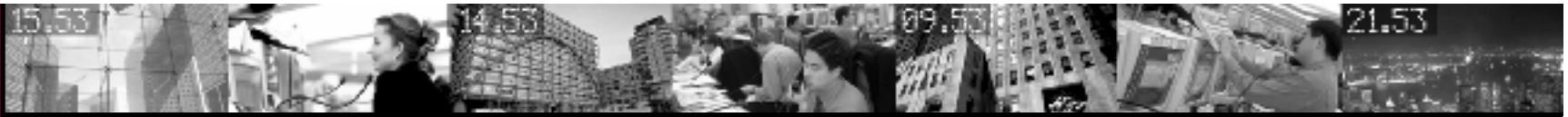


Mitigating risks in Energy : A banker's view.

Energy Charter- AIE – October 26th 2005
Patrick MOLE, MD, Head of EMEA oil&gas sector

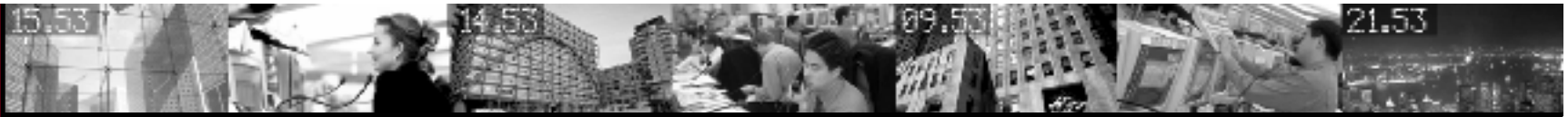


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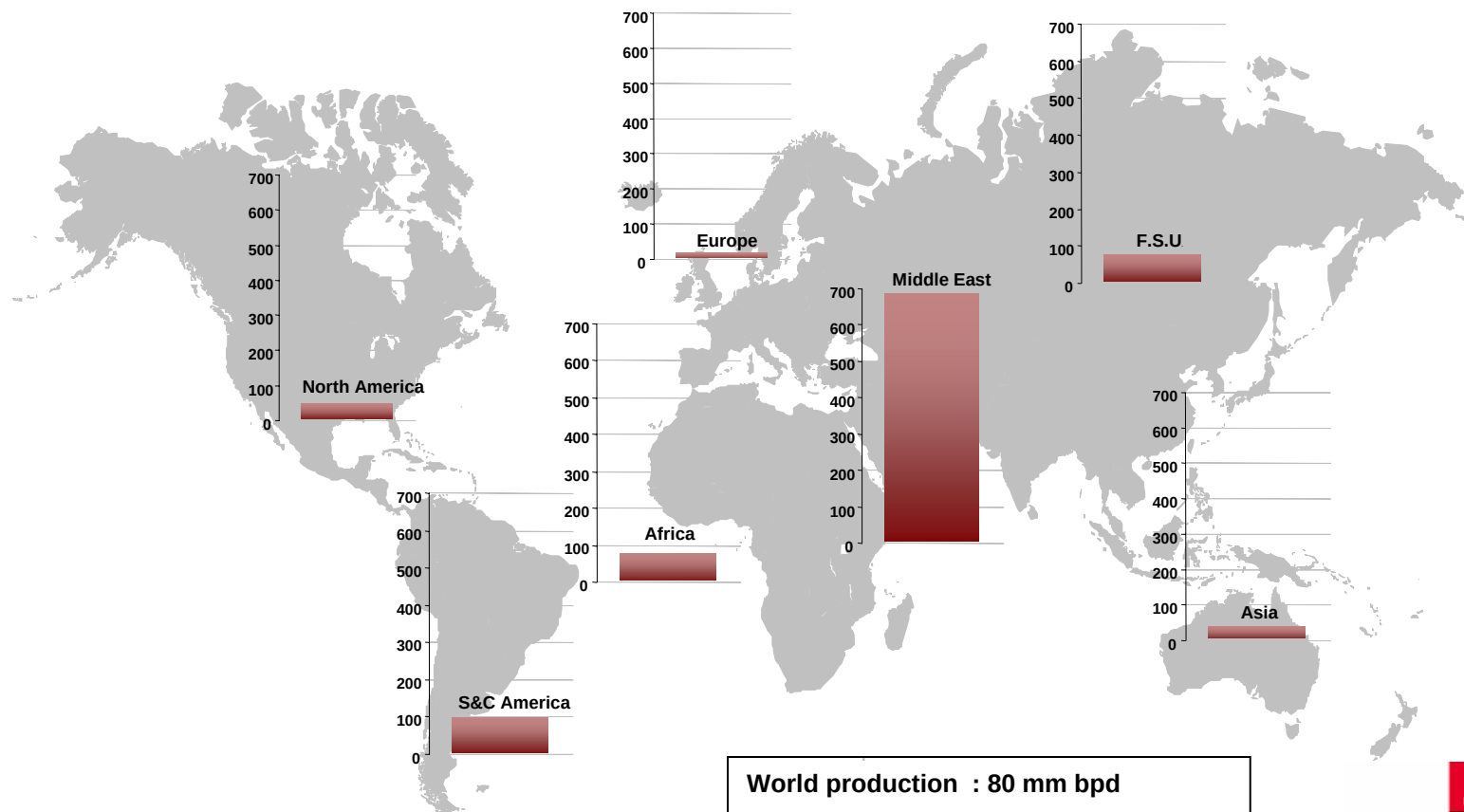
Major features of the oil and gas sector :

- Hydrocarbons will increase their share in world primary energy demand **up to 65% in 2030** (from 61% currently) (*Source EIA*)
- Alltogether, **the Sector represents nearly 20% of World economy** and the corporates market cap stands to about 15% of major index
- For the period 2002- 2030, **Industry capex are estimated at 211 bn USD per year**, of which 67% for E&P (*source : EIA*).
- **Several industry segments** : Exploration and production, Transportation, Refining, Marketing, Distribution, Oil service companies, Petrochemical
- **Volatility** is the name of the game
- **Marketing** the production is not really an issue



Energy Charter Secretariat

65% of world oil proven reserves are located in the Middle East.



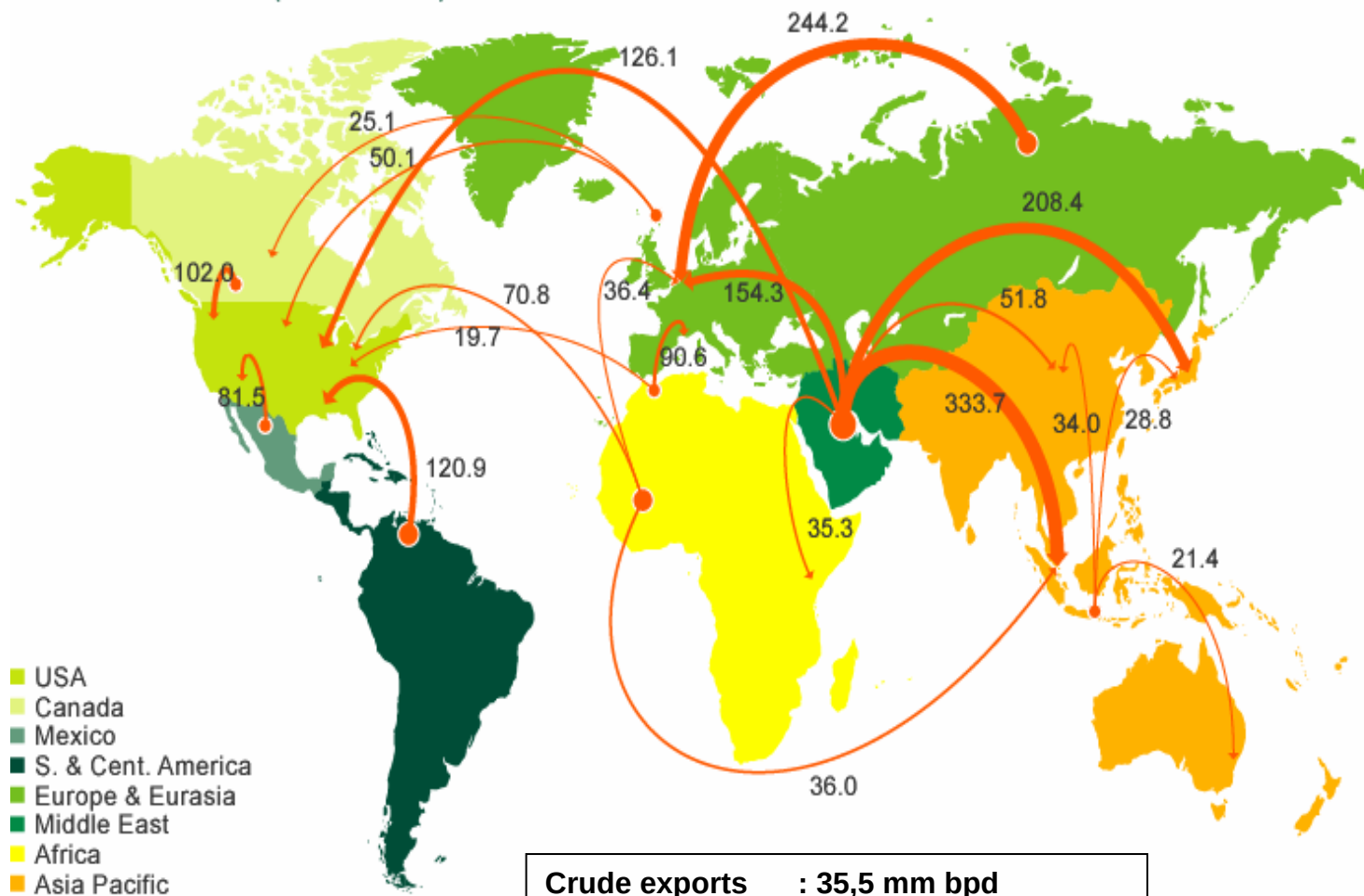
World production : 80 mm bpd
World reserves : 1147 bn b.
R/P : 41 years

Source: BP 2004 Statistical Review of World Energy



This is a global industry !

Trade flows worldwide (million tonnes)



Crude exports : 35,5 mm bpd

Products exports : 10,2 mm bpd

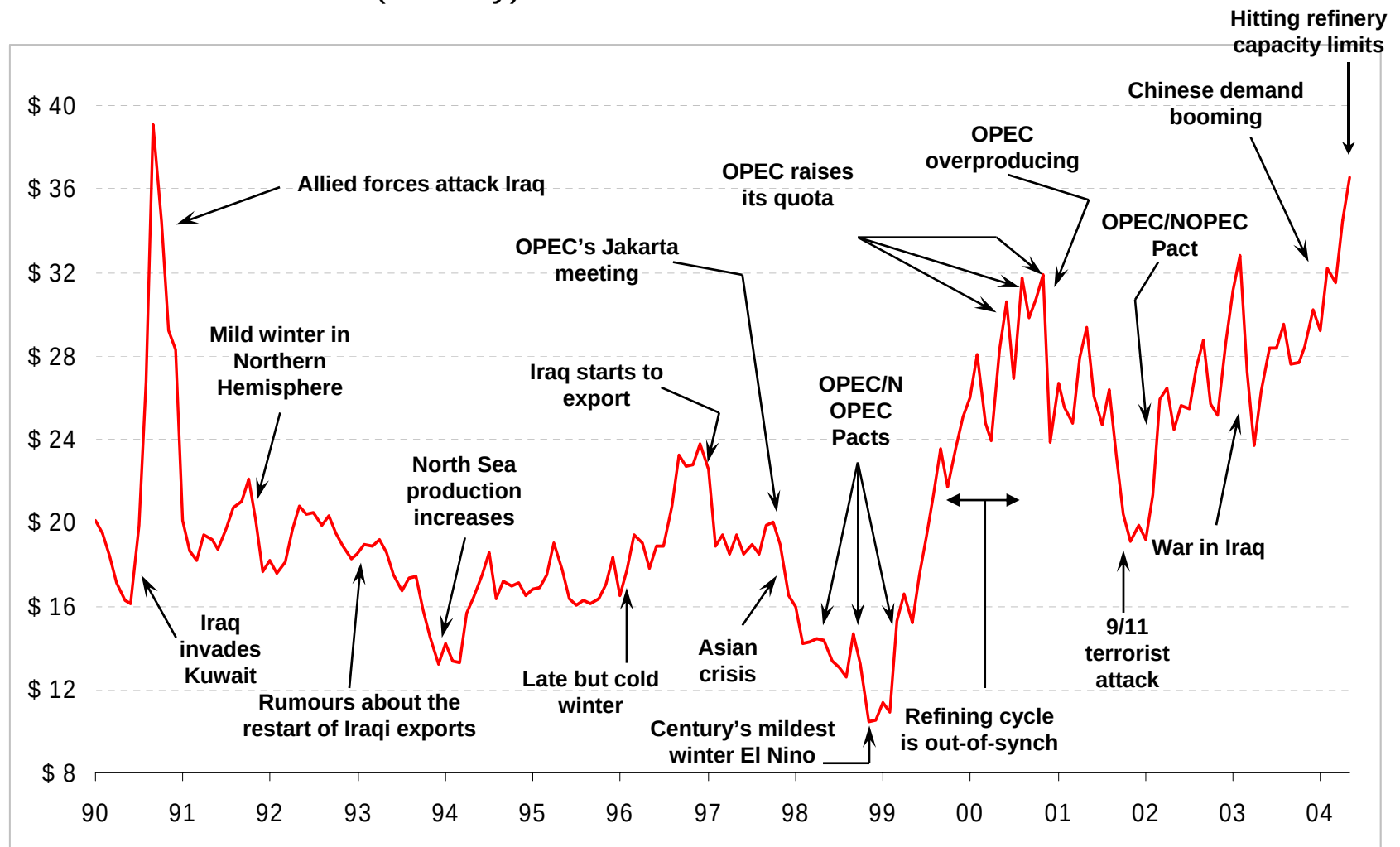


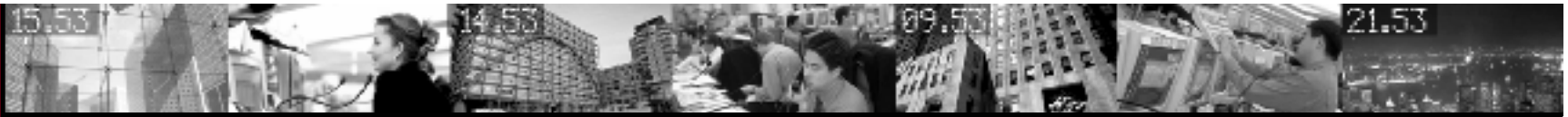
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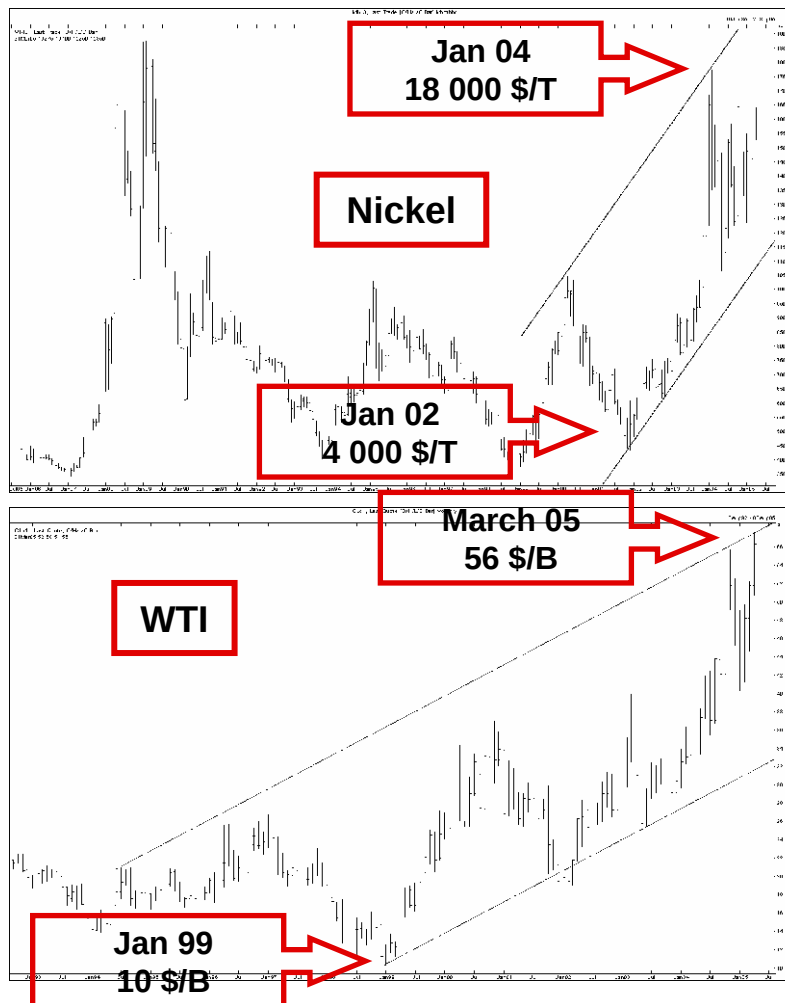
Indeed, a volatile environment

Brent IPE - 90-04 (monthly)





Compared volatilities.



■ Volatility :

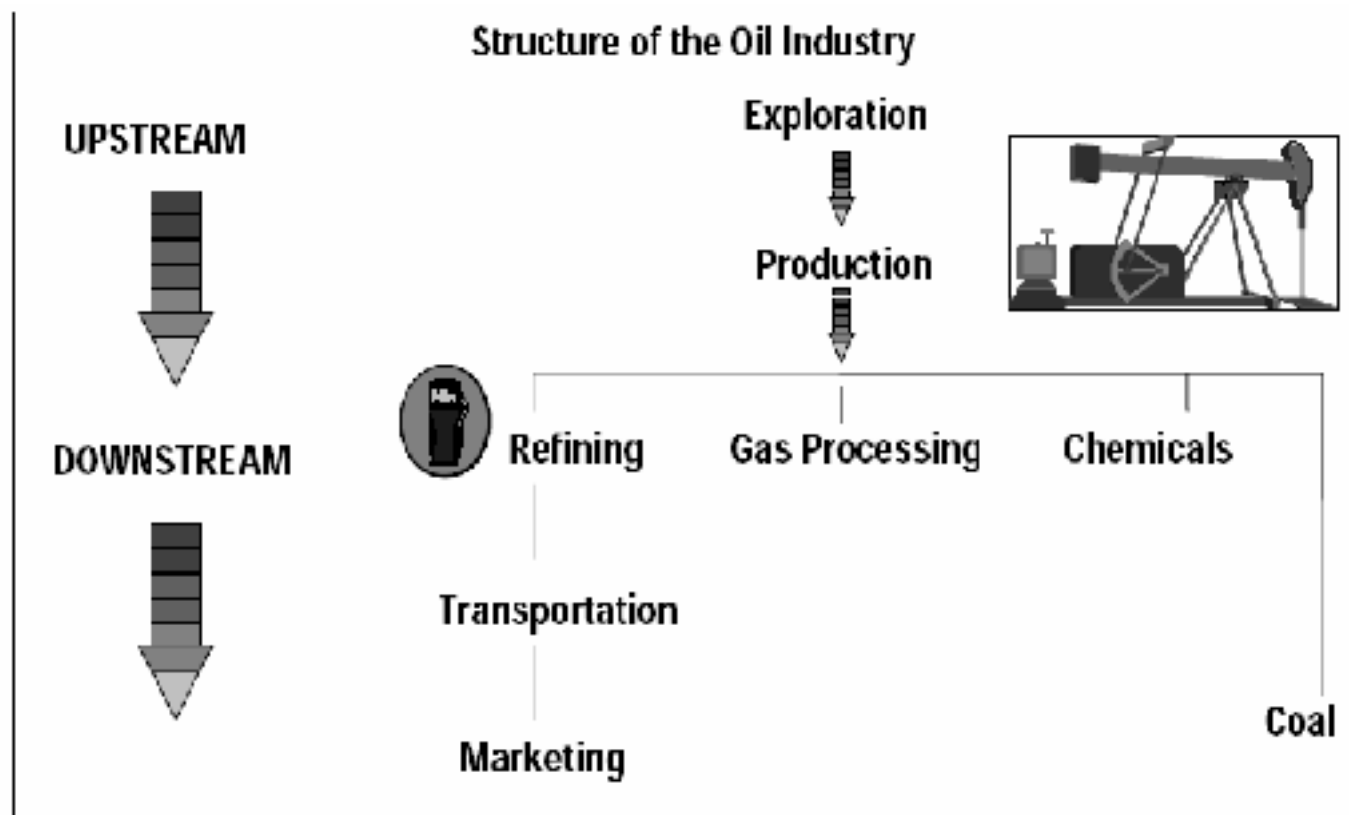
- ▶ U.S. Int. Rates : 5–14 %
- ▶ Currencies : 4–17 %
- ▶ Gold: 6–22 %
- ▶ Silver: 13–35 %
- ▶ Copper: 14–40 %
- ▶ Crude Oil: 16–60 %
- ▶ Heating Oil/Jet Fuel: 20–75 %
- ▶ Natural Gas: 25–120%

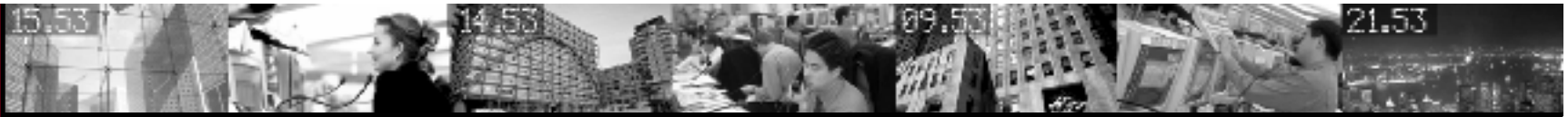
■ Market prices are the only references accepted by everybody :

- ▶ Producers, Intermediates and Consumers sell and buy using these market prices



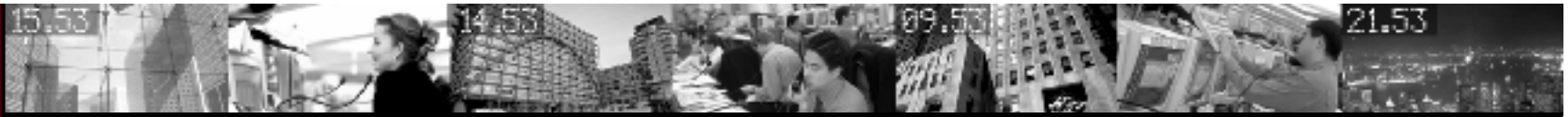
Oil industry : different segments





A complex risk Matrix, with all factors interacting with each others.

- **Macroeconomic** environment : typically supply, demand, stocks level
- **Forex** : Hydrocarbons prices are set in USD but corporates might have costs or publish accounts in different currencies.
- **Weather** : cold winter has an impact
- **Geopolitics** : 78% of the production is located in Emerging countries
- **Classical Country risk** : non-transfer, nationalisation, regulation, etc
- **Legal (contractual)**
- **Industrial**
- **Sponsors.**
- **Force majeure** : Hurricanes, wars, strikes,...



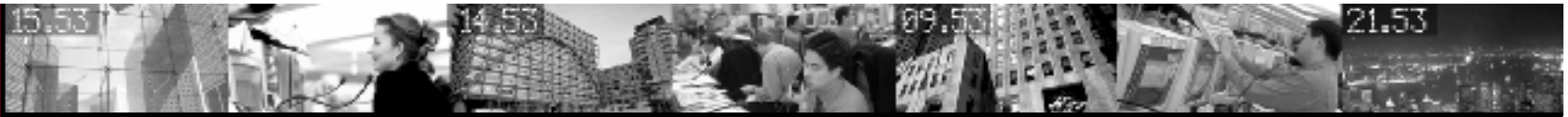
A focus on certain risks :

■ Regulations :

- property rights :except in the US, a producer never owns reserves, but only rights on produced crude
- Taxes (mineral taxes, royalties, export taxes)
- Environmental laws, for instance Autofuel 2005 for European refining, petrochemical, etc

■ Industrial :

- Reserves risk
- Reservoir risk
- Construction
- Capacity (yards, engineering companies, etc.)
- Delays.



Specific industry ratios/competitive analysis

■ Uptstream

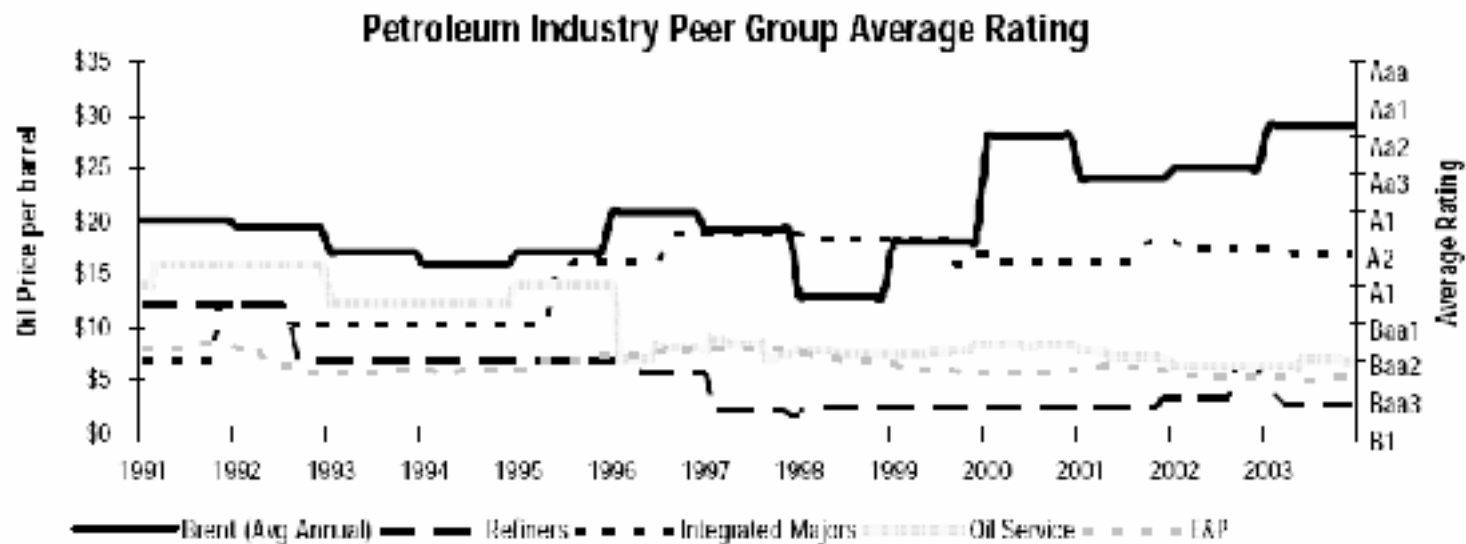
- Reserves Life Index
- Reserves Replacement rate
- Drilling success
- F&D cost, Full cycle cost

■ Downstream

- Refinery size and complexity (Nelson index)
- Crude slate
- Refinery utilization rate
- Logistics and location
- Integration level
- Variable/fixed costs

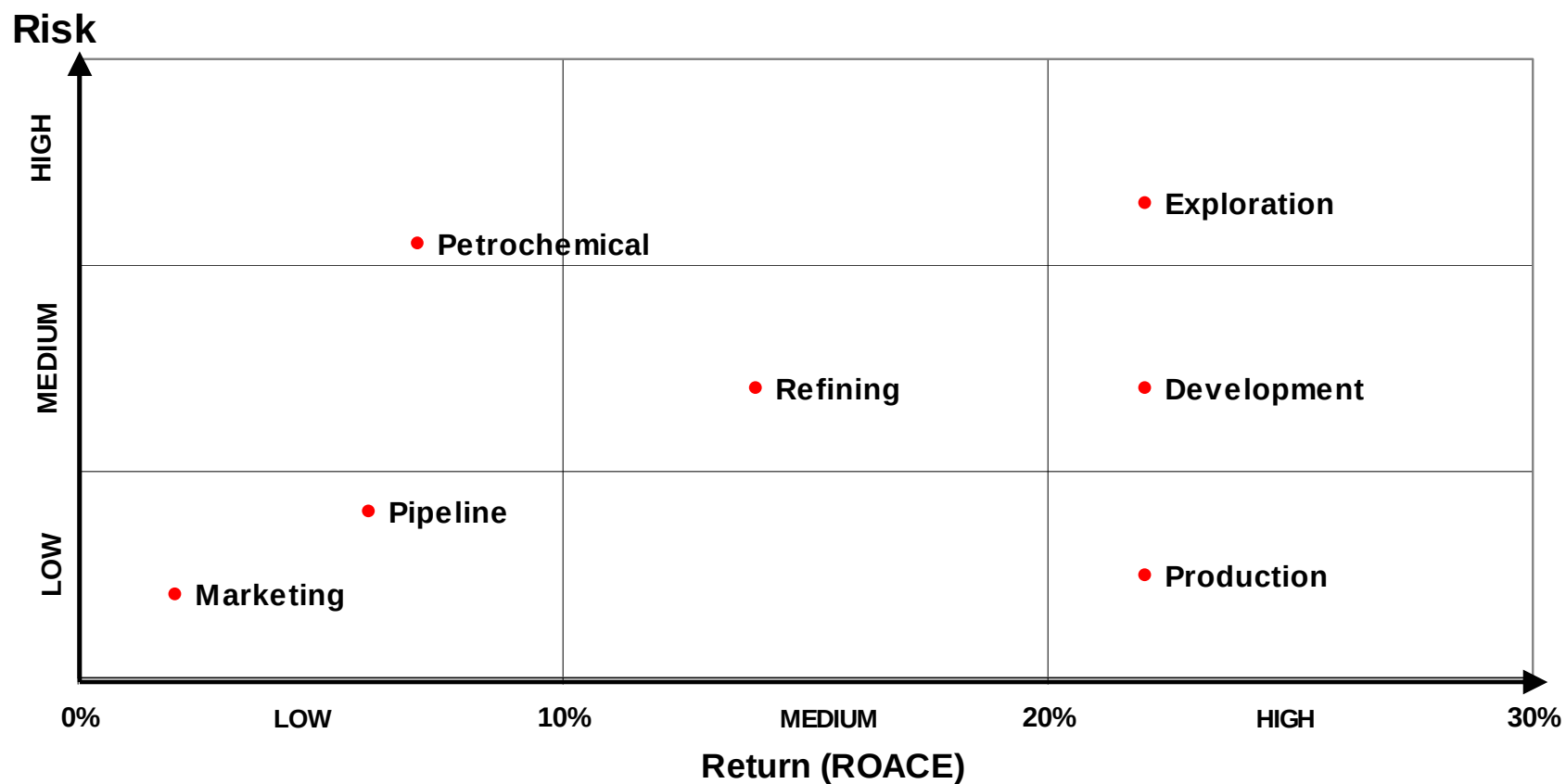


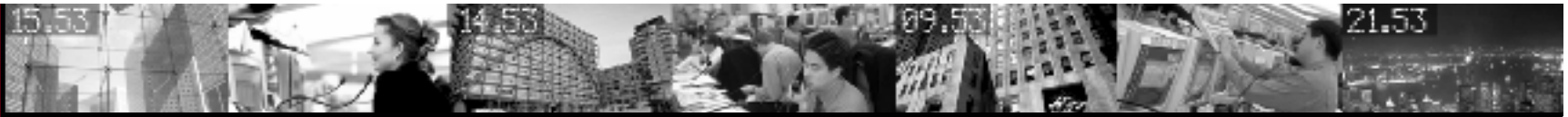
Historical industry average Moody's rating.





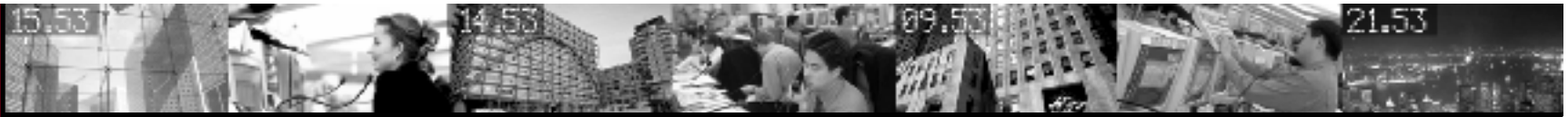
Tentative mapping of industry risk and return





Different risks, different instruments.

Risk	Instruments
Country risk	Export credit, Private insurance, Multilateral lenders (IFC Bloan, MIGA)
Volatility	Derivatives (options, swaps, futures)
Counterparty/Sponsors	Insurance, Credit Default swaps, concentration indicators.
Industrial/Environmental	Analysis of Sponsors, contractors, independant reports by reputable firms, Insurance coverage.



Different instruments, different investors : different strategies.

Instruments	Investors
Equity	Sponsors, Gv't agencies, Private equity, asset managers
Bonds	Asset managers
Export Credit	ECA, banks
Structured Commodity Finance	Banks, commodity traders
Project Finance Loans	Banks
Plain Vanilla Loans	Banks
Derivatives	Banks, funds,
Insurance policies	Insurance Companies

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