COPING WITH OIL PRICE VOLATILITY:
Welcome to the Roller Coaster
PRAGUE IAEE

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THE WOLF AT THE DOOR?

- DISCOVERIES INADEQUATE
- CAPITAL NEEDS TOO HIGH
- ALL EFFORTS INTO DEVELOPMENT, NOT EXPLORATION
- ALL THE EASY OIL FOUND
- BIG, OLD OIL FIELDS
- DEJA VU
PROJECTIONS OF OPEC MARKET SHARE
REALITY FOR 20 YEARS

- Abundance of oil has kept markets weak: bust then recovery, not boom.
- End of surplus capacity in 1990s means price collapse is followed by tightness (Lynch 1987).
- Dispersion of production raises vulnerability to small disruptions.
- Price weakness increases exporter instability.
- Market structure changes enhance volatility.
TYPES OF VOLATILITY

- NOT ETERNALLY RISING PRICES
- “NORMAL” COMMERCIAL VOLATILITY
  - LYNCH (2002)
- STABILIZATION VOLATILITY
  - RESPONSE TO NORMAL VOLATILITY
  - CARTEL ECONOMICS
- DISCRETE VOLATILITY
  - EVENT DRIVEN
“NORMAL” VOLATILITY
(Lynch 2002)

- VOLATILE, UNCERTAIN DRIVERS
  - GDP, WEATHER, ETC.
- POOR DATA
  - NON-OECD INVENTORIES, OPEC PRODUCTION & EXPORTS
- JUST IN TIME INVENTORIES
- HIGH UNCERTAINTY
  - +/- 2 MB/D MARKET BALANCE AT PRESENT
PRICE VOLATILITY
USABLE COMMERCIAL INVENTORIES
DAYS OF SUPPLY: EIG

Graph showing the days of supply for EIG from 1/30/85 to 1/30/03, with a peak around 1/30/90 and a recent decrease.
US CRUDE INVENTORIES
JUST NOT IN TIME
STABILIZATION VOLATILITY

- NO J DR, TRC TO SOLVE
  - PKV, JR?
  - RARELY WORKS WELL, LASTS LONG
    - TIN, COFFEE, COPPER, ETC.

- INTERNAL POLITICS
  - GAME THEORY
    - SLOW ENFORCER: TIT FOR TWO TATS

- EXTERNAL PRESSURE
EXTRAPOLATE THIS!
DISCRETE VOLATILITY: POLITICS AS RANDOM SHOCKS, INHERENTLY UNPREDICTABLE

- BUT SOME ELEMENTS PREDICTABLE
  - SURPLUS CAPACITY
  - INVENTORIES
  - DIVERSITY OF SUPPLY

- MANY DUMMY VARIABLES
  - PRESIDENT ???
THE REAL DANGER: OPEC MARKET SHARE
YOU’RE IN GOOD HANDS...
...TO THE RESCUE!
NEW VOLATILITY: NORMAL VOLATILITY PLUS

POST-1995 MARKET CHANGE

PRESSURES DOWN:
• HIGH NON-OPEC
• IRAQ, (VENEZUELA) INCREASES
• INTERNAL ECONOMIC PRESSURES IN REST OF OPEC

PRESSURES UP:
• LOW INVENTORIES
• LOW SURPLUS CAPACITY
• POLITICAL DISRUPTIONS INCREASING
THE PERFECT STORM...

CYCLES NOT OFFSETTING
PARTLY INDEPENDENT
SOMETIMES ADDITIVE
SOMETIMES SERIALLY RELATED

PRICE COLLAPSE CAN **CAUSE** TIGHT MARKET AND DISRUPTION IN OIL EXPORTING NATIONS

SEE 1998-2003
THINK DEFENSIVELY

- Be prepared to be unprepared
- Don’t trust the analysts
- The impossible keeps happening
- Blah, blah, blah

- Knowledge of history
- Knowledge of economics
COPING FOR PRODUCERS (1)

- DEEP POCKETS
  - SIZE HELPS
  - LOW DEBT
    - “AVOID HIGH CASH” T. Boone Pickens
- DIVERSIFY PORTOFOLIO
  - UPSTREAM/DOWNSTREAM
  - DIFFERENT TIMING FOR CASH FLOWS
  - DÉJÀ VU? 1970S STRATEGY
COPING FOR PRODUCERS (2)

- FLEXIBILITY
  - BEWARE FIXED CONTRACTS
    - SALES, RIG LEASES, ETC.
  - INCREMENTAL INVESTMENTS OVER GREENFIELD
    - TAR SANDS, CBM, ETC.

- HEDGE?
  - BUT WHEN IS A HEDGE SPECULATION?

- OPTIONS
  - IF YOU TRUST FINANCE PROFESSORS
COPING (3)

- Minimze Capital to Operating Costs Ratio
  - All else equal (Low costs best)
  - Tar Sands vs. Deepwater

- Have Govt absorb risk

- Monetize assets
  - Enron, BP
COPING FOR CONSUMERS (1)

- COST PASS THROUGH IS BEST
  - FUEL ADJUSTMENT CLAUSE
  - DEPENDS ON COMPETITION
    • PETER’S UGLY BABY

- FLEXIBILITY
  - VARY CONTRACT TERMS
    • INDICES, EXPIRATION
  - FUEL-SWITCHING
    • VIRTUAL, FINANCIAL OR PHYSICAL
COPING FOR CONSUMERS (2)

- GO UPSTREAM
- HEDGE (SEE ABOVE)
IF PESSIMISTS ARE RIGHT:

- PRICES WILL BE VOLATILE, MOSTLY A LOT HIGHER
- INCREASE UPSTREAM EXPENDITURES
  - BORROW AND HOARD
    - BUY RESERVES
    - HIRE ENGINEERS
    - SIGN LONG-TERM RIG CONTRACTS
  - ACCEPT MORE POLITICAL RISK
- DECREASE UPSTREAM EXPENDITURES
  - GIVE UP TO OPEC
- INVEST IN HIGH-COST ALTERNATIVES
  - ALTERNATIVE FUELS (GTL, SHALE)
IF I’M RIGHT:

- PRICES WILL BE VOLATILE, HIGHER AND LOWER
- HEDGE, DON’T HOARD:
  - SHORT-TERM CONTRACTS (BUY LOW)
- DEEP POCKETS
  - DON’T GET CAUGHT WITH HIGH DEBT
- AVOID HIGH COSTS, LOOK AT FIXED/VARIABLE RATIO
- OPPORTUNITIES FROM THOSE WHO DON’T