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Jet Fuel Price Risk Management

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Topics

1. Highlights of Risk Limited capabilities & approach
2. Market and industry reference points
3. Risk management expertise needed for jet fuel hedge programs
4. Other potential issues to assess in program design and implementation
5. Risk management process

Hedging Aspects for Consideration

- Background to fuel hedging
- Core value proposition of hedging
- Strategies
- Pitfalls of hedging strategy error
- Primary considerations in derivatives
- Risk Register
- Risk Audits

Risk Limited Highlights

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Risk Limited Overview

- Leading consulting firm
 - Independent, unbiased advice
 - Specialized in energy
- Advisors with proven expertise
 - Long history of success
- Financial strength and infrastructure to assure client project results

Strengths

- Can provide a range of services
 - Those potentially needed in hedging programs
 - Risk assessment & strategy development
 - Implementation & transaction support
 - Risk control, systems selection, risk audits
- High quantitative resources
- Extensive experience in trading & systems

Advantages

- Independent advice
 - Unbiased assessments of the critical issues
 - No bias on:
 - Hedging or not hedging
 - Vendor selection
 - Transaction types
- We are not competing with product providers

Other Considerations

- Risk Limited contacts in the financial hedge transaction side
 - Familiar with the transaction suppliers and their capabilities
- Knowledge of the market makers, structures, pricing and industry practices in each sector
 - Futures, OTC, broker, hybrid

Project Approach

- Client team integration
 - Transfer of expertise
 - Sync with organization
- Project management
 - To best assure timeline, scope and deliverable
- Education
 - Programs for executives or staff
 - FAS 133 ASC 815, VaR, options, etc.

Other Capabilities

- Can provide an extension of your resources
 - During start-up of hedge program
 - For risk management, derivatives reporting
- From brief specialized project support to full outsourcing of company's price risk management program
- Plug & play
 - Not a lot of ramp-up required

Markets & Industry Reference Points

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To Hedge or Not to Hedge

- Does hedging create value?
 - Does it increase firm's value?
- Ability to pass on fuel cost increases to customers
 - Ineffective hedge mechanism during periods of weak demand and fierce competition. Fuel surcharges or ticket price increases don't stick.
- Do hedged airlines have a competitive edge over non-hedged airlines?

To Hedge or Not to Hedge

- Ultimate value is the generation of more consistent, stable cash flows, which is valued by investors
 - Cost of financial distress is high, as repeatedly shown
- Hedged airlines are better positioned to take advantage of investment opportunity during periods of high fuel prices
- Academic studies have demonstrated that there is positive value to airline fuel hedging. It increased the value of the firm.

Recent Casualties of High Fuel Prices

- There is an unfortunately long list of airlines that have failed due to jet fuel price risks in combination with competitive pressures and increasingly difficult economic conditions
 - 4 major U.S. airlines failed within 3 weeks after oil prices exceeded \$100 per barrel (with fuel prices moving up in tandem)
- Lack of price risk management strategies for a cost component that represents 20-40% of costs and is known to be a highly volatile

Recent Casualties of High Fuel Prices

- Recent U.S. casualties include:
 - Aloha Airlines, filed chapter 11 bankruptcy 3/20/08, halted passenger operations 3/31/08
 - ATA, filed chapter 11 bankruptcy 4/2/08, halted all services
 - Skybus, halted operations 4/5/08. Management statement, “*Skybus struggled to overcome the combination of rising jet fuel costs and a slowing economic environment. These two issues proved to be insurmountable for a new carrier.*”
 - Frontier Airlines, filed chapter 11 bankruptcy 4/11/08, continues operations, sells 4 planes to cope with fuel costs
 - Champion Air, halted all flight operations 5/31/08. Management statement, “*Our business model is no longer viable in a world of \$110 oil, a struggling economy and rapidly changing demand for our services.*”

Research Findings

- Airlines should rely on robust hedging programs, however in the past that was not the industry consensus
- Investors value stable cash flow

Hedge Decision Factors

- Competitive situation
- Financial strength
 - Absolute / Relative
 - Cash and credit position
- Probability assessment
 - Price levels
 - Volatility
- Selection of instruments
 - Constraints
 - Cost

Survey of Industry Practices

- Historically
- Major airlines & operators
- International vs. domestic carriers
- Cargo carriers

Hedging Strategies / Options Available

- Dynamic hedging programs
 - Using a variety of derivative instruments
 - Timing & duration
- Strategies built around cyclical nature of the market
- Remaining unhedged

Industry Price Risk Management Strategies

- Dynamic hedging model
 - Consistent, but managed
- No hedge
- Limited hedging

Risk Guidelines

- Appetite for risks
 - Reflected in limits, policies
- Establishing risk management framework/
protocol

Basis Risk

- Product
- Location
- Time

Basis Risk

- Crude to jet
- Jet to heating oil
- NY harbor, USGC, NWE, Singapore, etc.
versus in-wing
- Stack & roll
- Time spreads

Hedging Pitfalls

- Misunderstanding or misjudgment of volatility of basis
- Faulty strategies
 - Failure to stress test or scenario plan
- Risk management controls omissions
- Error in hedge accounting

Process & Guidelines

- Risk Register
 - Risk component identification
- Risk policies & procedures
- Quantitative modeling and analytics

Risk Register

- Enumerate the major risk factors for company
- With a ranking level indicated
- Describe at a level appropriate for Board presentation and corporate Register
 - Very specific, but not detailed in extreme
- Describe likely risk mitigation alternatives for identified risks
- Assign top level responsibility for monitoring and managing the risks

Risk Management Policies

- Written as a Board level document
- Yet with adequate detail that conveys board intent as to exposure and risk levels the Board approves company to sustain
- A formal, written statement that expresses the corporate propensity for risk
- For all major categories of risk identified in the Risk Register

Risk Management Policies

- Strategic risk management assistance may include...
 - Valuing assets using quantitative techniques and options theory
 - Selecting and implementing valuation measurements such as value-at-risk
 - Enhancing credit risk management capabilities
 - Developing exposure reduction strategies
 - Developing risk management control policies and procedures

Components of RiskAudit

- Control structure
 - Ensures the existence and use of a valid risk management system
- Compliance of risk management system
 - Identifies gaps in adherence
- Critical parameters
 - Determines the appropriateness of parameters and assumptions



Mechanism of RiskAudit

- Review of existing risk management policies and procedures
- Review of typical transactions to ensure adherence to risk control program
- Review of risk models and technical aspects of risk control procedures

Hedge Program Requirements

- For dynamic hedging program, significant monitoring is required
- Systems and risk controls
- Modeling and pricing tools

Stress Testing, Back Testing

- Quantitative modeling
- Benchmarking

Capital Requirements Assessment for

- Direct start-up costs (people & technology)
- Capital commitment necessary to provide credit support for hedging volumes
- Cash outlay for option premiums
- Modeling of liquidity risk
- Counter party credit exposure

Selection of Hedge Instruments

- Over-the-counter instruments (OTC)
- Exchange traded derivatives
- Credit positioning of counter party credit risk
- Customizable
- Determining optimal duration of the hedges
- Fixed price, options or hybrids

Hedge Instruments

- Futures
- Swaps
- Options
 - Caps
 - Collars
- Hybrids
 - “Participation swaps”
- Indexed/linked derivatives
 - Total cost cap

Hedge Transacting

- OTC master agreement negotiations
- Transaction pricing, structure
- Timing
- Support in execution

Possible Scenarios?

- Mostly likely real price spike would be a Mid-east oil disruption (Iran?)
 - *Unpredictable, but probability is still low*
 - *Supply disruption driven by Mid-east conflict*
 - *Not economic driven actions by OPEC*
- Demand side of equation
 - *Weather, as always*
 - *And now, uncertainty on the economy*

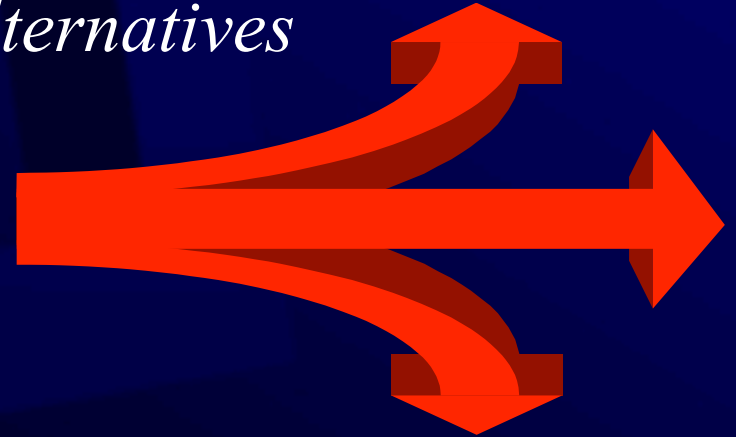


What Are the Implications?

- This is an environment where both sides of the market should be considering risk management strategies
 - *Producers / refiners should be considering some revenue/high margin protection strategies*
 - *Fuel consumers covering against price spikes or a move to new level in price range*
- Price volatilities likely to remain high

Strategy Considerations

- Now is the appropriate time for ‘scenario planning’ and sensitivity analysis
 - *Business operations in a potentially volatile environment*
 - *Price risk management alternatives*
 - *Is a price spike likely?*



U.S. FAS 133 ASC 815 Highlights

- Hedge accounting
- Fair value
- Cash flow hedges and fair value hedges
- Hedge effectiveness testing

Conclusions

- Fuel price risk management critical
- Effective hedging can add value
- Hedging activity can add a ‘control’ risk factor
- Accounting & reporting requirements must be considered

Risk Limited Highlights

- Resources, independent
- Experienced in implementation, not just theory
- Track record in which you can be confident
- Expertise that can be relied upon

*for additional information, please contact a Risk Ltd
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