FINANCIAL STATEMENT RATIO DEFINITIONS

1. ACCOUNTS RECEIVABLE TURNOVER

   A/R Turnover = Sales/Accounts Receivable

   A more common measure for managing A/R is the Collection Period:
   Collection Period = Accounts Receivable/(Sales/365)

2. INVENTORY TURNOVER

   Inventory Turnover = Sales/Inventory

   A more common measure for managing Inventory is Inventory Age:
   Inventory Age (or Days' Cost of Sales in Inventory) = Inventory/(Cost of Sales/365)

3. NET FIXED ASSETS TURNOVER

   Net Fixed Assets Turnover = Sales/Net Fixed Assets

4. TOTAL ASSET TURNOVER

   Total Asset Turnover = Sales/(Total Assets – Marketable Securities)

5. ACCOUNTS PAYABLE TURNOVER

   A/P Turnover = Sales/Accounts Payable

   A more common measure for managing A/P is Age of Accounts Payable:
   Age of Accounts Payable = Accounts Payable/(Cost of Sales/365)

6. NON-INTEREST BEARING LIABILITIES TURNOVER

   NIBL Turnover = Sales/Non-Interest Bearing Liabilities
   where Non-Interest Bearing Liabilities = Accounts Payable + Income Taxes Payable + Accrued
   Expenses + Other Current Liabilities + Deferred Income Taxes + Other Long-Term
   Liabilities

7. INVESTED CAPITAL TURNOVER

   Invested Capital Turnover = Sales/Invested Capital
   where Invested Capital = (Total Assets – Marketable Securities) – Non-Interest Bearing Liabilities
   or Invested Capital = Common Equity + Preferred Stock + Long-Term Debt + Current Maturities LTD
   + Short-Term Debt – Marketable Securities
8. EXPENSE RATIOS

Expense X Ratio = Expense X/Sales
where X refers to any operating expense (or other income) category.

9. GROSS MARGIN

Gross Margin = Gross Profits/Sales
where Gross Profit = Sales – Cost of Sales

10. OPERATING MARGIN

Operating Margin = Net Operating Profit/Sales
where NOP is before Interest Income and Interest Expense.

11. RETURN ON INVESTED CAPITAL (ROI)

ROI = Net Operating Profit/Invested Capital
where NOP is before Interest Income and Interest Expense
and where Invested Capital is defined above in item #7.

12. TAX RATE ON NET OPERATING PROFIT

Tax Rate On NOP = (Income Taxes + Marginal Tax Rate x Net Interest Expense)/NOP
where NOP is before Interest Income and Interest Expense,
where the Marginal Tax Rate is given (usually 40%), and
where Net Interest Expense = Interest Expense – Interest Income.

13. AFTER-TAX RETURN ON INVESTED CAPITAL (ATROI)

ATROI = [(1 – Tax Rate on NOP) x Net Operating Income]/Invested Capital
where NOP is before Interest Income and Interest Expense,
where Tax Rate On NOP is defined above as item #12, and
where Invested Capital is defined above in item #7.

14. FIRM or PROJECT ECONOMIC VALUE ADDED (FIRM or PROJECT EVA)

FIRM or PROJECT EVA = Net Operating Profit After – Tax – (Cost of Capital x Invested Capital)

FIRM or PROJECT EVA = (ATROI – Cost of Capital) x Invested Capital (when Invested Capital > 0)
where NOP is before Interest Income and Interest Expense,
where Cost of Capital is an average of Cost of Debt, Cost of Preferred Stock and Cost of Equity,
where Invested Capital is defined above in item #7,
where ATROI is defined above as item #13, and
where most references to EVA do not distinguish between Firm or Project EVA and Equity EVA.
15. INTEREST RATE

Interest Rate = \( \frac{\text{Net Interest Expense}}{\text{Net Interest-Bearing Debt}} \)
\[ \text{where Net Interest-Bearing Debt} = \text{Long-Term Debt + Current Maturities LTD + Short-Term Debt} - \text{Marketable Securities} \]
and where Net Interest Expense is defined above in item #12.

16. AFTER-TAX INTEREST RATE

After-Tax Interest Rate = \( (1 - \text{Marginal Tax Rate}) \times \frac{\text{Net Interest Expense}}{\text{Net Interest-Bearing Debt}} \)
\[ \text{where Net Interest-Bearing Debt is defined above in item #15,} \]
\[ \text{where the Marginal Tax Rate is given (usually 40%), and} \]
\[ \text{where Net Interest Expense is defined above in item #12.} \]

17. DIVIDEND RATE ON PREFERRED STOCK

Dividend Rate on Preferred Stock = \( \frac{\text{Preferred Dividends}}{\text{Preferred Stock}} \)

18. AFTER-TAX COST OF LEVERAGE

After-Tax Cost of Leverage = \( \frac{\text{Net Interest Expense} \times (1 - \text{Marginal Tax Rate}) + \text{Preferred Dividends}}{\text{Net Interest-Bearing Debt} + \text{Preferred Stock}} \)
\[ \text{where Net Interest-Bearing Debt is defined above in item #15,} \]
\[ \text{where the Marginal Tax Rate is given (usually 40%), and} \]
\[ \text{where Net Interest Expense is defined above in item #12.} \]

19. LEVERAGE

Leverage = \( \frac{\text{Net Interest-Bearing Debt + Preferred Stock}}{\text{Common Equity}} \)
\[ \text{where Net Interest-Bearing Debt is defined above in item #15.} \]

20. RETURN ON COMMON EQUITY (ROE)

ROE = \( \frac{\text{Common Stock Earnings}}{\text{Common Equity}} \)

21. EQUITY ECONOMIC VALUE ADDED (EQUITY EVA)

EQUITY EVA = \( \frac{\text{Common Stock Earnings}}{\text{Common Equity}} - (\text{Cost of Equity} \times \text{Common Equity}) \)
\[ \text{EQUITY EVA} = (\text{ROE} - \text{Cost of Common Equity}) \times \text{Common Equity} \quad \text{(when Common Equity > 0)} \]
\[ \text{where Cost of Equity is often computed as Risk-Free Rate + Equity Beta \times Ave. Risk Premium,} \]
\[ \text{where ROE or Return on Common Equity is defined above in item #20, and} \]
\[ \text{where most references to EVA do not distinguish between Firm or Project EVA and Equity EVA.} \]
22. INVESTED CAPITAL TURNOVER DRIVERS

Invested Capital Turnover depends directly on Total Asset Turnover and NIBL Turnover
where Total Asset Turnover is defined above as item #4, and
where NIBL Turnover is defined above as item #6.

It also is the case that Total Asset Turnover depends directly on the turnovers for each of the assets and
NIBL Turnover depends directly on the turnover for each of the components of NIBL.

It also is the case that there is no simple mathematical relationship between Total Asset Turnover and
its component turnovers, nor between NIBL Turnover and its component turnovers, nor between
Invested Capital Turnover and Total Asset Turnover and NIBL Turnover.

23. OPERATING MARGIN DRIVERS

Operating Margin = 1 – Cost of Sales/Sales – Operating Expense #1/Sales – ... – Operating Expense
#5/Sales – Depreciation/Sales – Amortization/Sales + Other Income/Sales

24. RETURN ON INVESTMENT DRIVERS (ROI DRIVERS)

ROI = Invested Capital Turnover x Operating Margin
where Invested Capital Turnover is defined above as item #7, and
where Operating Margin is defined above as item #10.

25. AFTER-TAX RETURN ON INVESTED CAPITAL DRIVERS (ATROI DRIVERS)

ATROI = ROI x (1 – Tax Rate On NOP)
where ROI is defined above as item #11, and
where Tax Rate On NOP is defined above as item #12.

26. FIRM or PROJECT ECONOMIC VALUE ADDED DRIVERS (FIRM or PROJECT EVA DRIVERS)

FIRM or PROJECT EVA = (ATROI – Cost of Capital) x Invested Capital (when Invested Capital > 0)
where ATROI is defined above as item #13,
where Cost of Capital is an average of Cost of Debt, Cost of Preferred Stock and Cost of Equity,
where Invested Capital is defined above in item #7, and
where most references to EVA do not distinguish between Firm or Project EVA and Equity EVA.

27. RETURN ON COMMON EQUITY DRIVERS (ROE DRIVERS)

ROE = ATROI + (ATROI – After-Tax Cost of Leverage) x Leverage
where ATROI is defined above as item #13, and
where After-Tax Cost of Leverage is defined above as item #18, and
where Leverage is defined above as item #19.

28. EQUITY ECONOMIC VALUE ADDED DRIVERS (EQUITY EVA DRIVERS)

EQUITY EVA = (ROE – Cost of Equity) x Common Equity (when Common Equity > 0)
where ROE is defined above as item #20,
where Cost of Equity is often computed as Risk-Free Rate + Equity Beta x Ave. Risk Premium, and
where most references to EVA do not distinguish between Firm or Project EVA and Equity EVA.
29. MISCELLANEOUS RATIOS

Payment Deferral Period = (Accounts Payable + Accrued Expenses + Other Current Liabilities)/((Cost of Sales + All Operating Expenses – Depreciation and Amortization)/365)

Cash Conversion Cycle = Collection Period + Inventory Age – Payment Deferral Period

Sales Growth Rate = Current Year’s Sales/Previous Year’s Sales – 1

Earnings Per Share Growth Rate = Current Year’s EPS/Previous Year’s EPS – 1

where Earnings Per Share (or EPS) = Common Stock Earnings/# Common Shares

Market To Book Ratio = Common Stock Market Price x # Common Shares/Common Equity

= Common Stock Market Price/Common Equity Per Share

Price/Earnings Ratio = Common Stock Market Price x # Common Shares/Common Stock Earnings

= Common Stock Market Price/EPS