

OPEC Policy and Oil Prices:
Long Term Issues versus Short Term
Management of the Market

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Structure of Presentation

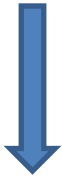
- The Conventional Wisdom
- OPEC and Short Term Management of the Market
- OPEC's Cycles: 2002-2008
- OPEC in the Current Market Context
- Conclusions

Conventional Wisdom I

- The conventional wisdom and OPEC's official position
- OPEC puts a floor on oil price
 - Prevent prices from falling below levels undesired by member countries
- OPEC puts a ceiling on oil price
 - Avoid demand destruction for its oil in long term
 - Limit entry of substitutes
- Reinforced by OPEC price band \$22-\$28 price band
- Reinforced by OPEC's official position
 - “extreme price levels, either too high or too low, are damaging for both producers and consumers”
- Implications
 - Establishes a feedback mechanism on the supply side
 - Influence short term expectations and behaviour (governments and financial investors)
 - Stabilise long term expectations

OPEC: The Official View

Too High Price



Prospects for economic growth
(especially in developing countries)



Threatens oil demand growth

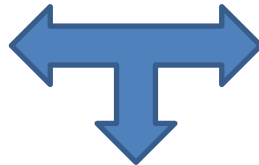
Too Low Oil Price



Undermines economic development
and social progress



Threatens oil supply growth



“necessity of being proactive under all market conditions”

Asymmetry in OPEC Response

In a Falling Market

Objective

Defend oil prices from falling below some level deemed unacceptable

Mechanism

Impose quotas and implement output cuts

Issues

- Will OPEC be able to implement the cut?
- How would the market respond to announcement of cuts?

In Rising Market

Objective:

- Increase output in response to customers' demand at market determined prices
- Consider itself as price taker
- Not to impose a ceiling on oil prices

Mechanism

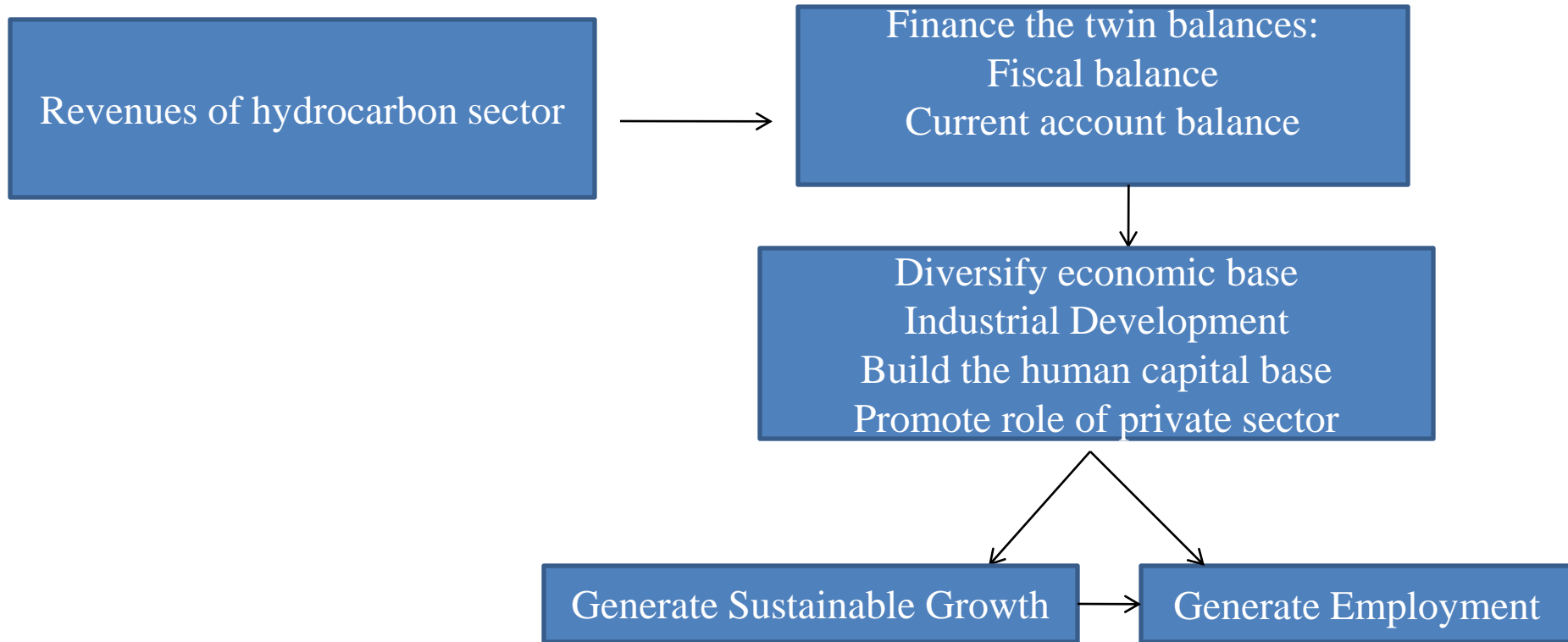
- No mechanism exists
- OPEC does not offer discounts or auction spare capacity to bring prices down

Issues

- Internal and external political constraints
- Learning process about impact of oil price shocks on growth

Lack of feedback mechanism from OPEC when prices rising affects short-term and long-term expectations

MENA Oil Exporter's Development Model



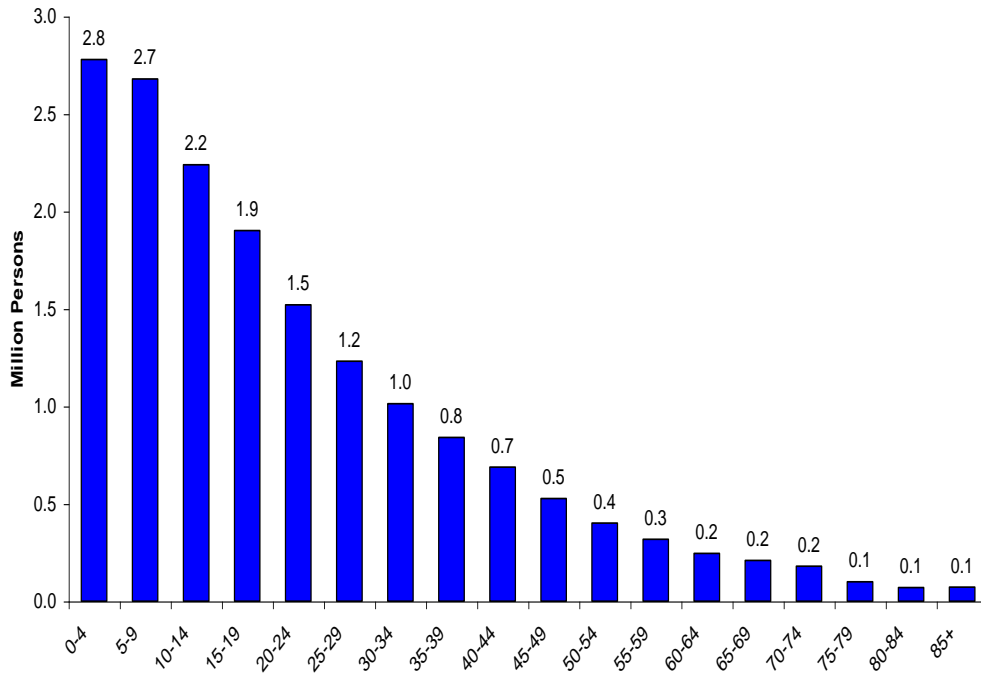
Oil revenues key for long term political and social stability

Oil revenues key for improving standards of living

Oil revenues key for transition from depletion-led development to sustainable development

The Demographics Challenge

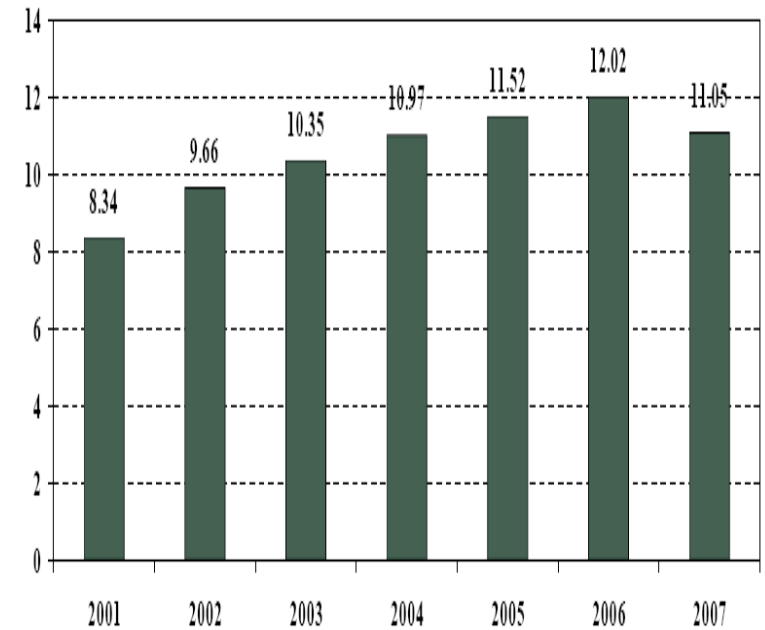
Saudi Population Profile--Jan 2006
(Saudis only)



<u>Age Group</u>	<u>Percent of Total Population</u>
0-14 yrs	45.2%
0-19 yrs	56.4%
0-24 yrs	65.4%
15-29 yrs	27.3%

Age Group

Saudi Arabia Official Unemployment rate
(percent)



Source: SAMA

Saudization/Growth of Public Sector Reaching its Limits

Employment in Government Sector, Saudi Arabia

Year	Saudis				Non-Saudis				Total	
	Males	Females	Total	Growth rate (%)	Males	Females	Total	Growth rate (%)	Saudis and non-Saudis	Growth rate (%)
1998	383,996	195,419	579,415	3.34	49,736	39,272	89,008	-7.26	668,423	1.79
1999	387,779	203,879	591,658	2.11	46,956	35,940	82,896	-6.87	674,554	0.92
2000	408,640	204,682	613,322	3.66	45,776	35,672	81,448	-1.75	694,770	3.00
2001	416,803	214,221	631,024	2.89	45,644	34,191	79,835	-1.98	710,859	2.32
2002	438,023	214,912	652,935	3.47	43,400	31,653	75,053	-5.99	727,988	2.41
2003	452,555	224,965	677,520	3.77	41,698	27,748	69,446	-7.47	746,966	2.61
2004	463,487	231,007	694,494	2.51	41,342	27,429	68,771	-0.97	763,265	2.18
2005	472,727	240,108	712,835	2.64	41,436	29,005	70,441	2.43	783,276	2.62
2006	490,109	243,757	733,866	2.95	39,779	30,018	69,797	-0.91	803,663	2.60
2007	508,006	252,989	760,995	3.70	36,851	32,139	68,990	-1.16	829,985	3.28

Source: Ministry of Civil Service.

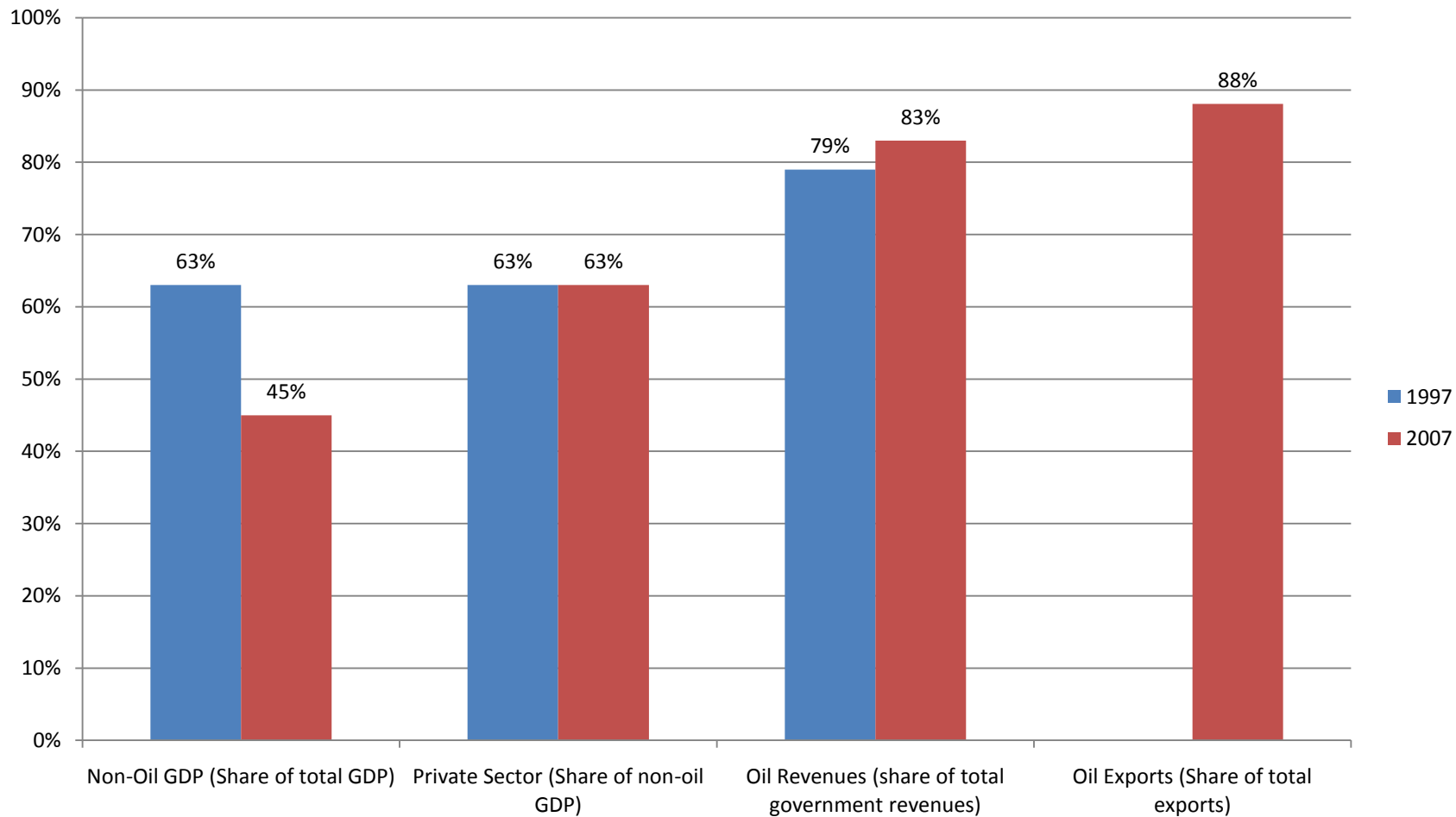
Limited Absorption by Private Sector

Labour Force in Private Sector, Saudi Arabia

	2006		2007	
	No. of workers	% Distribution	No. of workers	% Distribution
1. Total labour force	5580740	100.0	5826856	100.0
Males	5455864	97.8	5678806	97.5
Females	124876	2.2	148050	2.5
2. Saudis	713751	12.8	765621	13.1
Males	673830	12.1	714565	12.3
Females	39921	0.7	51056	0.9
3. Non- Saudis	4866989	87.2	5061235	86.9
Males	4782034	85.7	4964241	85.2
Females	84955	1.5	96994	1.7

Source: Ministry of Labour.

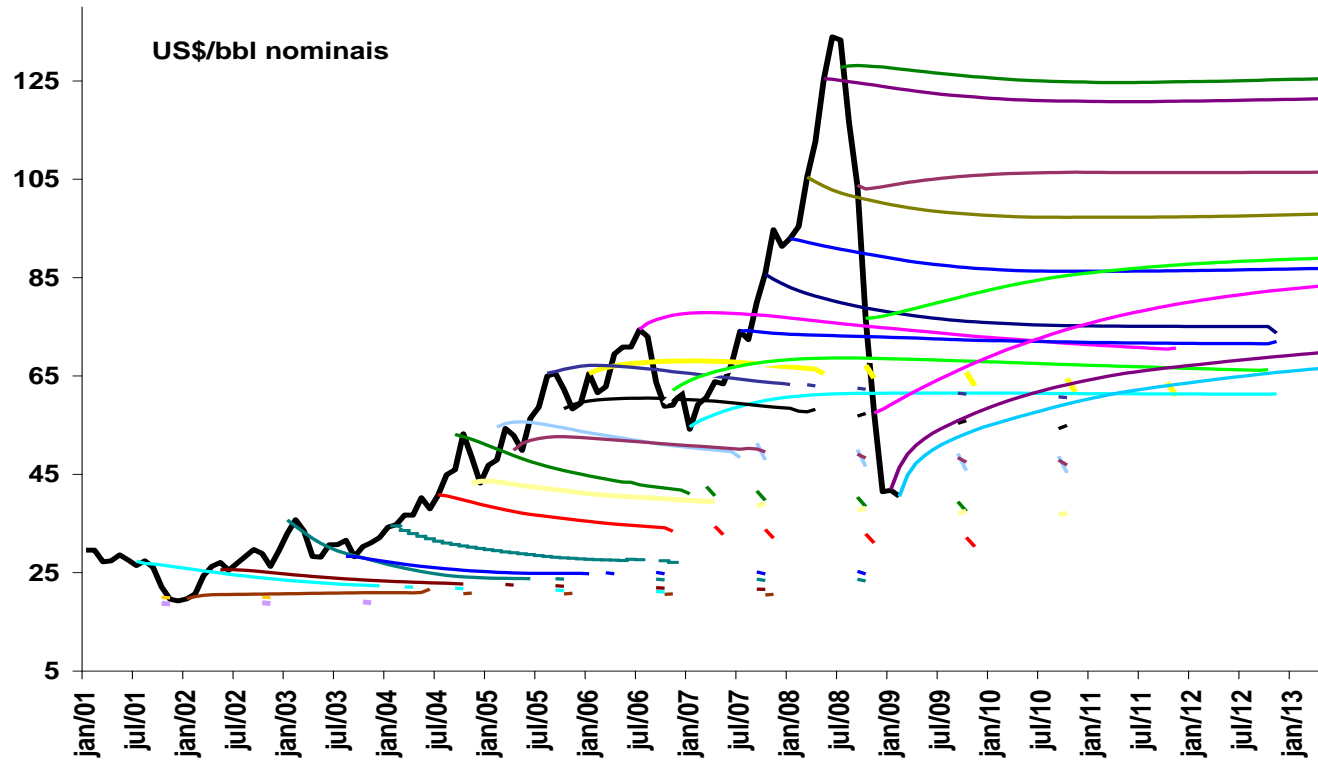
The Diversification Challenge



Asymmetry in OPEC response

- OPEC was not created to bring prices down
- In a rising market OPEC's role is passive
 - Learning process about the impact of oil shocks on growth
 - Lower oil intensity of GDP
 - Oil shocks just like many other things that hit the economy
 - Offsetting policy responses
 - Monetary policy response if no change in inflationary expectations
 - Budget deficits
 - Implications: Global economy can grow with persistent rise in oil price
 - OPEC does not have the tools to bring prices down
 - Political constraints
- Implication: Feedback mechanism from OPEC absent
 - Affected market's long term expectations
 - Contributed in parallel to the parallel shift in the back end of the curve

Feedback Mechanism Absent



Source: Pinelli (2009)

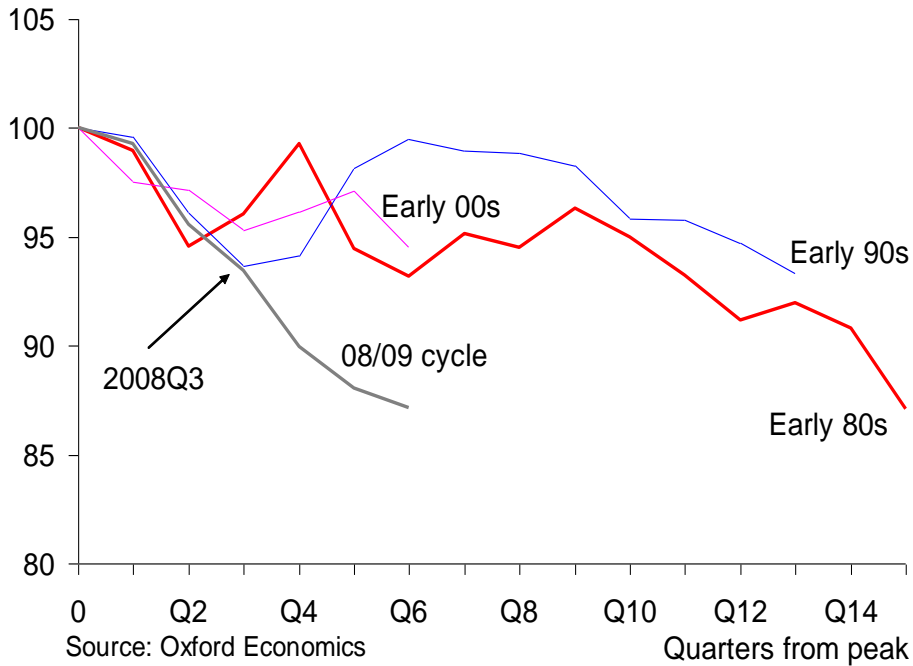
Oil Price Shocks Matter

- An inverse relationship between oil price changes & economic activity
- Amplified by monetary policy response
 - Oil price shock => lower GDP growth & higher inflation
 - Counter-inflationary policy can aggravate GDP losses
- Asymmetry
 - Rising oil prices slows economic activity more than falling oil prices stimulate economic activity
- Recession induced by oil price shock but through different channels
 - Acts like a tax
 - Affects key industries: Motor industry
 - Domestic auto industry vulnerable to higher gasoline prices
 - Affects consumer spending
 - Affects consumer sentiment
 - Can make some capital stock redundant
 - Postpone investment and consumption decisions due to uncertainty
- Implication
 - Oil price shocks generate a strong feedback to eliminate excess demand for oil
 - Only cure in absence of an oil supply response

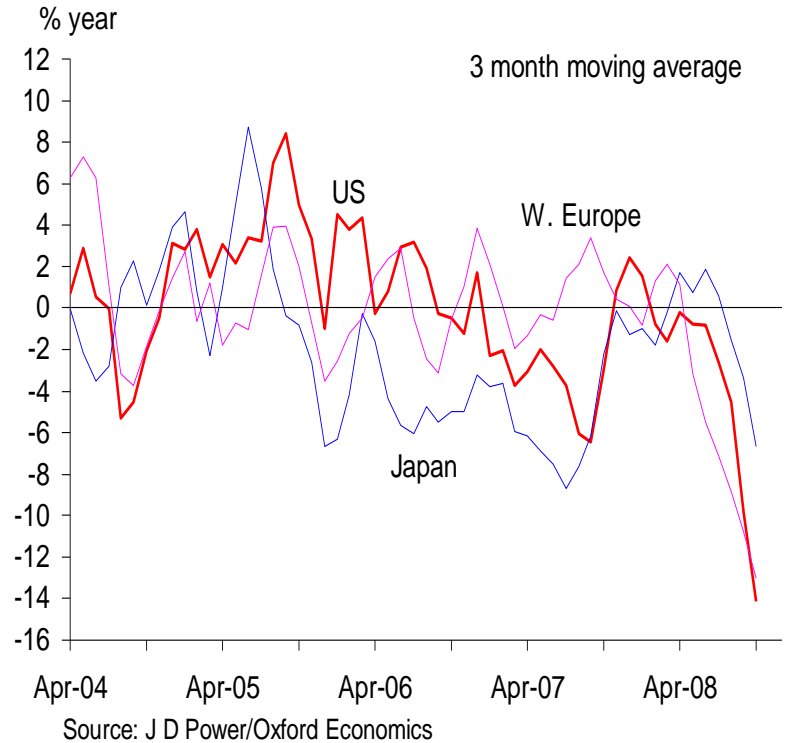
Motors' fall looks as bad as the early 80s

Motor vehicles: Cyclical declines since 1979

Cyclical Triad peak = 100

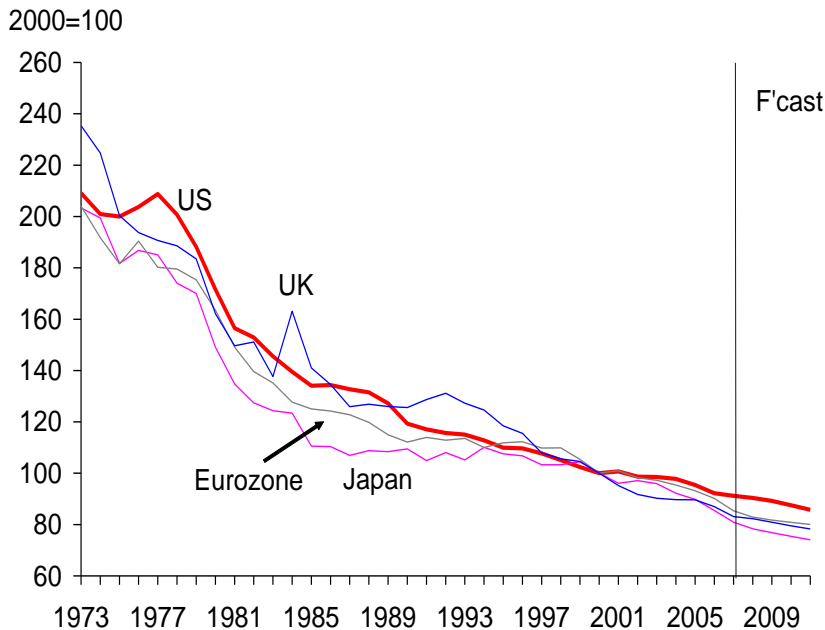


Motor vehicles: Car registrations



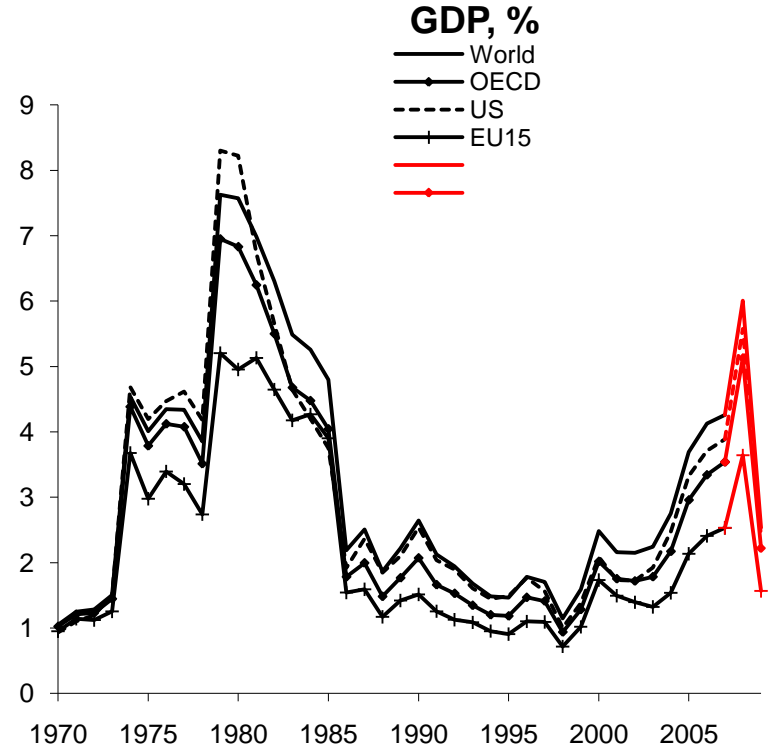
The Low Intensity Argument in Perspective

Global: Oil intensity



Source: Oxford Economics

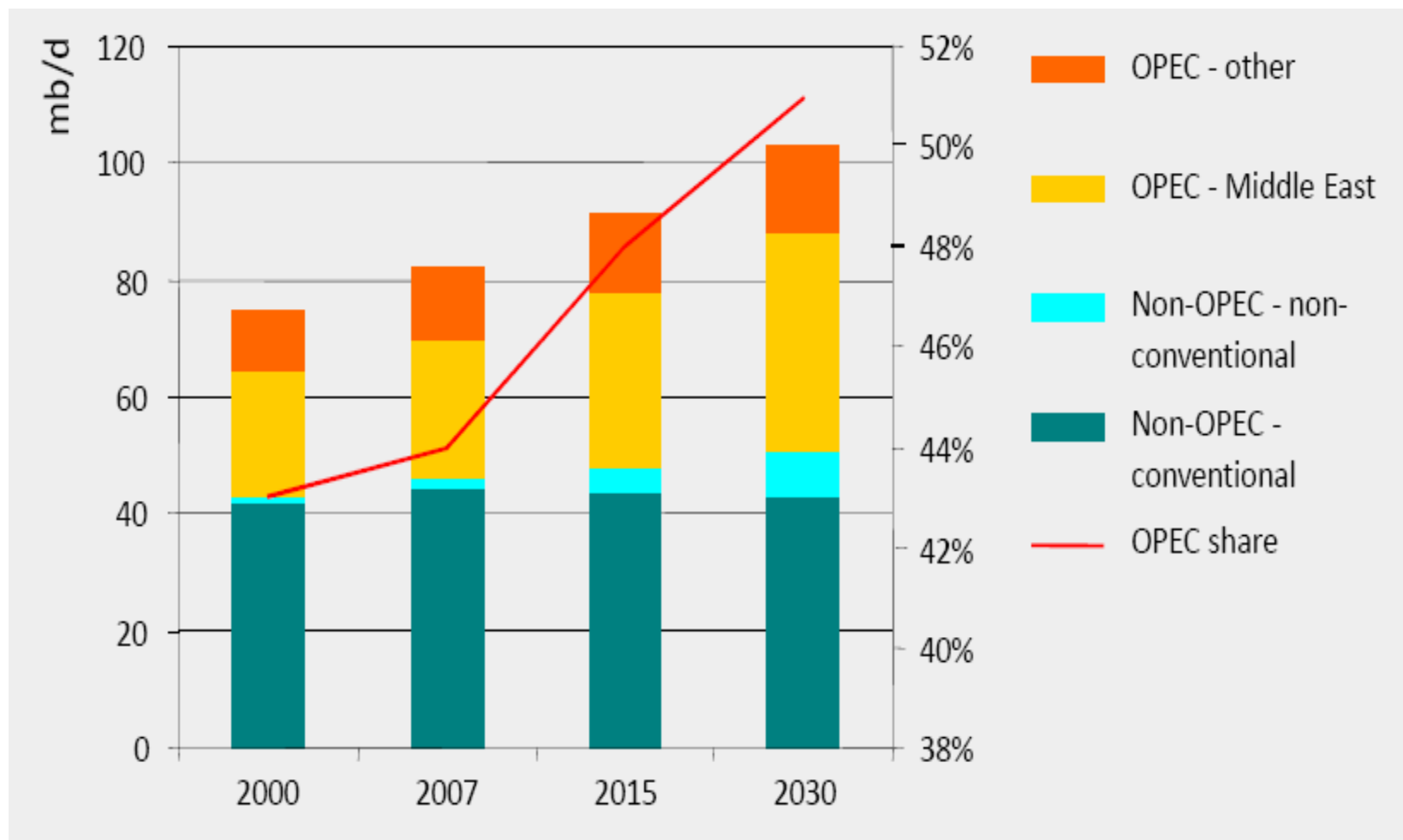
Petroleum expenditure as share of



Note: peak price taken as \$110 . Recent low taken as \$50

As long as energy intensity positive, rapid acceleration in oil prices induces large price shocks

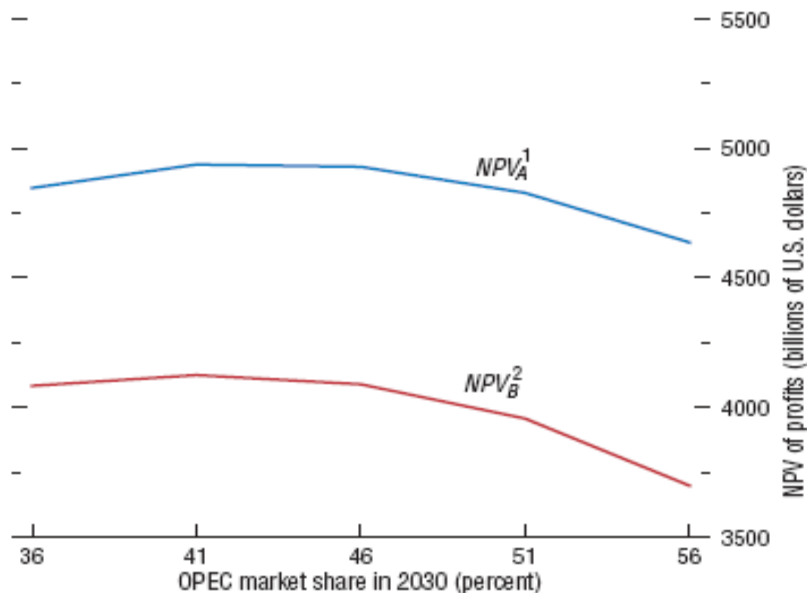
Conventional Wisdom II: OPEC Seeks Market Share



Source: EIA (2008)

Willingness: Does OPEC has Incentive to Increase Market Share by Pursuing Aggressive Investment Plans?

Profitability of Various OPEC Market Strategies



Source: Gately (2005).

¹ NPV_A^1 corresponds to the NPV of discounted profits in the baseline scenario, with the International Energy Agency non-OPEC supply path.

² NPV_B^2 corresponds to the NPV of discounted profits in the baseline scenario, with the U.S. Department of Energy non-OPEC supply path.

❑ The more OPEC increases its market share the lower will be its payoff

- Higher output offset by lower prices

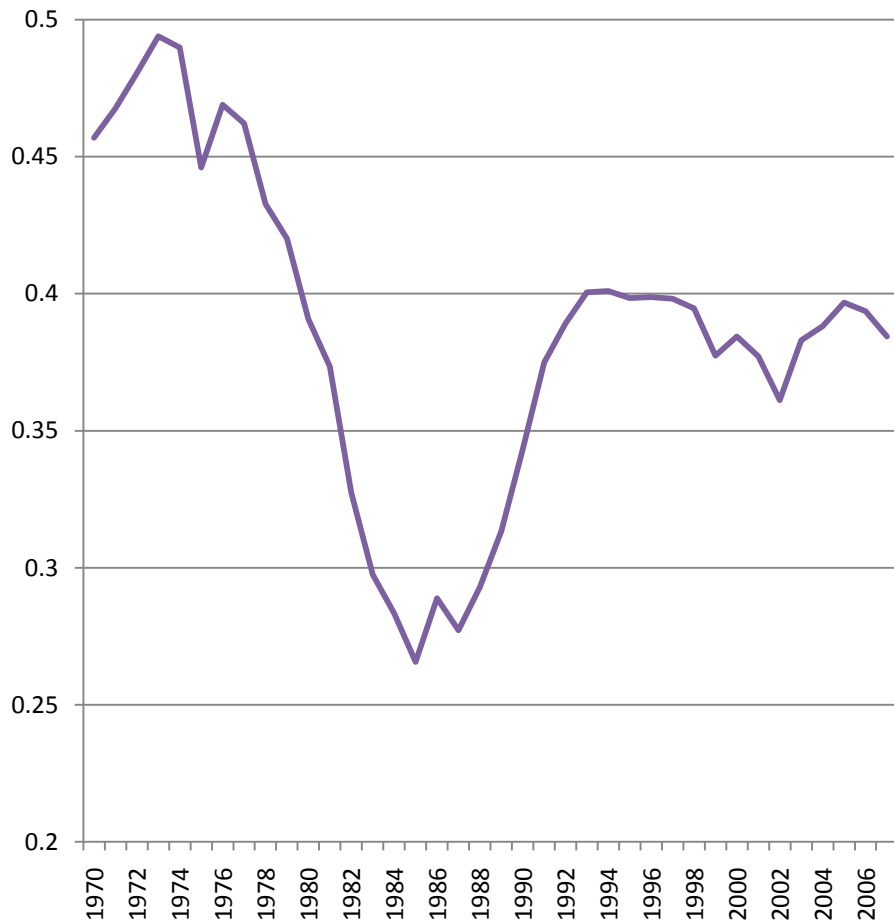
❑ Does not have incentive to let market share rise rapidly

- High oil prices compensate for the lower market share

Source: IMF (2005)

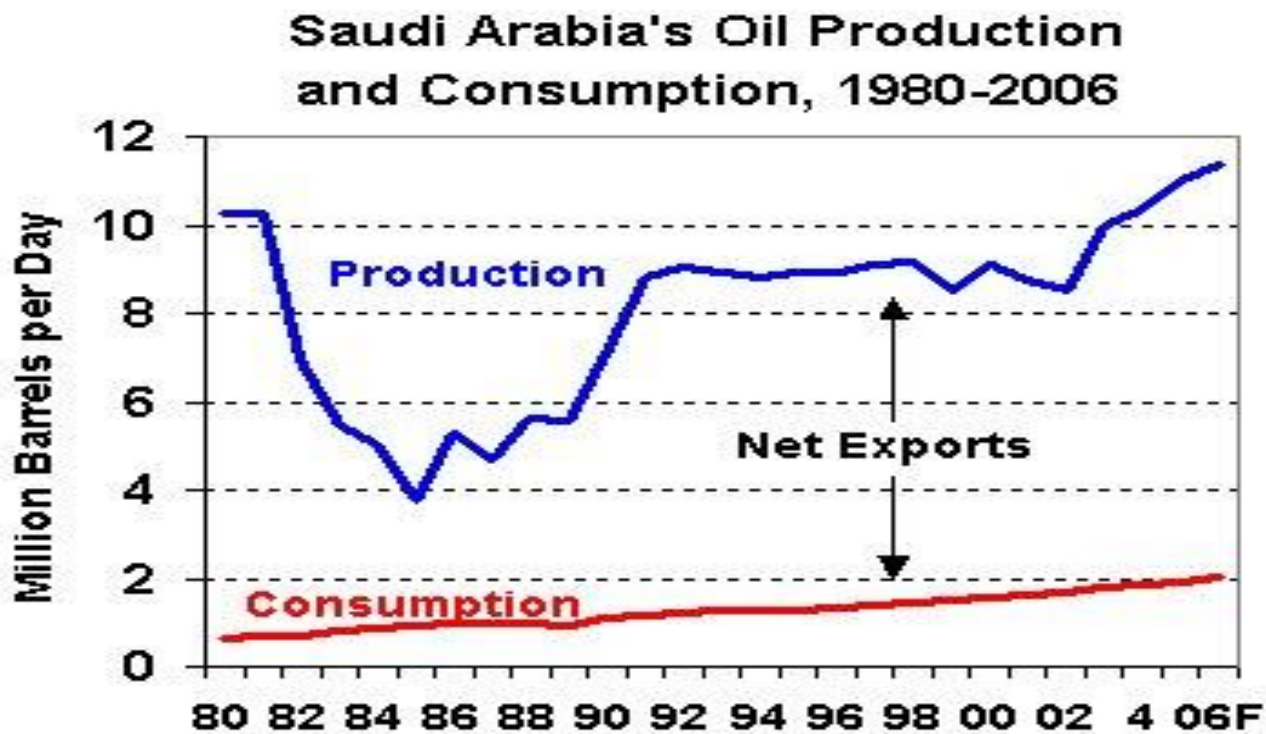
OPEC Market Share: A “Residual”?

OPEC 10 Market Share of Total Production



- Quota system based on “call on OPEC”
 - Fills the gap between the world demand and non-OPEC supplies
- Market priority given to non-OPEC oil
- Centre for world growth production and investment shifted to non-OPEC countries
- Keeping a floor on oil price allows the burden of investment to shift towards high cost producers
- Implication: Reduce OPEC’s market share (but compensated by higher oil price)
- Willing to increase investment if “call on OPEC” is expected to rise either due to expectations of increased demand or low oil non-OPEC supply

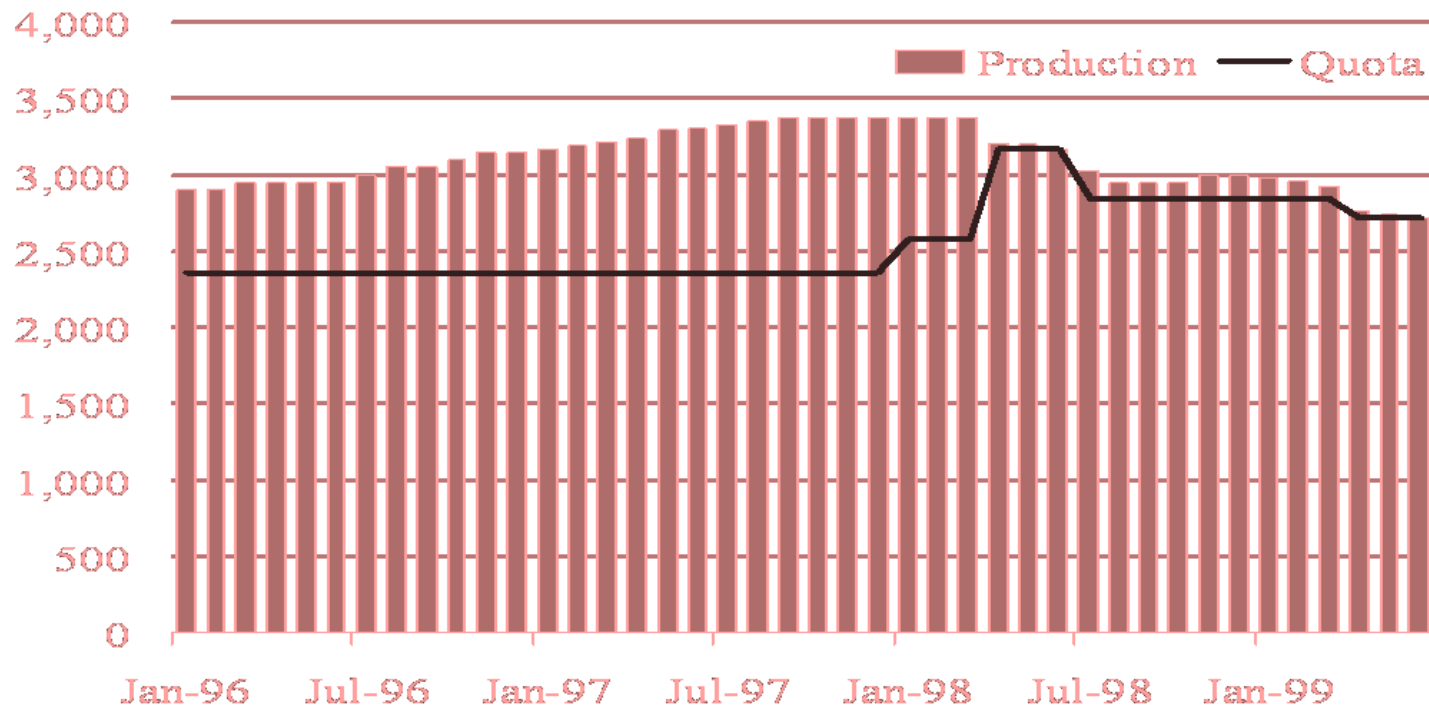
Exceptions



Note: Production includes crude oil, natural gas liquids, other liquids, and refinery gain.

Venezuela's Challenge in the 1990s

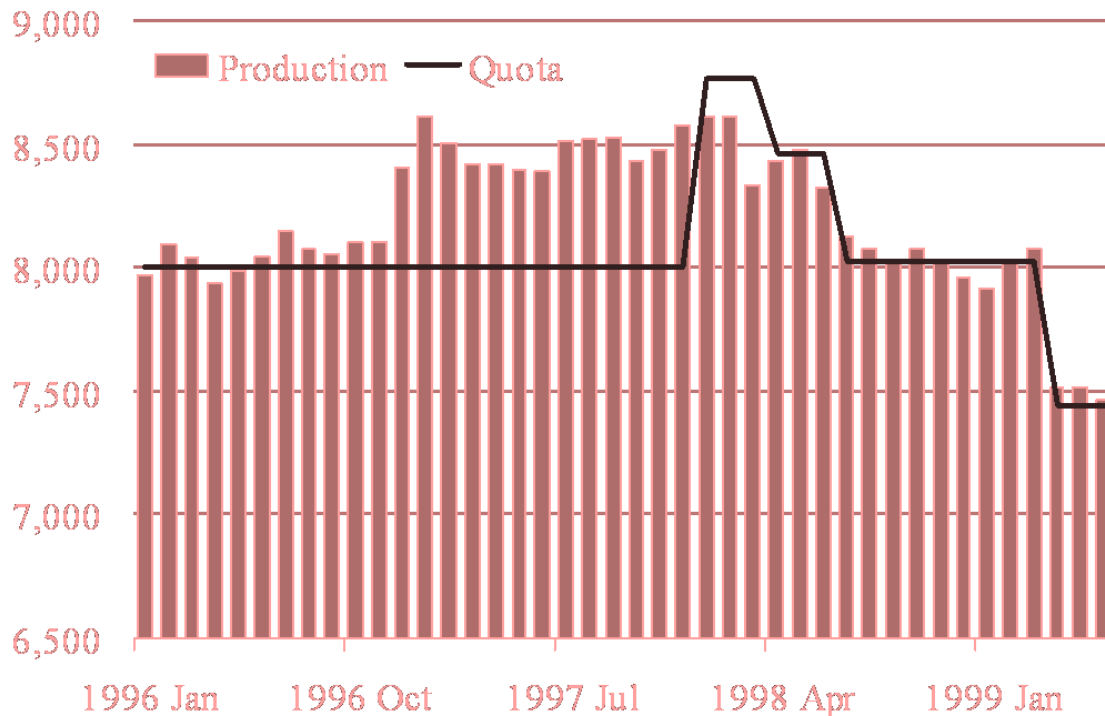
Venezuela production vs Quota (000 bbl/d)



Source: Energy Intelligence Group OMI data, Morse (2007)

Saudi Arabia's Response

Saudi Arabia production vs Quota (000 bbl/d)



Source: Energy Intelligence Group OMI data, Morse (2007)

2. OPEC and Management of the Market

- Structural Change in the international Pricing
- Role of financial players
- Inventories and the Shape of the Curve

The Context: The International Oil Pricing Regime

- Until early 1970s international oil industry outside North America, the USSR and China characterized by dominant position of large multinational oil companies (the seven sisters)
- Oil-exporting countries did not participate in production or pricing of crude oil
- Oil pricing regime associated with concession system centred on the concept of 'posted' price

The Rise of the OPEC Administered Pricing System

- Between 1970 and 1973, global oil demand increased at a fast rate
- Created a strong sellers' market and increased OPEC governments' power relative to Seven Sisters
- Year 1973 represented dramatic shift in balance of power towards OPEC
- System centred on concept of reference or marker price

Collapse of the Administered Pricing System

- New discoveries in non-OPEC countries responding to higher oil prices taking advantage of new technologies
- Diversity of Consumers
- Main Impact on Market
- Collapse of OPEC administered system in 1986
- Saudi Arabia's attempts to defend marker price would only result in a dramatic reduction in its oil exports and loss of market share as other producers could offer to sell their oil at a discount to administered price

The Emergence of the Oil Market Related System

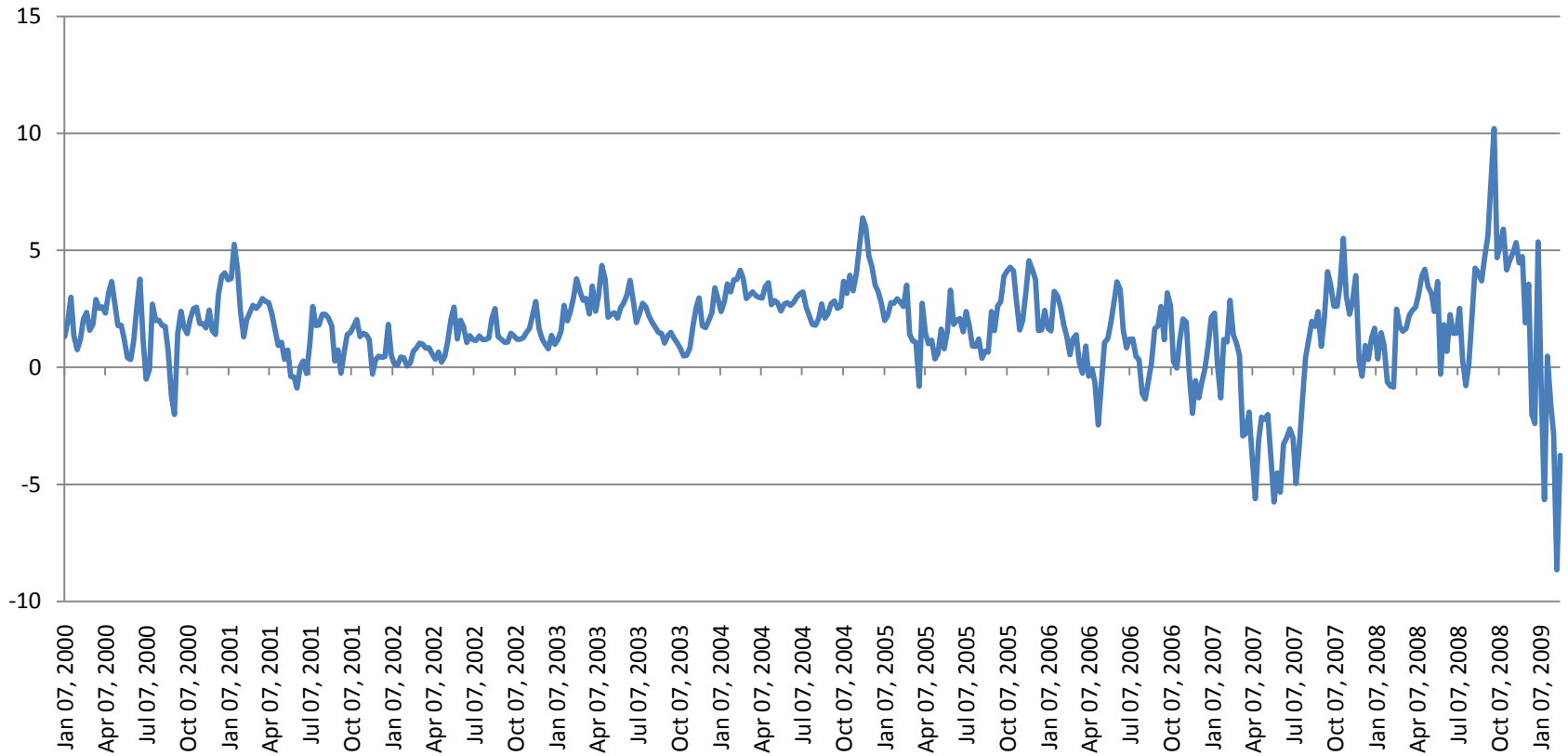
- Emergence and expansion of market for crude oil outside OPEC allowed development of market-referencing pricing
- Reference pricing
 - Price of certain variety of crude oil is set as a differential to a certain marker or reference price
 - Brent, West Texas Intermediate, and Dubai/Oman main crude oil benchmarks of the reference pricing regime
- Since 1986 OPEC no longer sets the oil price

The Shift to Futures Market

- Doubts about ability of benchmarks to generate price that reflects accurately the price at the margin of the physical barrel of oil
 - Markets have become very thin and illiquid
 - WTI and Brent used as benchmark crudes no longer represent the marginal barrel as the marginal barrel has become heavier
 - Heavily influenced by local conditions resulting in temporary breakdowns of benchmarks
- Need of alternative market to derive price of reference crude
- Alternative found in futures market
- Futures market grown to become not only a market that allows producers and refiners to hedge their risk and speculators to take positions but also where price of oil is determined
- Few consider the shift to futures market as structural transformation in oil markets with long lasting impact on price formation

Benchmark Crude Dislocation

WTI-Brent Price Differential



Source: EIA

OPEC: A Price Taker?

- In current international pricing system OPEC seems to play very limited role in the formation of oil prices
 - Likes to conceive itself simply as price taker
- Characterization not accurate
 - OPEC countries account for largest share in international trade of oil
 - By altering production plans OPEC & its dominant player Saudi Arabia bound to have an influence on oil prices
 - This influence however is not straightforward

Signalling

- Decisions of OPEC cuts can be viewed as signals to market about OPEC's preferred range of prices
- Signalling mechanism may or may not succeed depending on how financial market participants interpret these signals
- Important to emphasise:
 - When OPEC assumes a passive role it is also signalling to the market

Weak Market Conditions

- In a falling market
 - Non-OPEC suppliers continue to produce at their maximum potential
 - OPEC in attempt to defend a target price would announce production cuts
- Credible signals
 - OPEC cannot usually reach agreements on allocation of production cuts
 - Even when agreements are reached, each member has the incentive not to comply with quota
 - Because of the absence of a monitoring mechanism not usually detected
 - Even if detected the organization does not have the power to punish and force member countries to abide by the agreed production cuts
 - When required cuts are large some OPEC members find it difficult to cut output and abide by quota

Signals not Credible in a Falling Market

- OPEC's announcement of production cuts in face of fall of global demand and excess capacity not have intended effect as market may not attach any weight to this signal
 - Market participants doubt the effectiveness and credibility of OPEC's policy and may ignore the signal
 - OPEC signals are some sort of cheap talk
- It will take OPEC a series of cuts to convince the market

Tight Market Conditions

- The erosion of spare capacity
 - Without enough surplus capacity, OPEC's ability to influence oil prices weakens considerably
 - In absence of spare capacity OPEC becomes a price taker like any other producer
- In 2004 doubts about the ability of Saudi Arabia to supply the market with additional supplies of the required quality of crude
 - Rendered any announcements of production increases ineffective

OPEC Pricing Power

- OPEC pricing power is not constant
 - OPEC can lose its influence on oil prices in the short term
 - Such instances can emerge both in weak and tight oil market conditions but for entirely different reasons
- OPEC alone can not determine the oil price
 - Depends on other players' behaviour
- OPEC can engage in excessive cuts to give credibility to its signal about its preferred oil price

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Shape of Futures Curve and Inventories

- At any one point in time, trace the price of oil for delivery at different maturities to trace the futures curve
- Futures curve can take different shapes
- Contango
 - When spot price is lower than forward price (partial or full contango)
- Backwardation
 - When the spot price is higher than the forward price

Different Shapes of Futures Curves

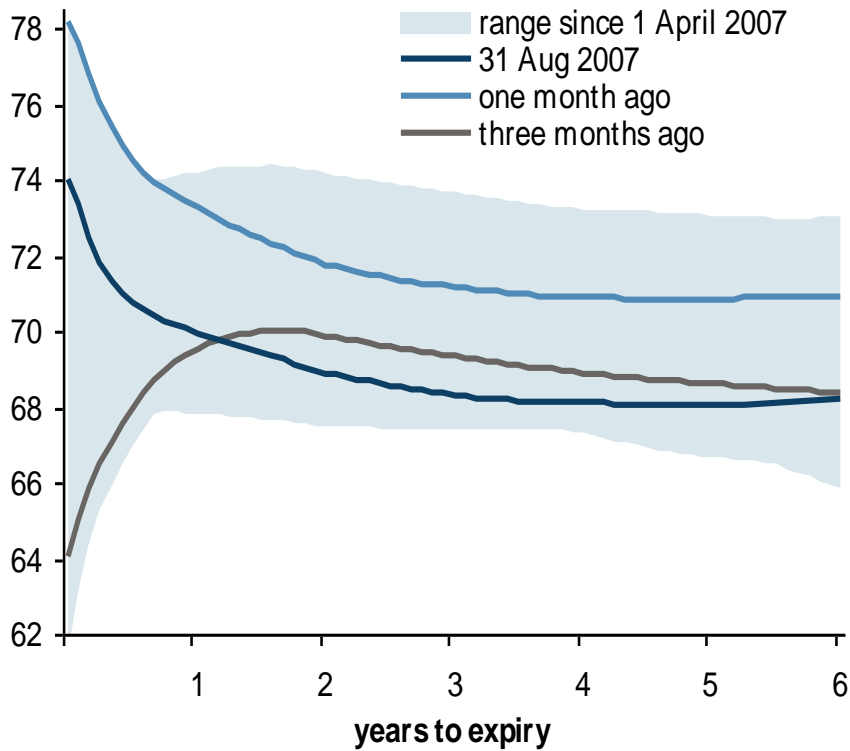
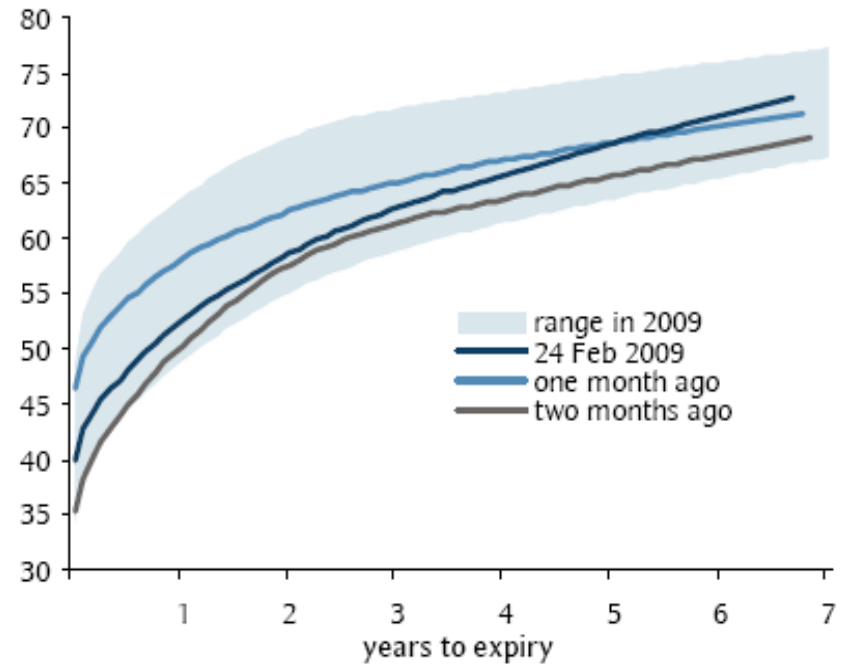


Figure 21: WTI forward curve trading range (\$/b)



Source: Barclay's Capital

Shape of the Curve and Inventories

- Shape of the curve and inventories
 - Contango: incentive to accumulate inventories
 - Backwardation: discourages inventory accumulation
- Shape of curve can affect price dynamics through inventories
- Feedback mechanisms
 - Contango encourage those with physical facilities to accumulate inventories
 - Interpreted by market participants a sign of an oversupply
 - Price of oil for immediate delivery would go down
 - Keep the contango
 - In turn induce traders with physical capacity to augment their stock further
- Contango which lasted for more than 12 months was associated with falling oil prices and large accumulation of inventories in 1998
- OPEC gets concerned about rapid accumulation of inventories

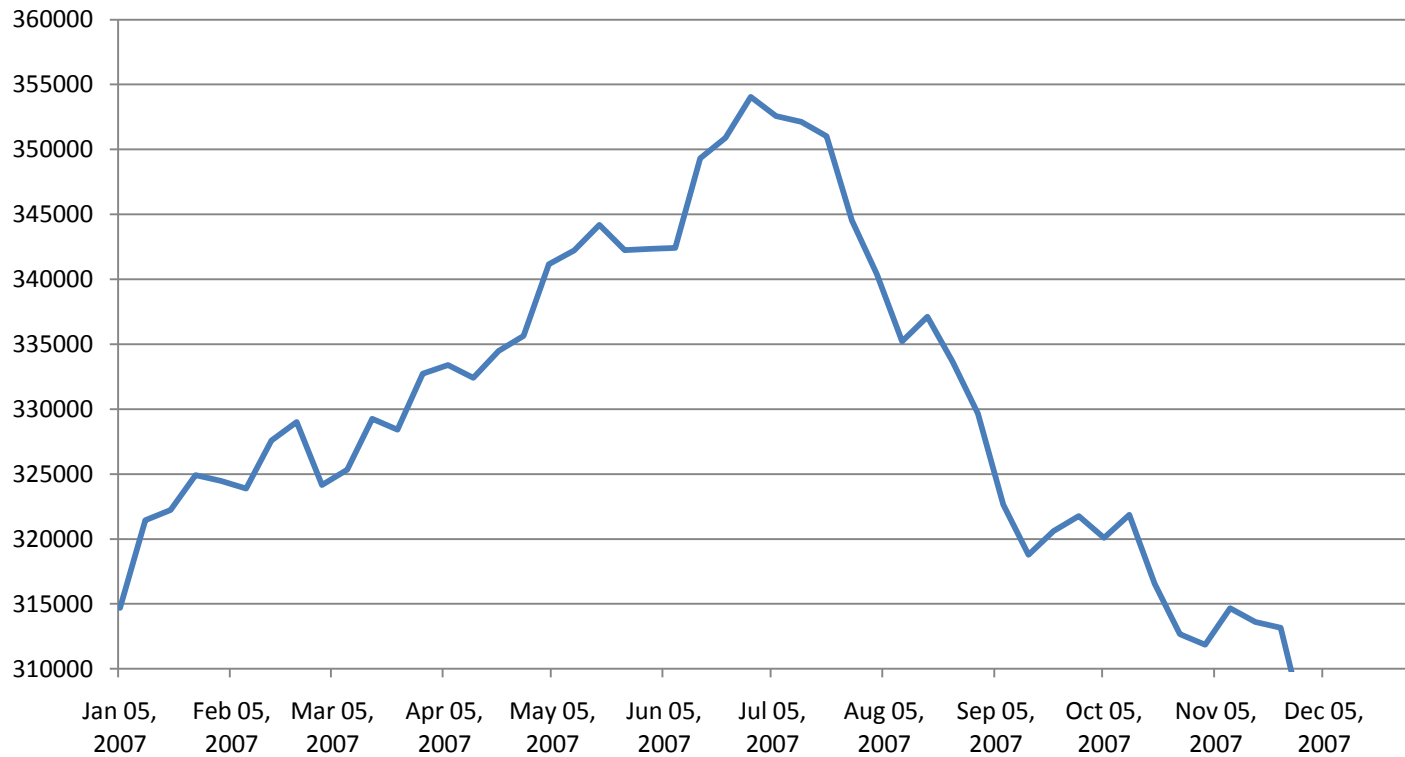
4. OPEC Cycles and the Oil Market: 2004-2008

- Passive role in the early period of the boom
 - The blame game
 - Increase output in response to customers' demand at market determined prices
 - No offer of discounts

Early 2007: OPEC the Active Player

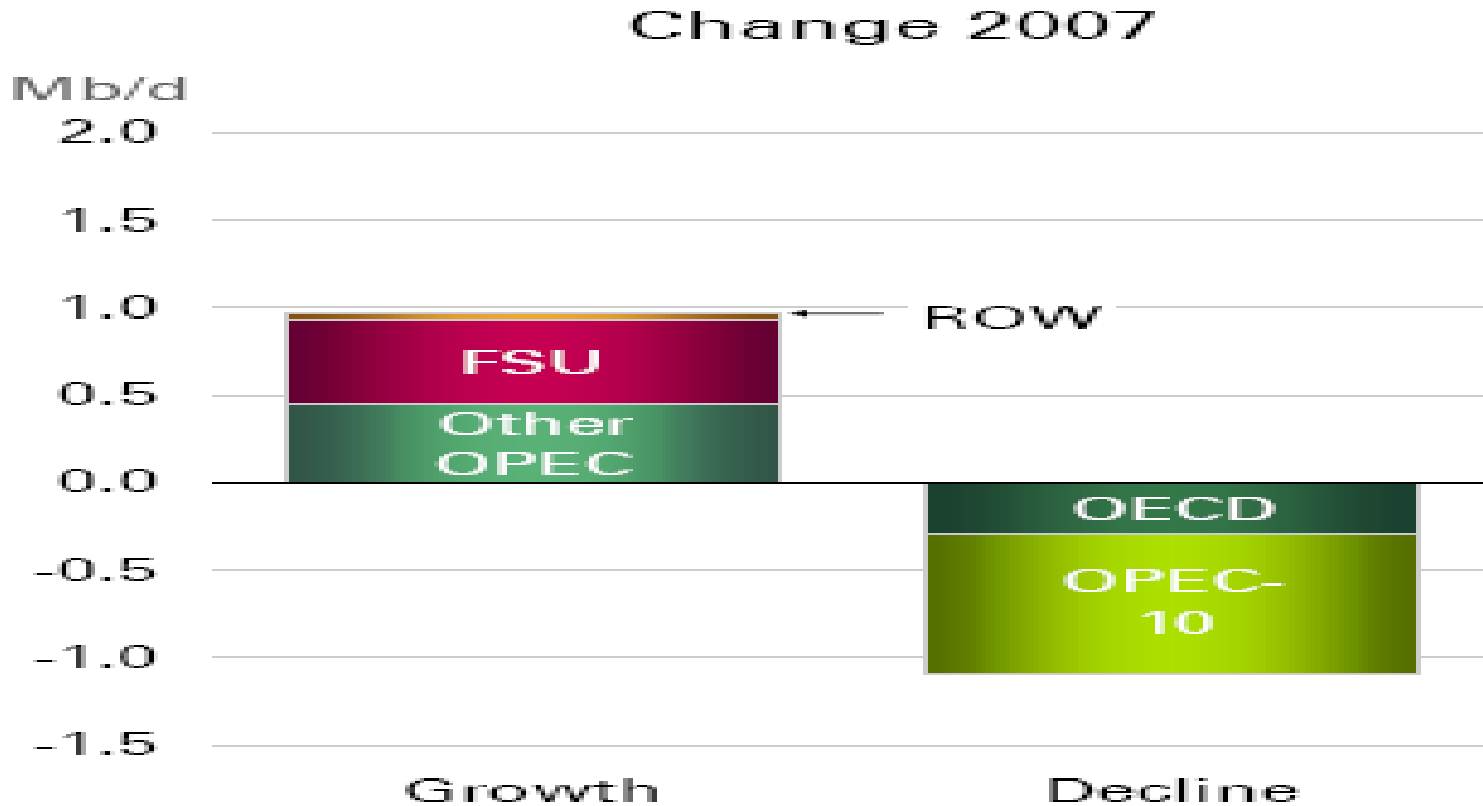
- OPEC's passive behaviour interrupted in 2007
- Concerns about the rapid accumulation of inventories
- OPEC responded by cutting supplies
 - Oil importing countries had to tap into their oil stocks to satisfy demand reducing the level of crude oil inventories
 - Spot price rose and the shape of futures curve changed from partial contango into backwardation

US Crude Oil Stocks 2007



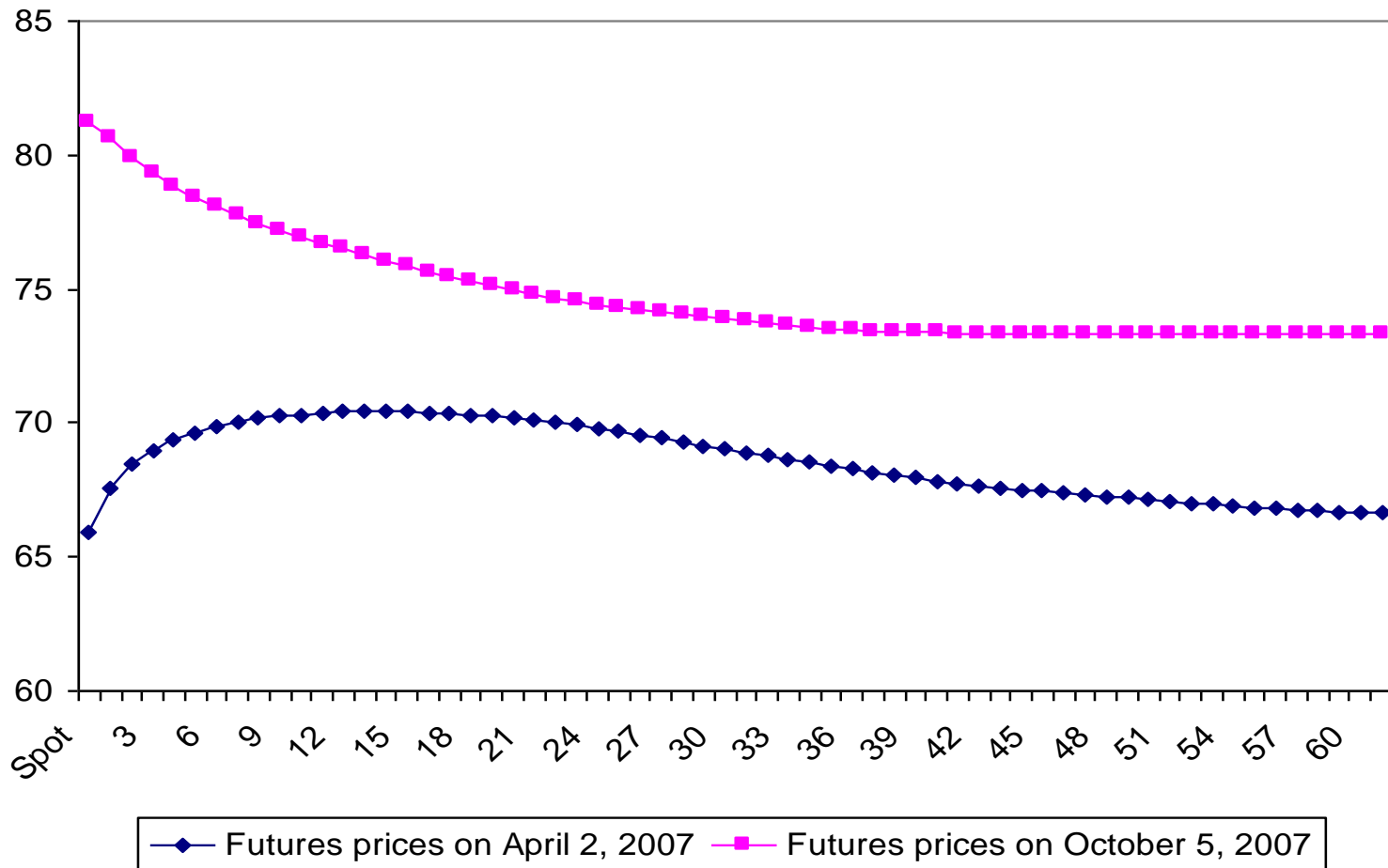
Source: EIA

OPEC Cuts Supplies in 2007



Source: BP

Change in Shape of Curve



Source: IMF, World Economic Outlook: Globalization and Inequality, October 2007, Figure 1.9

First Half of 2008: OPEC the Passive Player Again

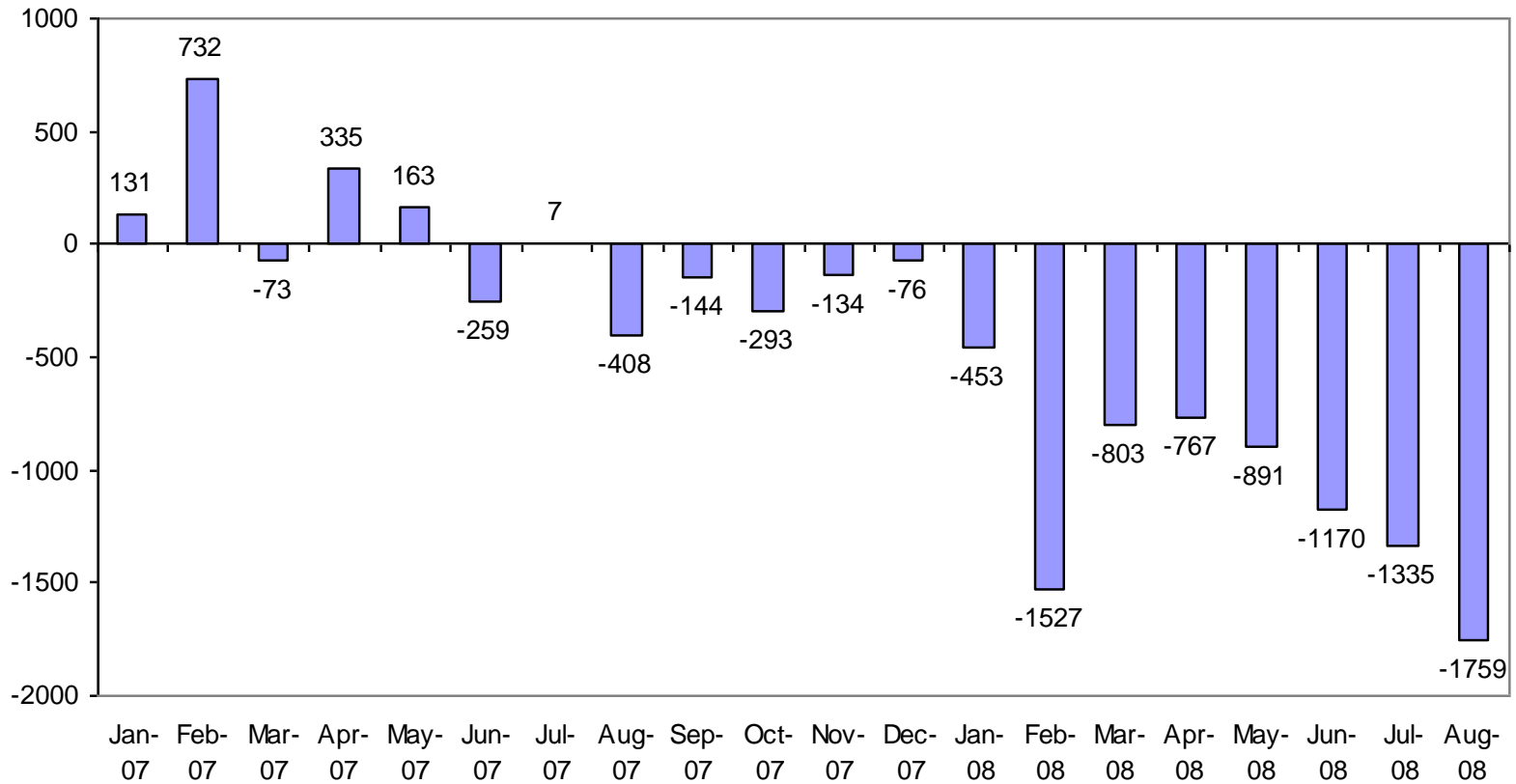
- OPEC resumed a passive role supplying market upon demand at oil prices ‘determined by the market’
 - No attempt to bring down prices by auctioning spare capacity or offering discounts for refineries to lift its heavy sour crude
- OPEC was comfortable with its position
 - No incentive for physical traders to accumulate inventories
 - Spot prices kept rising as the market coordinated on long term supplies
- Despite decline in oil demand excess supplies did not appear because OPEC passively adjusted its output in line with the demand for its oil

The Jeddah Meeting: A Concerned Saudi Arabia

- Serious concerns about the potential impact of high oil prices on US demand
- Saudi Arabia called for meeting in Jeddah in June, 2008 and announced that it would increase its output by 500,000 b/d
- Whether additional output taken by market and responsible for the subsequent decline in oil prices highly debatable
 - Likely story: Once market sentiments turned negative fall in US oil demand became the main public signal on which traders started coordinating their decisions

Largest US Fall in Oil Demand Since Early 1980s

Year on Year Change in total US Oil Demand, Jan 2007-August 2008



Source: Energy Information Administration (EIA)

5. OPEC in the Current Market Context

- OPEC Emergency meeting on 24 October 2008
 - Fall in oil prices “unprecedented in speed and magnitude”
 - “Slowdown in oil demand is serving to exacerbate the situation in a market which has been over-supplied with crude for some time”
 - Falling oil prices “may put at jeopardy many existing oil projects and lead to the cancellation or delay of others, possibly resulting in a medium term supply shortage”
 - Message to non-OPEC suppliers that “OPEC cannot be expected to bear alone the burden of restoring equilibrium” and called on non-OPEC producers/exporters to contribute to efforts to restore prices to reasonable levels and eliminate harmful and unnecessary fluctuations
 - “strongly emphasizing their firm commitment to ensuring that the volumes they supply to the market are reduced by the individually agreed amounts”
- OPEC Meeting on 17 December 2008
 - Cut 4.2 mb/d from the actual September 2008 OPEC-11 production of 29.045 mb/d
 - Countries strongly emphasize their firm commitment to ensuring that their production is reduced by the individually agreed amounts

OPEC's Current Dance with the Market

- First step: Traders talk about the amount that needs to be cut
 - Number of 'more than 1 million b/d', then raised to 2 million b/d the barometer to test whether OPEC's output cut is big enough
 - Anything below that amount is considered as 'worthless' or 'not enough' to alter price expectations
- Second Step: OPEC responds by announcing large cuts to meet traders expectations
- If signal is successful in stabilizing expectations OPEC will not have to resort to output cuts
- OPEC signals are rarely successful in stabilizing short term expectations in a falling market

OPEC Dance with Market

- Third move: Market players demand to see actual cuts in production
 - OPEC signals in a falling market are some sort of cheap talk that market players could ignore
 - Is OPEC compliance high?
 - 80% according to the Iranian Oil minister
- Fourth Move: Falling oil prices will eventually induce OPEC members to cut supplies
 - Cuts may take time to be implemented because of compliance and adjustment issues
 - If prices don't rebound OPEC may engage in excessive cuts in order to convince the market that its serious about defending the oil price
 - Risk that impact may be felt at a time when global economy about to bounce back from recession

Complicated by Rapidly Rising Inventories

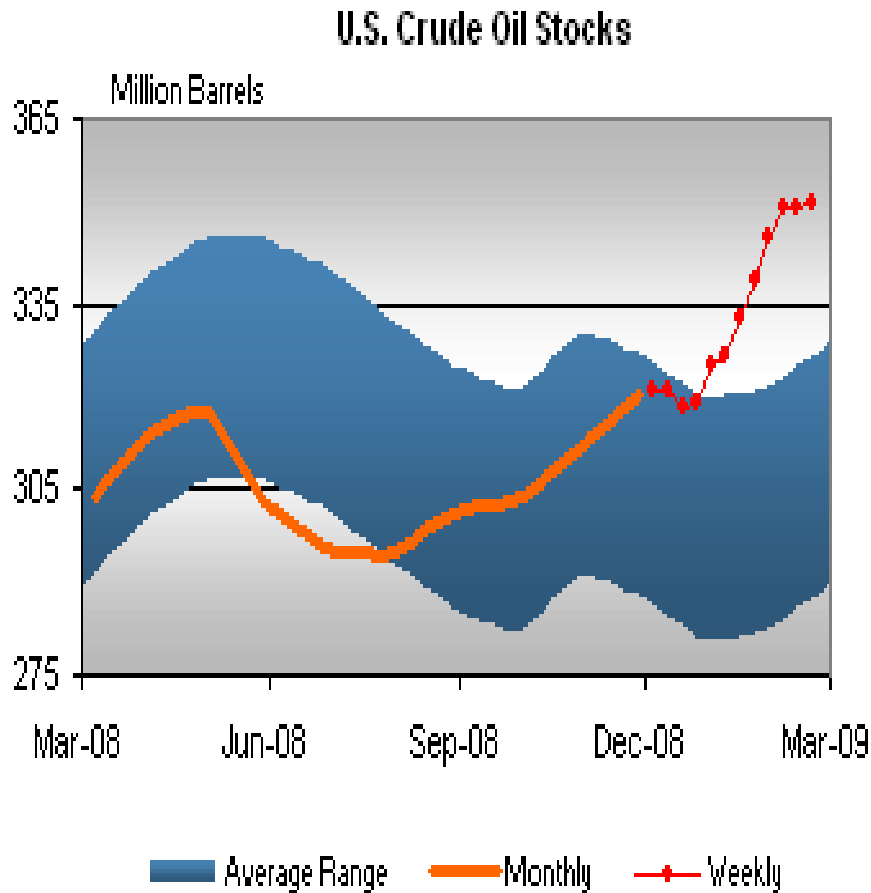
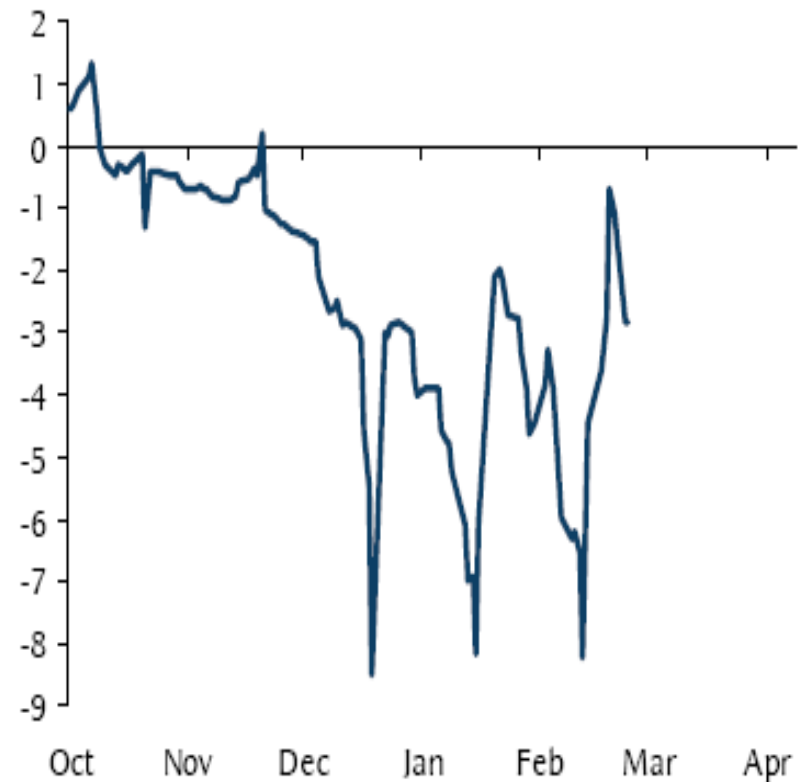
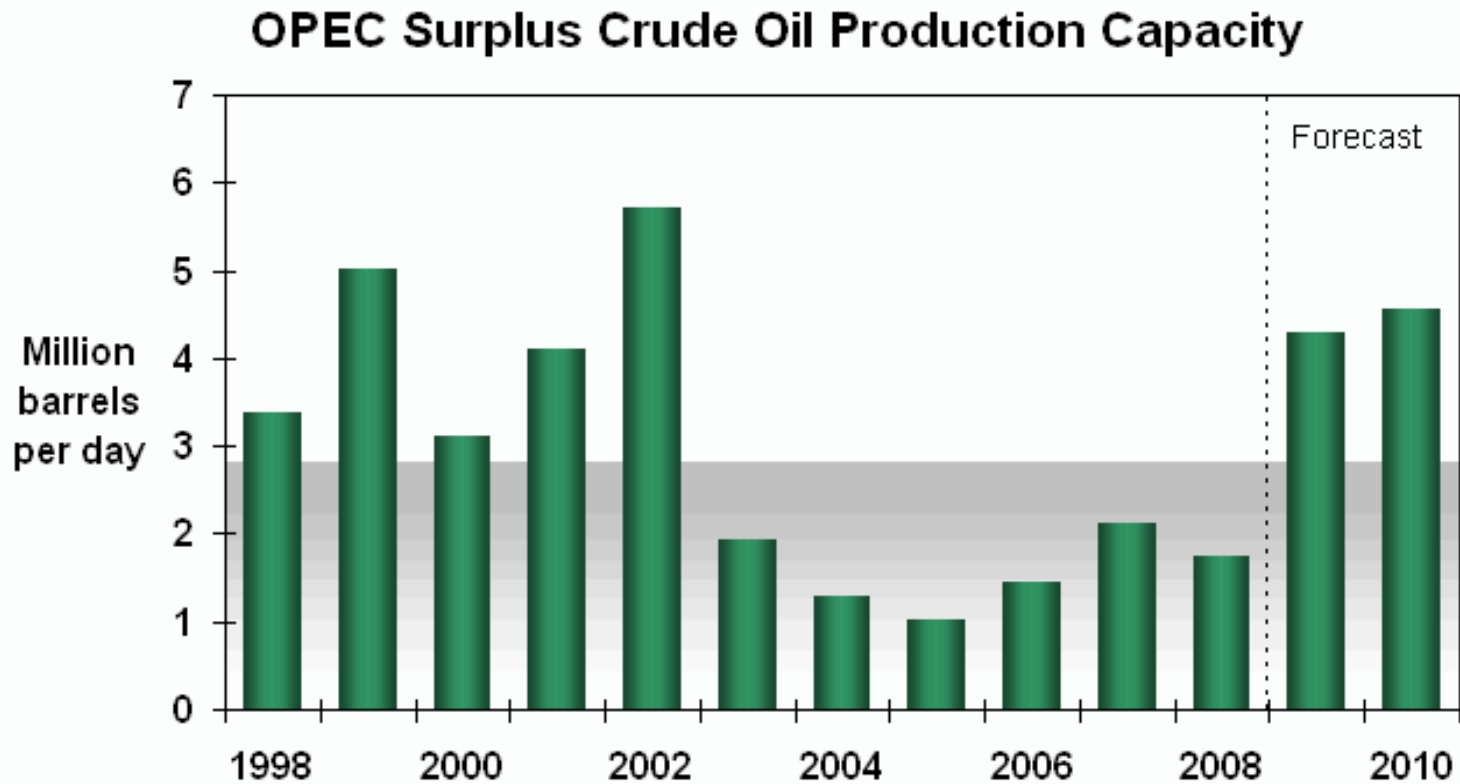


Figure 18: WTI time structure, 1st-2nd month (\$/b)



Source: EIA and Barclay's Capital

Spare Capacity Dimension & Oil Prices



Note: Shaded area represents 1998-2008 average (2.8 million barrels per day)

A New Oil Price To Defend?

- King Abdullah of Saudi Arabia
 - The fair price for oil is \$75 a barrel
 - First time in years preferred price cited by most important exporter
- Saudi Arabia Oil Minister Ali Naimi in Cairo meeting
 - “Because I believe \$75 is the price for the marginal producer. If the world needs supply from all sources, we need to protect the price for them”
- Questions
 - A ceiling or a floor?
 - Will Saudi Arabia aim to increase output if above the preferred target?
 - What is the mechanism? Auction spare capacity?
- Will it help stabilise expectations in the long term?

OPEC's Investment Response

- OPEC Secretariat
 - OPEC nations collectively postponed 35 oil drilling projects that had been in various stages of development
- Investment response driven by
 - Low oil prices
 - Spare capacity
 - Uncertainty about long term demand due to energy security and environmental policies

6. Conclusions

- OPEC no longer sets the oil price
- OPEC behaviour changes over the price cycle
- OPEC behaviour is asymmetrical
- OPEC could lose influence over oil prices in the short to medium term
- Complicated by term structure issues and inventories
- OPEC output decisions can induce and reinforce swings in oil prices
- OPEC spare capacity presents an important feedback mechanism but keeps downward pressure on oil prices
- OPEC's recently announced preferred price unlikely to stabilise market expectations in the current context
- Concept of fair price is about sharing the rent and highly unlikely to be an agreement between OPEC and oil importers on rent sharing