OECD/International Transport Forum Roundtable

MEDIUM-TERM Oil Market Report

Prices and Uncertainties

Lawrence Eagles
Head, Oil Industry & Markets Division
lawrence.eagles@iea.org
www.oilmarketreport.org

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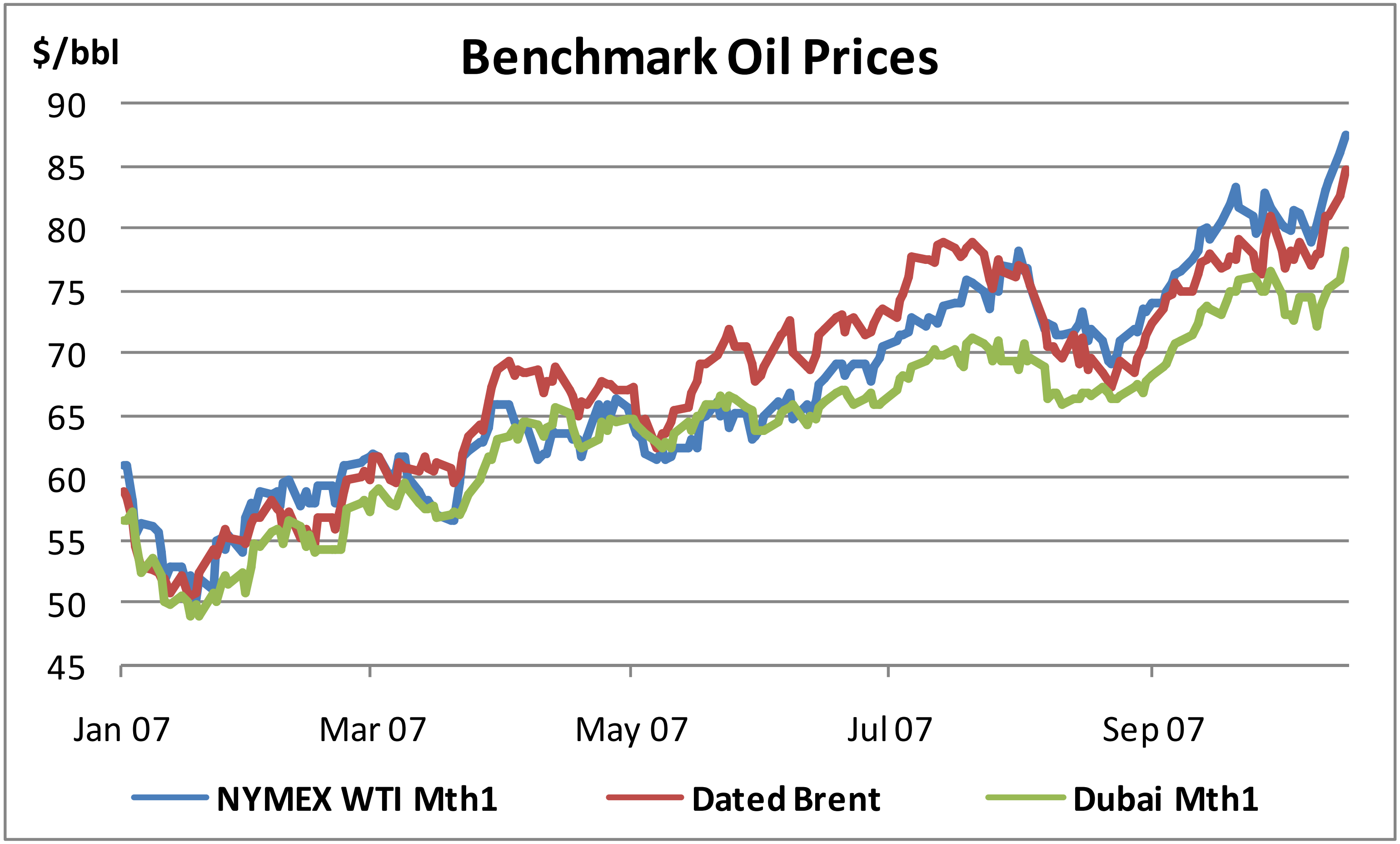
Nearing $100, but why?



+$80 oil caused by OPEC, low stocks, refining, spare capacity or funds?

Nearing inflation-adjusted highs

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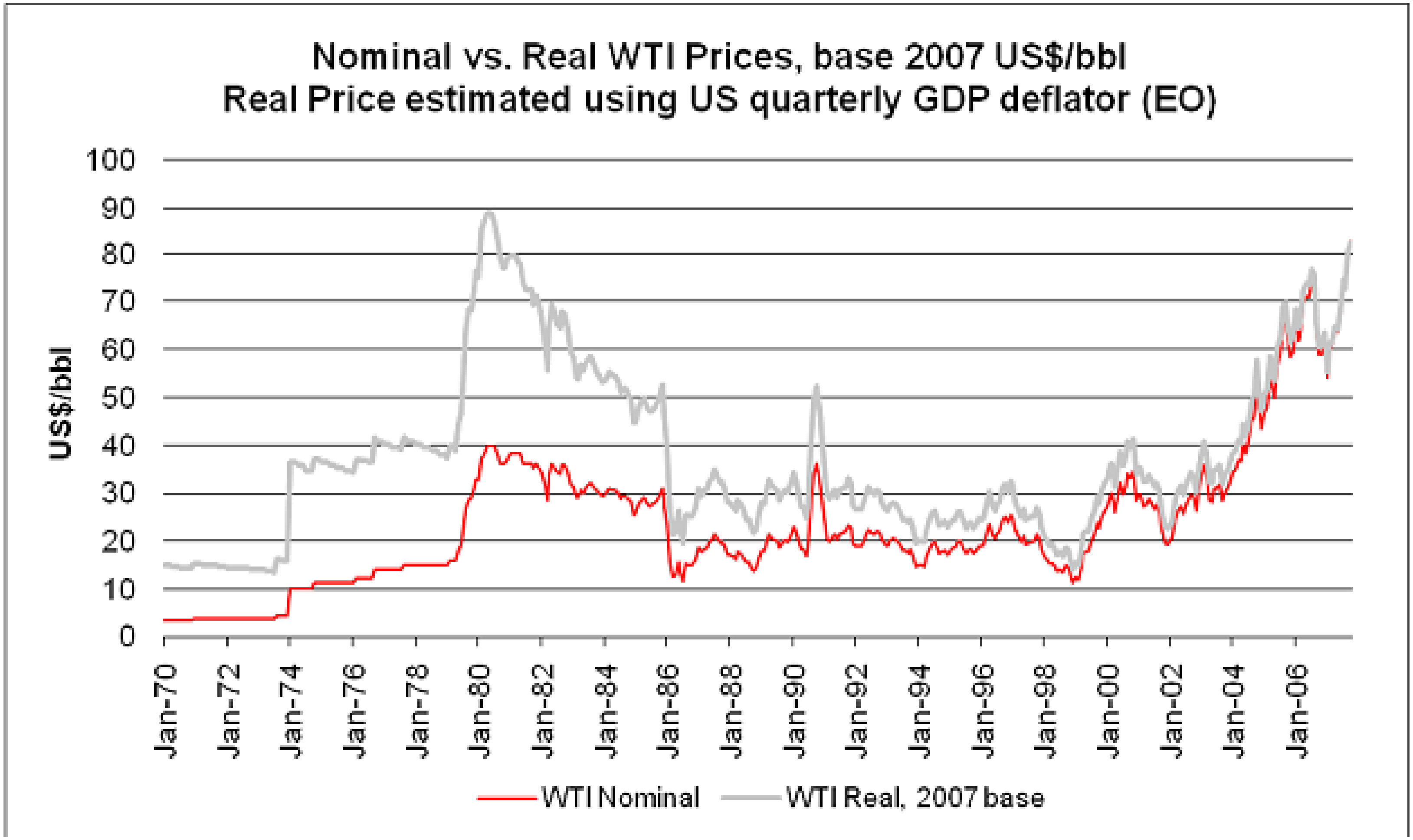
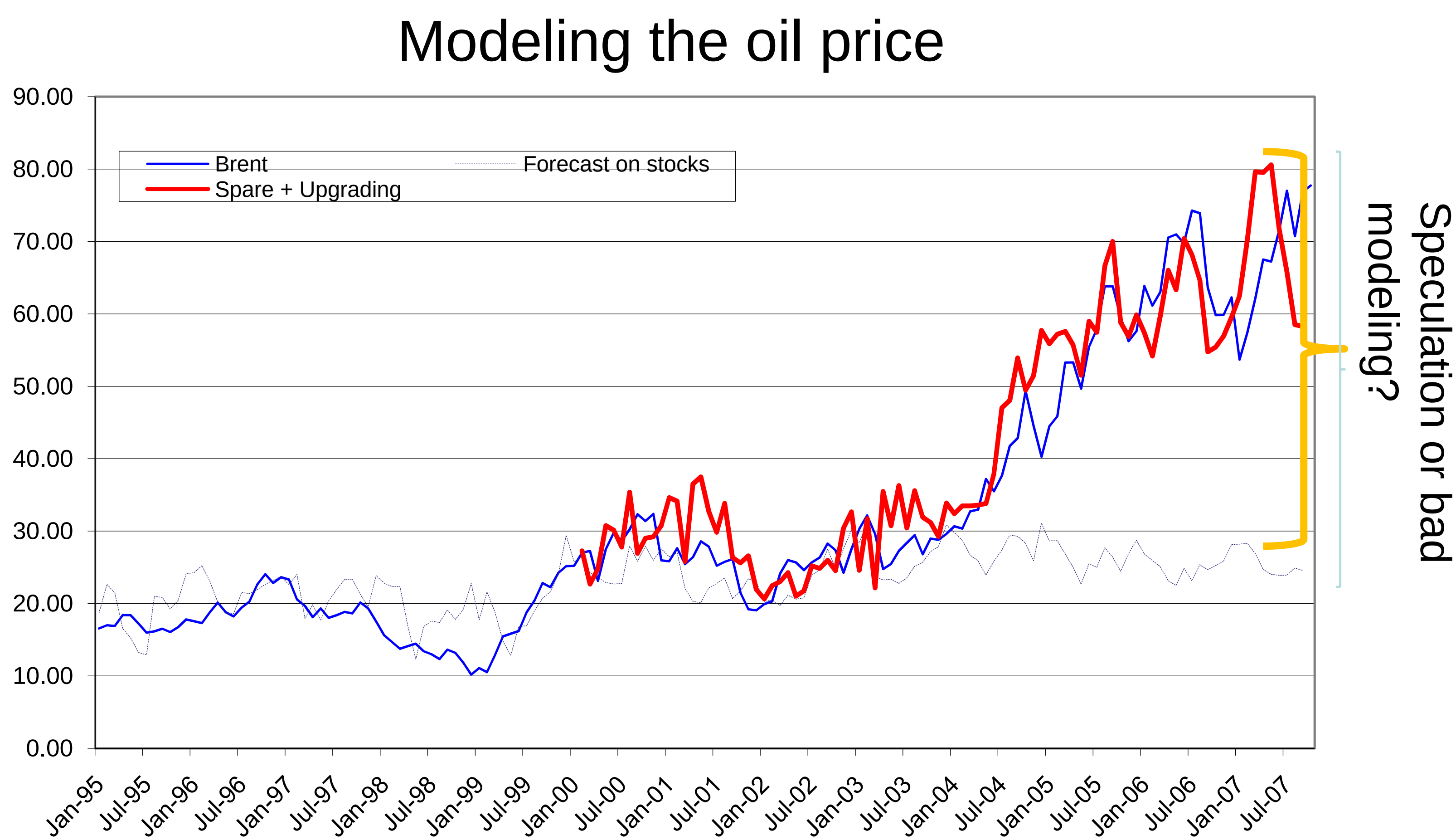


Source: IEA *Oil Market Report*

Stock price models broke down in 2003



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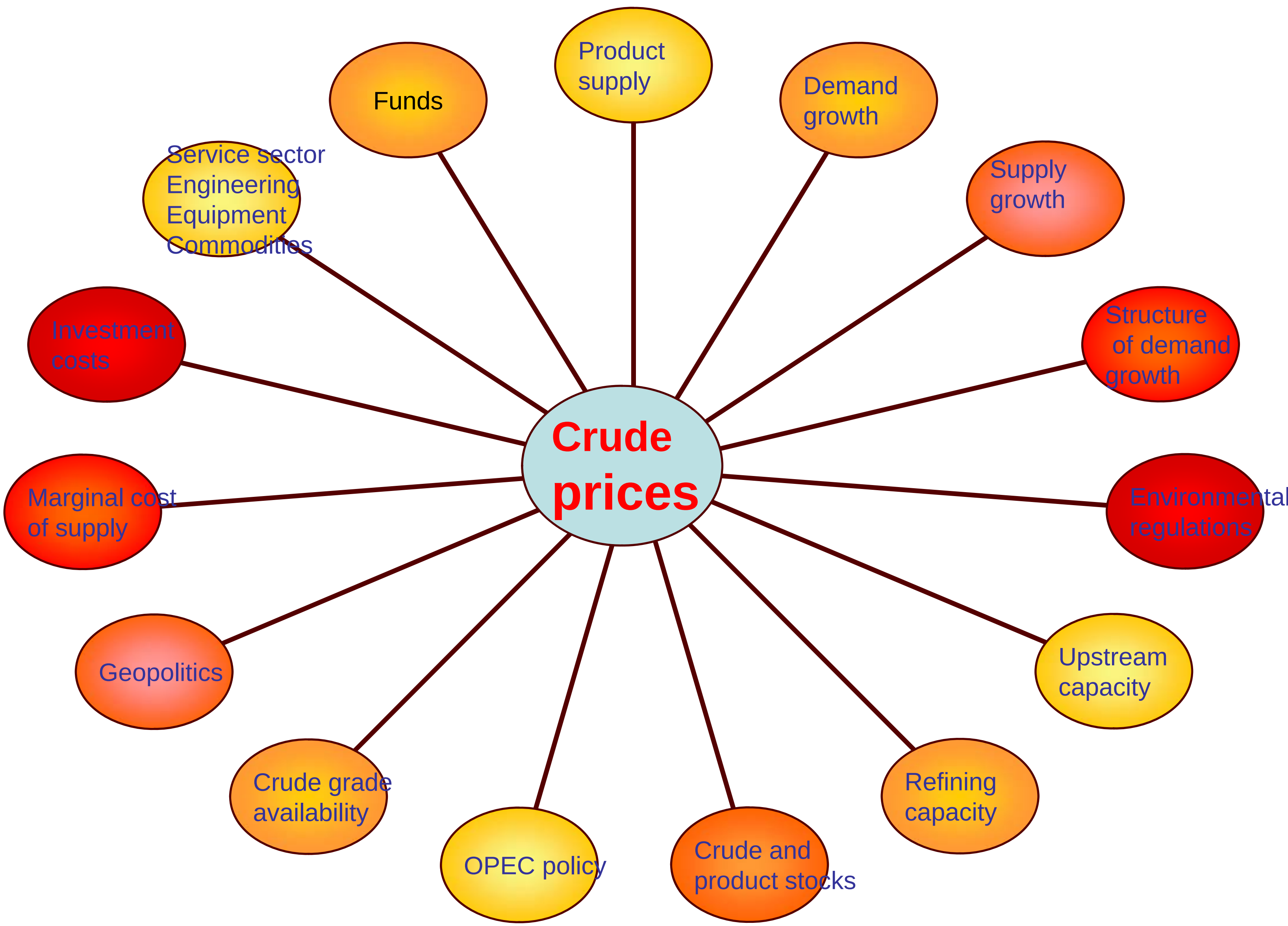
No single cause of high prices



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OECD/IEA 2007

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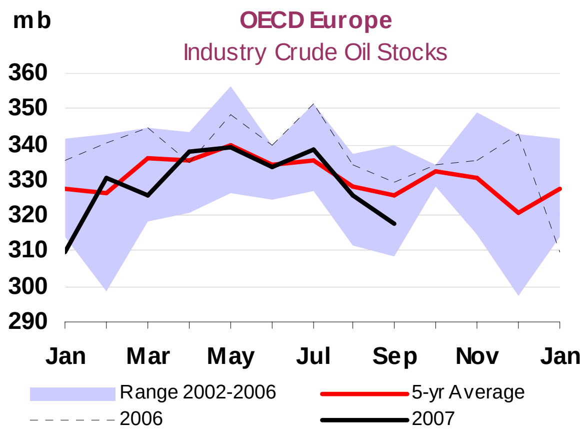
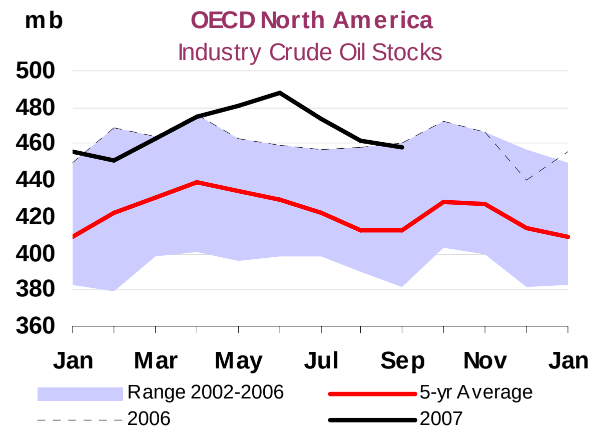
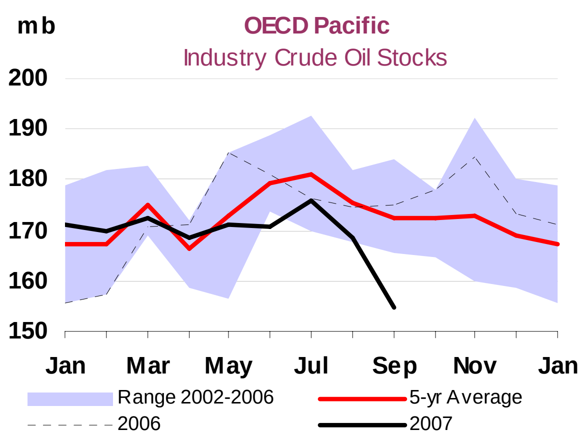
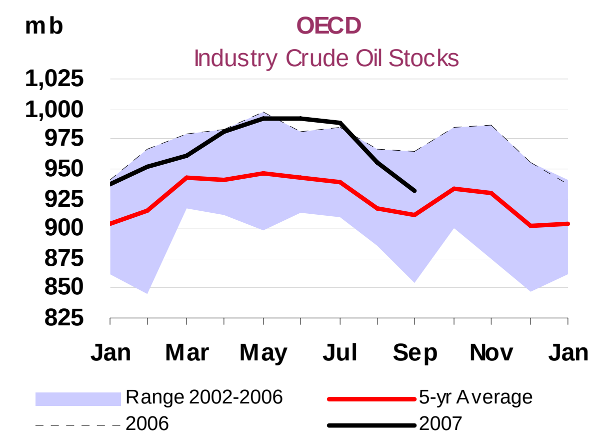
OECD industry stocks down 29.5 mb in Aug, maybe off another 20.5 mb in Sep









- Falls have been predominantly in crude over past few months
- Significant regional variations
- Counter-seasonal 3Q stockdraw, 4Q 400-700kb/d

Source: IEA *Oil Market Report*

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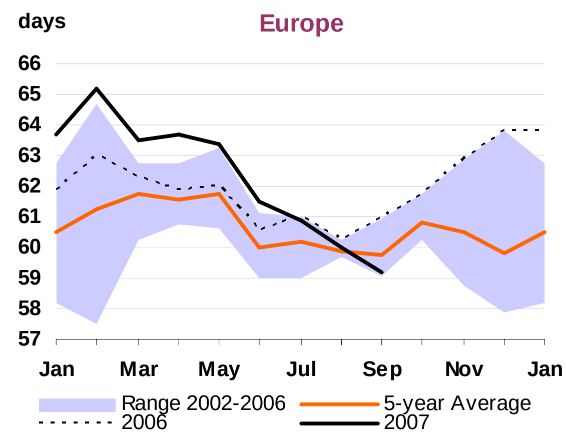
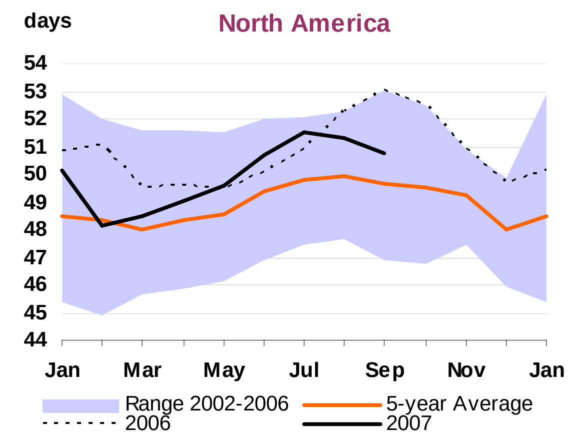
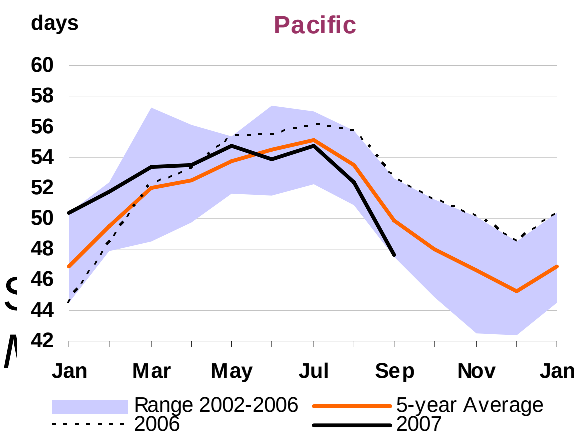
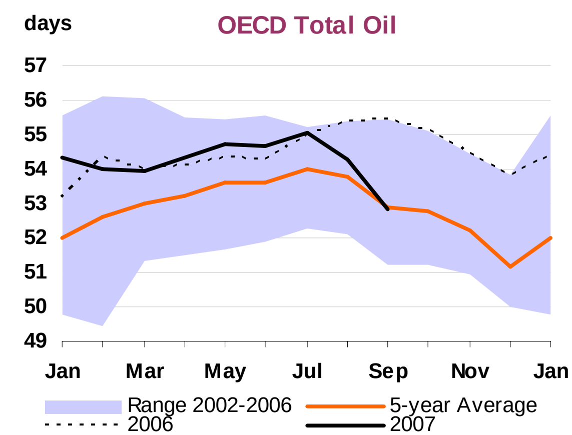
Forward demand cover falls below average









- OECD forward demand cover fell to 52.8 days in September, below five-year average
- European and Pacific cover is particularly low

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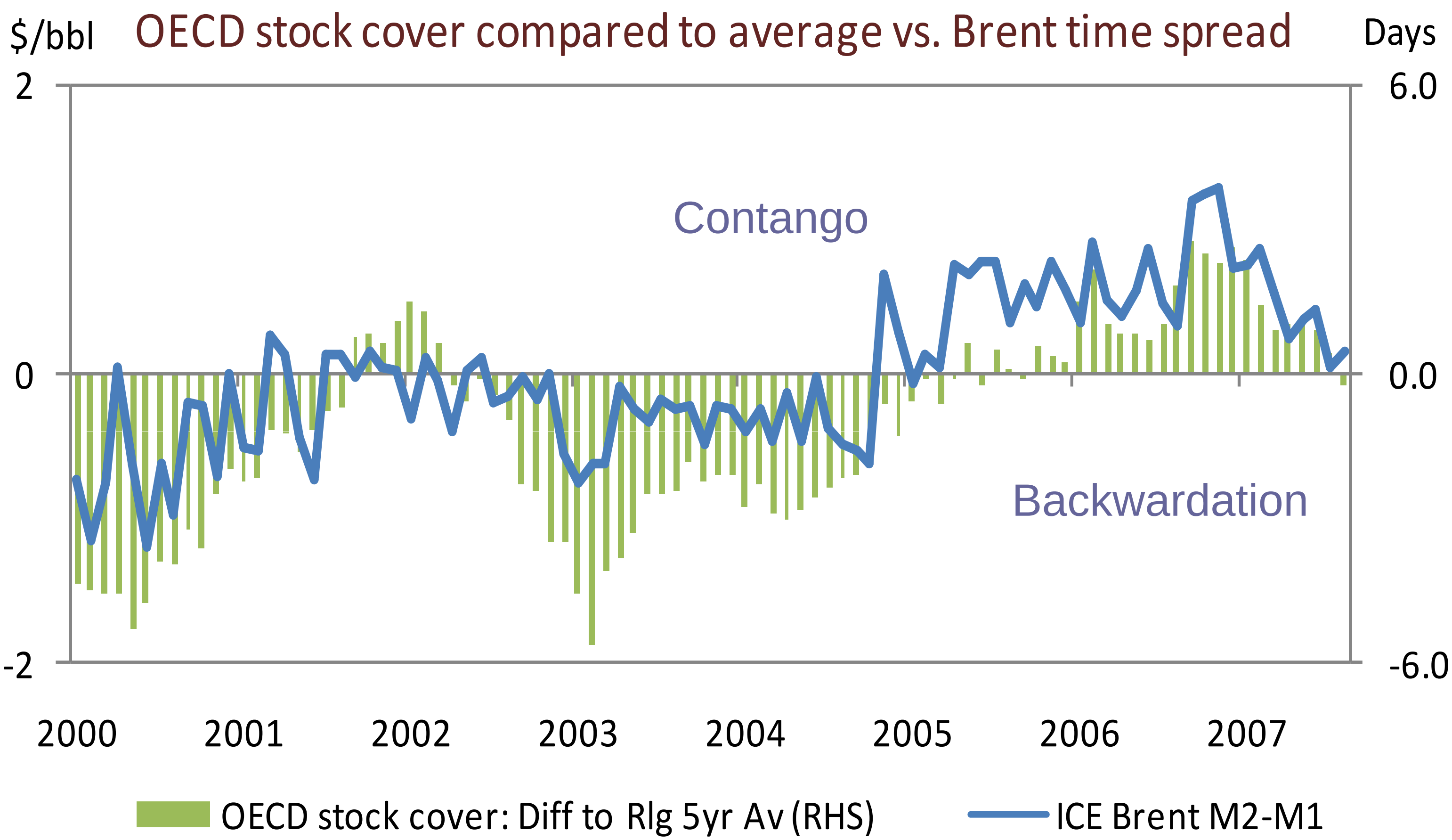
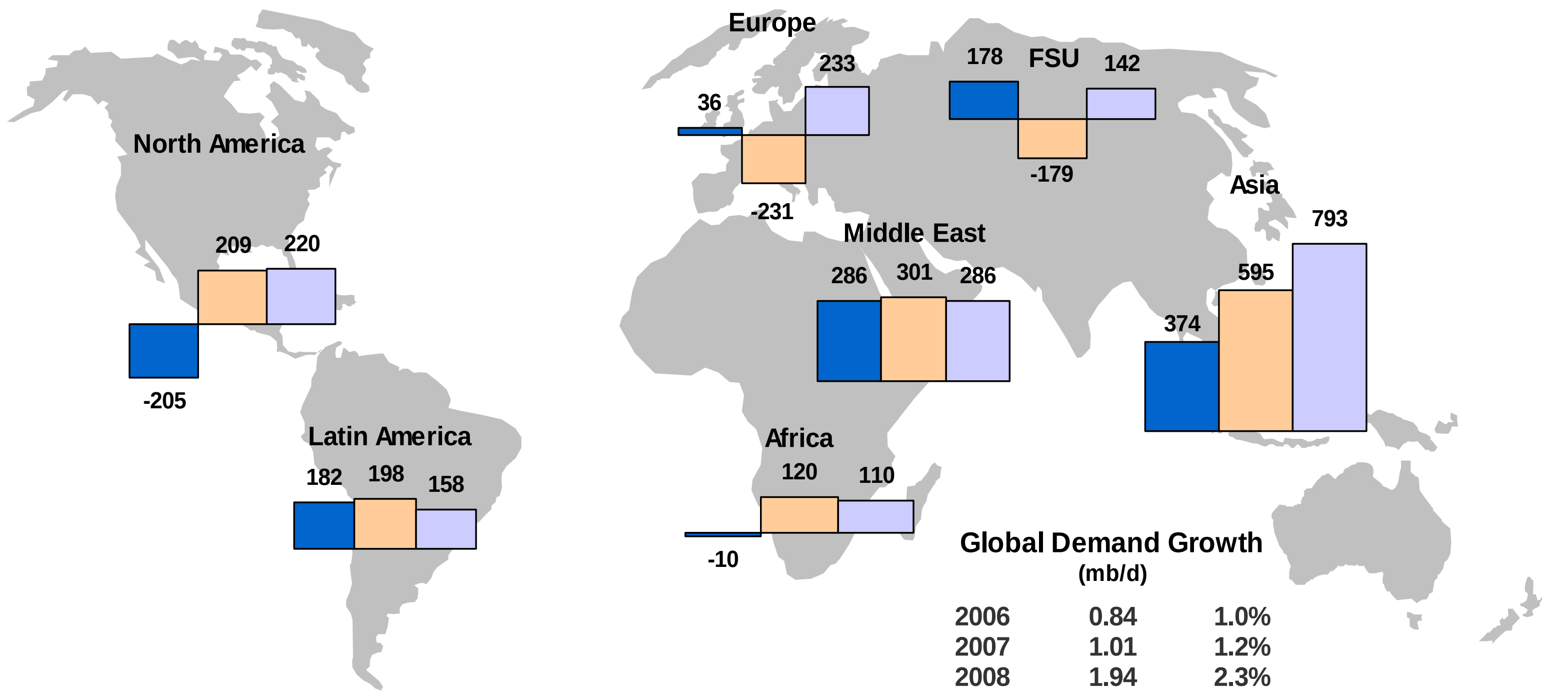
...pushing structure towards backwardation



Source: IEA *Oil Market Report*

Demand growth seen in 2008, despite high oil prices

Global Demand Growth 2006/2007/2008
thousand barrels per day



Global Demand Growth
(mb/d)

2006	0.84	1.0%
2007	1.01	1.2%
2008	1.94	2.3%

- Growth seen in most major regions
- Non-OECD: Asia demand accounts for 45%, and the Middle East for 18%

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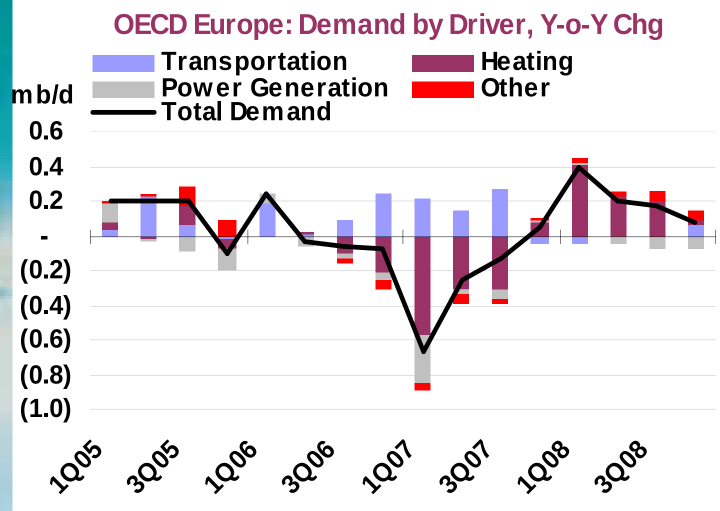
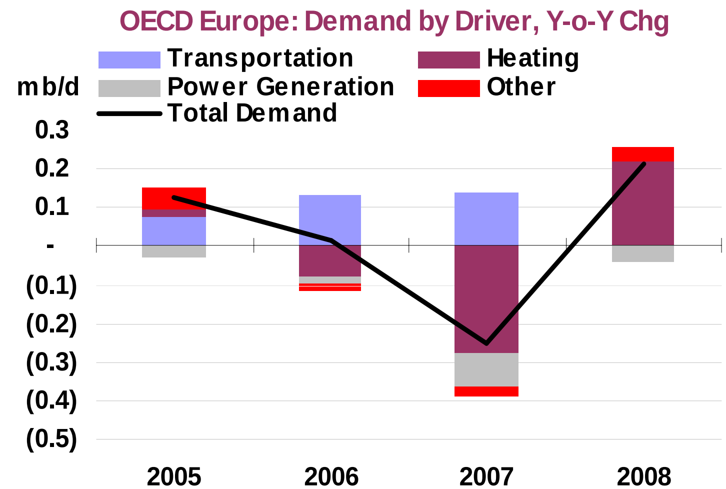
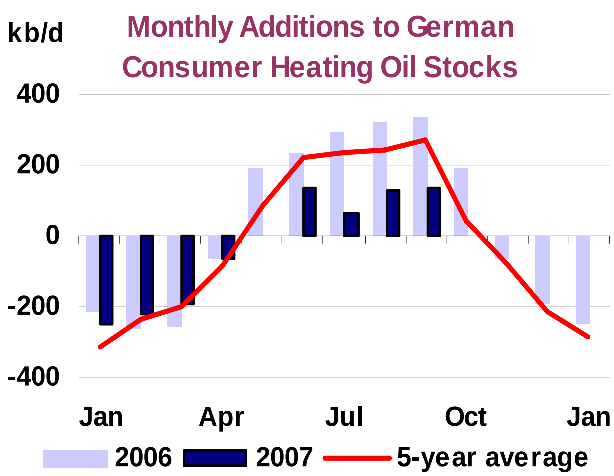
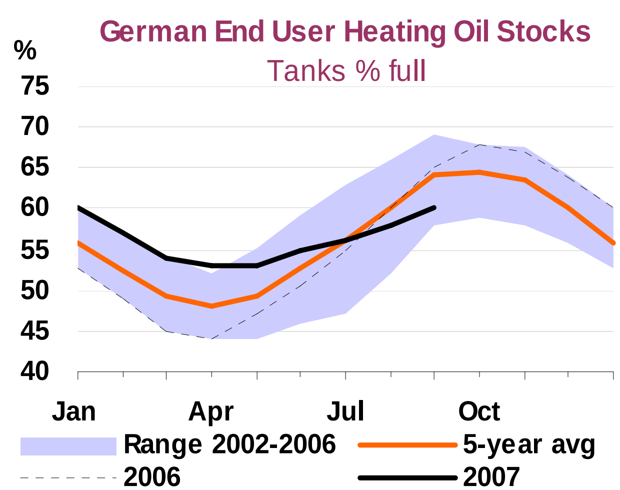
Price effects starting to show

Europe dominated by weather bounce back









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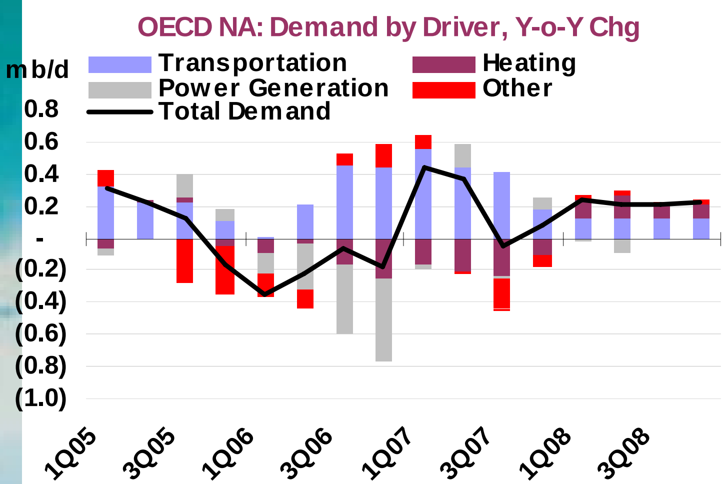
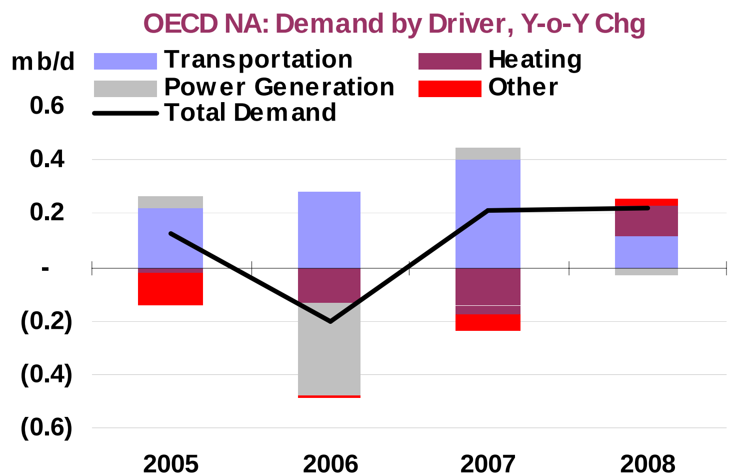
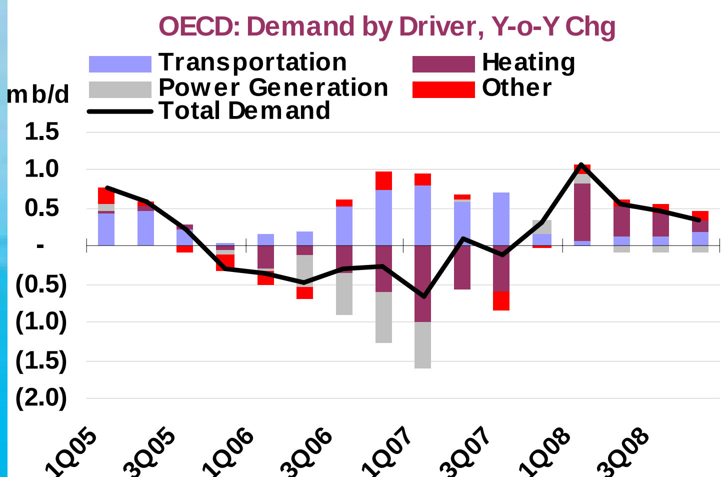
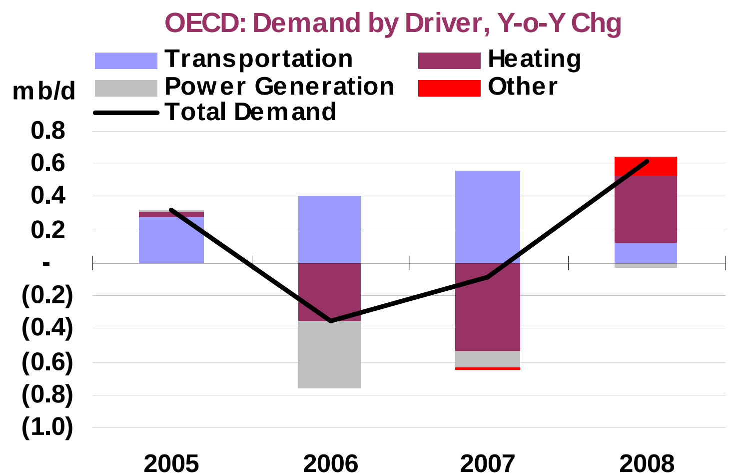
Transportation growth seen slowing – but needs sustained high prices

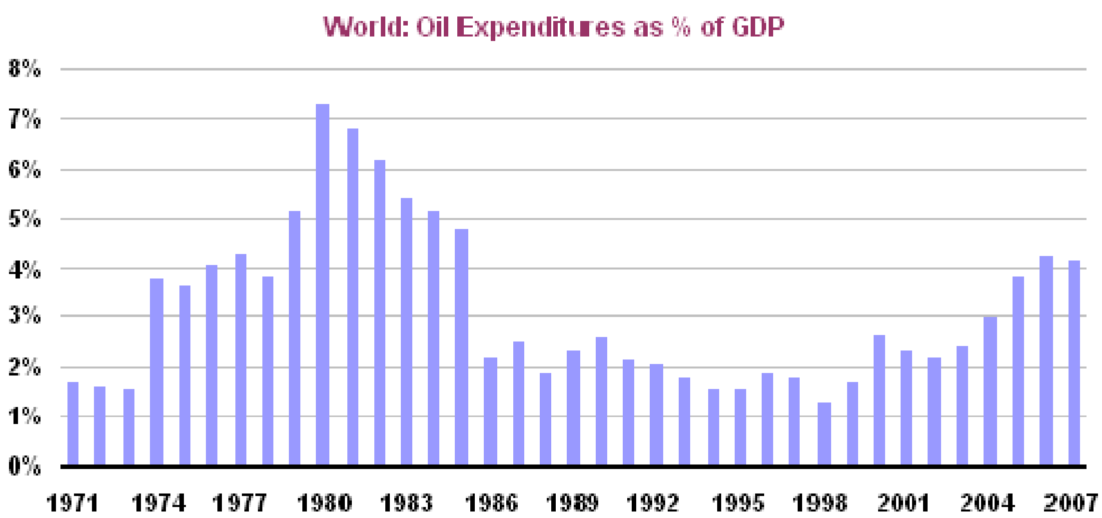


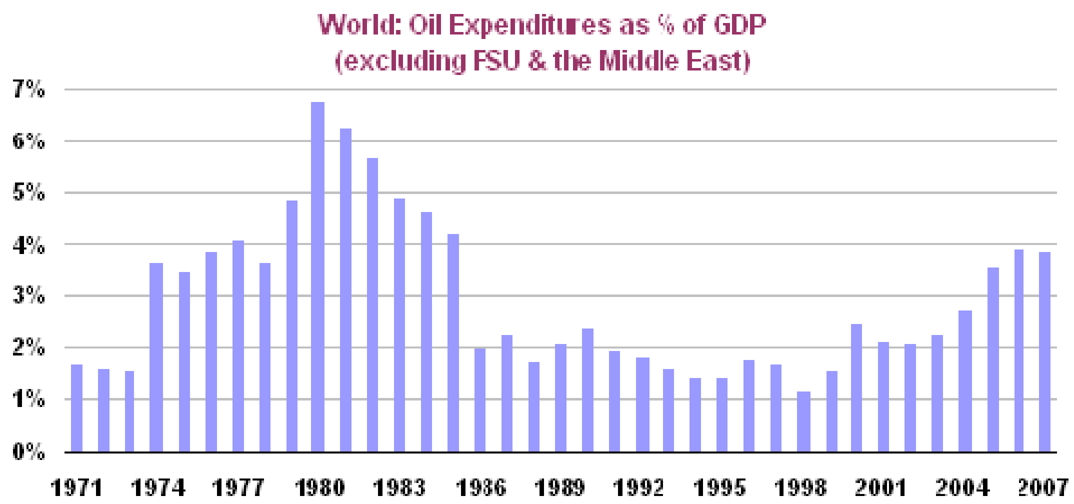






Oil expenditures still not as high as 1980s





Circular pressures

- Lack of structural changes in response to high prices
  - Still plenty of SUVs in the car pool
- Behavioural changes shift demand at the margin
  - Driving the small car to the shops
  - Public transport more a convenience than cost issue
- Price response in power generation related to long term price and efficiency benefits, but may not last
  - Tighter gas markets
  - Can't go below zero
- Short-term demand shifts or other changes?
  - Refinery maintenance
  - Secondary and tertiary stock draws
- Where demand has been curbed by behavioural changes in response to high prices, it has the potential to bounce back

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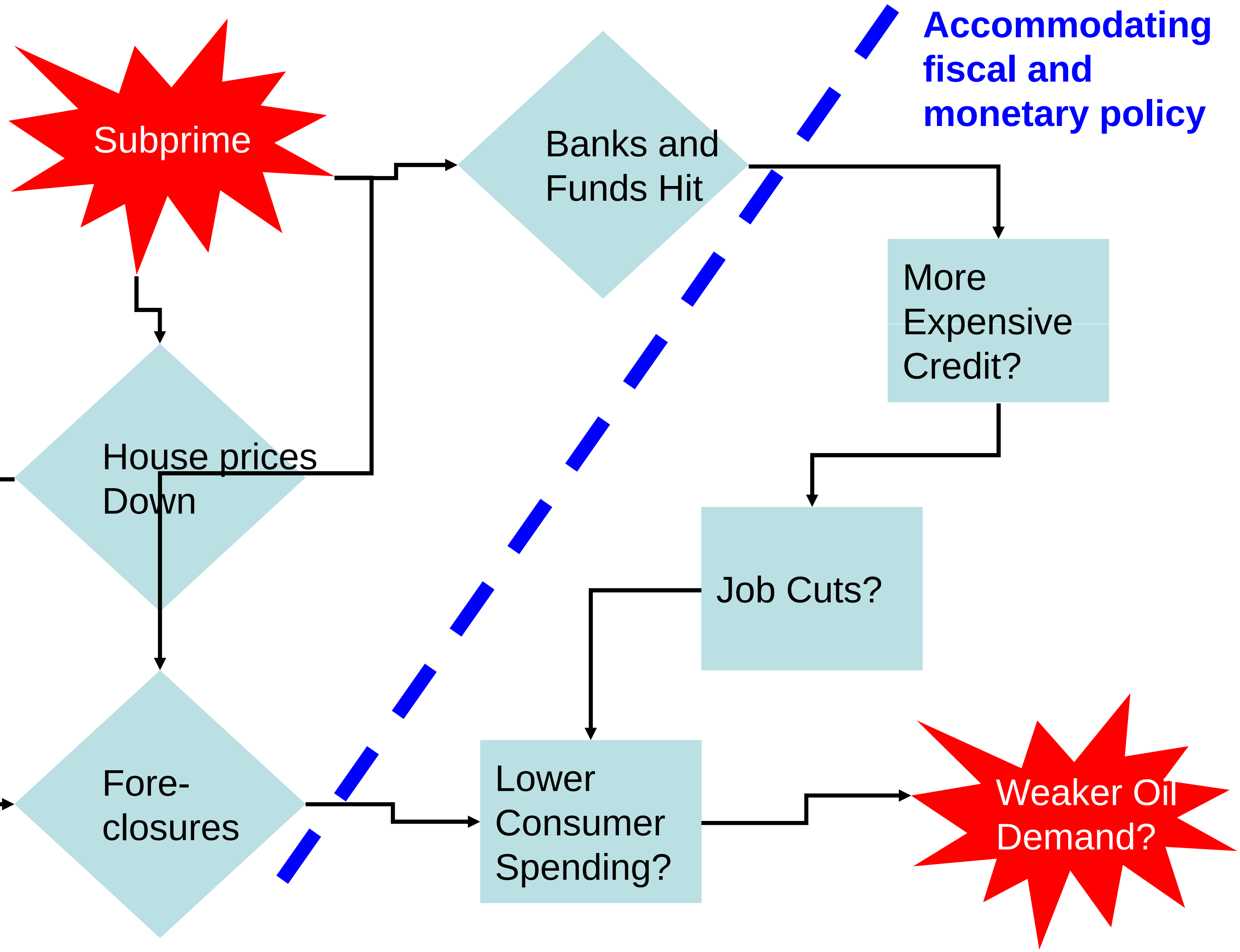
Economic cycle key for outcome

Institutions not good at forecasting recessions



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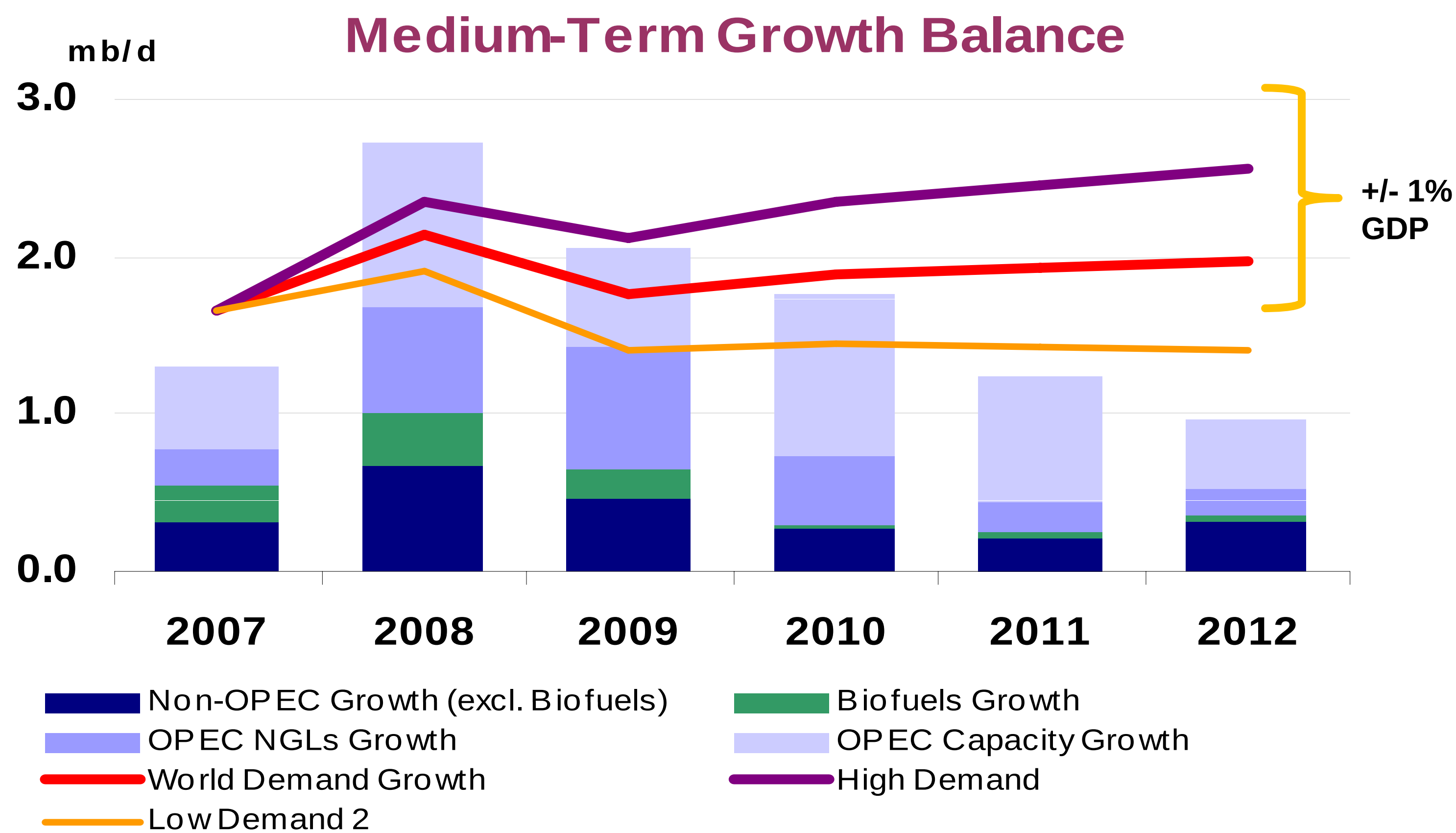
Demand more sensitive to growth than prices



- $50 rise to start to dent US gasoline growth
- Fuel oil switching requires heavy long-term investment

Demand growth =data uncertainty

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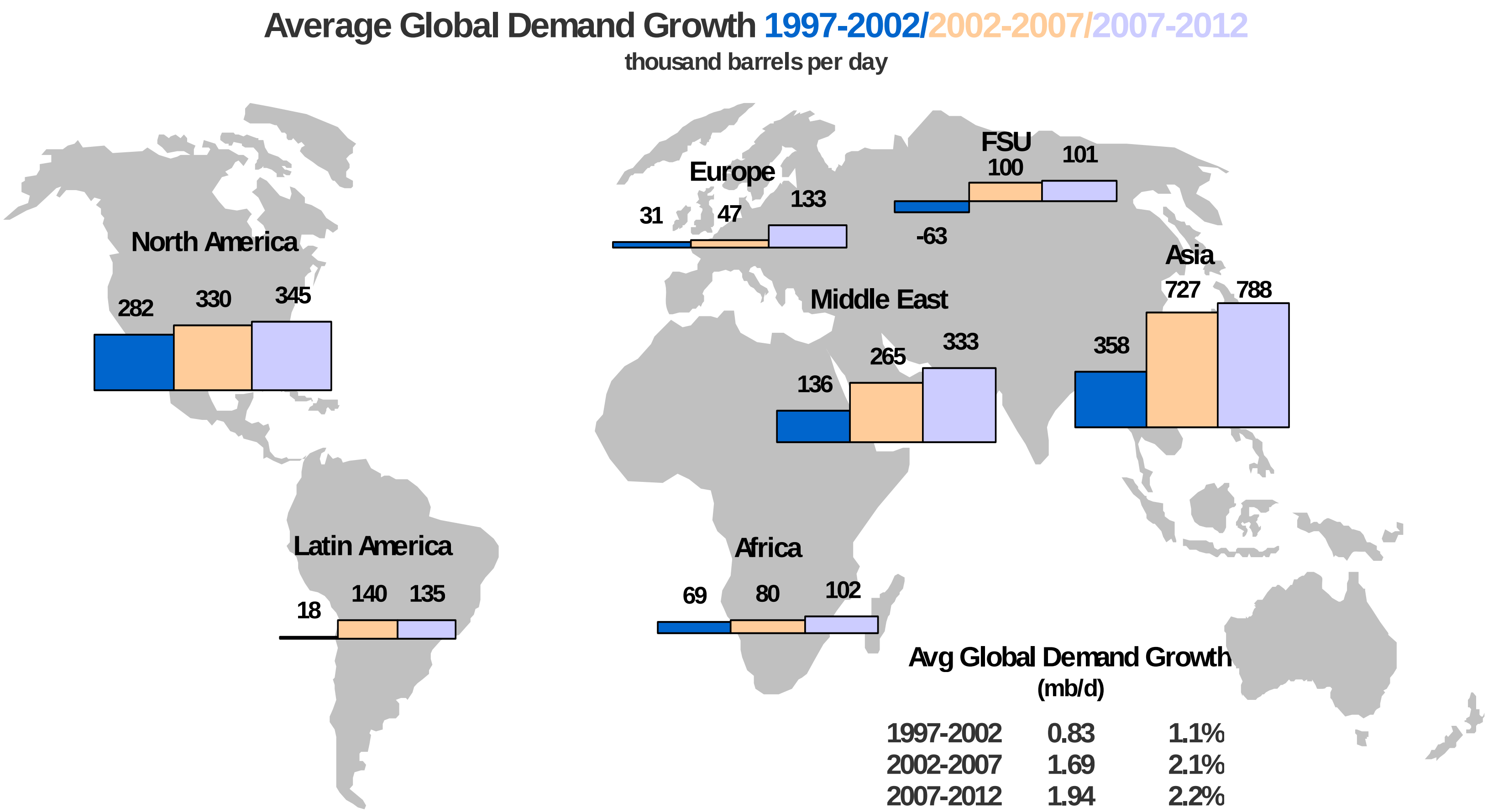

- **OECD: demand sustained by North America, which will represent 53% of the total by 2012**
- **Non-OECD: Asia demand will account for 47% and the Middle East for 19% of the total**

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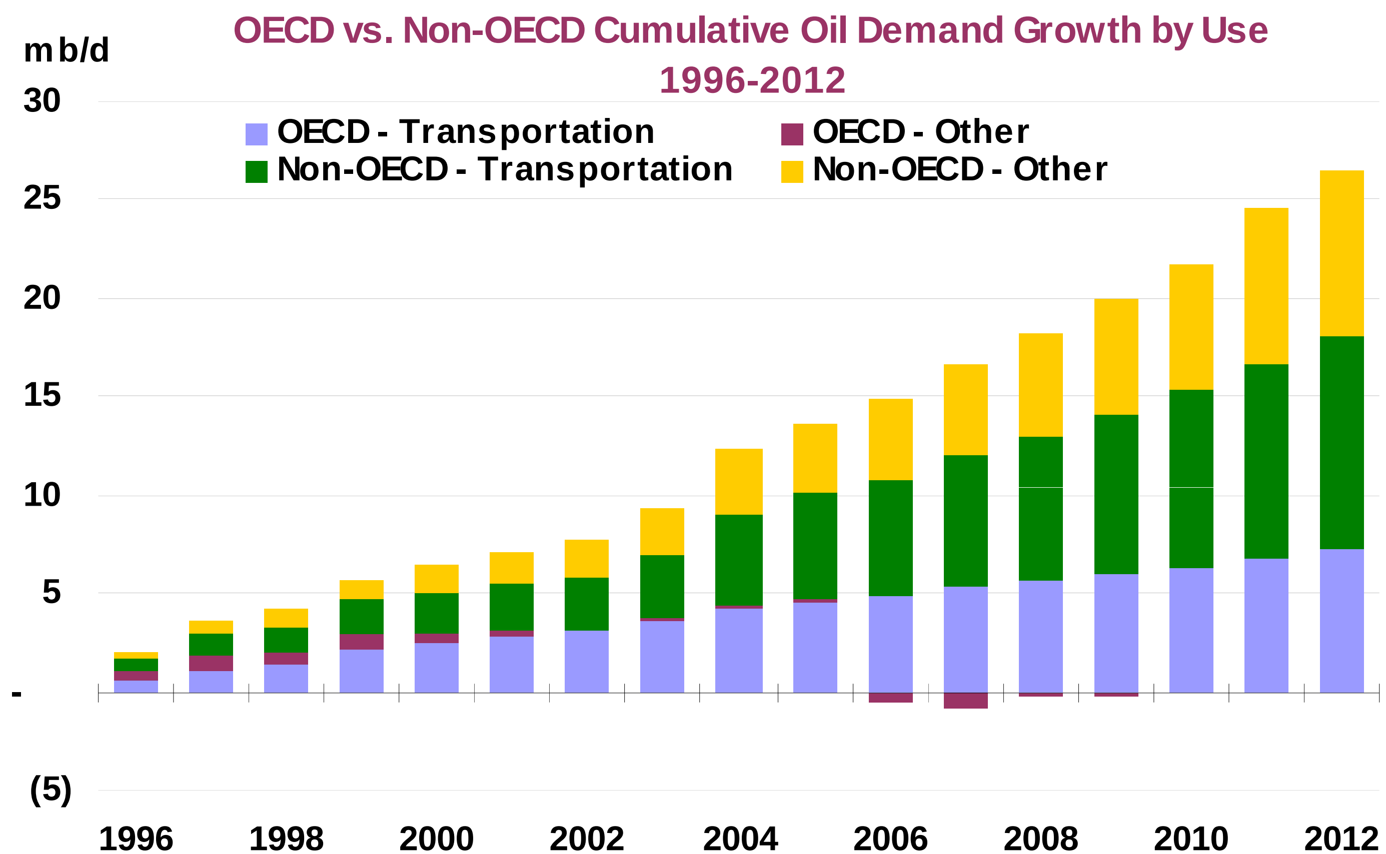
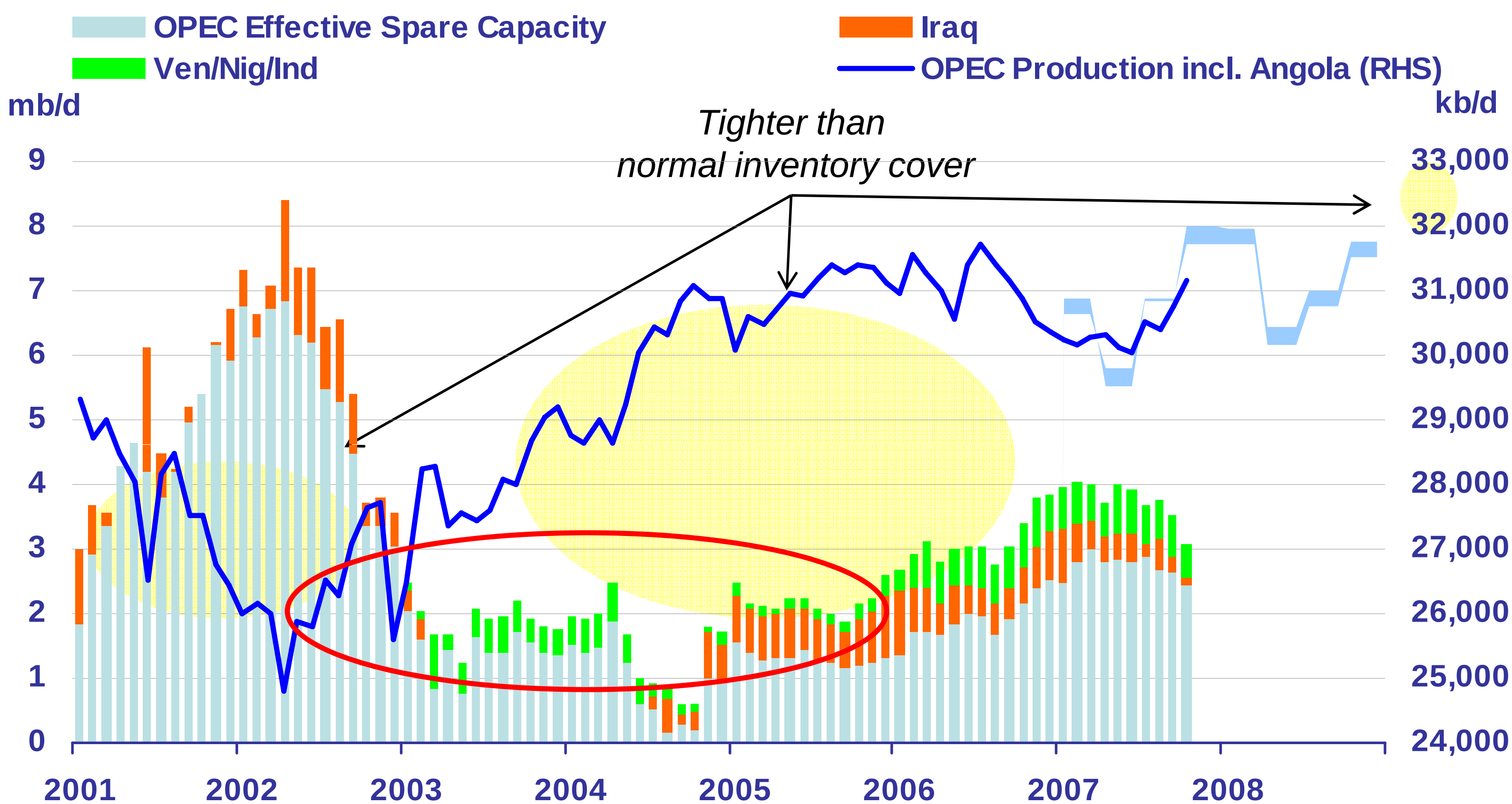
Transport demand dominates growth Ideal market for producers



- **Geographical shift: demand growth will come from non-OECD countries – mostly China and the Middle East**
- **Usage shift: growth will be fuelled by transportation fuels**
  - **Subsidies in non-OECD countries**
  - **Dieselisation trend, notably in Europe**
  - **Limited role for biofuels – less than 2% of demand by 2012**

Spare production capacity one factor among many in shaping oil prices

Inventory & refining flexibility also important



Lack of refinery upgrading capacity further diminishes utility of this sub-2 mb/d buffer

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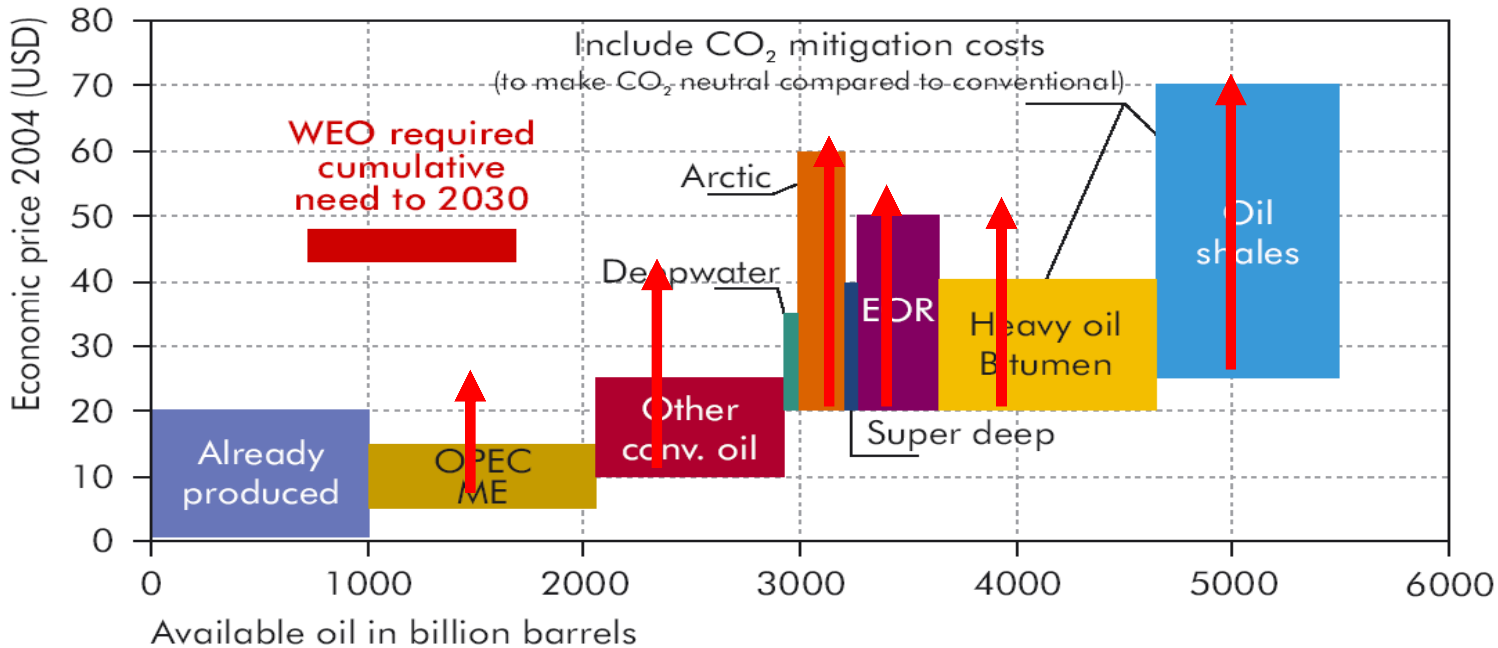
Cost inflation dampens investment impact

(long-term futures prices remain above $80)



Source: *Resources to Reserve*, IEA, 2005

- Tight service sector causes further cost inflation
- Call option for speculators/OPEC?
- Marginal cost of non-OPEC production influential when OPEC producing flat out
- When spare capacity exists, price OPEC are willing to keep spare capacity off the market is the key

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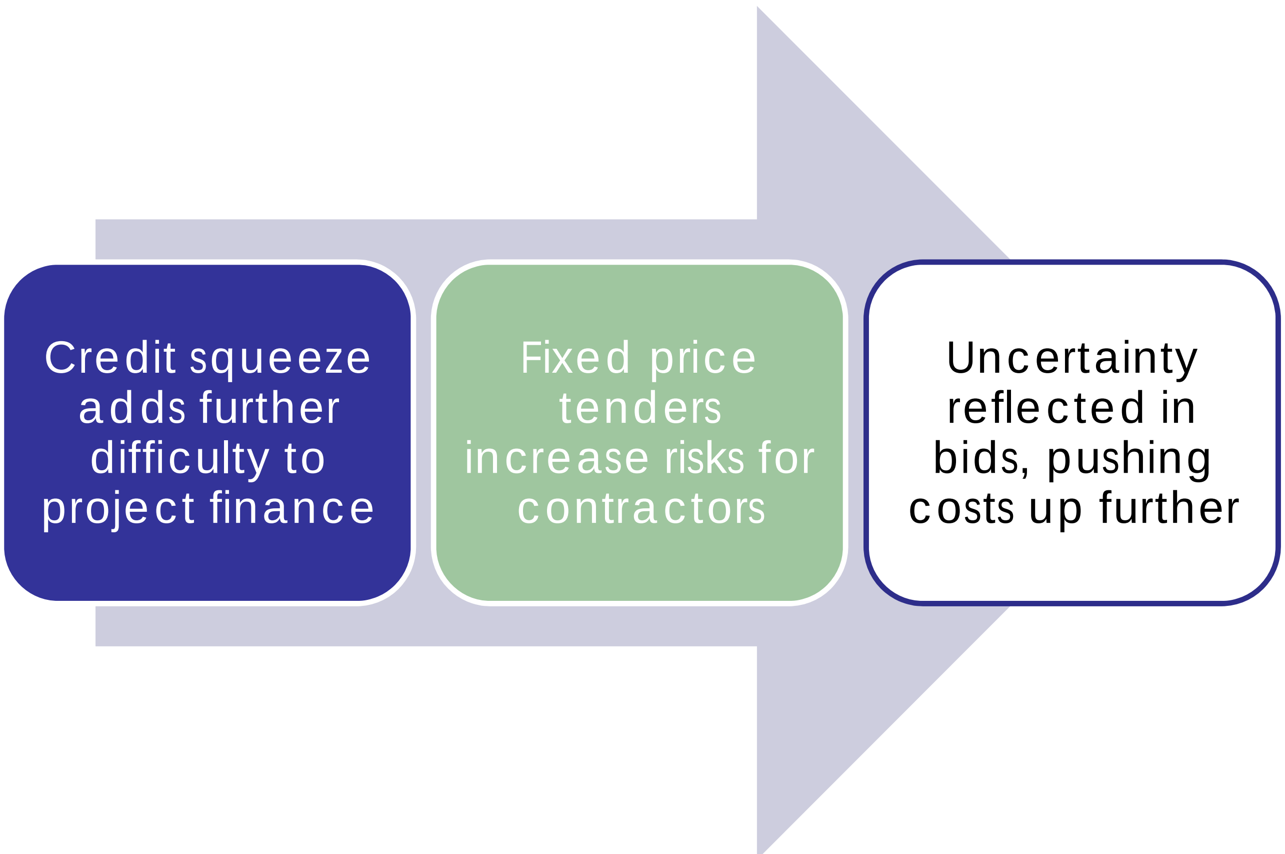
Rising costs hamper projects



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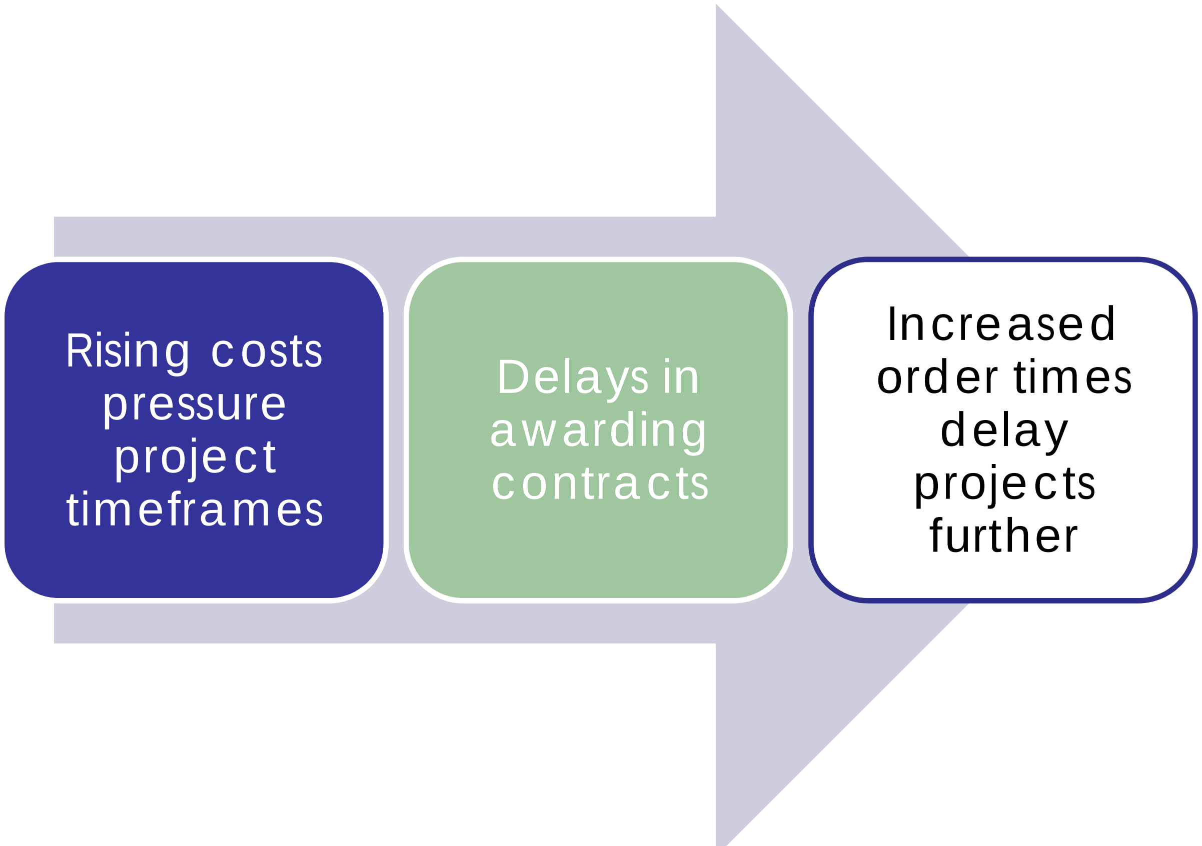
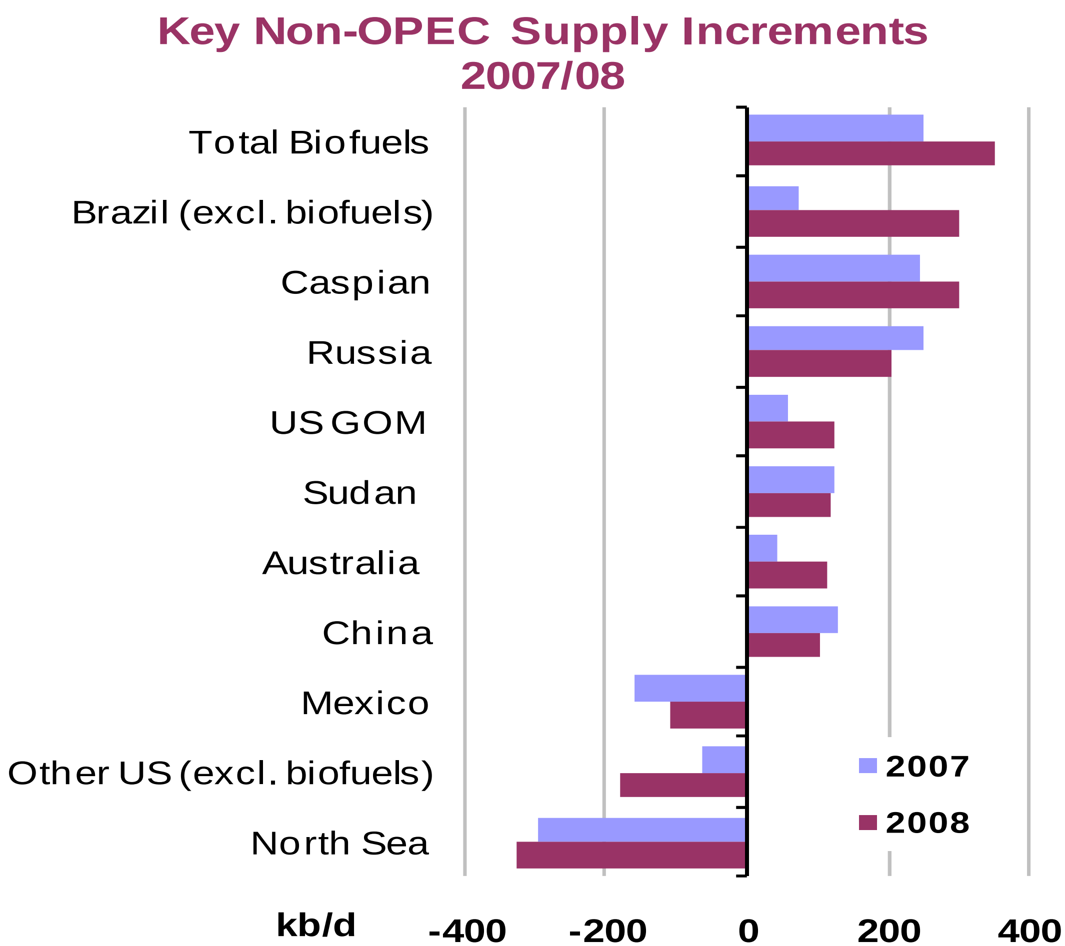
Engineering and Contractor markets stretched



Despite constraints we still have growth
Key non-OPEC supply increments



Source: I

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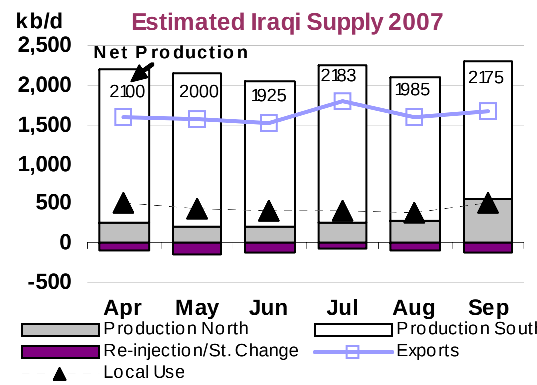
Geopolitical risks persist for key OPEC producers

- Iraq plans to increase export capacity
- Security risks still high
- But Sep/Oct surge in Ceyhan liftings

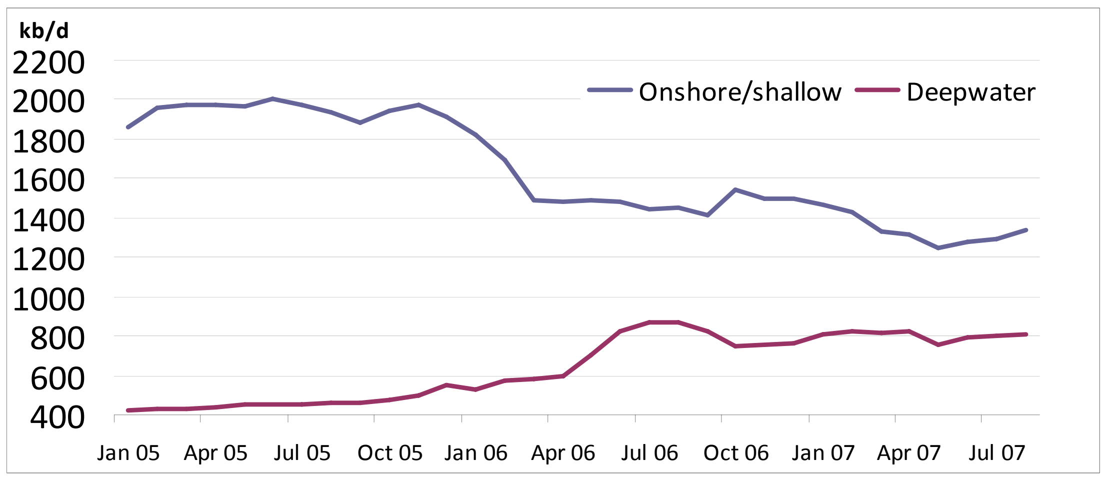
Iraqi Supply Capacity based on Offtake

(thousand barrels per day)

	Current Effective	Mid-Term Potential
Exports via:		
Ceyhan	<100	500
Basrah	1800	2000
Syria	10	300
Jordan	-	100
Basrah-Abadan	-	200
Domestic Crude Use	500	800
	2400	**3900**

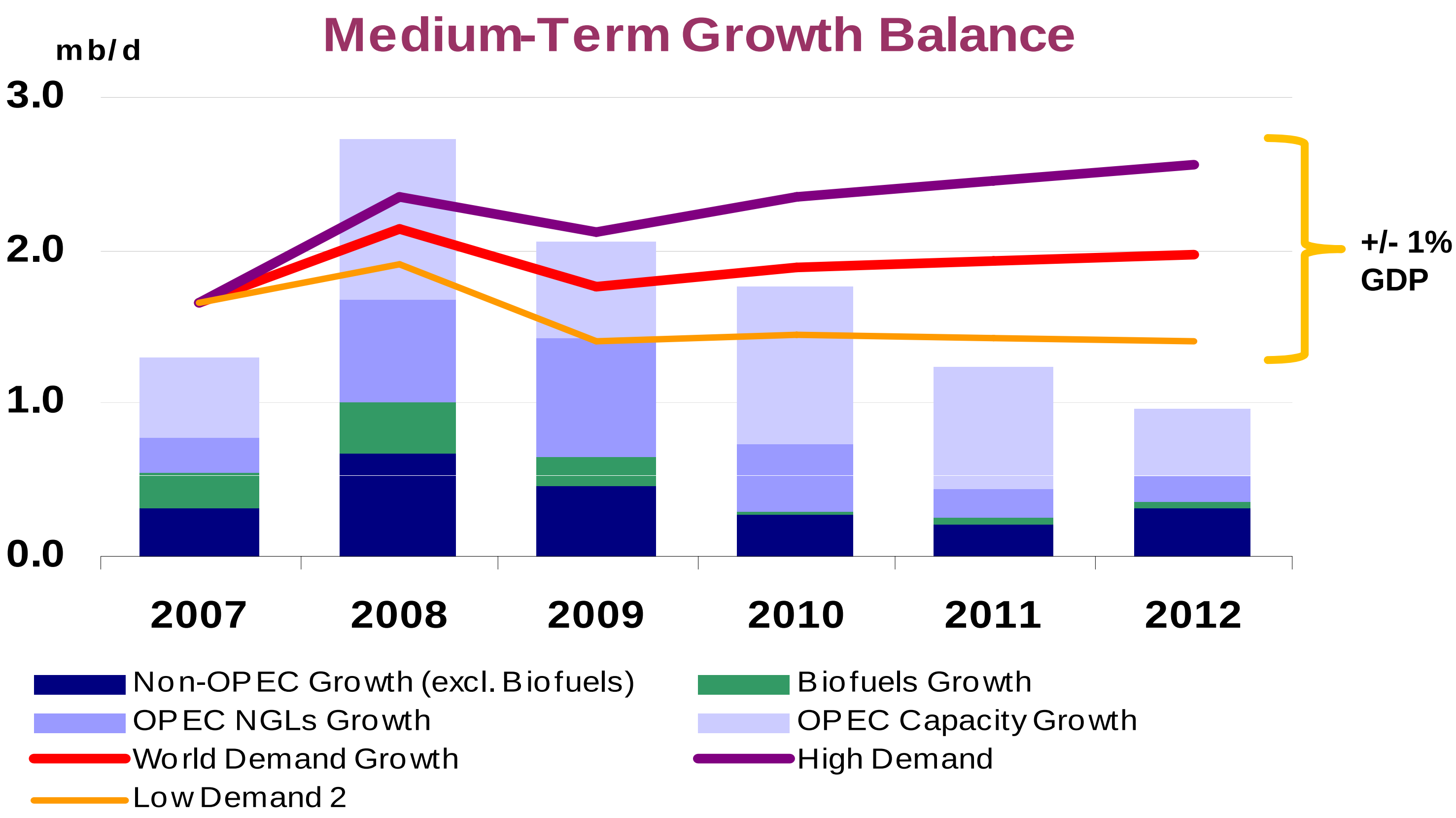


- 550 kb/d of Nigeria outages
- 2008 recovery possible
- Political and security situation remain uncertain
- Window for repairs short



Source: IEA *Oil Market Report*

Supply-side response limited so far



- Adjusted call on OPEC/stock chg: +5 mb/d by 2012
- OPEC spare capacity to fall from 2.5 ->1.5 mb/d

Medium-term non-OPEC supply growth still there

1997-2002 v 2002-2007 v 2007-2012

- 68% of net non-OPEC growth comes from, albeit slowing, FSU
- Brazil deepwater, Canadian oilsands, GOM & global biofuels also rise
- Mexico & North Sea see major decline

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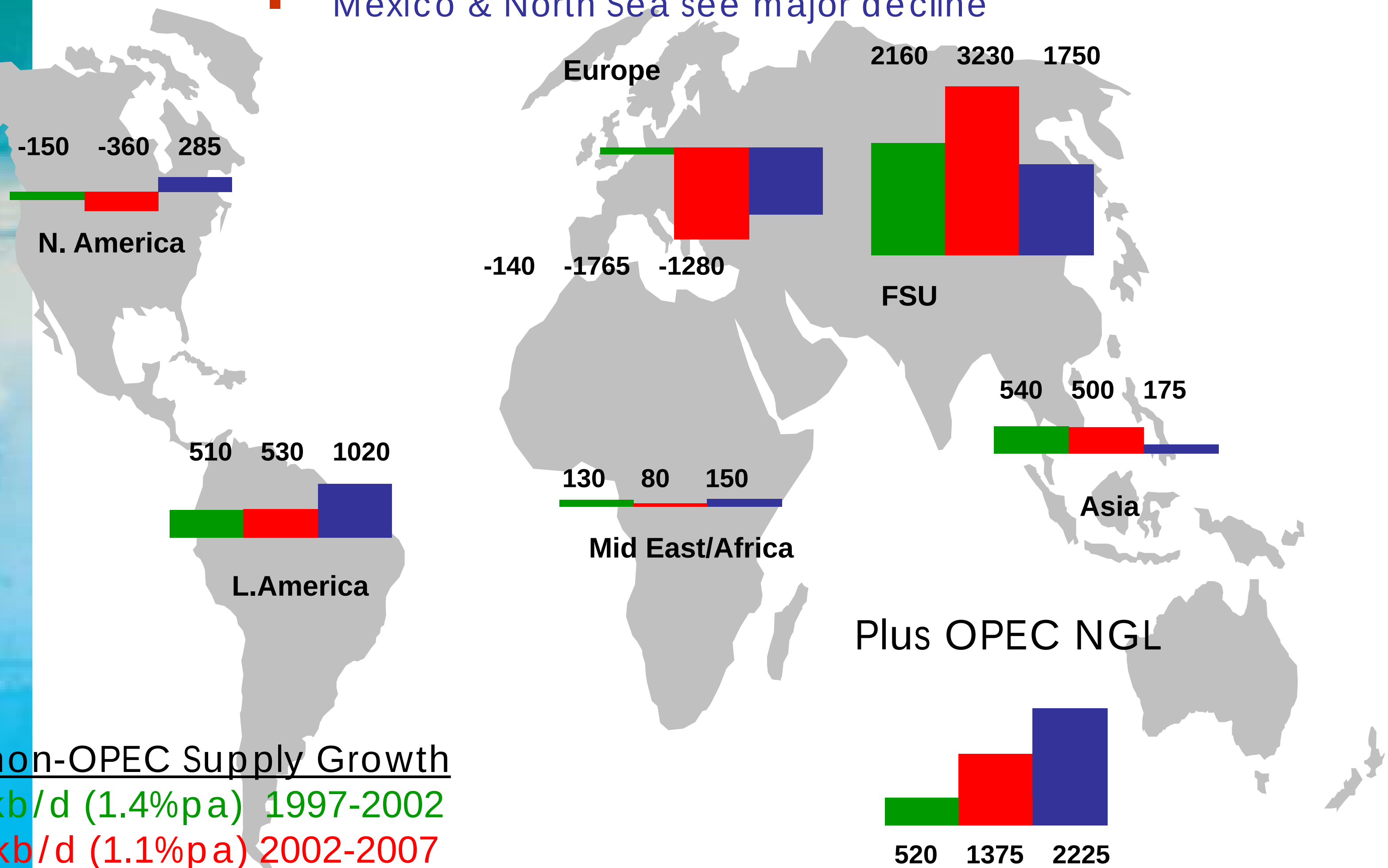

Total non-OPEC Supply Growth

3270 kb/d (1.4%pa) 1997-2002

2755 kb/d (1.1%pa) 2002-2007

2585 kb/d (1.0%pa) 2007-2012

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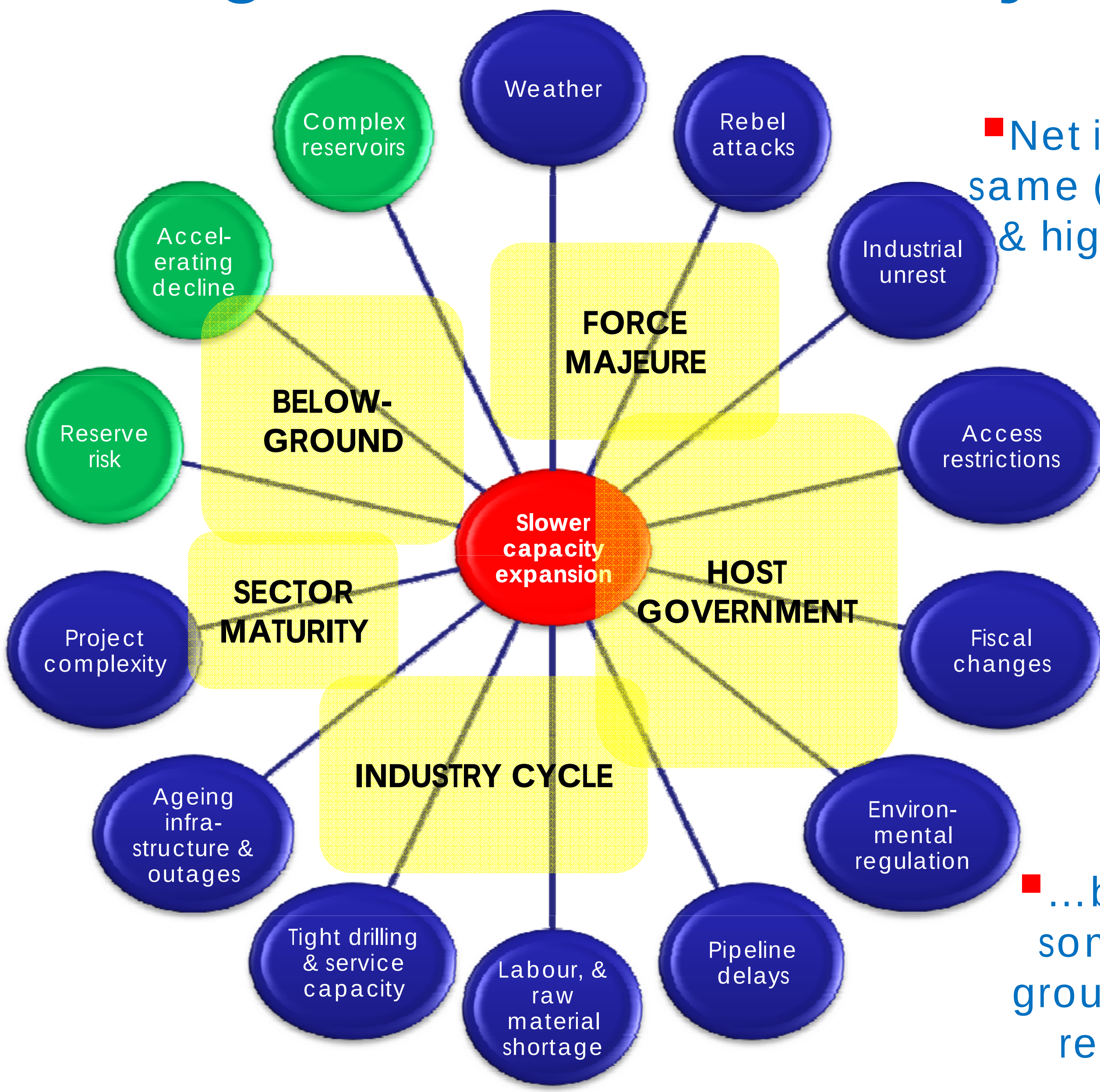
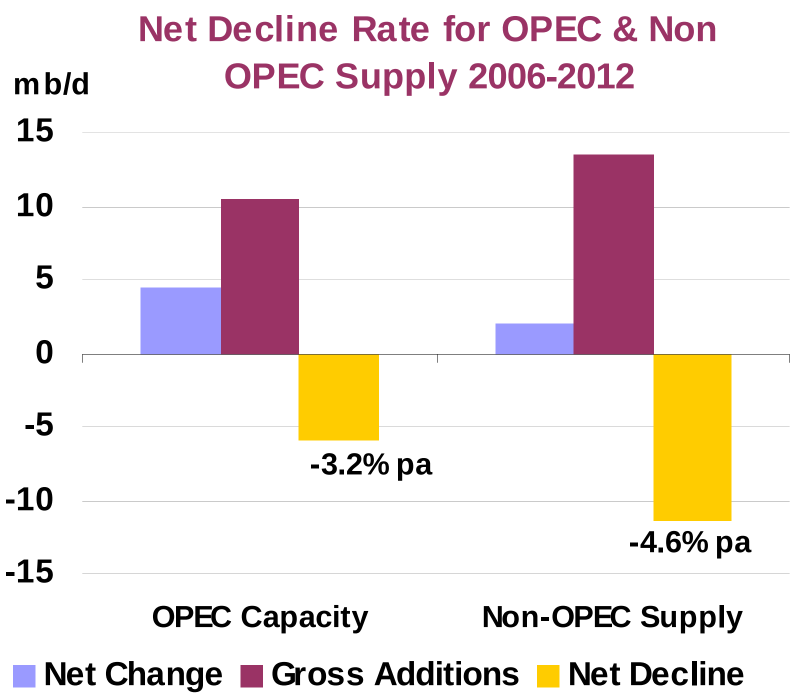
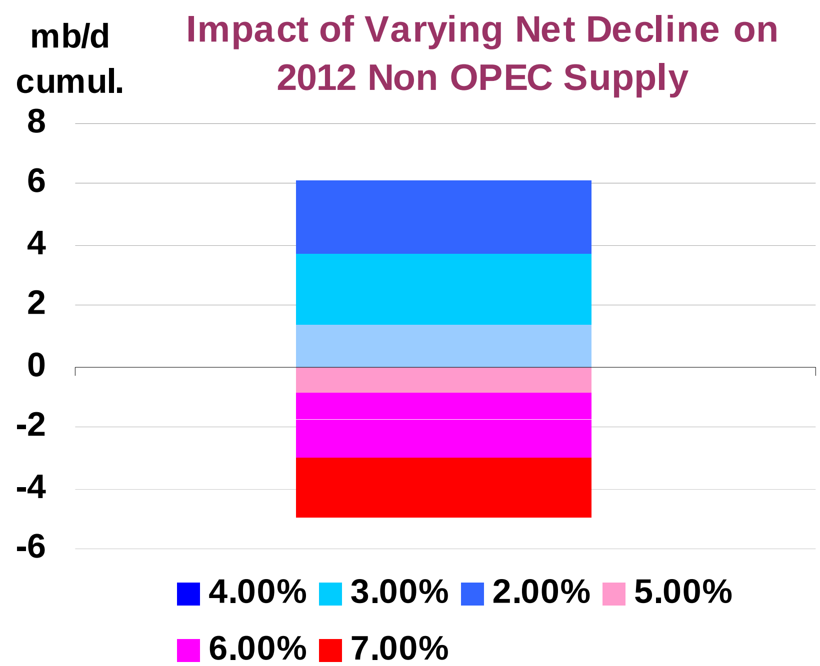
Above-ground risks exceed below-ground risks - currently



- Net impact is the same (lower output & higher costs)…
- …but at least some above ground risks are reversible?

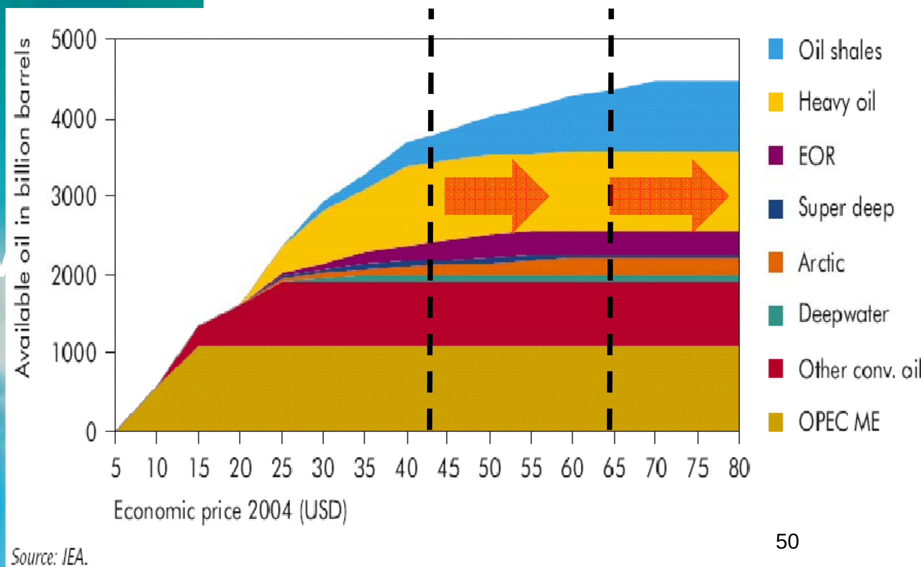
Non-OPEC *net* decline averages 4.6% pa
a hugely important supply variable



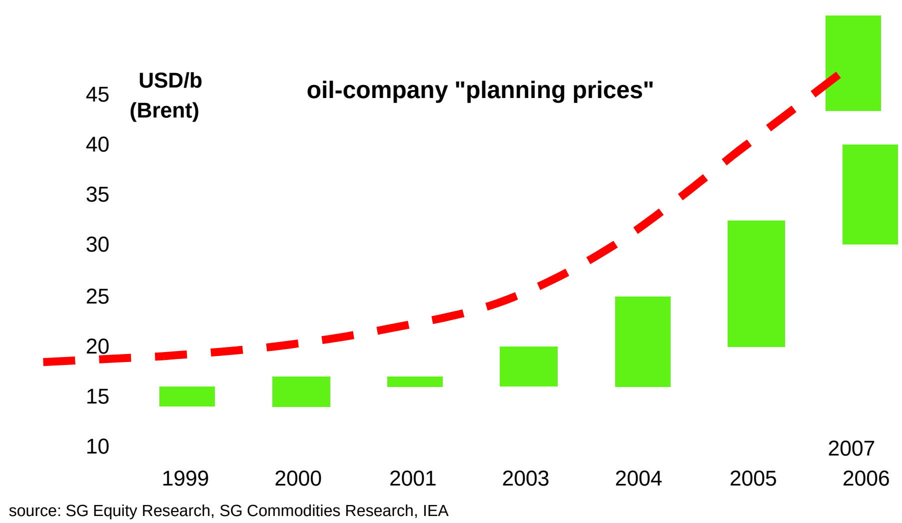


- Globally, 3 mb/d needs to be added to capacity just to keep production steady
- Sensitivity on non-OPEC side is the difference between an OPEC call of 31, 37 or 42 mb/d in 2012

No imminent resource scarcity: but supply response to high prices is slow



Company planning prices rising…
…partly reflecting higher cost base



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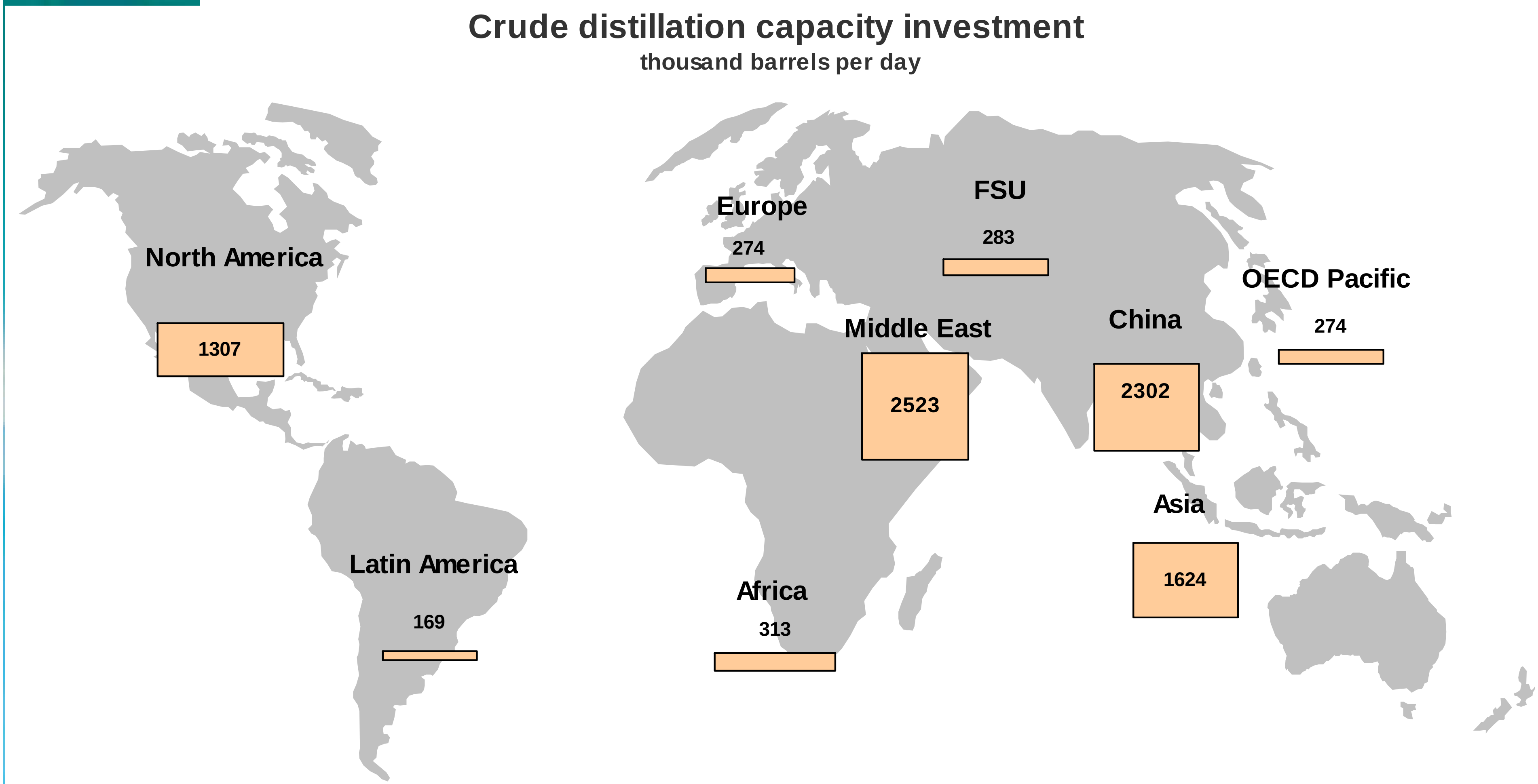
But access constraints, industry bottlenecks, financial factors & competing calls on capital…

…curbing price elasticity of supply

Delays are endemic

Global refining industry -substantial growth



- Middle East, China & Other Asia are 2/3rds of the total increase
- OECD 1.8 mb/d, of which North America 1.3 mb./d
- 274kb/d linked to new upgrading units in Spain, Greece & Hungary

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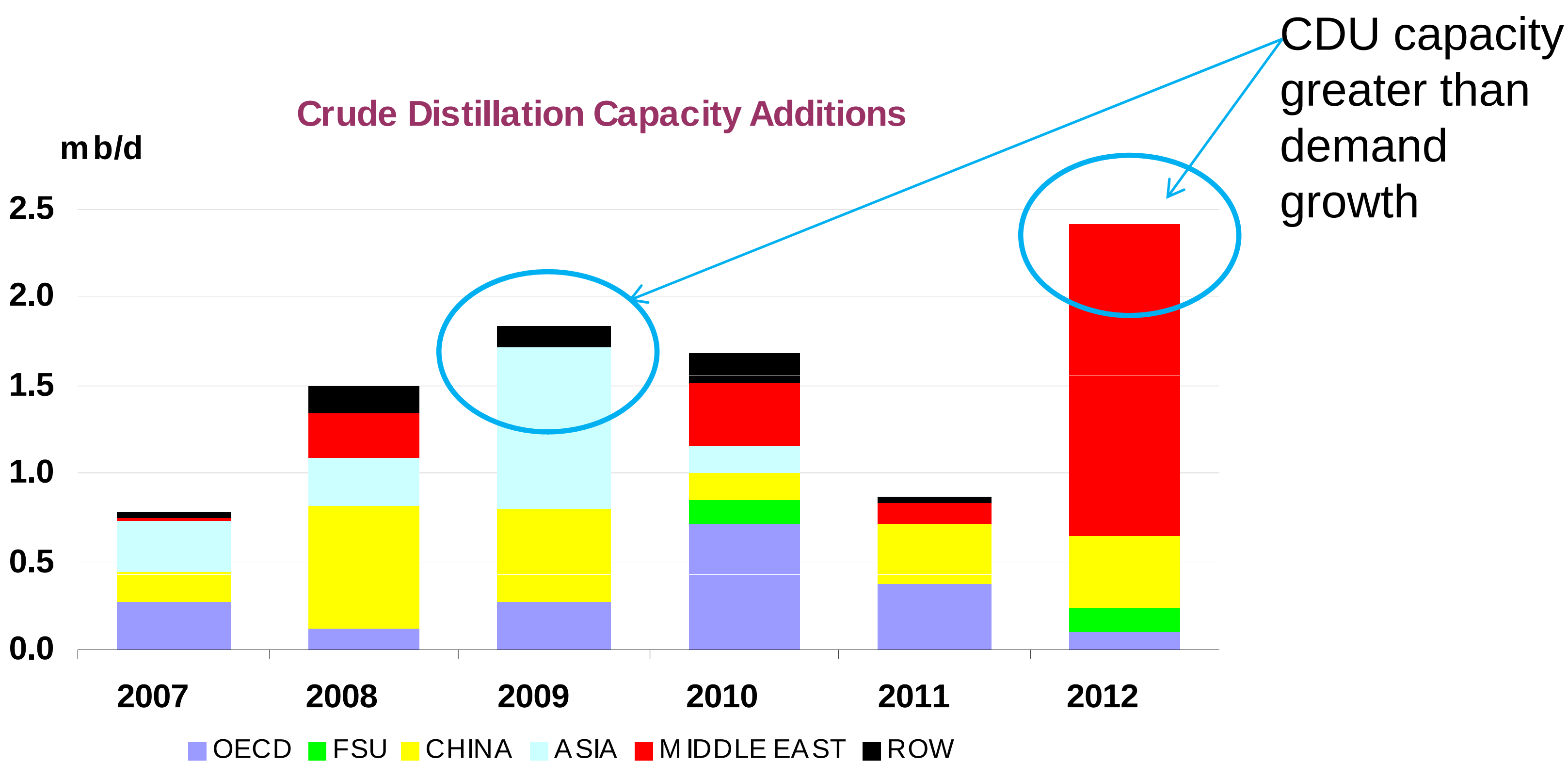
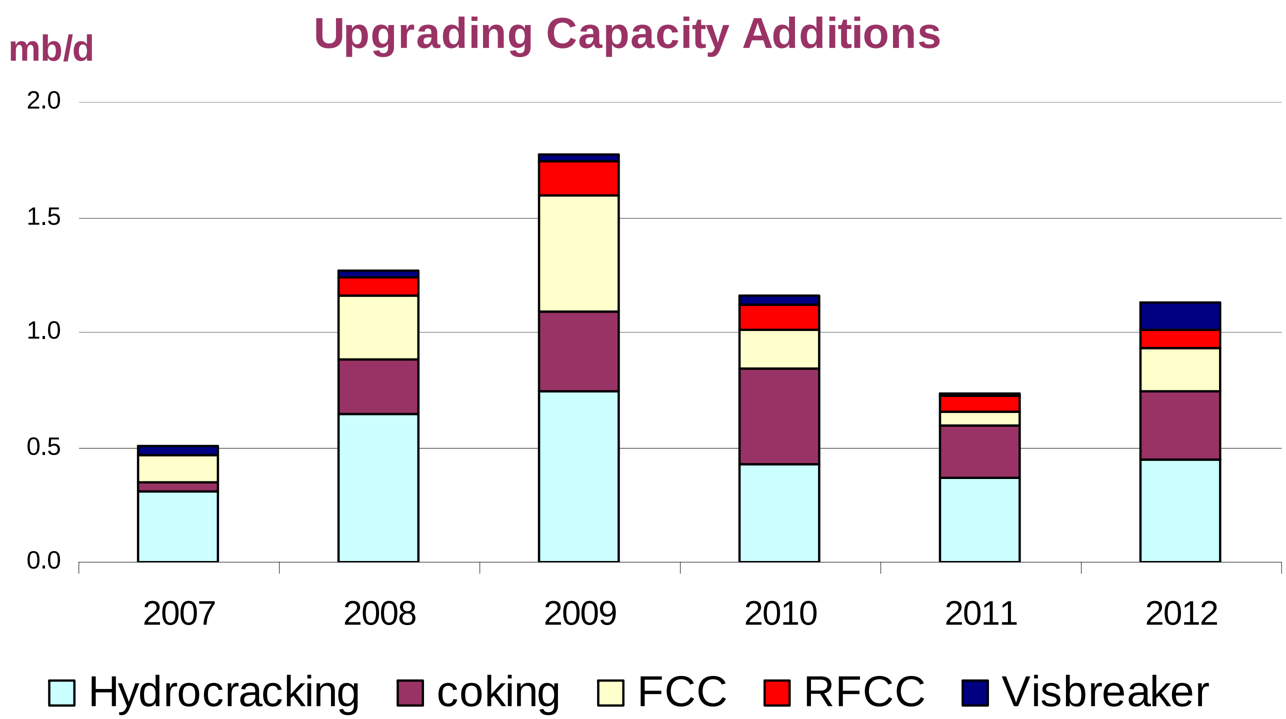
Strategic investment drives growth



•Growth is largely reliant on a few key countries
•Cost pressures continue to affect investment economics and timing
•Large proportion of projects vulnerable to margin cycle and future returns

Upgrading investment adds flexibility



- Global refining system will benefit from addition of further upgrading capacity
- This will boost heavy sour crude processing ability
- Expansion focused on the addition of hydrocracking and coking capacity

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Conclusion

- Prices may be starting to impact OECD transportation demand
  - But expenditure not back to the highs of the 1980s
  - Economic growth to continue to drive demand, particularly in Asia and Middle East
- Demand-side data uncertainties
  - Lack of data reporting from key countries
    - JODI making strong inroads
    - Still lack of stock data
  - Medium-term projections show lack of cyclical activity
  - Price
    - Policy shifts, geopolitics
- Lack of supply side response (so far) to high oil prices
  - Cost inflation, service sector constraints, access, lagged company planning prices
- Supply-side data uncertainties
  - Lack of internationally adopted standards for reporting/classification
  - "Political" reporting of reserve and production levels
  - Lack of field-by-field data for key producing countries
  - Segregation and conversion factors
  - Biofuels production reporting: still in its infancy
- Supplies currently being constrained by OPEC
  - Price does not reflect marginal cost of supply
  - Spare capacity usable
- Considerable investment in refinery capacity
  - New capacity and upgrading
  - But investment sensitive to cost overruns
- Bar recession, little reason to expect oil prices to return to pre-2004 prices