



Keeping Pace With A Rapidly Changing Sector: Then And Now

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Energy Intelligence Group

OUTLINE

- **How have petroleum markets changed?**
- **Have data and analysis tools kept pace?**
- **Are new tools being used effectively?**
- **How has the audience changed?**
 - ◆ **who's listening?**
 - ◆ **how do they react?**
- **What needs to be done better?**
- **Is there enough money, talent and experience?**

Then and Now

2008 Versus 1978

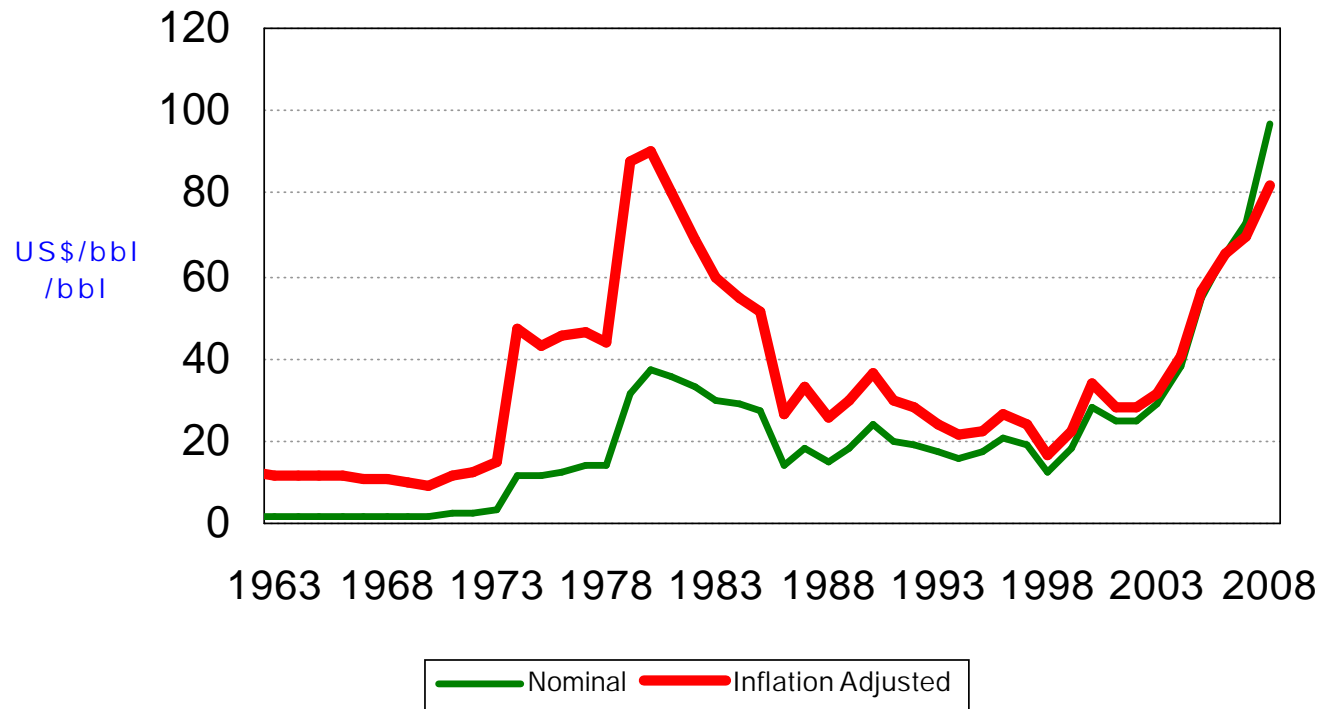
- **Oil prices are much higher, but a lot of that is inflation.**
- **We are in a demand-driven sellers' market, earlier price spikes were supply driven.**
- **Developing countries dominate demand growth and are moving to parity with OECD.**
- **Non-Opec supply is plateauing, moving the ball into Opec's court.**
- **National Oil Companies have evolved into a major presence in current oil markets.**

A Durable Sellers' Markets

- **Sellers' markets in 1920s, 1940s, 1970s were sudden, brief, unstable and supply-led.**
- **Post-2000 market was demand-led, emerged gradually and looks more durable.**
- **2nd half '07/Q1 '08 not a non-Opec reversal.**
- **Supply surge not apt to come to the rescue:**
 - ◆ **Post-2008 non-Opec unable;**
 - ◆ **Opec probably unwilling.**

Then and Now: The Price Dimension

Inflation Adjusted Crude Oil Price 1963-1Q 2008

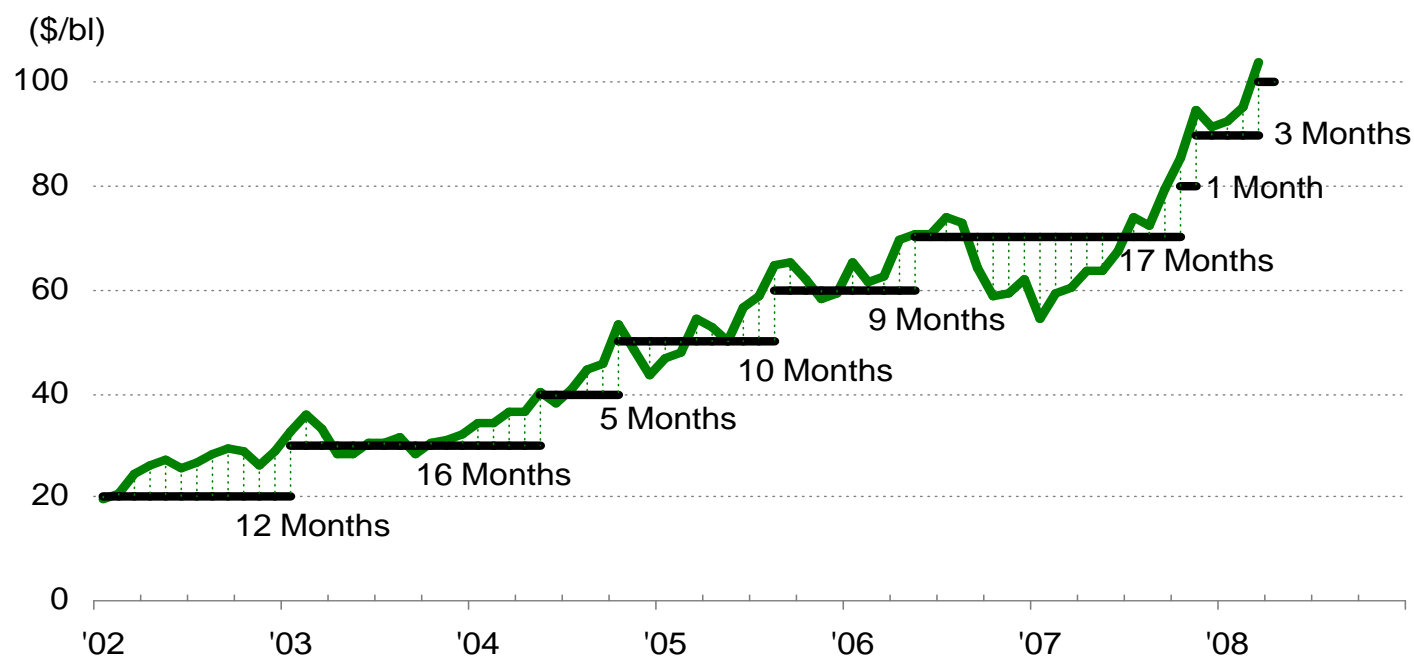


1963-1983 Arabian Light, posted at Ras Tanura; 1984-2008 Brent dated. Source: BP, LOR, EIG.

Source: EIG, Energy Intelligence Research, April 2008.

The 6-Year Stairstep to \$100+ Oil

WTI Average Monthly Spot Price



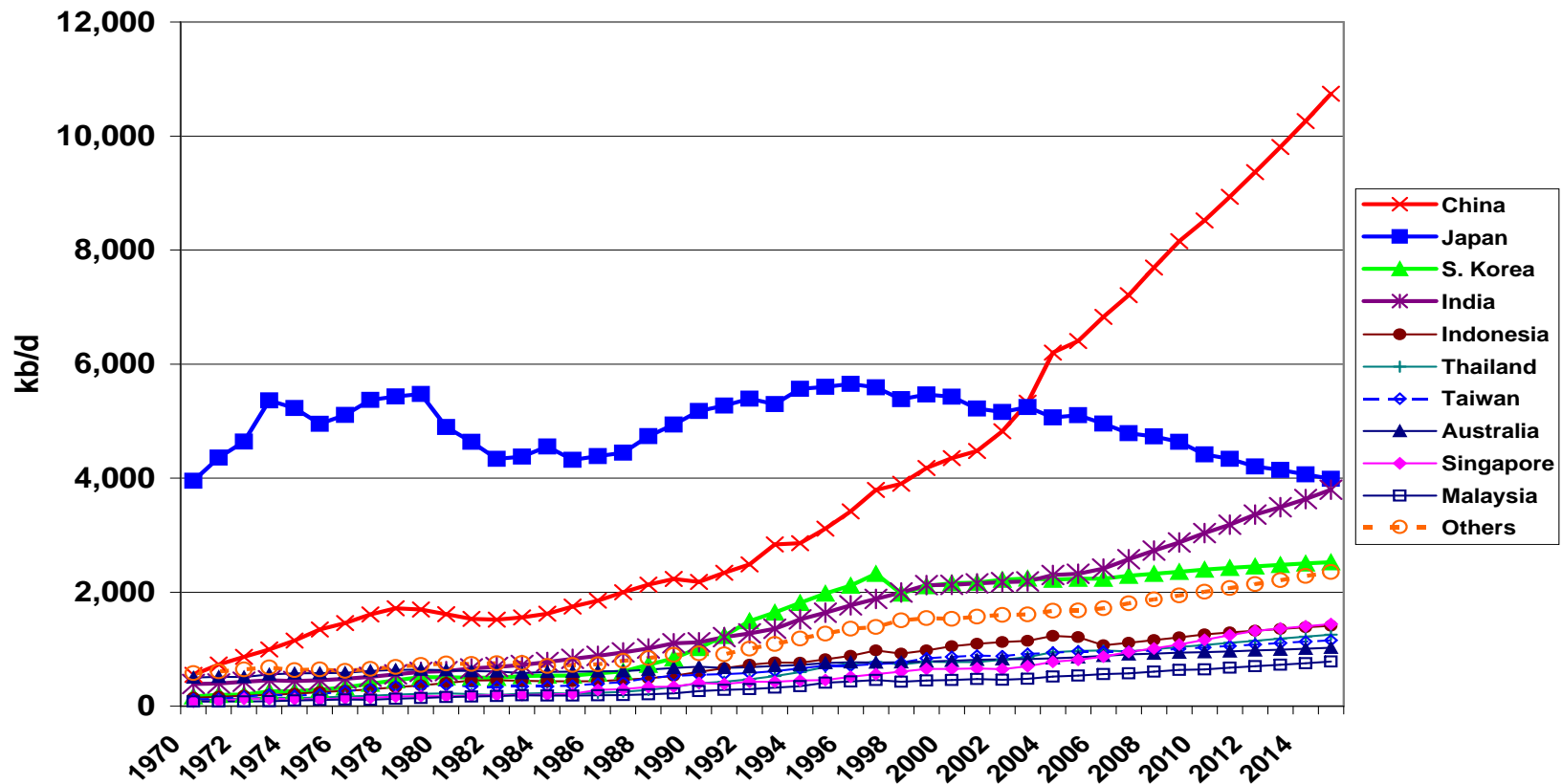
Source: EIG, Oil Market Intelligence .

Developing Country Demand Led

- **Asia esp. China and Mideast Gulf in the fore**
- **Developing countries will pass OECD by 2015**
- **Near-term developing country demand growth is somewhat shielded from US recession**
 - ◆ **non-dollar economies**
 - ◆ **price controls and subsidies**
- **Were too small to matter in 1978**
- **Stronger income elasticities, less price effects**

Non-OECD Growth Dominates Outlook

Oil Product Demand by Country, 1970-2015



Source: FGEnergy

Headed For A New World Balance

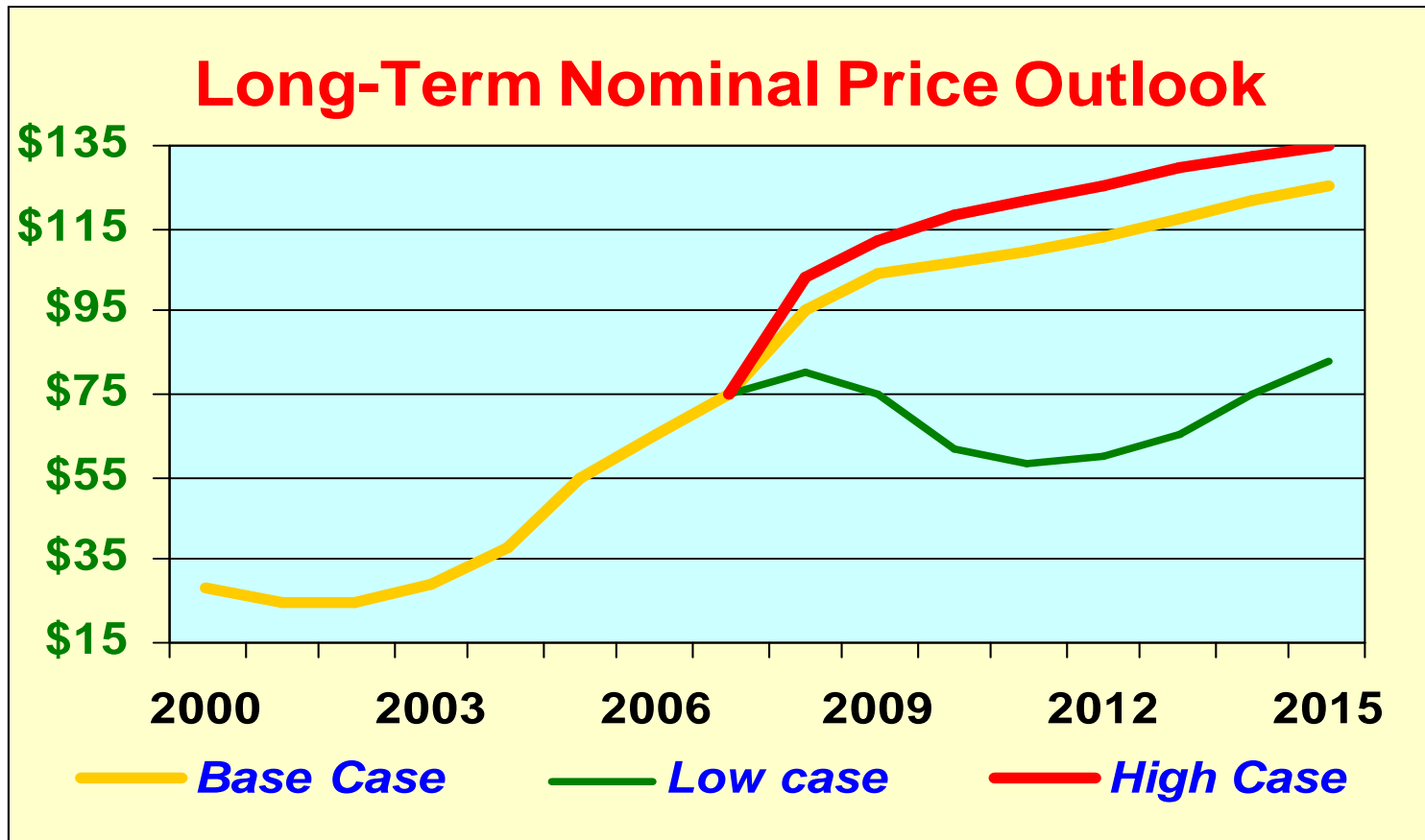
- **Non-OECD demand growth will need to be met increasingly by Opec supplies.**
- **Total demand approaches the 100 million b/d “limit” in 2015.**
- **Will it be supply constraints or price-driven demand reactions that set limit.**
- **Non-OECD demand exceeds OECD demand by 2015**
- **Opec crude & other nearly reaches non-Opec.**

Longer-Term Balances Favor Opec

Global Oil Balances							
<i>million b/d</i>	2000	2005	2006	2007	2008	2010	2015
Global Demand							
OECD	47.89	49.67	49.34	49.08	48.66	48.86	48.18
Non-OECD	27.93	34.56	35.61	36.95	38.15	41.07	51.18
Total	75.82	84.23	84.95	86.03	86.81	89.92	99.35
Global Supply							
Non-Opec	44.67	48.33	49.25	49.81	50.73	51.88	50.59
Opec Other Liquids	3.06	4.29	4.49	4.75	5.34	5.82	7.08
Opec Crude*	28.91	31.90	31.47	30.87	31.55	33.01	42.13
Total	76.64	84.52	85.20	85.42	87.62	90.71	99.81
Stock Changes	0.82	0.28	0.25	-0.61	0.81	0.79	0.46
<i>*Including Angola and Ecuador.</i>							

Source: Energy Intelligence Research. April 2008.

Alternative Price Outlooks



Source: Energy Intelligence Research, April 2008.

New Tools For A New Market

What's In The New Tool Box

- **Massive growth in computing power**
- **Faster movement of information in general**
 - ◆ **nanoseconds have replaced days or months**
 - ◆ **shelf life of data and analysis greatly diminished**
 - ◆ **timeliness a more critical factor**
- **New econometrics, new datasets, automation, cointegration techniques**
- **Crossover from other disciplines/applications**
- **30 years of experience with energy markets**

How Are New Tools Being Used?

- **Not enough, pressure of day-to-day demands for data and analysis overwhelm research.**
- **Systems have become “brittle” as new demands get “scotch tape” not revamps.**
- **New “tool-wielders” have skill sets, but not experience, old guys have the reverse.**
- **Skilled, experienced staff are now well into the retirement window.**
- **“Generational transfer” has been too slow.**

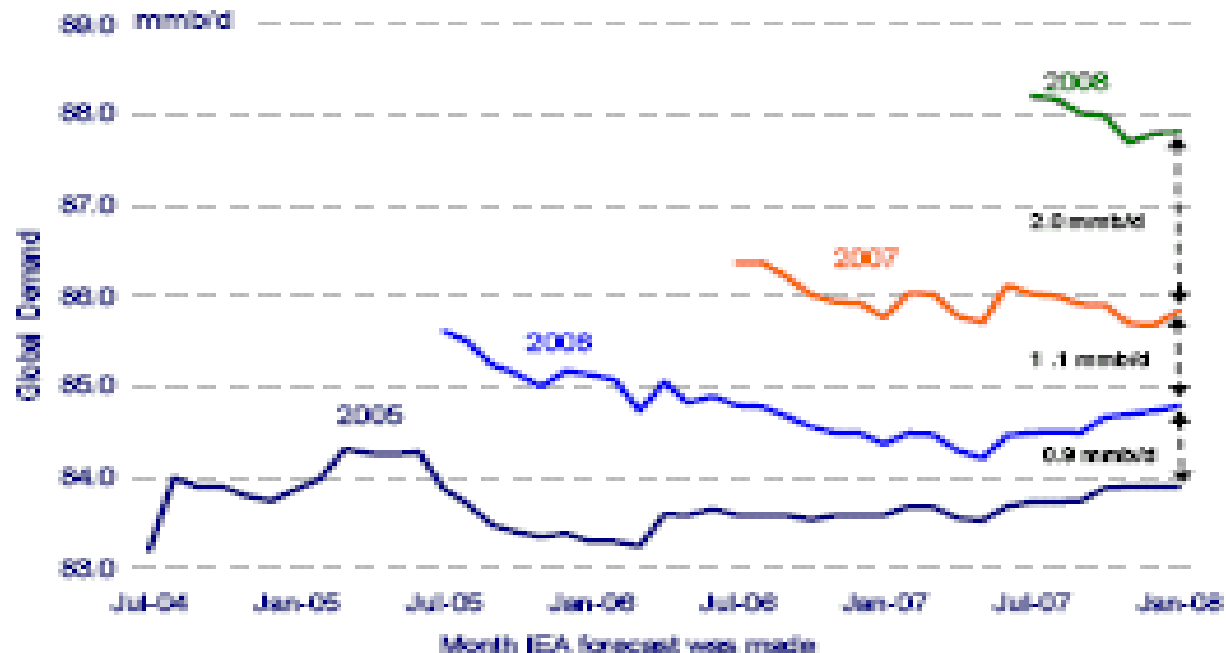
The New Audience: Quicker, Slicker and Pickier

The New Audience

- **Paper markets eat data voraciously and very selectively.**
- **International market uses US as a bellwether.**
- **US and foreign politicians actively monitor energy data and oil data in particular.**
- **Other administrative branches are also active users of energy data.**
- **Industry participants who used to do their own data work don't anymore rely on EIA/IEA, etc.**

IEA Near Term Oil Demand Over-Optimism

Figure 1: IEA global oil demand forecasts



Source: IEA, *D6 Global Markets Research*

Hurts the credibility of the longer term upside demand case

What Needs To Be Done

What Needs To Be Done

- **Gaps in US & international data need to be filled: ethanol, China/Russia, non-OECD stocks.**
- **Data sources need to be better harmonized between frequencies, between countries.**
 - ◆ **sample frames need to be updated, tested**
 - ◆ **correlations with causative factors need monitoring**
- **Users should be more actively involved in the data process.**
- **Shoddy data reporters need to be disciplined.**

Conclusion

- **Oil markets are fundamentally different than 30 years ago.**
- **Data and analysis tools have lagged these changes.**
- **Available tools are not being fully utilized.**
- **EIA's audience for data and analysis has gotten more sophisticated and more international.**
- **There needs to be substantive improvements in data collection, analysis and forecasting.**
- **Considerably more talent, money is needed.**



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