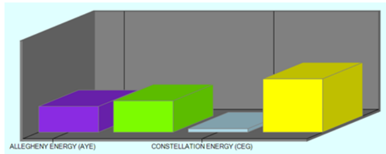
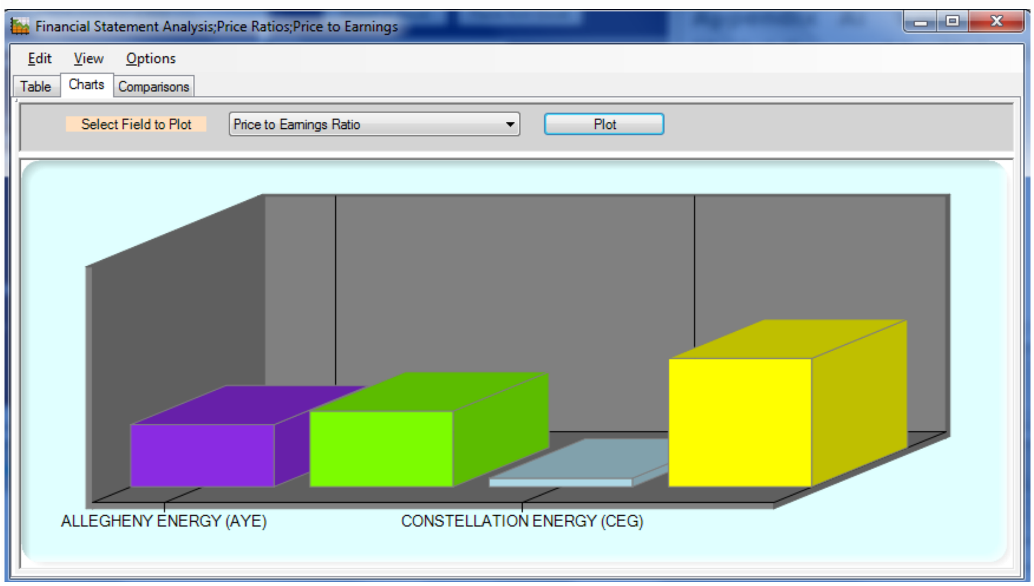


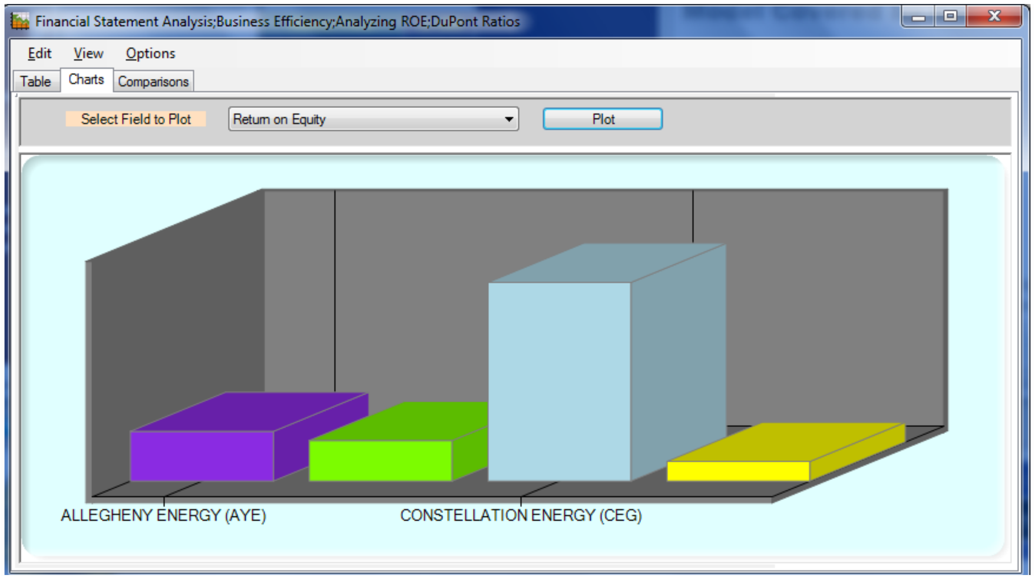
When the Book to Price Ratio Matters

Constellation Energy Group, Inc. (NYSE:CEG) was significantly affected by the financial crisis in October 2008. It is a company whose business ratios are strong but their price ratios are not. This attracted the interest of Berkshire Hathaway plus it signals the presence of a source of risk not captured in traditional models such as CAPM but instead captured by the Book to Price ratio.

In the following two plots, we plot the ROE and P/E ratio of CEG and its competitors. CEG is plotted in light blue, and the competitors are American Electric Power (AEP), plotted in green, Duke Energy Corporation (DUK) in yellow, and Alleghany Energy in purple.

As you can see, CEG has a P/E Ratio that is much lower than its competitors but a much more favorable ROE. In this study, we will apply the principles of financial statement analysis to understand why.





Background

CEG was significantly affected by the financial crisis in October 2008. This is explained in their 2010 10-K Item-1, as follows.

"Constellation Energy is an energy company that includes a merchant energy business and BGE, a regulated electric and gas public utility in central Maryland.

Our merchant energy business is primarily a competitive provider of energy-related products and services for a variety of customers. It develops, owns, owns interests in, and operates electric generation facilities located in various regions of the United States. Our merchant energy business also focuses on serving the energy and capacity requirements (load-serving) of, and providing other energy products and risk management services for, various customers.

BGE is a regulated electric transmission and distribution utility company and a regulated gas distribution utility company with a service territory that covers the City of Baltimore and all or part of 10 counties in central Maryland. BGE was incorporated in Maryland in 1906.

On November 6, 2009, we completed the sale of a 49.99% membership interest in Constellation Energy Nuclear Group LLC and affiliates (CENG), our nuclear generation and operation business, to EDF Group and affiliates (EDF) for total consideration of approximately $4.7 billion ($4.5 billion at close plus expense reimbursements). Our remaining 50.01% investment in CENG is an integral part of our nuclear business.

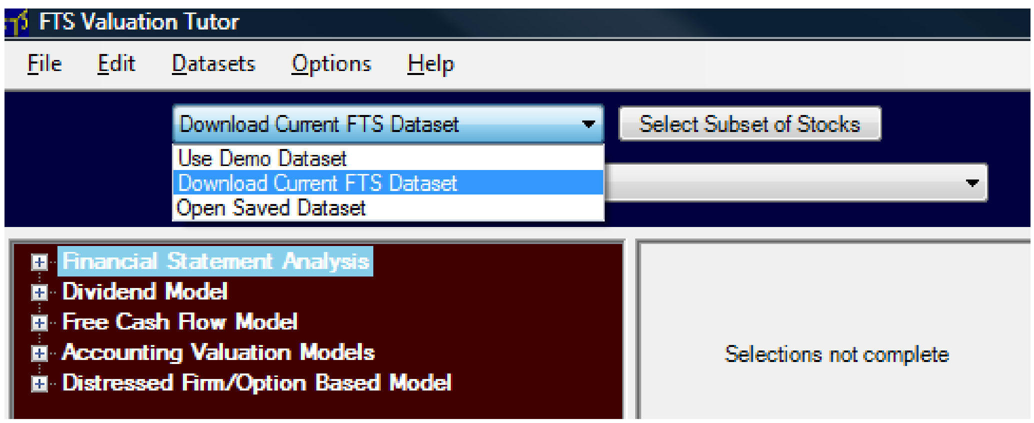
In connection with closing the transaction with EDF, we and EDF agreed to comply with certain conditions contained in an order from the Maryland Public Service Commission (Maryland PSC). We discuss these conditions in detail in Item 7. Management's Discussion and Analysis—Business Environment—Regulation—Maryland.

Prior to 2009, our merchant energy business included significant trading operations and an international commodities operation and grew rapidly. As that business grew, so too did its need for capital, particularly to fund the business' collateral requirements. We had previously met these collateral requirements through the use of cash and lines of credit, and we believed that we could meet any unexpected short-term capital needs by maintaining a *significant amount of available liquidity, primarily from our unused credit facilities. Furthermore, by maintaining an investment grade credit rating, we believed we would continue to be able to access the capital markets if additional liquidity needs arose.*

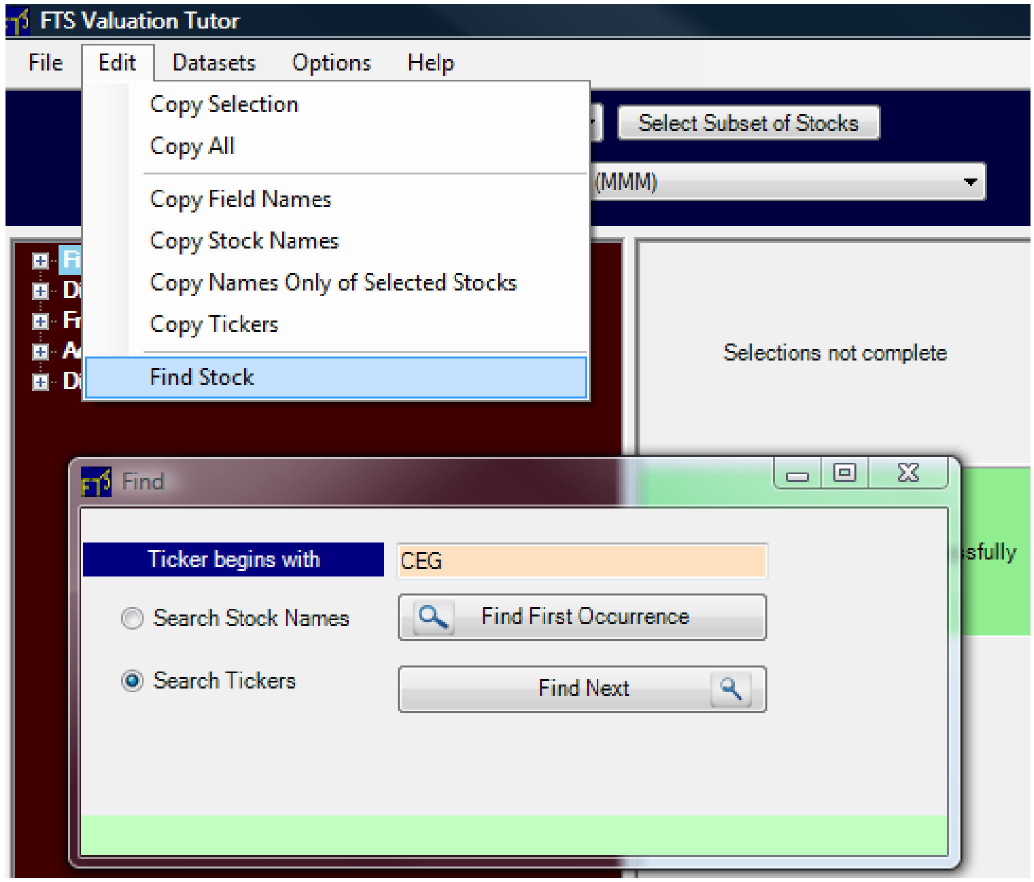
Therefore, as a capital- and asset-intensive business, Constellation Energy was significantly impacted by the events in the financial and credit markets during 2008. To address the liquidity issues arising from the credit and market events of 2008, we explored a series of strategic initiatives to improve our liquidity and reduce our business risk. During 2009, we completed transactions to sell our international commodities operation, our gas trading operation, our shipping joint venture, and our uranium market participant. These transactions helped improve our liquidity and reduce our business risk and resulted in substantial changes to our business in 2009. We discuss these transactions in more detail in Note 2 to Consolidated Financial Statements. "

Competitor Analysis

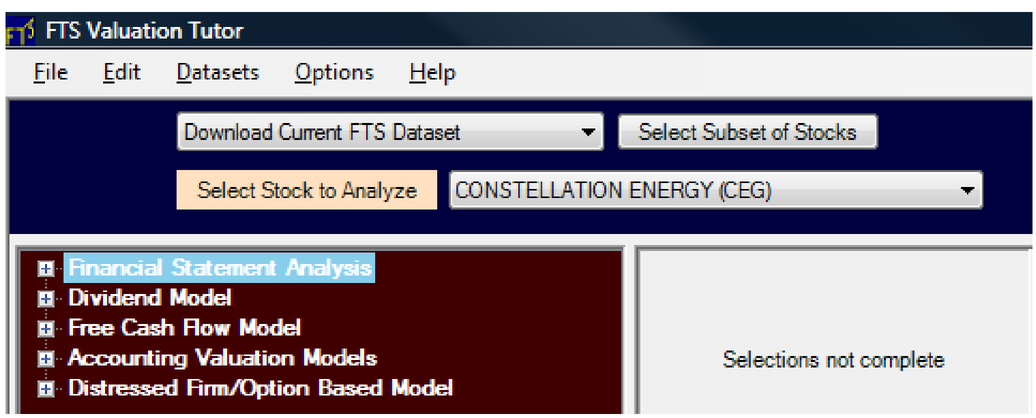
To start the analysis, launch Valuation Tutor and download the current FTS dataset:



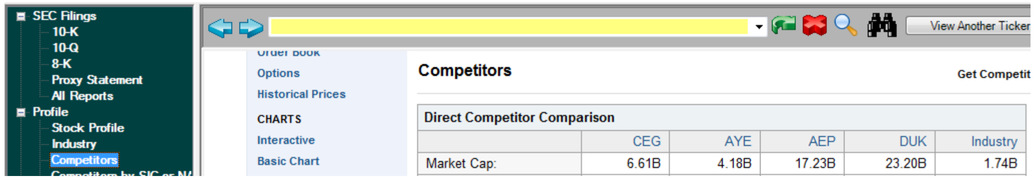
After the dataset has been read in, select CEG as the stock to analyze. The easiest way to do this is to find CEG as shown here:



Click "Find Next" and you will see CEG listed at the top of the list of stocks:

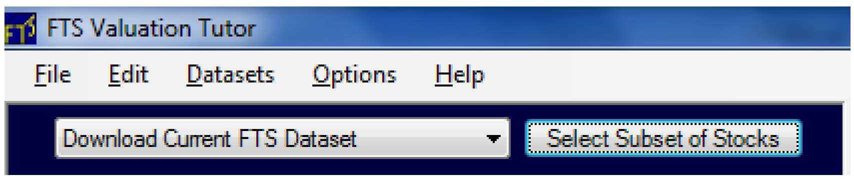


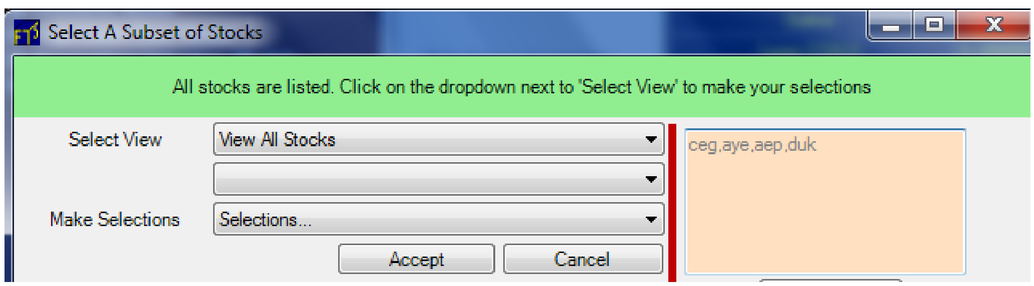
In the information system at the bottom, click on Profile and then competitors to see the direct competitors of CEG:



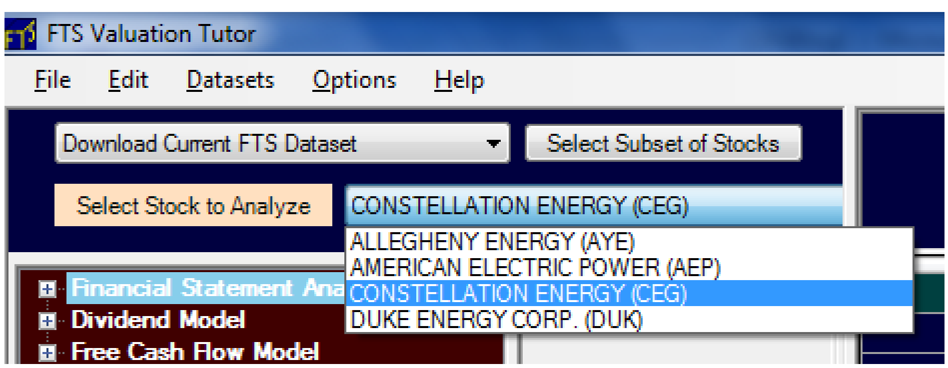
Having found the competitors, we will make our subset of stock these four companies, as follows.

First, click on the button Select Subset of Stocks



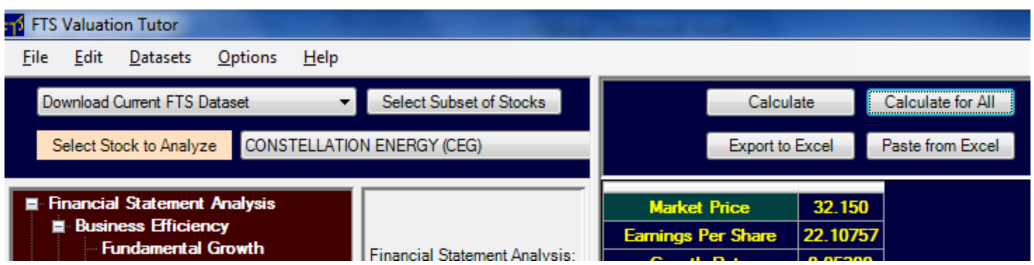


Type in the tickers as shown: CEG, AYE, AEP and DUK. Then, press Enter or click on Accept. Now CEG and its three competitors are easily accessed:

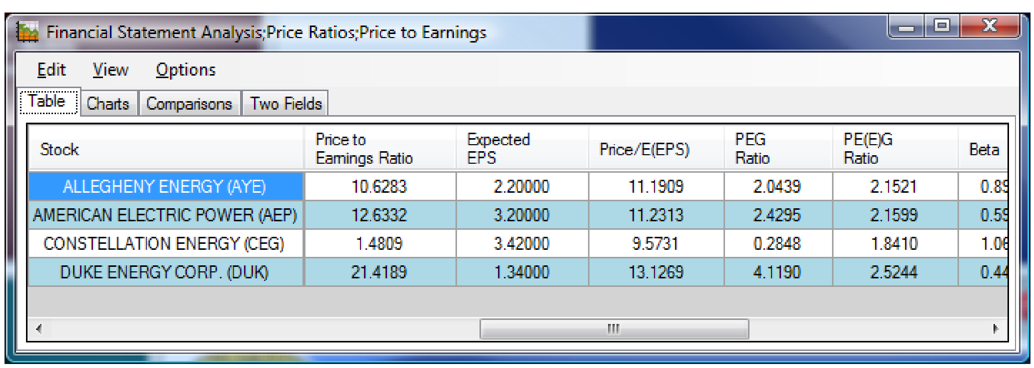


Under Financial Statement Analysis click on Price Ratios:

Then above the calculator, click on the button Calculate for All:

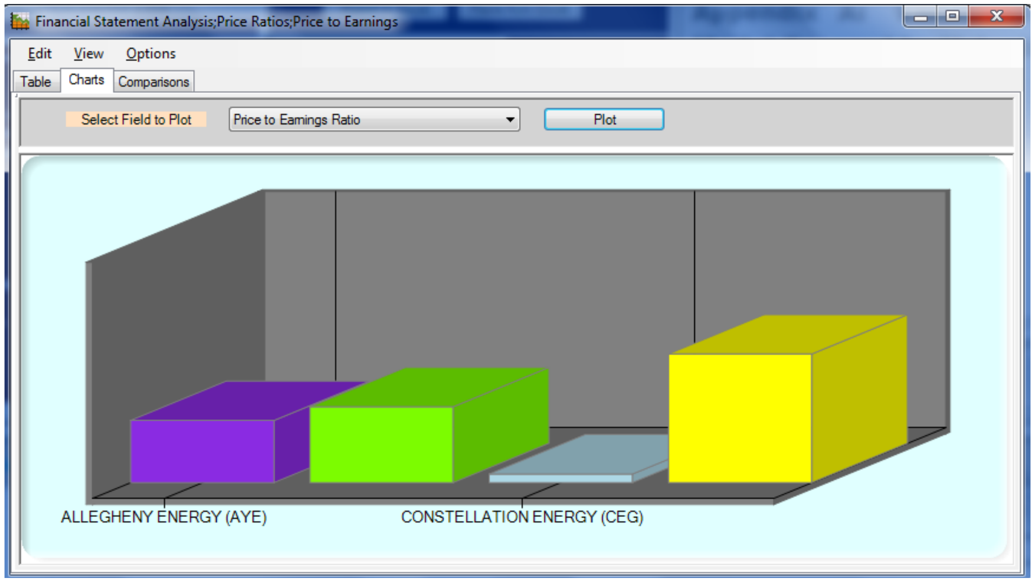


This will compute a P/E Ratio analysis for CEG and its immediate competitors:



Stock	Price to Earnings Ratio	Expected EPS	Price/E(EPS)	PEG Ratio	PE(E)G Ratio	Beta
ALLEGHENY ENERGY (AYE)	10.6283	2.20000	11.1909	2.0439	2.1521	0.8
AMERICAN ELECTRIC POWER (AEP)	12.6332	3.20000	11.2313	2.4295	2.1599	0.5
CONSTELLATION ENERGY (CEG)	1.4809	3.42000	9.5731	0.2848	1.8410	1.0
DUKE ENERGY CORP. (DUK)	21.4189	1.34000	13.1269	4.1190	2.5244	0.4

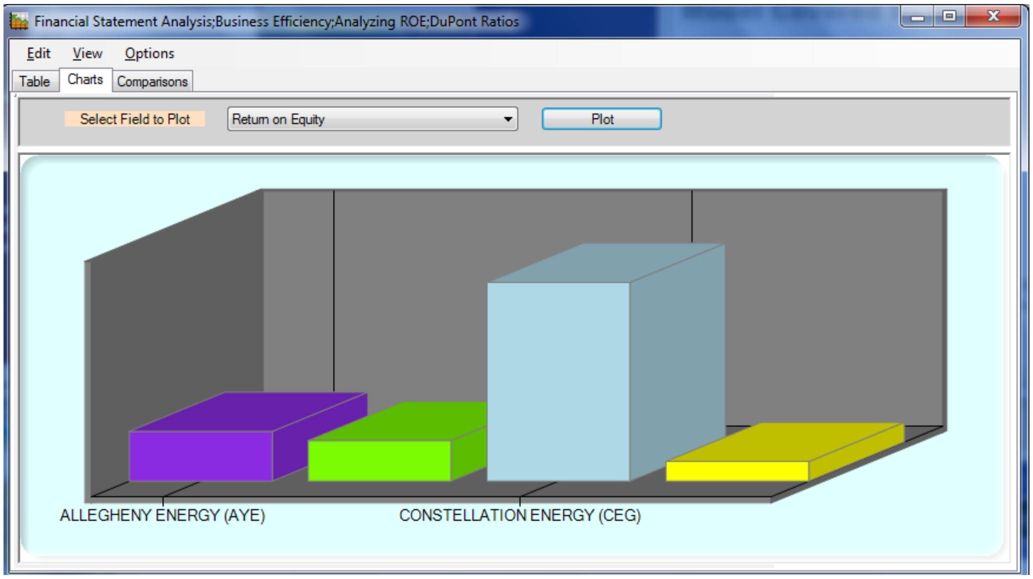
To view these graphically, click the Charts tab and then select Price to Earnings Ratios and click Plot to get our first chart:



This reveals a very low P/E ratio for CEG (DUK yellow, AEP Green).

This analysis can immediately be compared to the ROE Analysis. On the main screen, select DuPont Ratios:

.
Then click on the button Calculate for All and then select Charts and plot Return on Equity:



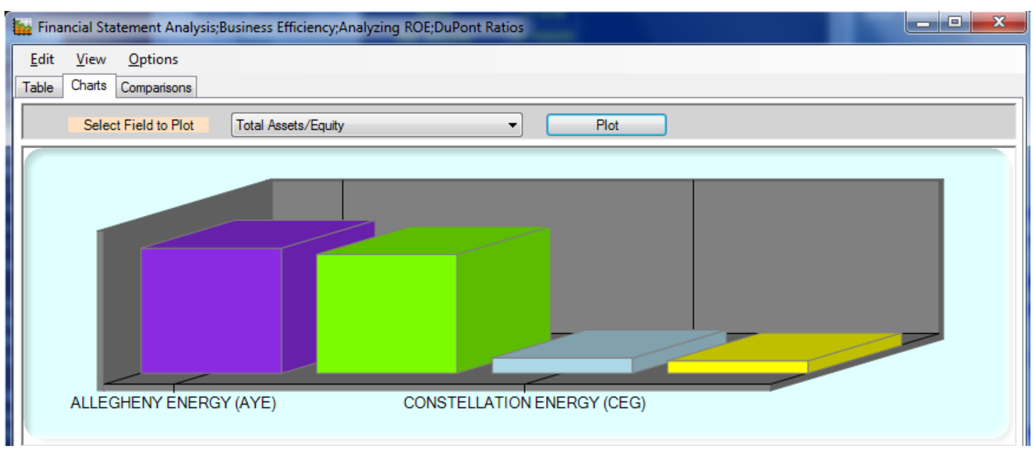
The P/E Ratio and ROE graphs show you the apparent contradiction. From a business ratio perspective CEG looks strong but from a market ratio perspective CEG looks weak. The objective of this exercise is to apply concepts introduced in chapters 2-3 of Valuation Tutor to understand why.

Decomposing ROE

We start by looking at ROE: what is making it so high? To answer this, we will conduct a DuPont burden analysis. This permits ROE to be broken down into drivers that are related to the major firm decisions, in particular the investment and financing decisions. A common method for boosting ROE relative to Return on Assets (ROA) is to carry high levels of financial leverage. This in turn will imply higher levels of risk and all other things being equal lower stock prices. So at first, glance we would like to see whether this explains the apparent contradictory ROE and P/E ratio graphs.

So select DuPont Burden Analysis:

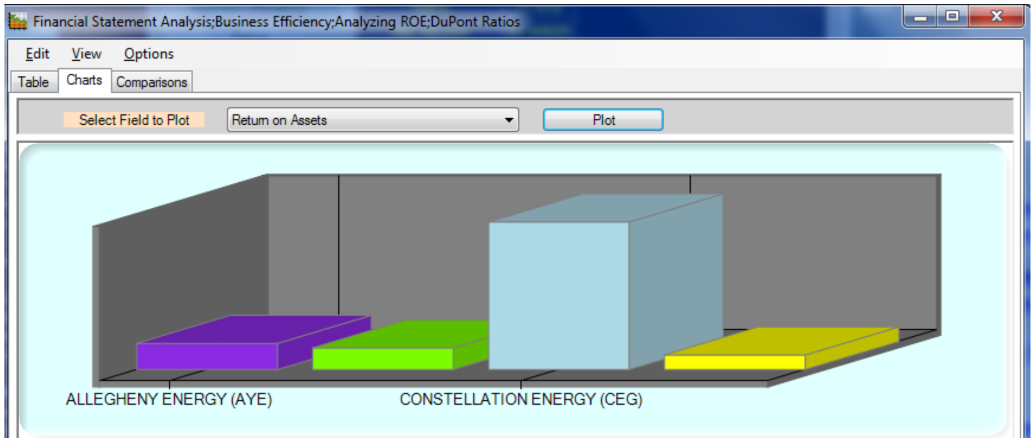
And then click on Calculate All. You can then plot the Financial Leverage Ratios for each of the stocks:



(AEP is in green, DUK in yellow).

So CEG has low financial leverage compared to its competitors, especially AYE and AEP, and so high financial leverage does not explain the high ROE.

The other major driver of ROE is ROA and the competitor analysis for this driver is as follows (i.e., Select Charts again and plot Return on Assets):



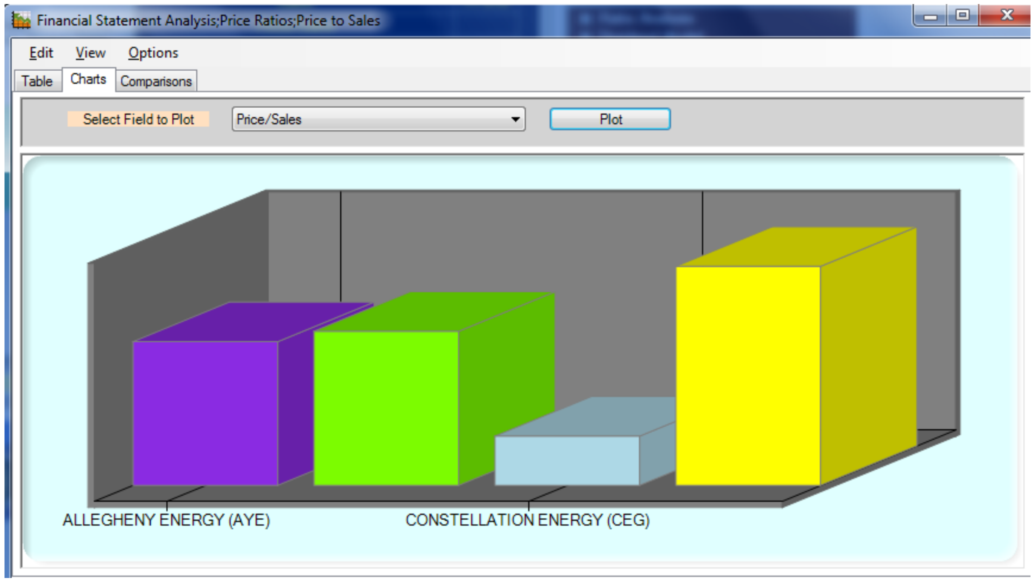
(AEP is in green, DUK in yellow)

This shows you that the large ROE for CEG is driven by the investment decision (which determines ROA) and not financial leverage. Recall that ROA is the ratio of net income to total assets.

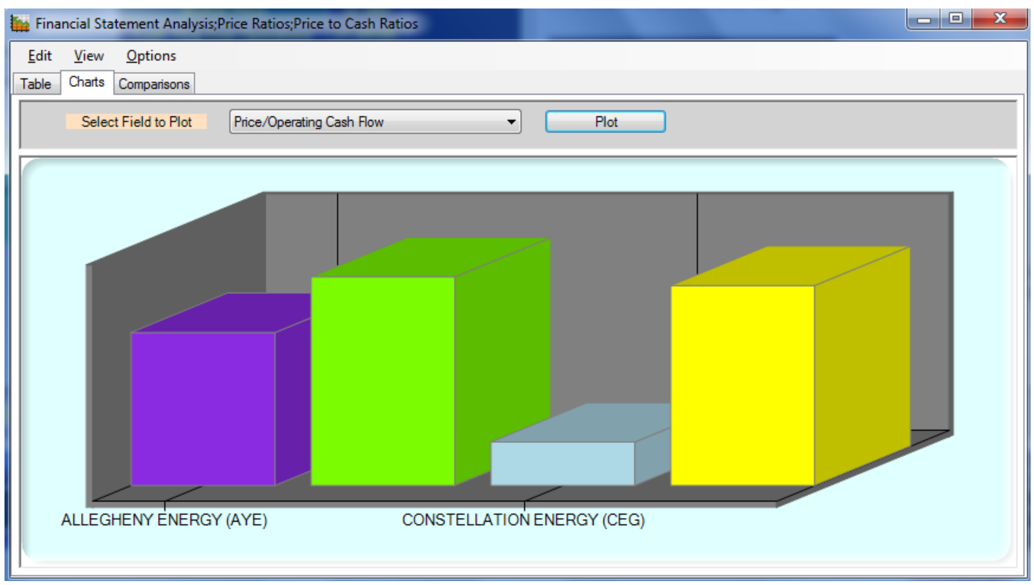
Does Earning's Management Explain the Puzzle?

Earnings management refers to attempting to smooth income so that reported earnings do not have large fluctuations or to meet expectations. A famous quote by Warren Buffet states that "*managers that always promise to 'make the numbers' will at some point be tempted to make up the numbers.*" There are both legal and illegal ways to manipulate earnings, and you can find a large number of examples on the internet of cases that have come to light.

To rule out this possibility, we will examine variables that are less easily manipulated such as Sales and Operating Cash Flows, as shown in the following charts:



Price to Cash Flows



The same phenomenon persists – CEG appears to be undervalued in the market: the price is low relative to sales and also relative to operating cash flow. So earnings management is not the answer.

The analysis so far suggests that the anomaly it is not driven by return related issues (income, sales, etc.). So next we focus attention on risk issues.

A financial Ratio that has attracted attention from empirical return studies is the **Price to Book Ratio**. This ratio was popularized by Fama and

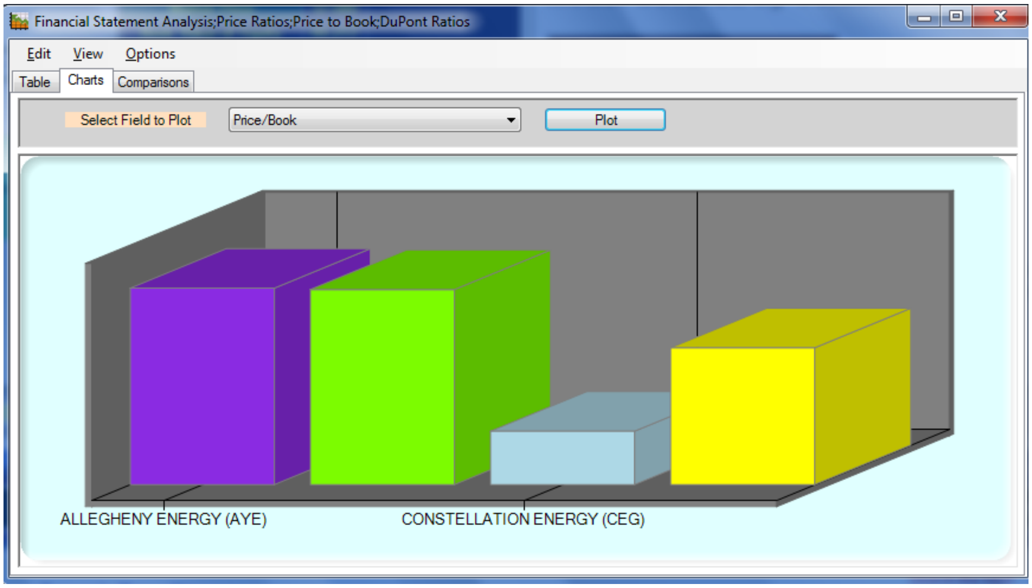
French in their model of stock returns. In their model they work with the inverse of the ratio --- "Book to Price Ratio." Thus a high number implies low price, low number implied high price. This is a risk factor because it is argued that a high number is associated with low future growth in earnings and possible distressed firms.

Aside: For statistical analysis the inverse (Book to Price Ratio) is used because it preserves the ranking when book values are negative. This point was discussed in Chapter 3 of Valuation Tutor in relation to the Earnings to Price ratio form of a P/E ratio.

A summary of the findings from F&F (JF 1995 Size and Book-to-Market Factors in Earnings and Returns) and others:

1. Low book-to-market equity firm portfolios remain more profitable than high book-to-market firm portfolios for at least 5-years, and growth rates in earnings tend to become similar for both groups over time.
2. They did not find evidence, however, that the book-to-market factor in earnings drives book-to-market factor in returns. That is, returns from high book-to-market tend to persist for 5-years --- even though earnings improvement occurs quickly (for the portfolio). This suggests that this factor is part of the expected (equilibrium) returns and is priced as some source of risk factor.
3. Finally, they found that firms with a very high book-to-market tend to be persistently distressed stocks which supported their argument for this being a priced risk factor.

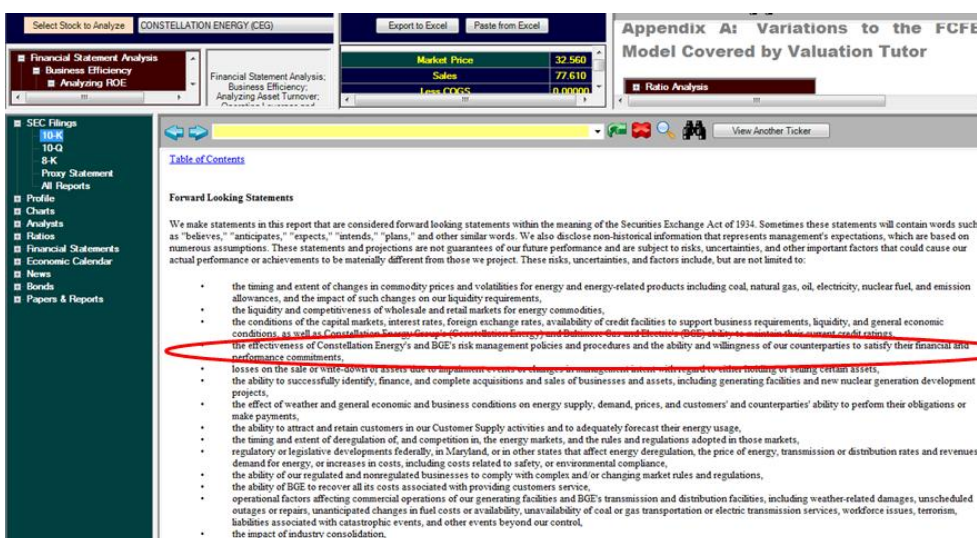
If we chart the Book to Price Ratio of CEG and its competitors in Valuation Tutor, we get the following:



The inverse of this plot is Book to Price and this provides evidence that is consistent with the Fama and French analysis, namely that CEG has a low Price/Book ratio so a high Book/Price ratio. We now explore why this may be the case.

CEG's Price to Book Factor and the Fama & French Risk Interpretation

First, in CEG's 10-K there are some early warning signals. CEG starts its 10-K with Forward Looking Statements.



The first few forward looking statements are:
These risks, uncertainties, and factors include, but are not limited to:
• the timing and extent of changes in commodity prices and volatilities for energy and energy-related products including coal, natural gas, oil, electricity, nuclear fuel, and emission allowances, and the impact of such changes on our liquidity requirements,
•the liquidity and competitiveness of wholesale and retail markets for energy commodities,
•the conditions of the capital markets, interest rates, foreign exchange rates, availability of credit facilities to support business requirements, liquidity, and general economic conditions, as well as Constellation Energy Group's (Constellation Energy) and Baltimore Gas and Electric's (BGE) ability to maintain their current credit ratings,

This alerts investors to potential liabilities arising from CEG's trading operations. A closer inspection requires us to look at the fourth major financial statement, the Consolidated Changes in Equity. This statement contains Other Comprehensive Income items that do not pass through the Accounting Income Statement. In particular, gains and losses from transactions classified as hedges under hedge accounting are reported in this statement. In the 10-K CEG discusses mark-to-market accounting and the implications of hedge accounting and accrual accounting income statements:

Mark-to-Market Accounting

We record revenues using the mark-to-market method of accounting for transactions under derivative contracts for which we are not permitted, or do not elect, to use accrual accounting or hedge accounting. These mark-to-market transactions primarily relate to our risk management and trading activities, our nonregulated retail gas customer supply activities, and economic hedges of other accrual activities. Mark-to-market revenues include:

- origination gains or losses on new transactions,
- unrealized gains and losses from changes in the fair value of open contracts,
- net gains and losses from realized transactions, and
- changes in valuation adjustments.

Under the mark-to-market method of accounting, we record any inception fair value of these contracts as derivative assets and liabilities at the time of contract execution. We record subsequent changes in the fair value of these derivative assets and liabilities on a net basis in "Nonregulated revenues" in our Consolidated Statements of Income (Loss). We discuss our mark-to-market accounting policy in the *Derivatives and Hedging Activities* section later in this Note.

The current statement reveals the effect of CEG having to follow Hedge Accounting standards which only permits losses to be taken to Other Comprehensive Income under very strict tests that require the hedge to stay within hedge accounting limits on a daily basis. This was violated and resulted in CEG having to reverse in excess of $1 billion losses that were shielded from previous income statements:

CONSOLIDATED STATEMENTS OF COMMON SHAREHOLDERS' EQUITY AND COMPREHENSIVE INCOME (LOSS)

Constellation Energy Group, Inc. and Subsidiaries

Years Ended December 31, 2009, 2008, and 2007	Common Stock Shares	Common Stock Amount	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Amount
	(Dollar amounts in millions, number of shares in thousands)					
Balance at December 31, 2006	180,519	$ 2,738.6	$ 3,474.3	$ (1,603.6)	$ 284.5	$ 4,893.8
Decrease in noncontrolling interests from deconsolidation					(74.1)	(74.1)
Comprehensive Income						
Net income			821.5		12.0	833.5
Other comprehensive income						
Hedging instruments:						
Reclassification of net losses on hedging instruments from OCI to net income, net of taxes of $(682.3)				1,124.8		1,124.8
Net unrealized loss on hedging instruments, net of taxes of $408.2				(671.1)		(671.1)
Available-for-sale securities:						
Reclassification of net gains on securities from OCI to net income, net of taxes of $1.0				(1.6)		(1.6)
Net unrealized gain on securities, net of taxes of $(25.5)				26.5		26.5
Defined benefit plans:						
Net gain arising during period, net of taxes of $(7.8)				11.6		11.6
Amortization of net actuarial loss, prior service cost, and transition obligation included in net periodic benefit cost, net of taxes of $(15.9)				24.6		24.6
Net unrealized gain on foreign currency translation, net of taxes of $(1.8)				7.0		7.0
Other				(10.8)		(10.8)
Total Comprehensive Income			821.5	511.0	12.0	1,344.5

That is, on the surface it would appear that Total Comprehensive Income is strong. However, there is a large ($1.1 billion) reversing entry for derivative losses from past years that were previously shielded from the income statement. In addition, for the current statement there are large losses again being process through Other Comprehensive Income for 2009 which presumably do satisfy the hedge accounting standards. Irrespective, it is clear that CEG still has a large exposure from their trading desk operations even though the rest of the firm is solid.

The major potential issues arise whenever the trading desk operations involve illiquid instruments that are not currently trading. In this case fair value accounting provides the company with a lot of flexibility to assess their own values of the instruments. Again this is noted in the 10-K for CEG:

Fair Value

We record mark-to-market and hedge derivatives at fair value, which represents an exit price for the asset or liability from the perspective of a market participant. An exit price is the price at which a market participant could sell an asset or transfer a liability to an unrelated party. While some of our derivatives relate to commodities or instruments for which quoted market prices are available from external sources, many other commodities and related contracts are not actively traded. Additionally, some contracts include quantities and other factors that vary over time. As a result, often we must use modeling techniques to estimate expected future market prices, contract quantities, or both in order to determine fair value.

The prices, quantities, and other factors we use to determine fair value reflect management's best estimates of inputs a market participant would consider. We record valuation adjustments to reflect uncertainties associated with estimates inherent in the determination of fair value that are not incorporated in market price information or other market-based estimates we use to determine fair value. To the extent possible, we utilize market-based data together with quantitative methods for both measuring the uncertainties for which we record valuation adjustments and determining the level of such adjustments and changes in those levels.

The valuation adjustments we record include the following:

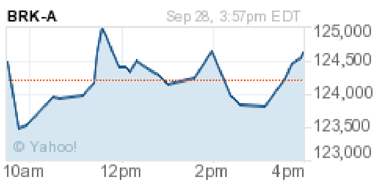
- Close-out adjustment—the estimated cost to close out or sell to a third party open mark-to-market positions. This valuation adjustment has the effect of valuing purchase contracts at the bid price and sale contracts at the offer price.
- Unobservable input valuation adjustment—necessary when we determine fair value for derivative positions using internally developed models that use unobservable inputs due to the absence of observable market information.
- Credit spread adjustment—necessary to reflect the credit-worthiness of each customer (counterparty).

We discuss derivatives and hedging activities as well as how we determine fair value in detail in *Note 13* .

The question that immediately arises is what assumptions are being carried along with this practice (circled in red above)? This is a question that is driving the current market price, as illustrated next.

Related Quotes

Symbol	Price	Change
BRK-A	124,495.00	+275.00



Symbol	Price	Change
CEG	32.56	+0.48
SHAW	33.90	+0.38

ByGlenn Williams, RealMoney Contributor , On Tuesday September 28, 2010, 1:09 pm EDT

There are some serious problems brewing within **Constellation Energy Group** , and the solution may be a significant strategy shift and leadership change.

This is not the first crisis to have befallen Constellation's management team. The company nearly went bankrupt two years ago when it disclosed risk-management problems just before the Lehman Brothers collapse. As Thompson Financial News reported,

"Concerns surrounding risk management and control processes were heightened by a recent disclosure that CEG's collateral obligations under certain hypothetical debt rating downgrade scenarios were larger than previously stated as well as a $1.7 billion exposure to one non-investment counterparty. CEG's liquidity profile has been impacted by rising commodity prices that has required the company to post additional collateral."

Then, Lehman Brothers collapsed. The bank was a counterparty to significant amounts of Constellation's risk portfolio. On Sept. 16, 2008, *Forbes* reported, "The New York Stock Exchange halted trading of Constellation Energy . . . due to a trade imbalance. . . . The energy firm plunged 56.1% . . . during afternoon trading. . . . They were nervous about the Baltimore-based energy firm's exposure to Lehman Brothers."

MidAmerican Energy, a unit of Warren Buffett's **Berkshire Hathaway** , came to the rescue and protected Constellation from bankruptcy. Later, Constellation replaced MidAmerican with **Electricite de France**, netting MidAmerican a handsome profit.

As background to the mention of Berkshire Hathaway above, was that at the height of the financial crisis Berkshire Hathaway made a bid for CEG which was accepted by management and at the time was very favorable for Berkshire Hathaway. This attracted counter offers from the French company Electricite de France for the sale of 49.999% of its Nuclear Facilities. Ultimately this counteroffer went through but Berkshire Hathaway was still well compensated. However, a negative subsequent signal was that Berkshire Hathaway started selling CEG stock around May 15, 2009.

In addition, the accounting for this sale is also questionable. You can see from the 2009 Consolidated Earnings that a significant gain ($7.4 billion) from the sale of its nuclear facilities was included in their EPS, even though this clearly is not a re-occurring item.

Constellation Energy Group, Inc. and Subsidiaries

Year Ended December 31,	2009	2008	2007
	(In millions, except per share amounts)		
Revenues			
Nonregulated revenues	**$ 12,024.3**	$ 16,057.6	$ 17,786.5
Regulated electric revenues	**2,820.7**	2,679.5	2,455.6
Regulated gas revenues	**753.8**	1,004.8	943.0
Total revenues	**15,598.8**	19,741.9	21,185.1
Expenses			
Fuel and purchased energy expenses	**11,135.6**	15,521.3	16,473.9
Operating expenses	**2,228.0**	2,378.8	2,447.4
Merger termination and strategic alternatives costs	**145.8**	1,204.4	—
Impairment losses and other costs	**124.7**	741.8	20.2
Workforce reduction costs	**12.6**	22.2	2.3
Depreciation, depletion, and amortization	**589.1**	583.2	557.8
Accretion of asset retirement obligations	**62.3**	68.4	68.3
Taxes other than income taxes	**290.4**	301.8	288.9
Total expenses	**14,588.5**	20,821.9	19,858.8
Equity Investment (Losses) Earnings	**(6.1)**	76.4	8.1
Gain on Sale of Interest in CENG	**7,445.6**	—	—
Net (Loss) Gain on Divestitures	**(468.8)**	25.5	—
Income (Loss) from Operations	**7,981.0**	(978.1)	1,334.4
Gain on Sales of CEP LLC Equity	—	—	63.3
Other (Expense) Income	**(140.7)**	(69.5)	157.4
Fixed Charges			
Interest expense	**437.2**	399.1	311.8
Interest capitalized and allowance for borrowed funds used during construction	**(87.1)**	(50.0)	(19.4)
Total fixed charges	**350.1**	349.1	292.4
Income (Loss) from Continuing Operations Before Income Taxes	**7,490.2**	(1,396.7)	1,262.7
Income Tax Expense (Benefit)	**2,986.8**	(78.3)	428.3
Income (Loss) from Continuing Operations	**4,503.4**	(1,318.4)	834.4
Loss from discontinued operations, net of income taxes of $1.5	—	—	(0.9)
Net Income (Loss)	**4,503.4**	(1,318.4)	833.5

Summary

This exercise provides interesting insights into the nature of the risks priced in the market that one of the factors in the Fama and French three factor model picks up. This factor is distinct from general market risk, and therefore is not appropriately accounted for in the single factor CAPM. The three factor model includes a book-to-market factor as a driver of long term returns. Identifying this source of risk, however, requires a close examination of the financial statements and in this case the practice of hedge accounting and mark-to-market accounting. In addition, the analysis also reveals how these potential flags can be identified whenever there is substantial discrepancy between the results from the business ratio analysis versus the results from the price ratio analysis.

Note: The calculations in this study were based on the company filings as of the time of this writing. The conclusion and discussion is meant only to show how to use Valuation Tutor to conduct analysis. It is not investment advice.