PRICE, DEMAND AND MARKET STRUCTURE FOR THE OIL INDUSTRY: Distillates in the driver’s seat or Gasoline resurgence?

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FUNDAMENTALS REGARDING OIL MARKET STRUCTURE

OPEC’s oil price mismanagements

Weak Economic Growth

Crude Oil Spare Capacity in High Levels

Geopolitical Factors

Energetic Efficiency & Biofuel Markets

Dollar x Euro

Interest Rates

Aggregate Demand Reduction

Low Oil Prices

Financial Speculation feedbacks the process

Brings Volatility to the Process, Amplifying Tendencies

New Refining Units
The data above indicates poor correlation and no causality between these variables.

Sources: CFTC and NYMEX

This chart is based on weekly data.
CRUDE OIL WAS USED AS A HEDGE AGAINST INFLATION, AND NOW?

From August 2007 to July 2008, Brent prices and Brent US$/bbl minus Brent Eur/bbl spread have caused* the dollar/euro rate and a good correlation between these variables is noticed from August 2007 to November 2008.

Among securities, the common stock of natural resource companies (such as gold, timber, and oil) is often considered an inflation hedge because the value of the companies' assets should rise during a period of inflation.

Source: Bloomberg and Platts

* Granger’s causality tests were performed between these variables during this period
RESERVE/PRODUCTION RATIO EVOLUTION

Source: BP Statistics 2008
WORLD: OIL PRODUCTION EVOLUTION

Source: BP Statistics 2008
WORLD: OIL CONSUMPTION EVOLUTION

Source: BP Statistics 2008

Total North America
Total Europe & Eurasia
Total Middle East
Total Africa
Total S. & Cent. America
Total Asia Pacific
Source: IEA and Platts
CONTRIBUTIONS TO OIL AND LIQUIDS DEMAND AND SUPPLY GROWTH

Oil and Liquids Demand

Thousand bpd

Oil and Liquids Supply

Thousand bpd

Source: IEA
OIL AND LIQUIDS SUPPLY CHANGE

Average 2003 - 2008

Year 2007

Year 2008

Source: IEA
OIL AND LIQUIDS DEMAND CHANGE

2007

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2008

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Source: IEA
IEA forecast revisions for 2008 Oil and Liquids Demand Growth

Sources: IEA Oil Market Report
WORLD: REGIONAL CONSUMPTION - BY PRODUCT GROUP

Source: BP Statistics 2008
WORLD FINAL ENERGY CONSUMPTION BY SECTOR

**Total Consumption (%)**

- **1980**
  - Industry: 35%
  - Residential, Services, and Agriculture: 40%
  - Transport: 25%

- **2007**
  - Industry: 30%
  - Residential, Services, and Agriculture: 40%
  - Transport: 30%

**Oil Consumption (%)**

- **1980**
  - Industry: 22%
  - Residential, Services, and Agriculture: 40%
  - Transport: 56%

- **2007**
  - Industry: 11%
  - Residential, Services, and Agriculture: 40%
  - Transport: 73%

Source: IEA
Regional Demand - Light and Middle Distillates

Source: BP Statistics 2008
LIGHT DISTILLATES CONSUMPTION, 2000-2007

Million bpd

North America
US
Europe
FSU
Middle East
Africa
Asia Pacific
China
Japan

CAGR
1.3%
1.1%
-2.5%
3.9%
5.4%
2.4%
3.5%
7.1%
0.4%

Source: BP Statistics 2008
CrackSpread Gasoline = Unleaded USG – WTI

Source: IEA and Platts
MIDDLE DISTILLATES CONSUMPTION, 2000-2007

CAGR

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Source: BP Statistics 2008
U.S., EUROPE, JAPAN DIESEL STOCKS AND CRACKSPREAD DIESEL USG MINUS WTI

Crackspread Diesel = N2 Diesel USG - WTI

Source: IEA and Platts
Diesel Prices

No.2 USG Waterborne Platts Mid
Gasoil 0.2%S NWE FOB Barges Platts Mid
Gasoil 0.5%S Singapore Platts Mid

(US$/BBL)
Gasoline - Diesel Spreads

(US$/BBL)

January 2000 to January 2009

USG, NWE, Sing

Hurricane Gustav
Source: EIA/DOE

(% of Total New Light-Duty Vehicle Sales)

Western Europe

United States

Source: EIA.
While in Europe, diesel penetration has increased significantly over the years. The graph below illustrates the trends in the composition of new cars registered in the EU15 from 1995 to 2007.

Trends in composition of new cars registered in the EU15

Source:
Average Retail Prices for Premium Gasoline and Diesel Fuel in Western Europe and the US, 1999-2007

Source: EIA.

(Nominal U.S. Dollars per Gallon)

(% of Total New Light-Duty Vehicle Sales)

Source: EIA.
US Gasoline Demand – Downturn in 2008

Source: EIA DOE
Vehicle-Distance Traveled - Americans are driving less…

Source: US Federal Highway Administration
US vehicle sales have been trending downward…

Light trucks--trucks up to 14,000 pounds gross vehicle weight, including minivans and sport utility vehicles

Source: US Department of Commerce
Fuel Economy in US

*Light-duty trucks = sport utility vehicles or SUVs, vans, and pickup trucks with less than 8500 pounds gross vehicle weight ratings.

Source: EPA
Fuel Economy by Country/Region


US: ETHANOL SUPPLY AND MANDATE

- Mandate ethanol
- Mandate cellulosic
- Mandate biodiesel
- Mandate Other Advanced
- Total Supply

Source: EIA
Total Aircraft deliveries from Airbus – 1992-2008

Source: Airbus (1992-2008 Results).
SPREADS LIGHT – HEAVY: THE COMPLEX REFINER ADVANTAGE

Spread Crude Oil Light-Heavy = WTI – Maya

Spread Oil Products Light-Heavy = (Unleaded USG + N2 Diesel USG)/2 – Fuel Oil 3% USG

Sources: Platts
GROSS REFINING MARGINS AT US GULF COAST

Gross Refining Margins = Products prices minus crude oil
Margin WTI Cracking = USGC Margin of using WTI with cracking yields
Margin Maya Coking = USGC Margin of using Maya with coking yields

Sources: Platts
GLOBAL MARGINAL REFINER 2002-2003

Average crude oil quality: 32 api, 1,2 S%, 0,9 TAN

Sources: OGJ, PIRA & Crude Oil Handbook 2002
GLOBAL MARGINAL REFINER 2005-2006

Average crude oil quality: 32 api, 1.2 S%, 0.9 TAN

Sources: OGJ, PIRA & Crude Oil Handbook 2004, 2006
GLOBAL MARGINAL REFINER 2007-2008

Average crude oil quality: 32 api, 1,2 S%, 0,9 TAN

Global demand for middle distillates has been growing faster than for gasoline over the last decade and is expected to continue to do so.

This has gradually been reflected in the price differential between diesel and gasoline. Two factors have exacerbated this trend: tightening sulfur specifications for diesel and growing ethanol and NGL supplies which weigh on gasoline/naphtha prices.

Developing countries have been a large source of incremental diesel demand over the past four years.

Refiners have been maximizing their diesel yields to take advantage of superior margins for the product. European refiners have less potential to increase distillate yields further as most of the measures have already been taken, while US refiners have more potential as they have long been focused on gasoline production.

Middle distillate margins are expected to weaken in 2009 from the record levels reached in 2007 and 2008, however they are not expected to collapse completely.

Demand growth in 2009 is likely to be much weaker than in the recent past. The sharp contraction in the OCDE economies has resulted in a reduction of trade and freight movements. Thus, demand for diesel for trucking firms, railroads and agricultural sector is also down.

Many of the large refining projects scheduled to come online over the next two years are configured to produce a large yield of middle distillates and thus there will be also pressure from the supply side.

As refiners periodically need to rebalance the gasoline market and draw down inventories, many refineries may be forced to cut runs.

Another argument for continued relatively tight middle distillate markets is that incremental world liquids production will be biased toward lighter liquids such as condensates and natural gas liquids (NGLs). When refined into products, these NGLs yield mostly naphtha and gasoline—boiling range material, and relatively little middle distillates.
Crude Oil’s rally in 2007-2008 was caused by fundamentals, but amplified by financial flows. Will they also amplify a plunge in prices?

Strong Economic Growth from Non-OCDE countries;

A better classification for Non-commercial players is absolutely needed;

Loose monetary policy has played a role in shaping the Oil Market;

Upstream: tight now and tighter in the future;

Distillates in the Driver's Seat;

Refiners need to look for a stable and secure oil supply sources;

Complex and integrated refiner: good environment.
LATIN AMERICA: OIL PRODUCTION EVOLUTION

Source: BP Statistics 2008
LATIN AMERICA: REGIONAL CONSUMPTION - BY PRODUCT GROUP

Source: BP Statistics 2008
Sources: DOE (dez/08) and Brazil's National Petroleum Agency (ANP) (jan/09).
BRAZIL: UNIT SALES OF VEHICLES – BY FUEL

Source: ANFAVEA
BRAZIL: SUPPLY AND DEMAND BALANCES

GASOLINE
Thousand bpd

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DIESEL

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FUEL OIL

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Sources: Brazil’s National Petroleum Agency (ANP)
BRAZIL: ETHANOL EXPORTS

Source: ANP
BRAZILIAN FAST GROWING DOMESTIC DEMAND...

(Thousand bpd)

2007  2008E  2013E  2020E

Others  182  202  274  400
FO      119  107  112  150
Diesel  738  783  901  1224
QAV     84  89  118  179
Naphta  250  218  255  246
Gasoline 326  332  367  419
LPG     208  214  230  257

3.3% p.a.
3.0% p.a.
Tighter specifications for Diesel and Jet Fuel;

Better perspectives for Ethanol market than Biodiesel;

Bunker fuel market is going to marine gasoil path;

Lack new HCCs due to credit crunch;

Excellent perspectives for distillates in emerging economies considering a recovery of the global economy;

Gasoil demand is less elastic than gasoline. Few substitutes for diesel in relation to gasoline. These two factors provide a more resilient demand for the diesel slate.