Picking and valuing stocks: The BIG way

Amy Ran, Ben Eisenberg, and Conor O’Gorman
The Theory of Competition

• Recall from Econ 1: “Under perfect competition in the long run, the economic profit of a firm will be __Zero, zip, nada__.”
• What does this mean for investors trying to beat the market?

Economic Profit
• As investors, we hate competition since it kills profits.
• “Good companies” have strong advantages over any competition.
• What types of “competition” does a business face?
  – Other business selling the same thing
  – Other businesses selling similar things
  – Other businesses which could start selling the same thing
  – Suppliers trying to charge as much as possible
  – Customers trying to haggle prices down
Framework for Analysis: Porter’s Five Forces

- Threat of new entrants
- Bargaining power of suppliers
- Rivalry among existing competitors
- Bargaining power of buyers
- Threat of substitute products or services
Moats

- “Companies with a competitive advantage create their own monopolies” – Andy Zhao
Caveat Before we Head Down this Road

• P5 Forces are typically used to analyze the attractiveness of an industry

• We’re going to apply it to analyzing the competitive advantage of a company’s business model (other factors will need to be considered outside of P5F).

• Keep in mind that P5F is not just a checklist, it’s a way to think about a company’s moat
Bargaining Power of Suppliers

How likely are suppliers to raise prices on you?

- A lot of suppliers = suppliers have low bargaining power

- Few suppliers
  + non-interchangeable suppliers
  + small portion of supplier’s revenue
  = Suppliers have high bargaining power

If there many interchangeable suppliers, no need to worry
If suppliers have high bargaining power, are you comfortable with the risk?
Bargaining Power of Buyers

Can your customers demand you lower prices?

- A lot of buyers = low bargaining power

- Few buyers = high bargaining power

If bargaining power of buyers is low, then no need to worry
If bargaining power of buyers is high, then you need more research
Who are its concentrated customers? How do they buy?

See if company is in danger of losing contracts
Rivalry Among Competitors

• What informs buying decisions for customers?
  – Price?
  – Features?
  – Service?
  – Etc.

• How does the company differentiate itself?
  – How does the company create its own monopoly?
Threat of New Entrants

How easily competitors can enter the industry?

• A profitable industry will always draw new competitors
• How can a company avoid a price war?
• Barriers to Entry (Moat)
  – Strong brand
  – High fixed costs
  – Regulation
  – Relationship with suppliers
  – Geographic constraint
  – Intellectual Property
Threat of Substitutes

How easily customers can use a different product to fulfill the same need?

• Is there a better product on the market?
• Is there a better product being developed for the future?
How do you form a variant perception?

• Rigorous understanding of the fundamentals of the business
  – Business model
  – Customers
  – Industry
  – Management
  – Past and future financial performance

• Understanding of what the market thinks

• Thinking for yourself and having conviction
Financial Statements

How many financial statements are there? What are they?

- Income Statement
- Balance Sheet
- Statement of Cash Flows
- Statement of Retained Earnings
- Statement of Other Comprehensive Income

Where do we find them?

- Yahoo/google/morningstar
- Company’s investor relations webpage

Which is the most important?

- Arguably, the cash flow statement
  - Used to calculate the portion of earnings that investors get
- But the income statement gives us insight into the company’s past and future performance
- And the balance sheet gives us a chance to examine the company’s financial health. Are they cooking the books?
- Trick question…all statements are important!!
The Income Statement
Revenue – Cost of Goods Sold = Gross Profit

<table>
<thead>
<tr>
<th>Revenue</th>
<th>12/31/2016</th>
<th>12/31/2015</th>
<th>12/31/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Revenue</td>
<td>38,527,000</td>
<td>47,011,000</td>
<td>55,184,000</td>
</tr>
<tr>
<td>Cost of Revenue</td>
<td>28,905,000</td>
<td>34,133,000</td>
<td>41,342,000</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>9,622,000</td>
<td>12,878,000</td>
<td>13,842,000</td>
</tr>
</tbody>
</table>

Operating Expenses
- Research Development: 1,951,000
- Selling General and Administrative: 6,598,000
- Non Recurring: 595,000
- Others: 0
- Total Operating Expenses: 0
- Operating Income or Loss: 0

Income from Continuing Operations
- Total Other Income/Expenses Net: 140,000
- Earnings Before Interest and Taxes: 644,000
- Interest Expense: 500,000
- Income Before Tax: 159,000
- Income Tax Expense: 102,000
- Minority Interest: 76,000
- Net Income From Continuing Ops: -67,000

**Revenue** – money generated from sales of products and/or services within a given time frame. 
- i.e. bulldozers, engines, machine insurance

**COGS** – cost of materials directly related to goods/services sold
- i.e. materials, factory workers

**Gross Profit** – profit directly related to producing the good/service
### Operating Income

<table>
<thead>
<tr>
<th></th>
<th>12/31/2018</th>
<th>12/31/2019</th>
<th>12/31/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Revenue</td>
<td>38,557,000</td>
<td>47,011,000</td>
<td>55,184,000</td>
</tr>
<tr>
<td>Cost of Revenue</td>
<td>28,900,000</td>
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</tr>
<tr>
<td>Operating Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Development</td>
<td>1,951,000</td>
<td>2,110,000</td>
<td>2,380,000</td>
</tr>
<tr>
<td>Selling General and Administrative</td>
<td>6,588,000</td>
<td>6,974,000</td>
<td>8,148,000</td>
</tr>
<tr>
<td>Non Recurring</td>
<td>595,000</td>
<td>595,000</td>
<td>595,000</td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operating Income or Loss</td>
<td>498,000</td>
<td>3,785,000</td>
<td>3,314,000</td>
</tr>
</tbody>
</table>

### Gross Profit
- Profit received from company’s core operations

### OpEx
- Indirect costs of operating the business:
  - Ads and Sales force
  - Management and workers not making hamburgers
  - Depreciation of capital equipment

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**Gross Profit**

**Operating Profit** – profit received from company’s core operations
**EBIT – Interest & Taxes = Net Income**

<table>
<thead>
<tr>
<th>Revenue</th>
<th>12/31/2016</th>
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<tr>
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**Income from Continuing Operations**

| Total Other Income/Expenses Net | 146,000 | 161,000 | 322,000 |
| Earnings Before Interest and Taxes | 644,000 | 3,946,000 | 3,536,000 |
| Interest Expense                | 505,000 | 507,000 | 484,000 |
| Income Before Tax               | 139,000 | 3,430,000 | 3,152,000 |
| Income Tax Expense              | 192,000 | 916,000 | 692,000 |
| Minority Interest               | 76,000  | 76,000  | 80,000  |
| Net Income From Continuing Ops  | -87,000 | 2,512,000 | 2,452,000 |

**EBIT**

**Interest Payments** – interest on company debt: tax deductible

**Taxes** – Tax rate * (EBIT - Interest payments)

**Net Income** – “earnings”, how much the company makes during a specified amount of time
What are Margins?

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**Operating Expenses**

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<td>595,000</td>
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<td>-</td>
<td>-</td>
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<td>3,036,000</td>
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<tr>
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<td>507,000</td>
<td>484,000</td>
</tr>
<tr>
<td>Income Before Tax</td>
<td>139,000</td>
<td>3,439,000</td>
<td>3,152,000</td>
</tr>
<tr>
<td>Income Tax Expense</td>
<td>192,000</td>
<td>916,000</td>
<td>692,000</td>
</tr>
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<td>Minority Interest</td>
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<td>80,000</td>
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<td>-87,000</td>
<td>2,512,000</td>
<td>2,452,000</td>
</tr>
</tbody>
</table>

**Margins** – profit as a % of revenue

- **Gross Margins** (gross profit/revenue)
  - Money company receives from manufacturing and selling a $ of good/service

- **Operating Margins** (operating profit/revenue)
  - Money company keeps from core operations per $ of good/service sold

- **Net Margins** (net income/revenue)
  - Money company keeps per $ of good/service sold
Adjustments

• We think that the revenue from the sale of assets shouldn’t be part of operating expenses. What do we do?

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Profit</td>
<td>11,654</td>
<td>65,570</td>
<td>82,580</td>
<td>7,059</td>
</tr>
<tr>
<td>Less: Net gain from disposition of assets</td>
<td>(1,323)</td>
<td>(27)</td>
<td>(2,467)</td>
<td>(1,213)</td>
</tr>
<tr>
<td>Adj. Operating Profit</td>
<td>10,331</td>
<td>65,543</td>
<td>80,113</td>
<td>5,846</td>
</tr>
</tbody>
</table>
The Balance Sheet
# Assets

<table>
<thead>
<tr>
<th>Period Ending</th>
<th>12/31/2016</th>
<th>12/31/2015</th>
<th>12/31/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash And Cash Equivalents</td>
<td>7,168,000</td>
<td>6,460,000</td>
<td>7,341,000</td>
</tr>
<tr>
<td>Short Term Investments</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Net Receivables</td>
<td>14,503,000</td>
<td>15,686,000</td>
<td>18,503,000</td>
</tr>
<tr>
<td>Inventory</td>
<td>8,614,000</td>
<td>9,700,000</td>
<td>12,205,000</td>
</tr>
<tr>
<td>Other Current Assets</td>
<td>1,682,000</td>
<td>1,662,000</td>
<td>818,000</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>31,967,000</td>
<td>33,508,000</td>
<td>38,887,000</td>
</tr>
<tr>
<td>Long Term Investments</td>
<td>14,585,000</td>
<td>14,821,000</td>
<td>16,265,000</td>
</tr>
<tr>
<td>Property Plant and Equipment</td>
<td>15,322,000</td>
<td>16,090,000</td>
<td>16,577,000</td>
</tr>
<tr>
<td>Goodwill</td>
<td>6,020,000</td>
<td>6,615,000</td>
<td>6,694,000</td>
</tr>
<tr>
<td>Intangible Assets</td>
<td>2,349,000</td>
<td>2,821,000</td>
<td>3,076,000</td>
</tr>
<tr>
<td>Accumulated Amortization</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other Assets</td>
<td>1,671,000</td>
<td>1,998,000</td>
<td>1,798,000</td>
</tr>
<tr>
<td>Deferred Long Term Asset Charges</td>
<td>2,790,000</td>
<td>2,489,000</td>
<td>1,404,000</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>74,704,000</td>
<td>78,342,000</td>
<td>84,681,000</td>
</tr>
</tbody>
</table>

- **Cash and Cash Equiv.** — most liquid asset
- **Receivables** — short-term non-cash assets that are owed to the company
- **Inventory** — goods that have been produced but not sold
- **PP&E—** capital goods, i.e. deep fryers, restaurant buildings
## Liabilities and Equity

### Current Liabilities
- Accounts Payable: $10,532,000, $11,727,000, $14,622,000
- Short/Current Long Term Debt: $13,965,000, $12,844,000, $11,501,000
- Other Current Liabilities: $1,635,000, $1,671,000, $1,754,000

**Total Current Liabilities:** $26,132,000, $26,242,000, $27,877,000

- Long Term Debt: $22,818,000, $25,169,000, $27,784,000
- Other Liabilities: $12,541,000, $12,046,000, $12,194,000

### Deferred Liabilities
- Deferred Long Term Liability Charges: -
- Minority Interest: $76,000, $76,000, $80,000
- Negative Goodwill: -

**Total Liabilities:** $61,567,000, $63,533,000, $67,935,000

### Stockholders’ Equity
- Misc. Stocks Options Warrants: -
- Redeemable Preferred Stock: -
- Preferred Stock: -
- Common Stock: $5,277,000, $5,238,000, $5,016,000
- Retained Earnings: $27,377,000, $29,246,000, $33,887,000
- Treasury Stock: -17,478,000, -17,640,000, -15,726,000

**Total Stockholder Equity:** $13,137,000, $14,809,000, $16,746,000

**Net Tangible Assets:** $4,768,000, $5,373,000, $6,976,000

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**Accounts Payable** – goods the company has received but not paid for in cash

**Long-term Debt** – debt to be paid off in more than a year (bonds)

**Retained Earnings** – cumulative total of a company’s retained net income (net income - dividends) since inception
Key Balance Sheet Metrics

Liquidity Metrics:
• Current Ratio (current assets/current liabilities)
• Quick Ratio (Quick assets/current liabilities)
  – Quick assets = cash, cash equivalents, accounts receivable

Operating Efficiency Metrics
• Days Receivable: AR/(Sales/365)
  – How long does it take a company to collect its receivables?
• Days Inventory: Inventory/(COGS/365)
  – How long does it take a company to turn over its inventory

Leverage Metrics:
• Debt-to-equity
• Debt-to-EBITDA
Net Working Capital = Current Assets (less cash & cash equivalents) – Current Liabilities (less short-term debt)

- What does it mean when NWC increases YoY? Decreases?
- Which is better for the firm?

Book Value = total assets – intangible assets – liabilities

- How much money the company would be worth in the event of a bankruptcy
- Market Cap / Book Value (P/B) is a common metric of a stock’s valuation

Return on Equity = Net Earnings / Shareholder Equity

- An indicator for how efficiently the firm uses investors’ money

Return on Invested Capital = EBIT * (1-tax rate) / (Net Working Capital + Fixed Assets)

- A better way to determine how efficiently the company is utilizing capital

Debt / Equity

- A higher D/E means more aggressive financing and is different for every industry
- Companies with significant debt usually trade at a discount to companies with less debt
## Limitations of the BS

<table>
<thead>
<tr>
<th>One Time</th>
<th>Matching Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>The balance sheet records is a stock measurement, hard to determine company’s current performance</td>
<td>Many ratios including the current and quick ratio fail to note changes in long term debt</td>
</tr>
<tr>
<td><strong>Lack of Clarity</strong></td>
<td><strong>Not All Equal</strong></td>
</tr>
<tr>
<td>The clarity of asset’s true value or category is not noted within the statement itself, but at times deep within the 10-K</td>
<td>Debt is not necessarily equal on every degree, increase in short term debt may come at other costs that must be read through in an 8-K or other financial document</td>
</tr>
</tbody>
</table>
The Cash Flow Statement
Filling in the Details

From Operating Activities
• Start with Net Income
• Add back D&A
• Subtract change in NWC
• How much cash the company made from operations in the last fiscal year (flow measure)

From Investing Activities
• Pretty much Capex (money spent on PPE)

From Financing Activities
• Dividends, stock buybacks
• Issued debt less cash

This is the total cash generated each year but it’s not the whole story...
But wait…isn’t the IS good enough?

<table>
<thead>
<tr>
<th>In millions, except per share data</th>
<th>2007</th>
<th>2006</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principal transactions</td>
<td>$9,197</td>
<td>$9,802</td>
<td>$7,811</td>
</tr>
<tr>
<td>Investment banking</td>
<td>3,903</td>
<td>3,160</td>
<td>2,804</td>
</tr>
<tr>
<td>Commissions</td>
<td>2,471</td>
<td>2,050</td>
<td>1,728</td>
</tr>
<tr>
<td>Interest and dividends</td>
<td>41,693</td>
<td>30,284</td>
<td>19,043</td>
</tr>
<tr>
<td>Asset management and other</td>
<td>1,739</td>
<td>1,413</td>
<td>944</td>
</tr>
<tr>
<td><strong>Total revenues</strong></td>
<td>59,003</td>
<td>46,709</td>
<td>32,420</td>
</tr>
<tr>
<td>Interest expense</td>
<td>39,746</td>
<td>29,126</td>
<td>17,790</td>
</tr>
<tr>
<td><strong>Net revenues</strong></td>
<td>19,257</td>
<td>17,583</td>
<td>14,630</td>
</tr>
<tr>
<td><strong>Non-Interest Expenses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation and benefits</td>
<td>9,494</td>
<td>8,669</td>
<td>7,213</td>
</tr>
<tr>
<td>Technology and communications</td>
<td>1,145</td>
<td>974</td>
<td>834</td>
</tr>
<tr>
<td>Brokerage, clearance and distribution fees</td>
<td>859</td>
<td>629</td>
<td>548</td>
</tr>
<tr>
<td>Occupancy</td>
<td>641</td>
<td>539</td>
<td>490</td>
</tr>
<tr>
<td>Professional fees</td>
<td>466</td>
<td>364</td>
<td>282</td>
</tr>
<tr>
<td>Business development</td>
<td>378</td>
<td>301</td>
<td>234</td>
</tr>
<tr>
<td>Other</td>
<td>261</td>
<td>202</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total non-personnel expenses</strong></td>
<td>3,750</td>
<td>3,009</td>
<td>2,588</td>
</tr>
<tr>
<td>Income before taxes and cumulative effect of accounting change</td>
<td>13,244</td>
<td>11,675</td>
<td>9,801</td>
</tr>
<tr>
<td>Provision for income taxes</td>
<td>6,013</td>
<td>5,905</td>
<td>4,829</td>
</tr>
<tr>
<td>Income before cumulative effect of accounting change</td>
<td>1,821</td>
<td>1,945</td>
<td>1,569</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>$4,192</td>
<td>$4,007</td>
<td>$3,260</td>
</tr>
<tr>
<td><strong>Net income applicable to common stock</strong></td>
<td>$4,125</td>
<td>$3,941</td>
<td>$3,191</td>
</tr>
</tbody>
</table>
Not so fast….

We must look at all the statements to get the full picture!

<table>
<thead>
<tr>
<th>In millions</th>
<th>Year Ended November 30,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2007</td>
</tr>
<tr>
<td><strong>Cash Flows From Operating Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Net income</td>
<td>$4,192</td>
</tr>
<tr>
<td>Adjustments to reconcile net income to net cash used in operating activities:</td>
<td></td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>577</td>
</tr>
<tr>
<td>Non-cash compensation</td>
<td>1,791</td>
</tr>
<tr>
<td>Cumulative effect of accounting change</td>
<td>—</td>
</tr>
<tr>
<td>Deferred tax provisions (benefit)</td>
<td>418</td>
</tr>
<tr>
<td>Tax benefit from the issuance of stock-based awards</td>
<td>—</td>
</tr>
<tr>
<td>Other adjustments</td>
<td>(114)</td>
</tr>
<tr>
<td><strong>Net change in:</strong></td>
<td></td>
</tr>
<tr>
<td>Cash and securities segregated and on deposit for regulatory and other purposes</td>
<td>(6,652)</td>
</tr>
<tr>
<td>Financial instruments and other inventory positions owned</td>
<td>(78,903)</td>
</tr>
<tr>
<td>Receivables, net of repurchase agreements</td>
<td>3,039</td>
</tr>
<tr>
<td>Securities borrowed, net of securities loaned</td>
<td>(1,608)</td>
</tr>
<tr>
<td>Other secured borrowings</td>
<td>3,964</td>
</tr>
<tr>
<td>Receivables from brokers, dealers and clearing organizations</td>
<td>(3,556)</td>
</tr>
<tr>
<td>Receivables from customers</td>
<td>(11,152)</td>
</tr>
<tr>
<td>Financial instruments and other inventory positions sold but not yet purchased</td>
<td>23,415</td>
</tr>
<tr>
<td>Payables to brokers, dealers and clearing organizations</td>
<td>884</td>
</tr>
<tr>
<td>Payables to customers</td>
<td>19,511</td>
</tr>
<tr>
<td>Accrued liabilities and other payables</td>
<td>302</td>
</tr>
<tr>
<td><strong>Net cash used in operating activities</strong></td>
<td>(45,595)</td>
</tr>
</tbody>
</table>
The Beauty of the Statements

- Net Income (becomes retained earnings)
- Total Debt (Becomes Interest Payments)
- Net Income, D&A, Dividends
- NWC, Issued Debt
- Change in Cash

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“Cash Rules Everything Around Me”

- Wu Tang Clan

- Not all financial statements are created equal
  - IS tells us the earnings and costs of doing business
  - BS tells us the financial health of the company
  - CS tells us how much CASH is coming in every year and ties together the two

- Cash is what investors want the most (cash = value)
  - High revenue doesn’t necessarily = High cash flow
  - The cash flow statement tells us how much value the company is generating
Free Cash Flow

**Free Cash Flow:** cash the company generates in a given year to pay off lenders and give value to investors

The Equation...

Free Cash Flow = \( EBIT \times (1 - \text{tax rate}) + D\&A - \text{Capex} - \text{change in NWC} \)

Proxies for FCF:
- **EBITDA** (\( EBIT + D\&A \))
- Operating Cash Flow – Capex

Rationale Behind Each Component
- **NOPAT** – Excludes interest because interest payments are cash going to lenders
- **D\&A** – non-cash expenses that are included in opex as an accounting tool
- **Capex** – actual cash being spent on PP&E
- **Change in NWC** – increase in NWC means more receivables, a non-cash component of earnings

**Net Operating Profit After Taxes (NOPAT)**

\( \text{NWC} = \text{C. Assets (exc. Cash)} - \text{C. Liab (exc. Debt)} \)

Strong free cash flow is a good indicator of a firm’s value
Valuation
Why compare PE instead of share price?

• As an investor, we want earnings.
• Why? Earnings -> dividends = money in your pocket.
• What about companies that don’t pay dividends?
• Company reinvests earnings -> even higher earnings in the future -> even higher dividends eventually
• Ultimately, the value of a stock is its ability to pay you money, even if that’s in the future.
Some really hard math

\[
\frac{\text{Earnings}}{\text{Share}} \times \frac{\text{Price}}{\text{Earnings}} = \frac{\text{Price}}{\text{Share}}
\]

“EPS” \[\uparrow\]

“P/E” \[\uparrow\]

Price \[\uparrow\]

Where can we have a variant perception?
Layman’s Definition of P/E

\[
P/E = \frac{\text{How much investors are willing to pay}}{\text{1 Dollar’s worth of earnings}}
\]
What determines a company’s PE?

• Value of company = Cash paid to investors

• What affects a company’s ability to pay dividends to investors, now and in the future?
  – Current earnings
  – Growth rate of earnings (+ or -)
  – Risks to the above (uncertainty)
    • Competitive Moat
    • Leverage
    • Management ability
    • Business Model
    • Macroeconomic sensitivity
Basic Drawbacks of P/E

• Includes non-cash items
• Not Neutral to Capital Structure (Debt)
• Dependent on the Industry
  – *never* buy a semiconductor at a low P/E
  – Bonus points: why?
• Entire Industry could be overvalued
• Backward-Looking (if using last year’s)
Variant Perceptions

• EPS
  – If you believe next year’s EPS will be higher/lower than what other people think

• P/E
  – Depends on the company’s risk and long-term EPS growth rate
  – You can have a variant perception on either one of those
Advantages/Disadvantages of Multiples

**Pros**

- **Useful**
  - Provide a good framework for making judgments

- **Simple**
  - User friendly
  - Avoid getting bogged down the “precision” of other valuation methods

- **Relevant**
  - Typically focus on key metrics that other investors/analysts are using

**Cons**

- **Simple**
  - Attempts to aggregate a ton of information into one number
  - Tough to identify what exactly is driving value

- **Static**
  - Snapshot of a firm at one point in time

- **Difficult to compare**
  - This becomes much more of an art than a science
Why do Multiples Vary?

1. Differences in the quality of the business
2. Accounting Differences
3. Fluctuations in Cash Flow or Profit
4. Mispricing
Other useful multiples

1. **P/Free Cash Flow** – entirely independent of accounting method used (if calculated properly)
2. **EV/EBITDA**
   1. Very commonly used
   2. Proxy for cash
   3. However, ignores cost of capex
3. **EV/Operating Cash Flow (EBITDA – maintenance capex)**
   1. Maintenance capex is the amount of capex required to maintain competitive edge and profitability
4. **P/Sales (Revenue)**
   1. Only use as a last resort
   2. Why is revenue typically a bad metric to use?
How to pick good comps

Start with the following criteria:

2. Industry
   1. Don’t compare General Mills with Kroger
3. Financial (similar range of revenue and EBITDA)
   1. Why might it be tough to compare Berkeley Bowl with Safeway?
One last note on Valuation

• Valuation does **not** tell you how much a company is worth
  – Wrong – “Aha! Based on a weighted average of my 47 different valuation methodologies, GE is worth $35.07 per share”

• Valuation is all about the potential range for a company’s value
  – Right – “I’m in reasonably confident that GE’s fair value is between $30.35 and $36.14 per share”
Questions?