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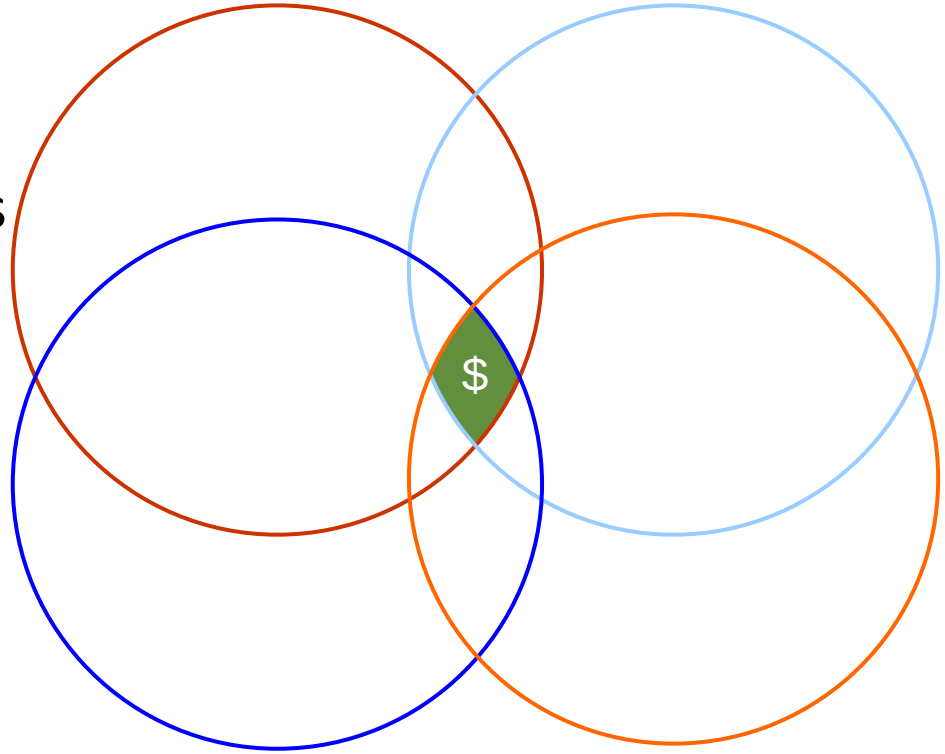
Techniques in Finance & Valuation

What is Valuation?

Valuation: *Methods of quantifying how much money something should be exchanged for today, considering future benefits.*

We will teach 4 valuation methods

- Trading Comparables
- Transaction Comparables
- Sum-of-the-Parts Valuation
- Discounted Cash Flow Analysis (DCF)



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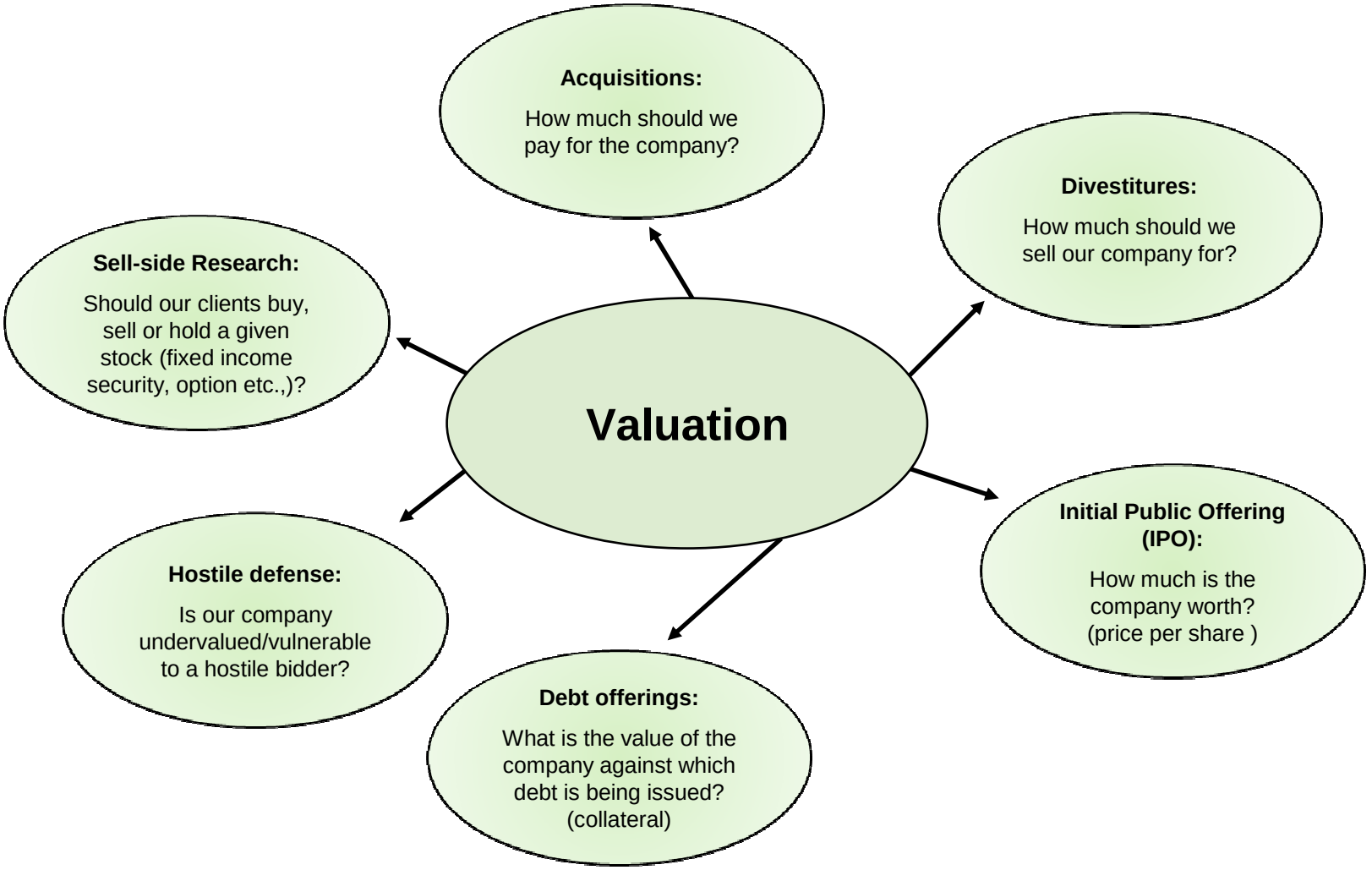
Why is Valuation important?



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Trading Comparables

Relative Valuation Technique

Agenda

- Multiples: Comparables Trading (transaction comparables will be covered by Mike)
- Theory: Similar companies (all else equal) should have similar valuations
- Defining a Peer Group (“similar companies”)
- Picking the right multiples
- Calculating CLX’s multiples
- Spreading Peer Group multiples
- Calculating CLX’s implied value

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First day on the job… (potential interview question)

- Your boss thinks shares of Clorox Co. (“CLX”) might be a good investment:
  - She asks you: “How much do you think they are worth?”

  - One common approach is Multiples Based Valuation Technique

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What are multiples?

Examples:

- Price / Earnings (P/E)
- Firm Value / Revenues
- Firm Value / EBITDA

"CLX"
$67 a share

?

"ENR"
$67 a share

Earnings per share
$4.24

Earnings per share
$2.90

$67 / $4.20 ≈ 15.8x

$67 / $3.00 ≈ 23.1x

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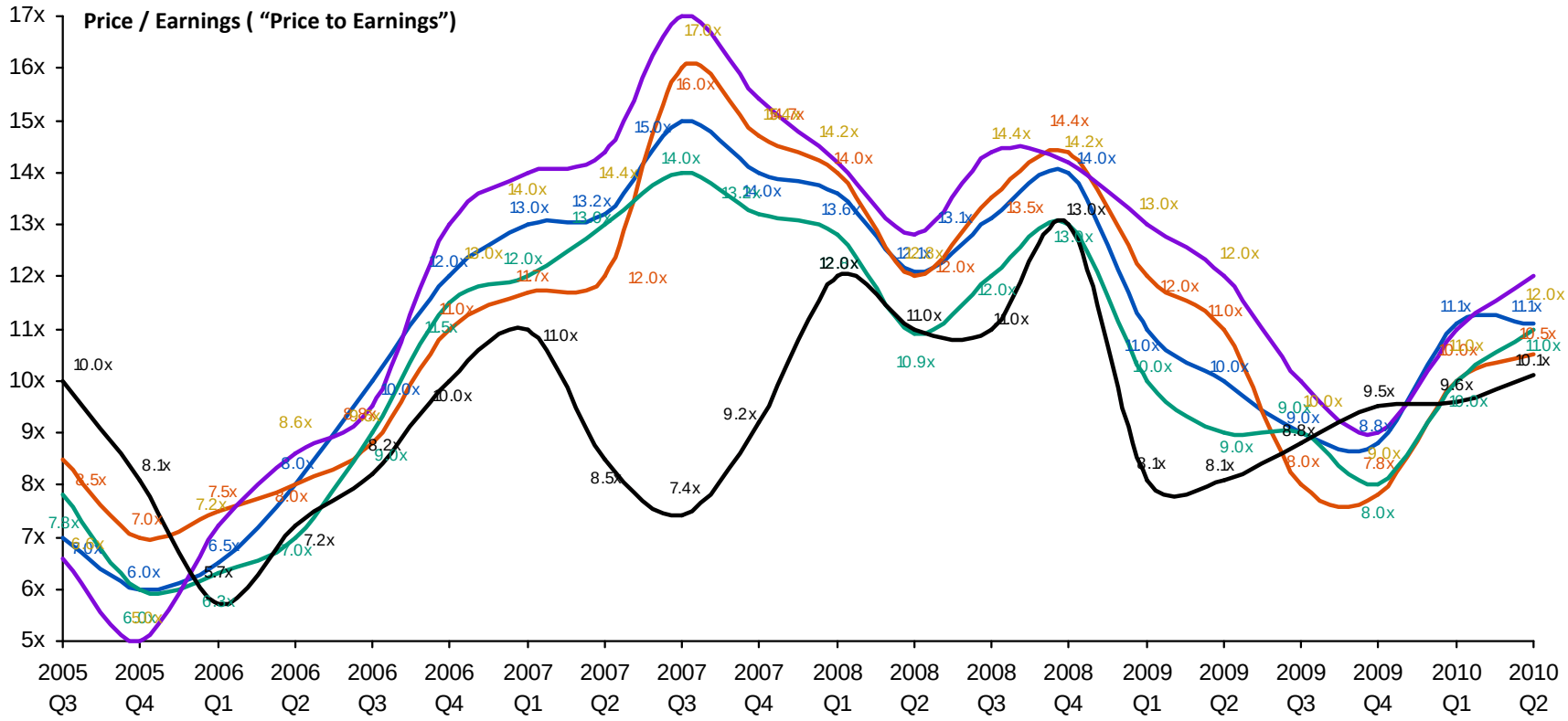
Trading Comparables: The Theory

- Basic Assumption: Similar companies should have similar valuations
  - Employing multiples is a **relative valuation** technique



Trading Comparables – Selecting the right peer group

- It is important to select the best peer group possible ("similar companies")
  - How?

Operational Filters

- **Industry / Sub-Sectors**
- **Product**
- **Markets**
- **Customers**
- **Seasonality**
- **Cyclicality**

Financial Filters

- **Size (e.g. Market Capitalization, Revenue etc.,)**
- **Profit Margins**
- **Leverage (e.g. Debt / Capital)**
- **Shareholder base (influence of a large shareholder)**

Clorox Peer Group

- **Kraft – "KFT"**
- **Procter & Gamble – "PG"**
- **Colgate – "CL"**
- **Kimberly-Clark – "KMB"**
- **Church & Dwight - "CHD"**
- **Energizer Holdings – "ENR"**
- ***Clorox Corporation – "CLX"***

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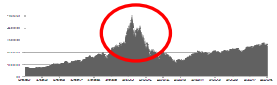
Next Step: Choosing the right multiples

- It is important to chose the RIGHT multiples

Examples: Multiples

Price/earnings
Firm value/EBITDA
P/E to growth
Price/cash flow

- Generally, it is appropriate to use the multiples which are being used in the market.
  - Check sell-side research reports
- It is also important to understand WHY the market is using certain multiples

Multiple	Pros	Cons
Firm value/subscribers 	• Important telecom ratio • Good for more mature situations	• Assumes same profitability for all comps • Difficult to use in high growth situations
Price/book value 	• Useful for capital intensive industries and financial institutions • Reflects long-term profitability outlook	• Distorted by accounting differences • Need profitability cross-check
Firm value/sales 	• Most often used with high growth companies that do not have earnings	• Need profitability cross-check
Price / click rate (?) 	• Useful for companies without revenues or earnings (?)	• Is not a good predictor of long-term return to shareholders

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Our multiples

Price / Earnings Per Share (EPS)

- Companies **have** earnings (relatively stable vs -> e.g. tech.)
- Widely Used (illustration power)
- Illustrates need for earnings forecasts

Firm Value / EBIT

- Impact of Leverage (debt + interest expense)
- Debt can be good and bad (efficiently used?)
- Important Distinction: Firm Value vs. Equity Value

Firm Value / Revenue

- High fixed costs + economies of scale
  - Small change in sales = Large Change in Earnings
- Illustrates need for revenue forecasts

1) Calculate CLX's Price to Earnings Per Share

2) Calculate CLX's Firm Value to EBIT

3) Calculate CLX's Firm Value to Revenue

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Our multiples

Price / Earnings Per Share (EPS)

- The companies **have** earnings (stable but cyclical)
- Widely Used
- Illustrates need for earnings forecasts

1) Calculate CLX's Price to Earnings **(aggregates)**

Price -> Market Capitalization (price x shares)

Yahoo Finance: $9.5 billion USD

Earnings -> Consensus (average) sell-side estimates – Bloomberg Machine –

Year-End 2010E: $600m

Price to Earnings: $9500m/$600m = 15.8x

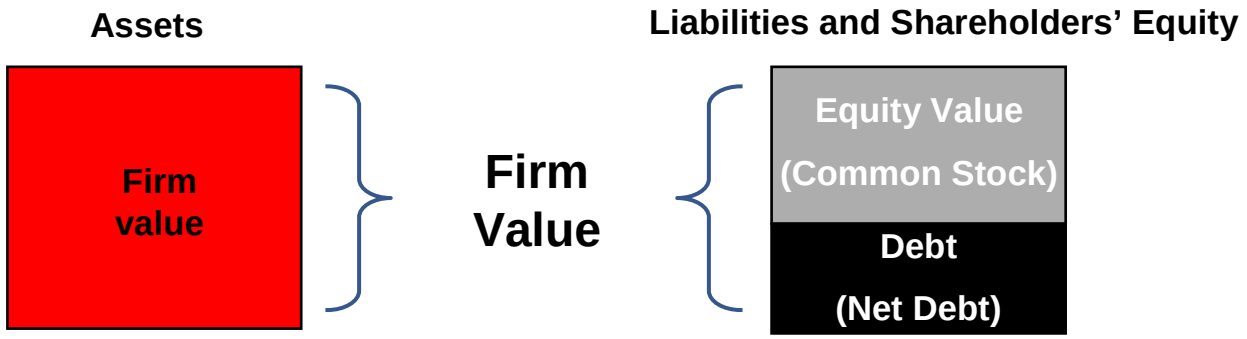
Which is the same as earlier example: $67 / $4.24 ≈ 15.8X

Our multiples

Firm Value / EBIT

- Impact of Leverage (debt + interest expense)
- Debt can be good and bad
  - Important Distinction: Firm Value vs. Equity Value

1) Calculate CLX's Firm Value



Net Debt . . .

Debt

- Long Term Debt -> $2,151m
- Current Portion of Long Term Debt -> $577m
- Short Term Debt -> $421m

(-)

Cash

- Cash & Cash Equivalents -> $206m

=

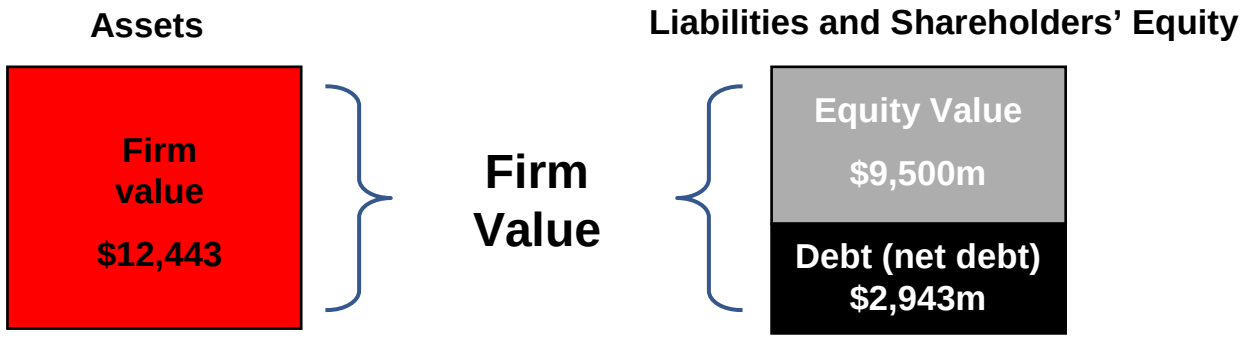
- Net Debt -> $2,943

Our multiples

Firm Value / EBIT

- Impact of Leverage (debt + interest expense)
- Debt can be good or bad
  - Important Distinction: Firm Value vs. Equity Value

1) Calculate CLX's Firm Value



1) Calculate CLX's Firm Value to EBIT

EBIT YE2010E -> Consensus sell-side $1,305

FV / EBIT = 9.5x

Our multiples

Firm Value / Revenue

- High fixed costs + economies of scales
  - Small change in sales = Large Change in Earnings
- Illustrates need for revenue forecasts

1) Calculate CLX's Firm Value to Revenues

   Why is a revenue multiple a Firm Value Multiple?

Firm Value -> $12,443

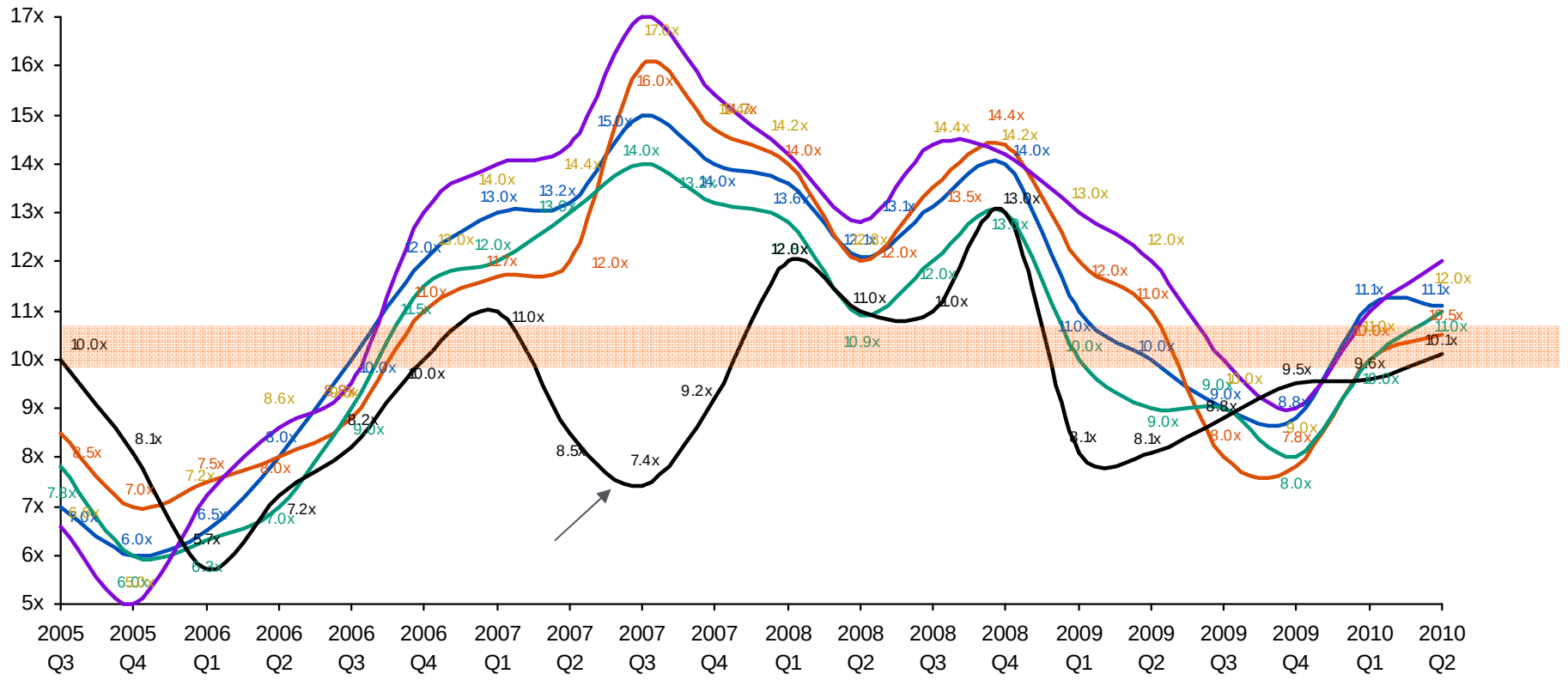
Revenues -> Consensus sell-side

   Year-End 2010E: $5,579

Firm Value to Revenue: $12,443m/ $5,579m = 2.2x

Trading Comparables: Remember This is a Relative Valuation Method

- Now we know where CLX is trading TODAY - but our boss / interviewer asked what the VALUE is



Spreading the Trading Comparables

Company Comp Set	Equity Value Multiples	Firm Value Multiples	
Company Name	Price / Earnings Per Share (EPS)	Firm Value / Revenues	Firm Value / EBIT
Church & Dwight - "CHD"	17.55x	2.10x	11.36x
Colgate-Palmolive - "CL"	18.23x	2.56x	10.77x
Kimberly-Clark - "KMB"	21.00x	3.30x	9.74x
Energizer Holdings - "ENR"	17.20x	3.80x	10.80x
Kraft Foods - "KFT"	17.43x	1.80x	12.82x
Procter & Gamble - "PG"	16.98x	2.52x	12.40x
Clorox Corp - "CLX"	15.8x	2.2x	9.5x
Mean	18.07x	2.68x	11.32x

Trading Comparables – Current Price $67 / share "CLX"

($ in millions, USD)			
Peer Group Mean	18.1x Price / Earnings	2.7x FV / Revenue	11.3x FV / EBIT
"CLX "	$600m	$5,579	$1,305
Valuation	$10,860 Equity Value	$15,063 Firm Value	$14,746 Firm Value
Net Debt		$2,943	$2,943
Equity Value	**$10,860**	**$12,120**	**$11,803**
Shares Outstanding	140m	140M	140M
Implied Value	$77.60	$86.57	$84.31
Buy? Sell? Hold?	?	?	?

Trading Comparables - Valuation Range: $77 - $87 per share

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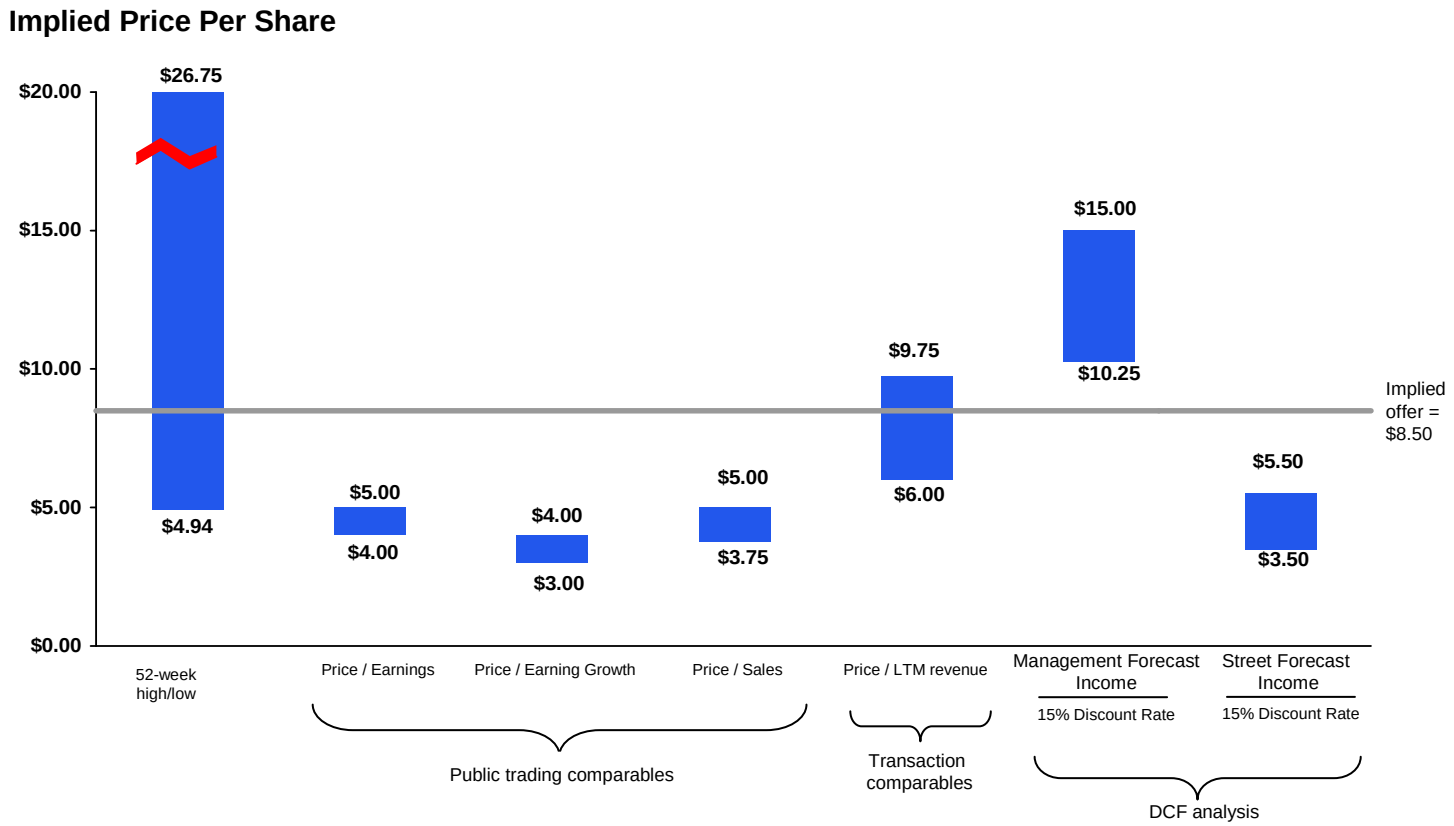
The SCIENCE is performing the valuation, the ART is interpreting the results in order to arrive at the "right" price. TECHNOLOGY can help you do this more efficiently.



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Transaction Comparables

Step 1: Locate Comparable Transactions

- Equity research reports
- Merger proxies for similar transactions
  - Fairness opinions of financial advisors disclose the comparable transactions used in their valuations of the target
- Company press releases, shareholder presentations, conference call transcripts and SEC filings
- Bloomberg transaction description (TICKER<EQUITY>CACS) – Click on deal

Step 2: Select *Comparable* Transactions

- Remember that some transactions are more relevant than others when selecting a range of multiples for a valuation
  - The **situation** surrounding the acquisition is crucial:
    - Bankruptcy-related acquisition

> ***Televisa to Take Stake in Univision***
>
> • "Servicing the company's **$10 billion debt load left Univsion reeling**…"
>
> • Televisa is buying into the company at a valuation about **40% below its original takeover price**…"
>
> *Source: Wall Street Journal (10/4/2010)*

    - Hostile transaction
- Recent deals are typically a more accurate reflection of value

Let's Pull Transaction Comparables for Clorox…

($ in Millions)

Date	Target / Acquiror	Transaction Value	EV / LTM Revenue	EV / LTM EBITDA	EV / LTM EBIT
7/12/2010	Silpada / Avon	$650	2.8x	10.9x	11.8x
1/14/2010	Bare Escentuals / Shiseido	$1,828	3.4x	11.1x	12.3x
12/21/2009	Chattem / Sanofi Aventis	$2,156	4.5x	13.1x	13.5x
12/14/2009	Simple skin care / Alberto Culver	$396	3.7x	11.0x	12.0x
12/11/2009	Ambi Pur (Sara Lee) / P&G	$470	2.6x	12.5x	13.5x
5/11/2009	Edge (SC Johnson) / Energizer	$275	1.8x	9.2x	9.8x
4/1/2008	Orajel / Church & Dwight	$380	3.8x	13.6x	15.8x
1/25/2008	Frederik Fekkai / P&G	$440	3.5x	16.0x	17.6x
	AVERAGE	$824	3.9x	11.7x	12.6x
	CLX Financials		$6,000	$1,500	$1,300
	Implied Value		$23,200	$17,600	$16,380

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Sum of the Parts Valuation

Sum of The Parts Valuation Example:

Time Warner, Inc. (TWX)

Segment	Segment EBITDA	Target EV/EBITDA	Implied Value
Movies	$1,500	7.0x	$10,500
Cable Networks	$3,900	10.0x	$39,000
Publishing	$450	5.0x	$2,250
Total	**$5,850**		**$51,750**

Implied EV/EBITDA: 8.8x

- What is the **"Conglomerate Discount"**?
  - Full value of TWX cannot be realized unless we unlock it
  - Sometimes SOTP does not equal the value whole company
  - **$51,750 * (90%) = $46,675 (Implied Multiple: 8.0x)**

Time Warner, Inc. (TWX) – Spin-offs

Cable Spin

"Simpler, Leaner, Better & More"

• "The company will finally, fully separate its cable operations creating a **near-pure content company** enabling **better investor focus**."

Source: Collins Stewart (1/30/2009)

AOL Spin

"AOL Exit Clarified…"

• "Cable networks eventually **become the focus**. Over the long-term, we think **investors will appreciate Time Warner's leading content-centric assets** and **streamlined strategic approach** focused on generating high-quality and popular programming."

Source: Goldman Sachs (5/28/2009)

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Discounted Cash Flows – "DCF"

DCF Analysis

Discounted cash flow analysis is based upon the theory that the value of a business is the **sum of its expected future free cash flows, discounted at an appropriate rate.**

- Three key drivers:
  - Free cash flow **projections**
  - **Terminal value** at the end of the projection period
  - **Discount Rate** (weighted average cost of capital or "WACC")

Free Cash Flow

Levered Free Cash Flow
EBITDA
(-) Interest Expense
(-) Capital Expenditures
(-) Cash Taxes
(-) Changes in Working Capital
Levered Free Cash Flow

Unlevered Free Cash Flow
EBITDA
(-) Capital Expenditures
(-) Cash Taxes
(-) Changes in Working Capital
Unlevered Free Cash Flow

Let's setup a DCF Model….

Calculating WACC

- WACC = $[(r_d * (1 - T)) * (D / (D + E))] + [r_e * (E/ (D + E))]$
- Let's look at two capital structures: (1) 100% debt (2) 100% equity

$D / (D + E) = 100\%$ vs. $E / (D + E) = 100\%$

- There is a cost associated with debt and equity used to fund business initiatives
  - There is a rate charged for debt issued
  - There is a rate charged for equity issued
- $[r_d * (D / (D + E))] + [r_e * (E/ (D + E))]$
- The rate used for debt should be reduced to account for the tax shield
- WACC = $[(r_d * (1 - T)) * (D / (D + E))] + [r_e * (E/ (D + E))]$

Cost of Equity – "CAPM"

"CAPM" = Capital Asset Pricing Model

$Rf + \beta * (r_m - r_f)$

- "The $10 Question"
- As the perceived risk of a company increases, an equity investor will require a higher rate of return
  - Risk free rate of return ("r_f") – the minimum return an investor should expect to receive
  - $R_f + (r_m - r_f)$

    10% + (1000% - 10%) = 1000%
- Treasury securities are a good proxy for r_f

    3% + (10% - 3%) = 10%

Cost of Equity - Beta

Question: If the stock market were to fall 50% next year, would you prefer to have been invested in a mature and stable company or an early stage technology software growth company?

- CAPM says an investor should be rewarded more for investing in a stock that fluctuates more with stock market performance
- Beta provides a method to estimate the riskiness of a stock with the overall stock market
  - Beta of 1.0 is "as risky" as the overall stock market
  - Beta of 2.0 should see returns on its equity rise or drop twice as fast as the overall market

$$R_f + \beta * (r_m - r_f)$$

- **Question: What are the limitations of WACC?**