Keeping Pace With A Rapidly Changing Sector: Then And Now

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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.
• 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


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


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

<table>
<thead>
<tr>
<th>million b/d</th>
<th>Global Oil Balances</th>
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<tbody>
<tr>
<td>Global Demand</td>
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<tr>
<td>OECD</td>
<td>47.89</td>
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<tr>
<td>Non-OECD</td>
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<td>Total</td>
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<td>Global Supply</td>
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<td>Non-Opec</td>
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<td>Opec Other Liquids</td>
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<td>Opec Crude*</td>
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<td>Total</td>
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<td>Stock Changes</td>
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</tbody>
</table>

*Including Angola and Ecuador.

Alternative Price Outlooks

Long-Term Nominal Price Outlook

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

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.
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.
Thank You For Your Attention