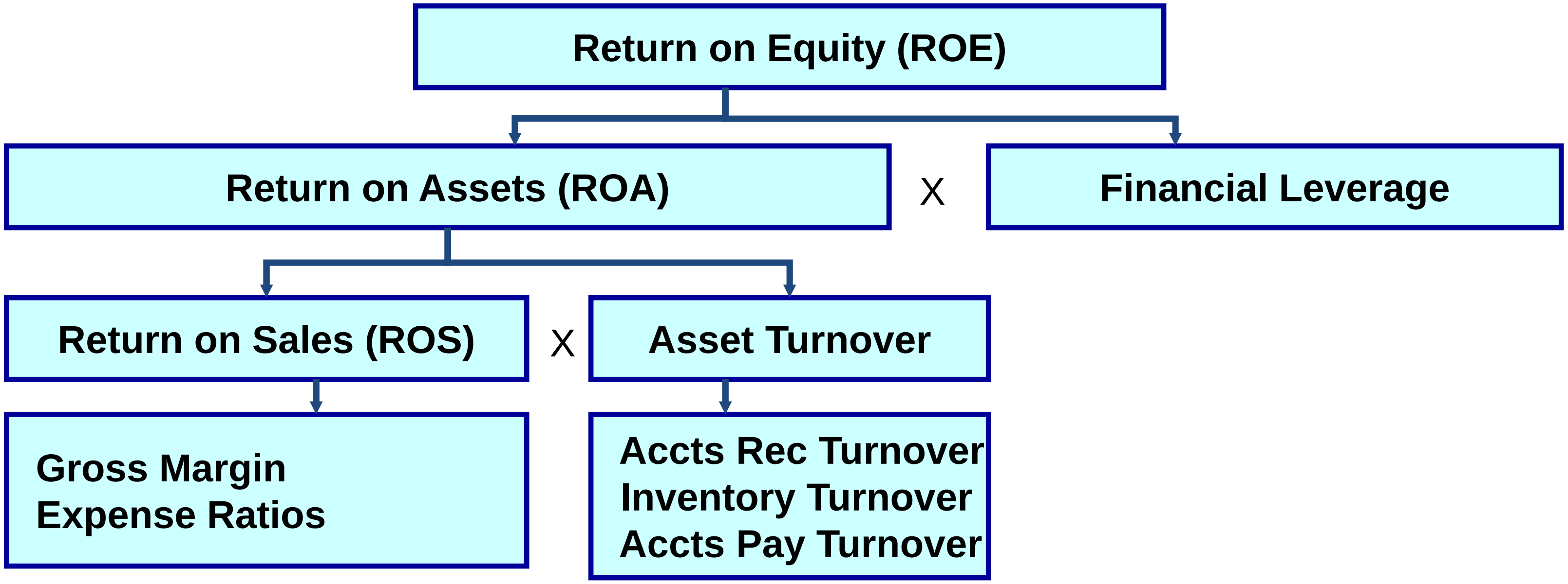
RATIO ANALYSIS: PROFITABILITY AND TURNOVER RATIOS

Professor Brian Bushee

Wharton
UNIVERSITY of PENNSYLVANIA
ONLINE

DuPont Ratio Analysis Framework



ROE	**= Net Income/Sales**	**x Sales/Assets**	**x Assets/Equity**
	= Profitability	**x Efficiency**	**x Leverage**

Profit Margin Ratios

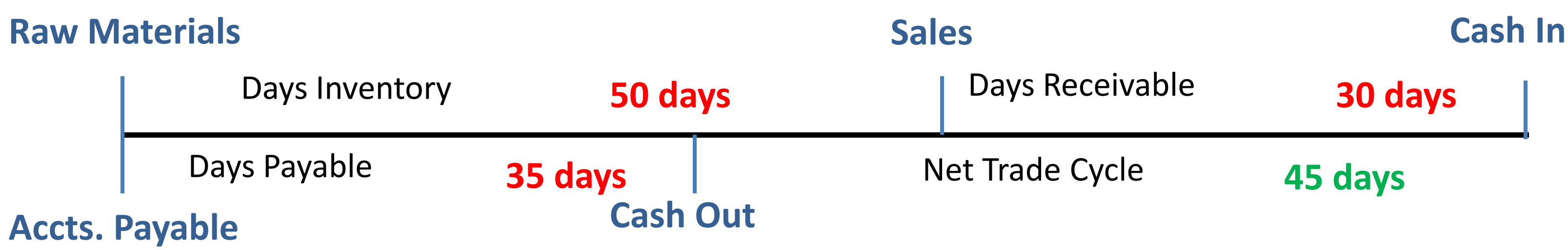
- What are the drivers of profitability?
  - Decompose Return on Sales by income statement line item
- Gross Margin = (Sales - Cost of Goods Sold) / Sales
- SG&A-to-Sales = SG&A Expense / Sales
- Operating Margin = Operating Income / Sales
- Interest Expense-to-Sales = Interest Expense / Sales
- Effective Tax Rate = Income Taxes / Pre-tax Income

Asset Turnover Ratios

- **How many times per year do we cycle through accounts?**
  - **Example: Inventory Turnover of 8 means that we build and sell Inventory 8 times per year, on average.**
- **Accounts Receivable Turnover = Sales / Average A/R**
- **Inventory Turnover = Cost of Goods Sold / Average Inventory**
- **Accounts Payable Turnover = Purchases / Average Accounts Payable**
  - **(Purchases = Ending Inventory + COGS – Beginning Inventory)**
- **Fixed Asset Turnover = Sales / Avg. Net PP&E**

Days Outstanding Ratios

- **How many days, on average, are accounts outstanding?**
  - **Example: Days Inventory of 45 means that it takes 45 days, on average, from the time we start building Inventory until we sell it**
- **Days Receivable (Sales) Outstanding = 365 * (Average A/R / Sales)**
- **Days Inventory = 365 * (Average Inventory / Cost of Goods Sold)**
- **Days Payable = 365 * (Average Accounts Payable / Purchases)**
- **Net Trade Cycle = Days Receivable + Days Inventory - Days Payable**
  - **Net Trade Cycle represents the gap between cash outflows and cash inflows that we have to bridge with short-term borrowing**



Wharton
UNIVERSITY of PENNSYLVANIA