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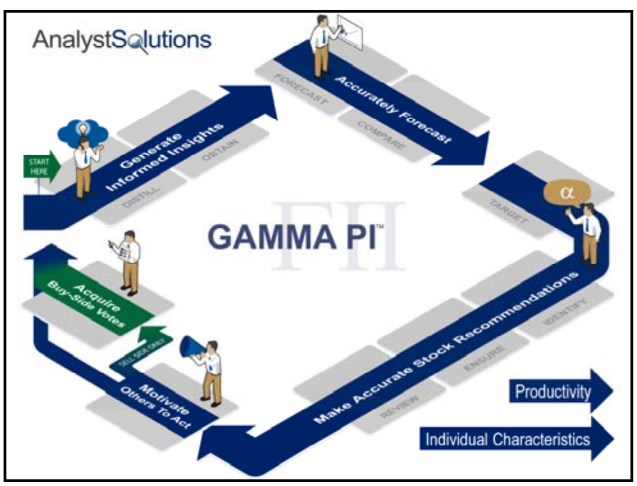
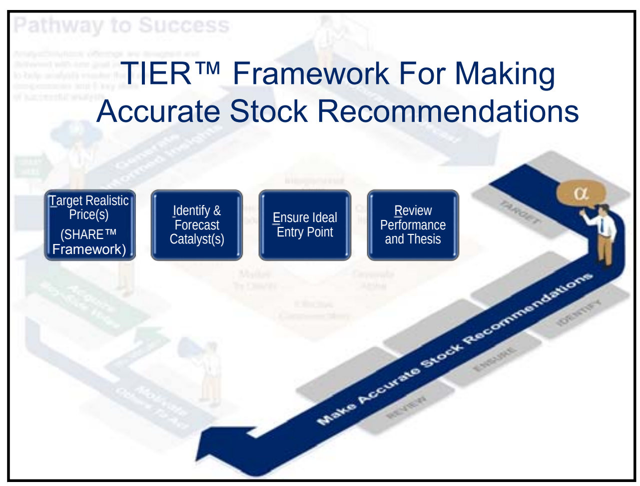
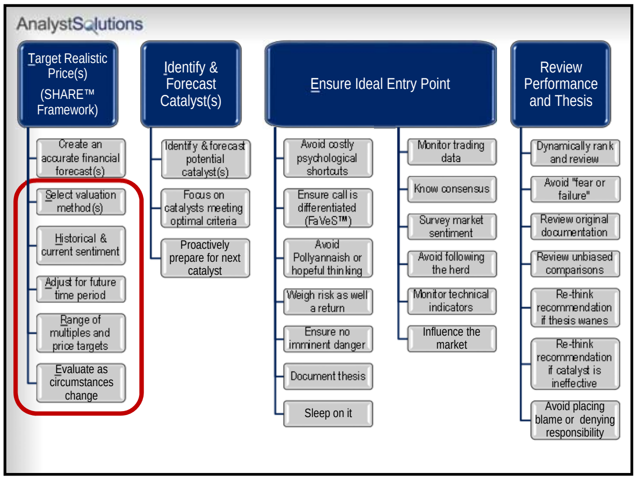
Apply Practical Valuation Techniques for More Accurate Price Targets

CE Qualified Activity CFA Institute



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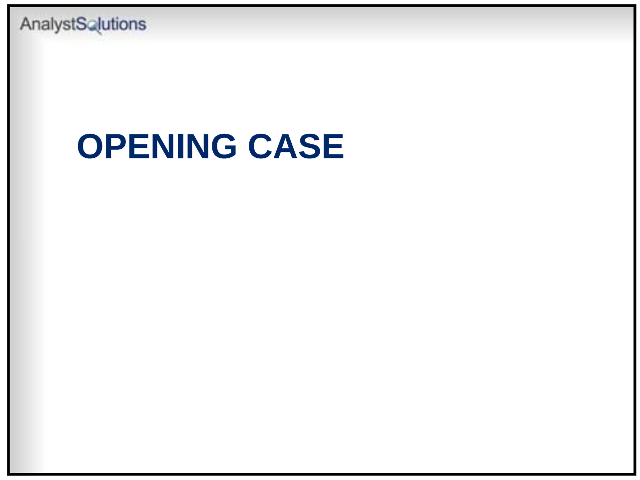
Target Realistic Price(s) (SHARE™ Framework)
Identify & Forecast Catalyst(s)
Ensure Ideal Entry Point
Review Performance and Thesis
Create an accurate financial forecast(s)
Select valuation method(s)
Historical & current sentiment
Adjust for future time period
Range of multiples and price targets
Evaluate as circumstances change
Identify & forecast potential catalyst(s)
Focus on catalysts meeting optimal criteria
Proactively prepare for next catalyst
Avoid costly psychological shortcuts
Ensure call is differentiated (FaVeS™)
Avoid Pollyannaish or hopeful thinking
Weigh risk as well a return
Ensure no imminent danger
Document thesis
Sleep on it
Monitor trading data
Know consensus
Survey market sentiment
Avoid following the herd
Monitor technical indicators
Influence the market
Dynamically rank and review
Avoid "fear or failure"
Review original documentation
Review unbiased comparisons
Re-think recommendation if thesis wanes
Re-think recommendation if catalyst is ineffective
Avoid placing blame or denying responsibility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OPENING CASE


AnalystSolutions
Valuation Accuracy
GPS
430 reviews


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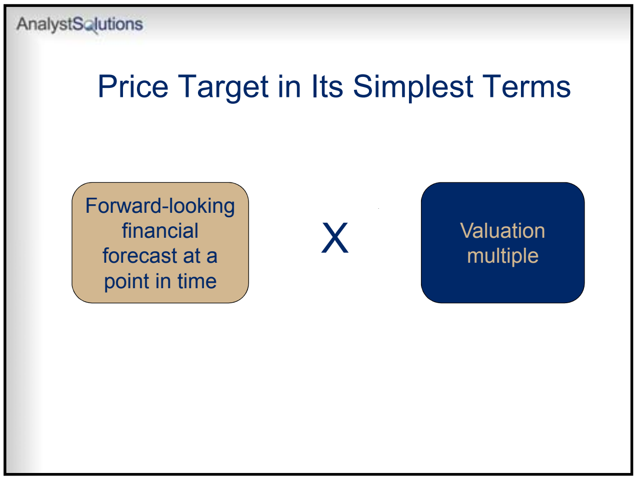
Get In the "Mind of the Market"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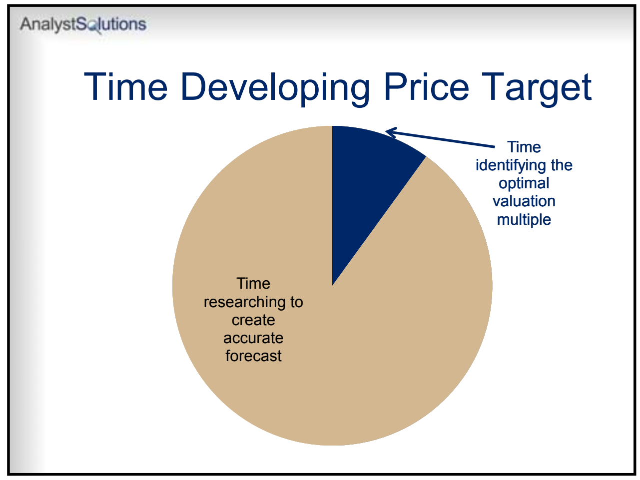
Price Target in Its Simplest Terms
Forward-looking financial forecast at a point in time
X
Valuation multiple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Time Developing Price Target
Time identifying the optimal valuation multiple
Time researching to create accurate forecast


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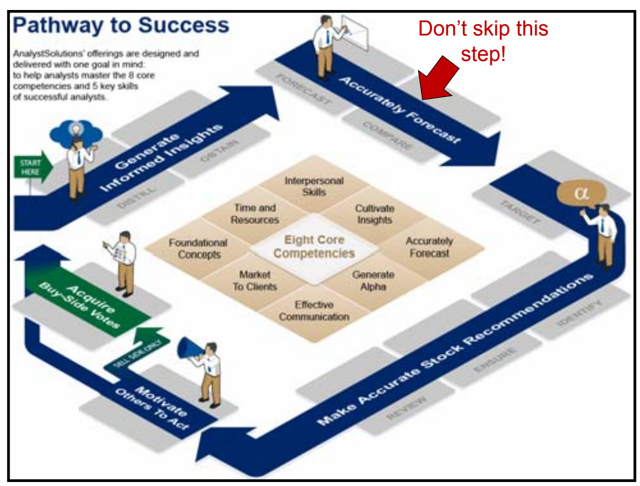
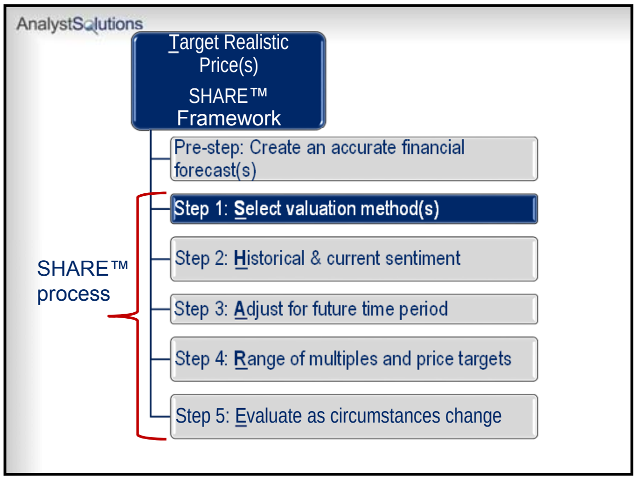
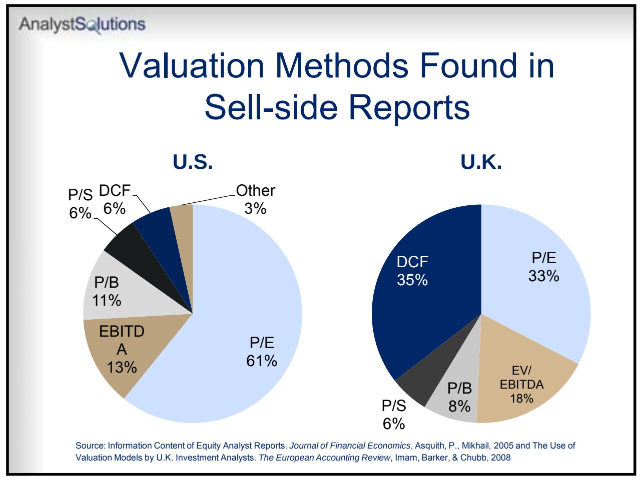
ENGINEERED


Pathway to Success
AnalystSolutions' offerings are designed and delivered with one goal in mind: to help analysts master the 8 core competencies and 5 key skills of successful analysts.
Don't skip this step!
START HERE
Generate Informed Insights
DISTILL
OBTAIN
FORECAST
COMPARE
Accurately Forecast
TARGET
IDENTIFY
ENSURE
REVIEW
Make Accurate Stock Recommendations
Motivate Others To Act
SELL SIDE ONLY
Acquire Buy-Side Votes
Interpersonal Skills
Time and Resources
Cultivate Insights
Foundational Concepts
Eight Core Competencies
Accurately Forecast
Market To Clients
Generate Alpha
Effective Communication





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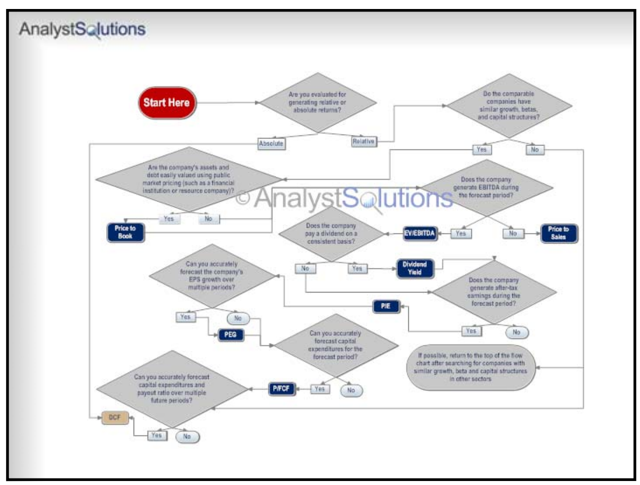
Examples of Sectors With Other Valuation Methods

Sector	Method
MLPs	Dividend yield
Retail	EV/Total addressable market
Energy/resource sectors	P/CF NAV EV/Daily production EV/Proven + Probable Reserves EV/Debt-adjusted CF



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All Multiples Based Methods

Pros

- Relatively simple and quick to perform

Cons

- Rarely include financial forecasts beyond the next 18 months
- Unlike DCF, a company's expected growth rate and risk are not explicit inputs to the valuation (except for the "G" in the PEG ratio), making it difficult to compare companies on these dimensions
- Multiple may not be computed in the same manner by all market participants, namely, the underlying financial data can be trailing, forward, or current year

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Is the Stock Expensive or Cheap?

Sell-side Analyst (all have same EPS forecast)	P/E Ratio
A	19.0x
B	12.6x
C	12.0x
D	11.0x

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Which P/E Ratio is Correct

EPS Data	
Last Year	
1QA	$0.40
2QA	$0.40
3QA	$0.30
4QA	$0.20
Full Year	$1.30
Current Year	
1QA	$0.20
2QA	$0.35
3QE*	$0.40
4QE	$0.40
Full Year	$1.35
Next Year	
1QE	$0.42
2QE	$0.45
3QE	$0.47
4QE	$0.48
Full Year	$1.82

Methods for Computing the "E"	"E"	P/E	Difference from Average
Average of four methods below	$1.53	13.7x	0%
A: Trailing Actual EPS (past 4 quarters)	$1.05	19.0x	39%
B: Forward EPS (50% this year, 50% next)	$1.59	12.6x	-8%
C: Forward EPS (next 4 quarters)	$1.67	12.0x	-12%
D: Forward EPS (next year)	$1.82	11.0x	-20%

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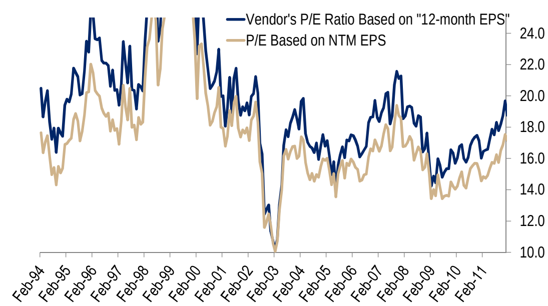
MCD's P/E Ratios



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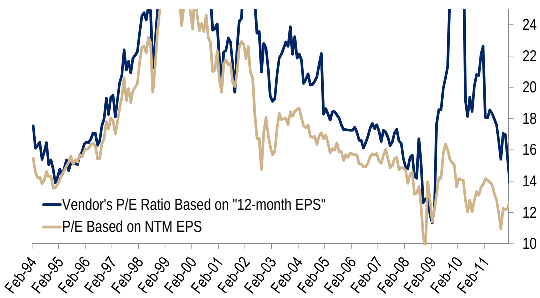
S&P 500 P/E Ratios



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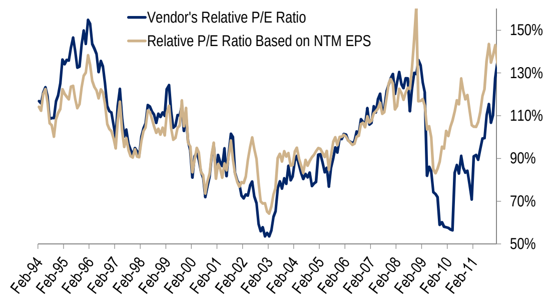
MCD's Relative P/E Ratios



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Price to Book (P/B)

Pros

- For a select industries where assets and liabilities (debt) can be valued using a public-market price, may be a good proxy for measuring a firm's equity value

Cons

- For most sectors, book value rarely equates to the company's market value of equity
- Book value can be subjectively influenced by interpretation of accounting rules, which can make comparisons between companies meaningless

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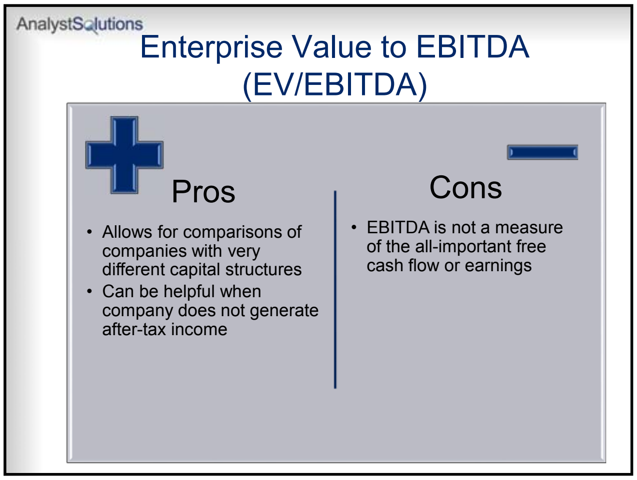
Price to Sales (P/S)

Pros

- Can be helpful if there are no earnings or cash flow

Cons

- Sales do not equate to free cash flow, which is the true measure of value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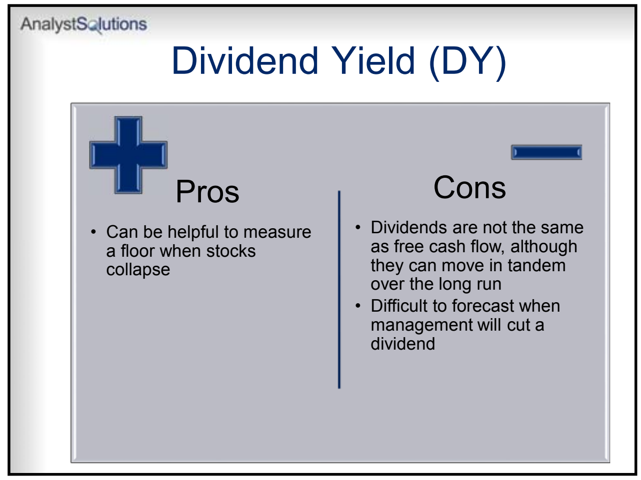
Enterprise Value to EBITDA (EV/EBITDA)
Pros
• Allows for comparisons of companies with very different capital structures
• Can be helpful when company does not generate after-tax income
Cons
• EBITDA is not a measure of the all-important free cash flow or earnings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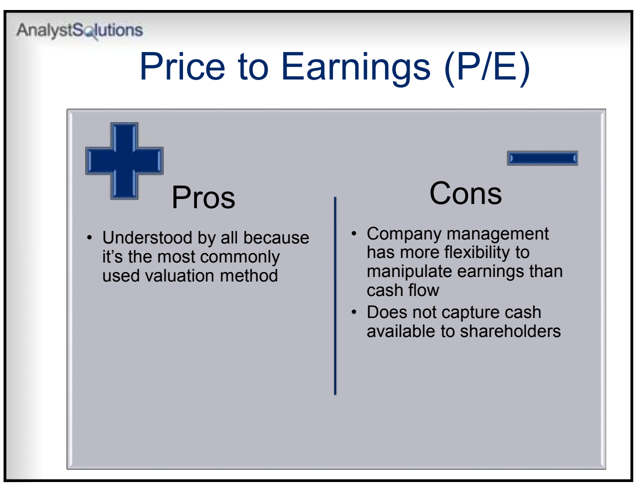
Dividend Yield (DY)
Pros
• Can be helpful to measure a floor when stocks collapse
Cons
• Dividends are not the same as free cash flow, although they can move in tandem over the long run
• Difficult to forecast when management will cut a dividend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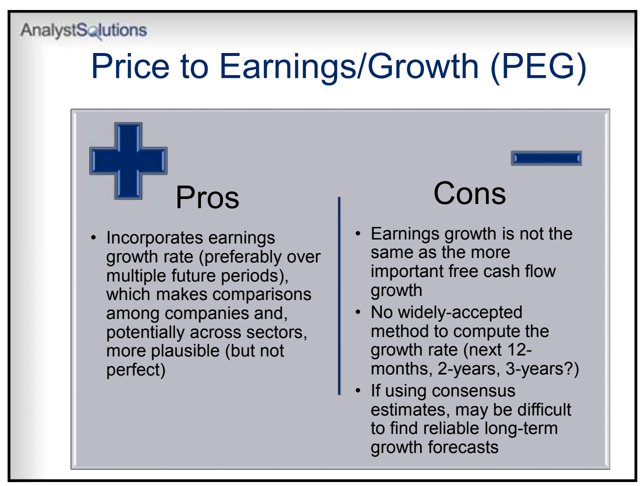
Price to Earnings (P/E)
Pros
• Understood by all because it's the most commonly used valuation method
Cons
• Company management has more flexibility to manipulate earnings than cash flow
• Does not capture cash available to shareholders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Price to Earnings/Growth (PEG)
Pros
• Incorporates earnings growth rate (preferably over multiple future periods), which makes comparisons among companies and, potentially across sectors, more plausible (but not perfect)
Cons
• Earnings growth is not the same as the more important free cash flow growth
• No widely-accepted method to compute the growth rate (next 12-months, 2-years, 3-years?)
• If using consensus estimates, may be difficult to find reliable long-term growth forecasts

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Price to Free Cash Flow (P/FCF)

Pros

- Incorporates free cash flow, which is the best measure of value

Cons

- Unlike DCF, it considers only one time period of free cash flow
- Methodology can vary for reasons mentioned earlier as well as in estimating level of capital expenditures (maintenance vs. forecast)

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Discounted Cash Flow (DCF) & Residual Income (RI)

Pros

- Capture a company's ability to generate free cash flow over the life of the enterprise, which is the best measure of value
- Helps to place the focus on the level and returns from incremental capital spending (ROIC)
- More likely to identify overheated and oversold stocks and markets than multiples-based methods

Cons

- Can be highly sensitive to minor input changes for factors difficult to quantify
- Time consuming because multiple periods are required for forecast
- Complex models are prone to mistakes and reverse engineering
- During highly-priced equity markets, may be challenging to find attractive equity investments using these methods

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Additional DCF Limitations

- Variables involve subjectivity:
  - Risk free rate
  - Market's required rate of return
  - Company's unique risk level (beta)
  - Terminal growth rate
- Often no clear distinction between "maintenance" capital required to sustain the business and "growth" capital required for growth
- Relies on forecasts of cash flows over extended periods of time, often 5-10 years, which:
  - May be well-researched but not reliable
  - Prone to large errors due to compounding

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"Make It Work" (?)

"Our analysis indicates that analysts see DCF in part as a useful tool for more accurate fundamental valuation but more generally as a flexible device for 'reverse engineering' valuation estimates based on multiples models and/or subjective judgment."

- The Use of Valuation Models by UK Investment Analysts
(Shahed Imam Richard Barker, Colin Clubb)

36

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Benefit	Relevance*	P/E	PEG	P/FCF	EV/ EBITDA	DCF	P/B	P/S	Dividend Yield
Good proxy for free cash flow to shareholders	3	→	→	↑	↓	↑	↓	↓	→
Captures multi-period growth	2	↓	↑	↓	↓	↑	↓	↓	↓
Relatively simple and quick to perform (low risk of mistake)	2	↑	↑	→	→	↓	↑	↑	↑
Can be utilized when comparing companies not in the same sector	1	→	→	→	→	↑	↓	↓	↓
Captures risk/volatility	1	↓	↓	↓	↓	↑	↓	↓	↓
Eliminates effects of management using aggressive accounting tactics (not fraud)	1	↓	↓	↑	→	↑	→	→	↑
Not overly-sensitive to minor changes to inputs (e.g equity risk premium, growth rate)	1	↑	→	↑	↑	↓	↑	↑	↑
Allows for accurate valuation of company's assets at current market prices	0	↓	↓	↓	↓	↓	↑	↓	↓
Helpful in identifying attractively valued stocks in an overheated market	0	→	→	→	→	↑	→	→	↑
In general, computation is consistent by all market participants	0	→	→	↓	→	↓	→	↑	↑
Useful if there are no earnings or cash flow during the forecast period	0	↓	↓	↓	↑	↓	↑	↑	↑
Total, weighted		→	↑	↑	↓	↑	↓	↓	→

* Relevance in accurately measuring long-term free cash flow on a regular basis for multiple stocks

Request an Excel version: Info@AnalystSolutions.com

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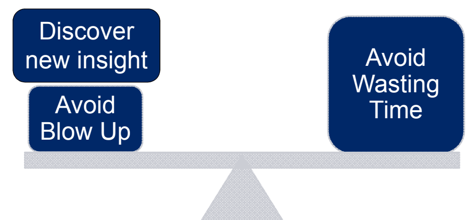
Consider a Second Valuation Method If It Adds Value



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What Could Lucas Have Learned from Step 1 of SHARE™?

STEP 1: Select Valuation Method

Lucas…

- Doesn't understand the shortcomings of each valuation method
  - He doesn't grasp the absolute P/E ratio doesn't account for fluctuations in the broader market, which is important when selecting stocks relative to the market
- Doesn't understand that some valuation methods are better proxies for cash flow than others
  - He doesn't appreciate that the P/E ratio, price-to-sales and EV/EBITDA do not measure a company's ability to generate free cash flow, specifically they do not account for the reinvestment of cash in the business

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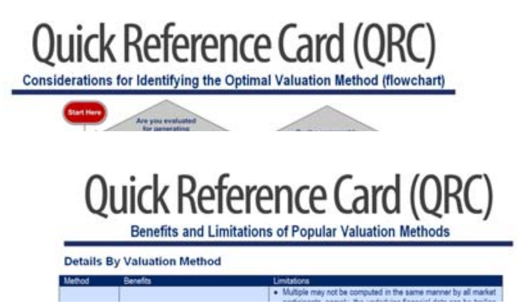
Select Valuation Method(s) QRCs



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Key Best Practice for Step 1 of SHARE™

- Identify:
  - The most common valuation method used for valuing the stock; and
  - Potential new methods likely to be used at time of price target (driven by company or sector changes)
- Consider using an alternative valuation method <u>only</u> if it will help in identifying a mis-priced stock (e.g. better measurement of company's free cash flow)

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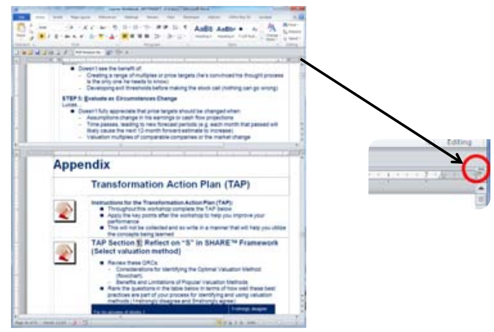
Split Your Screen if Using Electronic Version



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Complete Your TAP

Section 1

Transformation Action Plan (TAP)

Instructions for the Transformation Action Plan (TAP):
- Throughout this workshop complete the TAP below
- Apply the key points after the workshop to help you improve your performance
- This will not be collected and so write in a manner that will help you utilize the concepts being learned

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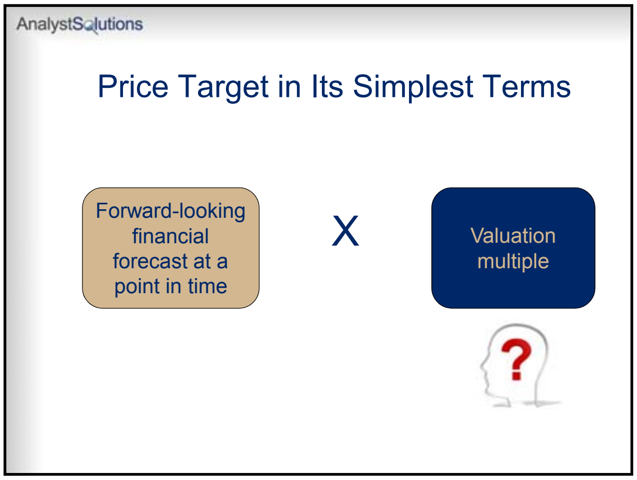
Target Realistic Price(s) (SHARE™ Framework)

- Create an accurate financial forecast(s)
- STEP 1: Select valuation method(s)
- **STEP 2: Historical & current sentiment**
- STEP 3: Adjust for future time period
- STEP 4: Range of multiples and price targets
- STEP 5: Evaluate as circumstances change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Price Target in Its Simplest Terms
Forward-looking financial forecast at a point in time
X
Valuation multiple
?


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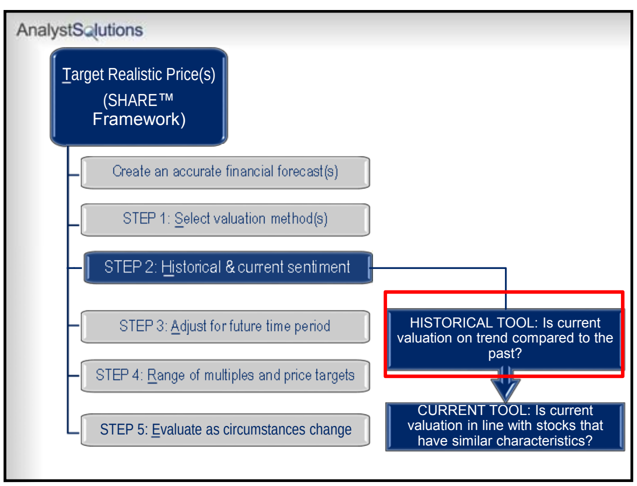
Two Perspectives
Past
Present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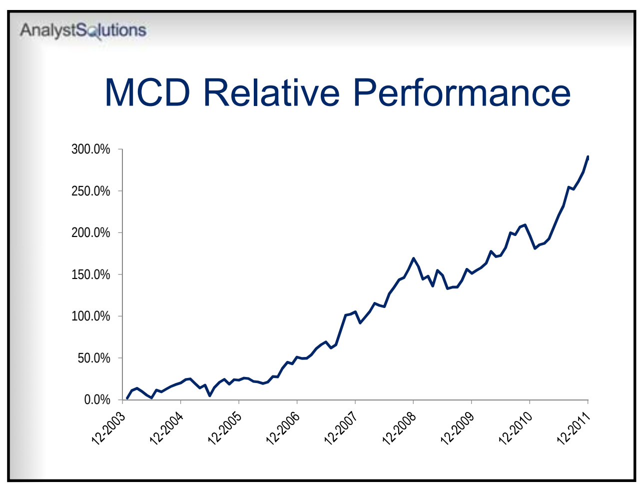
Target Realistic Price(s) (SHARE™ Framework)
Create an accurate financial forecast(s)
STEP 1: Select valuation method(s)
STEP 2: Historical & current sentiment
STEP 3: Adjust for future time period
STEP 4: Range of multiples and price targets
STEP 5: Evaluate as circumstances change
HISTORICAL TOOL: Is current valuation on trend compared to the past?
CURRENT TOOL: Is current valuation in line with stocks that have similar characteristics?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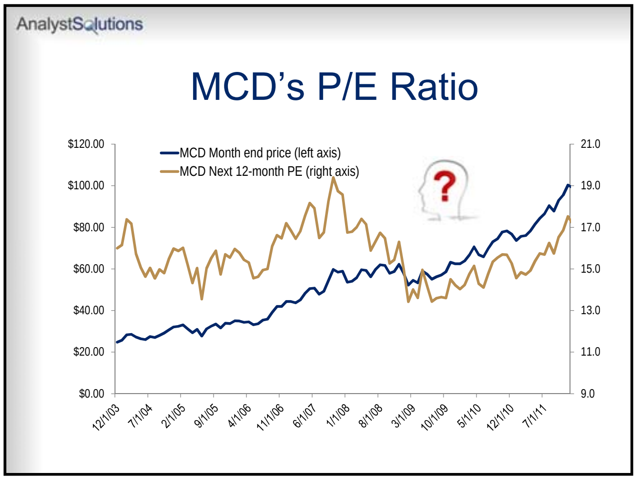
MCD Relative Performance
300.0%
250.0%
200.0%
150.0%
100.0%
50.0%
0.0%
12-2003
12-2004
12-2005
12-2006
12-2007
12-2008
12-2009
12-2010
12-2011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MCD's P/E Ratio
MCD Month end price (left axis)
MCD Next 12-month PE (right axis)
?
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
21.0
19.0
17.0
15.0
13.0
11.0
9.0
12/1/03
7/1/04
2/1/05
9/1/05
4/1/06
11/1/06
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1/1/08
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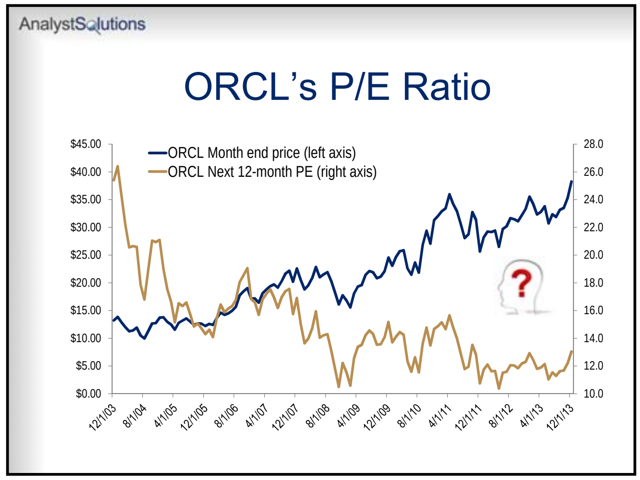
5/1/10
12/1/10
7/1/11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ORCL's P/E Ratio
ORCL Month end price (left axis)
ORCL Next 12-month PE (right axis)
?
$45.00
$40.00
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
12/1/03
8/1/04
4/1/05
12/1/05
8/1/06
4/1/07
12/1/07
8/1/08
4/1/09
12/1/09
8/1/10
4/1/11
12/1/11
8/1/12
4/1/13
12/1/13


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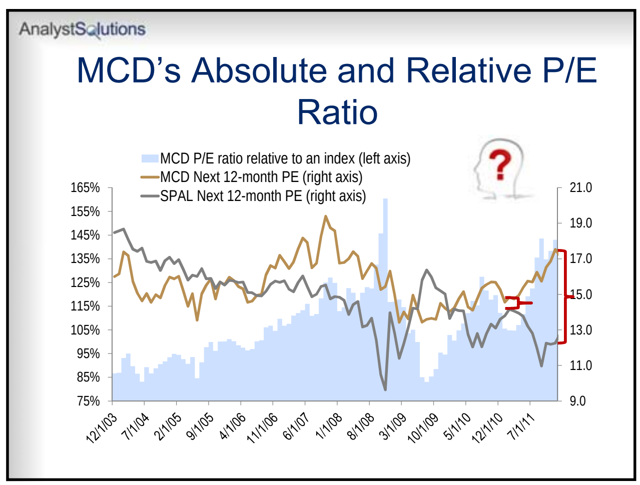
What's In the Stock?
• Is 6th place good?
• Is a restaurant rating of "4" good?
• Should you be pleased that the stock you're about to recommend is trading at a market multiple?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MCD's Absolute and Relative P/E Ratio
MCD P/E ratio relative to an index (left axis)
MCD Next 12-month PE (right axis)
SPAL Next 12-month PE (right axis)
?
165%
155%
145%
135%
125%
115%
105%
95%
85%
75%
21.0
19.0
17.0
15.0
13.0
11.0
9.0
12/1/03
7/1/04
2/1/05
9/1/05
4/1/06
11/1/06
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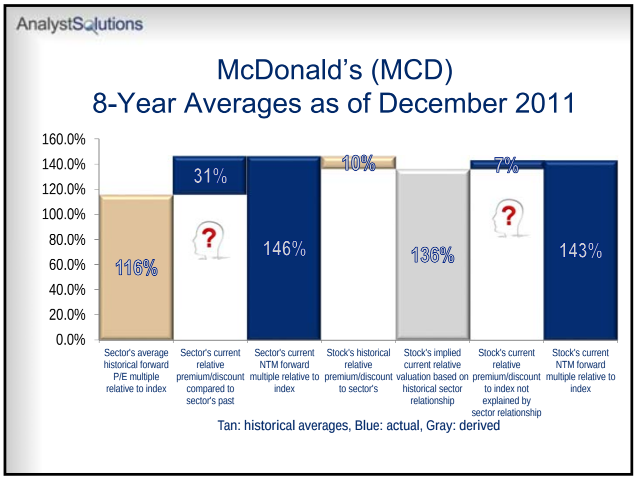
5/1/10
12/1/10
7/1/11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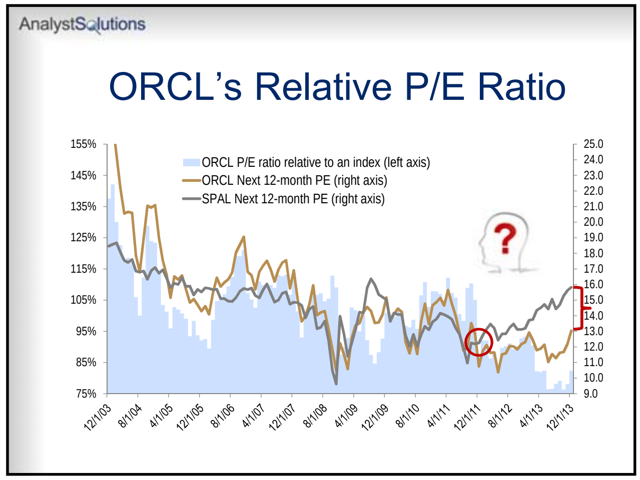
McDonald's (MCD)
8-Year Averages as of December 2011
160.0%
140.0%
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
116%
31%
146%
10%
136%
7%
143%
Sector's average historical forward P/E multiple relative to index
Sector's current relative premium/discount compared to sector's past
Sector's current NTM forward multiple relative to index
Stock's historical relative premium/discount to sector's
Stock's implied current relative valuation based on historical sector relationship
Stock's current relative premium/discount to index not explained by sector relationship
Stock's current NTM forward multiple relative to index
Tan: historical averages, Blue: actual, Gray: derived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ORCL's Relative P/E Ratio
ORCL P/E ratio relative to an index (left axis)
ORCL Next 12-month PE (right axis)
SPAL Next 12-month PE (right axis)
155%
145%
135%
125%
115%
105%
95%
85%
75%
25.0
24.0
23.0
22.0
21.0
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
12/1/03
8/1/04
4/1/05
12/1/05
8/1/06
4/1/07
12/1/07
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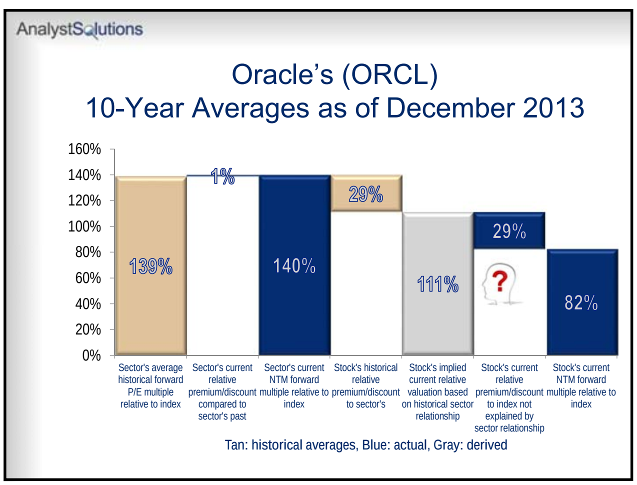
8/1/12
4/1/13
12/1/13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Oracle's (ORCL)
10-Year Averages as of December 2013
160%
140%
120%
100%
80%
60%
40%
20%
0%
139%
1%
140%
29%
111%
29%
82%
Sector's average historical forward P/E multiple relative to index
Sector's current relative premium/discount compared to sector's past
Sector's current NTM forward multiple relative to index
Stock's historical relative premium/discount to sector's
Stock's implied current relative valuation based on historical sector relationship
Stock's current relative premium/discount to index not explained by sector relationship
Stock's current NTM forward multiple relative to index
Tan: historical averages, Blue: actual, Gray: derived


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Do We Have Good Records of the Market's Historical Expectations for Our Stock?

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Historical Forward-looking Metrics Are Gold

Refer to this exhibit below in your DRC "*Best Practices for Targeting Realistic Prices (SHARE™ framework)*"

Exhibit 2: Availability of Historical Forward-Looking Valuation Metrics

Valuation Method	Need NTM forward consensus estimates for this method	Ease to obtain for stock, peers and index*	Readily available?*
P/E	EPS	Readily available	Most market data service providers have this as a designated field that can be downloaded monthly, going back over 10 years for widely developed stocks in developed markets
P/S	Sales	Can potentially be obtained depending on data service provider	Some market data service providers have historical NTM consensus forecasts of company sales although it may not go back as far as NTM consensus EPS.
P/CF	CF	May be constructed	May be more difficult to obtain because some services do not capture consensus cash flow. If not available from the data provider, this can potentially be constructed by starting with NTM consensus EPS, above and [illegible]

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Terms & Assumptions (1 of 2)

- All references to valuation ratios, such as a P/E ratio, will use next twelve months ("NTM") consensus estimates as the denominator (never actual or trailing)
- "Relative multiple" is the stock's forward valuation multiple divided by a similar forward multiple for an appropriate peer or index (e.g. MCD's P/E is 15 and S&P 500 P/E is 10x which means MCD's relative P/E is 150%)
- "Index" refers to the most appropriate index for the stock
- "Peers" refers to the company's comparable peers. If there is not a clean set of peer companies with similar characteristics, a new universe of peers may need to be created, such as finding companies in other sectors with similar growth, beta, payout ratio, etc.

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Terms & Assumptions (2 of 2)

- "Y1" = year 1, "Y2" = year 2 and "Y3" = year 3
  - For the discussion that follows, assume we are at January 1 of year 1 which means "Y2" begins 12 months from now and "Y3" begins 24 months from now
- When collecting historical forward-looking valuation data, consider using these time periods:
  - From last recession to now: Useful for understanding the valuation trends for the current business cycle
  - Past 10 years: Useful for understanding valuation trends over an entire economic cycle (possibly two)
  - Past three economic cycles (or more): Useful for understanding recurring trends at the different stages of the business cycles for mature cyclical stocks

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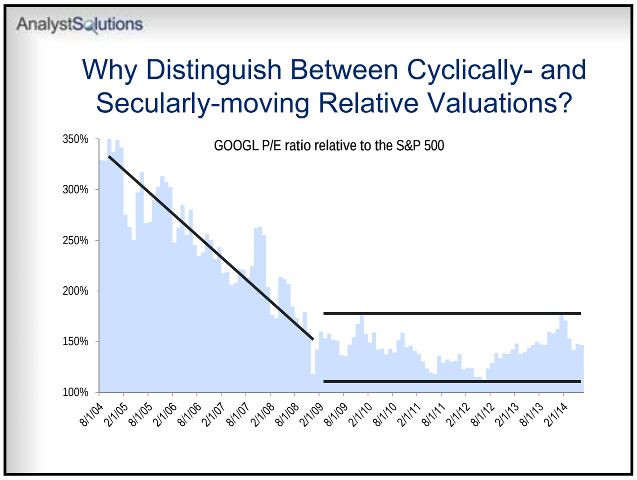
EQRV <GO>
EQUITY RELATIVE VALUATION WITH HISTORICAL CONTEXT

Bloomberg

AnalystSolutions does not endorse or receive financial benefits from any market data service providers


AnalystSolutions
Why Distinguish Between Cyclically- and Secularly-moving Relative Valuations?
GOOGL P/E ratio relative to the S&P 500
350%
300%
250%
200%
150%
100%
8/1/04
2/1/05
8/1/05
2/1/06
8/1/06
2/1/07
8/1/07
2/1/08
8/1/08
2/1/09
8/1/09
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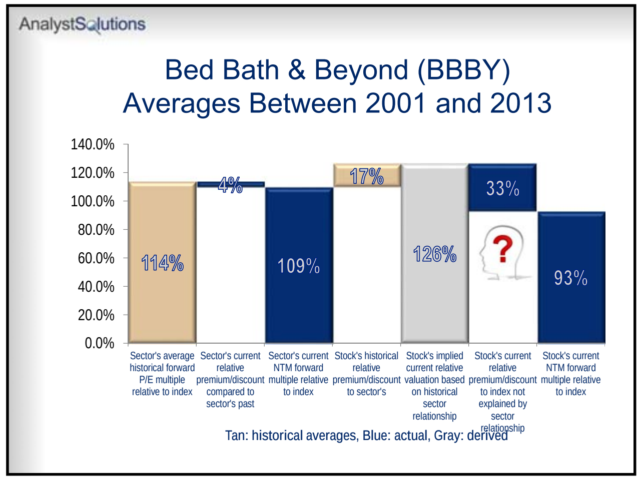
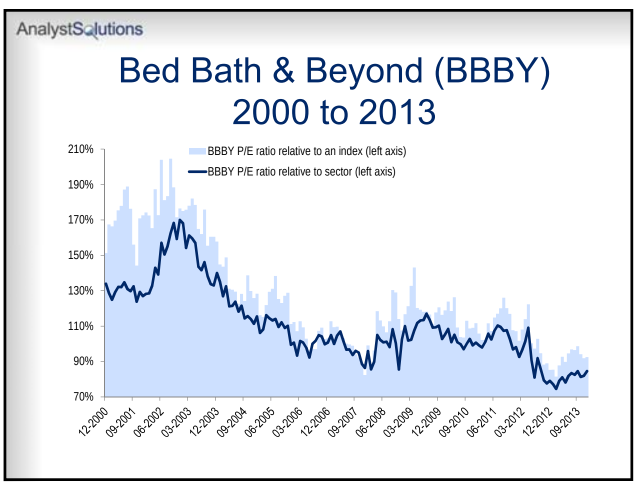
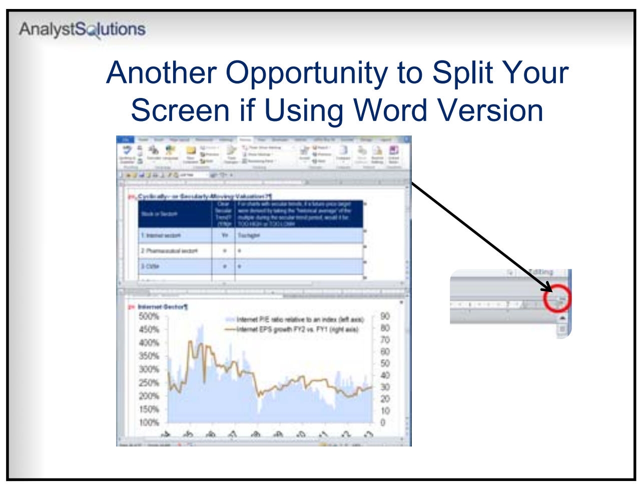
8/1/13
2/1/14


AnalystSolutions
Bed Bath & Beyond (BBBY) Averages Between 2001 and 2013
140.0%
120.0%
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
114%
4%
109%
17%
126%
33%
?
93%
Sector's average historical forward P/E multiple relative to index
Sector's current relative premium/discount compared to sector's past
Sector's current NTM forward multiple relative to index
Stock's historical relative premium/discount to sector's
Stock's implied current relative valuation based on historical sector relationship
Stock's current relative premium/discount to index not explained by sector relationship
Stock's current NTM forward multiple relative to index
Tan: historical averages, Blue: actual, Gray: derived


AnalystSolutions
Bed Bath & Beyond (BBBY) 2000 to 2013
BBBY P/E ratio relative to an index (left axis)
BBBY P/E ratio relative to sector (left axis)
210%
190%
170%
150%
130%
110%
90%
70%
12-2000
09-2001
06-2002
03-2003
12-2003
09-2004
06-2005
03-2006
12-2006
09-2007
06-2008
03-2009
12-2009
09-2010
06-2011
03-2012
12-2012
09-2013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Another Opportunity to Split Your Screen if Using Word Version

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EXERCISE: CYCLICALLY- OR SECULARLY-MOVING VALUATION?

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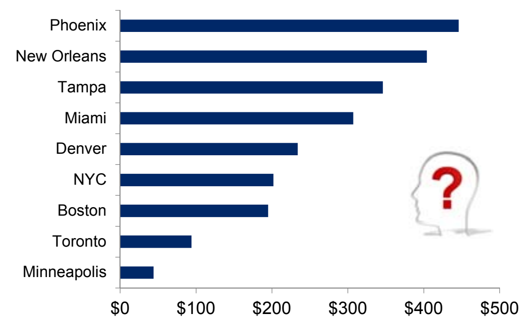
Airfares from Chicago for Travel Winter 2014



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Factors that Drive Relative Valuations

- Cash flow growth prospects
  - Company-specific
  - Industry-level
  - Macro
- "Greater fool" theory

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Key Variables Can Explain Psychology Around a Stock

If there is a strong relationship between the stock's relative valuation and the key variable:

- We can assess if the stock is being valued by the market similar to the past
  - If not, the variable can help us identify why not
- If we can forecast the variable, we can also forecast the future multiple for the stock

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Variables Linked to Valuation

Valuation Method	Variable with logical link to valuation method
Price Earnings Ratio	Expected Growth, Payout, Risk*
Price to Book Ratio	Expected Growth, Payout, Risk*, ROE
Price to Sales Ratio	Expected Growth, Payout, Risk*, Net Margin
EV to EBITDA	Expected Growth, Reinvestment Rate, Risk*, ROC, Tax rate
EV to Capital Ratio	Expected Growth, Reinvestment Rate, Risk,* ROC
EV to Sales	Expected Growth, Reinvestment Rate, Risk,* Operating Margin

* Proxies for risk include beta and firm size

Damodaran, Aswath. "Valuation Approaches and Metrics: A Survey of the Theory and Evidence." *Foundations and Trends® in Finance* 1.8 (2006): 693-784. Web.

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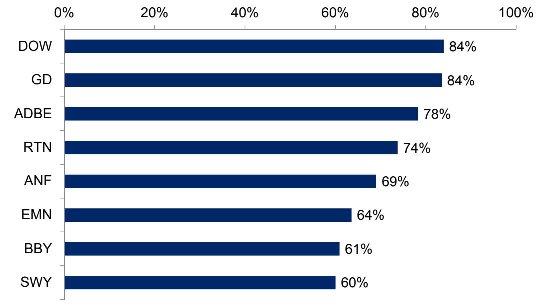
Correlation Between Relative P/E and EPS Growth (12/03-12/13)



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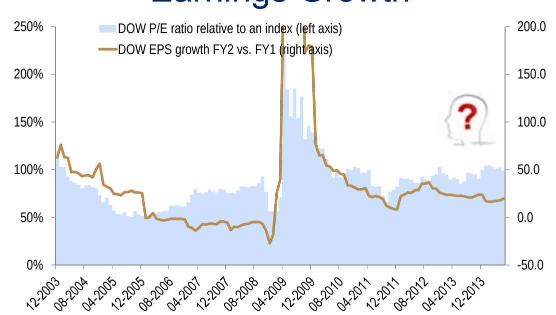
DOW's Relative P/E Ratio and Earnings Growth



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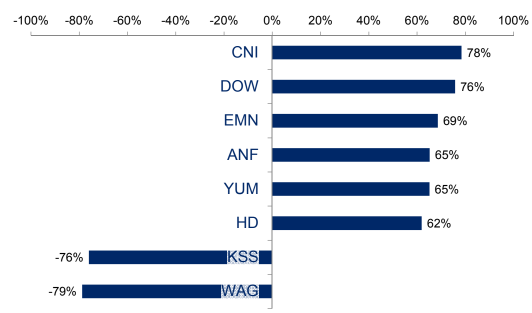
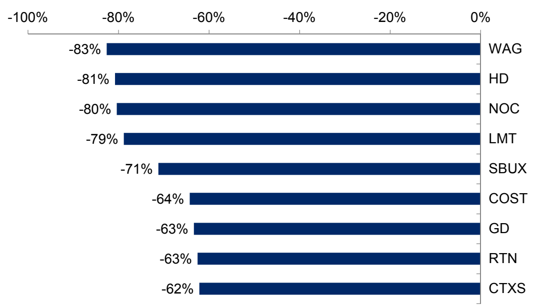
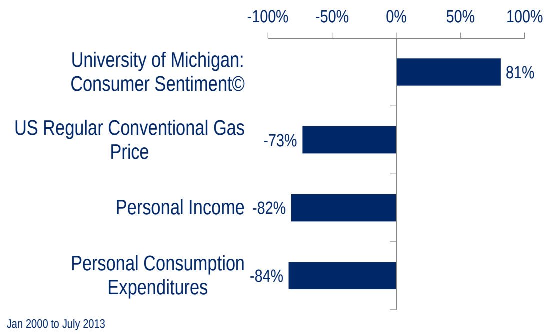
Correlation Between Relative P/E and Payout Ratio (12/03-12/13)



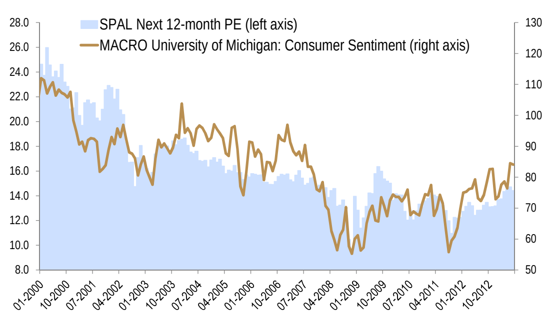
Correlation Between Relative P/E and Beta (12/03-12/13)



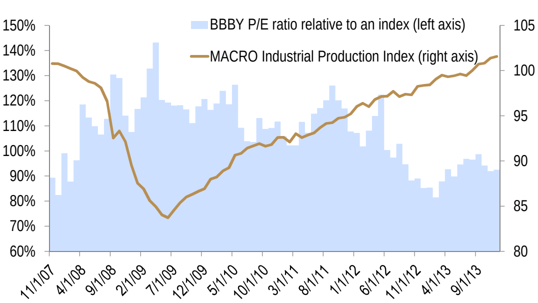
Correlation Between S&P 500 P/E Ratio and Macro Data



S&P 500 P/E Ratio vs. Consumer Sentiment



Bed Bath & Beyond (BBBY) 2007 to 2013



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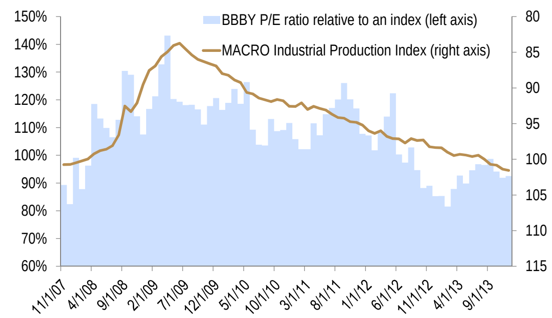
Bed Bath & Beyond (BBBY) 2007 to 2013 (right axis reversed)



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Macro Data

- All Employees: Total nonfarm
- Existing Home Sales
- Industrial Production Index
- ISM Manufacturing: PMI Composite Index
- Manufacturers' New Orders: Nondefense Capital Goods Excluding Aircraft
- New One Family Houses Sold: United States
- Personal Consumption Expenditures
- Personal Income
- Real Retail and Food Services Sales
- S&P/Case-Shiller 20-City Composite Home Price Index
- Total Construction Spending
- Total Private Construction Spending: Nonresidential
- Total Private Construction Spending: Residential
- Total Vehicle Sales
- University of Michigan Consumer Sentiment
- US Regular Conventional Gas Price

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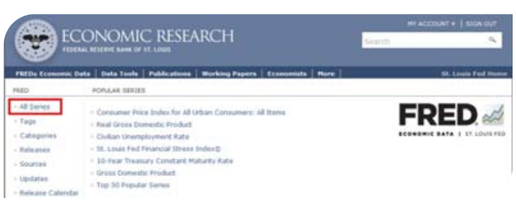
Great Source of Macro Data

https://research.stlouisfed.org/fred2/tags/series



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See "Stock Correlation Coefficient Matrix" in Learner Workbook

Ticker	EPS Growth FY2 vs. FY1	NTM EPS Grwth vs. Trail 12 MTH	Payout ratio	Beta		US Regular Gas Price	New One Family Houses Sold	Mnfctrs New Orders	Real Retail & Food Services Sales	Case-Shiller 20-City Price Index	Total Vehicle Sales	U of Michigan: Cons. Sent.
ABT	23.3%	-23.2%	-0.2%	5.2%		-3.9%	27.8%	30.7%	33.7%	45.1%	39.1%	15.3%
ADBE	87.1%	-44.7%	-14.0%	-34.5%		22.8%	-6.4%	39.8%	50.8%	22.3%	25.7%	16.7%
ADSK	10.7%	-29.8%	-39.4%	30.3%		34.8%	-34.0%	25.8%	27.4%	17.5%	-26.2%	-24.7%
AEO	33.4%	10.4%	59.7%	-39.5%		36.2%	-39.4%	19.0%	16.7%	1.8%	-40.3%	-21.2%
ALB	8.3%	61.9%	-25.1%	2.4%		24.1%	4.0%	26.7%	31.1%	48.5%	0.0%	9.2%
ANF	67.8%	15.2%	72.5%	3.0%		35.3%	-48.7%	6.0%	-6.5%	-6.6%	-57.9%	-41.3%

In Excel, use the PEARSON function

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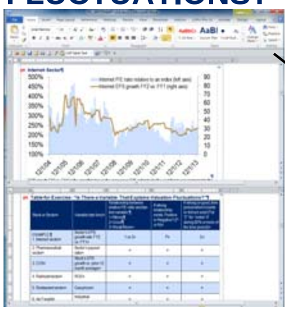
EXERCISE: IS THERE A VARIABLE THAT EXPLAINS VALUATION FLUCTUATIONS?



Split the screen in reverse, so you're working in the table on the bottom of the screen

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EXERCISE: IS RELATIVE VALUATION CURRENTLY ON-TREND?

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Regression Analysis Helps Fend Off "Guesswork"

This excerpt is in your Learner Workbook…

A firm may have a P/E ratio of 22 in a sector where the average P/E is only 15, but the analyst may conclude that this difference can be justified because the firm has higher growth potential than the average firm in the industry.

If, in the judgment of the analyst, the difference on the multiple cannot be explained by the fundamentals, the firm will be viewed as overvalued (if its multiple is higher than the average) or undervalued (if its multiple is lower than the average).

The weakness in this approach is not that analysts are called upon to make subjective judgments, but that the **judgments are often based on little more than guesswork**. All too often, these judgments **confirm analysts' biases about companies**."

- Aswath Damodaran

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Benefits of Regression Analysis

- Objectively explains the variables investors value the most and least
- Allows for stocks from different sectors to be compared to one another
- Helps to identify if all of the stocks in a given sector are over- or under-valued

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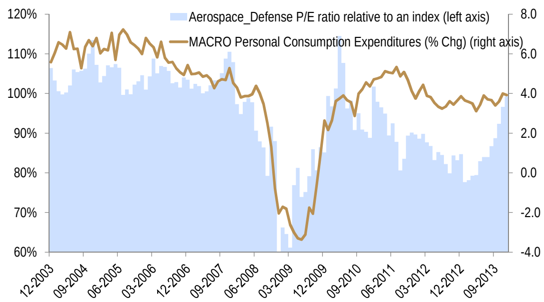
Aerospace & Defense Sector and Changes in Personal Consumption Expenditures



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Regression

$$Aerospace\ \&\ Defense\ sector\ relative\ P/E\ Ratio$$

$$= 0.80 + \left(\begin{matrix}Change\ in\ personal\ consumption\\ expenditures\ x\ 3.5\end{matrix}\right)$$

Based on regression formula, predicted value for December 2013 = 94% vs. actual of 99%

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HISTORICAL TOOL: Is current valuation on trend compared to the past?

Cyclically-moving relative valuations	Secularly-moving relative valuations
• Compare sector relative to broad index • Compare stock relative to sector	• Review secular decay or ascent

CURRENT TOOL: Is current valuation in line with stocks that have similar characteristics?

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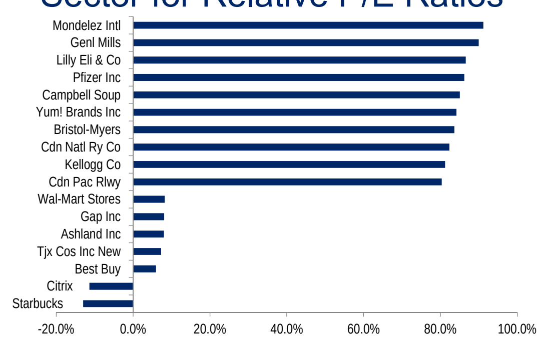
Correlation Between Stock and Sector for Relative P/E Ratios*



From December 2003 to December 2013

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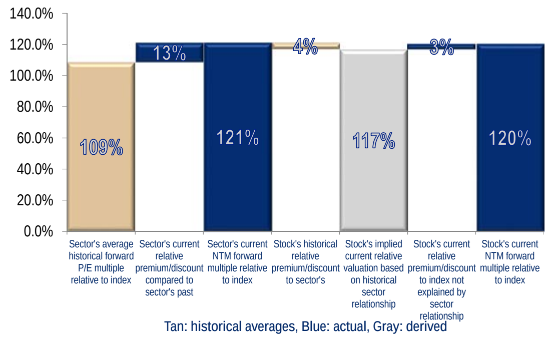
Mondelez (MDLZ)
10-Year Averages as of December 2013



Tan: historical averages, Blue: actual, Gray: derived

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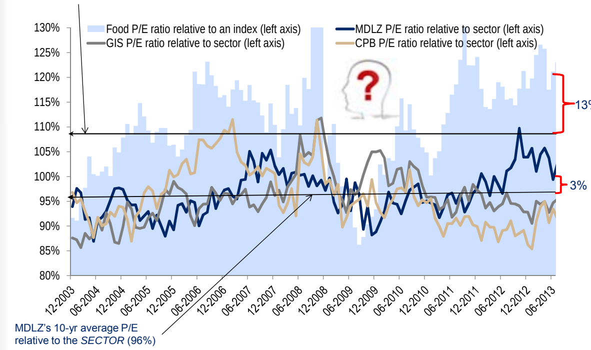
Sector's 10-yr average P/E relative to the *MARKET* (109%)

Food Sector Stocks



MDLZ's 10-yr average P/E relative to the *SECTOR* (96%)

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Elements of Relative P/E

Stock's P/E relative to index's	=	Stock's P/E relative to sector's	x	Sector's P/E relative to index' s

$$\frac{StockPE}{Index\ PE} = \frac{Stock\ PE}{Sector\ PE} x \frac{Sector\ PE}{Index\ PE}$$

$$\frac{11}{10} = \frac{11}{9} \times \frac{9}{10}$$

110% = 122% x 90%

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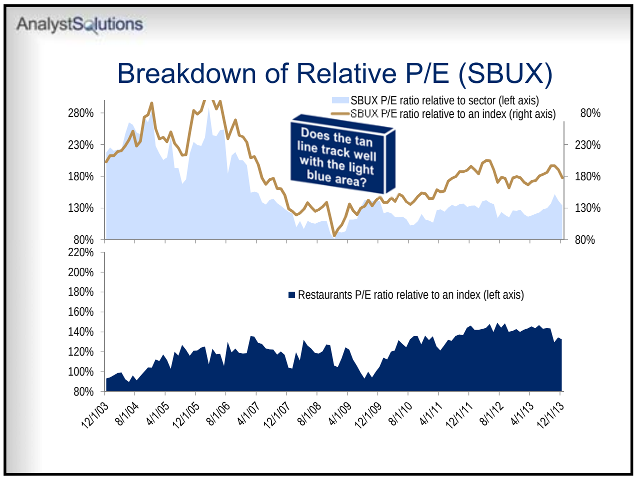
See "Sector Correlation Coefficient Matrix" in Learner Workbook…

Sector Correlation Coefficient Matrix

Correlation coefficients for relationship between sector's relative P/E ratio (based on NTM EPS) and variable below (December 2003 to December 2013)	Aerospace Defense	Air Freight	Food	Pharma	Restaurants	Retailers Food and Drug
Change in FY2 vs. FY1 NTM EPS	52.7%	50.4%	9.0%	8.2%	66.0%	11.9%
Payout Ratio	22.6%	31.2%	18.9%	71.2%	62.3%	5.8%
BETA	-17.0%	-10.1%	9.7%	-10.1%	36.6%	-16.9%
Existing Home Sales	61.0%	-4.3%	-16.5%	52.0%	-39.3%	39.9%
US Regular Conventional Gas Price	-32.5%	-36.2%	54.8%	3.6%	72.6%	0.5%
US Regular Conventional Gas Price (Chg)	57.2%	-1.9%	7.9%	8.0%	-6.5%	29.2%
New One Family Houses Sold	67.7%	-5.3%	-20.5%	48.4%	-52.8%	39.8%
Industrial Production Index	31.5%	-72.3%	60.9%	79.8%	46.2%	55.0%



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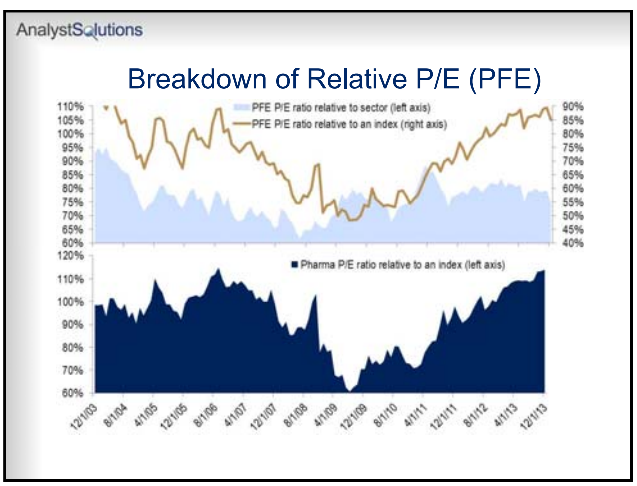
EXERCISE: STOCK OR SECTOR INFLUENCES?



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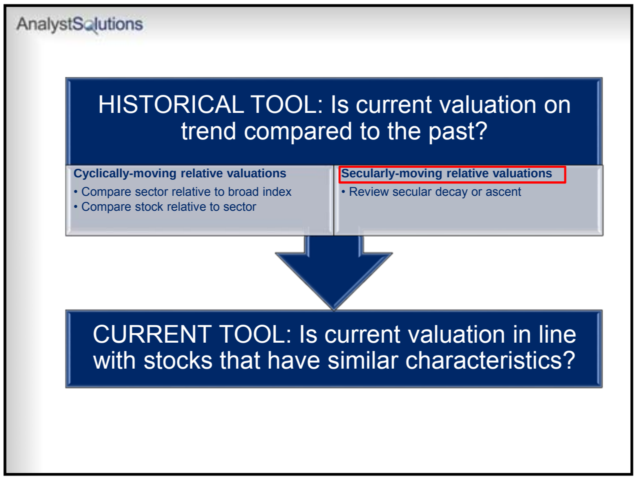
Complete Your TAP

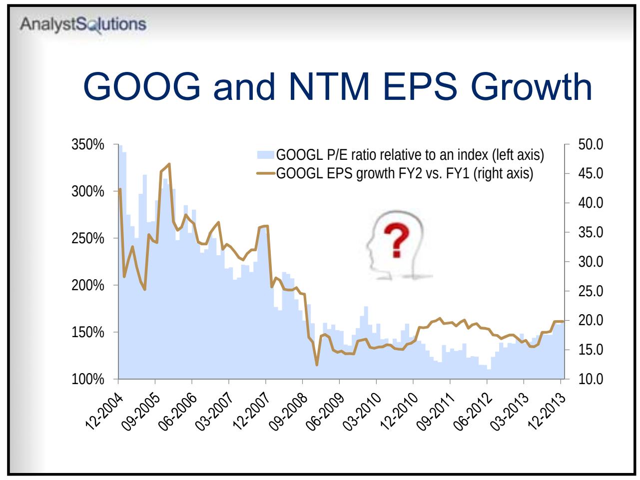
Section 2

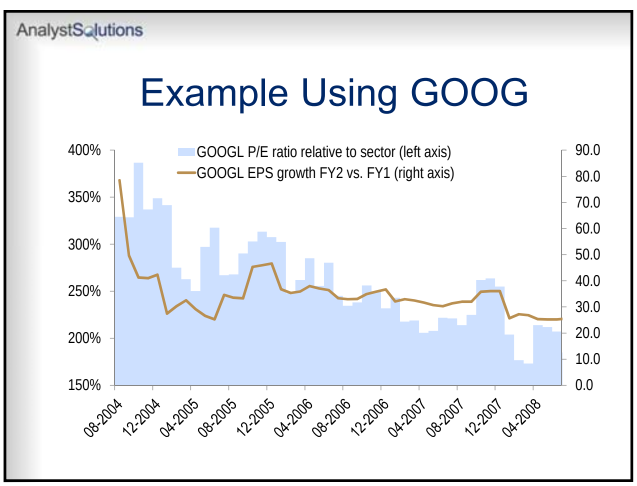
Transformation Action Plan (TAP)

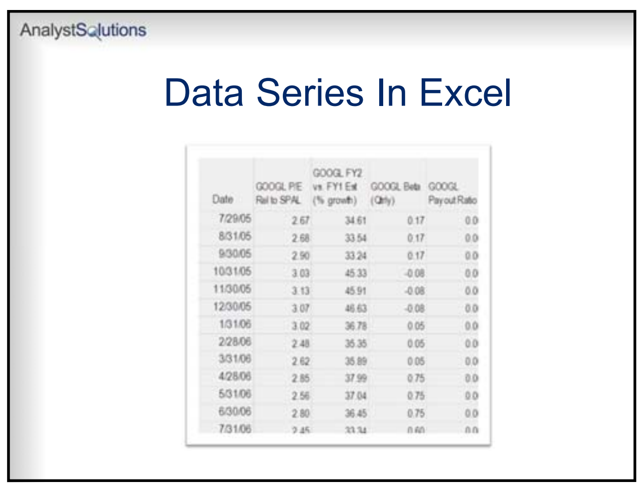
Instructions for the Transformation Action Plan (TAP):

- Throughout this workshop complete the TAP below
- Apply the key points after the workshop to help you improve your performance
- This will not be collected and so write in a manner that will help you utilize the concepts being learned









Date	GOOGL P/E Rel to SPAL	GOOGL FY2 vs. FY1 Est (% growth)	GOOGL Beta (Qtrly)	GOOGL Payout Ratio
7/29/05	2.67	34.61	0.17	0.0
8/31/05	2.68	33.54	0.17	0.0
9/30/05	2.90	33.24	0.17	0.0
10/31/05	3.03	45.33	-0.08	0.0
11/30/05	3.13	45.91	-0.08	0.0
12/30/05	3.07	46.63	-0.08	0.0
1/31/06	3.02	36.78	0.05	0.0
2/28/06	2.48	35.35	0.05	0.0
3/31/06	2.62	35.89	0.05	0.0
4/28/06	2.85	37.99	0.75	0.0
5/31/06	2.56	37.04	0.75	0.0
6/30/06	2.80	36.45	0.75	0.0
7/31/06	2.45	33.34	0.60	0.0

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Key Elements of Excel Output

Regression Statistics	
Multiple R	0.82
R Square	0.68
Adjusted R Square	0.65
Standard Error	0.22
Observations	37.00

ANOVA

	df	SS	MS	F
Regression	3.00	3.37	1.12	23.04
Residual	33.00	1.61	0.05	
Total	36.00	4.97		

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.15	0.38	5.71	0.00
GOOG FY2 vs. FY1 Est (% growth)	1.82	0.97	1.88	0.07
GOOG Beta	-0.36	0.08	-4.44	0.00

R = Pearson correlation coefficient (relationship between the predicted and the actual values in a linear regression)

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Regression Equation for GOOG

Y	=	a	+	(b_1 * X_1)	+	(b_2 * X_2)	+	(b_3 * X_3)
Predicted stock's relative P/E Ratio	=	Intercept	+	(Coefficient 1 * Variable 1)	+	(Coefficient 2 * Variable 2)	+	(Coefficient 3 * Variable 3)
GOOG's predicted relative P/E Ratio	=	2.15	+	(1.82 * YoY Change in NTM EPS)	+	(−0.36 * Beta)	+	(0 * Payout ratio)
GOOG's predicted relative P/E Ratio	=	2.15	+	(1.82 * 0.256)	+	(−0.36 * 2.01)	+	(0 * 0)
GOOG's predicted relative P/E Ratio	=	189%						

Actual: 185%

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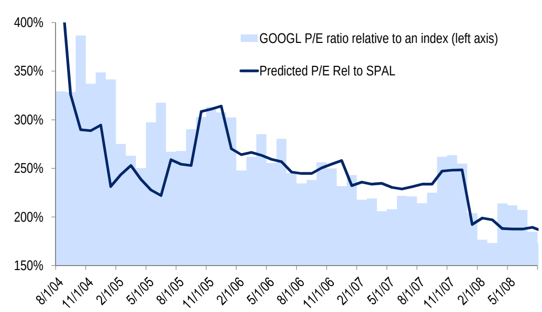
Is GOOG "On Trend?"



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Example Decay Coefficients

	GOOGL	PFE	MSFT	BBBY
Starting Period	6/30/05	4/30/98	12/31/99	12/31/01
Ending Period	6/30/08	8/30/02	12/31/03	12/31/05
R Square	0.68	0.77	0.72	0.73
Decay Coefficients				
EPS growth FY2 vs. FY1	1.82	3.11	2.55	4.90
Payout ratio	0.00	-1.74	-1.78	0.00
Beta	-0.36	1.54	-1.85	0.54

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EXERCISE: "IS SECULARLY-MOVING VALUATION ON-TREND?"

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Special Considerations for Growth Stocks

- Some momentum investors will buy a stock simply because it's going up (not necessarily because fundamentals are improving)
- Growth stocks will often look expensive because most metrics are only looking out 12-24 months and it may take years for a company to "grow into it's valuation" (e.g. GOOG)
- At some point the stock's relative P/E ratio's secular decline will become cyclical

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Does a declining relative multiple automatically mean a stock will under-perform?

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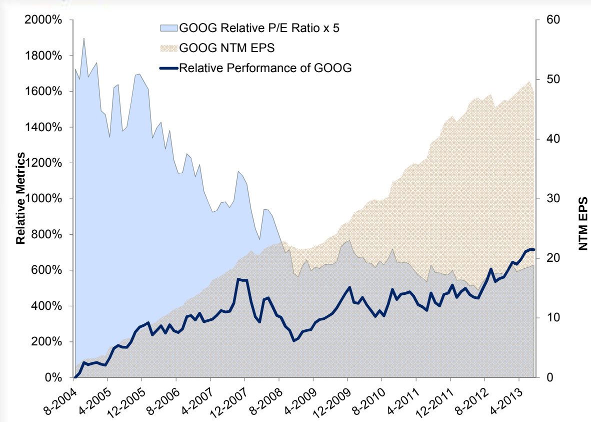

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Considerations Before We Move from "Historical" Tool to "Current" Tool

- Your stock's relative P/E ratio may not have a high correlation coefficient to the company's financial data or macro data. Options to get to a better predictive regression equation:
  - Change the time period
  - Exclude anomalous time periods (such as big earnings misses)
- Don't make it too scientific – recall the purpose is to understand the psychology around the stock's valuation
- But also try not to make it too subjective or you run the risk of falling into the all-too-common *confirmation bias* which allows you to reverse engineer

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Complete Your TAP

Section 3

Transformation Action Plan (TAP)

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HISTORICAL TOOL: Is current valuation on trend compared to the past?

Cyclically-moving relative valuations	Secularly-moving relative valuations
• Compare sector relative to broad index • Compare stock relative to sector	• Review secular decay or ascent

CURRENT TOOL: Is current valuation in line with stocks that have similar characteristics?

Shotgun (regression of large universe)	Rifle (filter to few comps)

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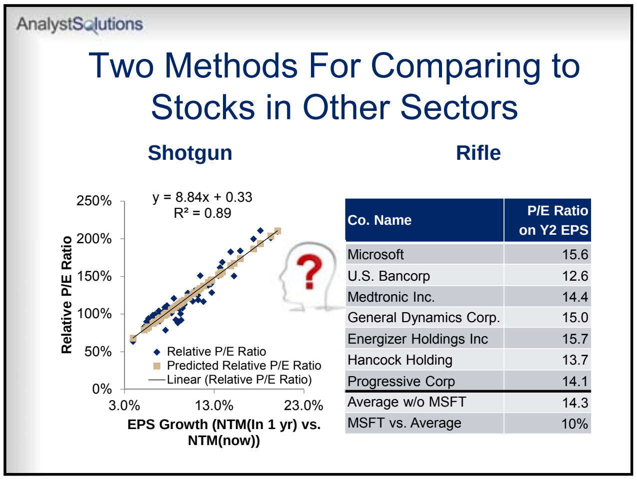
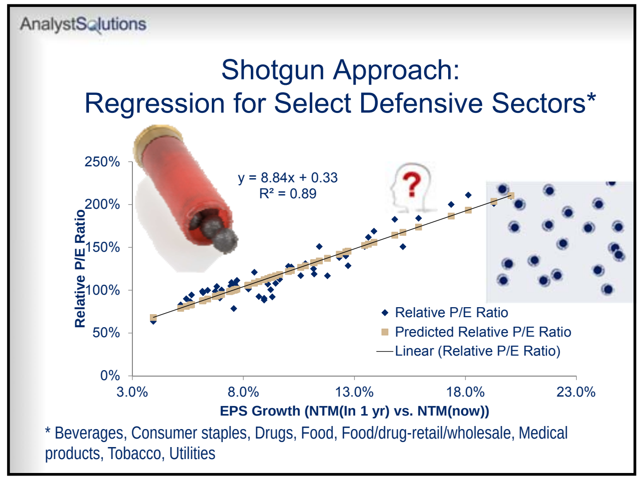
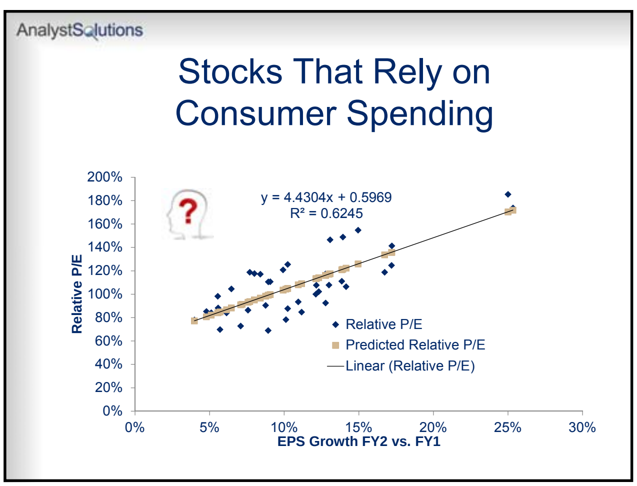
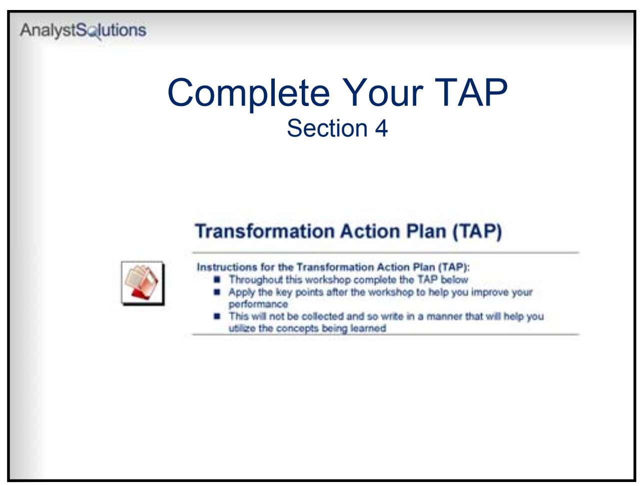
Are These Comparable?



Co. Name	P/E Ratio on Y2 EPS
Microsoft	15.6
U.S. Bancorp	12.6
Medtronic Inc.	14.4
General Dynamics Corp.	15.0
Energizer Holdings Inc	15.7
Hancock Holding	13.7
Progressive Corp	14.1
Average w/o MSFT	14.3
MSFT vs. Average	10%







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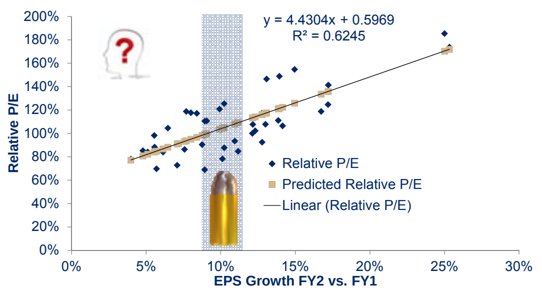
Stocks That Rely on Consumer Spending



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Rifle Approach: Compare to Stocks In Other Sectors

Factor	MSFT	Minimum for Screen	Maximum for Screen
Expected Growth (Y3 vs. Y1)	16%	13%	19%
Expected Growth (Y3 vs. Y2)	9%	7%	11%
Payout ratio	42%	25%	60%
Beta	0.96	0.76	1.16
Market capitalization	$373B	$5B	None

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Rifle Approach: Compare to Stocks In Other Sectors

Co. Name	GICS Sub-industry	P/E Ratio on Y2 EPS	Forward EPS Growth (Y3 vs. Y1)	Forward EPS Growth (Y3 vs. Y2)	Payout ratio	Beta
U.S. Bancorp	Diversified Banks	12.6	19%	10%	32%	0.78
Medtronic Inc.	Health Care Equip.	14.4	14%	7%	28%	1.09
General Dynamics	Aerospace & Def.	15.0	16%	8%	34%	1.14
Energizer Holdings	Hshold Products	15.7	16%	8%	28%	0.98
Hancock Holding	Regional Banks	13.7	15%	8%	41%	1.05
Progressive Corp	Prop. & Cas. Ins.	14.1	14%	8%	30%	0.76
Average w/o MSFT		14.3	16%	8%	32%	0.97
Microsoft	Systems Software	15.6	16%	9%	42%	0.96
MSFT vs. Average		10%	4%	12%	30%	-1%

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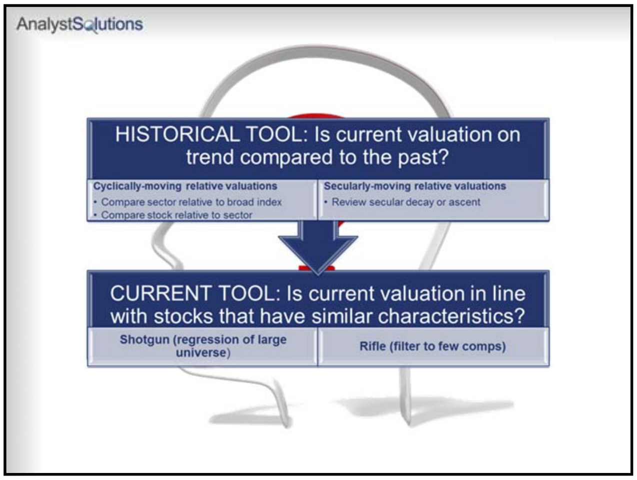
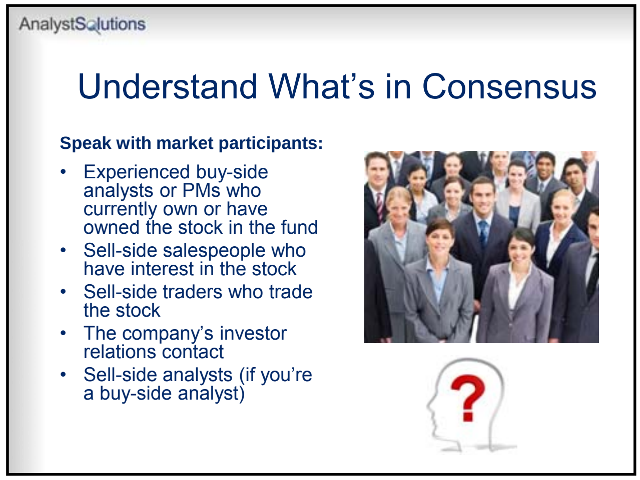
Complete Your TAP

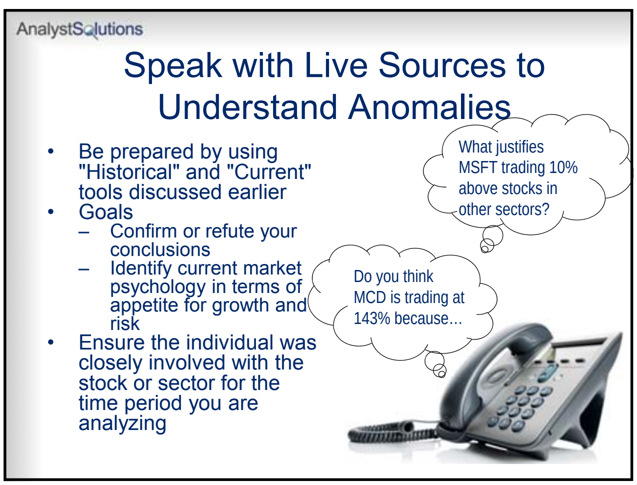
Section 5

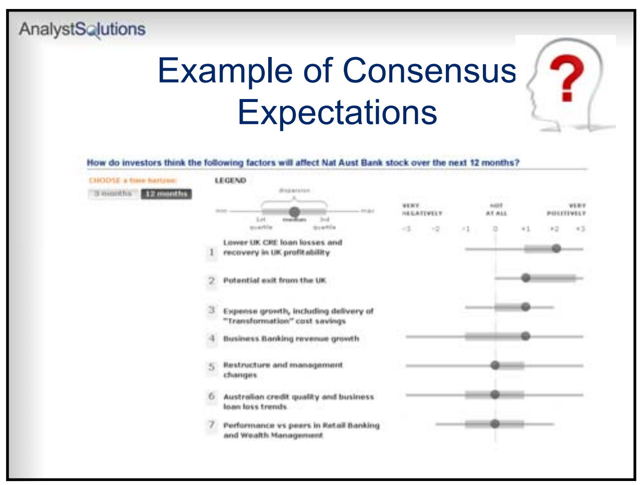
Transformation Action Plan (TAP)

Instructions for the Transformation Action Plan (TAP):
- Throughout this workshop complete the TAP below
- Apply the key points after the workshop to help you improve your performance
- This will not be collected and so write in a manner that will help you utilize the concepts being learned


AnalystSolutions
HISTORICAL TOOL: Is current valuation on trend compared to the past?
Cyclically-moving relative valuations
• Compare sector relative to broad index
• Compare stock relative to sector
Secularly-moving relative valuations
• Review secular decay or ascent
CURRENT TOOL: Is current valuation in line with stocks that have similar characteristics?
Shotgun (regression of large universe)
Rifle (filter to few comps)


AnalystSolutions
Understand What's in Consensus
Speak with market participants:
• Experienced buy-side analysts or PMs who currently own or have owned the stock in the fund
• Sell-side salespeople who have interest in the stock
• Sell-side traders who trade the stock
• The company's investor relations contact
• Sell-side analysts (if you're a buy-side analyst)
?


AnalystSolutions
Speak with Live Sources to Understand Anomalies
• Be prepared by using "Historical" and "Current" tools discussed earlier
• Goals
– Confirm or refute your conclusions
– Identify current market psychology in terms of appetite for growth and risk
• Ensure the individual was closely involved with the stock or sector for the time period you are analyzing
What justifies MSFT trading 10% above stocks in other sectors?
Do you think MCD is trading at 143% because…


AnalystSolutions
Example of Consensus Expectations
?
How do investors think the following factors will affect Nat Aust Bank stock over the next 12 months?
12 months
LEGEND
1 Lower UK CRE loan losses and recovery in UK profitability
2 Potential exit from the UK
3 Expense growth, including delivery of "Transformation" cost savings
4 Business Banking revenue growth
5 Restructure and management changes
6 Australian credit quality and business loan loss trends
7 Performance vs peers in Retail Banking and Wealth Management

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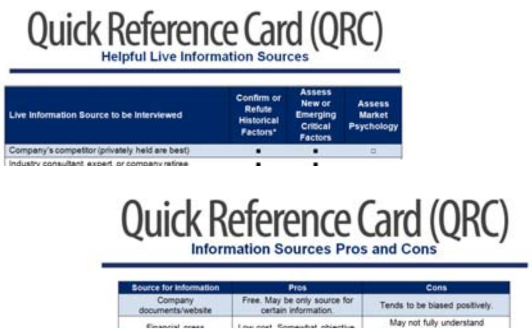
Quick Reference Cards



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What Could Lucas Have Learned from Step 2 of SHARE™?

STEP 2: Historical and Current Sentiment

Lucas…

- Doesn't know these *historical*: elements for MCD
  - Range of MCD's valuation levels in absolute terms
  - Range of MCD's valuation levels relative to peers and broad index
  - Whether MCD's valuation has been moving cyclically or secularly
- Is using *absolute* valuation levels rather than *relative*
- When asked about using relative P/E ratios, he doesn't understand the importance of using forward-looking estimates for the "e" rather than historical actuals
- Doesn't know how the stock's *current* valuation compares to:
  - All of its peers
  - Stocks of companies in other sectors with similar characteristics

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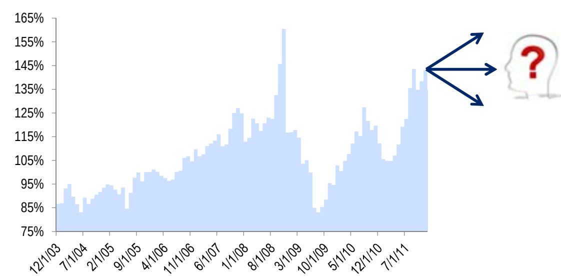
Target Realistic Price(s)
SHARE™ Framework

- Pre-step: Create an accurate financial forecast(s)
- Step 1: Select valuation method(s)
- Step 2: Historical & current sentiment
- **Step 3: Adjust for future time period**
- Step 4: Range of multiples and price targets
- Step 5: Evaluate as circumstances change

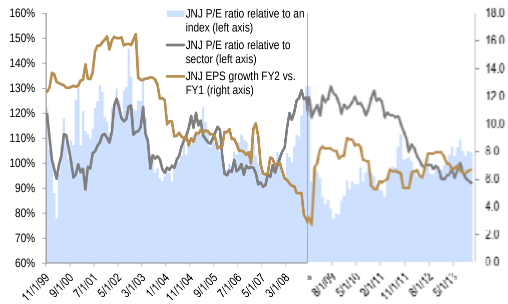
AnalystSolutions

What Should We Use For a Future Price Target Valuation Multiple?

MCD P/E ratio relative to an index (left axis)



Adjusting for the Future



Choose Your Path

If a stock's current valuation multiple is anomalous *from its past* or *versus current stocks that have similar characteristics*, the future multiple:

- Should be adjusted back to normal trends/relationships; or
- Can stay at current levels if research can justify current levels are the "new normal" for the forward investment time horizon

Price Target in Its Simplest Terms

Forward-looking financial forecast at a point in time → Influences → Valuation multiple

Example

Year	NTM EPS	Multiple at that time	Price	Upside	Multiple at that time	Price	Upside
Y1 (yours and consensus estimate)*	€ 1.00	10	€ 10.00	0%			
Y2 (Consensus)	€ 1.10	10	€ 11.00	10%	9	€ 9.90	-1%
Y2 (Your estimate)	€ 1.20	10	€ 12.00	20%	9	€ 10.80	8%

* Assume we are in January of Y1

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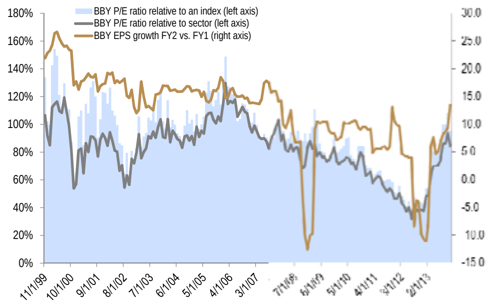
Don't Forget: Forecast Trumps Valuation



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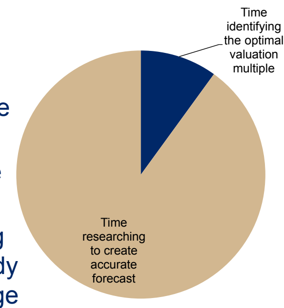
Exploit Anomalies

If your financial forecast is more accurate than consensus, you will have the ability to:

- Anticipate the multiple expansion; or
- Avoid double-counting if the multiple is already anticipating this change



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Watch For Sector Anomalies

- Greater forces beyond a stock can impact multiples
  - Desire to own tech stocks in 1999
  - Desire to own clean energy stocks in 2008
  - Desire to own defensive names during the sub-prime melt-down
- Don't assume current irrational exuberance will continue to provide support to a one-year price target

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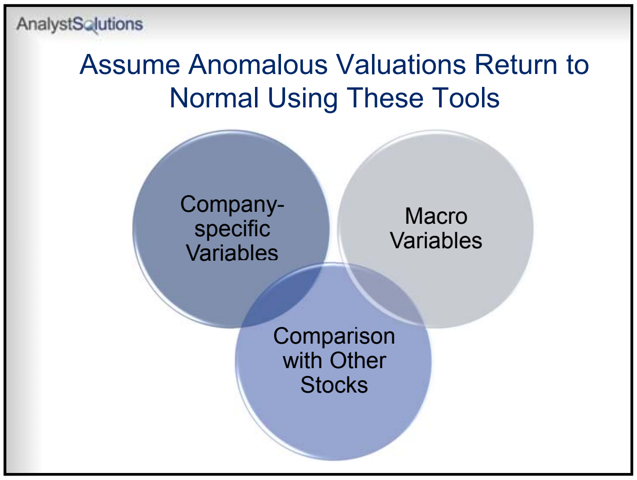
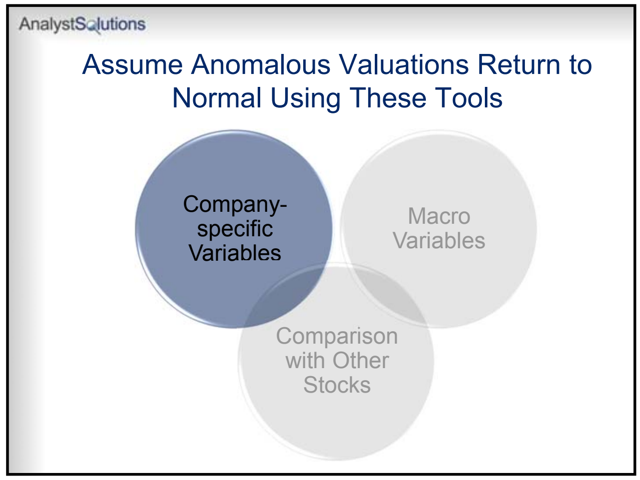
Avoid This "Too Early" Mistake

- Ensure you understand how your financial forecast for Y1, Y2 and Y3 differ from the consensus
- If you have a much higher EPS estimate than consensus in Y3 but lower in Y1, it would be unwise to assume the stock's relative multiple will expand during Y1, at a time when expectations will likely be lowered


AnalystSolutions
Assume Anomalous Valuations Return to Normal Using These Tools
Company-specific Variables
Macro Variables
Comparison with Other Stocks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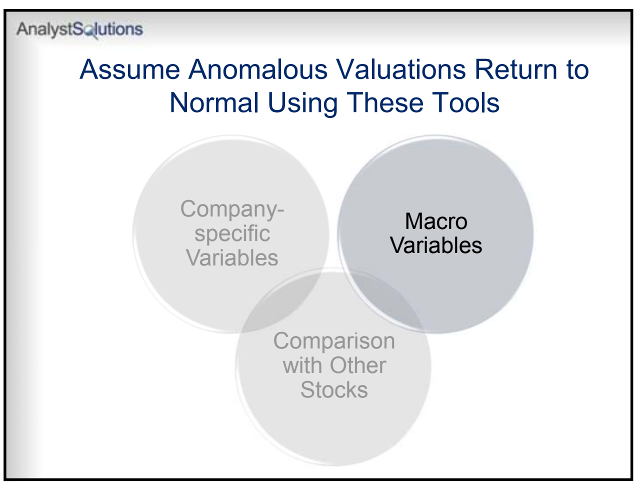
AnalystSolutions
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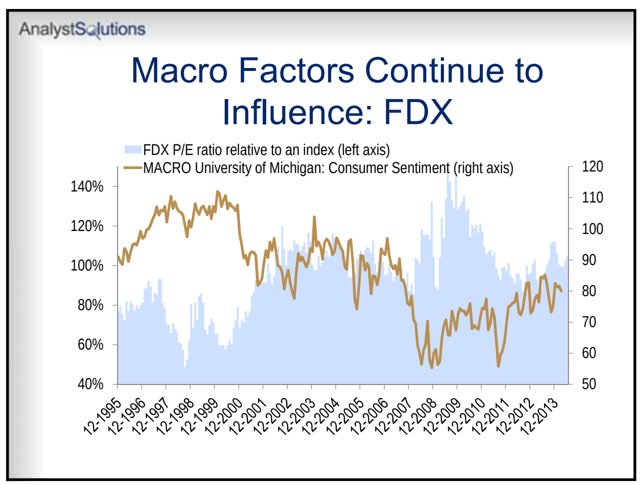
AnalystSolutions
Macro Factors Continue to Influence: FDX
FDX P/E ratio relative to an index (left axis)
MACRO University of Michigan: Consumer Sentiment (right axis)
140%
120%
100%
80%
60%
40%
120
110
100
90
80
70
60
50
12-1995
12-1996
12-1997
12-1998
12-1999
12-2000
12-2001
12-2002
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12-2005
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12-2007
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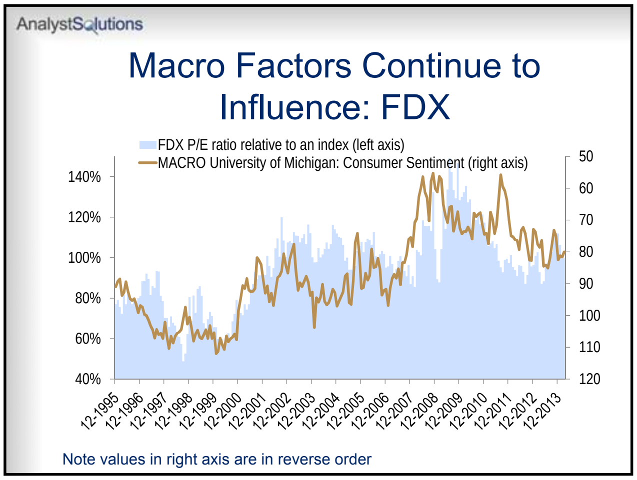
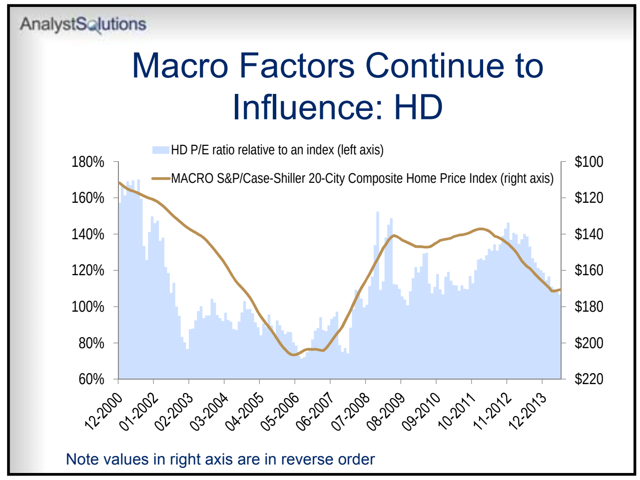
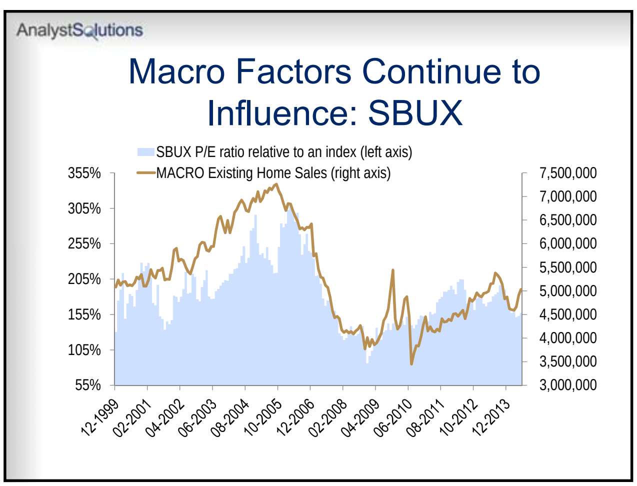
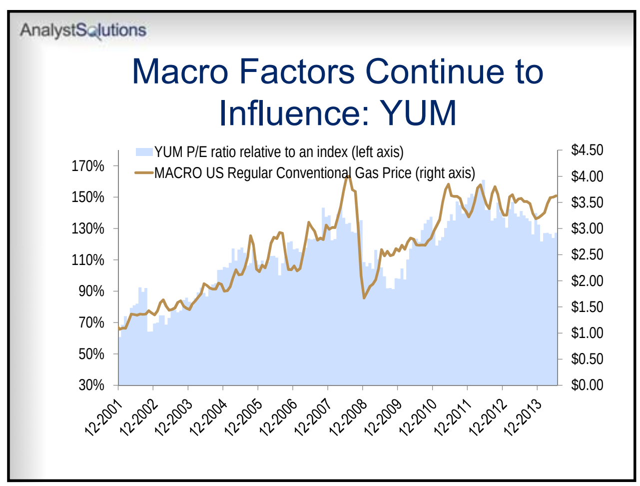
12-2009
12-2010
12-2011
12-2012
12-2013


AnalystSolutions
Macro Factors Continue to Influence: FDX
FDX P/E ratio relative to an index (left axis)
MACRO University of Michigan: Consumer Sentiment (right axis)
Note values in right axis are in reverse order


AnalystSolutions
Macro Factors Continue to Influence: HD
HD P/E ratio relative to an index (left axis)
MACRO S&P/Case-Shiller 20-City Composite Home Price Index (right axis)
Note values in right axis are in reverse order


AnalystSolutions
Macro Factors Continue to Influence: SBUX
SBUX P/E ratio relative to an index (left axis)
MACRO Existing Home Sales (right axis)


AnalystSolutions
Macro Factors Continue to Influence: YUM
YUM P/E ratio relative to an index (left axis)
MACRO US Regular Conventional Gas Price (right axis)

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EXAMPLE CASES: RAYTHEON & WALMART

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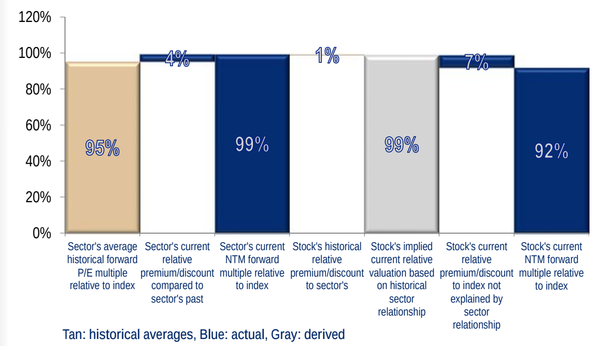
Historical Valuation for RTN



Tan: historical averages, Blue: actual, Gray: derived

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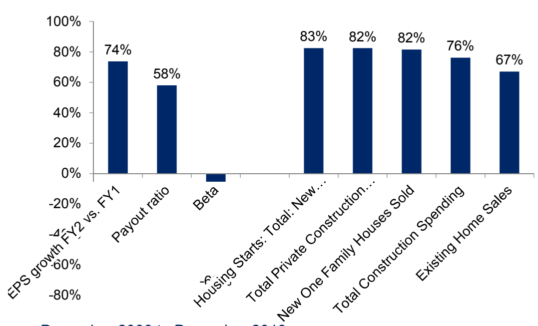
Correlation Coefficients for RTN's Relative P/E Ratio vs. Variable



December 2003 to December 2013

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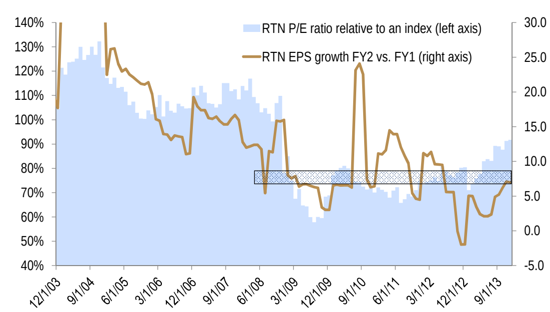
Company-Specific Variable for RTN



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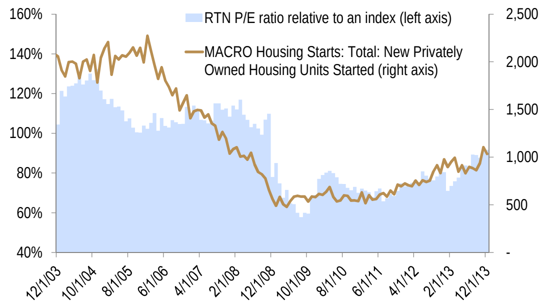
Macro Variable for RTN



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Forecast of Relative P/E Ratio in One Year (RTN)

	EPS growth FY2 vs. FY1	Housing Starts (New Privately Owned)
R Square*	74%	82%
Intercept	0.72	0.60
Variable (multiplier)*	1.53	0.0287
Forecast for 1 year from now**	7.7%	1,000K
Expected relative P/E ratio in 1 year	84%	88%

* Regression based on data between December 2003 and December 2013
** "Now" is assumed to be December 2013

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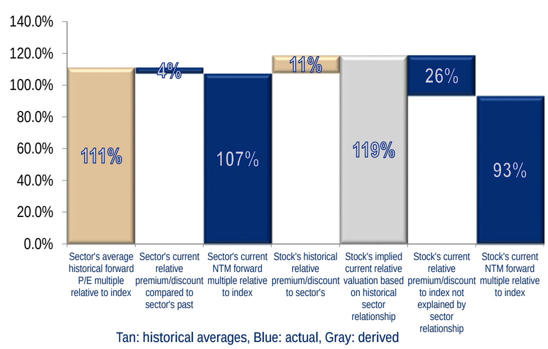
Historical Valuation for WMT



Tan: historical averages, Blue: actual, Gray: derived

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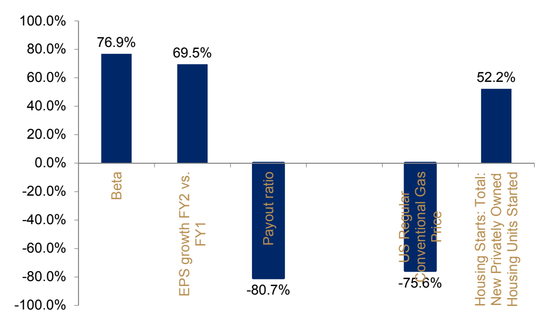
Correlation Coefficients for WMT's Relative P/E Ratio vs. Variable



June 1997 to June 2013

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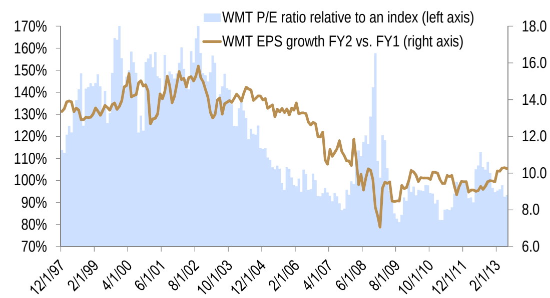
Company-Specific Variable for WMT



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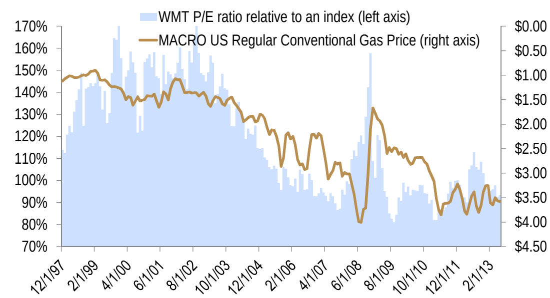
Historical Variables for WMT



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Forecast of Relative P/E Ratio in One Year (WMT)

	EPS growth FY2 vs. FY1	EPS growth FY2 vs. FY1 (48 outliers removed from 193 periods)	Gas Prices (dollars/ gallon)
R Square*	0.69	0.86	0.73
Intercept	0.25	0.12	1.61
Variable (multiplier)*	7.7	8.6	-20
Forecast for 1 year from now**	9%	9%	$3.63
Expected relative P/E ratio in 1 year	94%	89%	89%
Actual in June 2014	86%	86%	86%

* Regression based on data between June 1997 and June 2013
** "Now" is assumed to be June 2013

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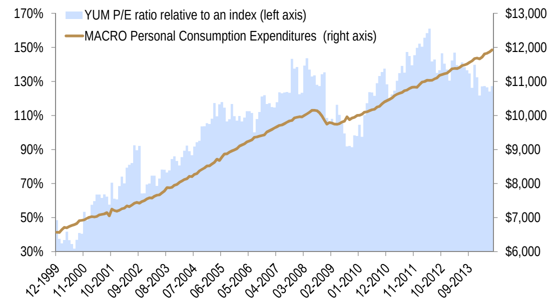
Shortcomings of Using Statistics

- Will not always find a strong relationship (correlation coefficient)
- Time consuming
- Relationships change over time and so today's work may become stale in six months
- Not likely to be as accurate during macro shifts such as economic slowdowns
- Correlation doesn't mean causation
- Be aware of multicollinearity

Correlation ≠ Causation



Jan 2000 to July 2013. Correlation coefficient = 77%

Considerations When Comparing Historical Macro Data to Relative Multiples

Remove any effect from inflation because relative multiples do not continually grow like GDP, personal income or the consumer price index

- Month-over-month change can eliminate this problem, but may be too volatile
- Consider using change in trailing 3 months

Example of Multicollinearity (WMT)

Variable	Coefficient
Intercept	1.83
Year-over-year change in NTM consensus EPS	-2.2
Beta	0.29
Payout ratio	-2.5
Adjusted R squared	0.63

$$
\begin{aligned}
&WMT's\ relative\ PE\ Ratio\ forecasted \\
&= 1.83 + (EPS\ growth\ rate\ x\ - 2.2) + (beta * 0.29) \\
&+ (payout\ ratio * -2.5)
\end{aligned}
$$

Counter-intuitive Implications (if multicollinearity did not exist):

- As EPS growth rate increases, the relative P/E ratio decreases
- As the beta declines, so does the company's relative P/E ratio

Correlation Between "Independent" Variables

	WMT EPS growth FY2 vs. FY1	*WMT Payout ratio*	*WMT Beta*
WMT EPS growth FY2 vs. FY1	1.00		
WMT Payout ratio	-0.86	1.00	
WMT Beta	0.81	-0.73	1.00

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Implications for Multicollinearity

Multicollinearity does not bias results, but when it occurs…

- **Cannot use variables on their own (such as a "decay coefficient")**
- If the multicollinearity relationship between the independent variables change over time, the regression will become less reliable

Sources: Chatterjee, S.; Hadi, A. S.; Price, B. (2000). Regression Analysis by Example (Third ed.). John Wiley and Sons
Gujarati, Damodar. "Multicollinearity: what happens if the regressors are correlated?" Basic Econometrics (4th ed.). McGraw−Hill pp. 363–363.

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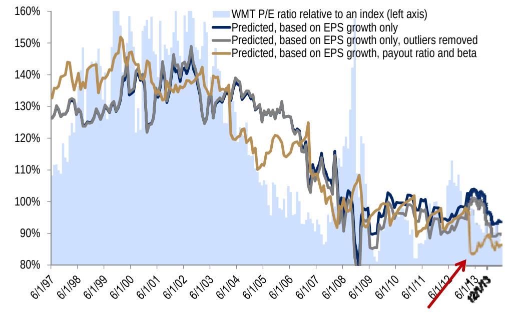
Actual and Predicted Relative P/E (WMT)



The regression equation included data that ended June 2013

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K.I.S.S. Principle

- Occam's razor:
  - Among competing hypotheses, the one with the fewest assumptions should be selected
- Solomonoff's theory of inductive inference:
  - Shorter computable theories have more weight when calculating the probability of the next observation

Source: Wikipedia

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Complete Your TAP

Section 6

Transformation Action Plan (TAP)

Instructions for the Transformation Action Plan (TAP):

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- Apply the key points after the workshop to help you improve your performance
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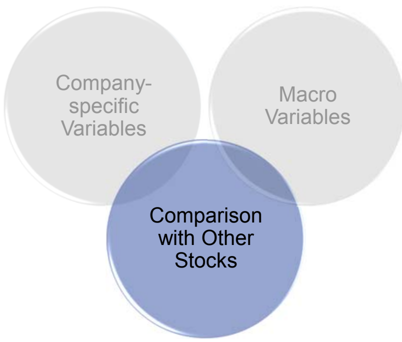
Assume Anomalous Valuations Return to Normal Using These Tools



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Comparison With Other Stocks That Have Similar Characteristics

Regression (Shotgun)

Stock's relative P/E Ratio	=	0.60	+	(Stock's EPS Growth FY2 vs FY1 x 4.43)
107%	=	0.60	+	(**0.105** x 4.43)
82%	=	0.60	+	(**0.05** x 4.43)

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Comparison With Other Stocks That Have Similar Characteristics

Screening (Rifle)

Transformation Action Plan (TAP)

700 Stocks Screened With This Criteria (based on January 2012 data):

- Same as earlier, but consensus EPS growth from FY1 to FY2 **greater than 3% and less than 7%** (instead of 9.5% to 11.5%)

Company	M Industry	Relative P/E	EPS Growth FY2 vs FY1	Beta 12/2011	Payout Ratio
Genuine Parts	AUTOS-TIRES-TRUCKS	126%	5%	0.8	46%
Bok Finl Corp	BANKS & THRIFTS	104%	6%	0.8	31%
Commerce Bancsh	BANKS & THRIFTS	111%	5%	0.5	33%
Cullen Frost Bk	BANKS & THRIFTS	118%	3%	0.6	50%
Keycorp New	BANKS-MAJOR	80%	5%	0.8	15%
Minimum w/o MCD		68%	3.3%	0.3	11%
Average w/o MCD		107%	5.3%	0.7	36%
Maximum w/o MCD		172%	6.8%	1.0	60%
Standard Deviation		25%	1.0%	0.2	14%

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What Could Lucas Have Learned from Step 3 of SHARE™?

STEP 3: Adjust for Future Time Period

Lucas…

- In computing a future valuation multiple, he doesn't account for the current anomalies that will likely disappear:
  - Lucas cannot explain why MCD's current 17.5x P/E multiple (on trailing earnings) is likely to be sustainable when compared to a 15.8x P/E multiple (on forward earnings) the stock has averaged over the past 5 years
  - Lucas doesn't understand there is a *negative* (not positive) relationship between consumer sentiment and the stock's relative valuation multiple

AnalystSolutions

Target Realistic Price(s)

SHARE™ Framework

- Pre-step: Create an accurate financial forecast(s)
- Step 1: Select valuation method(s)
- Step 2: Historical & current sentiment
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- **Step 4: Range of multiples and price targets**
- Step 5: Evaluate as circumstances change

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What
you don't know
you don't know
will kill you

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Information Accessible to the Market		Information Accessible to You: Known	Information Accessible to You: Not Known
	Known	"Information" Background or noise	"Blow Ups" Information that catches us by surprise but not everyone (e.g. sub-prime collapse)
	Not Known	"Alpha Generating Insights" Your proprietary insights about critical factors	"Opportunities to Find Alpha" Events likely to surprise the entire market unless you can forecast it first

Source: Joseph Luft and Harrington Ingham's Johari window (1955)

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Price Target in Its Simplest Terms

Forward-looking financial forecast at a point in time | Valuation multiple

Forward-looking financial forecast at a point in time X Valuation multiple

Forward-looking financial forecast at a point in time | Valuation multiple

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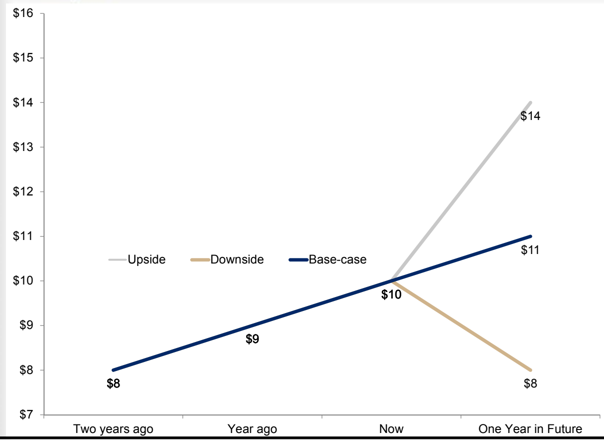

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Complete Your TAP

Section 7

Transformation Action Plan (TAP)

Instructions for the Transformation Action Plan (TAP):
- Throughout this workshop complete the TAP below
- Apply the key points after the workshop to help you improve your performance
- This will not be collected and so write in a manner that will help you utilize the concepts being learned

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Shortcomings with Price Targets

- Static: only change when analyst updates
- Usually look only 6-18 months out
- Single-point
  - No measure of conviction or risk

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Develop a Range of Multiples

- Valuation isn't about one precise multiple
  - Understand market psychology
  - Understand range of future realistic outcomes
- A best practice is to have:
  - Base case multiple
  - Upside case multiple
  - Downside case multiple

Valuation multiple

Valuation multiple

Valuation multiple

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Clarify Consensus "EPS Growth"

January 2012		MCD
• FY2 vs. FY1		10.5%
• NTM vs. Trailing 12 Months		7%

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MCD's Base-case, Downside and Upside Valuation Multiples

Variable #1: EPS Growth rate (NTM EPS vs. avg. of past 12 months)

	Down-side	Base	Upside
Current/recent levels	N/A	7.0%	N/A
Your forecast at time when price target should be achieved	0.0%	5.0%	10.0%
Correlation coefficient of regression	N/A	55%	N/A
Regression coefficient (multiplier from regression output)	N/A	1.55	N/A
Point change (not %) to current relative valuation	-10.9%	-3.1%	4.7%

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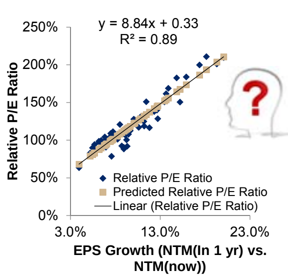
Revisit Shotgun & Rifle to Forecast a Future Valuation Multiple

Shotgun



Rifle

Co. Name	P/E Ratio on Y2 EPS
Microsoft	15.6
U.S. Bancorp	12.6
Medtronic Inc.	14.4
General Dynamics Corp.	15.0
Energizer Holdings Inc	15.7
Hancock Holding	13.7
Progressive Corp	14.1
Average w/o MSFT	14.3
MSFT vs. Average	10%

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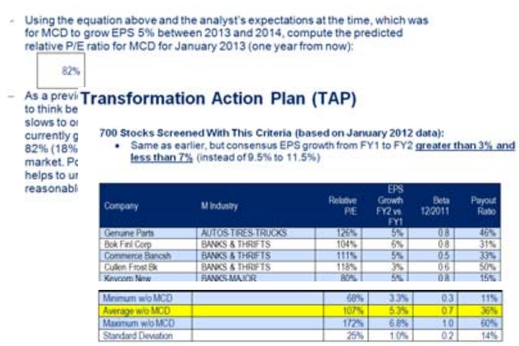
See These In Your TAP



- Using the equation above and the analyst's expectations at the time, which was for MCD to grow EPS 5% between 2013 and 2014, compute the predicted relative P/E ratio for MCD for January 2013 (one year from now):

82%

- As a previ… to think be… slows to o… currently g… 82% (18%… market. P… helps to u… reasonabl…

Transformation Action Plan (TAP)

700 Stocks Screened With This Criteria (based on January 2012 data):

- Same as earlier, but consensus EPS growth from FY1 to FY2 greater than 3% and less than 7% (instead of 9.5% to 11.5%)

Company	M Industry	Relative P/E	EPS Growth FY2 vs. FY1	Beta 12/2011	Payout Ratio
Genuine Parts	AUTOS-TIRES-TRUCKS	126%	5%	0.8	46%
Bok Finl Corp	BANKS & THRIFTS	104%	6%	0.8	31%
Commerce Bancsh	BANKS & THRIFTS	111%	5%	0.5	33%
Cullen Frost Bk	BANKS & THRIFTS	118%	3%	0.6	50%
Keycorp New	BANKS-MAJOR	80%	5%	0.8	15%
Minimum w/o MCD		68%	3.3%	0.3	11%
Average w/o MCD		107%	5.3%	0.7	36%
Maximum w/o MCD		172%	6.8%	1.0	60%
Standard Deviation		25%	1.0%	0.2	14%

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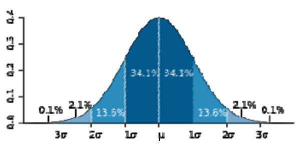
Comparison With Other Stocks That Have Similar Characteristics

Regression (Shotgun)

Regression Statistics	
Multiple R	0.79
R Square	0.62
Adjusted R Square	0.61
Standard Error	0.17
Observations	40.00



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Peak on Peak or Peak on Trough?

Forward-looking financial forecast at a point in time

X

Valuation multiple

Forward-looking financial forecast at a point in time

Valuation multiple

Forward-looking financial forecast at a point in time

Valuation multiple

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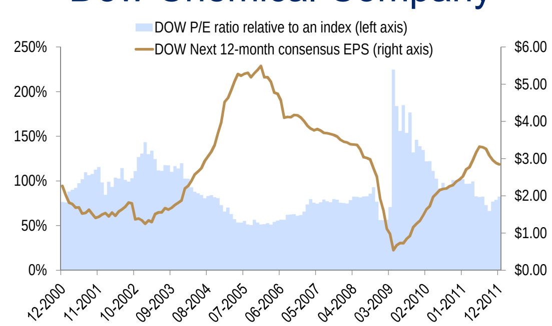
Dow Chemical Company



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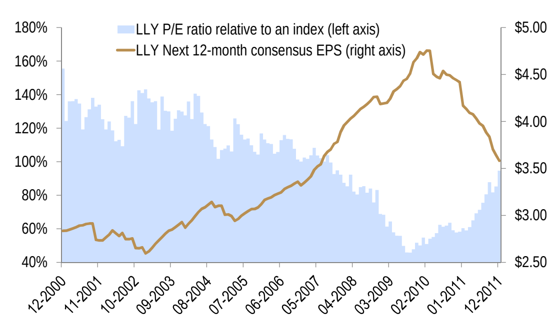
Eli Lilly



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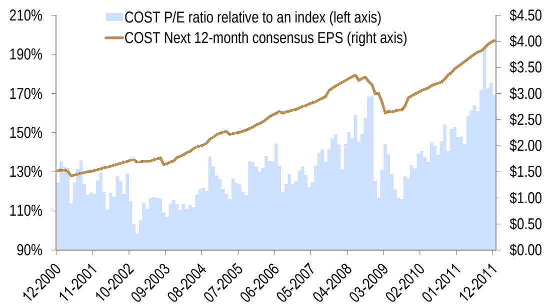
Costco



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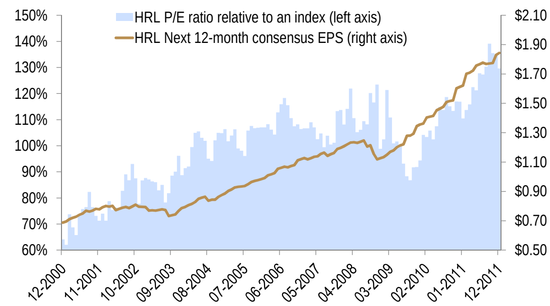
Hormel Foods



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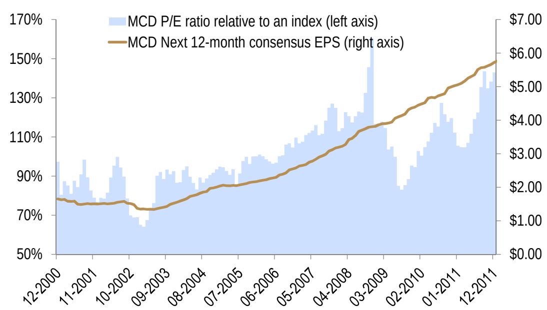
McDonald's



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Price Target in Its Simplest Terms

Forward-looking financial forecast at a point in time X Valuation multiple

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The Final Product

Table A: Three Scenarios Answer Key

Answer Key for Financial Forecast, Valuation Multiple and Price Target Scenarios

	Downside	Base	Upside
Adjustments for Critical Factors			
Critical Factor #1. Impact from slowing international growth	Non-U.S. growth of -1%	Non-U.S. growth of 2%	Non-U.S. growth of 5%
EPS Impact vs. Base-case	-$0.25	$0.00	$0.25
Probability (must equal 100%)	20%	60%	20%
EPS Impact, Weighted for Probability	-$0.05	$0.00	$0.05
Critical Factor #2. Operating margins stop improving	O.M. decline 200 bps	O.M. decline 100 bps	O.M. rise 50 bps

See your learner workbook for a full version of the table found on this slide

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Know Why Your Price Target Differs

If the upside to your price target is materially different than the expected upside in the broader market, determine which of your areas disagrees with consensus (FaVeS):

- Financial forecast?
- Valuation multiple?

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Complete Your TAP

Section 8

Transformation Action Plan (TAP)

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Setting Parameters for Exiting a Stock

- Document a range of exit thresholds in advance of making the recommendation (they may be within the "upside" and "downside" scenarios), which will reduce biases from creeping into decisions at a later date
  - **Upside exit threshold to begin selling <u>some</u>** of the position when it's playing out as expected. This would be the point to stop reiterating the call to your colleagues/clients
  - **Upside exit threshold to sell the <u>entire</u>** position unless new information materializes. This is the point to downgrade the stock
  - **Downside exit threshold** to seriously reexamine the investment thesis (for example, the stock moves 15 percent in the opposite direction of the call)
  - **Stop-loss exit threshold**: to sell position because the thesis is not playing out

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What Could Lucas Have Learned from Step 4 of SHARE™?

STEP 4: <u>R</u>ange of Multiples and Price Targets

Lucas…

- Doesn't see the benefit of:
  - Creating a range of multiples or price targets (he's convinced his thought process is the only one he needs to know)
  - Developing exit thresholds before making the stock call (nothing can go wrong)

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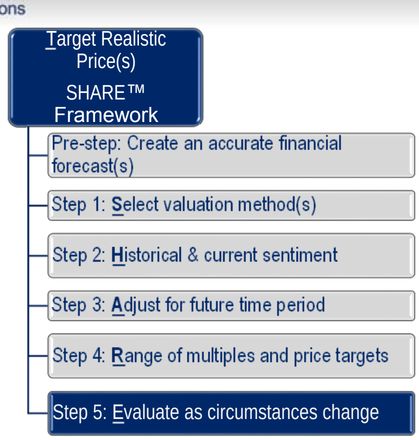

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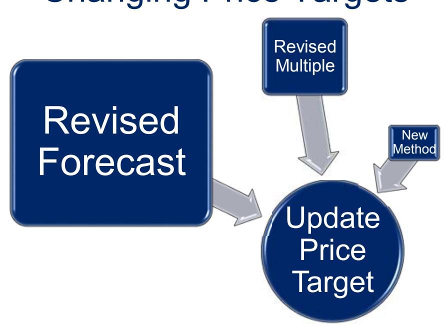
Catalysts for Changing Price Targets



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Catalysts for Changing Price Targets: Revised Forecast

Revised Forecast

- Objective, defendable changes in your assumptions
- For forward estimates strive to keep the valuations current by using next 12 months (NTM) or next four quarters earnings or cash flow

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Catalysts for Changing Price Targets: Revised Multiple

Revised Multiple

- For relative multiples:
  - When peer multiples fluctuate
  - When highly-correlated variables change
    - Company-specific such as EPS growth rate
    - Macro such as consumer sentiment
- For DCF or residual income, when the underlying assumptions change such as risk-free rate, equity premium, or stock's beta

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Catalysts for Changing Price Targets: New Valuation Method

New Method

- At the peak or trough inflection points of the business cycle
- Moving from one phase to another of a company's or industry's life cycle (e.g. growth to maturity)
- Going through a major secular transformation or major restructuring

See list of examples in Learner Workbook

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Use "Change in Valuation" Sparingly

Stock recommendations tend to fail when they are based solely on the analyst's expectations that:

- The stock's valuation multiple will be re-rated (void of an impending financial forecast change); or
- The market will change its preferred valuation methodology

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EXERCISE: "HOW IS THE VALUATION METHOD LIKELY TO CHANGE?"

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Avoid "Incrementalism" when Changing Price Targets

Avoid raising your price targets in small, incremental steps while waiting for "further clarification" because it prevents others from seeing the true upside in your call

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What Could Lucas Have Learned from Step 5 of SHARE™?

STEP 5: Evaluate as Circumstances Change

Lucas…

- Doesn't fully appreciate that price targets should be changed when:
  - Assumptions change in his earnings or cash flow projections
  - Time passes, leading to new forecast periods (e.g. each month that passed will likely cause the next 12-month forward estimate to increase)
  - Valuation multiples of comparable companies or the market change

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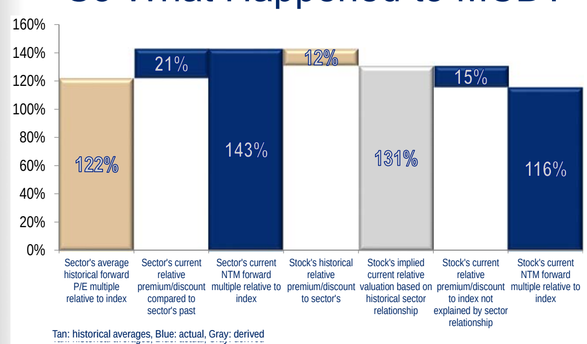
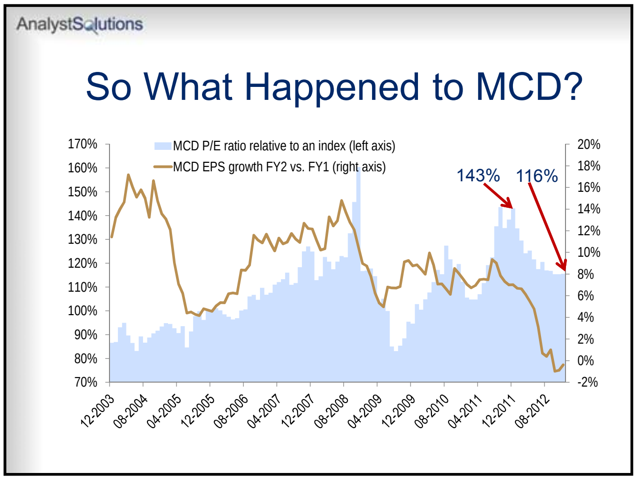
So What Happened to MCD?

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So What Happened to MCD?
MCD P/E ratio relative to an index (left axis)
MCD EPS growth FY2 vs. FY1 (right axis)
143%
116%
170%
160%
150%
140%
130%
120%
110%
100%
90%
80%
70%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
-2%
12-2003
08-2004
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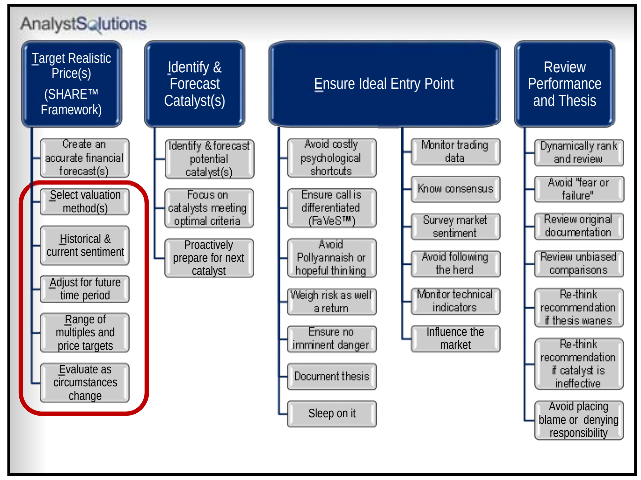
08-2010
04-2011
12-2011
08-2012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Target Realistic Price(s) (SHARE™ Framework)
Identify & Forecast Catalyst(s)
Ensure Ideal Entry Point
Review Performance and Thesis
Create an accurate financial forecast(s)
Select valuation method(s)
Historical & current sentiment
Adjust for future time period
Range of multiples and price targets
Evaluate as circumstances change
Identify & forecast potential catalyst(s)
Focus on catalysts meeting optimal criteria
Proactively prepare for next catalyst
Avoid costly psychological shortcuts
Ensure call is differentiated (FaVeS™)
Avoid Pollyannaish or hopeful thinking
Weigh risk as well a return
Ensure no imminent danger
Document thesis
Sleep on it
Monitor trading data
Know consensus
Survey market sentiment
Avoid following the herd
Monitor technical indicators
Influence the market
Dynamically rank and review
Avoid "fear or failure"
Review original documentation
Review unbiased comparisons
Re-think recommendation if thesis wanes
Re-think recommendation if catalyst is ineffective
Avoid placing blame or denying responsibility


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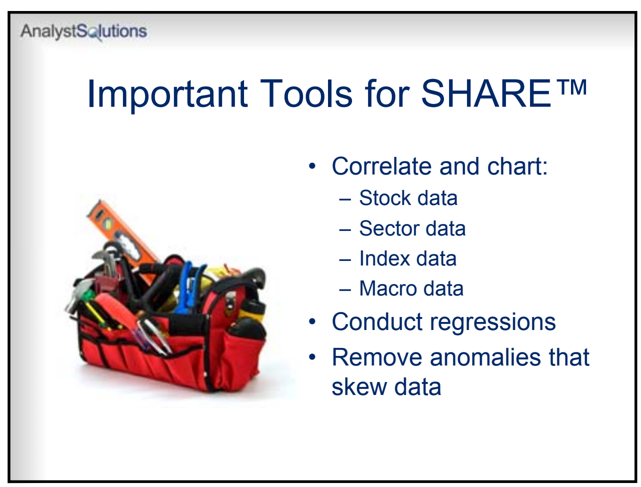
Target Realistic Price(s) DRCs
Detailed Reference Card (DRC)
Best Practices for Making Accurate Stock Recommendations
Detailed Reference Card (DRC)
Best Practices for Making Accurate Stock Recommendations
Perspectives for Target Realistic Price(s) (Step 1 of TIER™)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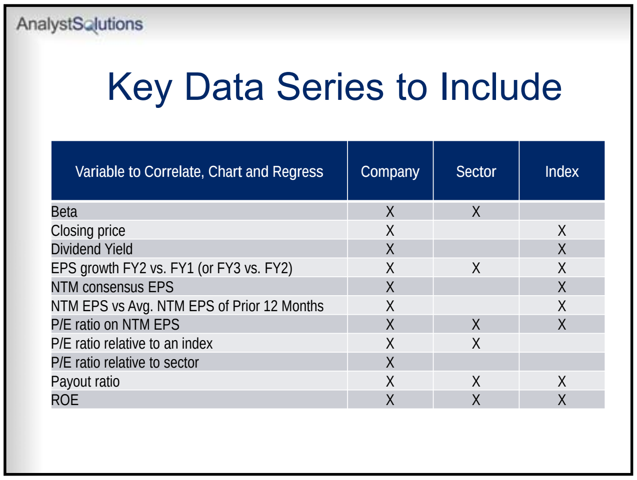
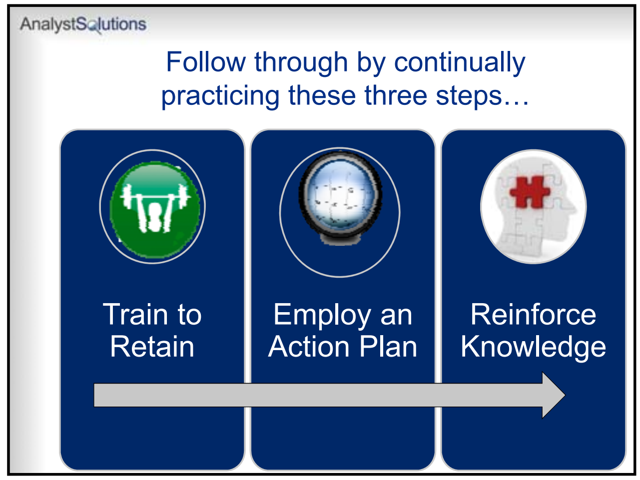
Important Tools for SHARE™
• Correlate and chart:
– Stock data
– Sector data
– Index data
– Macro data
• Conduct regressions
• Remove anomalies that skew data



Variable to Correlate, Chart and Regress	Company	Sector	Index
Beta	X	X	
Closing price	X		X
Dividend Yield	X		X
EPS growth FY2 vs. FY1 (or FY3 vs. FY2)	X	X	X
NTM consensus EPS	X		X
NTM EPS vs Avg. NTM EPS of Prior 12 Months	X		X
P/E ratio on NTM EPS	X	X	X
P/E ratio relative to an index	X	X	
P/E ratio relative to sector	X		
Payout ratio	X	X	X
ROE	X	X	X



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Best Practices Bulletins


10 Steps for Equity Research Analysts to Perform Better

According to Reuters, one of its sister companies, Lipper, finds that roughly 85% of active large-cap stock funds are lagging their benchmarks year-to-date through late November. Investors are voting with their feet as shown by the $206 billion of inflows into ETFs through the first 10 months of 2014 vs. only $36 billion for the...

Portfolio Managers' #1 Frustration With Equity Research Analysts

While I was studying the Japanese language during college, I initially didn't take notice that the word "chigau" (ちがう) is used to convey both "different" and "wrong." But after moving to Tokyo and learning the importance of conforming to the group, I developed a newfound appreciation for why these two English words require only one...

Read the Entire Bulletin ›

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Questions and Feedback

Info@AnalystSolutions.com

CE Qualified Activity CFA Institute

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APPENDIX

Thoughts from Academia

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Aswath Damodaran

- "In terms of valuation multiples, the median value is much more representative of the typical firm in the group, and any comparisons should be made to medians"[1]
- "The standard sales pitch of a stock being cheap because it trades at a multiple less than the average for the sector should be retired in favor of one that compares the stock's pricing to the median for the sector"[1]
- "Stocks with low PE ratios earn significantly higher returns than stocks with high PE ratios over long time horizons"[2]

[1] Damodaran, Aswath. *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance*. Hoboken, NJ: John Wiley & Sons, 2006. Print.
[2] Damodaran, Aswath. *Investment Fables: Exposing the Myths of "can't Miss" Investment Strategies*. London: Financial Times Prentice Hall, 2004. Print.

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Liu, Nissim & Thomas

"Multiples of forecasted earnings per share do best in explaining pricing differences, than multiples of sales and operating cash flows do and that multiples of book value and EBITDA fall in the middle"

Liu, Jing, Doron Nissim, and Jacob Thomas. "Equity Valuation Using Multiples." *Journal of Accounting Research* 40.1 (2002): 135-72. Web

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Boatman and Baskin

"The precision of P/E ratio estimates that emerge from using a random sample [of stocks] from within the same sector [is superior to] a narrower set of firms [not in the same sector] with the most similar 10-year average growth rate in earnings."

Boatman, J.R. and E.F. Baskin, 1981, Asset Valuation in Incomplete Markets, The Accounting Review, 38-53