




Outlook for Petroleum Prices, Ethanol Industry Expansion, Structure, and Infrastructure

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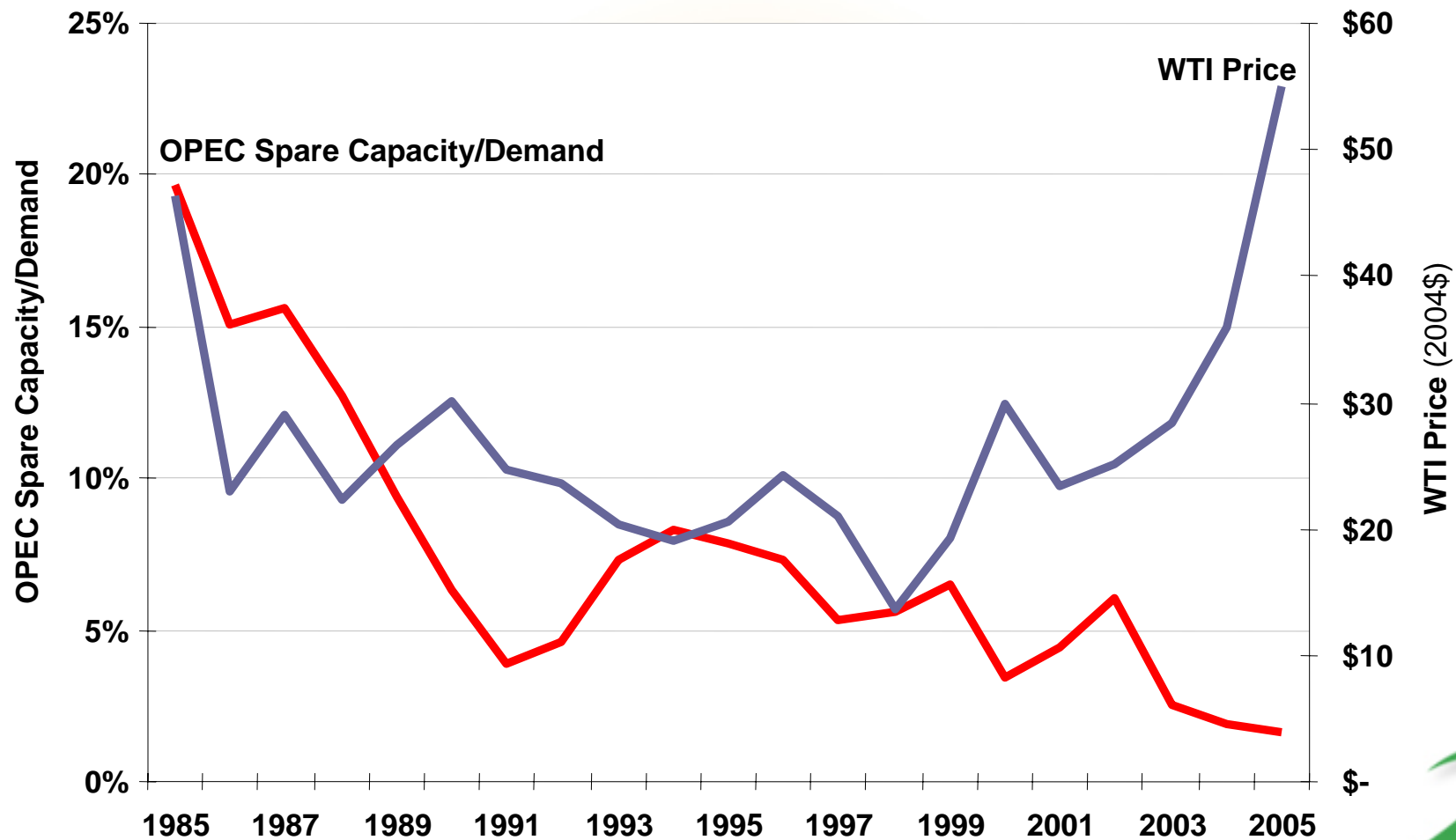




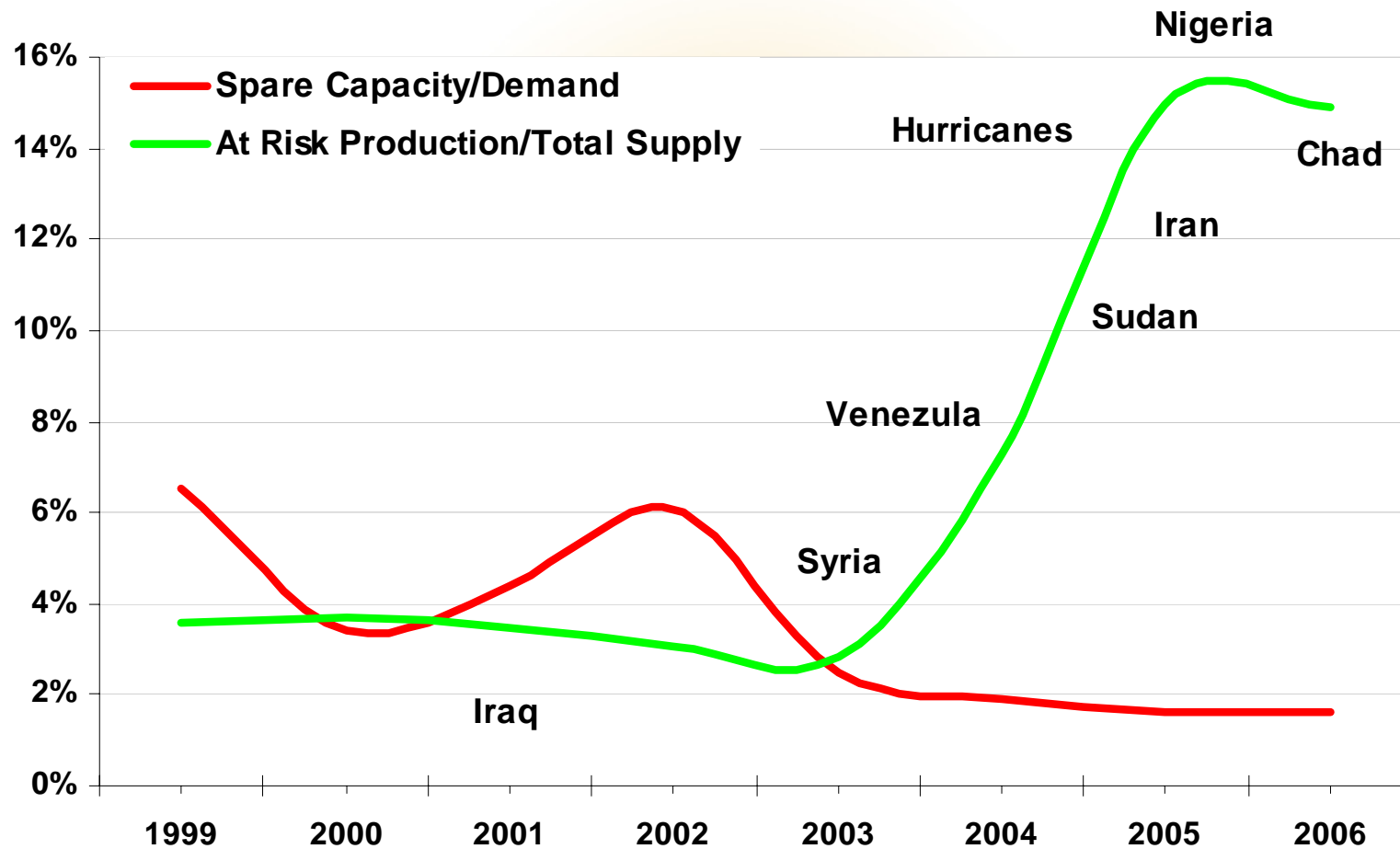
Global Insight (Lindemer) Observations

- Energy prices likely to trend higher than the 1990s with higher event driven volatility
 - Oil surplus production capacity has fallen to the lowest levels in decades and will not return to levels sufficient to cause oil prices to fall significantly.
 - Oil demand and production have not yet responded to higher prices
 - High energy prices have not yet slowed economic growth significantly. Higher prices may be tolerated by the global economy.
 - Evidence suggests non-OPEC oil production and North American natural gas production decline rates may be accelerating
 - Real and perceived risk to oil supplies has increased
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OPEC Spare Capacity and Price




Oil Price: *Real Tightness/ Real & Perceived Risk*






Why Oil Prices Will Stay High in the Near-Term ...

- Oil Prices will stay high in the near-term due to:
 - Robust energy demand growth
 - Relatively modest investment in exploration and drilling
 - High vulnerability to (and fears of) supply disruptions
 - No shortage of potential risks
 - Rebel activity in Nigeria,
 - Sabotage in Iraq and elsewhere
 - Nuclear standoff with Iran
 - Middle East Instability
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Future Oil and Energy Prices: The Resource Base is Not the Issue

- Conventional oil and gas reserves continue at stable levels for the last several years.
 - Biobased/unconventional resources are huge with costs largely below oil prices of the last six months.
 - Conventional oil supplies and reserves heavily concentrated in high risk countries.
 - Low spare capacity has focused the market's attention on real and perceived risk of oil exporters
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Ethanol Demand Drivers

- US has pursued “cheap energy policy”
 - 1980-early 2000s - Federal and state tax incentives and environmental regulations
 - After 2000 – petroleum market is driver
 - 2005 Energy Policy Act has limited impact
 - Renewable Fuels Standard (RFS)
 - MTBE bans
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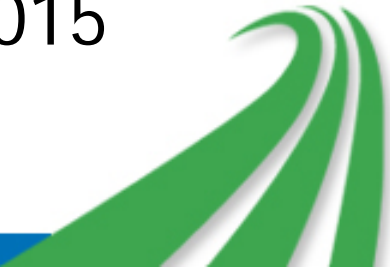


Link of Ethanol and Gasoline Markets

- Do ethanol prices follow corn prices?
 - Do ethanol prices follow gasoline and crude oil prices?
 - Omaha gasoline and ethanol market analysis
 - Ethanol price increases follow gasoline price increases by the same amount
 - Ethanol price decreases over-compensate for gasoline price decreases on downside
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Ethanol Industry Expansion and Projected Growth in Supply

- Ethanol market has quadrupled since 2000
 - Market continually adjusting to new plants
 - Structure is changing with expansion skewed toward larger plants
 - EPA's RFS for 7.5 billion gallons in 2012 should be reached in 2008
 - Supply in 10-12B gallon range by 2012
 - Biomass fuels commercialized, 2012/2015
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Implications for Corn and Gasoline Markets

- Corn-based Ethanol in 2005
 - Used 12% of 2005 corn crop
 - Over 1/3 of US gasoline blended with ethanol
 - Over $\frac{3}{4}$ of Iowa gasoline blended
 - If 12B gallons corn-based Ethanol in 2012
 - Could use 1/3 of corn crop
 - Could supply 7-8% gasoline fuels
 - Could supply all gasoline E-10 blended or
 - Could supply more E-85 and other blends
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Biofuels Infrastructure Issues

- How do we get biofuels to the coasts?
 - Infrastructure investments needed to distribute and move biobased products?
 - Pipelines, centralized loading terminals, dedicated trains, and feedstock transport
 - Integrated production, feedstock utilization/handling, and transportation systems
 - Economies in plant siting, production vs. handling costs, and feedstock costs?
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New Financial Economics and Structural Change

- Industry consolidation
 - Fragmented industry for local growth
 - Future industry for national biofuels market
 - Economies of scale in operation, finance, marketing, and distribution
 - Shift community focus and rents to outside ownership and national market
 - More stable biofuels prices and markets in more mature industry
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Wild Cards and Market Breakers or Makers

- Demand picture could change if:
 - crude oil and gasoline prices decline
 - clean air regulations eliminated
 - Supply picture could change if:
 - corn or natural gas prices increase
 - biofuels tax subsidies reduced
 - emission regulations relaxed
 - Brazilian import tariff eliminated
 - natural resource constraining
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Outlook for Ethanol Industry

- Optimistic outlook
 - Structural changes and industry “shake-outs” are to be expected
 - Biomass feedstocks will be an integral part of the industry in the 2010s and beyond as will other biobased products
 - The biofuels industry of today will mature into a “big business” but with many efficient local firms
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