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Michael J. Mauboussin 212/325-3108 michael.mauboussin@csfb.com

Thoughts on Valuation



- Exploration of market myths and market reality draw a picture of an economically sound stock market.
- Popularly used valuation techniques offer the advantage of simplicity at the expense of accuracy.
- A value-based model incorporates good theory and good practice and should be the primary tool in capital allocation for companies and investors alike.

This text is based on a presentation given at the annual National Investor Relations Institute (NIRI) conference in June 1997. The session was originally entitled “Valuation: A to Z.” We thank the NIRI for allowing us to reproduce this speech.

Introduction

Good morning. My objective today is to walk through, very logically, why we think value-based analysis is a powerful tool for both investors and the corporations. We’ll approach the issue in three different ways. First, we’ll talk about stock market myths and stock market reality. Next, we will evaluate valuation techniques, weighing the pluses and minuses of each. Finally, we will lay out the case for a value-based model.

Market Myths and Market Reality

Let’s go right to the first section—stock market myths and reality. I would like to preface these comments by emphasizing that I work on the sell side. Everyday I deal with companies and investors. So I have to be pragmatic, and must try to understand what it is that really matters. My objective in this analysis is to be practical, as well as value-added, for the investors.

The first popular myth is that earnings per share matter. Why would anyone be of that opinion? First, earnings are widely cited in the financial press, it is what companies talk about—earnings are the common language of Wall Street. Second, earnings are the result of audited financial statements—there is authority behind the numbers. Finally, stock prices change, and in some cases significantly, based on earnings per share reports. This morning we woke up with the unfortunate news that Cabletron is going to miss the consensus EPS for the quarter by 15%: the stock tumbled by almost 30%. The fact that earnings will be below current expectations and the stock is down suggest a high correlation between the two events.

We suggest that earnings are really a proxy for what is going on, and that earnings per share figures, in and of themselves, are to be used with a lot of caution. In order to develop this point we used data from the food industry. (See Figure 5.) We took the fiscal 1994 numbers for a handful of major packaged food companies, started with the reported earnings per share number, and sorted through those items that differentiated the reported numbers from the cash numbers. We all know that because of varying, acceptable accounting standards, amortization of goodwill and other sundry issues, reported earnings per share and cash earnings can be two very different things. So we made the necessary adjustments to show the “cash” earnings for every dollar of reported earnings. In 1994, for every dollar of reported earnings Kellogg delivered \$1.39 in cash earnings; ConAgra generated over \$2.08 in cash earnings. So when we are talking about earnings, and applying multiples to those earnings, it doesn’t seem to make sense to use comparable multiples on two business that have vastly different economics, no matter what their reported numbers suggest. Earnings per share, then, are a proxy for cash, but *only* a proxy, for cash.

Now we go to the next level of reasoning: earnings themselves may not matter, it is really earnings *growth* that everyone cares about. Why would we think that? First, earnings growth tends to be held up as an absolute good. In almost every organization, managers are drilled to believe that growth is good. Very rarely do managers ever consider that growth can be bad, and I am going to demonstrate in a moment why EPS growth can be bad. Second, investors appear to be after growth. You hear it all the time: the faster the growth rate, the better. Finally, in most cases

executive compensation is tied to some growth metric. Before I go on to explain why I don't think that earnings per share growth, in and of itself, is important, let's do a mental exercise:

Let's pretend I am an unlimited source of capital. Everyone in this room can come to me and I will give you all the money you want. There is just one catch: the expected return on the capital I give you, not the explicit return, but the implicit return, is 10%. Now, let's say you can go out and reinvest the money I give you at 8%. I give you capital with a 10% "cost" and you reinvest it at an 8% return. Now here is the question. What is your earnings per share growth going to be for this venture? The answer is, It is going to *be anything you want it to be!* All you have to do is keep coming back to me for more money, reinvest it, and you will generate earnings growth at whatever rate you choose. Clearly, the more rapidly you grow earnings the worse off you are, because you are investing below the required rate of return.

That may make sense, but how does it apply to the real world? The answer is that the primary source of capital for most companies is retained earnings. (Roughly 75% of investments are funded internally.) Retained earnings have an implied opportunity cost—that is what shareholders could earn on that capital if they invested it in other ventures of similar risk—but most managers think of retained earnings as "free" money. Hence, managers who take cash generated by the business and reinvest it at below appropriate rates of return in order to drive earnings per share are doing their shareholders injustice. Mind you, investing in projects that do not earn the costs of capital may drive earnings per share growth, but will clearly destroy value. This type of investing goes on every day in corporations around the world.

Here are some other illustrations in the last few months that demonstrate the earnings/value dichotomy. Tyco International—which has been a very good performing stock, by the way—announced in March it was acquiring a company called ADT. Tyco is in the building supply business, ADT is a leading home security company. It came in as a white knight. The acquisition is structured as stock-for-stock—formally called a pooling of interest. It is a mathematical truism when a high P/E company buys a low P/E company, EPS for the acquiring company go up. This point is axiomatic. This was also the case for Tyco and ADT. The day of the announcement, ADT stock was up 18%—no big surprise. Tyco suggested that the deal should result in EPS accretion of about 8%. The stock, however, declined 3% in a flat overall stock market. So earnings per share went up, the stock went down, and the company witnessed a 4 P/E point multiple contraction.

This underscores the important point that P/E multiples are not a determinant of value, but rather a function of value. On Wall Street, the typical valuation formula is $EPS \times P/E = \text{value}$. We just talked about earnings and how they can be misleading. Now we go to this thing called the P/E multiple. We are asking the P/E multiple to reflect growth, capital intensity, risk, quality of management, and competitive advantage. We are heaping a lot of responsibility on one number and we argue that it is practically impossible to know what that right number is. So we try to break value down into components. We believe that value is determined by the present value of a stream of future cash flows, and the P/E falls out of that equation.

Here's another good illustration. A few days after the TYCO/ADT news, Coca-Cola Enterprises announced that its earnings would be roughly 10% lower than the consensus because of some noncash accounting issues. No cash impact—earnings down 10%, but no cash impact. The stock price was unchanged in a flat overall market. What happened? The P/E multiple went up. P/E is not driving the value, the value is driving the P/E; and you really have to keep that relationship straight.

Here is the next market myth: EPS *growth* drives valuation. Companies say that if we could just get our EPS growth rate from 12% to 14% we would get a higher P/E. Maybe yes, maybe no. Figure 9 is a chart for the food industry that helps clarify the EPS growth/valuation debate. We have done similar correlations for 25 industries around the world, and the results have been remarkably consistent. On the X axis, we show projected earnings per share growth. We use consensus estimates, in this case *Value Line*. On the Y axis, we show enterprise value to invested capital—a fancy way of saying price-to-book. For those familiar with Stern Stewart's work, this is relationship is “scaled” market-value-added (MVA). There is a whopping 1% correlation between EPS growth and valuation. If you employ return on equity as your independent variable, the R-squared rises to about 25%. If you use return on invested capital less cost of capital spread on the X axis, the R-squared goes to 75%. Let's go through that again. The correlation for earnings per share growth, 1%; for return on equity, 25%; and for return on invested capital, 75%. Does anyone think that the market doesn't get it? You can be assured that the market gets it. We did this analysis for the food industry going back 15 years. What we found was that return on invested capital versus cost of capital spread explains valuation well over the whole period. Companies moved up or down the regression line as their prospects got better or worse, but the relationship held true.

The next myth is that the market is very short-term orientated. This one is a favorite of the business press, and is a theory in which many CEOs indulge. What is the evidence for “short-termism?” First, stocks react to quarterly earnings per share. Next, money managers are evaluated every 90 days so they have to run fast to make sure their portfolio is well positioned for the short term. Finally, there is a disproportionate focus on next quarter's earnings per share. This is particularly endemic to the sell side.

How are stock prices really set? We will go back to the food industry to gain a perspective on the answer. While the food industry may be somewhat unique in its stability and visibility, let me suggest that this is analysis that is relevant in most sectors.

What we did was quite simple: accepting the basic premise that the value of a business is the present value of future cash flows, we estimated what percent of the value of these stock prices is attributable to cash that will be recognized after five years. (See Figure 11.) The answer is 75% for Campbell Soup and 76% for CPC International. These examples are not unique: roughly 70% of the stock market value of the food industry is attributable to cash that is going to be received beyond five years.

How can we rationalize such a long-term perspective? To address that question, we can hold the “Coca-Cola auction.” This auction is a proof of the market's extended view via some basic armchair logic.

We start the auction process by recognizing that Coca-Cola is one of the best-known companies in the world. Its return on capital in 1996 was 37%, its global market share is 45%, it has an impressive presence in emerging markets. In short, Coca-Cola is a wonderful franchise, and is clearly a strong value-creating company, any way you want to define it.

Now let's pretend for a moment that I was given the right to auction the company, and that everyone here had the resources to buy the whole business. Rather than auction off the company for a given amount, I will auction off the "rights" to future value creation, measured in years. Who would be willing to bet, with their own money, that KO will have returns above its cost of capital over the next five years? How about 10 years? How about 15 years? How about 20 years? Here is the point I am trying to make: portfolio managers want to make money so they buy things they think are going up and they sell things they think are going down. It is nothing personal. Now think about the forecast horizon, or the "short-termism" argument in this context. If the market pushes the horizon in short enough, you are certainly going to have self-interested, motivated, intelligent people say, "I'm willing to bet that KO could earn above its cost of capital for the next (say) seven years and I'm going to buy the stock." The process of setting of stock prices, which is really an auction, assures that the market will look out well into the future when appropriate.

The next canard is that the market is "unsophisticated" or in some instances "irrational." Allen Greenspan and Warren Buffett have recently contributed to this myth. Sumner Redstone, the CEO of Viacom, recently said that his stock price is depressed because the stock market is irrational; people don't get it. All these portfolio managers, who are out to make money in a competitive setting, are collectively irrational. That is a difficult one to buy.

What does happen is a company makes an acquisition, tells the world it's a great strategic deal, and is shocked when the stock is down 2% or 3%. Now in some cases the market doesn't get it because the market doesn't have the appropriate information. In that case, it is incumbent on the company to provide the relevant information so as to allow investors to make the right decision. Collectively, the market gets it a lot more times than it doesn't get it.

Here are two examples of the power of group. First, if you put lots of people together and you ask them to guess a "commodity" number, and their errors are independent, the result will be something very close to the actual price. This illustration was demonstrated very clearly by Jack Treynor. Let me give you a very specific illustration. If I handed everyone in this room a form, asked you to estimate IBM's assets at year-end 1989 (I would assume most of you wouldn't know the exact number), collected them, and took a mean of the responses, that mean would be within 5-10% of the true number. What happens, so long as the guesses are independent, is that the low ballers and high ballers cancel out, and the mean comes out close to the true number. I do this exercise every year in my class at Columbia Business School. Without fail, we come within 5%, and that is without any information being conveyed.

The second example we use, called the "Academy Awards," is a little more fun. We get a group together about this size and we give them a ballot before the Academy Awards are announced. The ballot has two sides. On the first side are top six categories for the Academy Awards—Best Picture, Best Actor, that

type of thing. The second side has more remote categories—things like Best Cinematography, Best Screen Play, and so forth. We ask each participant to chip in one dollar to play and ask them to pick the winners for each category. What we see consistently is that the consensus guess for every category does better than any single human being. In the spring of 1997 we had 125 people play this game: the consensus got 11 out of 12 right, the best human got 9 out of 12. So, the market mechanism is much more powerful than individuals, and that is something that should be respected by everyone that is in this business.

Let's leave this section by suggesting that there are three things that we really want to dwell on. The first is cash flow, the second is some measure of risk, and the third is some sort of time horizon. These are the basics required to value any financial asset, including bonds, options and commercial real estate. For stocks, of course, these variables are based on expectations.

Evaluating Valuation Techniques

Now on to the second section. Our goal here is to weigh the pluses and minuses of various valuation techniques, considering what these techniques can and can't do.

The first valuation tool is the ubiquitous P/E multiple. The definition is just the stock price over earnings per share, typically the next 12 months' earnings forecast. What are the pluses? First, it is very simple. Second, it may be a decent proxy for the present value of future cash flow. Let me pause here to make a point. Financial economists looked at the "cash flow versus EPS" issue 20-30 years ago. The question they asked was, "What really does matter more, earnings or cash flow?" To solve the riddle, they looked for a situation where earnings were going one way and cash flow was going the other, and studied how the market reacted. The best documented example of the earnings/cash flow dichotomy is the shift from FIFO to LIFO accounting in the period of rising prices. If you go from FIFO to LIFO your earnings go down, because you increase your reported expenses. Your cash flow, however, actually goes up because you pay less taxes. It was demonstrated with a decent amount of clarity that stock prices went up when those announcements were made. So the academics suggested, with little exception, that when earnings and cash flow diverge, it is cash flow that the market follows.

There are three minuses to using P/Es, and they are damning. The first is that multiples exclude risk. Second, they exclude capital needs. This is the one I really like to focus on. Third, P/Es don't incorporate the time value money. More accurately, these items are implicit, but not explicit with P/Es.

How are P/Es used in the real world? People typically look for low P/Es—both absolute and relative—as well as (related) EPS growth momentum.

The next valuation tool is the price-to-book ratio. This is particularly relevant for financial institutions, by the way. The pluses: it is a simple measure, indicates a margin of safety, and it is a good indicator of value creation. If a stock trades at or below book, you can be pretty sure it has not earned its cost of capital in the recent past. You can almost say that categorically. The minuses: price/book can be manipulated, is subject to account vagaries, and does not capture key issues of value. Things like write-offs, pooling versus purchase acquisition accounting, and share repurchase all have a major impact on book value, making the measure unreliable.

The next valuation tool, enterprise value to EBITDA, has become very popular. Enterprise value is simply the sum of a company's market value of equity and debt, less excess cash. EBITDA is operating cash flow, defined as operating income plus all noncash charges. The positives of this metric: it gets closer to reflecting the economics of a business; it is simple; it is useful for mergers and acquisition analysis; it relates *enterprise* value to cash flow, not just the equity value; it is useful for industries that don't make money. What are the minuses? The same three things we saw for P/Es. A couple of years ago, Warren Buffett wrote a scathing piece about the abuse of cash flow and cash flow multiples. He focused on the issue of the capital needs of a business. The bottom line is that we cannot talk about the appropriate multiples for a company without understanding its capital requirements. How do you use this measure? One can seek low multiples, and private market value (PMV) investors like to use EBITDA multiples to estimate takeover values.

The next valuation model is the basis for modern finance: the dividend discount model (DOM). Interestingly, the dividend discount model was formalized in 1938 by John Burr Williams, a Harvard professor. It wasn't until 1958 that yields on stocks fell below yields on high-grade bonds. So let's go back in time: the dividend discount model was laid out during a time when stocks yielded more than bonds, which made total sense because stocks were known to be riskier than bonds. So Williams asks, in essence, "We value bonds by discounting future coupons, why don't we value stocks by discounting future dividends?" Then companies started to reduce their payout ratios, meaning companies had more capital to play with. In the 1960s, not surprisingly, we had an era of active mergers and acquisitions.

The dividend discount model is the foundation for the discounted cash flow model. The time value of money is now accounted for, we have reflected capital needs, and product/company lifecycles are captured. There are some drawbacks, however. First, the discount rate is usually a question mark. Second, some companies don't pay dividends, so you have to create all this stuff synthetically. Finally, the DDM can be cumbersome to calculate. By the way, a lot of money management firms—JP Morgan, DuPont, Putnam, to name a few—have been using DDMs to run their portfolios. Now let's shift to the final part of our story, the case for the value-based model.

The Case for a Valued-Based Model

The value of any financial asset boils down to three things: some measure of cash flow, some measure of risk, and some measure of forecast horizon.

Let's start with the first of these, cash flow. Our cash flow definition is going to have two components. The first piece is a measure of income or cash earnings. This income is called net operating profit after tax. (The acronym is NOPAT.) NOPAT is the unlevered — that is, it excludes financial leverage—cash earnings of a business. By making NOPAT unlevered, and by making it cash, we can compare companies within sectors, across sectors, and ultimately across borders. The actual definition of NOPAT is as follows: we take operating income, adjust it for cash taxes paid and the value of the tax shield from interest expense, and add back non-tax-deductible, noncash amortization of goodwill. NOPAT is a good number to know and understand. If you do a return on invested capital calculation, it is the numerator. If you do a free cash flow calculation, it is the number from which you subtract the investments. If you are doing EVA[®], it is the number from which you subtract the capital charge.

The second component of cash flow is the investment in future growth: it represents the investment required to generate future NOPAT. Think about “investment” as an old-fashioned steam-engine train. The first car is the steam engine itself and the second car is the coal car. You have a big burly guy in overalls with a shovel; as the train goes down the track, he shovels the coal from the coal car into the engine. The question is, How much coal has to be shoveled into the engine to drive the future of earnings in the business? We are looking for companies that require little capital and can go “fast down the track.” And we want to avoid those companies that need two or three folks shoveling coal in order to make it poke along.

It’s important to add that we consider all the “value” delivered in so-called investments. For example, if a company makes an acquisition with stock, our model will take that value and translate that into an investment. If 5 million shares are issued at \$20.00 to make an acquisition of \$50 million in book value, the full \$100 million would be treated as an investment, not just the incremental book value.

There are three things that define investment: changes in working capital, capital expenditures (which will reflect net of depreciation), and acquisition, net of divestitures. We suggest spending a lot of time understanding how much money is going into a business, where it’s going and what kind of return it’s going to enjoy.

Free Cash Flow

Free cash flow (FCF), the difference between NOPAT and the investment, is the pool cash that can be distributed to all the claim holders of the company. By the way, this free cash flow is different from the sources and uses number that most analysts throw around. FCF, defined here, is a finance term. Keep in mind that free cash flow excludes financing costs—interest expense. Free cash flow is projected and discounted to a present value in order to value a business.

EVA[®]

Now we define EVA[®]. EVA[®] can be defined as the difference between NOPAT and a capital charge. The three drivers of NOPAT, again, are sales, EBITA margins, and cash taxes. Invested capital is the sum of net working capital, net fixed capital, goodwill, and any other operating assets. Invested capital, if properly modified, represents the amount of capital that has been invested in the business over time. The capital charge—invested capital times the cost of capital—assures that the opportunity cost of capital providers is accounted for.

Now we move on to risk, which we quantify through the cost of capital. What we are trying to capture is the opportunity cost of capital providers. You could draw a mental picture of a portfolio manager sitting in a big leather chair weighing different investment opportunities, in the hope of getting the best returns for a perceived level of risk. That is what you are trying to capture when talking about the cost of capital. One can debate about betas and equity risk premiums but those are only details that need to be smoothed out.

A couple of additional points. First, you have to consider the debt-to-total capital ratio on a market value basis. A lot of companies communicate their debt to total capital targets on a book basis; we take those targets and translate them in market value terms. Second, a further comment on the cost of equity may be in order because it tends to be the most controversial component of the cost of capital. We continue to use the capital asset pricing model (CAPM), although we debate the issue frequently. We use a 30-year risk-free rate (which is now just shy under 7%), and an equity risk premium of about 4¹/₂%. These figures suggest the market expected returns of around 11% to 11¹/₂%.

Competitive Advantage Period

Now we come to the last component of the value-based model and it is a critical one. This idea is what takes the DCF from the classroom into the real world. It takes it from theory to practice. Most MBAs have not been subjected to anything like this before, yet it is really the key to securities analysis. It's something we call competitive advantage period (CAP). CAP is defined as the period of time a company can generate excess returns on its incremental investments. It is based on the idea that competitive forces ultimately drive your excess returns down to zero, meaning the business earns the cost of capital. The ability to extend excess returns for as long as possible is the basic concept of competitive advantage. This is how competitive advantage is tied into this framework.

Generally, when companies or investors run a cash flow model they go out five or ten years. Why is that? Because that's how many fingers you have. Literally, we live in a decimal world because that is how many fingers we have! What you really want to do is link the competitive position of your business and/or industry to an economically sound competitive advantage period.

CAP can be defined by three major variables. The first is the current return on capital—the higher the better. The second is the rate of industry change—if you are in a fairly dynamic industry where things are changing quickly, investors tend to shorten the competitive advantage period. And third, which is related to the first two, is the barriers to entry; the higher the barriers to entry, the longer the competitive advantage period tends to be.

How do we make money using CAP? Well there are two generic ways to do it. The first is to identify higher-than-expected excess returns. Excess return improvement, in turn, can come from two sources. The first is earnings surprise. No change in competitive advantage period. The second is better balance sheet management. One great illustration of that is Dell Computer and Gateway 2000. These companies are in very similar businesses; they sell personal computers through a direct model. Until 1996, the companies actually had very similar margin structures and returns on capital. Beginning in 1996, Dell adopted a value-based program. Management single weighted revenue growth and double weighted returns on capital for their compensation. Dell's return on capital went from roughly 40% to 175% annualized in the most recent quarter. Now the income statement did well, but the balance sheet did a whole lot better. Gateway 2000, same period, saw its returns stay in the 30% to 50% range. Gateway's stock is up an impressive 3¹/₂ times since the beginning of 1995, but Dell's stock up a much more impressive 12.5-fold. Had you been looking solely at the income statement, you would have missed the extraordinary improvement in Dell's financial performance.

The second way to make money is expanding competitive advantage period. That could be driven by changes in management, changes in the industry structure, or changes in investor psychology. Now let me say that we have no idea what the *right* number is for CAP. What we *can* say is that it is very important that investors and managers have a clear understanding of market expectations. By the way, Warren Buffett has a concept he calls the economic moat around the business. He says he looks for businesses that have economic moats that are as wide and as deep and that have as many alligators as possible. Further, he says he wants to find companies where the moat is getting wider. Warren Buffett's concept of a moat translates perfectly into competitive advantage period. It's worth noting that everything we have talked about in terms of defining cash flows, defining risk, and

thinking about competitive advantage has been laid out in Berkshire Hathaway's annual reports over the past 20 years. Buffett is probably the preeminent practitioner of this framework in the world.

While many investors continue to subscribe to certain notions or myths, the evidence collected by the academic community over the years paints a picture of a sophisticated and economically sound stock market. A lack of understanding of capital market behavior is benign unless it leads to suboptimal behavior—like chasing earnings growth for the sake of growth or poorly structured compensation programs. For companies, a value-based program offers an economically sound and consistent way to evaluate all aspects of the business.

Various valuation techniques offer insight to the stock-picking process, but no framework is as complete and theoretically sound as the value-based model. The access to cheap and powerful computers allows investors to utilize the value model effectively.

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Berkshire Hathaway (BRKA, 44,500, Not Rated)
Cabletron (CS, 32⁹/₈, Buy)
Campbell's Soup Company (CPB, 52³/₁₆, Not Rated)
Coca-Cola Company (KO, 61⁵/₁₆, Buy)
Coca-Cola Enterprises (CCE, 27, Buy)
ConAgra (CAG, 33¹/₁₆, Not Rated)
CPC International (CPC, 97⁷/₈, Not Rated)
Dell Computer (DELL, 100³/₄, Hold)
E.I. Du Pont (DD, 60³/₄, Buy)
Gateway 2000 (GTW, 35¹/₂, Buy)
General Mills (GIS, 68¹⁵/₁₆, Not Rated)
H.J. Heinz Company (HINZ, 48¹/₄, Not Rated)
Hershey (HSY, 54¹⁵/₁₆, Not Rated)
IBM (IBM, 104¹/₂, Buy)
J.P. Morgan (JPM, 120³/₈, Hold)
Kellogg (K, 42²/₄, Not Rated)
Ralston Purina Company (RAL, 91⁵/₈, Not Rated)
Sara Lee Corporation (SLE, 53, Not Rated)
Tyco International (TYC, 83³/₈, Buy)
Viacom (VIAB, 30⁹/₁₆, Buy)

Figure 1

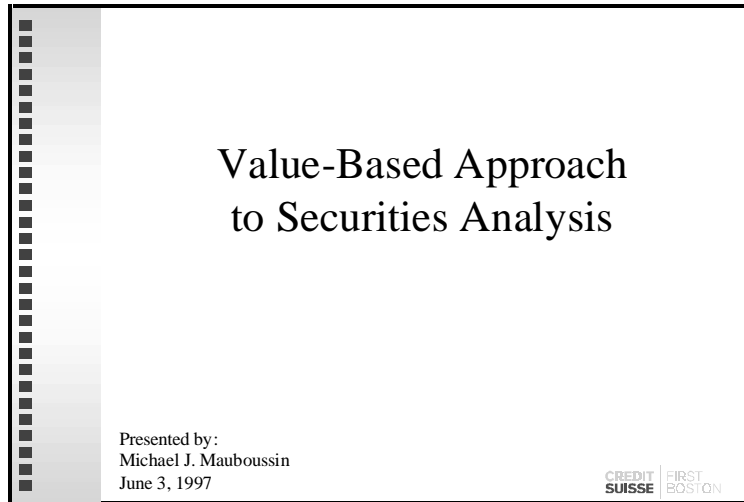


Figure 2

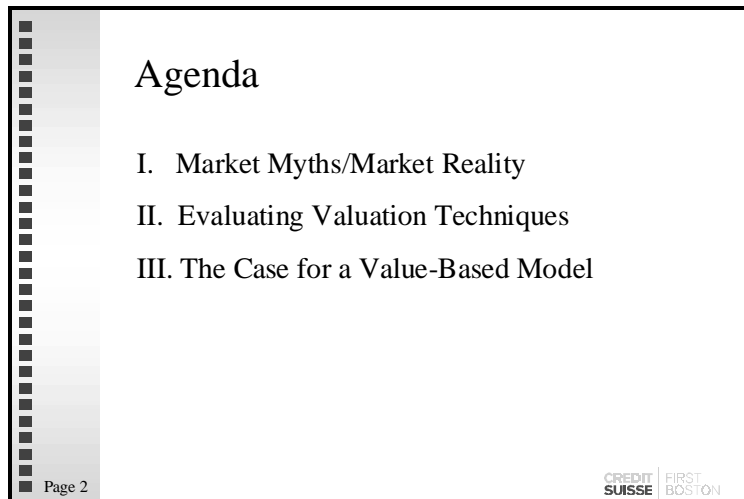


Figure 3

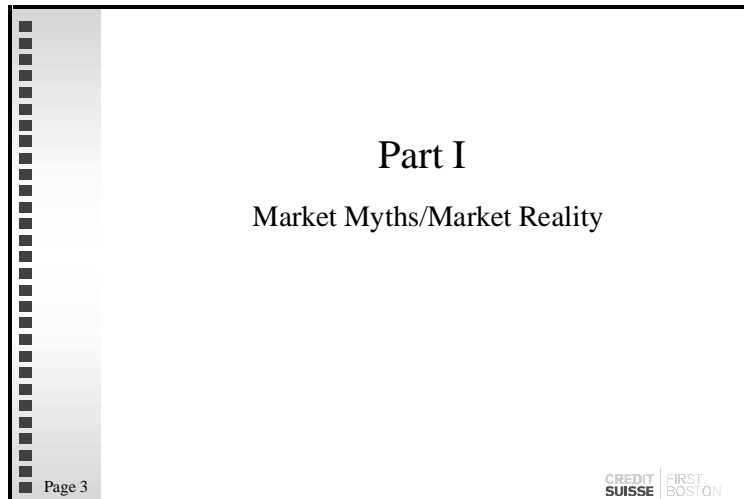


Figure 4

Market Myth

Earnings matter

- ◆ Widely accepted
- ◆ Result of audited financial statements
- ◆ Stocks move based on EPS announcements

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Figure 5

Market Reality

An unreliable measure

\$ in millions, except per share data

Fiscal 1994	Kellogg	Hershey	Sara Lee	H.J. Heinz	ConAgra
Pretax income	\$1,130	\$401	\$389	\$922	\$720
+ depreciation	256	84	414	200	295
+ amortization	0	13	154	60	74
+/- nonrecurring	0	0	732	127	0
- capitalized interest	7	12	15	2	2
Pretax cash	1,379	486	1,664	1,053	1,087
Taxes paid	396	137	295	153	204
Net cash	983	349	1,369	900	883
Preferred dividend	0	0	24	0	24
Net cash	983	349	1,369	900	883
"Cash" EPS	4.39	3.87	2.70	3.50	3.76
Reported EPS	3.15	2.69	1.47	2.11	1.81
Cash/Reported EPS	\$1.39	\$1.44	\$1.84	\$1.66	\$2.08

Source: Company published data.

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Figure 6

Market Myth

EPS growth matters

- ◆ EPS growth is good
- ◆ Investors ask for growth
- ◆ Compensation tied to growth

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Figure 7

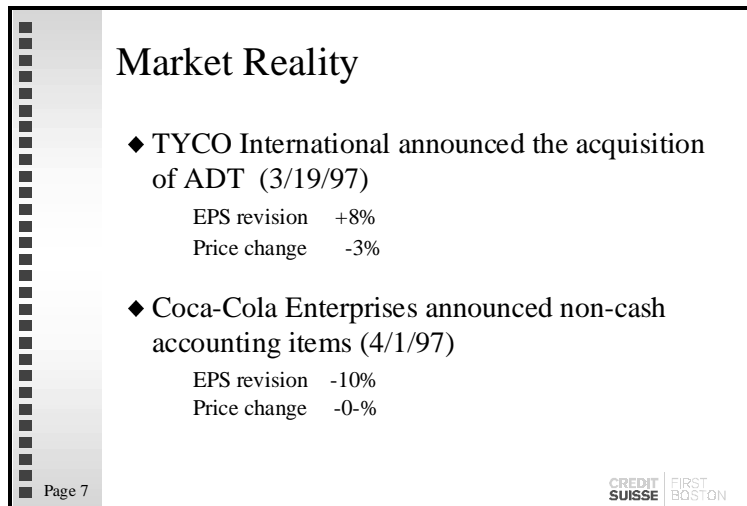


Figure 8

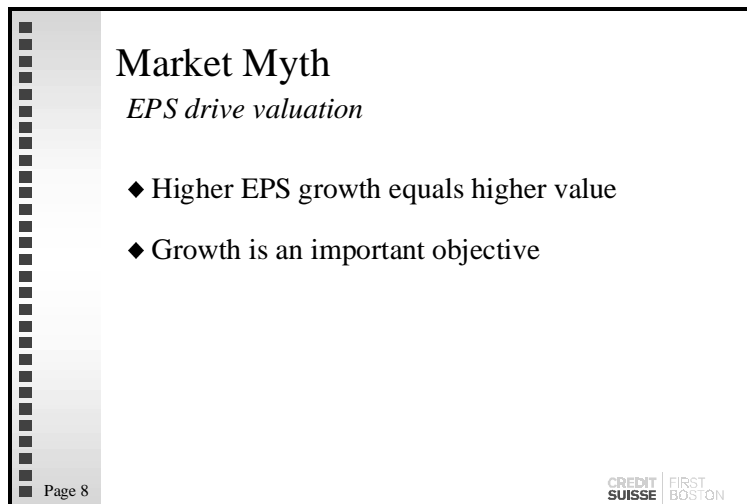


Figure 9

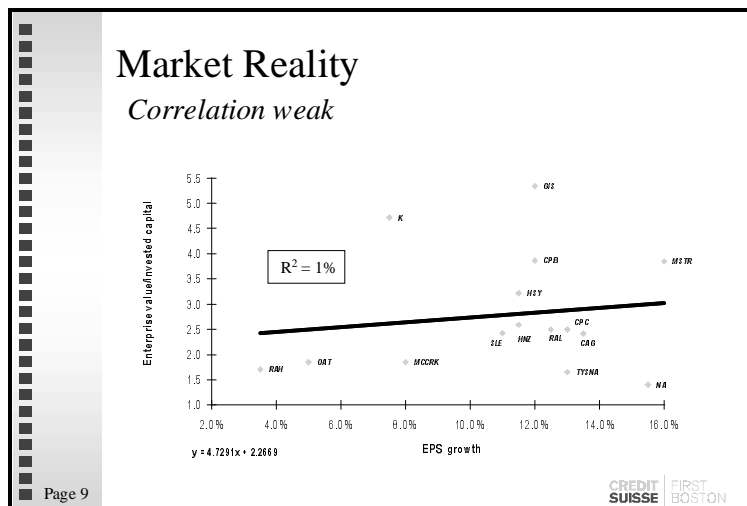


Figure 10

Market Myth

Market is short-term oriented

- ◆ Stocks react to quarterly EPS
- ◆ Money managers evaluated every 90 days
- ◆ Disproportionate focus on next quarter's EPS

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Figure 11

Market Reality

Market has long-term horizon

	% value attributable to cash flows beyond five years
Campbell Soup	75%
CPC International	76%
General Mills	59%
Kellogg	59%
Ralston Purina	65%
Sara Lee	66%

- ◆ Coca-Cola Auction

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Figure 12

Market Myth

Market is unsophisticated

- ◆ Lots of "irrational overreaction"
- ◆ Short-term focus compound the problem
- ◆ Many investors do not get it

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Figure 13

Market Reality
Market is smart

- ◆ Lots of players with independent errors yield “accurate” prices
- ◆ Academy awards

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Figure 14

Value Boils Down To 3 Things

- ◆ Cash Flow
- ◆ Risk
- ◆ CAP (time horizon)

→ All expectational

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Figure 15

Part II
Evaluating Valuation Techniques

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Figure 16

EPS / P/E			
Description	Plus	Minus	How used in "real world"
<i>price of stock/ earnings per share</i>	<ul style="list-style-type: none"> • simple • proxy for cash flow • widely accepted • broadly articulated • executive compensation 	<ul style="list-style-type: none"> • excludes risk • excludes capital needs • time value of \$ • EPS can be manipulated 	<ul style="list-style-type: none"> • relative P/E • EPS momentum • absolute P/E • P/E vs. growth rate • Graham/Dodd formula

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Figure 17

Price/Book			
Description	Plus	Minus	How used in "real world"
<i>stock price/ shareholders' equity</i>	<ul style="list-style-type: none"> • simple • margin of safety • indicator of value creation 	<ul style="list-style-type: none"> • can be manipulated • subject to accounting vagaries • does not capture key issues of value 	<ul style="list-style-type: none"> • low price/book (preferably at or below one) • P/E vs. growth rate

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Figure 18

Enterprise Value/EBITDA			
Description	Plus	Minus	How used in "real world"
<i>enterprise value/ EBITDA</i>	<ul style="list-style-type: none"> • more reflective of economics of business • simple • good for M & A • relates enterprise to cash flow • industries that don't make money 	<ul style="list-style-type: none"> • excludes risk • excludes capital needs • time value of \$ 	<ul style="list-style-type: none"> • low price/EBITDA • PMV investors • EBITDA growth versus multiple

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Figure 19

Dividend Discount Model

<u>Description</u>	<u>Plus</u>	<u>Minus</u>	<u>How used in "real world"</u>
<p><i>discount future dividends to PV</i></p>	<ul style="list-style-type: none"> • incorporates time value of money • implicitly incorporates capital needs • mimics life cycle 	<ul style="list-style-type: none"> • discount rate • discount number not correct • biased toward high yield stocks and against growth stocks • cumbersome to calculate 	<ul style="list-style-type: none"> • calculate NPV • calculate IRR • "black box"

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Figure 20

Part III

The Case for the Value-Based Model

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Figure 21

Definitions

Cash Flow

Net Operating Profit After Tax (NOPAT)

- Unlevered cash earnings
- After *cash* taxes attributable to operating income
- Before financing costs
- Goodwill amortization is added back

Definition

Operating Income	
Less: Taxes attributable to operating income	
Tax provision (normalized)	
- Deferred taxes	
+ Tax shield (net interest expenses * tax rate)	
Plus: Goodwill amortization	
= NOPAT	

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Figure 22

Definitions
Cash Flow

Investment in Future Growth (I)

- Investment required to generate future NOPAT
- “Fuel” of the business
- Key variable for understanding capital allocation
- Consider all value delivered in “investments”

Definition

Δ Operating working capital
Capital expenditures (net of depreciation)
Acquisitions (net of divestitures)

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Figure 23

Definitions
Cash Flow

NOPAT	=	cash earnings
- Investment	=	investment in future growth
<hr/>		
Free Cash Flow	=	cash available for distribution to <u>all</u> claimholders

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Figure 24

Definitions
Cash flow/economic profit link

```

    graph LR
      Sales[Sales] --> NOPAT[NOPAT]
      OM[Operating Margin] --> NOPAT
      CT[Cash Taxes] --> NOPAT
      NWC[Net Working Capital] --> IC[Invested Capital]
      NFC[Net Fixed Capital] --> IC
      G[Goodwill] --> IC
      CC[Cost of Capital] --> IC
      NOPAT --> EP[Economic Profit]
      IC --> EP
    
```

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Figure 25

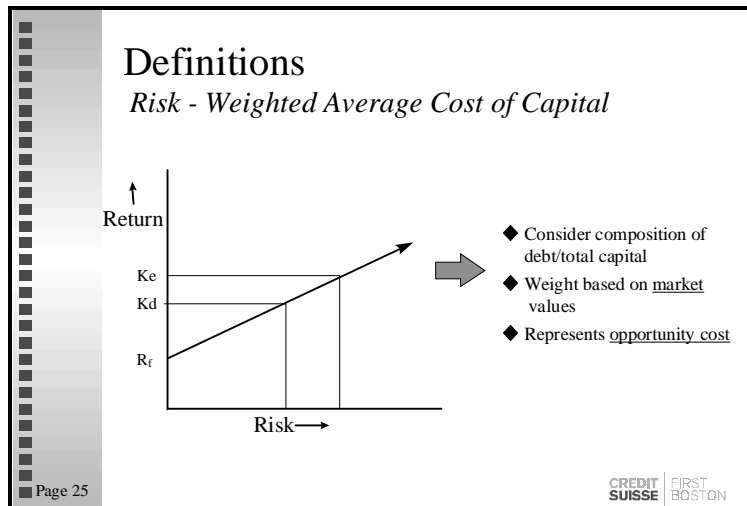


Figure 26

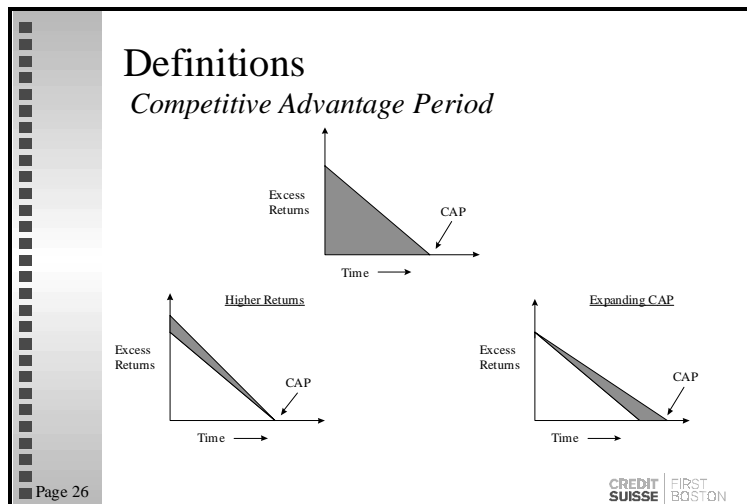
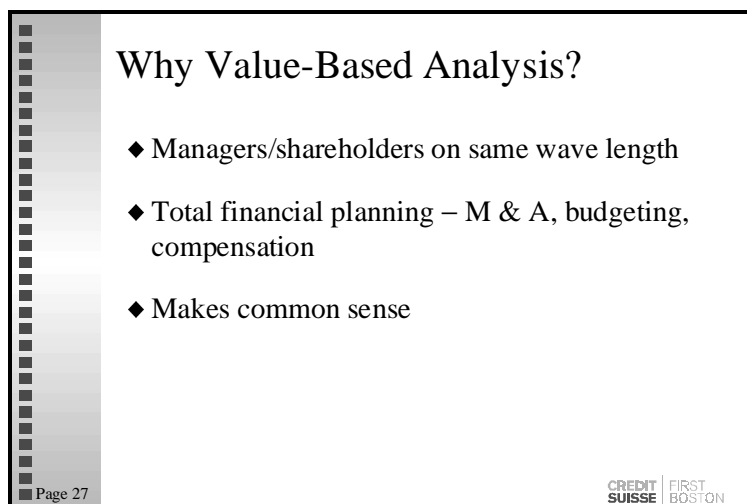


Figure 27



Americas

Eleven Madison Avenue
New York, NY 10010, U.S.A.
1 212 325 2000

Atlanta	1 404 656 9500	Mexico City	1 525 202 6000
Boston	1 617 556 5500	Philadelphia	1 215 851 1000
Buenos Aires	1 541 394 3100	Portland, ME	1 207 780 6210
Chicago	1 312 750 3000	San Francisco	1 415 765 7000
Houston	1 713 220 6700	São Paulo	55 11 3048 2900
Los Angeles	1 213 253 2000	Toronto	1 416 351 1600

Europe

One Cabot Square
London E14 4QJ, England
44 171 888 8888

Amsterdam	31 20 575 4444	Paris	33 1 40 76 8888
Budapest	36 1 202 2188	Prague	420 2 248 10937
Frankfurt	49 69 75380	Vienna	43 1 512 3023
Geneva	41 22 394 7000	Warsaw	48 22 695 0050
Madrid	34 1 532 0303	Zug	41 41 726 1020
Milan	39 2 7702 1	Zurich	41 1 333 5555
Moscow	7 501 967 8200		

Pacific

Shiroyama Hills
4-3-1 Toranomom
Minato-ku, Tokyo 105, Japan
81 3 5404 9000

Auckland	64 9 302 5500	Seoul	82 2 399 7355
Beijing	86 10 6410 6611	Singapore	65 226 5088
Hong Kong	852 2847 0388	Sydney	61 2 9394 4400
Melbourne	61 3 9 280 1666	Wellington	64 4 474 4400
Osaka	81 6 243 0789		