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This class teaches how to analyze cash on the balance sheet and to beware of financial warnings.

Summary: Balance sheet analysis. Good business and good price. Duff & Phelps Case Study. ROE vs. ROC.

Today we will look at Balance Sheets, Income Statements, and Cash Flows as an investor.

Terms	Abbreviations
Net Working Capital	NWC or (CA - CL)
Fixed Assets	FA
Current Liabilities	CL
Current Assets	CA

I. CASH

We said last week that DCF is theoretically the way to look at things, but it is difficult to estimate the cash collected over a long period of time. The problem is figuring that out. Using DCF is like using the *Hubbell Telescope*, one small change and you are looking at another galaxy. Exception for using DCF.

1. Answer: A crummy retailer with negative cash flow but great real estate. The property is worth more than the DCFs of the retailing operations. Hidden Asset that can be eventually but uncertainly turned into cash flows. Future wealth creation
2. Another example: two discount brokers: 1 has 200,000 customers and (2) another broker that has 1,000,000 customers buys it. After the acquisition Broker 2 has 1.2 mm customers with same cost structure. Broker 1 is worth more to an acquirer who can drive operational improvement--mostly cost reduction. There is more value to a strategic buyer.

In general, DCF is theoretically the normal way to value businesses. If that is the case, then why bother looking at the balance sheet?

1. More cash on the balance sheet than is necessary. The excess cash is \$5. How to value and deal with the cash? CF from cash (interest earned) an investor must separate from the operating business. Forget the interest income line.
2. **How will management deploy cash?** The \$5 is not in your (the investor's) pocket. What are management's investment opportunities? What is the history of the management in deploying cash?

Cash is easy to see on the balance sheet, but that is not the end of your analysis. The \$5 is not in your pocket so what you have to determine, based on the history of management, the history of the company, the opportunities in their space, what is going to happen to that cash? If

the stock looks cheap, one of the things management could do with the cash is buy-back stock and accrete value to the remaining shareholders. That would be a good use of cash assuming the stock was undervalued. The company could go on an acquisition binge, and you may or may not like that since 75% of takeovers end in failure, you might think that cash will be dissipated. **You have to determine what will happen to the excess cash.**

Though you see the cash--mathematically it is \$5-- on the balance sheet, you need to determine what that cash is worth to me, the investor. If I think they can grow their business with that cash like buy an add-on type of business or if they are buying back stock, I may give the cash full value. Or the company may sit on the cash and only earn 1% or 2% a year, so I discount the cash on the balance sheet. Generally, I look at that \$5 on the balance sheet. And how much is it worth to me. I may value it as low as \$1 or \$2 or at full value. **Don't just take the \$5 at face value.** If it were all mathematically simple, the opportunities wouldn't be as great.

Flaw in Using Enterprise Value

There is another flaw when you use Enterprise Value. $EV = \text{Mkt.Cap.} + \text{Net Debt.}$ \$6 debt + \$5 cash = \$1 EV. Say a company has 1 share priced at \$7 per share or a \$7 Mkt. Cap. \$5 in cash so $EV = \$7 \text{ mkt. cap} - \$5 \text{ in cash} = \$2 \text{ in EV.}$

You estimate that EV will be worth \$3 or 50% higher (at \$2 a conservative 50% discount to \$3). So you can lay out \$2 in EV and have something at \$3 in value. **What is wrong with that analysis?** You can't immediately unlock the value of the excess cash.

Back to example: EV is \$2 and you value it at \$3, however if you value the cash at par you are putting a big weight on the \$5 in cash. You are laying out \$5 now for a future return and you may have to wait 2 or 3 years. So $\$5 + \$2 = \$7$ -----going to $\$3 + \$5 = \$8$. The \$5 could be dead money so there is less upside. Note opportunity costs.

You can wait round for 2 or 3 years for *Mr. Market* to revalue the business. But here don't be fooled--you pay \$7 for a return of \$8 after two years--your return is not that high--less than 7% compounded. (6.93% to be exact).

USE Enterprise Value (EV) ANALYSIS

Should we use P/E or EV/EBIT analysis? In this class **we will always use EV/EBIT analysis** because in my 20 years in the business--if you don't make the best of your business, someone will come in and do it for you.

So in one sense in the book I assigned you (*Security Analysis* by Hooke), the author says that you don't have control over the capital structure of the company, so P/E analysis is fine. The Company has the debt it has and you should just leave it at that.

I disagree and think you should always use Enterprise Value (EV) analysis not market cap and Earnings per Share (EPS) analysis. Use EBIT or (Ebitda – Maint. Capex).

In general, I think the Private Market Value (PMV) is the best. Figure out what the whole business is worth to somebody then pay a big discount for it.

II. Accounts Receivable - liquid in a year. Inventories

Refer to Chapter 8 of Thorton O'Glove's Book, *Quality of Earnings*.

Concerns: credit quality and collectivity. Work in Process (WIP) vs. Finished Goods. Look at them as risks. If you sell on credit, you can sell more stuff.

Inventories - salability

<i>Commodore Int'l</i>	9/30/84	% Chg.	9/30/83	% Chg.	9/30/82
Net Sales (3 months)	\$244.2	16.7	\$209.3	102.6	\$103.3
Accts. Rec., Net	\$254.7	34.1	189.9	5.5	180.0
Inventories	437.4	9.7	398.7	22.0	326.8

Good, inventories only up 22% and A/R up only 5.5% in 82-83 while sales are up 103%. Customers are paying quickly or in cash for a hot product.

However, in 84-83, A/R ballooned 34% while sales only up 16.7%--note divergence. Inventories only up 9.7%. A/R up because of slow payers or easier credit terms. Or because of a sales slowdown. You look for a dichotomy between these two things--sales and A/R.

<i>Commodore Int'l</i>	Sep 30, 1984	Sep 30, 1984
Inventories		
Raw Materials and W.I.P.	\$243.2	\$270.3
Finished Goods	\$194.2	\$128.4
	Note big jump in finished goods!	Old goods not selling!

Not expecting as many sales since finished goods piling up in the warehouse. Now 1984/1983 receivables are ballooning 2x as much as sales. This Company subsequently blew up. Ask if receivables and inventories growth is in line with sales growth. **Look for Aberrations and divergences.**

Determine if inventories are good--should I give the A/R and Inventory a haircut?

Could be an industry in distress. Future sales shoved into inventory. Work in Process Inventory (W.I.P.) up 50% while finished goods are up 10% - big boom in sales. Check the divergence out.

Are inventories and receivables in line with sales growth? Know what inventories are made up of.

Keep the big picture in mind.

III. Goodwill

Now some general goodwill is not being amortized. \$5 Tangible Assets with \$10 EPV so purchase price of \$10 in book value has \$5 in goodwill. Or \$5 in goodwill (premium paid in acquisition) + tangible assets \$5 = \$10 book Value.

I originally paid \$10, but now the value is \$7, so \$3 written-off (\$10 - \$7). There is a Goodwill impairment of \$3.

Company 1:	Current Assets of	\$3
	Fixed Assets of	\$2
	Goodwill of	\$5
	-Current Liabilities	\$1

Book Value = \$9

Company 2:	Current Assets of	\$3
during inflation)	Fixed Assets of	\$7 (more fixed assets means more replacement cost
	Goodwill of	\$0
	-Current Liabilities	\$1

Book Value = \$9

Both companies earn \$2 per share in cash. **With company 1, you don't have to replace tangible assets so you would prefer the business with goodwill.** Less tangible assets mean more investment to replace those assets in order to keep the business running as is. I (investor) paid a premium over the tangible assets of \$5 because of the high Earnings Power Value of the business. Once I have paid that premium, I own the business and the greater returns will allow me to grow with less investment in fixed assets. **I don't have to keep paying the premium over tangible net assets. (WEB explained this in his 1989 annual report).**

Current Assets - Current Liabilities = Working Capital (CA-CL = WC).

Capital employed: NWC + FA. So Company 1: WC = \$2 + FA = 2 ---\$4 in capital. ROIC = \$2/\$4 = 50%. \$2 in cash earnings pre-tax/total investment capital = \$2/\$4 = 50%.

For every \$1 invested, the business earns 50 cents. This Business doesn't need a lot of Fixed Assets to grow. You Would have to buy less FA to grow than Company 2. (Less capex reinvested).

Company 2: WC = 2 + FA = \$7 ---\$9 in capital. ROIC = \$2/\$9 = 22%. For every \$1 invested, it earns 22 cents.

There is goodwill on the balance sheet because before, someone paid less than me. Asset heavy.

Accounting records what you or someone else paid in the past.

Always look at pre-tax return. EBIT: Earnings before Interest & Tax or Operating Income. EBIT allows an apples-to-apples comparison between companies because firms have different tax and interest rates. How much the business is earning regardless of the tax rate or interest paid or owed. How much is the business earning?

How much is the business earning to make an acquisition? How much of a dollar of sales drop to operating earnings--the bottom-line.

EBIT/(Net Working Capital) + Net Fixed Assets or EBIT/investment capital.

EBIT is your pre-tax return/what capital that had to be employed to generate that EBIT.

CA -----A/R - CL -----A/P (free loan). Assume no excess cash or take out the excess cash and add back after your analysis. You have to finance these receivables minus the money that is lent to you freely through A/P.

On the denominator we take the Net Working Capital--what you need to run your business plus you need to finance your fixed assets or your plant and equipment. Forget goodwill and everything else.

What you need to generate EBIT is in your NWC plus Fixed Assets ----- Return on Invested Capital (ROIC or ROC). $EBIT / (NWC + FA)$ or operating income/invested capital.

Which is the Better Business?

GUM STORE

Jason opens a gum store for \$400,000 which includes WC + Inventories + FA and building-out the store. Every year he makes EBIT of \$200,000. He makes $\$200,000/\$400,000 = 50\%$ Return on capital (ROC).

JUST BROCCOLI

Now he has a friend named *Jimbo* who opens a store, *Just Broccoli*, and he made \$10,000 for each store he opens. $\$10,000/\$400,000 = 2.5\%$ ROC.

Who would you give money to expand? Give \$\$ to *Jason* because of higher ROC.

You want to ask how much it costs to expand and how much will you make on the investment?

Be in a business earning high ROC. Borrow 10% to make 50%---that is a good deal.

Look at pretax rate to simplify. Compare pretax return to pretax return.

Jimbo is really throwing money away earning a 2.5% ROC vs. a 6% risk free rate from govt. bonds. He is not earning 2.5% but losing 3.5% (6% Risk Free Rate - 2.5% return earned from his store). Opportunity Costs.

Your goal as an investor: you want businesses that are earning high returns on capital and returns above your cost of capital.

Using capital regardless of how fixed assets are financed. How good a business is this (not measuring equity)? If I put in \$, how much do I earn on it?

Denominator is **NWC + FA**--why using net and not gross working capital? On average that is the right thing to do. Because in general what happens to your fixed assets, you buy something and you depreciate the assets so the value of your asset goes down, but to maintain your asset, there has to be on-going capex. Depreciation and Capex cancel out (assume Depreciation = Maint. Capex). If capex is more than depreciation, then FA will increase accordingly and you will be updated. If you are in expansion mode, you build new stores and the FA balloon before you earn on those assets, so your ROC will decline--so you must normalize or adjust for that. Fixed Assets minus depreciation plus Maint. Capex is why I use a Net number.

So NFA + NWC are what I look at. A quick and dirty analysis. We only buy a few situations. We may have to look at 50 to 100 situations to buy 1 or 2. Drop or evaluate to study further. Do intensive research on a few things. *XX Partners* are very selective in our investments.

Explain the big picture. Your predecessors (MBAs) failed over a long period of time. It has nothing to do about their ability to do a spread sheet. It has more to do with the big picture. I focus on the big picture. **Think of the logic, not just the formula.**

Thorton O'Glove was recently interviewed and he wrote the book, Earnings Quality. I looked at the footnotes but they are not the big picture. Don't lose the perspective of the big picture. Listen, I lost the big picture. Savvy guys say the footnotes are important, **but think of whether it is a good business and am I getting it at a good price.**

DUFF & PHELPS Example.

A prior lecture on Duff & Phelps can be found here:

The problem with $EBIT/ASSETS = \$28.4/\$44.2 = 64\%$. What is wrong with that? Take out goodwill of \$21.7 million. $EBIT/Tangible\ Assets = 126\%$. Fantastic returns!

$EBIT/(NWC + FA)$ or (tangible assets - current liabilities). CL or Non-Interest Bearing Current Liabilities (NIBCL)

This is a great business because it is asset light but with huge returns to capital. The business needs little capital to grow. **It drowns in cash.**

Student: after-tax EBIT/EV is 6.5% or about the LT Bond Rate. Hold.

$EBIT/Assets = 28.4/44.2 = 64\%$. Take out Goodwill of about 1/2 the assets.

GI: Over 100% return on tangible capital. This happens to be a great business with huge ROC.

What to Focus on:

1. First I am looking for good businesses. $EBIT/(NWC + FA)$ or $EBIT/Tangible\ Assets$. This is what the business is earning pre-tax or pre interest cost or benefit.
2. Then a bargain price: EBIT/EV or my earnings yield. This is what I am paying for those pre-tax earnings. \$100 paid but earning \$9, so the yield is 9%.
3. Is the earnings stream growing, declining or staying the same? How confident am I of this? I focus on normalizing earnings two to three years out instead of all the little problems in the near-term. Project my EBIT two years out--will it be at risk, will it be growing or shrinking? Hard stuff. Project my EBIT two or three years out. This is where your circle of competence is important.
4. How much am I paying relative to my normalized earnings? If the 9% yield is growing quickly--it could be a good buy. If it is a business with high ROIC then good. Am I getting a good price? How much am I paying? Am I getting a good return?
5. If I am unable to normalize earnings, then pass on the opportunity or set aside.

The hard part is determining the normalized number and what is happening to that number. *Regression to the mean.*

If I can figure the normalized EBIT three years out, how confident am I of that? Is this a good franchise or not? What is my ROC? How confident can I be of the future? This depends on the Barriers to Entry, competitive advantages and management, etc.

Then how much will I be paying for that?

I look at things in that simple way. Most of the time I can't project normalized earnings. But when I can, then I have confidence in the business. The space is growing, their new stores will be earning a lot. The business has a franchise.

Simplify

Just Learn to first ask:

Good Business?	Is this a good price?
EBIT/NWC + FA (or TA - CL) Pre-tax operating income/Investment Cap.	EBIT/EV Pre-tax oper. inc./Enterprise Value
Is this a good business with normalized earnings and future normalized earnings?	Am I getting a bargain price?

Only invest where and when you have confidence. You don't have that luxury. If you have a choice, then wait for the perfect pitch. If a business or a normalized return produces less than 20% pre-tax, the investment must have more going for it than that.

When interest rates are below 6% (like today 4.5%) I use 6% because when Interest rates are less than 2%, you get crazy multiples. Using 6% or above is an added margin of safety.

Student: Mgt. is getting too much money. Professor & Great Investor ("GI"): this is a brains business, so you might need mgt. He likes to have management incentivized with shares.

So the company is earning \$2 per share, but you feel normalized earnings three years out will be \$5 per share. Usually what happens is that when you grow sales, you have to grow NWC and FA during that time. Don't fine tune it. I am trying to choose between the Broccoli Store with 2.5% ROC and the Gum Store with 50% ROC. The choice should be obvious.

Sales growth

Every dollar at *Duff & Phelps* of FCF can go to buying back shares. EBIT growth of 51% in 1998. Jump in sales growth due to structured finance.

The business is a semi-oligopoly. Firms need to have bonds rated by an agency like *Duff & Phelps*, S&P or *Moody's*.

- This is a good business
- Use of cash to buy back stock.

- Because of share buy backs, then Net Income grew at 18% while EPS grew faster at 29%.
- Sales growth of 13% to 25%

In 5 years, what would *Duff & Phelps* look like?

1. 28.4 EBIT grows at 24% per year because it is a good business and has a niche with *Barriers to Entry (B-t-E)* and *Competitive Advantages (CAs)*.

Duff & Phelps is using all their earnings to repurchase stock. Assets are not growing despite sales growth of 20% - 25%. It only has tangible assets of 23 mm--only growing by \$2 million over five years despite sales doubling. Then looked at EBIT growth. 51% growth in 1998 due to increase in the structured finance area. Their business could grow without increases in assets. There is good increase in sales and FCF without adding investment.

All in all, this business looks good. Every nickel used to buy back stock, so a good use of cash--EPS growing faster than earnings.

What would this business look like in five years?

Greenblatt makes three assumptions for three scenarios:

If we don't have confidence in our estimates, this is a waste of time. EBIT grows faster than sales. EPS grew at 30% per year and sales grew at 20% per year.

1. Grow 8%: EBIT of \$28.4 ---\$41.2 + \$2 million = \$43.2 x 8 multiple = \$341/3.45 mm OS = \$99 per share.
2. Grow 13% \$52.3 + \$2 = \$54.3 x 13 = \$32.58 after-tax = \$122 per share.
3. Grow 20% = 28% annualized return over five years = \$164 per share.

What about cash earned over 5 years? I will assume that I will add the cash to the balance sheet. But in this case, I assume for every \$1 there is a buyback of stock. Assume price is up 8% per year. All their earnings used for share repurchase. 347,000 shares per year bought back--so reduce at the end of five years by 1.5 mm shares. 5 mm - 1.5 mm FD outstanding shares = 3.5 mm outstanding shares. Professor noticed the declines in outstanding shares because of continuous share buybacks.

Place a *Margin of Safety* in your assumptions by being conservative. At most, an investor will lose cost of carry if the business doesn't grow.

Simplicity of exercise. In footnotes - put \$2 million back. Mgt. owned 25% of company so management is a big stakeholder. A good sign of management alignment with investors.

7.8% after-tax yield for a 13 P/E vs. 6% bond.

Barriers to Entry with huge ROIC. He learned from this to invest in *Moody's*. He invested in *Moody's* at 20 x EPS for a 5% yield which was less than 6% bond yield.

Learn an industry. Because of studying Duff & Phelps, he knew to look at MCO when it was being spun off.

13% growth in five years = \$122. It turned out that 24% growth a year was conservative.

Assessing Management:

The trick is that if a CEO is being paid \$500,000 a year, then 1/2 million point for every \$1 up. Where is their bread buttered? *Prof. Greenblatt* wants mgt. to be large stakeholders relative to their salary. To fight or change management, there is not a lot you can do except by a proxy fight.

Mgt. of *Duff & Phelps* spent \$4.5 mm buying back stock in 1996, \$13.9 mm in 1997 and \$16.7 in 1998. Net Income of \$9 mm in 1996, \$10.7 mm in 1997 and \$16.7 in 1998.

KEY TO LEARN:

Step 1: Good Business?	Step 2: Bargain Price?
EBIT/(NWC + FA) Operating Income/Net Tangible Investment	EBIT/EV or Enterprise Value/Operating Income

Can you normalize EBIT or not? 6% (US Long term bond yield) is the bogie to beat. 16.66 x P/E vs. 6% US bond yield. 10 x EBIT is my initial bogie. Growing or Shrinking?

Gotham Capital invests in a very focused portfolio of 3 to 9 positions. Have a focused portfolio. Only do things you feel comfortable about or know a lot about.

How to adjust to this framework to new stuff like special situations? How to create opportunities and expand our universe? 6% is equivalent to: \$16.66/\$1.00

The point of the *Duff & Phelps* example is the simplicity of the exercise and the different things you need to think about. If you looked at the footnotes, you see they would stop paying \$2 million a year. What are they doing--buying back stock. Mgt. owned 25% of the company so they were stakeholders. The business had a franchise. There were barriers to entry.

7.8% after-tax yield (8 P/E) or 6% bond? I would rather own *Duff & Phelps*. Rarely will you find a business this good in your travels. In fact, the only other business I found was *Moody's* when it was spun off when it was selling 20 x earnings or yielding 5%. Their earnings were temporarily depressed.

I saw this opportunity because of my prior study of this industry. Ultimately, *Fitch* took over *Duff & Phelps* at \$100. In one year we got \$100. The gap between price and value closed quickly. **All knowledge in this business is cumulative.**

End of lecture.

Hand-Out www.sherlockinvesting.com

Return on Equity or Return on Capital: Which is the better guide to performance?

Two brothers, *Abe* and *Zac*, both inherited \$10,000 and each decided to start a photocopy business. After one year, *Apple*, the company started by *Abe*, had an after-tax profit of \$4,000. The profit from *Zebra*, *Zac*'s company, was only \$3,000. Who was the better manager? For simplicity, suppose that at the end of the year, the equity in the companies had not changed. This means that the ROE for *Apple* was 40% while for *Zebra* it was 30%. Clearly *Abe* did better? Or did he?

There is a little more to the story. When they started their companies, *Abe* took out a long-term loan of \$10,000 and *Zac* took out a similar loan for \$2,000. Since capital is defined as equity plus long-term debt, the capital for the two companies is calculated as \$20,000 and \$12,000. Calculating the return on capital for *Apple* and *Zebra* gives 20% ($=\$4,000/\$20,000$) for the first company and 25% ($=\$3,000/\$12,000$) for the second company.

So for this measure of management, **Zac did better than Abe**. Who would you invest with?

Perhaps neither. But suppose that the same benefactor who left money to *Abe* and *Zac*, also left you \$100 with the stipulation that you had to invest in the company belonging to one or other of the brothers. Who would it be?

Most analysts, once they have finished talking about earnings per share, move to return on equity. For public companies, it is usually stated along the lines that equity is what is left on the balance sheet after all the liabilities have been taken care of. As a shareholder, equity represents your money and so it makes good sense to know how well management is doing with it. To know this, the argument goes, look at return on equity.

Let's have a look at your \$100. If you loan it to *Abe*, then his capital is now \$20,100. He now has \$20,100 to use for his business. Assuming that he can continue to get the same return, he will make 20% on your \$100. **On the other hand, if you loan it to Zac, he will make 25% on your money.** From his perspective, **Zac is the better manager since he can generate 25% on each extra dollar whereas Abe can only generate 20%.** 25% return vs. 20% on total capital employed.

The bottom line is that both ratios are important and tell you slightly different things. **One way to think about them is that ROE indicates how well a company is doing with the money it has now, whereas ROC indicates how well it will do with further capital.** (In a later article, I will explain in more detail how to use ROC to estimate the growth of earnings.)

But, just as you had to choose between investing with *Abe* or *Zac*, if I had to choose between knowing ROE or ROC, I would choose the later. As I said, it gives you a better idea of what a company can achieve with its profits and how fast its earnings are likely to grow. Of course, if LT debt is small, then there is little difference between the two ratios.

Warren Buffett is well known for achieving an average annual return of almost 30% over the past 45 years. Books and articles about him all say that he places great reliance on ROE. In fact, I have never seen anyone mention that he uses ROC. Nevertheless, a scrutiny of The Essays of Warren Buffett and Buffett's Letters to Shareholders in the annual reports of his company, Berkshire Hathaway, convinces me that he relies primarily on ROC. For example, in one annual report he wrote, "To evaluate (economic performance), we must know how much

total capital--debt and equity--was needed to produce these earnings." When he mentions ROE, generally it is with the proviso that debt is minimal.

If your data source does not give you return on capital for a company, then it is easy enough to calculate it from ROE. The two basic ways that LT debt is expressed are as LT debt to equity (DTE) and as LT debt to capital DTC. (DTC is also referred to as the *capitalization ratio*.) In the first case, ROC is calculated from ROE by **$ROC = ROE / (1 + DTE)$** , and in the second case by **$ROC = ROE \times (1 - DTC)$** .

For example, in the case of *Abe* we saw $DTE = \$10,000 / \$10,000 = 1$ and $ROE = 40\%$ so that, according to the first formula, $ROC = 40\% / (1 + 1) = 20\%$. Similarly, $DTC = \$10,000 / 20,000 = 0.5$ so that by the second formula, $ROC = 40\% \times (1 - 0.5) = 20\%$. You might like to check your understanding of this by repeating the calculations with the results for *Zac's* company.

If you compare ROE vis-a-vis ROC for a company like *General Motors* with that of a company like *Gillette*, you will see one of the reasons why Buffett includes the latter company in his portfolio and not the former.

END