

# **Refinery Valuation & Litigation Issues: Past, Present, and Future**

2010 Texas Oil & Gas Association  
Property Tax Representatives Annual  
Conference

Hyatt Regency – San Antonio, Texas  
February 24, 2010

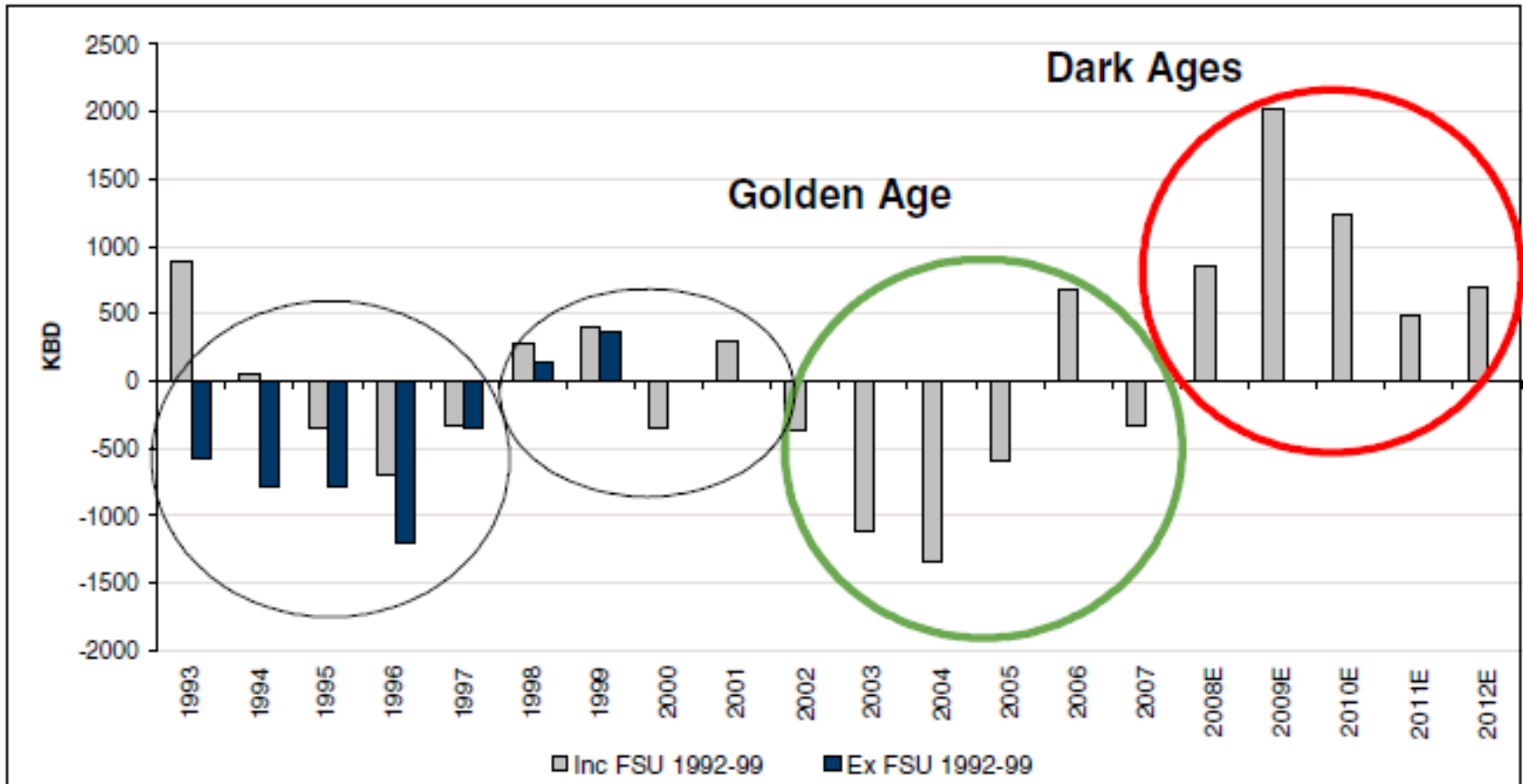
# Agenda

- **US Refining Industry Review**
- Sales Comparison Approach to Value
- Cost Approach to Value
- Income Approach to Value
- Future Issues for the US Refining Industry
- Case Strategies for Refinery Valuation Issues

# Dark Age of Refining

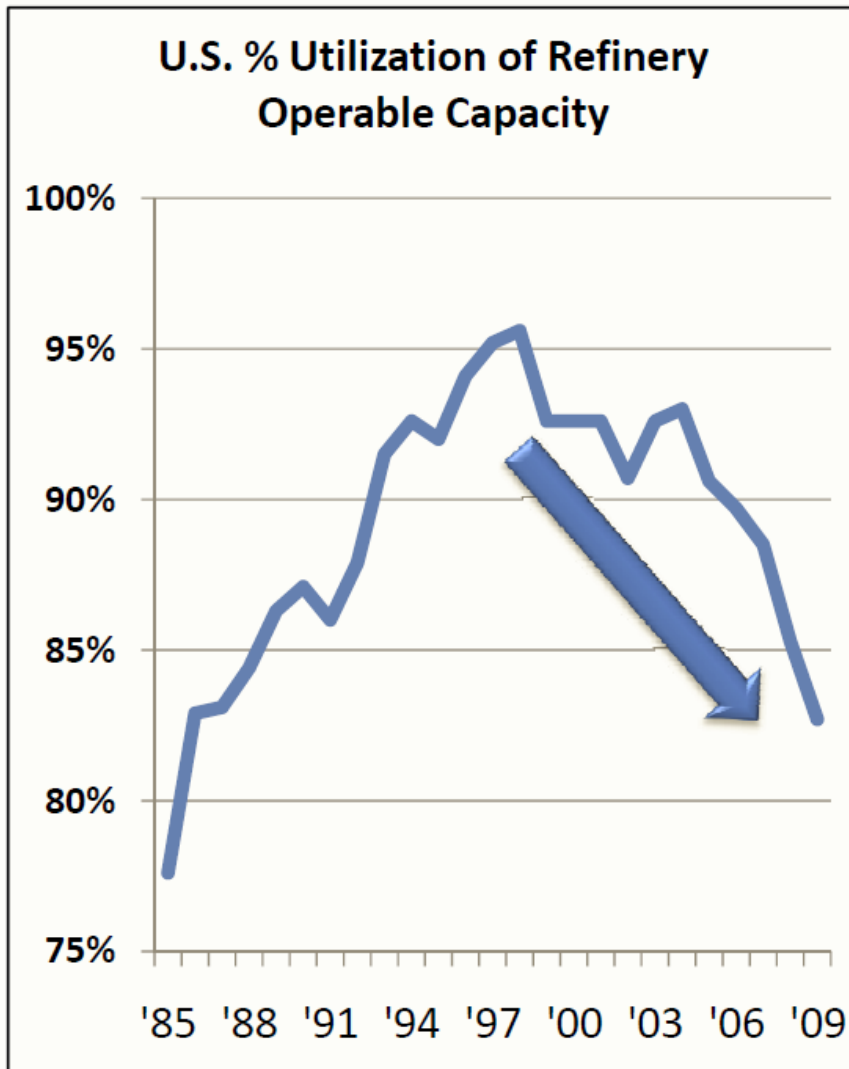
- Golden Age of Refining is behind us
- US gasoline demand down 3% from 2007
- US diesel demand down 14% from 2007
- Excess refining capacity in the US market
  - India's Reliance Petroleum 580,000-b/d refinery online
  - 1 to 2 million barrels of US refining capacity to close in the next several years
- US expansions and upgrades on hold or canceled
- Dividends and share buybacks suspended
- GHG emissions and impact of Cap & Trade

# Global Refining Supply Balance



Source: Credit Suisse estimates

# US Refinery Utilization



- 2000's Average Utilization – 90%
- 2009 Average Utilization – 83%
- 2010 YTD Utilization – 78%
- Long Term Utilization Forecast - 80%

# Shutdown Refining Capacity

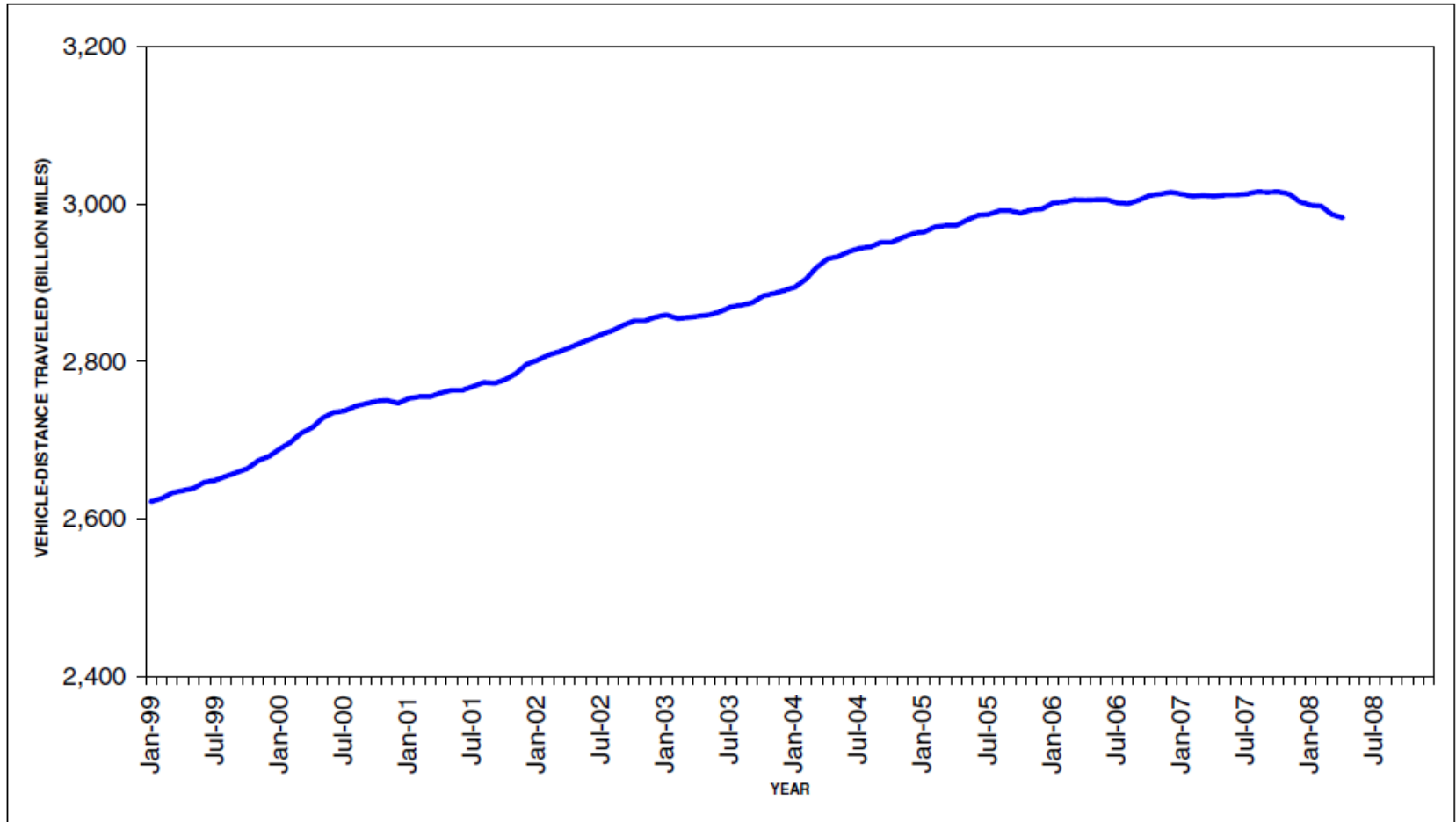
<b>Facility</b>	<b>Capacity (BPCD)</b>	<b>Year Announced</b>
<b>Valero Energy – Delaware City, DE</b>	190,000	2009
<b>Valero Energy –Aruba</b>	235,000	2009
<b>Shell Oil – Montreal, Canada</b>	130,000	2010
<b>Somerset Energy Refining – Somerset, KY</b>	5,500	2010
<b>Western Refining –Bloomfield, NM</b>	18,600	2009
<b>Sunoco – Westville, NJ</b>	150,000	2009

# Recent News

“I think you will see more closures, I think we’ll even see some majors... There are not a lot of buyers out there.”

- Bruce Smith, CEO, Tesoro Corporation – Credit Suisse Energy Conference, February 3, 2010

# Total Miles Driven in US



Source: US Department of Transportation



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# Sales Comparison Approach

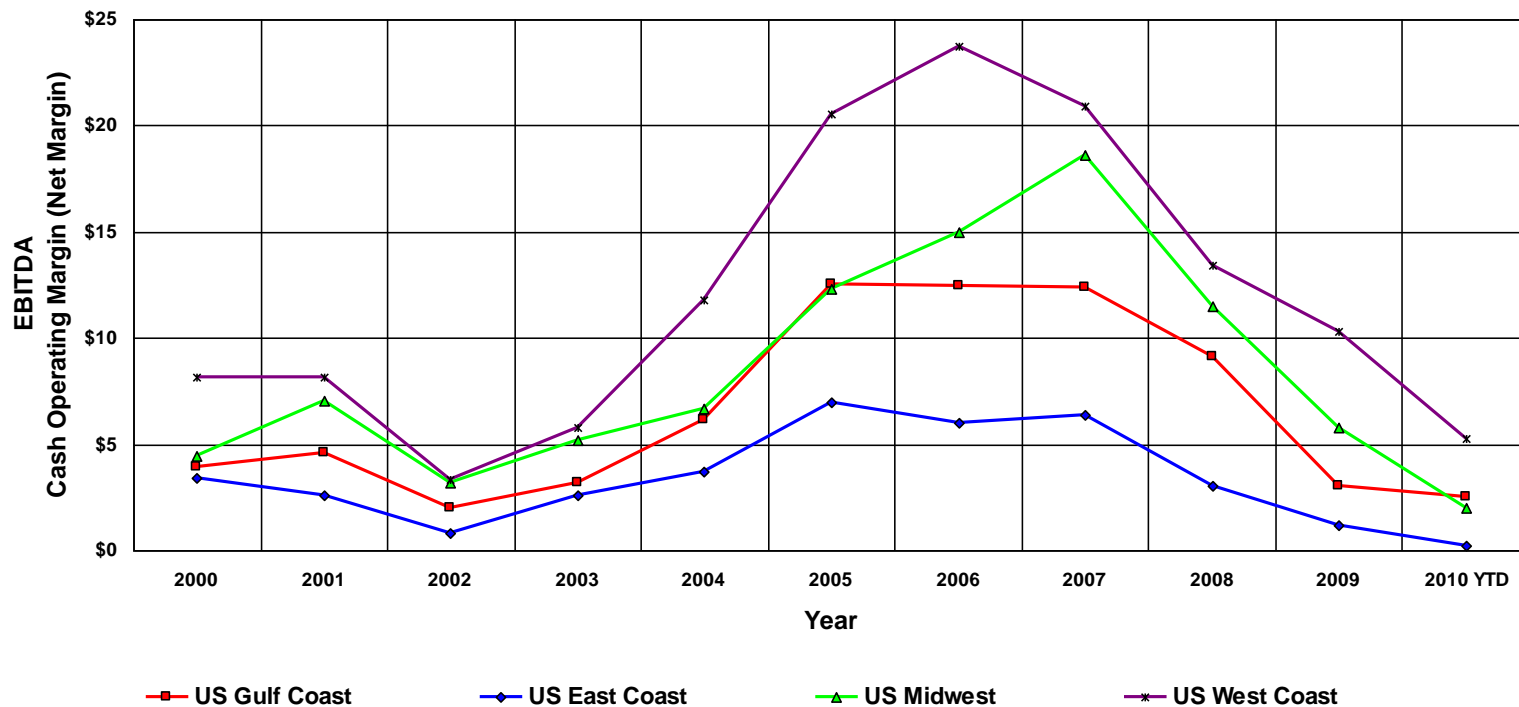
- Purpose is to examine sales of similar properties to determine the value of the subject
- Advantages of the Sales Comparison Approach
  - Reflects actual transactions by buyers and sellers
  - Measures the loss in value from all forms of depreciation
  - Develop sales trends
- Disadvantages of the Sales Comparison Approach
  - Sales price includes tangible and intangible assets
  - Requires effort to obtain data on the transaction

# Sales Comparison Approach

- Factors that influence market value of tangible assets:
  - Location
  - Profitability
  - Age of Facility
  - Impact of Recent Construction
  - Environmental Climate
  - Other Assets

# US Refining Margins

## **Muse, Stancil & Co. Refining Margins** **Oil & Gas Journal**



# Sales Comparison Approach

- 2006-2007 certain refinery transactions approached replacement cost
- Refinery Sales prices tend to track margins
- 2006-2007 transactions reflected *going concern premium* to enter the marketplace
- With the ongoing impairment of refinery assets this intangible premium was substantiated

# Sales Comparison Approach

“If you sell refining assets now, you’re going to get scrap value”

- Fadel Gheit, Energy Analyst, Oppenheimer & Company –  
Houston Chronicle, October 16, 2009

# Holly Corporation Tulsa Refinery Transactions

- Holly acquired from Sunoco in 2009
  - 85,000 barrel per day refinery
  - Purchase price for the business - \$65 million
- Holly acquired from Sinclair in 2009
  - 75,000 barrel per day refinery
  - Purchase price for the business - \$128.5 million
- Holly will integrate the two Tulsa facilities to form one 125,000 barrel per day refinery with a complexity of 14
- Minimal Capex to meet ongoing environmental requirements for ULSD

# Bakersfield Refinery Transaction

- Alon is the Stalking Horse bidder for the Flying J Bakersfield Refinery
  - 66,000 barrel per day refinery; EDC 686,400
  - Proposed purchase price for the business - \$40 million
  - 2005 Flying J purchased from Shell for \$130 million
- Refinery meets CARB diesel and gasoline standards
- Alon plans to integrate the Bakersfield refinery with its Paramount Refinery in the Los Angeles area



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# Cost Approach

- The Cost Approach is based on the principle of substitution: A prudent buyer will not pay more for an asset than the cost of acquiring a substitute property of equivalent utility
- Advantages of the Cost Approach
  - Starting Point to Identifying the Subject Property
  - Relates Value to Cost
  - Identifies and Quantifies all forms of Depreciation & Obsolescence
- Disadvantages of the Cost Approach
  - Difficult to Qualify and Quantify all Forms of Depreciation & Obsolescence
  - Time Consuming & Costly

# Cost Approach

- Replacement Cost New
- Less Physical Depreciation
- Less Economic Obsolescence
  - Refining Industry Issues & Economics
  - Health, Safety & Environmental Requirements
- Less Functional Operating Obsolescence
  - Excess Operating Costs
  - Obsolete Technology
- Equals Cost Indicator of Value

# RCN Cost Escalation Factors

	<b>2009 Actual</b>	<b>2010 <i>Estimated</i></b>
<b>Capitol Appraisal Group</b>	1.102	0.939
<b>Hugh L. Landrum &amp; Associates</b>	1.074	0.967
<b>Pritchard &amp; Abbott, Inc.</b>	1.095	1.019

# Economic Obsolescence

- Loss in value caused by influences external to the subject property itself
- May exist in any industry or property where the following attributes are found:
  - Reduced demand for products
  - Overcapacity in the industry
  - Increasing cost of raw materials and expenses, while the selling price of the product remains fixed or increases at a much lower rate
  - Health, Safety & Environmental considerations that require capital expenditures to be made with no return investment

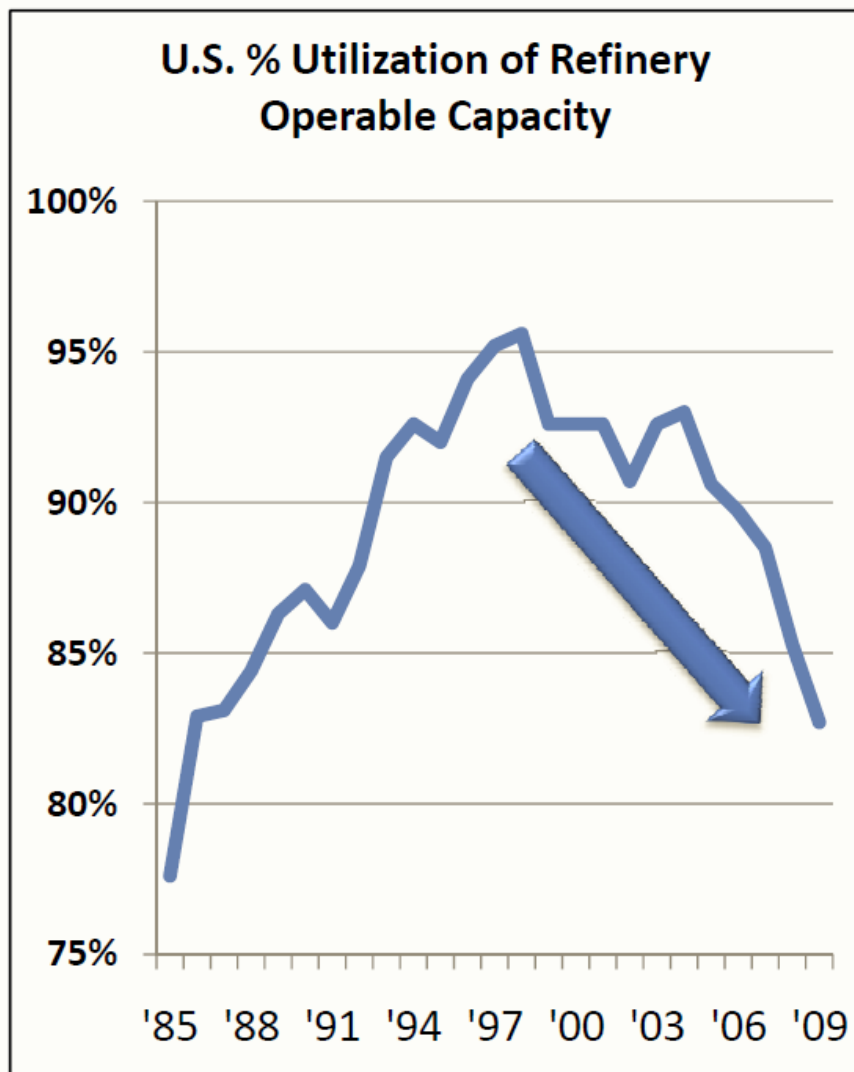
# Economic Obsolescence

- Quantified by:
  - Return on Capital Analysis
  - Utilization Analysis
  - Stock Price Analysis

# Return on Capital Analysis

- Reviewed 8 publically traded refining companies (Value Line)
- 2009 Return on capital was 5%
- 2004-2007 Benchmark Return on Capital – 19%
- 2009 Economic Obsolescence quantified at 74% of RCNLD
- 2008-2009 average Economic Obsolescence quantified at 50% of RCNLD

# Utilization Analysis



- 2000's Average Utilization – 90%
- 2009 Average Utilization – 83%
- 2010 YTD Utilization – 78%
- Long Term Utilization Forecast - 80%
- Inutility – Scale Factor



# Stock Price

- Reviewed the business value of 8 publically traded refining companies (Value Line & Barclays)
- 2007 Cycle Peak Implied Value of 80% RCN
- Current Implied Value of 30% RCN
- 2009 Economic Obsolescence quantified at 50% of RCNLD

# HS&E Requirements

- Site Security
- API 753 Building & Structure Standards
- Revised 8-hour Ozone Standards – 0.075 ppm
  - Cost to Industry - \$8.5 billion
  - Non-attainment areas must comply beginning in 2014
- MSAT II Benzene Reduction
  - Compliance by 2011
  - Cost to meet standard - \$1.1 billion
- GHG Emission and Cap & Trade Standards

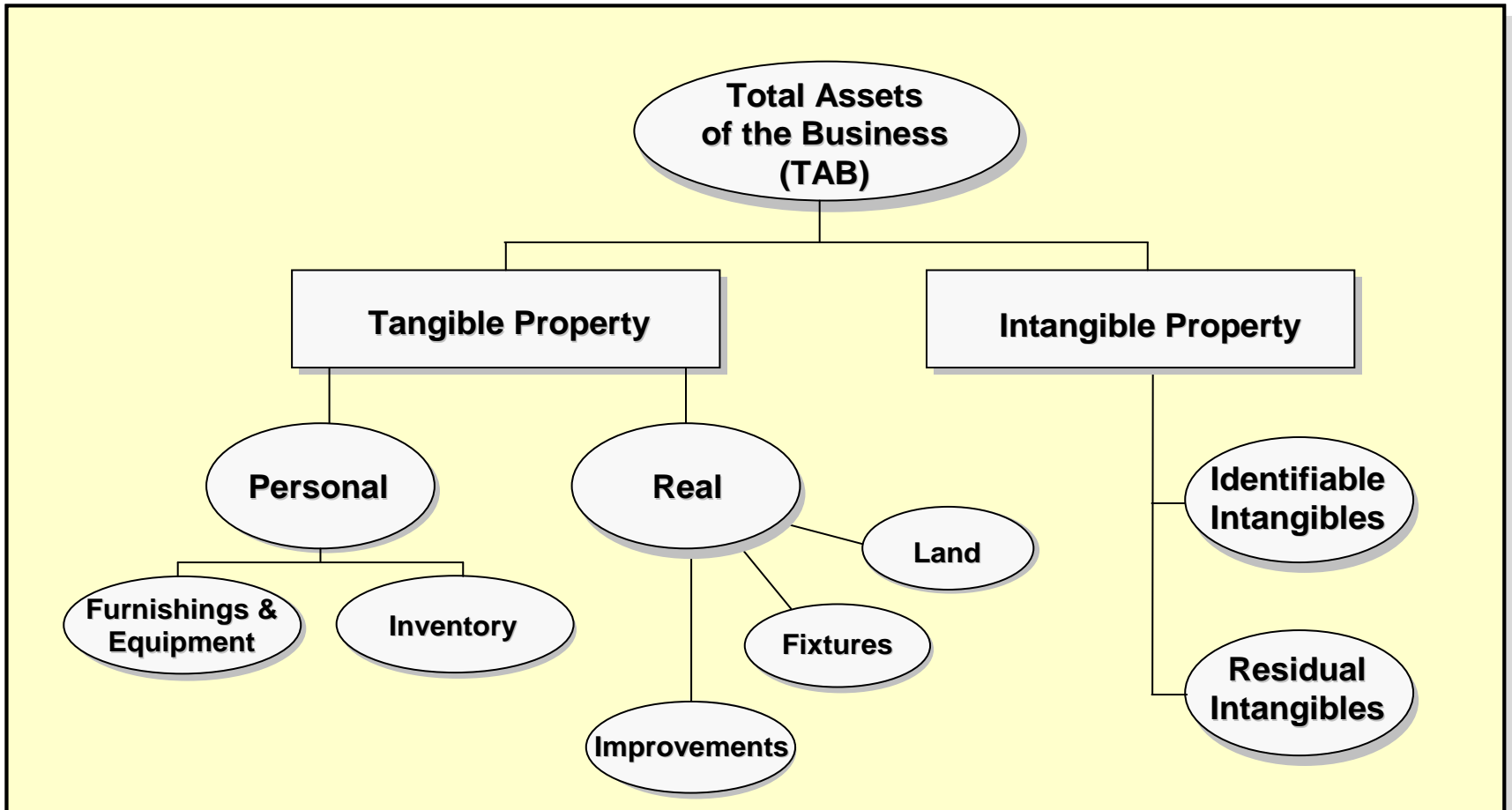
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# Income Approach

- The Income Approach is based on the principle of anticipation: Investment decisions are based on the expected future benefits to be earned by the investment
- Advantages of the Income Approach
  - Method used by buyers and sellers in the marketplace
- Disadvantages of the Income Approach
  - Reliability of forecasted revenues, raw materials, operating expenses and capital requirements
  - Difficult to Qualify and Quantify all Intangible Assets

# Business Enterprise Value Segregation of Intangibles

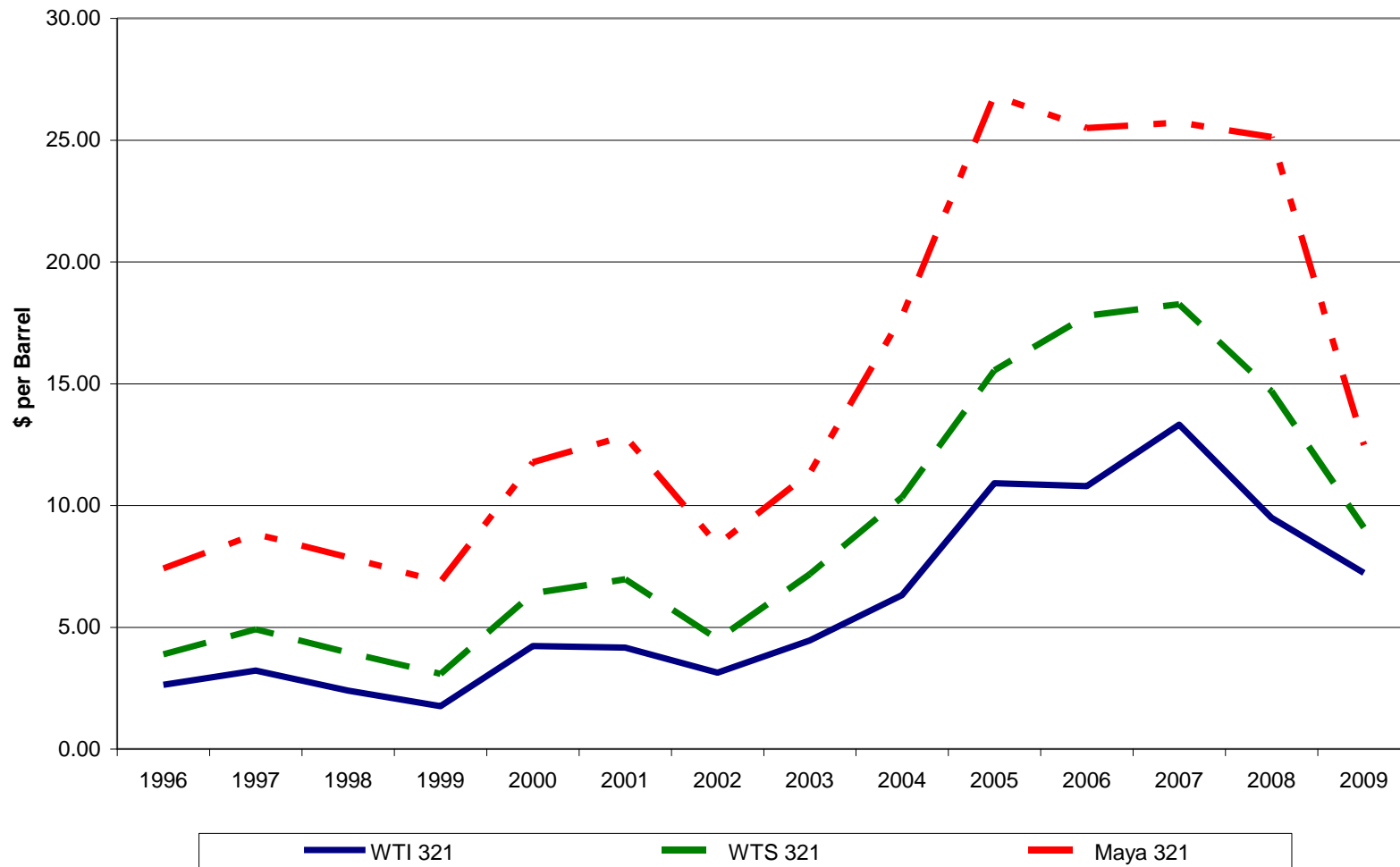


# Income Approach

- Project Revenues & Expenses
- Forecast Future Capital Expenditures
- Develop the Discount Rate
- Calculate Present Value of the Cash Flows
- Equals Business Enterprise Value
- Less Working Capital
- Less Intangible Assets
- Income Approach Indicator for the Tangible Assets

# US Refining Crack Spreads

**USGC 3:2:1 Crack Spreads for Sweet, Sour & Heavy Crudes  
(WTI, WTS, Maya), USGC Unleaded Regular Gasoline, & USGC No. 2 Fuel Oil (Source: Platts)**



# WTI Crude Oil Forecast

	<b>2010 (per bbl)</b>	<b>2011 (per bbl)</b>
<b>DOE/EIA 2010 Short-Term Energy Outlook</b>	\$79.78	\$83.50
<b>Deutsche Bank</b>	\$65.00	\$80.00



# Segregation of Intangibles

- Assembled and Trained Workforce
- Engineering Drawings
- Operating and Procedure Manuals
- Licenses
- Permits
- Goodwill / Going Concern

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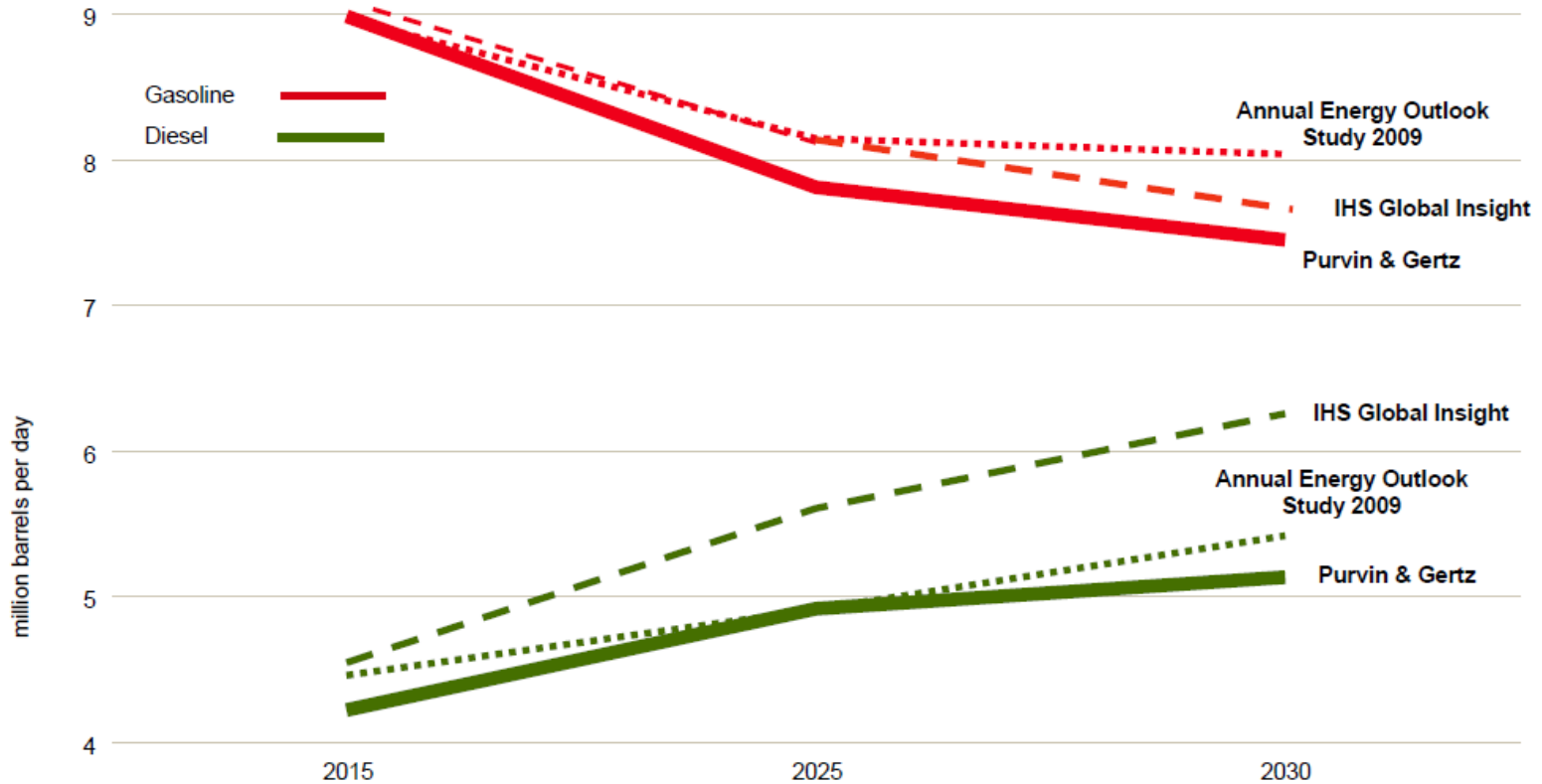
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# Future Issues

- Recovery of the US & World economies
- Biofuels supply & demand
  - Ethanol usage to increase to 36 billion gallons in 2022
- Auto fuel-efficiency standards
  - By 2016 increase fleet average to 35 mpg
- Long term outlook for refined products
- GHG Emissions & Climate Change legislation

# Long Term Outlook

## Gasoline and Diesel Demand Projections



Source: Annual Energy Outlook, 2009 Energy Information Administration

# Climate Change

- **December 8, 2009 EPA declared emissions of greenhouses gases, including carbon dioxide, to be a danger to human health**
- **US Congress not likely to pass Cap & Trade law**
- **EPA might take the lead under CAA**
- **Wood Mackenzie US Refiners Study**
  - Increase US Refiners cost by \$100 billion per year
  - Equivalent to \$20 per barrel of crude oil
  - Exporters would improve competitive position
- **State of Texas filed a Petition for Reconsideration with the EPA**

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# Refinery Valuation Issues

- **Appraisal Districts**
  - Temporary situation
    - View is the economy is getting better
  - Mass appraisal methods may limit quantification of all forms of obsolescence
  - Dependence on previous data from the 2007 peak
  - Removal of excess capacity reduces economic obsolescence for the industry

# Refinery Valuation Issues

- **Taxpayer**
  - Sales Comparison Approach
    - Purchase Price Allocations
    - Research of Transactions
  - Cost Approach
    - Quantification of Economic Obsolescence
    - Mandated or No-return investments
  - Income Approach
    - Cash Flow Forecast
    - Segregation of Intangibles



# Tangible Property vs. Refinery Business

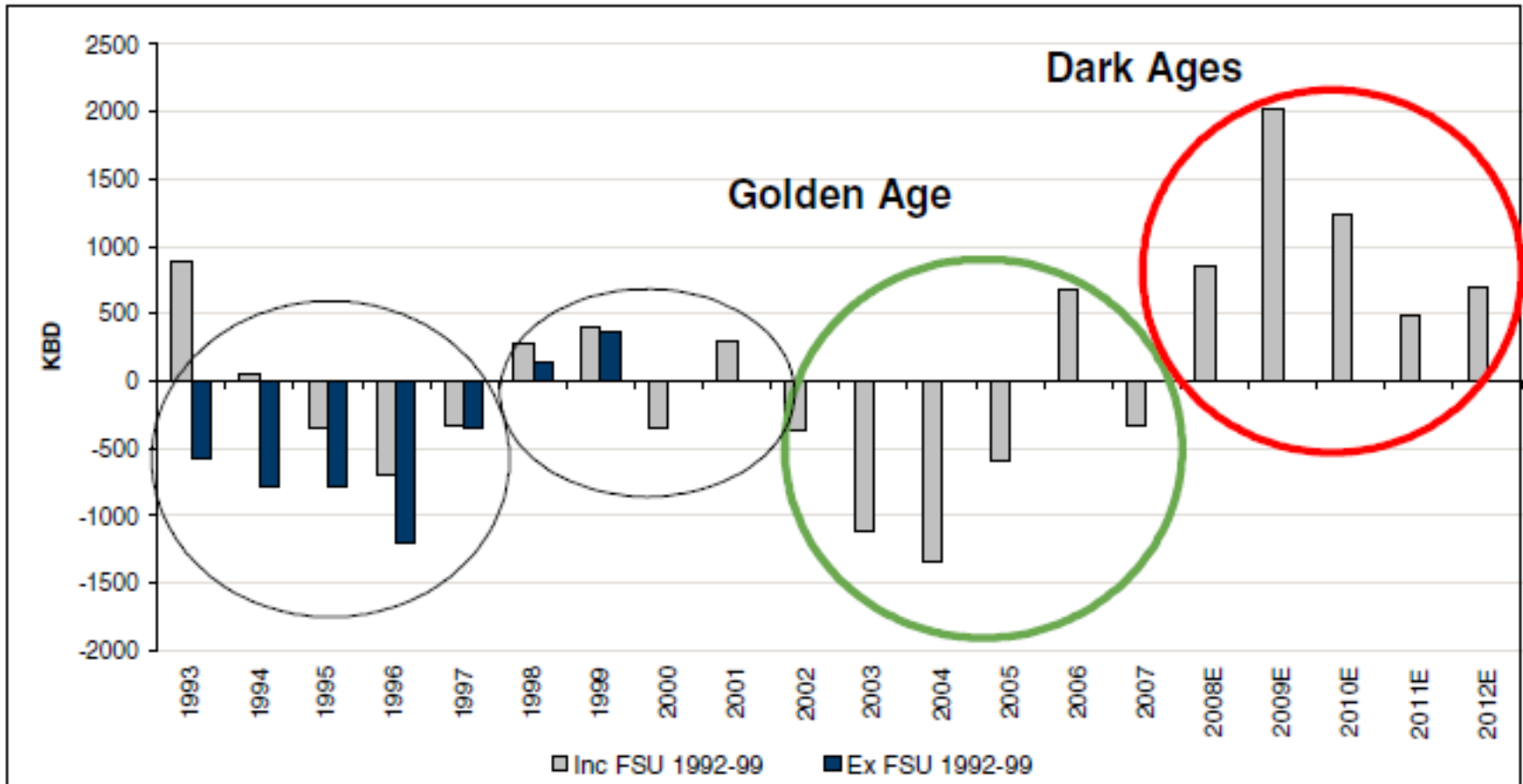
- Refinery A

- 70,000 bbl Capacity
- Cracking Refinery
- 90% WTS
- 9.0 Complexity
- Built in 1970
  
- No Licenses or Permits
- No Procedure Manuals
- No Engineering Drawings
- No Assembled or Trained Workforce
- No Crude Supply Agreements
- No Vendor Agreements
- No Customer Agreements
- No Goodwill or Structured Going Concern

- Refinery B

- 70,000 bbl Capacity
- Cracking Refinery
- 90% WTS
- 9.0 Complexity
- Built in 1970
  
- Licenses/Permits in Place
- Operating and Procedure Manuals Developed and Organized
- Engineering Drawings Developed, Revised, and Up to Date
- Assembled and Trained Workforce of Engineers and Skilled Employees
- Crude Supply Relationships/ Agreements in Place
- Vendor Relationships/ Agreements in Place
- Customer/Product Relationships and Agreements in Place
- Management and Structure of Going Concern

# Global Refining Supply Balance



Source: Credit Suisse estimates

**Thank You**