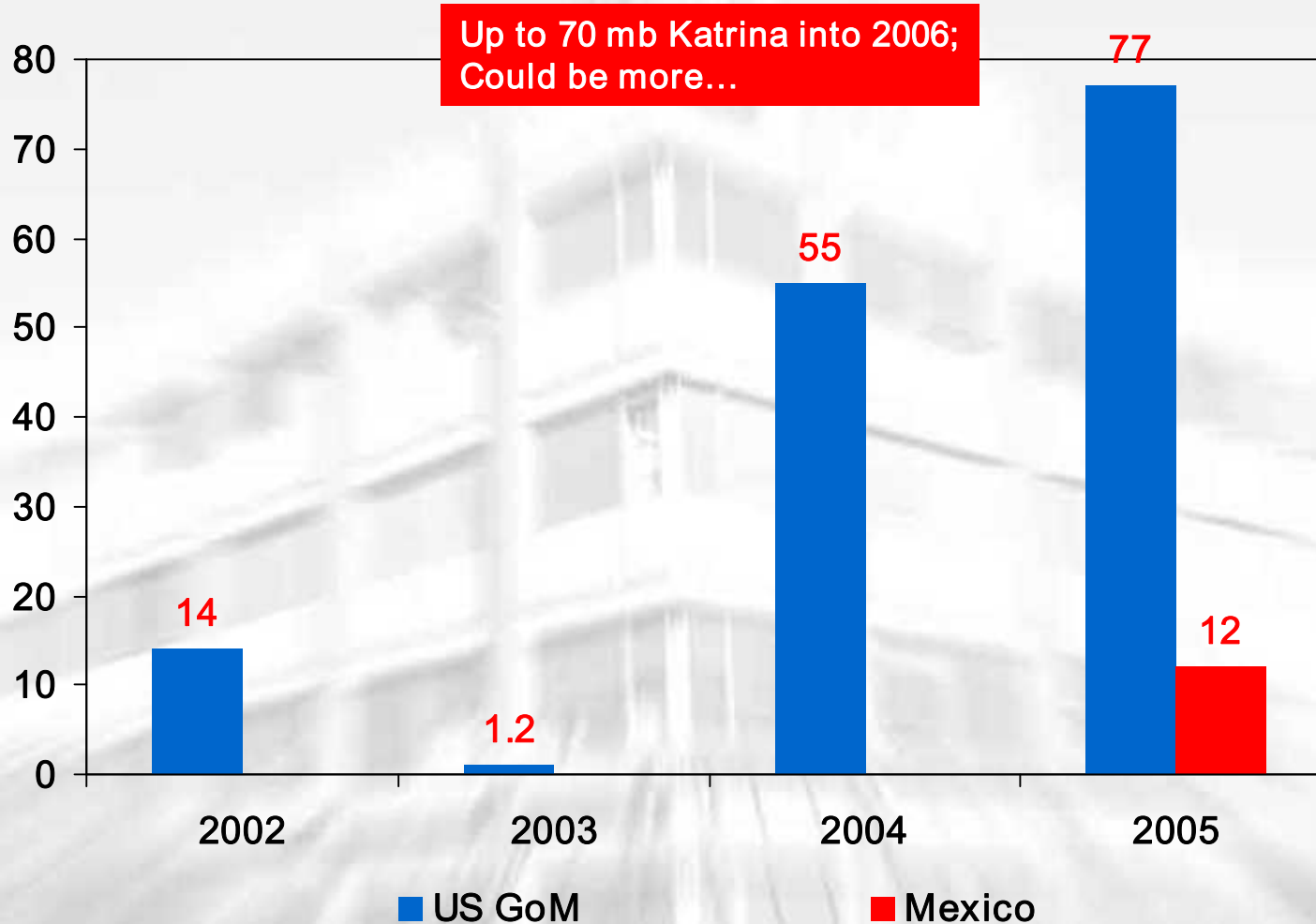
## Assessment of full impact & the recovery process in progress

- Shut in production recovered from ~1.4 mb/d to 0.8 mb/d (60% of the production in the region), with a cumulative production loss of >20 mb so far
- Current gas shut-in 3.7 bcf/d (37% capacity with >100bcf)
- The refinery shut-down in the region peaked ~3.2 mb/d. Four refineries (860 tb/d) shut at least early 2006 & five others are running at reduced capacity, but improving fast
- Major regional product pipelines (e.g., colonial & plantation) back to 100% capacity; also LOOP terminal working at 75% capacity



# Impact of hurricanes in the GoM area (mb)

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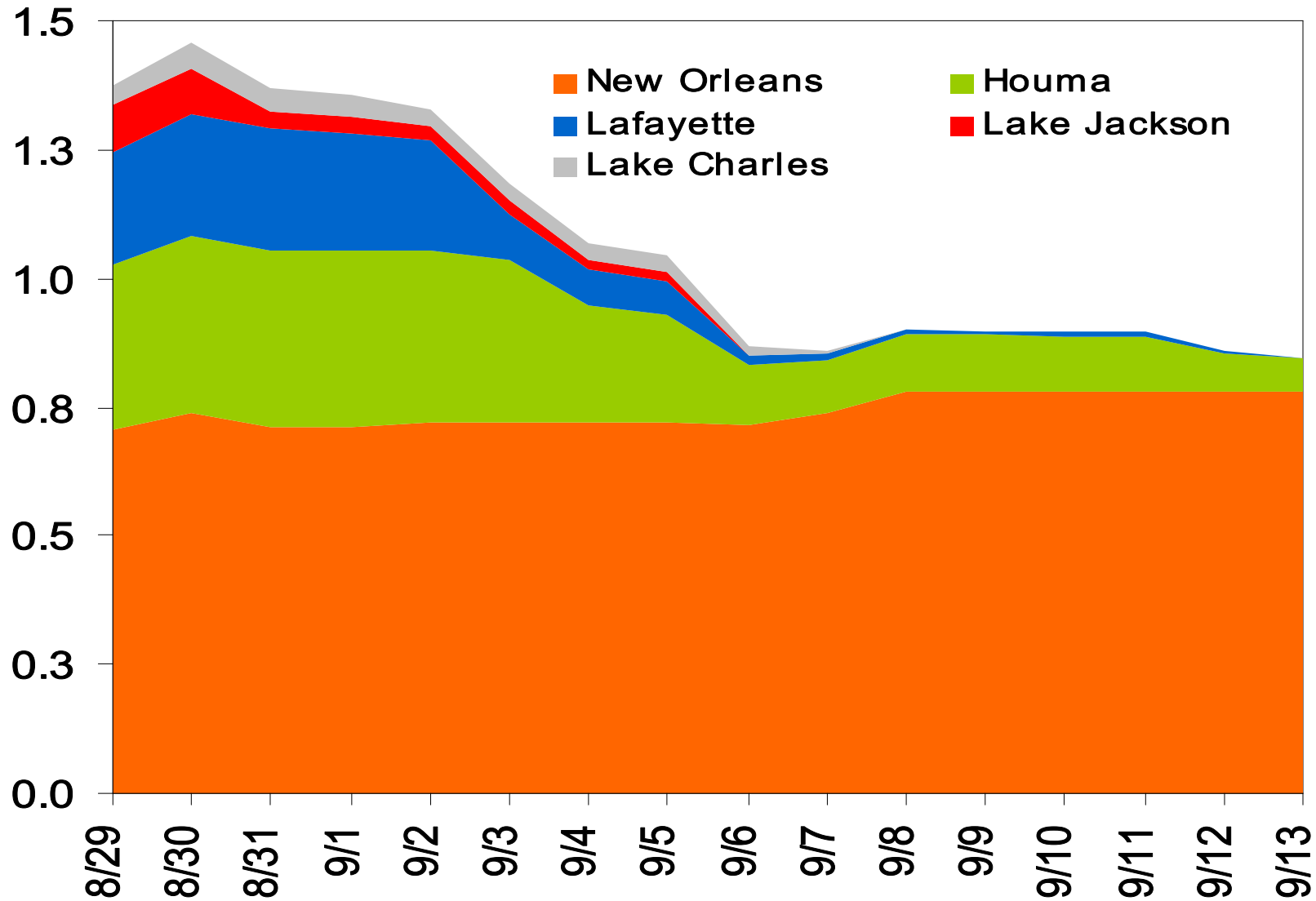


Source: MMS, OPEC; Ivan projected into 2005; Katrina into 2006



# GoM Production after Katrina (mb/d)

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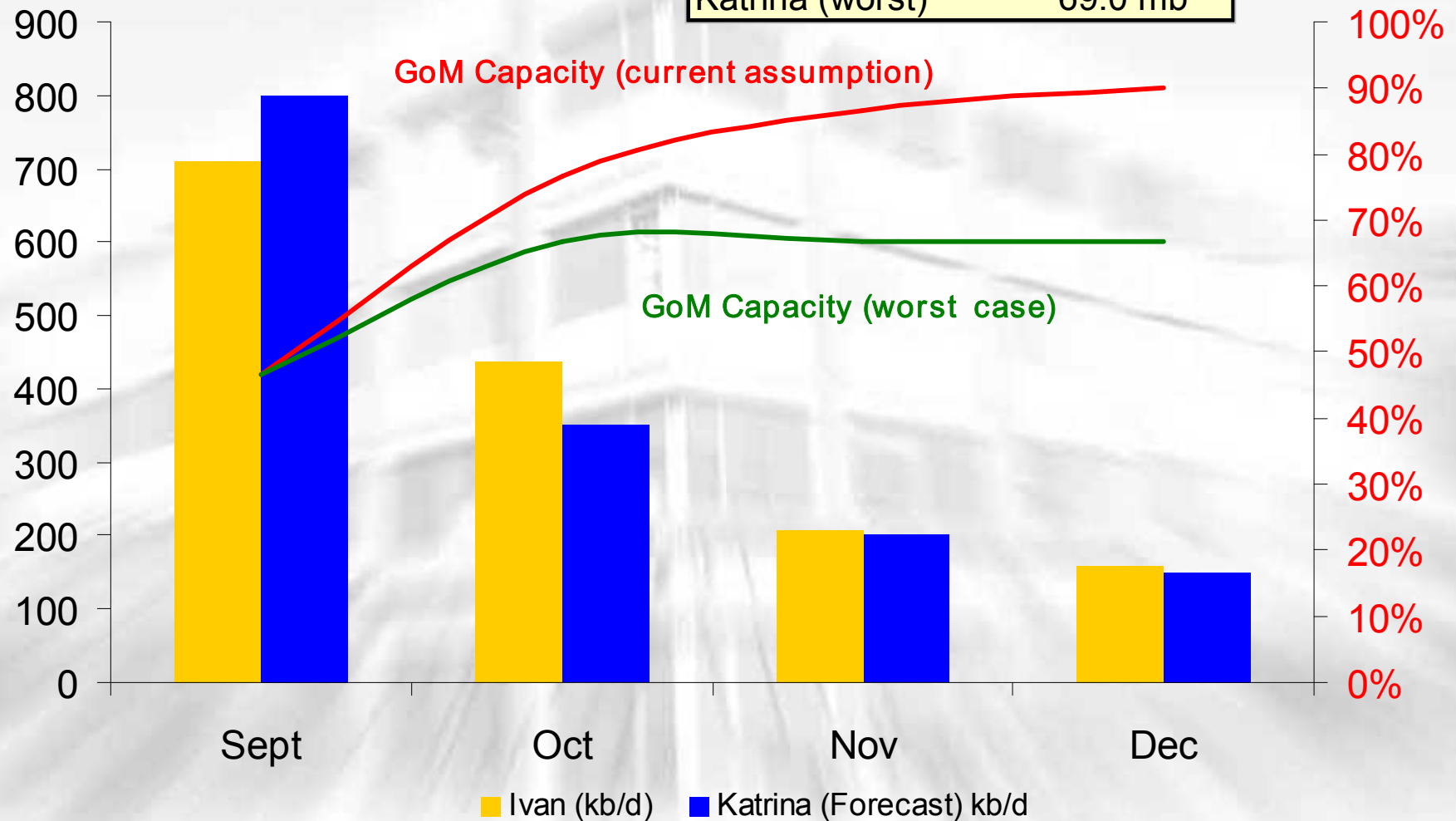
Source: MMS; OPEC projected



# US Gulf of Mexico (GoM): Loss in production (September – December)

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Cumulative loss (Sep-Dec):	
Ivan	45.4 mb
Katrina (current)	45.0 mb
Katrina (worst)	69.0 mb

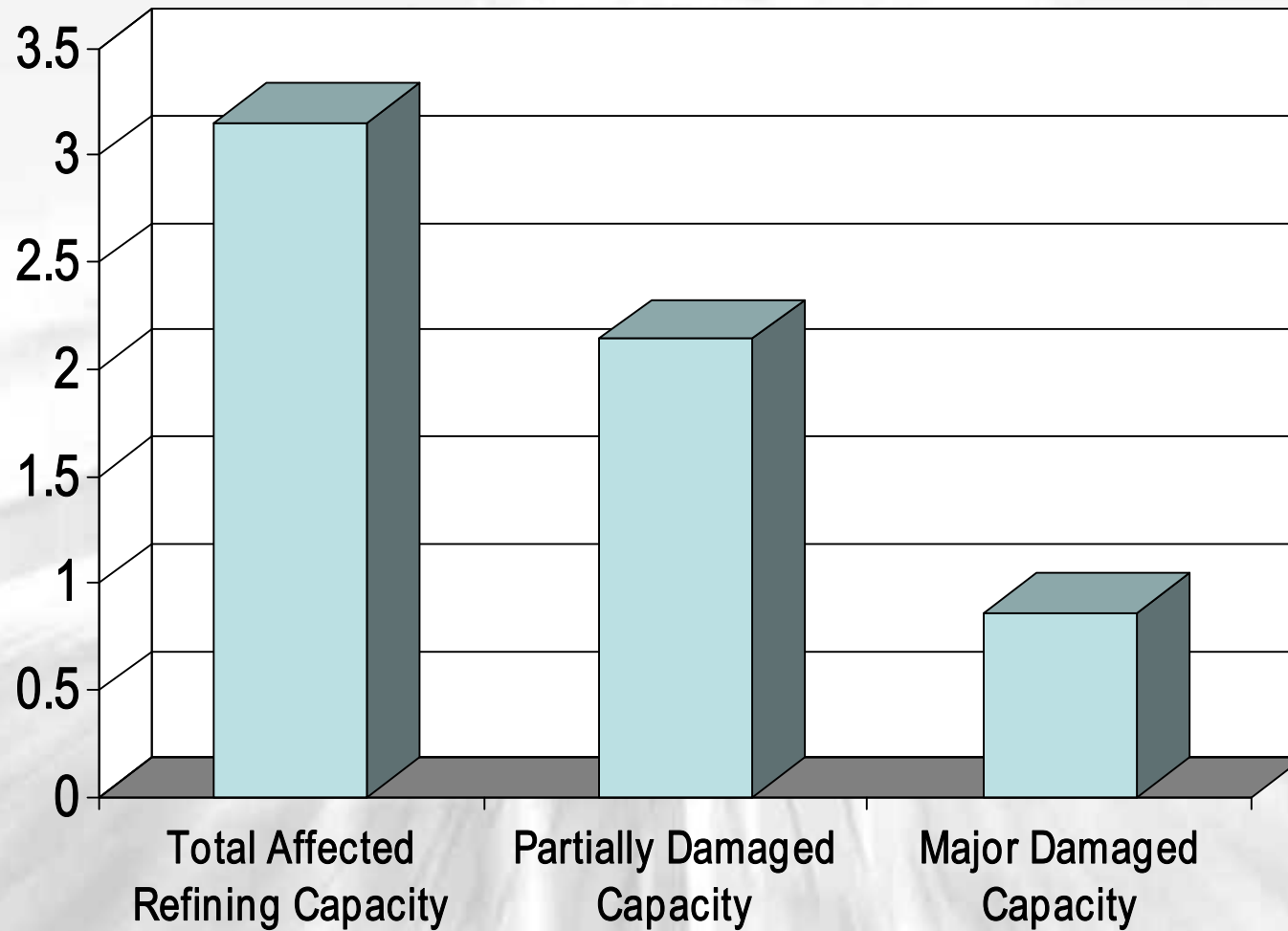




# Product market conditions after Katrina

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Katrina's impact on the refining industry



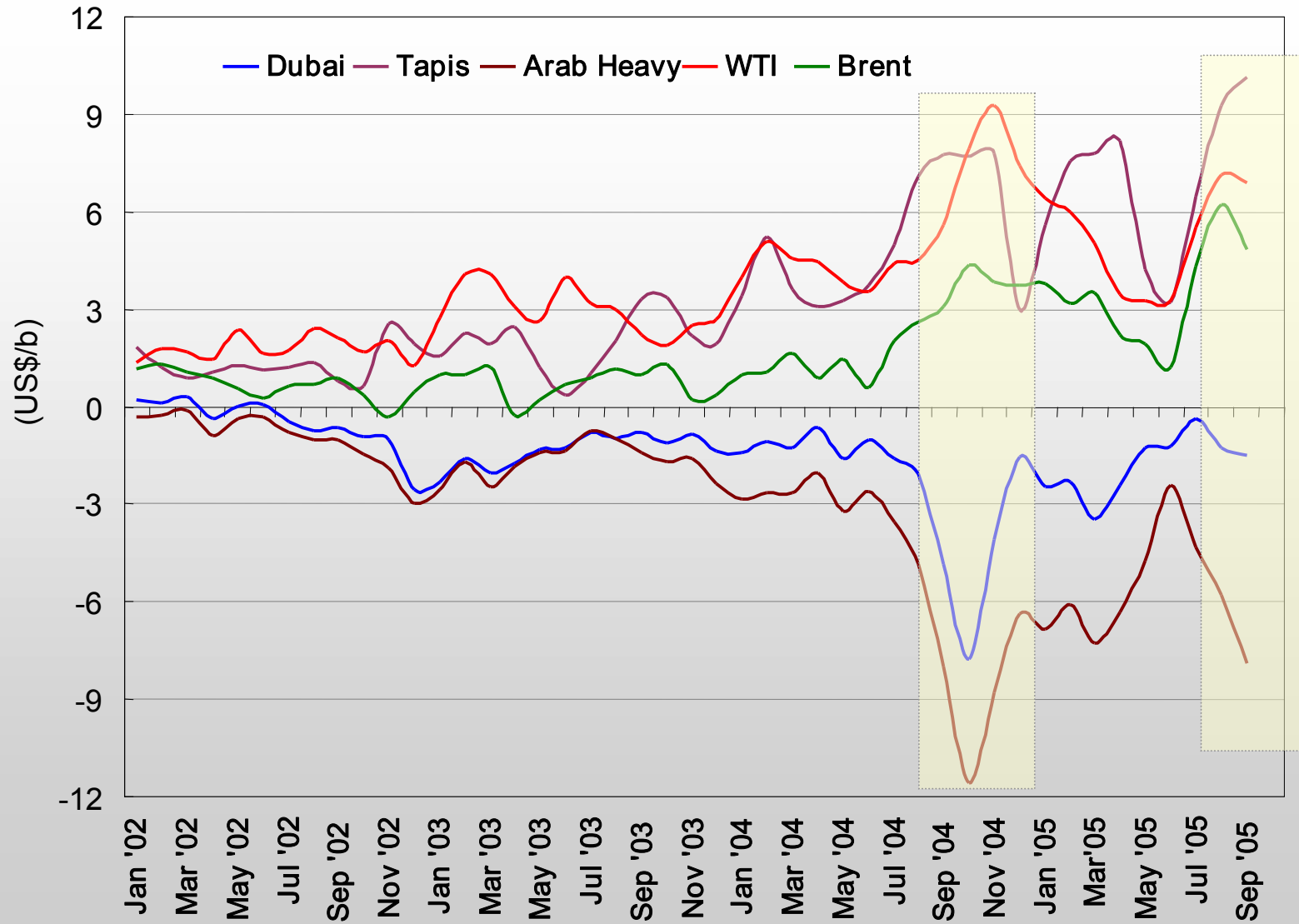




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# Widening differentials

## Spot differentials to OPEC Ref. Basket





# US inventories

## Impact of Hurricane Katrina

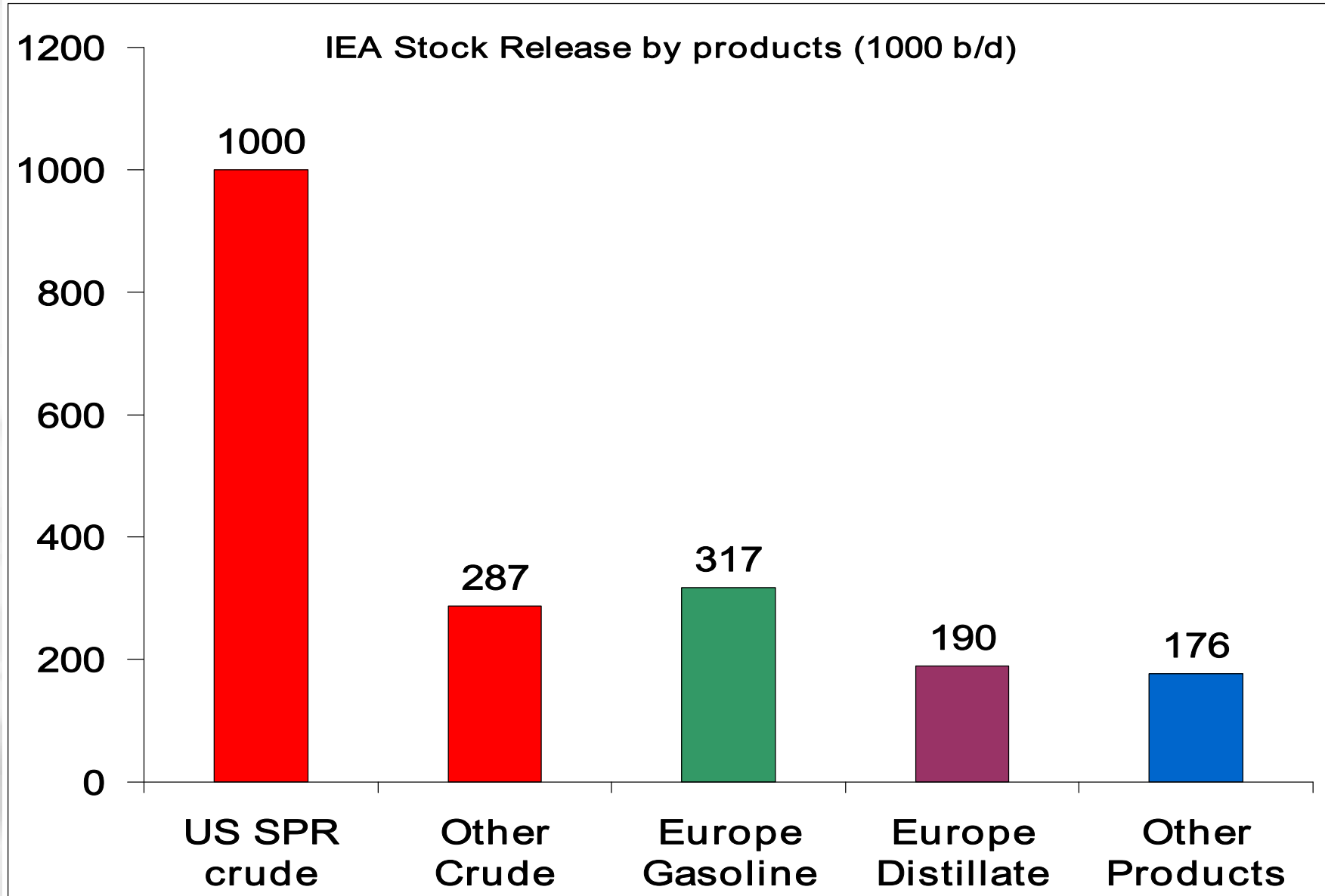
### Measures:

- IEA SPR release for one month (the first since 1991)
  - 1.29 mb/d of crude
  - 0.69 mb/d of products
- 12.5 mb as loans from US SPR
- Easing of gasoline & diesel specifications
- Easing of shipping rules



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# US inventories Impact of Hurricane Katrina

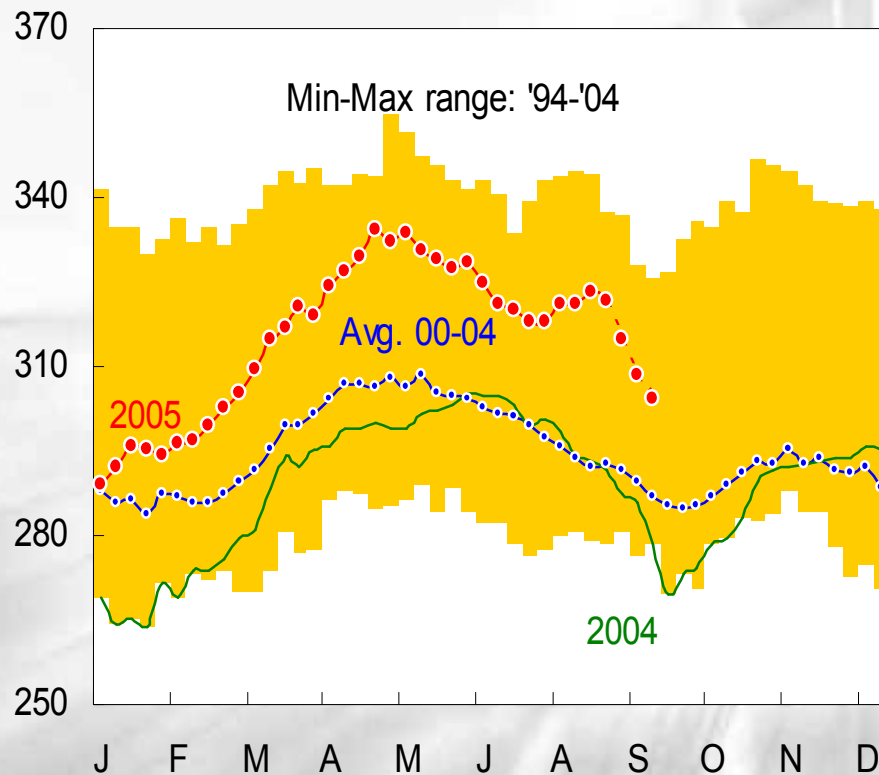




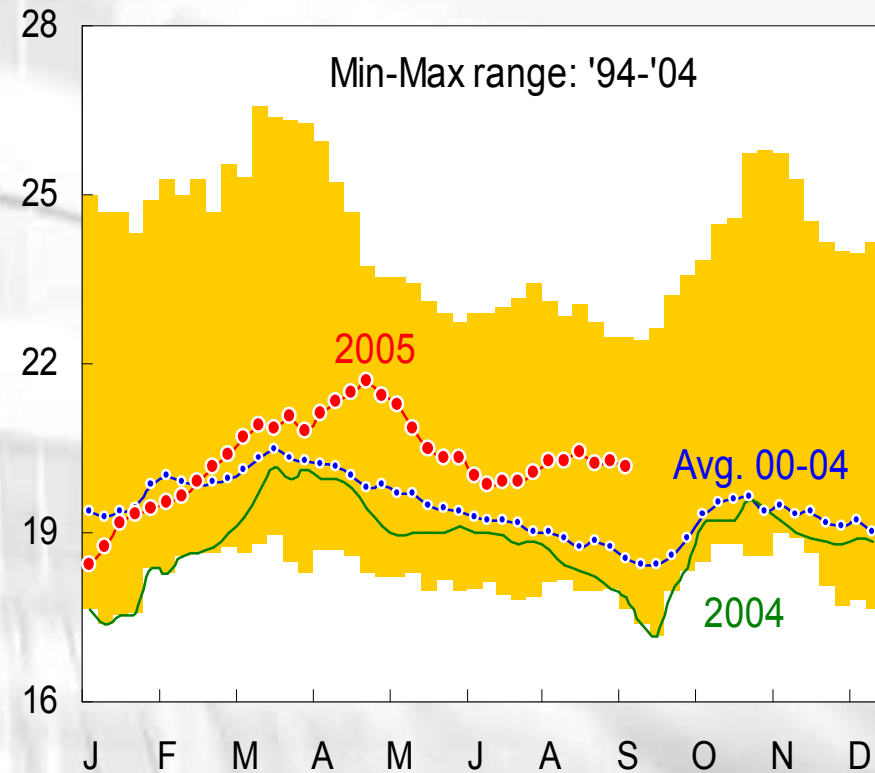
# Commercial oil stock levels in the USA week-ending, mb

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### Crude Oil Stocks (mbbl)



### Days of crude cover (4-wk mavg, input to refineries)

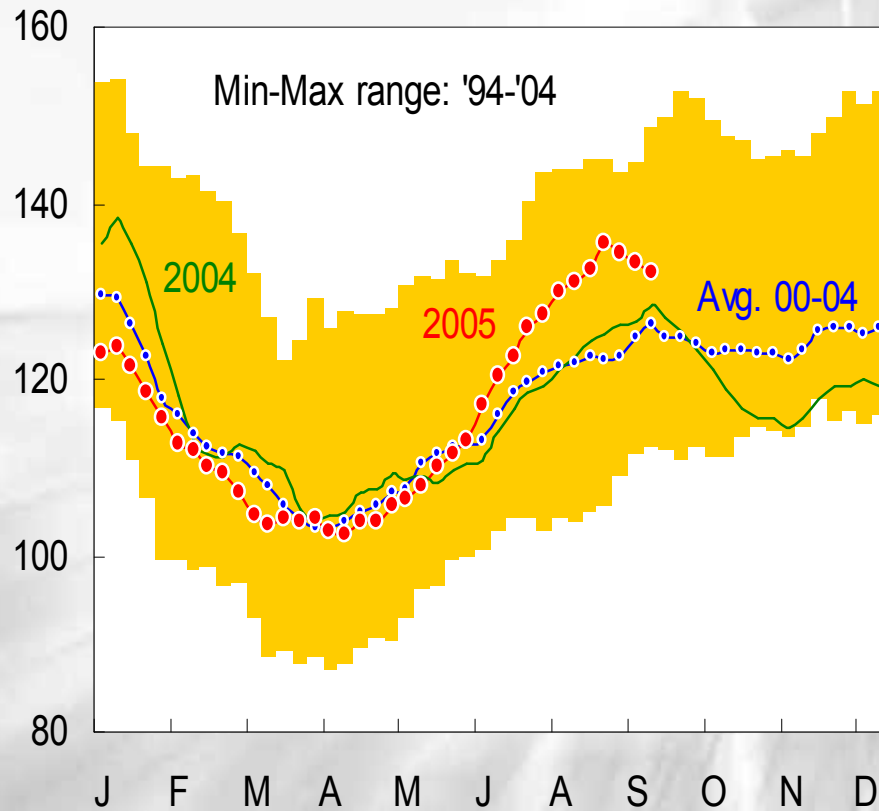




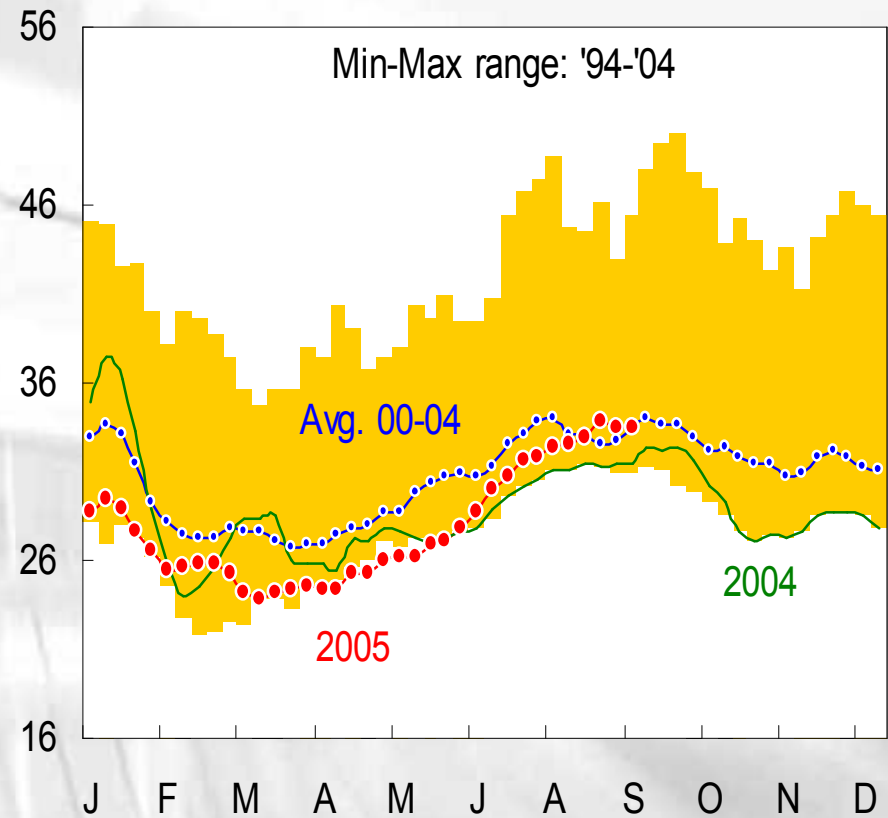
# US distillate stocks & demand cover

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### Distillates stocks: (week-ending, mb)



### Days of Distillates Demand Cover

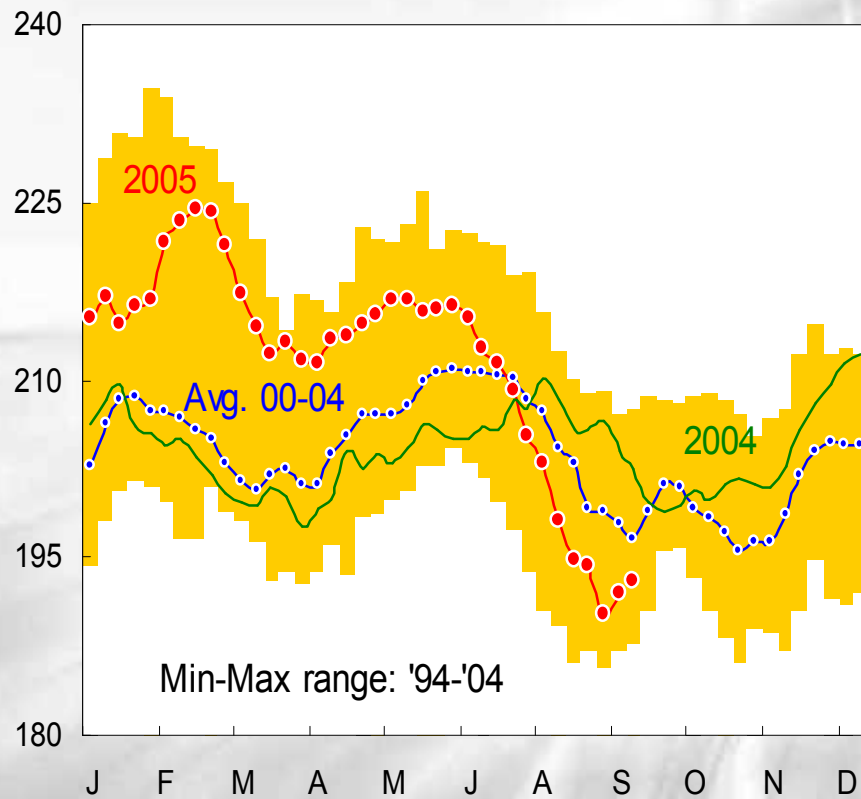




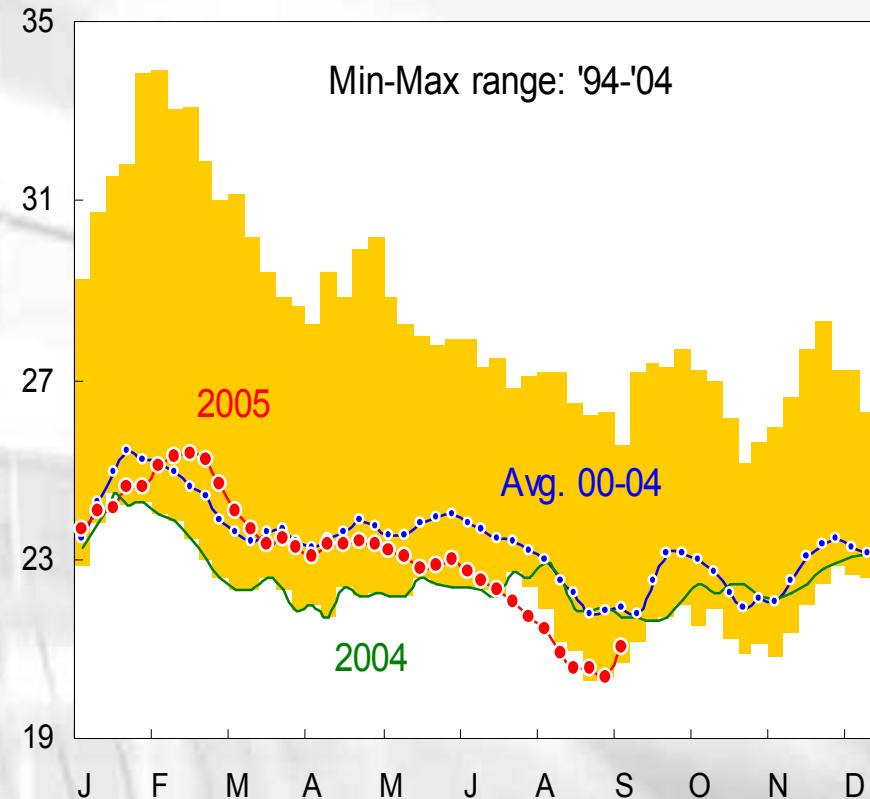
# US gasoline stocks & demand cover

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### Gasoline stocks: week-ending (mb)



### Days of Gasoline Demand Cover





# US inventories

## Impact of Hurricane Katrina

### Implication:

- Crude supply is therefore not the problem
  - There could even be an over crude supply:
    - The full 30 mb US SPR crude release will probably not take place
    - US refiners might end up importing less crude
- Distillate stocks should still be manageable, but if the weather turns out to be cold and natural gas prices move higher, this could increase concern for the winter season.
- On the gasoline side, if refining capacity losses are prolonged, significant shortages in gasoline can be expected. However, if demand is reduced more than expected, the impact of this shortage will be less.

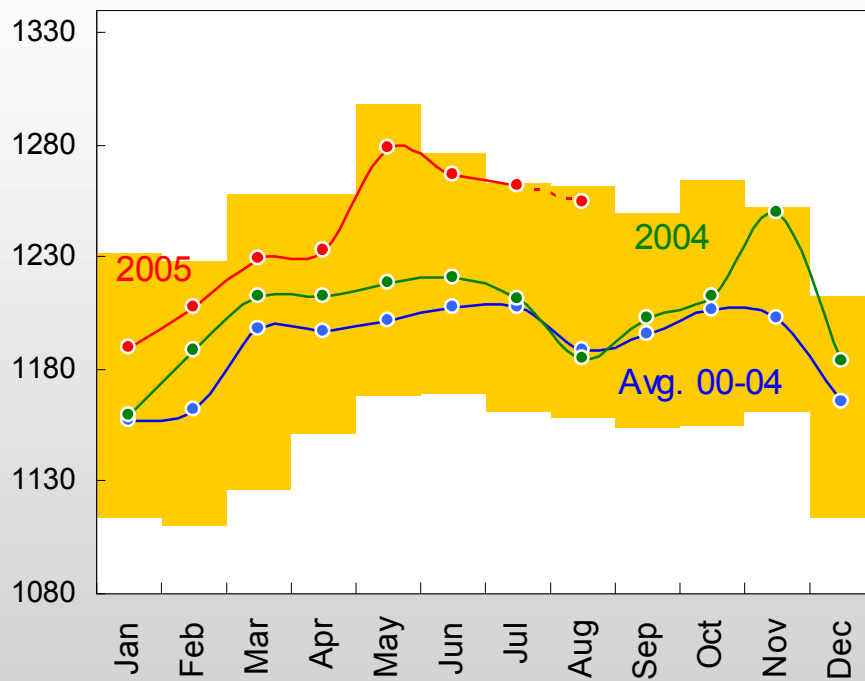


# OECD commercial oil stocks

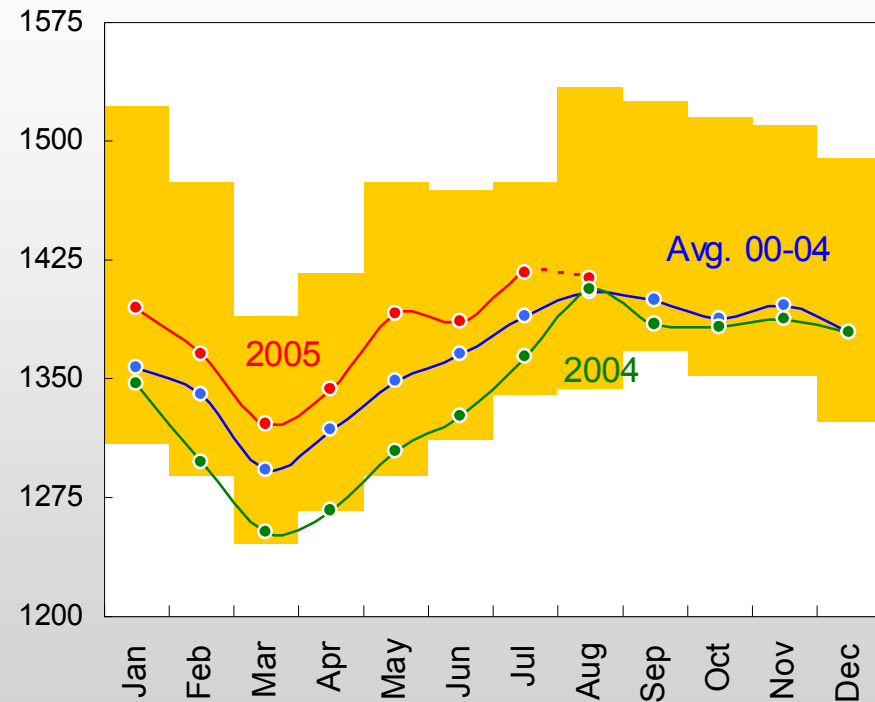
## closing levels, mb

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### Crude



### Products

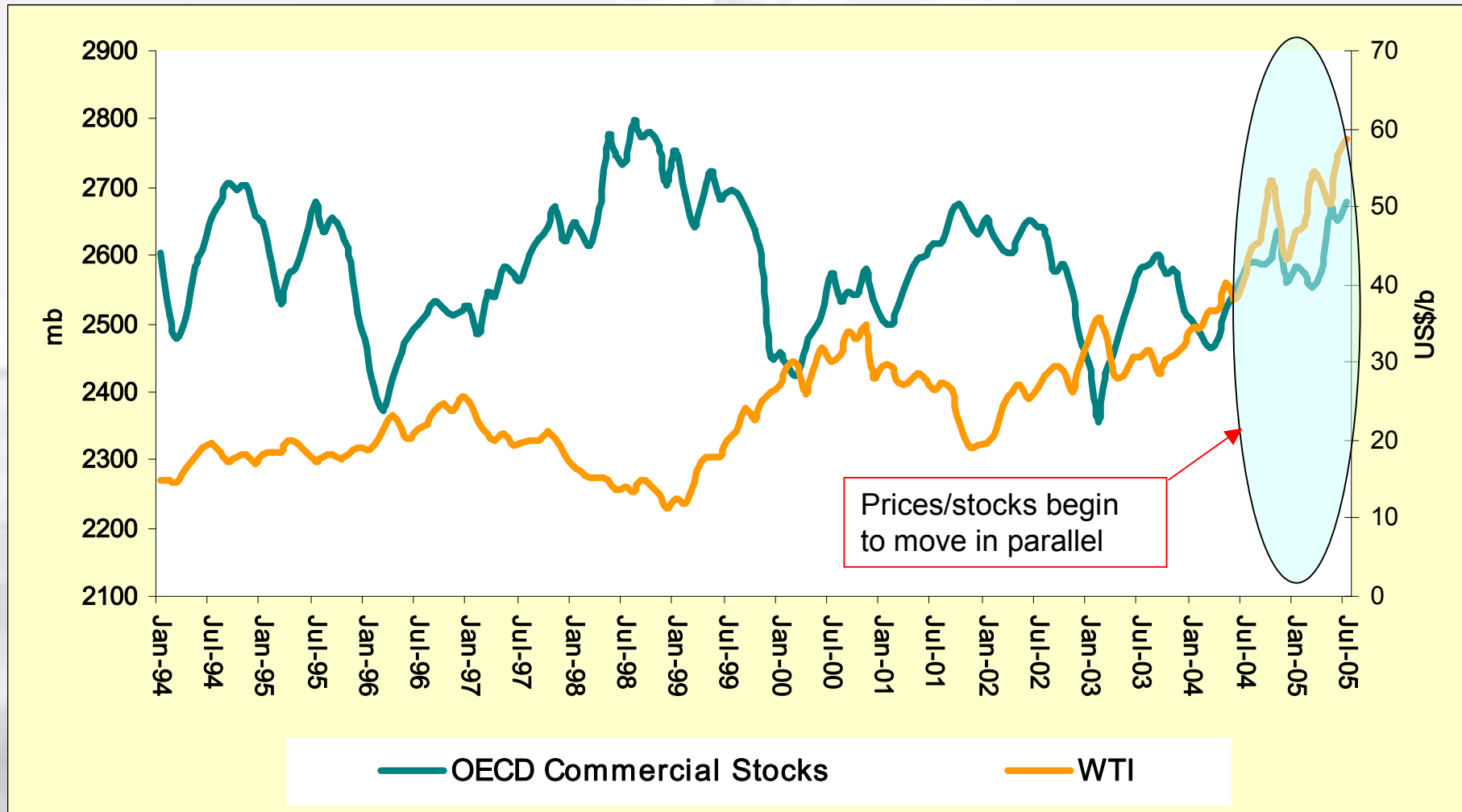






# Traditional inverse price/stock relation

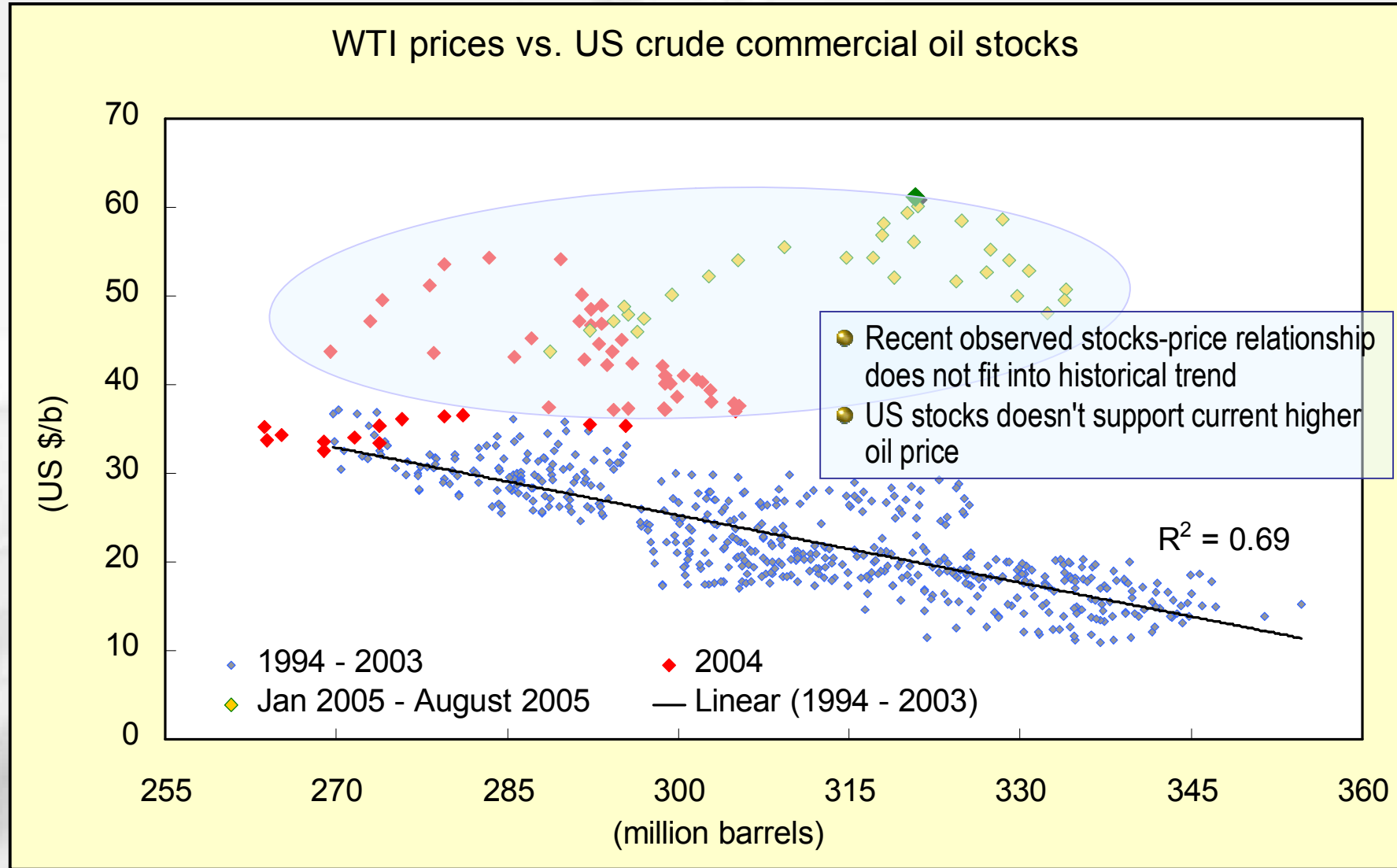
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# Increasing activity in the Futures market

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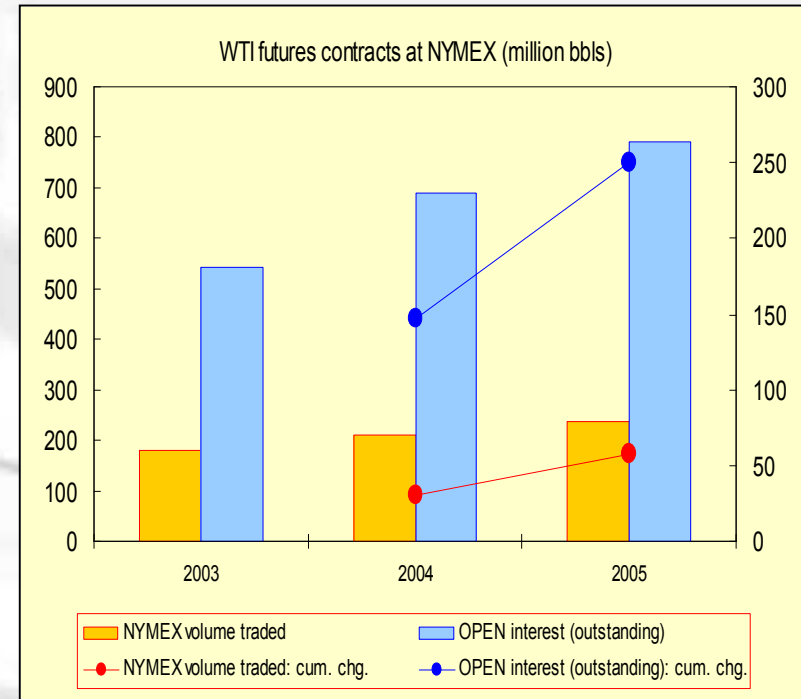
# Growing use of oil futures as a form of financial instrument

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## WTI futures contract at NYMEX

million barrels

	<u>2003</u>	<u>2004</u>	<u>2005</u>
Nymex volume traded	179	210	237
OPEC Interest	542	689	792

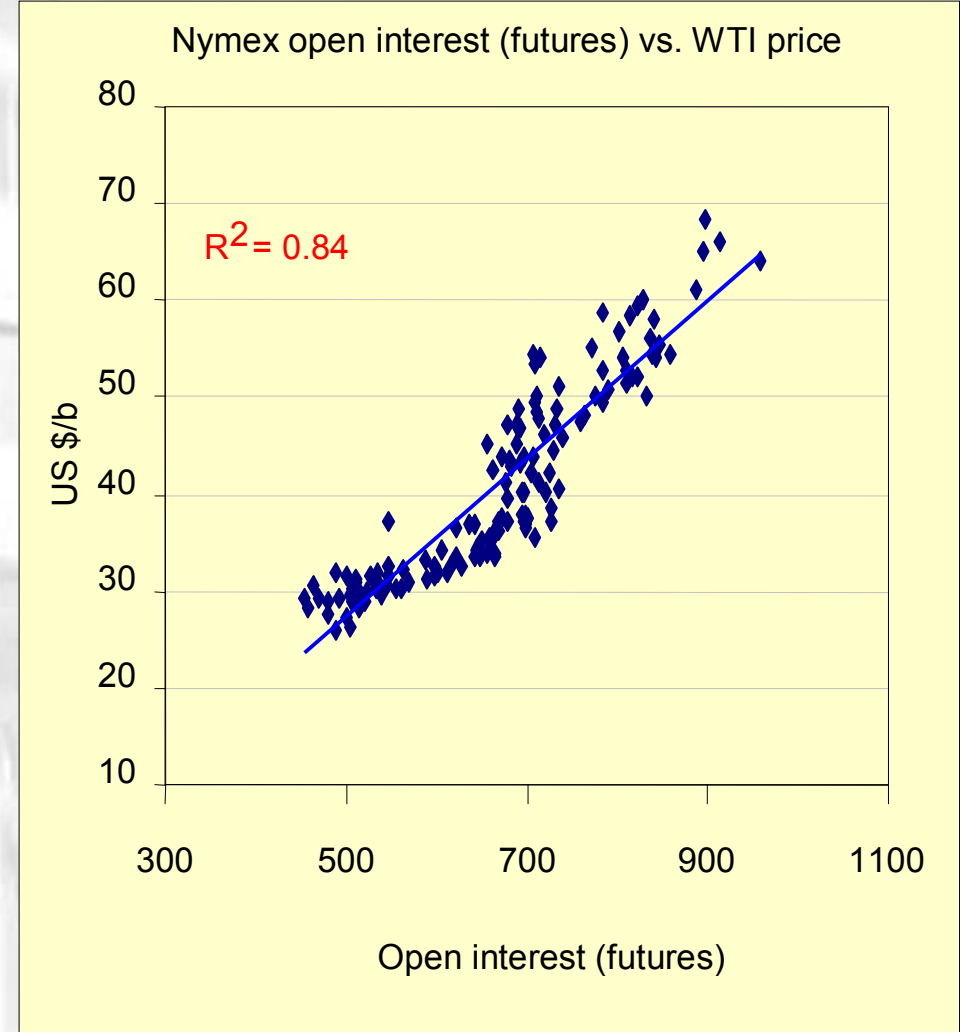
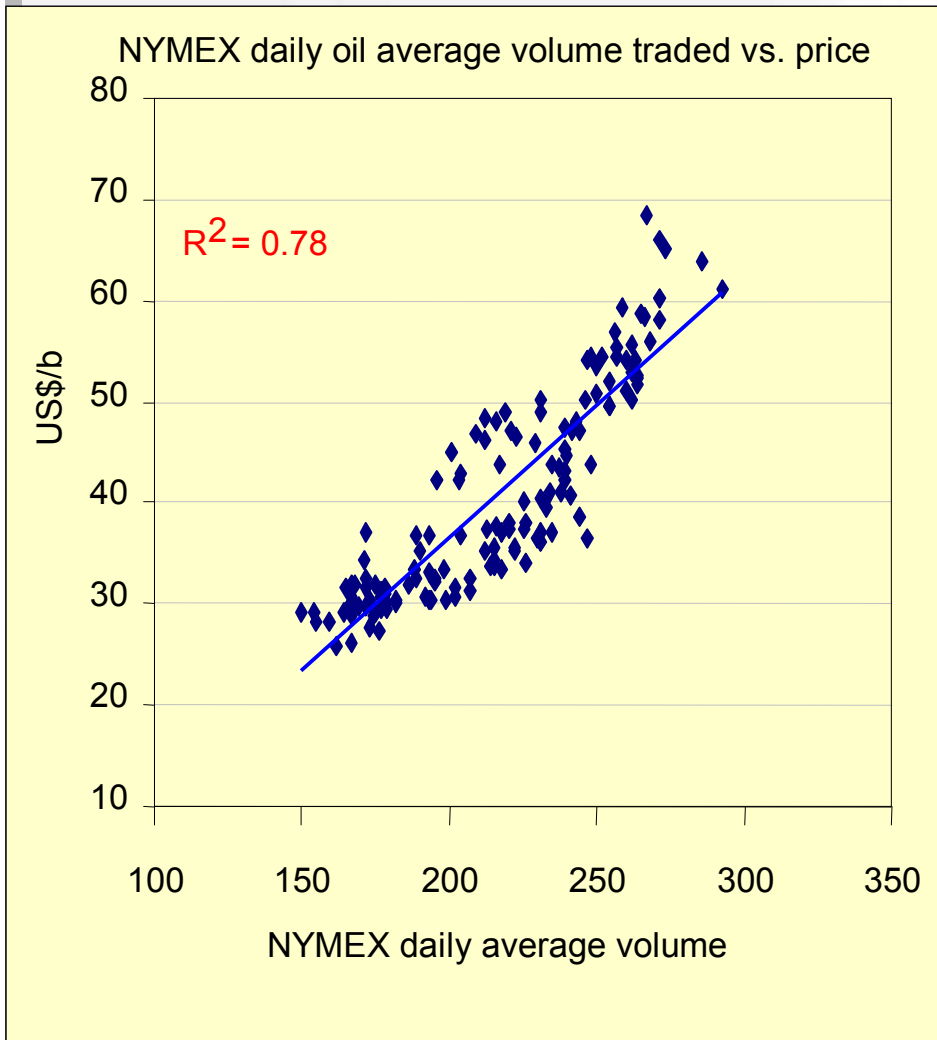


- growing use of oil futures as a form of financial instrument
  - NYMEX hit a record high in 2005 surpassing the record in 2004. The average volume of contracts rose in 2005 to 237 million contracts compared to 179 million contracts in 2003
  - OPEN interest also shows a higher record in 2005 of 792 million contracts compared to 542 million contracts in 2003



# Increasing activity in the Futures market

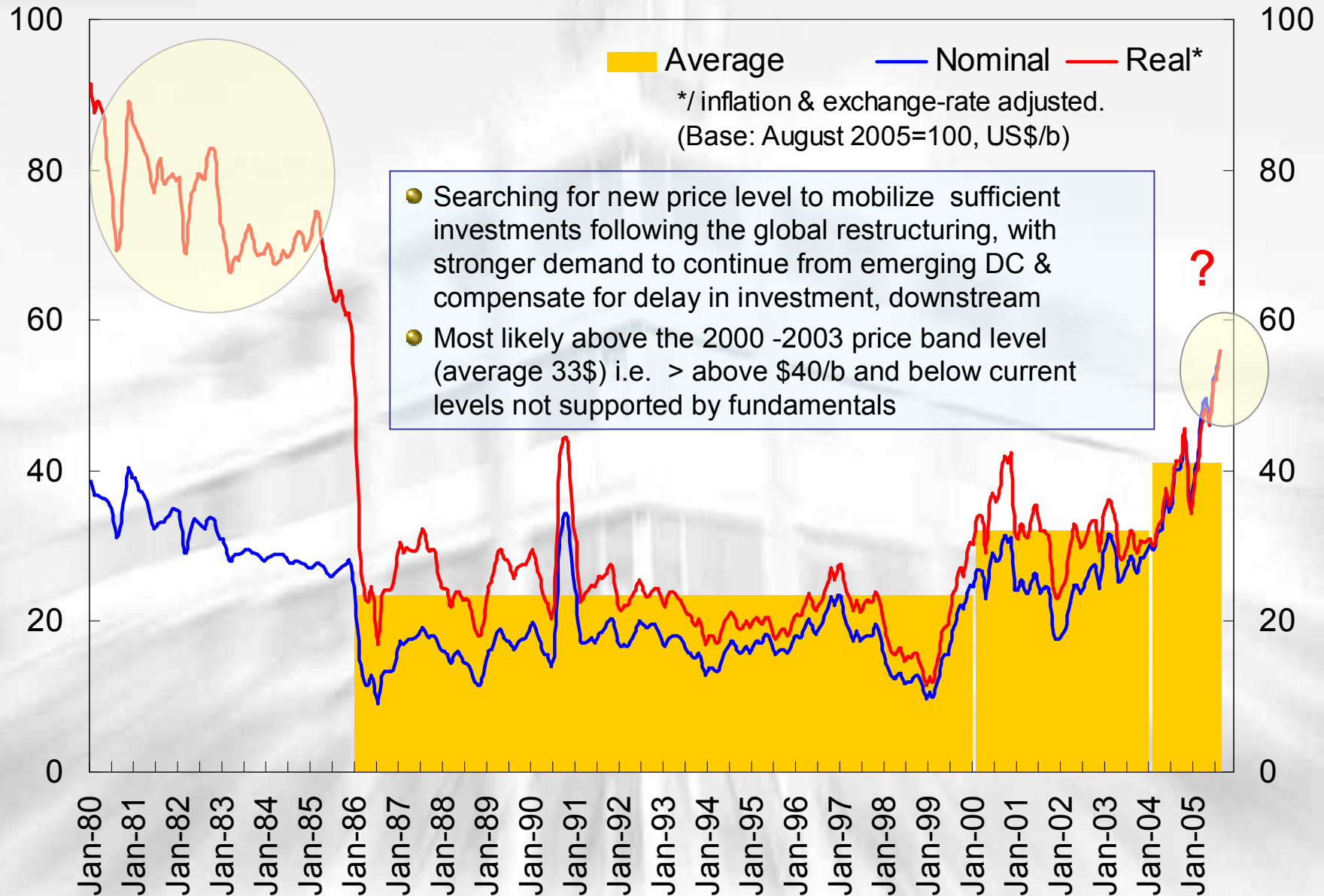
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# The price of oil: distinguishing between nominal and real, (US\$/b)

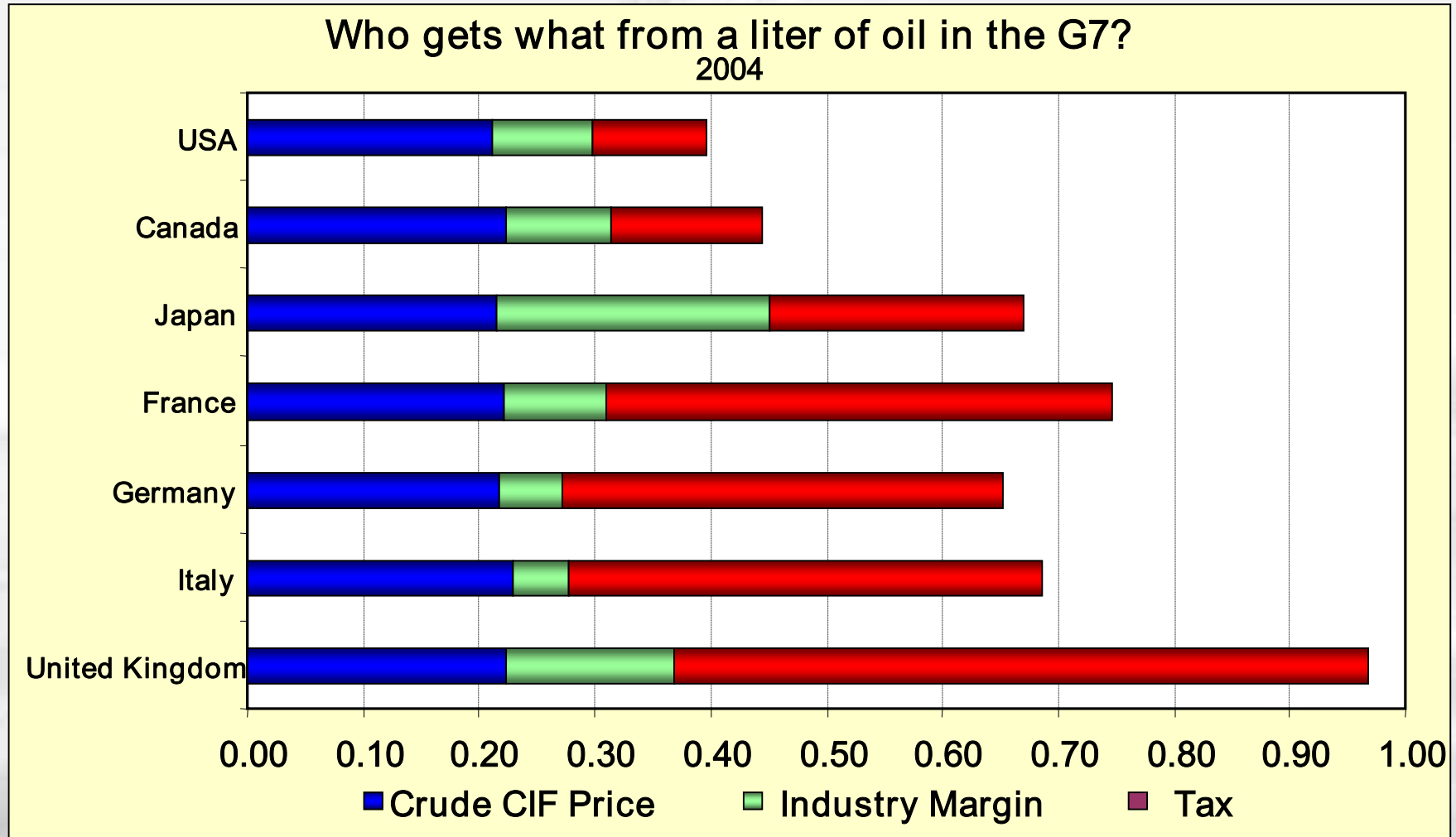
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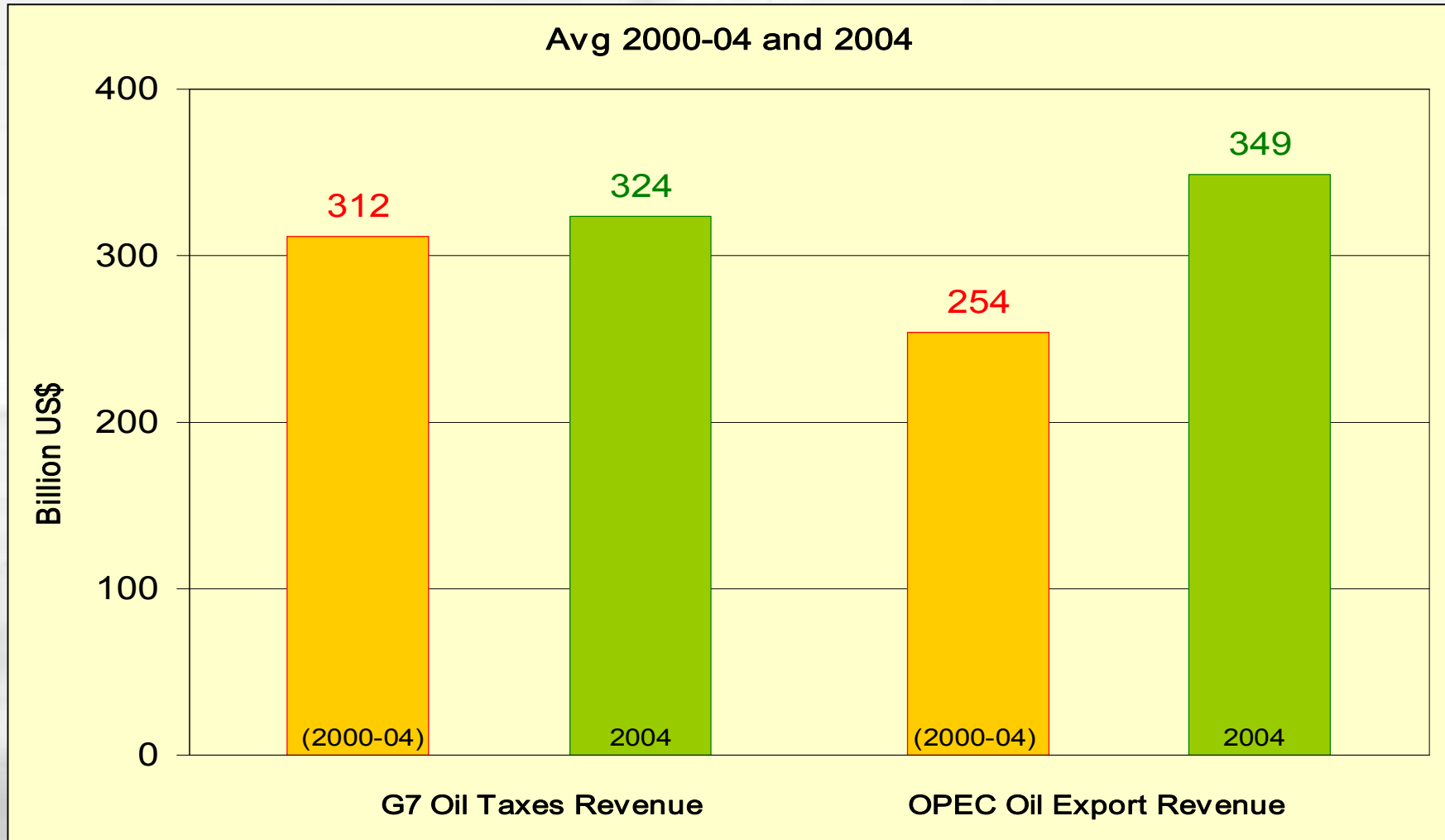
# Oil taxes & export revenues: who gets what?





# Oil taxes & export revenues: who gets what?

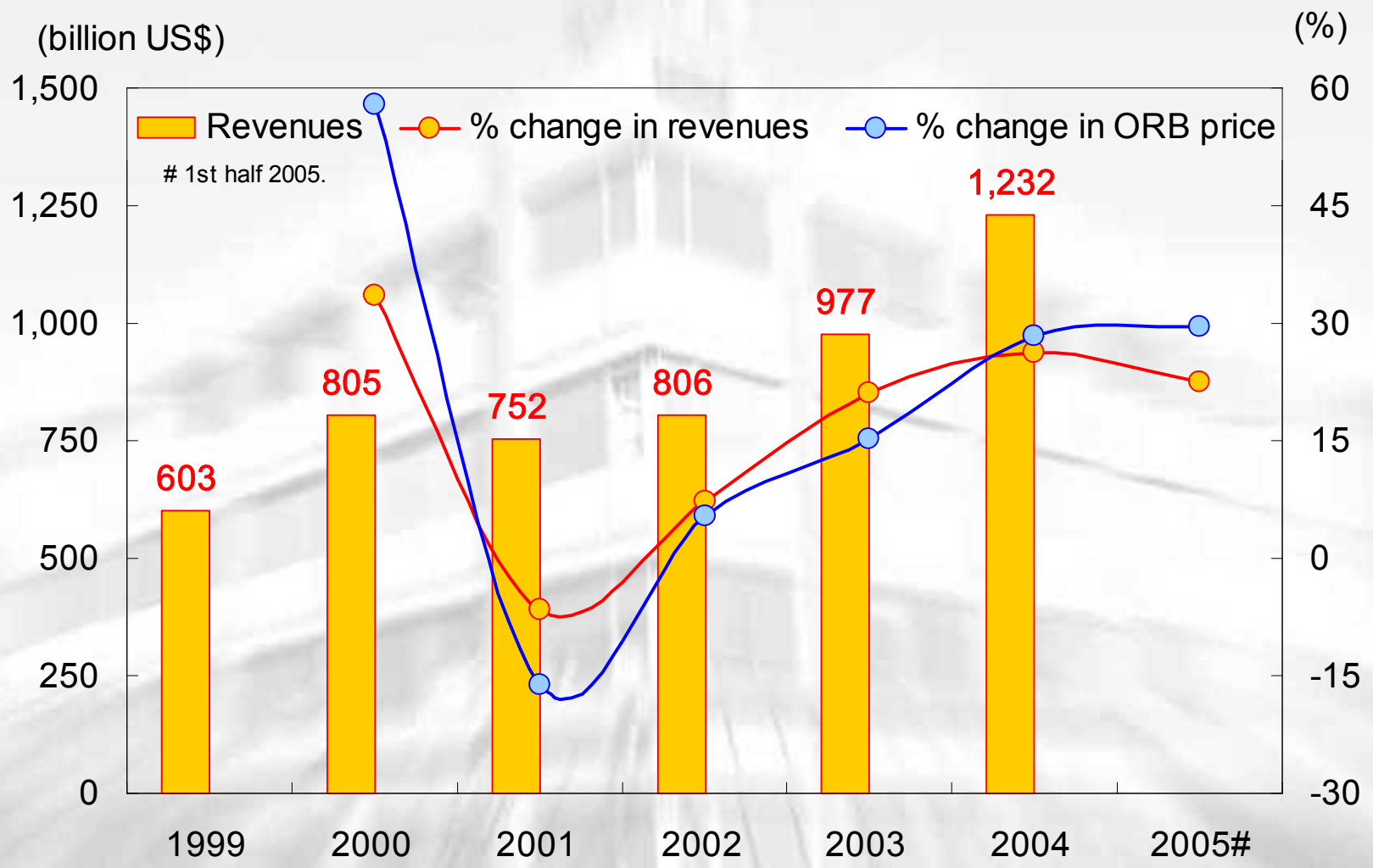
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# Revenues of major international oil companies\*

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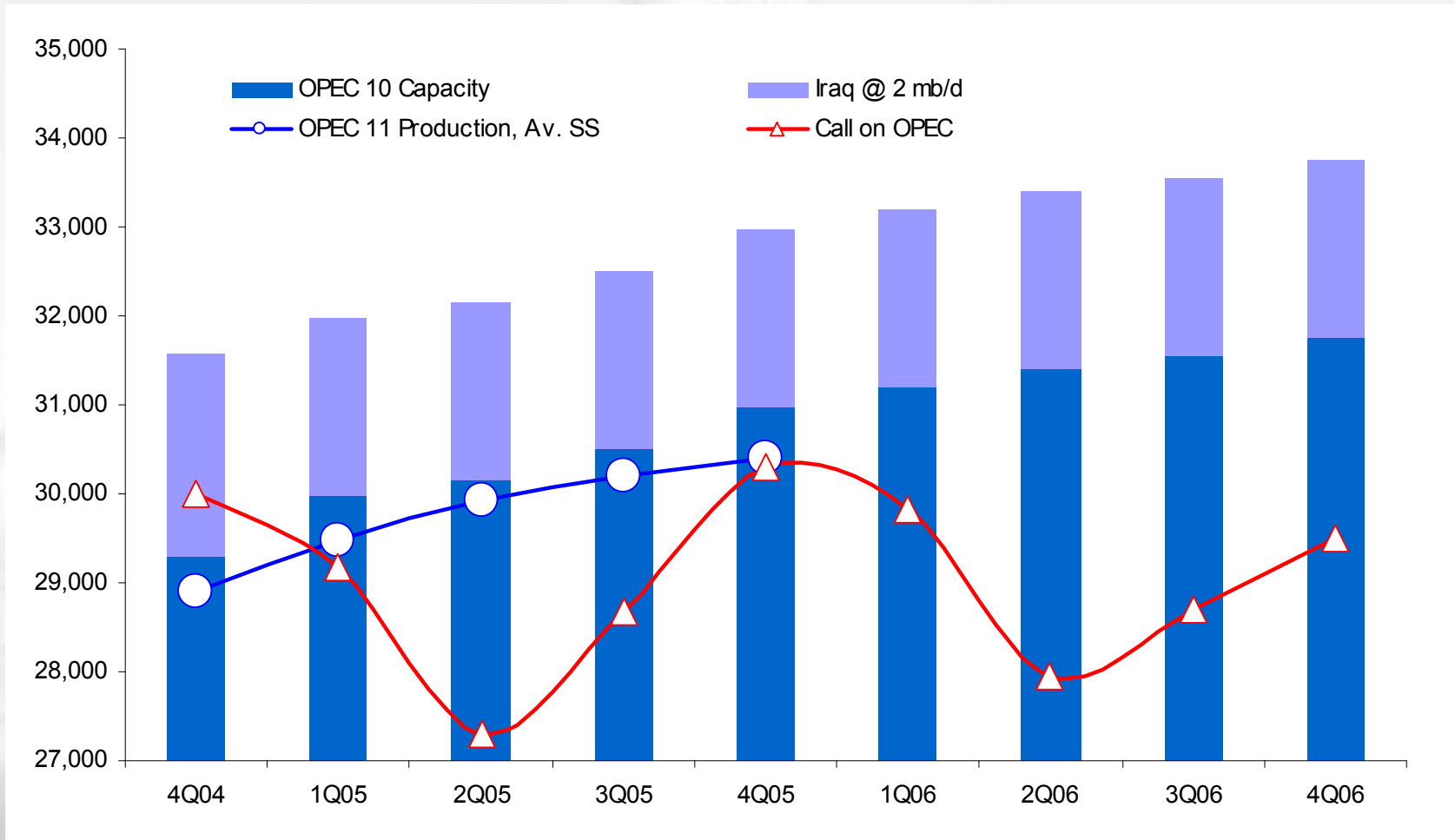
\* which constituted ~39% of the total oil companies' revenues in 2003, and 55% of the revenues if the NOCs (>50% state-owned) are excluded.





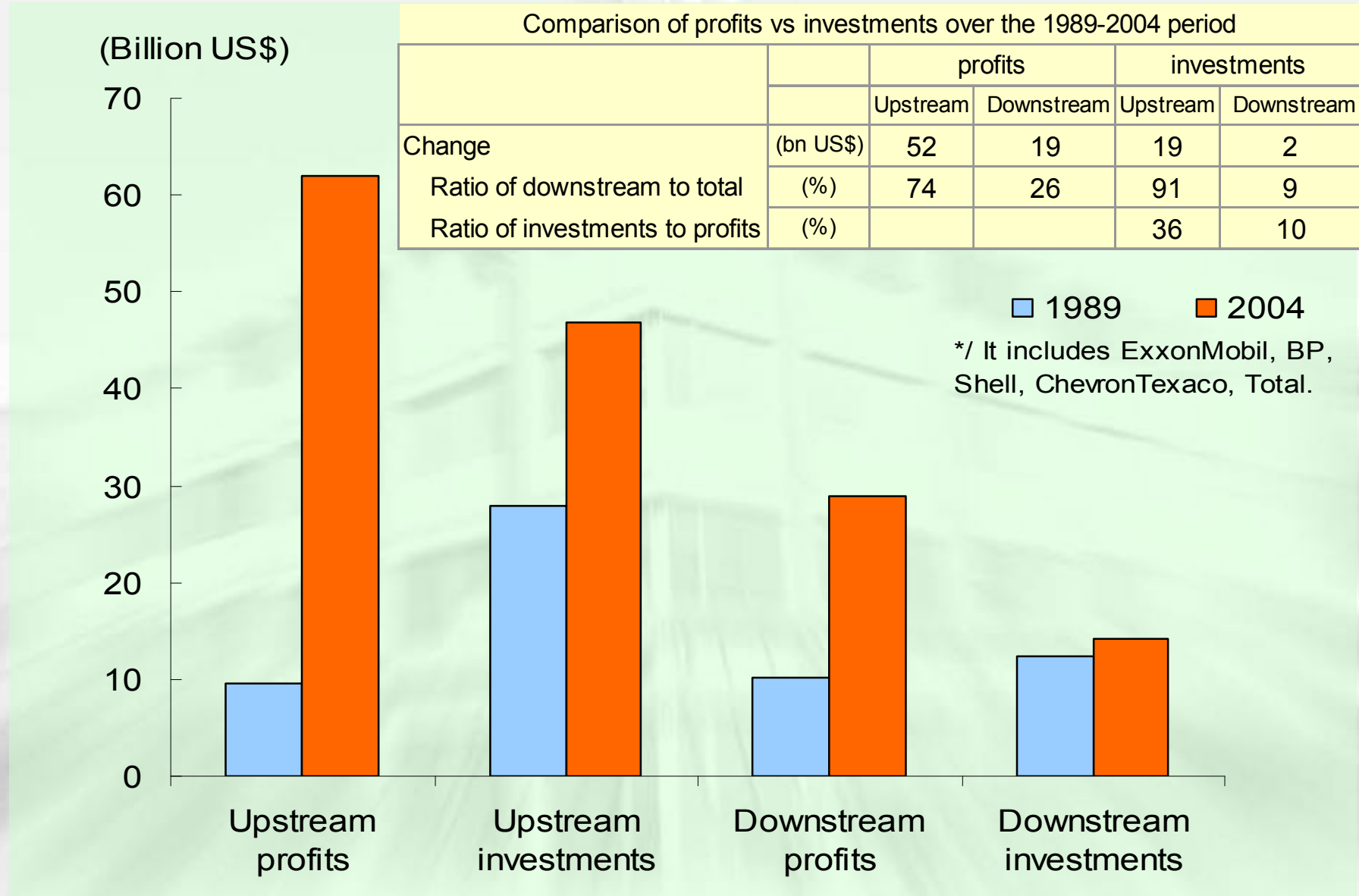
# OPEC Crude, Production and Requirements in the Short term

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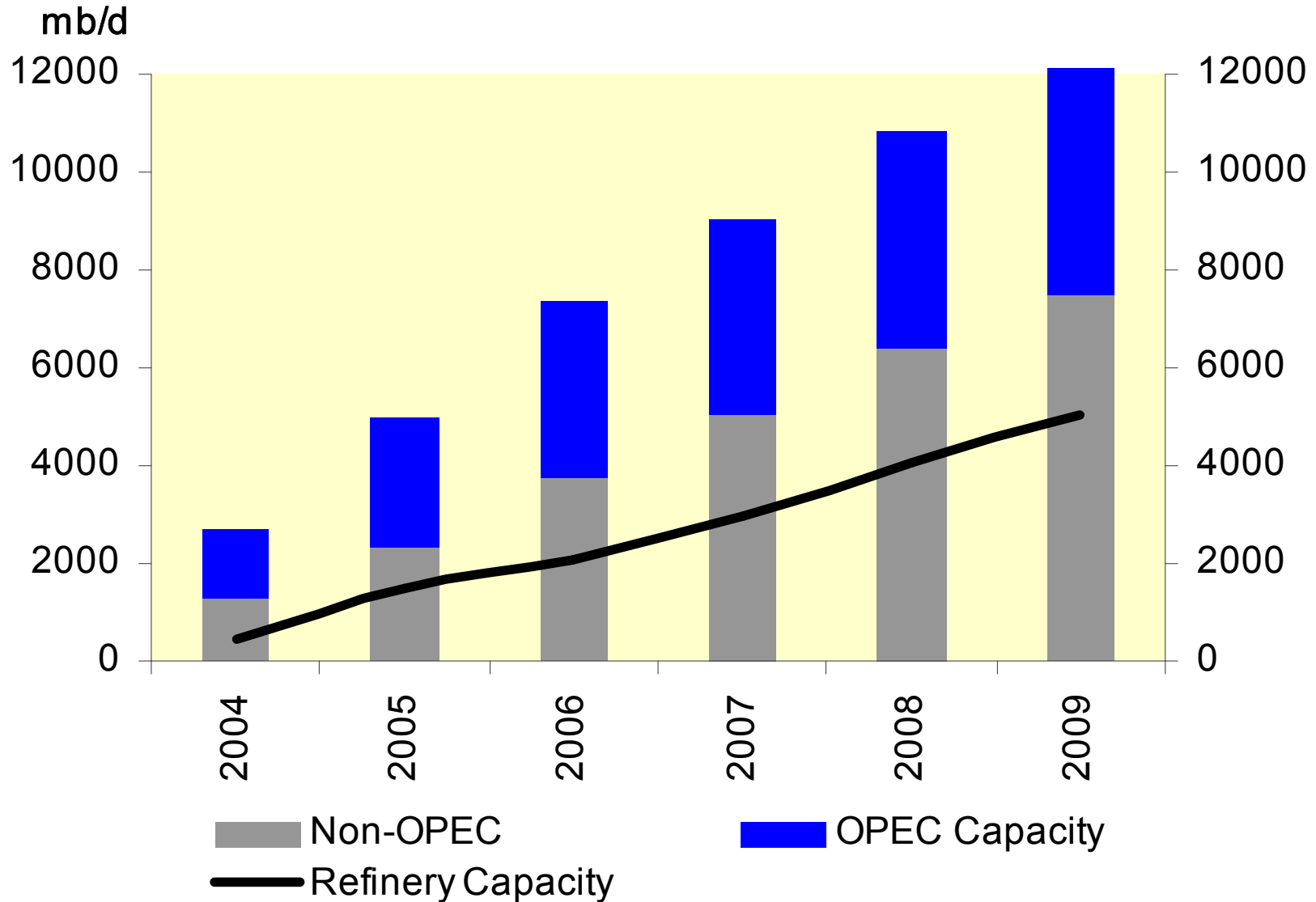
## Comparison of profits vs investments of major international oil companies\* (1989 - 2004)





# Expected cumulative growth in OPEC capacity, non-OPEC supply and refinery capacity

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# Impact of Higher Oil Prices

- ◆ The year-to-date OPEC Reference Basket price for 2005 has risen by about \$5/bl or 10% since last May.
- ◆ The impact on OECD economies in 2006 of such a 10% increase will be in the region of between 0.1-0.15%.
- ◆ DCs may also see growth reduced by a similar amount on average but the impact on poorest countries with high shares of oil imports in GDP may be 0.3-0.4%



# Impact of Higher Oil Prices

- ◆ Many governments in Asia have implemented policies to reduce fuel subsidies. Cuts in subsidies is likely reduce consumer spending and growth in many DCs
- ◆ Oil exporters will benefit from higher prices, as will their trading partners as the oil revenues are recycled. OPEC imports rose by \$70/b in 2004 with a much larger increase expected this year.
- ◆ Overall impact on 2006 world economic growth of a 10% price increase will be about 0.15%



## Oil market outlook

- During 2004 and in the first 3Q of 2005, fundamental factors both in upstream and downstream sectors were major contributors to higher oil prices.
- Supply fears and consequent speculative buying magnified price movements on the upside.
- The current consensus is that in the near term there is no significant shift in the supply/demand balance, particularly in the downstream sector; hence, no major change in prices is expected.



## Oil market outlook

- World oil demand in the coming quarter is expected to reach a record high level approaching 86 mb/d. The call on OPEC crude at 30.4 mb/d will leave a lower level of spare capacity.
- The bulk of new refinery capacity will be in the Far East and Middle East, rather than in Europe and the USA.
- This places the USA at an even greater risk of supply disruption as the volume of imports become a greater percentage of the products supply



## Oil market outlook

- Looking further ahead, we expect some deceleration of the World GDP growth rate due to cyclical patterns as well as the impact of higher oil prices. In 2006, this is likely to be about 0.5-0.6%.
- Supply constraint will ease slightly in 2006. A question remains on the behaviour of demand.
- An industry survey before Katrina showed projections for WTI crude at \$56/b in 4Q05, declining to \$50/b in 2006.
- Given the healthy situation in crude oil stocks, combined with the release of SPR, crude developments are not expected to push prices higher. However, the tight product situation will be the main driver of the market.





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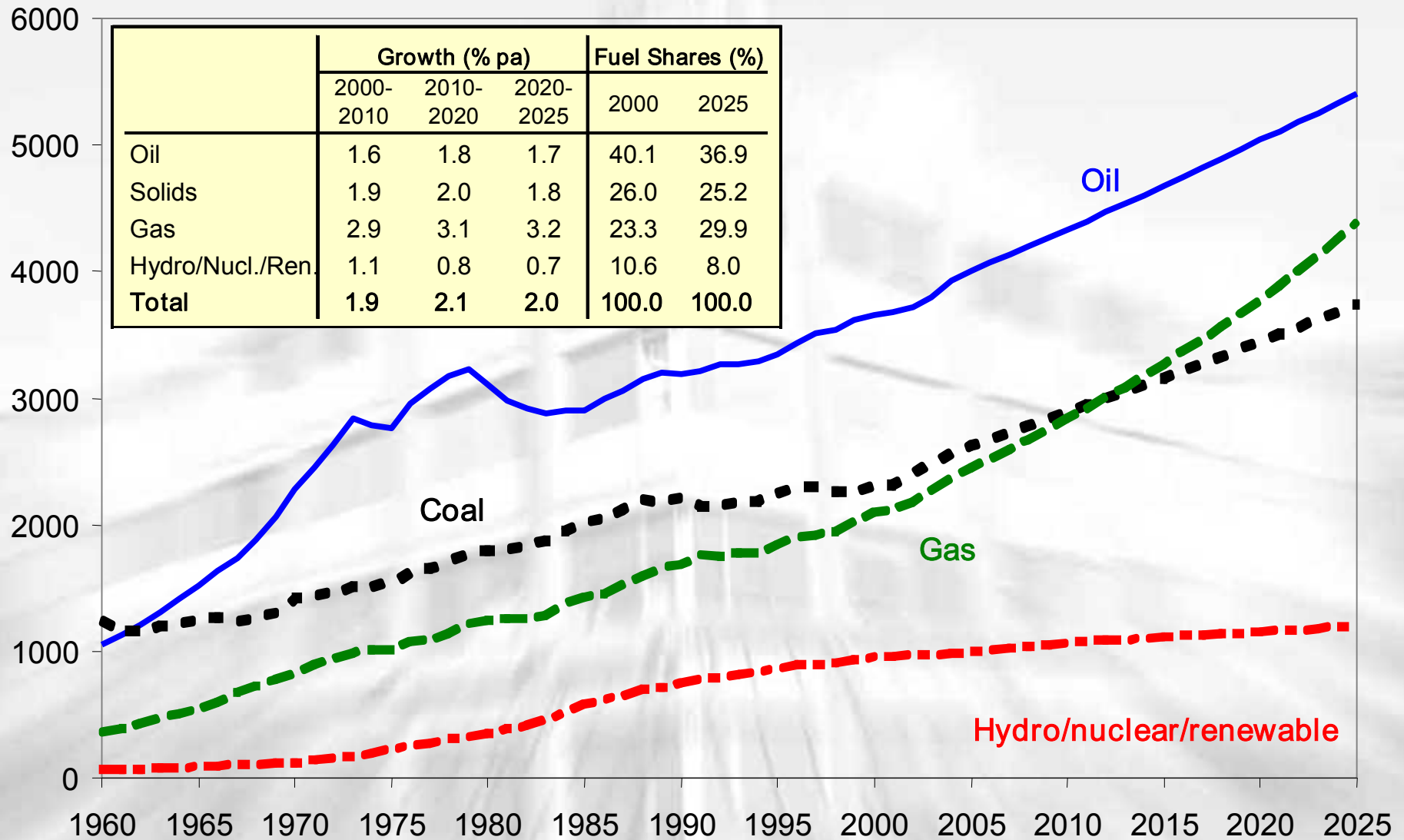
# OPEC-Northeast Asia

**Enhancing OPEC-Northeast  
Asia relationship**



# World energy demand by fuel type (mtoe)

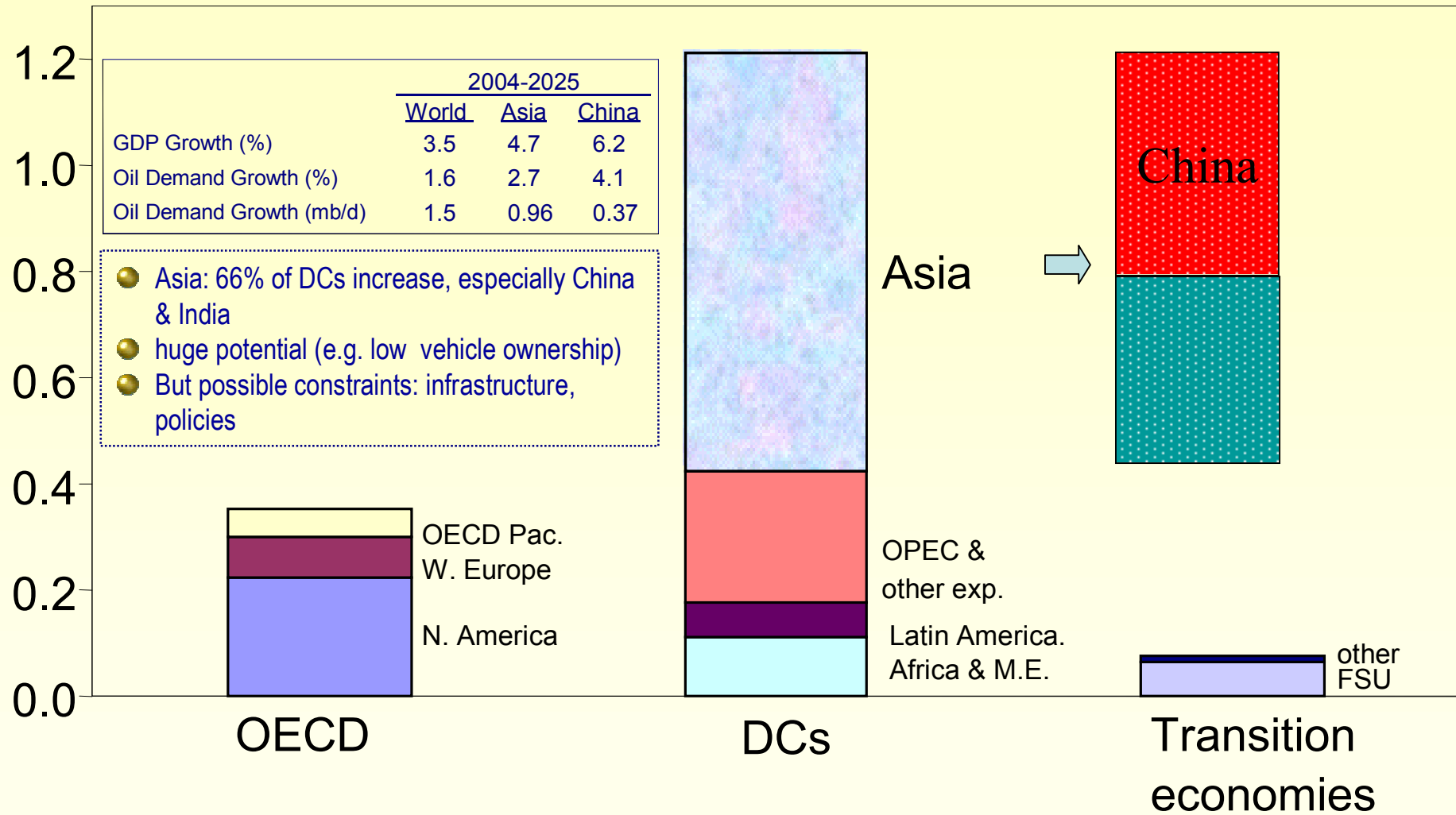
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# Annual growth in oil demand, 2004-2025, Reference, mb/d pa

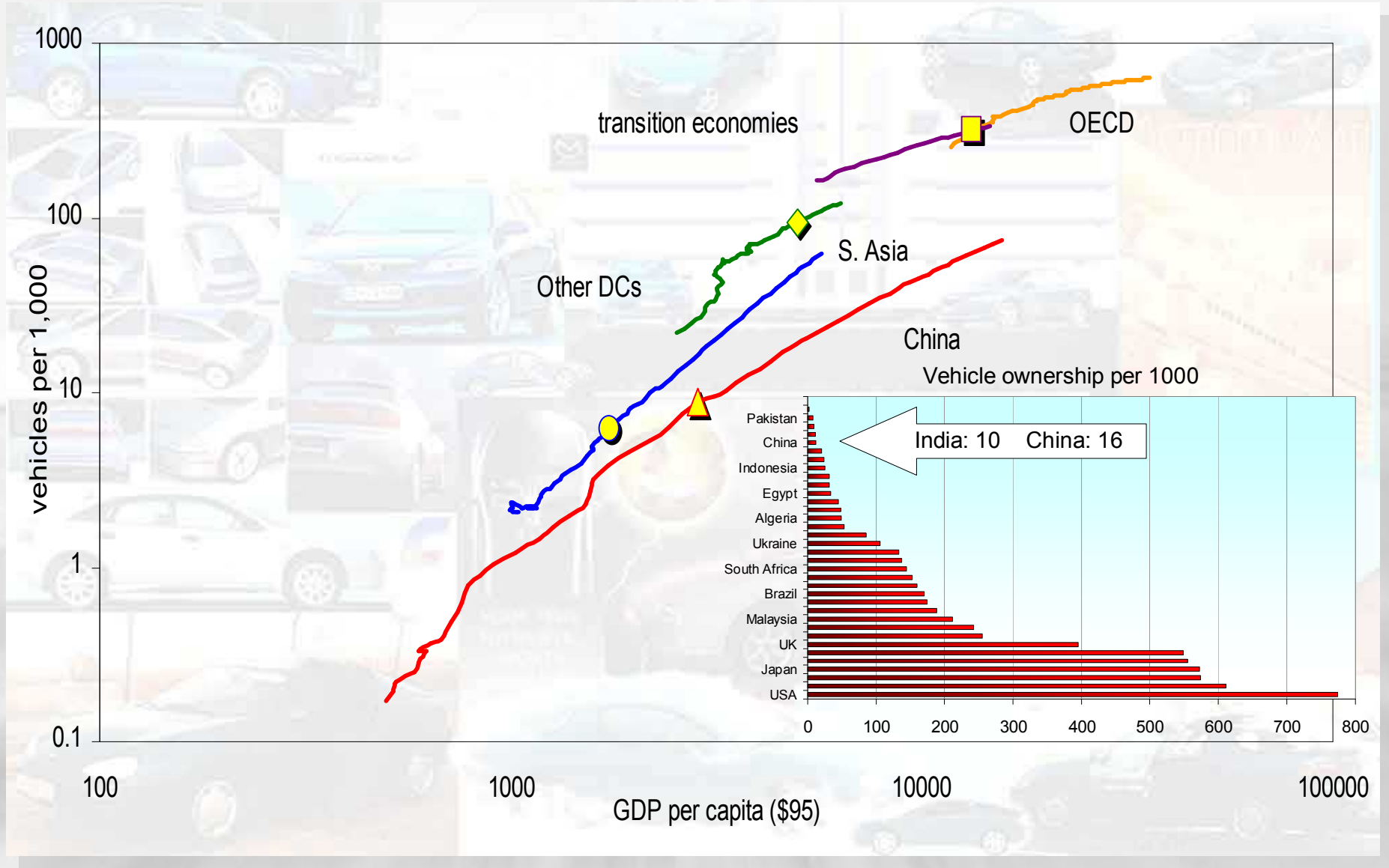
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# Vehicle intensities 1970-2025

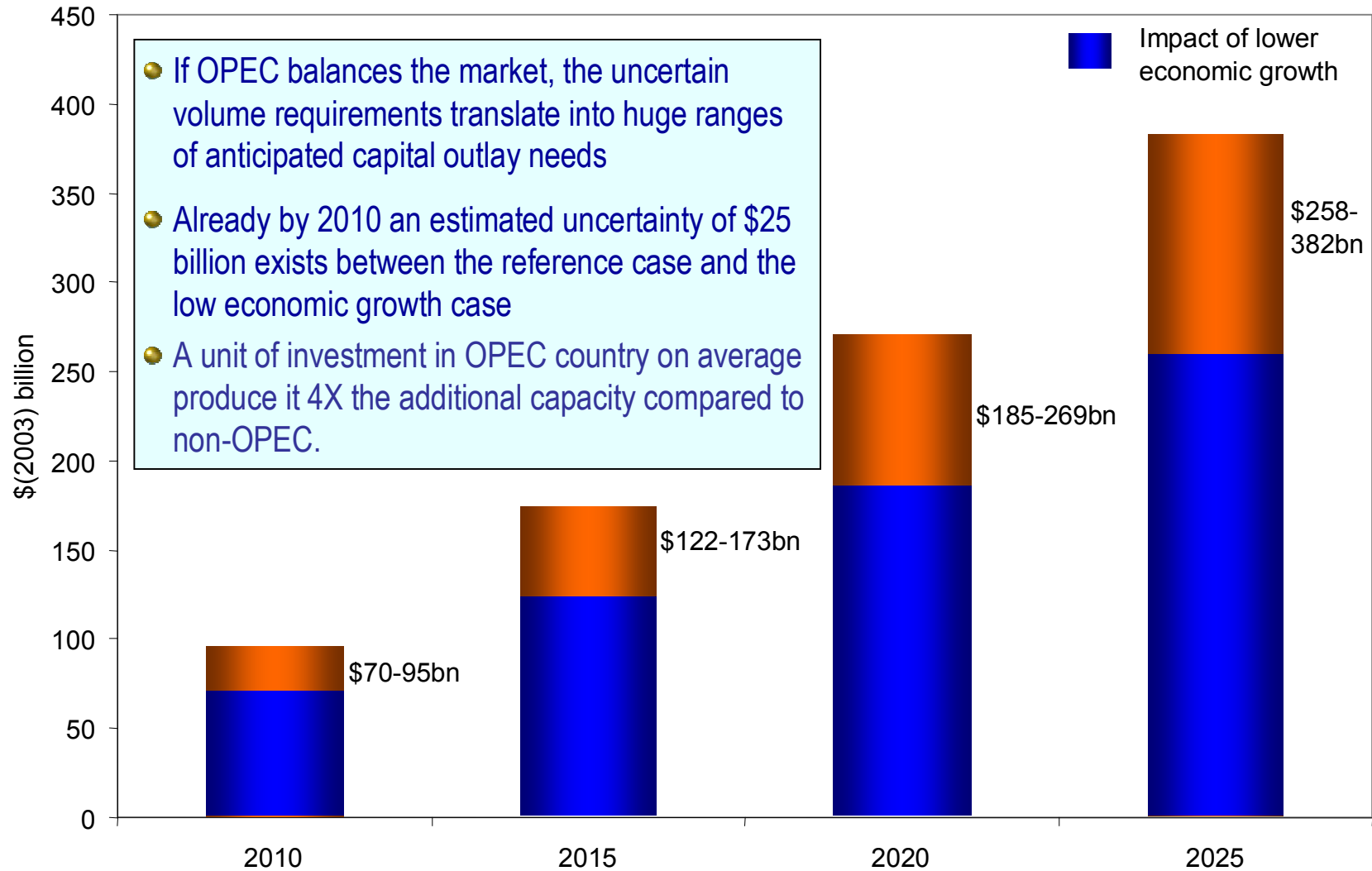
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# Cumulative OPEC investment requirements: Huge uncertainties in future oil demand translate into huge uncertainties and risks for future OPEC investment

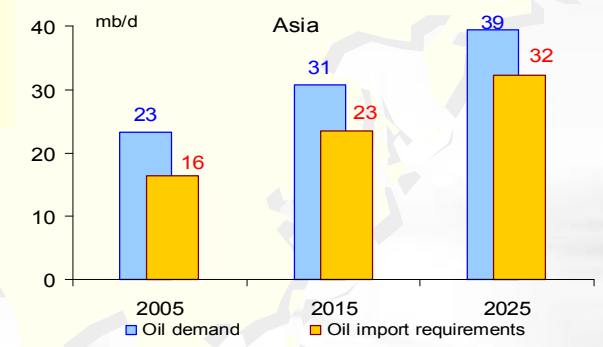
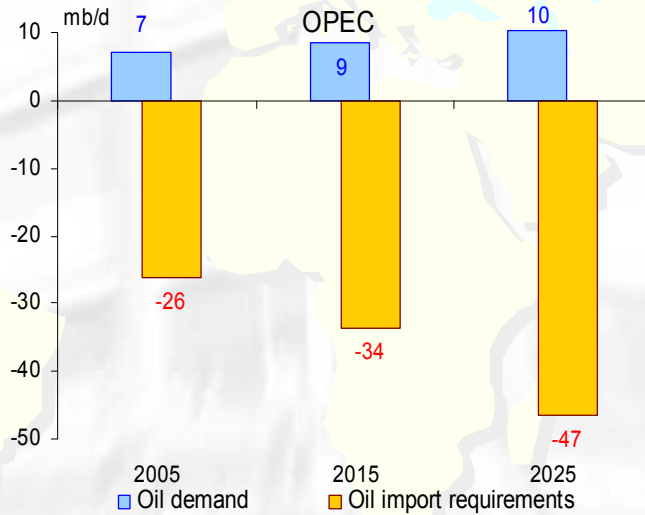




# Regional oil demand & net import requirements (mb/d)

IEEJ: October 2005

(mb/d)	Oil Demand			Net Oil Import Req.		
	2005	2015	2025	2005	2015	2025
North America	26	28	29	11	13	14
Latin America	5	6	7	0	0	1
Europe	16	16	17	10	12	13
FSU	4	4	5	-8	-10	-10
Asia	23	31	39	16	23	32
China	7	11	14	3	7	11
M.East & Africa	3	4	5	-3	-3	-2
OPEC	7	9	10	-26	-34	-47



M.East OPEC contribution to world oil trade is expected to increase from ~30% to ~40% in 2025.

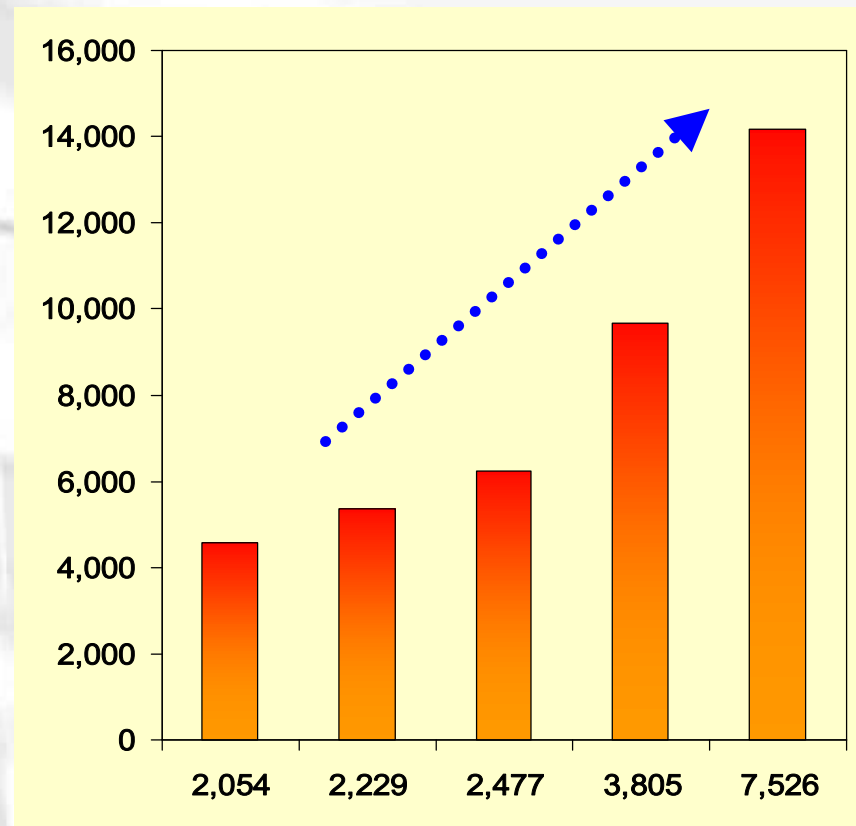
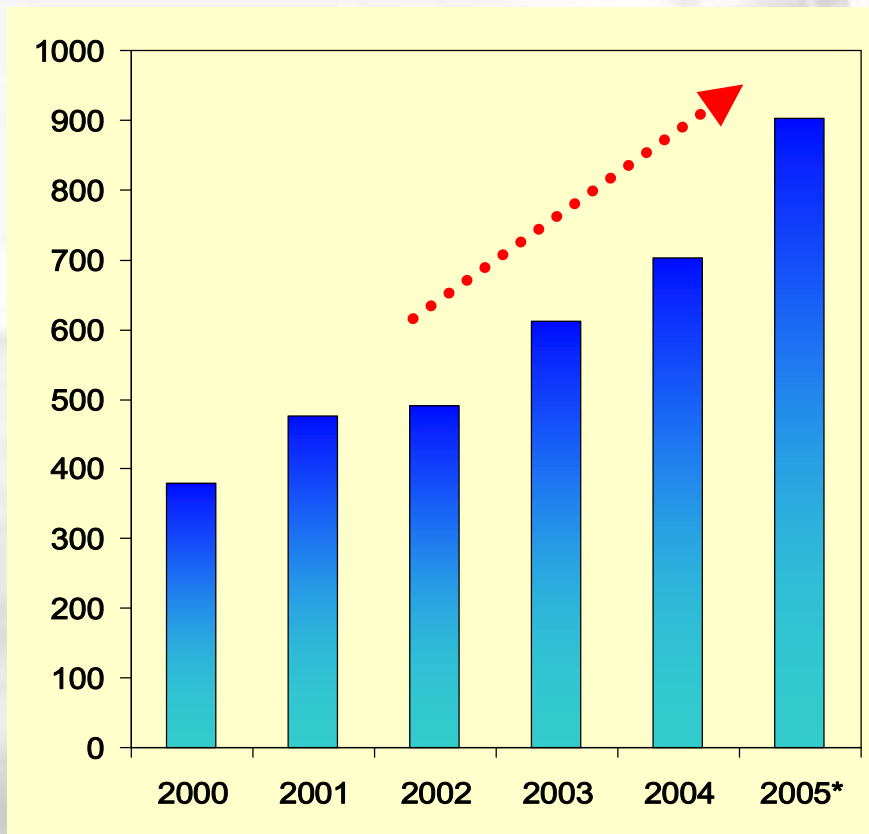


# OPEC Middle East & China Trade

IEEJ: October 2005

China: crude oil Imports from Middle East  
(1000 b/d)

OPEC Middle East: Imports from China  
(Mill. US \$)

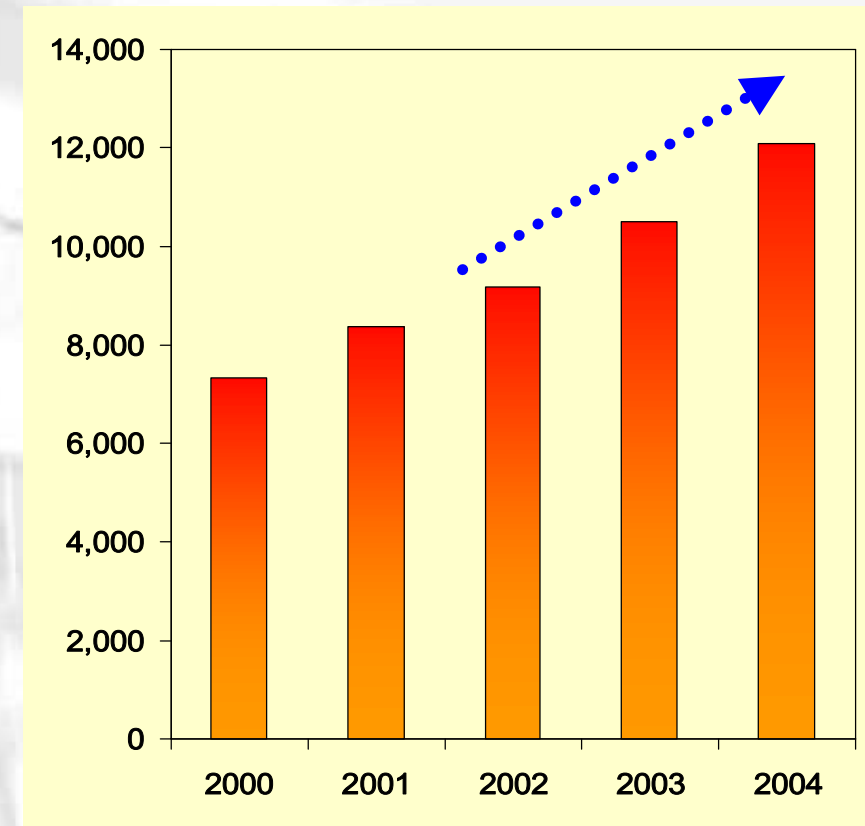
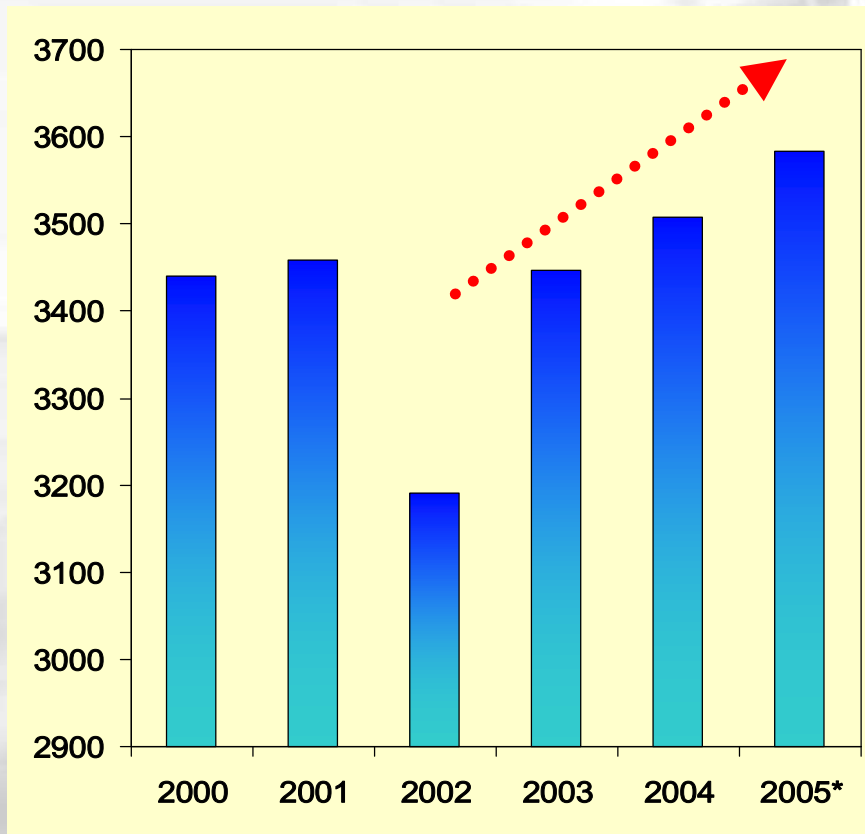




# OPEC Middle East & Japan Trade

IEEJ: October 2005

Japan: crude oil Imports from Middle East (1000 b/d)    OPEC Middle East: Imports from Japan (Mill. US \$)



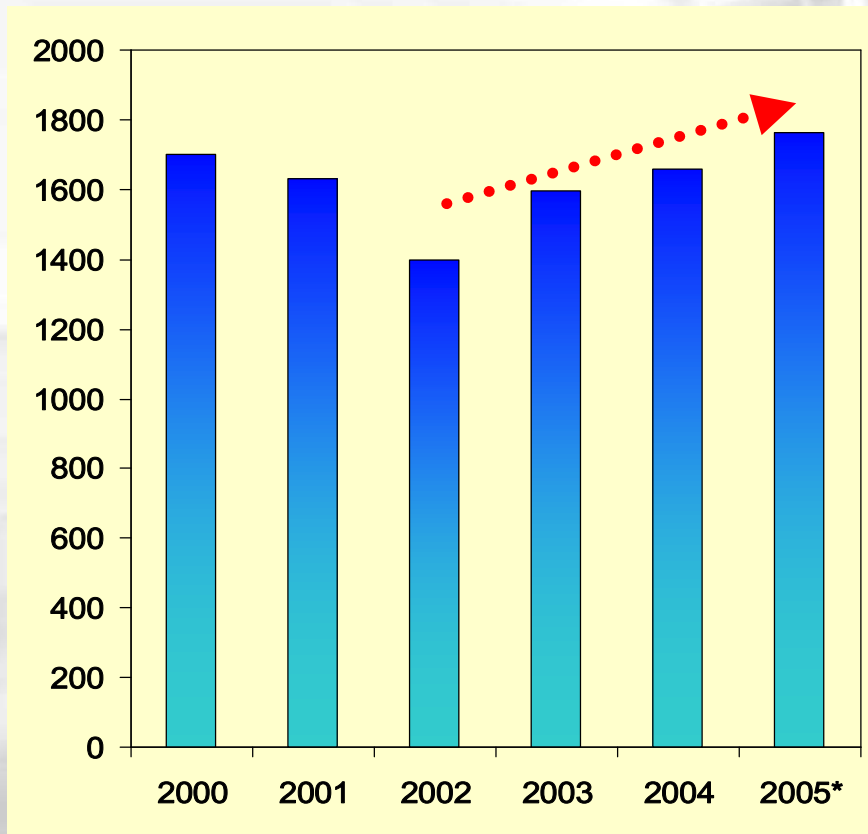




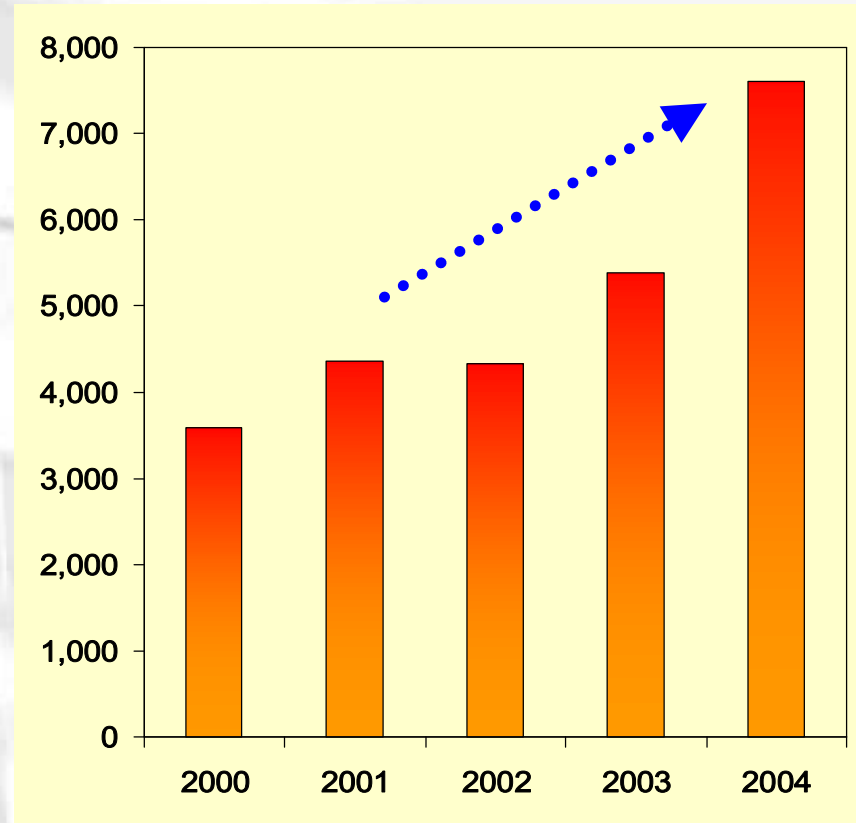
# OPEC Middle East & Rep. of Korea Trade

IEEJ: October 2005

South Korea: crude oil Imports from Middle East  
(1000 b/d)



OPEC Middle East: Imports from South Korea  
(Mill. US \$)





IEEJ: October 2005

## Dialogue, partnership and cooperation

- Growing interdependency and enhancement of security of supply for the consumer and security of demand for producers.
- OPEC has made substantial investments in the upstream. Positive prospects for Asian investment in OPEC producers
- To enhance relations, some OPEC Member Countries have made investments in the downstream sector of some major consumers, such as Korea and China, in addition to other countries.
- The future will provide more space for richer ties and deeper partnership between OPEC and Northeast Asian countries.



IEEJ: October 2005

**Thank you**



# World oil demand & supply balance (mb/d)

IEEJ: October 2005

	1Q05	2Q05	3Q05	4Q05	2005	05/04	1Q06	2Q06	3Q06	4Q06	2006	06/05
<b><u>Demand (a)</u></b>	83.6	82.0	83.0	85.3	83.5	1.4	85.3	83.4	84.4	86.9	85.0	1.5
<b><u>Supply</u></b>	83.9	84.6	84.5	85.2	84.6	1.7						
Non-OPEC (b)	50.3	50.5	50.1	50.8	50.4	0.6	51.1	50.9	51.2	52.7	51.5	1.1
OPEC NGL (c)	4.1	4.2	4.2	4.3	4.2	0.2	4.4	4.5	4.6	4.7	4.5	0.3
OPEC Crude oil	29.5	29.9	30.2	30.2	30.0	0.9						
<b>a-(b+c)</b>	29.2	27.3	28.7	30.3	28.9	0.6	29.8	28.0	28.7	29.5	29.0	0.1
<b><u>Balance (d)</u></b>	0.3	2.6	1.5	-0.1	1.1							
<b><u>Seasonal stock chg.:</u></b> ('00-'04)	-0.7	0.9	0.3	-0.6			-0.7	0.9	0.3	-0.6		
<b><u>Stock change (e)</u></b>												
OECD commercial	-0.1	1.1										
OECD SPR	0.1	0.1										
Oil in Water	0.2	0.0										
Remaining to Balance (d-e)	0.0	1.4										

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