

MIT OpenCourseWare  
<http://ocw.mit.edu>

15.997 Practice of Finance: Advanced Corporate Risk Management  
Spring 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.

# Trading Operations

MIT Sloan School of Management  
15. 997 Advanced Corporate Risk Management  
John E. Parsons

## Constellation Energy

- Competitive electricity generation, wholesale supplier & trader, utility (BG&E).
  - > 8.7 GW generation capacity in deregulated markets (PJM/NY)
  - > 5 nuclear units: 2 @ Calvert Cliffs MD, 2 @ Nine Mile Point NY, 1 @ Ginna NY
  - > UniStar nuclear development JV with EDF
  - > 32.7 GW wholesale supply
  - > Leading electricity trading operation
- \$14B market value of equity + \$16B debt = \$30B Total Enterprise Value
- Outstanding stock market performance.

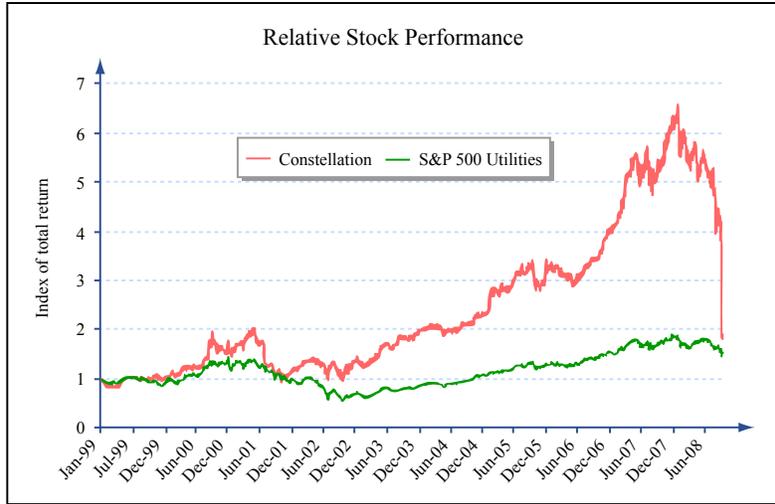


Figure by MIT OpenCourseWare.

3



Figure by MIT OpenCourseWare.

4

## What Happened?

- 2Q08 Earnings press release is positive, stock price = \$83
- 10Q Filing made public shortly thereafter notes an error in the calculation of the contingent collateral requirements in an earlier 10Q filing:
  - Understated the contingent collateral requirement at \$1.6 billion when the correct figure was \$3.2 billion, double the amount.
  - Meanwhile the contingent collateral requirement had grown another 41% to \$4.57 billion.
- Stock price immediately dropped 16% to \$61.
- Market talk about Constellation's precarious liquidity situation. Constellation makes an effort to shore up its liquidity through sale of assets and negotiation of new lines of credit.
- Stock price continues to decline, reaching \$58 on Sept 12.
- Lehman bankruptcy filing on Monday, Sept 15. Rumors that Constellation is exposed. Stock drops to \$48, then to \$31.
- S&P puts Constellation on credit watch. Stock price falls to \$25.

5

## MidAmerican Energy Holdings Deal

- MidAmerican agrees to buy Constellation for \$4.7 billion in cash, or \$26.5 per share.
- \$1 billion immediate cash injection in exchange for preferred shares. The remainder at closing.

6

## EDF counter

- EDF was a large shareholder as well as JV partner in UniStar.
- EDF did not act as quickly as MidAmerican and didn't offer the immediate liquidity before the MidAmerican offer closed.
- EDF came back with a competing offer.
  - Purchased 49.99% stake in the nuclear assets.
  - For \$4.5 billion. \$1 billion cash immediately; additional option on \$2 billion cash, all netted from the \$4.5 billion purchase price.
  - Constellation Energy continues to operate as an independent firm.
- Constellation pays MidAmerican a \$600 million break-up fee (in addition to return of its \$1 billion cash).
- Constellation stock now trades at \$21/share.

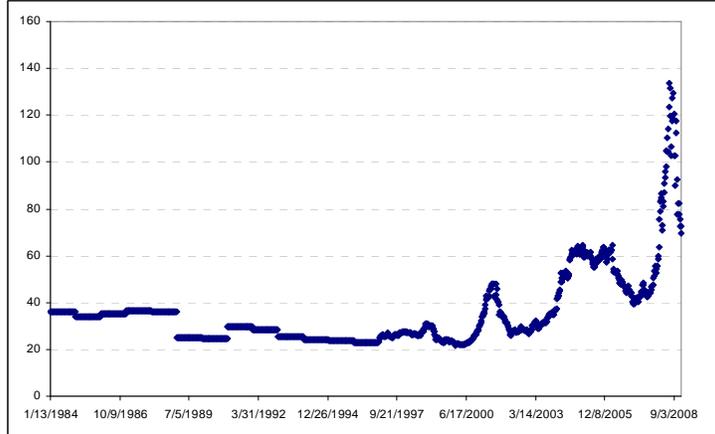
7

## The Proximate Cause

- Element #1: Move into trading coal.
- Element #2: Sharp rise in commodities prices, coal especially.
  - Price rises pushed contracts into- or out-of-the-money.
  - Margin calls were one-sided, leading to a net cash drain.
  - Price rises also increased the notional value of any fixed physical position, increasing total collateral requirements.
  - Coal counterparties were often below investment grade, increasing the credit risk for any given exposure.
- Element #3: Failure of internal risk management processes.
  - Misreporting of contingent collateral on key coal contracts.
- Element #4: Poor execution of PR.
  - Failure to note the contingent collateral correction in the 2Q PR.
- Element #5: US Financial Crisis
  - A bad time to go looking for liquidity.

8

# Coal Price



9

Image removed due to copyright restrictions.

10

Image removed due to copyright restrictions.

11

## The Proximate Cause

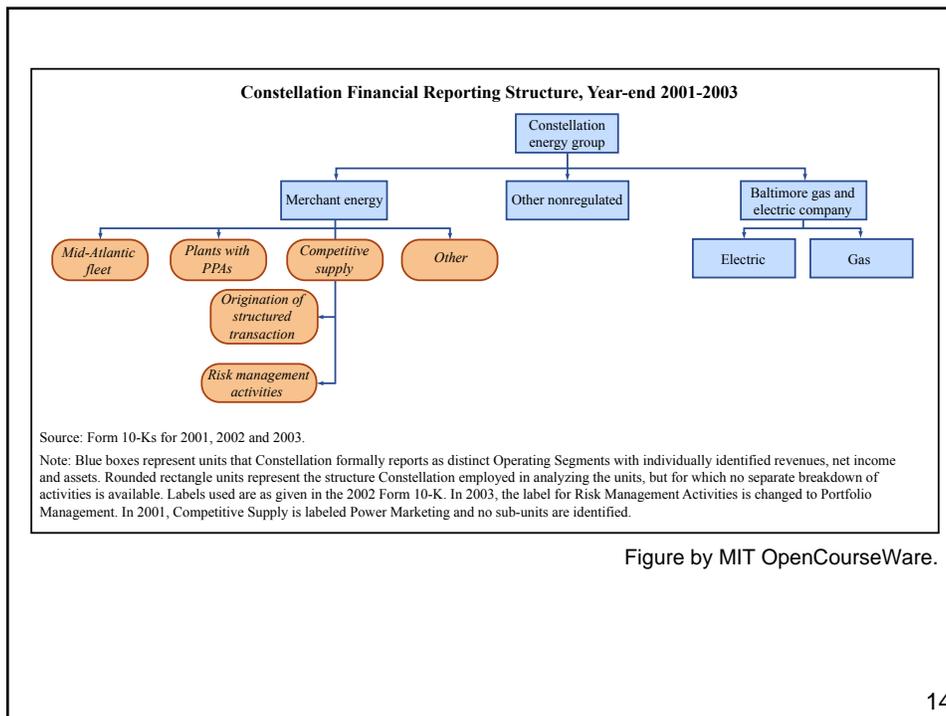
- Element #1: Move into trading coal.
- Element #2: Sharp rise in commodities prices, coal especially.
  - Price rises pushed contracts into- or out-of-the-money.
  - Margin calls were one-sided, leading to a net cash drain.
  - Price rises also increased the notional value of any fixed physical position, increasing total collateral requirements.
  - Coal counterparties were often below investment grade, increasing the credit risk for any given exposure.
- Element #3: Failure of internal risk management processes.
  - Misreporting of contingent collateral on key coal contracts.
- Element #4: Poor execution of PR.
  - Failure to note the contingent collateral correction in the 2Q PR.
- Element #5: US Financial Crisis
  - A bad time to go looking for liquidity.

12

## Deeper Causes? Do Power & Trading Mix?

- Constellation had executed an important restructuring giving greater independence and prominence to trading.
- Trading became a separate business – modeled on hedge funds or merchant banking.
- Was that wise?
- Was that related to the liquidity crisis?

13



14

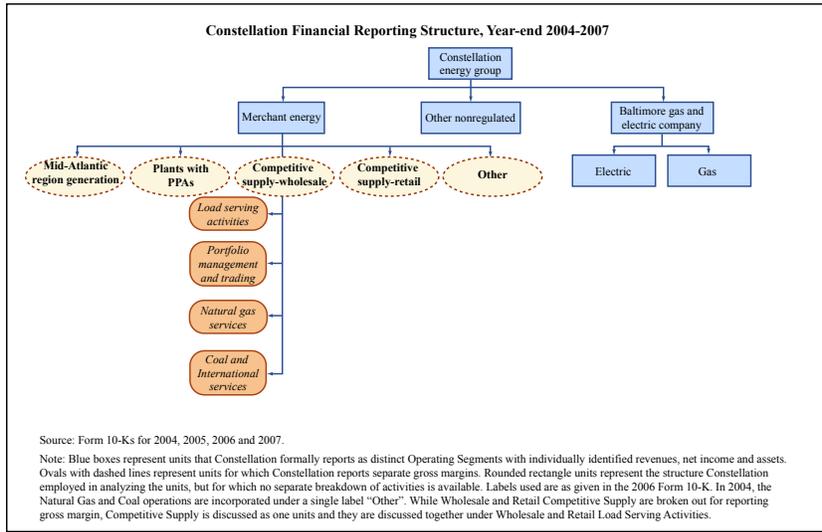


Figure by MIT OpenCourseWare.

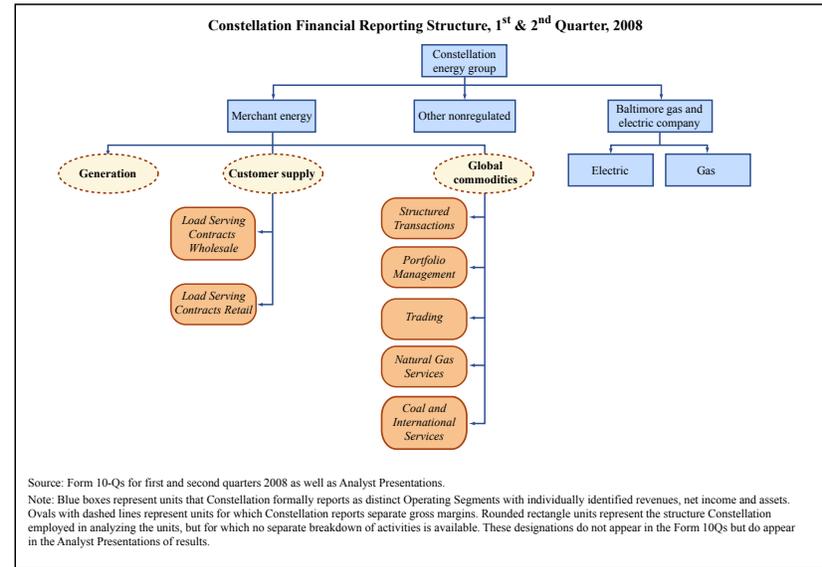


Figure by MIT OpenCourseWare.

## What is a Trading Business?



## Trading Operations

- Many Firms in Commodity Related Business Run a Trading Operation
- Many of the trappings of the operations are the same...a big trading floor with screens tracking the movements of prices of key commodities...scores of telephone connections with traders at potential counterparties...high turnover activity with significant back office support, critical control functions...a rocket science research department for pricing complicated structures
- These trappings belie significant differences in the objectives and role these operations play within the firm

## A Taxonomy

Mrkt & Fin  
Support  
Function

Integrated Arm  
of Asset  
Management

Pure-Play  
Trading Desk  
Profit Center

- trading is an after thought to the company's main operations
- trading helps to realize the returns of the business, but does not generate them
- trading is a support function, essential to completing the sale at the best price
- hedging is purely a cash management task
- trading is not a profit center

19

## A Taxonomy

Mrkt & Fin  
Support  
Function

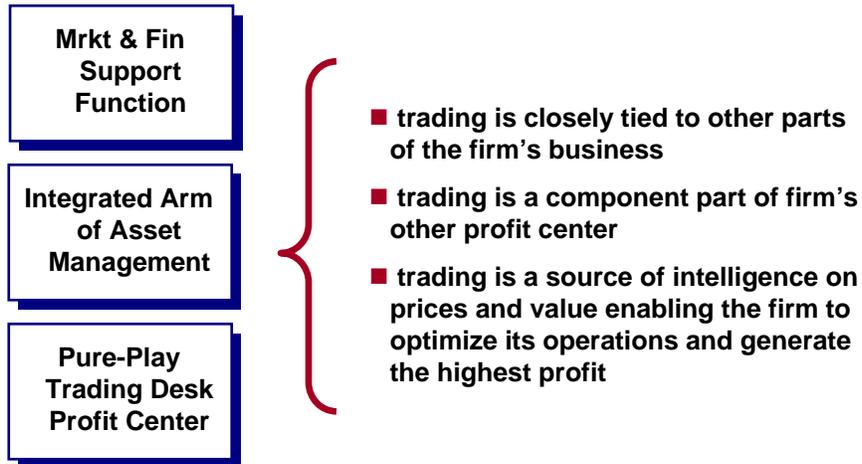
Integrated Arm  
of Asset  
Management

Pure-Play  
Trading Desk  
Profit Center

- trading is disconnected from the remainder of the firm's business
- trading is a profit center
- essentially a financial institution

20

## A Taxonomy



21

## Wholesale Trading at Constellation

- Customer:
  - Local utility or Load Serving Entity: they need power, and they need it supplied as it is demanded.
  - Industrial and commercial customers.
- Constellation's competitive skills:
  - Knowledge of load dynamics; risk modeling and data management.
  - Administration of market delivery protocols, sales execution, billing, etc.
  - Knowledge of wholesale supply options, competitive prices.
  - Ability to restructure price terms to suit the customer; risk management and insurance.
- Same skills help to maximize the value of Constellation's own generation assets.

...note that nowhere in this discussion is there any need for maintaining a proprietary book of trades!

22

## Stand-Alone Trading

- An active wholesale trading business may produce opportunities to make markets.
  - Market-making generally earns profit from (1) transaction fees or (2) bid-ask spreads. Profit is made on volume.
  - Another form of market-making is structured transactions in which the margin is very high on very few transactions.
  - Little capital is at risk. The task is to minimize capital at risk.
- And, an active wholesale trading business may produce opportunities to profit from a proprietary book of trades.
  - Superficially similar to the wholesale business. But proprietary trading is very different.
  - Customer base is different. Capital is purposefully put at risk.
- Proprietary trading is only a very small part of profitable trading operations.

23

## Mis-measurement of profits.

- Misplaced focus on proprietary trading as the main source of profit.
  - Loss of focus on original customers and real sources of value.
- Credit requirements of proprietary trading are minimized. Proprietary trading leans on the real assets of the other businesses without being charged for the credit.
  - Contingent capital claims are hard to assess.
  - Commodity company positions tend to be less liquid so that the impact of the contingent capital claims are larger than purely financial trading companies.
  - Stand-alone operation forces accountability. Combined operations allows proprietary trading to operate parasitically.

24