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Evaluating Companies with Financial Metrics

Prof. Katherine Spiess

Associate Professor of Finance

Mendoza College of Business

Last Seminar Recap

- Income statements measure profitability over a certain time period

  – Revenues are what a company makes, expenses are its costs, and profit or earnings are what it takes home at the end.

- Cash flow statements help to show you were cash has been used in the business and has three important parts:

  – Operating -cash going in/out for business operations

  – Investing - cash going in/out for growth and investment

  – Financing - cash going in/out to finance operations or growth or to return cash to shareholders /bondholders

Tonight's Agenda

- Market Update

- Income Statement Metrics

- Balance Sheet Metrics

- Valuation Metrics

- Valuation, Price & EPS

This Week's Seminar

- After this, you should be able to:
  - Understand Price to Earnings Ratio and how to use it

  - Understand EPS, what it means, and how you derive it.

  - Be familiar with key ratios for the financial statements

  - Be able to compare similar stocks using the financial ratios

  - Understand what financial ratios mean about a company

Market Update

- S&500, DJIA, and Nasdaq indexes all at record high levels yesterday

- Year-to-Date returns: S&P > 22%; DJIA nearly 18%; Nasdaq > 27%

- Strong US jobs report on Friday and strong earnings from several firms

- Current S&P500 price-to-earnings ratio is 22.9x

- World news: Saudi Aramco announces world's largest IPO (~$1.5 trillion) for December 2019.

Income Statement
Financial Metrics

What They Tell Us

- Income statement metrics help us understand how the company is making their money
  - High volume with low margins (Wal-Mart, WMT)
  - Very low costs (Southwest Airlines, LUV)
  - High prices (Coach, COH)

- They can help us forecast future earnings by providing useful information to determine what the income statement (and thus earnings) may look like in coming years

Growth Metrics

- Growth is calculated by:
  - (Ending value/Beginning value) − 1

- Almost universally, higher growth is better although you have to understand the components of growth.

- Growth is a useful metric for comparing multiple companies, especially within a given industry and over time.

Revenue Growth

- Revenue is the amount of money the company is generating from the sale of goods or services

- Revenue growth shows that the company is generating more money from the sale of its services or products
  - Selling More (volume goes up)
  - Charging More (prices go up)

- It is important to understand the (often <u>inverse</u>) relationship between price and volume

Operating Income (EBIT) Growth

- Operating income (EBIT) is the money you have left over after paying operating expenses.

- Operating income growth shows you if the company is effectively managing costs (both COGs and other operating expenses), as well as generating revenues.

- You would hope to see operating income growing at the same rate as revenue growth or higher.

- If operating growth is higher than revenue growth, then the company is reducing their costs relative to the revenue they are generating.

Earnings per Share (EPS) Growth

- Earnings per Share (EPS) is net income divided by diluted shares outstanding

- EPS can grow as a result of two reasons:
  - Earnings grow causing the numerator to increase
  - Shares outstanding decrease (the company buys back stock)

- If EPS grows slower than revenue, this means that the firm is either not managing costs or is diluting shareholders by issuing more shares.

Margin Metrics

- Margins show how effective the firm is in any given year at managing specific costs and line items.

- Margins are calculated by taking any income statement line item and dividing it by revenues, and are expressed in percentage.

- Higher margins shows that the company is effectively managing costs. Margin *trends* over time show rising/falling cost structures.

Margins across Industries

- Margins are also useful when comparing multiple companies, especially within a given industry.

- Margins vary widely by industry. For example, software companies (ie, Microsoft) tend to have high margins, whereas retailers (ie, Wal-Mart) tend to have low margins

- Lower-margin companies like Wal-Mart can still be very profitable because they make up for their margins through selling large volumes of products

Gross Profit Margin

- Gross profit is what remains from sales after a company pays out the costs of goods sold.

- Gross profit margin = gross profit/revenue.

- A 20% gross profit margin means that for every dollar generated in sales, the company has 20 cents left over to cover basic operating costs and profit.

Revenue	100
COGs	80
Gross Profit	20
Gross Profit Margin	20%

Operating Profit (EBIT) Margin

- Operating income (EBIT) is the amount left after paying operating expenses and shows the earnings power of the firm's ongoing operations.

- To obtain operating income margin divide operating income by revenue.

- Basically, 15% operating income margin means that for every dollar generated in sales, the company has 15 cents left over to cover non-operating expenses and profit.

Revenue	100
COGs	80
Gross Profit	20
Gross Profit Margin	20%
Operating Expenses	5
Operating Income	15
Operating Income Margin	15%

Net Income Margin

- Net income is what remains after subtracting all the costs (namely, business, depreciation, interest, and taxes) from a company's revenues. Net income is also called the bottom line.

- To obtain net income margin divide net income by revenue.

- Basically, 10% net income margin means that for every dollar generated in sales, the company has 10 cents left over in profit.

Revenue	100
COGs	80
Gross Profit	20
Gross Profit Margin	20%
Operating Expenses	5
Operating Income	15
Operating Income Margin	15%
Other Expenses	5
Net Income	10
Net Income Margin	10%

Comparing 2 companies (2018):

	PFIZER (PFE)	STARBUX (SBUX)
Revenue Growth	2%	10.4%
Gross Margin Gross Profit/Revenues	79%	59%
Operating Margin Operating Profit/Revenues	26%	16%
EPS Growth	-47%	64%

Strong Income Statement

MERIDIAN BIOSCIENCE VIVO

Meridian Bioscience, Inc.

- Relatively consistent high teens revenue growth
- High gross margins that are improving over last 3 years
- High & improving operating profit margins
- Always profitable
- Very fast EPS growth

	2000	2001	2002	2003	2004	2005	2006
	Sep-00 FY	Sep-01 FY	Sep-02 FY	Sep-03 FY	Sep-04 FY	Sep-05 FY	Sep-06 FY
INCOME STATEMENT							
Net Sales	57.1	56.5	59.1	65.9	79.6	93.0	108.4
Cost of Sales	21.7	25.8	24.5	27.6	33.9	38.2	43.7
Gross Profit	35.4	30.7	34.6	38.3	45.7	54.8	64.7
R&D	2.3	3.4	2.9	3.9	4.4	3.9	4.8
Selling & Marketing	12.3	11.0	9.7	10.6	12.5	15.0	16.5
General & Admin.	10.8	11.5	10.8	11.0	14.1	15.7	16.5
EBITDA	15.0	9.6	14.9	16.6	18.7	24.5	32.2
EBIT	10.2	4.9	11.2	12.8	14.7	20.2	26.9
Interest Income	0.4	0.2	0.0	0.0	0.0	0.0	1.1
Pretax Income	7.7	2.5	9.5	11.6	13.2	19.6	28.1
Provision for Income Taxes	(0.2)	(4.6)	3.2	4.6	4.0	7.0	9.7
Tax Rate	-2%	-187%	34%	39%	30%	36%	35%
Net Income	7.9	7.1	6.2	7.0	9.2	12.6	18.3
EPS	$ 0.24	$ 0.22	$ 0.19	$ 0.21	$ 0.27	$ 0.35	$ 0.46
CY EPS		$ 0.07	$ 0.19	$ 0.22	$ 0.28	$ 0.38	$ 0.50
Mgmt Guidance							
First Call Estimates							
Diluted Weighted Average Shares	33.0	32.8	33.2	33.6	34.3	36.3	40.2
GROWTH & MARGINS							
GROWTH (YoY)							
Revenues		-1%	5%	11%	21%	17%	17%
EBITDA		-36%	55%	11%	13%	31%	31%
EBIT		-52%	130%	14%	15%	38%	33%
EPS		-10%	-13%	11%	28%	30%	32%
MARGINS							
Gross	62.1%	54.3%	58.5%	58.1%	57.4%	58.9%	59.7%
R&D	4.0%	5.9%	4.9%	5.9%	5.5%	4.2%	4.4%
S&M	21.5%	19.4%	16.5%	16.1%	15.7%	16.1%	15.2%
G&A	18.9%	20.3%	18.2%	16.7%	17.7%	16.9%	15.2%
EBITDA	26.2%	17.0%	25.3%	25.2%	23.5%	26.3%	29.7%
EBIT	17.8%	8.6%	19.0%	19.4%	18.4%	21.7%	24.8%
Incremental EBIT		927.4%	245.6%	23.4%	13.6%	41.6%	43.1%
Net	13.9%	12.6%	10.6%	10.7%	11.5%	13.5%	16.9%

Weak Income Statement

TYSON FOODS TSN

- Totally inconsistent revenue growth that has been bad recently
- Look how low their gross & operating margins are!!! Pathetic!
- They are not always profitable (negative EPS in FY06)

	2000 FY Sep-00	2002 FY Sep-02	2003 FY Sep-03	2004 FY Sep-04	2005 FY Sep-05	2006 FY Sep-06
INCOME STATEMENT						
Total Revenue	7410	23367	24549	26432	26014	25559
CGS	6453	21550	22805	24550	24266	24626
Gross Profit	957	1817	1744	1882	1748	933
SG&A	609	877	831	880	939	935
EBITDA	**348**	**1354**	**1295**	**1463**	**1310**	**527**
Operating Income	348	887	837	973	809	10
Interest Expense	116	305	296	275	227	229
Pre-Tax Income	234	593	661	683	564	-211
Income Taxes (benefit)	83	210	235	256	199	-73
Tax Rate	35.5%	35.4%	35.5%	37.5%	35.3%	34.5%
Net Income	**151.0**	**386.5**	**281.0**	**482.1**	**364.8**	**-138.3**
EPS	$ 0.67	$ 1.09	$ 0.80	$ 1.36	$ 1.02	$ (0.40)
CY EPS		$ 1.08	$ 0.97	$ 1.14	$ 1.02	$ (0.35)
YoY EPS growth		125.5%	-26.7%	69.3%	-24.7%	-138.8%
Diluted Shares Outstanding	224.9	354	351	356	357.3	348.75
Street Estimates		$ 1.09	$ 0.74	$ 1.30	$ 1.06	$ (0.04)
Mgmt Guidance				1.26-1.33	0.95-1.08	-14c to 1 c
GROWTH & MARGINS						
GROWTH (YoY)						
Revenues		122%	5%	8%	-2%	-2%
SG&A		49%	-5%	6%	7%	0%
EBITDA		68%	-4%	13%	-10%	-60%
EBIT		88%	-6%	16%	-17%	-99%
EPS		126%	-27%	69%	-25%	-139%
MARGINS						
Gross	12.9%	7.8%	7.1%	7.1%	6.7%	3.7%
SG&A as % Sales	8.2%	3.8%	3.4%	3.3%	3.6%	3.7%
EBITDA	4.7%	5.8%	5.3%	5.5%	5.0%	2.1%
EBIT	4.7%	3.8%	3.4%	3.7%	3.1%	0.0%
Net	2.0%	1.7%	1.1%	1.8%	1.4%	-0.5%

Balance Sheet
Financial Metrics

What They Tell Us

- Balance sheet financial metrics help us determine the financial health of the company.

- Companies that have stronger balance sheet metrics typically will command a higher price (or P/E multiple) from the market

Current Ratio

- The current ratio is a measure of short-term liquidity risk
  – Current Assets/Current Liabilities

- It shows how easily a company could cover current expenses with assets on hand.

- We want to see a Current Ratio > 1 (ideally between 1.5 and 2)
  – A ratio less than 1 means that a company may not be able to pay its bills!
  – Anything over 2 means that the company can easily fund its current liabilities, but may be keeping cash for other purposes.

Return on Equity (ROE)

- Return on Equity (ROE) is a measure of the efficiency with which a company employs its shareholders' capital
  - Net Income / Shareholders' Equity

- It is used as a general indication of the company's efficiency; in other words, how much profit it is able to generate given the resources provided by its stockholders.

- Investors usually look for companies with returns on equity that are high and growing.

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Return on Assets (ROA)

- Return on Assets (ROA) is a measure of a company's profitability
  - Net Income / Total Assets

- Companies with higher ROAs are able to better manage the use of their assets typically through more efficient asset utilization.

- For example, a company that is able to use fewer plants to produce the same number of products is more effectively using its assets and will have a higher ROA.

Return on Invested Capital

- Return on Invested Capital(ROIC) is a measure of the efficiency with which a company employs its debt and equity (total capital)
  - Net Income / (Debt + Owner's Equity)

- Gives general indication of the company's efficiency; in other words, how much profit it is able to generate given the resources provided by all of its investors (both creditors and shareholders).

- Investors usually look for companies with ROICs that are high and growing.

Debt-to Equity

- The Debt-to-Equity (D/E) ratio measures the amount of long-term debt financing relative to equity in a firm's capital structure
  - Long-term Debt / Shareholders' Equity

- Investing in a firm with a higher D/E ratio may be riskier, especially in times of rising interest rates, due to the additional interest expense.

- If D/E > 1, assets are financed more with debt. If D/E <1, assets are financed more with equity.

- The degree of leverage varies across industries.

Comparing 2 Companies (2018)

	Pfizer (PFE)	Starbucks (SBUX)
ROA (Net income/Total Assets)	7.0%	18.7%
ROE (Net income/ Shareholders' Equity)	17.5%	384.3%
Debt/Equity	65%	803%
Current Ratio (current assets/current liabilities)	1.57x	2.20x

Strong Balance Sheet

MERIDIAN BIOSCIENCE VIVO

- Growing cash & equivalents
- PP&E not growing too fast >> not capital intensive business
- Very high ROE & ROA

	2000 Sep-00 FY	2001 Sep-01 FY	2002 Sep-02 FY	2003 Sep-03 FY	2004 Sep-04 FY	2005 Sep-05 FY	2006 Sep-06 FY
BALANCE SHEET							
Cash & Equivalents	5	5	3	2	2	33	40
A/R, net	14	13	13	15	18	17	20
Inventories	16	12	13	14	14	17	18
PP&E, net	18	17	18	18	17	17	18
TOTAL ASSETS	85	66	65	66	69	111	121
Current Debt	8	8	4	1	1	1	0
Accounts Payable	3	2	2	2	3	3	4
Long Term Debt	27	24	24	22	17	3	2
TOTAL LIABILITIES & EQUITY	85	66	65	66	69	111	121
ROIC		5.7%	15.0%	14.7%	18.6%	17.5%	17.9%
ROE		23.9%	26.4%	27.1%	30.4%	21.5%	20.5%
ROA		9.4%	9.5%	10.7%	13.5%	14.0%	15.8%
Debt/Cap		51.5%	49.2%	43.9%	34.2%	3.1%	1.9%
Net cash/share		$ (0.84)	$ (0.74)	$ (0.62)	$ (0.46)	$ 0.82	$ 0.96

Weak Balance Sheet

TYSON FOODS
TSN

- Cash is going down
- PP&E is HUGE % of total assets >> capital intensive business
- They have a lot of debt
- Terrible ROA & ROE. They are negative in FY06 because NI is negative.

	2000	2002	2003	2004	2005	2006
	FY	FY	FY	FY	FY	FY
	Sep-00	Sep-02	Sep-03	Sep-04	Sep-05	Sep-06
BALANCE SHEET						
Cash/Equivalents	43	51	25	33	40	28
Accounts Receivable	508	1101	1280	1240	1214	1183
Inventories	965	1885	1994	2063	2062	2057
PP&E	2141	4038	4039	3964	4007	3945
TOTAL ASSETS	**4841**	**10562**	**10486**	**10464**	**10504**	**11121**
Current Debt	185	254	490	338	126	992
Accounts Payable	333	755	838	945	961	942
Total Debt	1542	3987	3604	3362	2995	3979
TTL LIAB + EQUITY	**4841**	**10372**	**10543**	**10464**	**10504**	**11121**
ROA		3.6%	2.7%	4.6%	3.5%	NM
ROIC		7.8%	7.5%	8.4%	7.1%	NM
ROE		10.9%	8.8%	10.3%	8.2%	NM
Debt/Total Capital	41%	50%	44%	41%	38%	40%

A Note on Ratios

- Important ratios vary from industry to industry, depending on the type of business

  – For example, pharmaceutical companies put a big focus on profitability margins vs. retail companies which care about sales per square foot

- Ratios presented here are generally important ratios across the board

- Ratios only tell us something about potential investments when compared to other *similar* companies, or tracked across time for a single company.

Valuation Metrics

Intrinsic Value

- There are multiple techniques for estimating the intrinsic value of the company

  > "Intrinsic value is an all-important concept that offers the only logical approach to evaluating investments: it is simply the discounted value of the cash that can be taken out of a business during its remaining life"
  > – Warren Buffett

- Discounted Cash Flow (DCF) -- projecting cash flows for the company and discounting them to the current day-- is the most direct approach

- Valuation Multiples are an alternative way that investors estimate intrinsic value.

Multiples Valuation

- Examination of a firm's value _relative to_ its own history, its peers, or the market.

- IF you can find appropriate comparisons, this approach should give similar estimates of intrinsic value to DCF and may be simpler to use.

- Limitations to using multiples.
  - May not accurately reflect the company's future.
  - May not take into consideration an important aspect of the business (due to imperfect comparisons).
  - May be misinterpreted, so always use with care!

Common Multiples

- Valuation multiples always have share or firm market value in the numerator and some measure of accounting performance in the denominator.
  - Price to Earnings (P/E)
  - Enterprise Value/Earnings Before Interest, Taxes, Depreciation and Amortization (EV/EBITDA)
  - Price/Book Value (P/B)

- Often vary by industry as to which multiples are most meaningful

- We focus on P/E for the seminar, but if you were researching a company in-depth, you would look at several different valuation multiples.

What is P/E ?

- ## P/E = Share Price/Earnings per Share

  - P/E tells us what the market is willing to pay for $1 of EPS.

  - Based in large part on expected growth in earnings.

  - Examples:

    - Alphabet, Inc. (GOOGL) EPS = $27.40, stock price = $810 so P/E = $810/$27.40 = 30x

    - Anything > 25x means the market is assuming a lot of future growth.

- ## Alternative formula is P/E = Market Capitalization/Net Income

- ## Faster growing, higher quality companies tend to get higher P/Es

What do we use Valuation for?

- Valuation helps us understand if a stock is cheap or expensive relative to similar firms.

  – In other words, it helps determine the stock's "value," not just "price".

- It can also help us estimate the future stock price

  – To estimate future stock price, investors make an assumption about the stock's future P/E and its future EPS

  – Price = EPS * P/E. For example:

    - Forecasted GOOGL EPS assuming 25% growth from current EPS of $27.40 = $34.25

    - Estimated P/E is 30x

    - Estimated future stock price = 30 x $34.25 = $1,027.50

    - Stock price is $810 today, if I estimate it will go to $1,027.50 over the next 12 months, I expect upside of 27%

Forward vs. Lagged P/E

- Lagged P/E is the ratio of the current stock value to last twelve months' actual net income.
- Forward P/E is the ratio of the current stock value to an estimate of next year's net income.
  - The denominator is an estimate rather than a reported actual value in this case, but the numerator is still the current price.

- Since growth is such an important determinant of P/E, we may also calculate another metric: "PEG" = Forward P/E ratio divided by long-run EPS growth

- Companies that are not currently profitable (that is, ones which have negative earnings) don't have a P/E ratio at all.

Valuation, Price, and EPS

P/E Ratio Valuation

- Look at the EPS from the Income Statement & think about:
  - Factors that will drive continued growth (trends)
  - What future EPS growth will be

- Look at the current P/E ratio
  - Current price/current EPS

- Decide if you think the P/E will stay the same, increase, or decrease

- Use estimated EPS & P/E to determine if stock is a buy or a sell
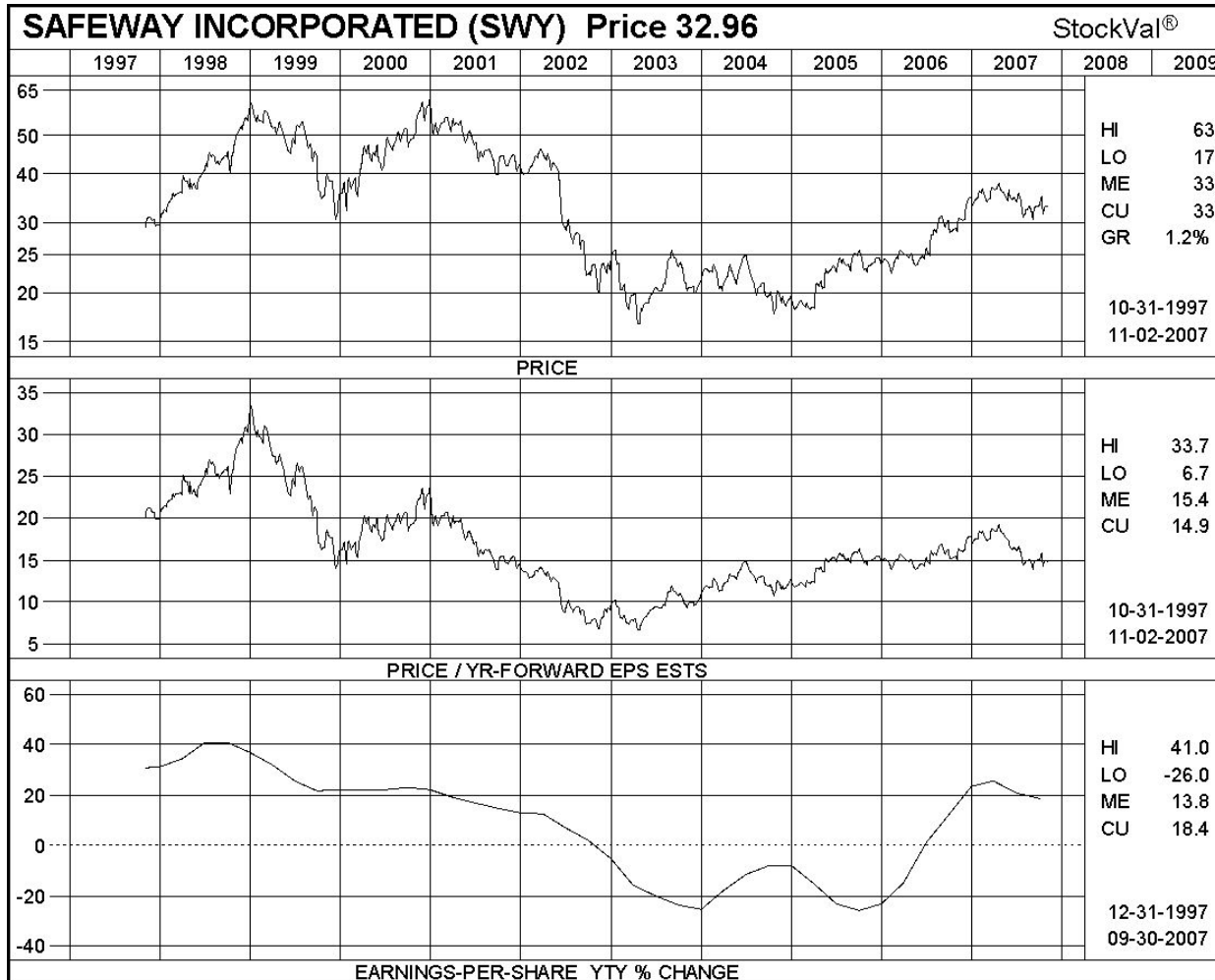
One Very Helpful Valuation Trick

- The P/E for a stock is a function of EPS growth

  Valuation is an art (there are no hard & fast rules), but here is one useful tool

- The market will often pay 1.5 to 2x EPS growth (i.e., PEG = 1.5 to 2x)
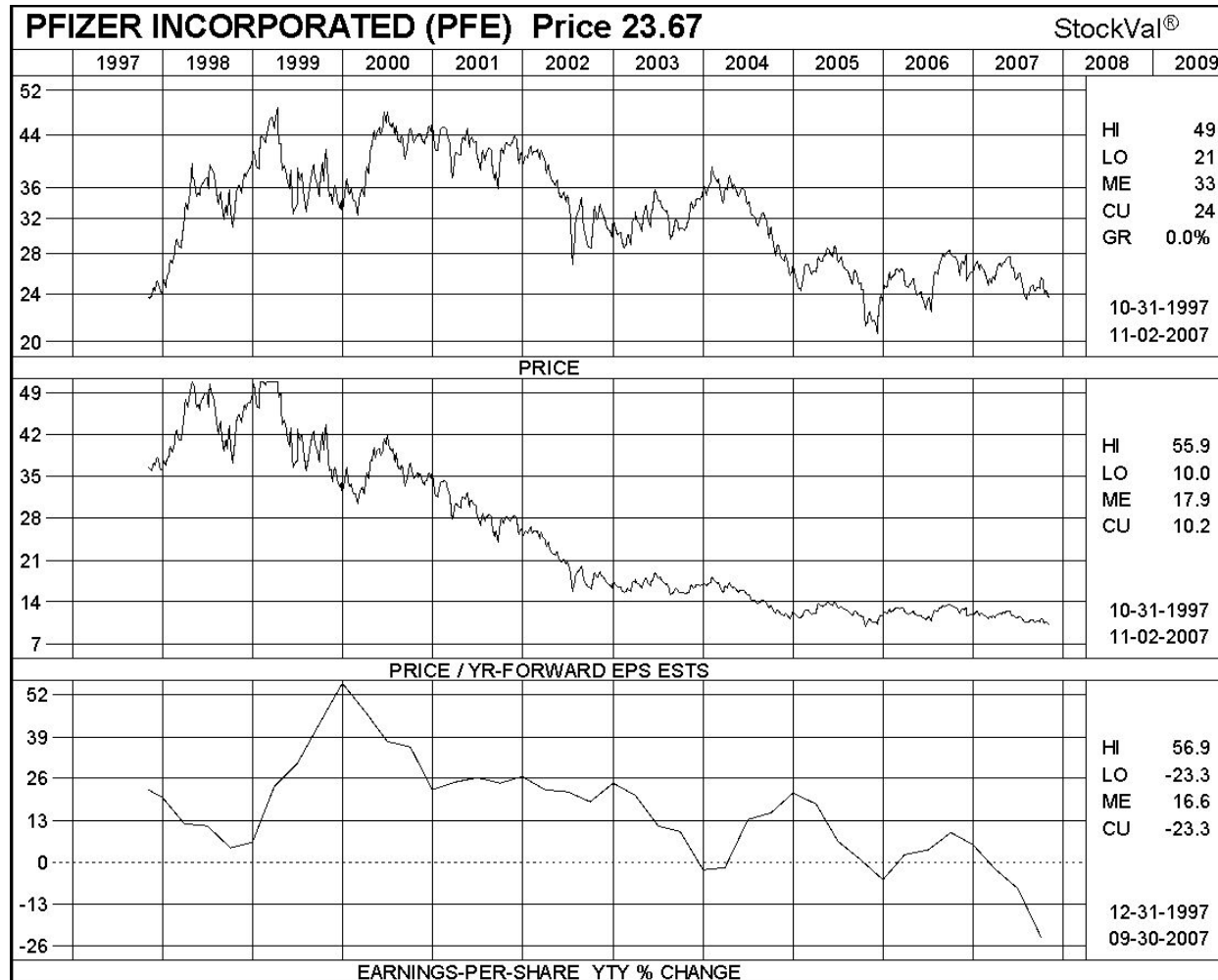 – If Kellogg (K) is growing EPS 10% consistently, its P/E can be as high as 2 x 10 = a P/E of 20x.

P/E & EPS Growth Drive Stock Price

- P/E and EPS growth increased, stock price up

SAFEWAY INCORPORATED (SWY) Price 32.96 StockVal®

PRICE
HI 63, LO 17, ME 33, CU 33, GR 1.2%
10-31-1997 / 11-02-2007

PRICE / YR-FORWARD EPS ESTS
HI 33.7, LO 6.7, ME 15.4, CU 14.9
10-31-1997 / 11-02-2007

EARNINGS-PER-SHARE YTY % CHANGE
HI 41.0, LO -26.0, ME 13.8, CU 18.4
12-31-1997 / 09-30-2007

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P/E & EPS Growth Drive Stock Price

- P/E and EPS growth decreased, stock price down

PFIZER INCORPORATED (PFE) Price 23.67   StockVal®

WFMI's P/E has collapsed

- They don't always go together. Why would this happen?
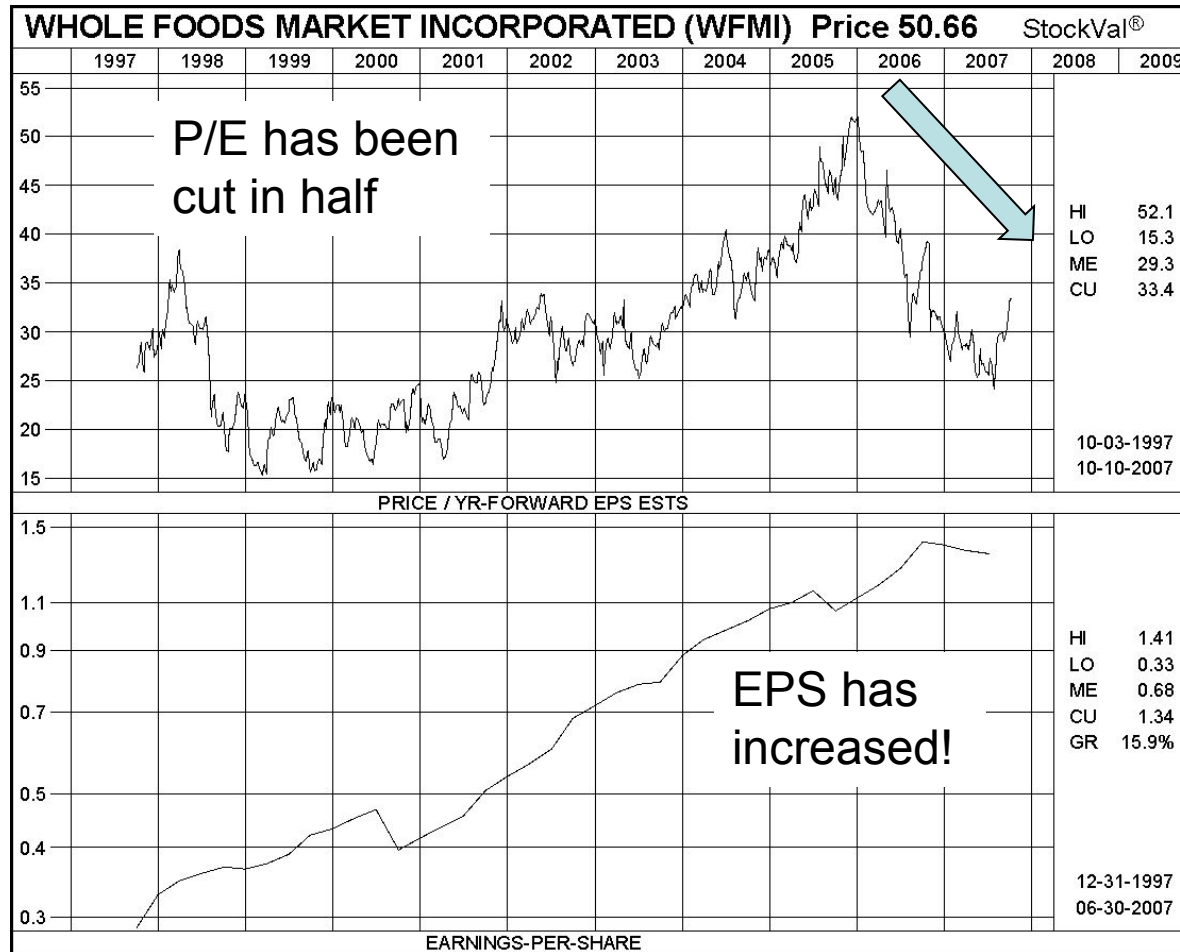
- Stock Price = Earnings per Share x Price/Earning Ratio

- If we want to know what the stock price will do in the future, we have to figure out:

  - Future earnings (how much the company will make)

  - Valuation (what we should pay for those earnings (P/E ratio))

How do we Get to a Target Price?

- How do we estimate future EPS and what P/E ratio we should pay for that given EPS.

- Earnings per Share (EPS)

  - EPS reflects how efficiently management operates the firm.

  - We work to forecast the future earnings given our thoughts on key financial metrics (like growth and margins)

- P/E ratio is dependent on the quality of the earnings.

  - If the company has higher growth rates, stronger balance sheet, and other favorable characteristics, investors are likely to pay more for given earnings.

Seminar Recap

- EPS and P/E are a crucial part in understanding how to come to the value of a stock

- Ratios help us compare different companies and compare a specific company across time

- Financial metrics also help us determine the future earnings and earnings quality for a company.

- Be careful about comparing companies in different industries, as many ratios cannot be universally applied.

- Continue to research financial metrics that may be relevant to the industry that you are interested in.

Coming Up

<u>Week 8:</u>
- Understanding how an investment recommendation works
- Synthesizing information from previous seminars
- Putting it all together with an investment recommendation
- Seeing a real world example of an investment recommendation

<u>Weeks 9-10:</u>
- Guest lectures/presentations