Ratios that the CFA Institute feels may be valuable in performing Financial Statement Analysis

Our textbook breaks ratios down into three categories as shown on the item entitled "Some Useful Ratios described in our textbook that may be helpful in performing Financial Statement Analysis. There three categories are (1) liquidity ratios, (2) profitability ratios and (3) solvency ratios

The CFA Institute categorizes ratios into the following five categories: (1) Activity, (2) Liquidity, (3) Solvency, (4) Profitability and (5) Valuation.

Activity Ratios measures company efficiency in performing day-to –day tasks such as collection of receivables and management of inventory.

Liquidity Ratios measure a company's ability to meets its short term obligations.

Solvency Ratios measures a company's ability to meet long term obligations. Subsets of these ratios are also known as "leverage and long term debt" ratios.

Profitability Ratios measure the company's ability to generate profits from its resources (assets).

Valuation Ratios measures the quantity of an assets or flow (e.g., earning s) associated with ownership of a specified claim (e.g.., share or ownership the enterprise.

Ratios in included in CFA Material

Activity Ratios	Formula	Purpose or Use
1. Inventory Turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Measures liquidity of inventory Measures short-term debt-paying ability
2. Days of inventory on hand (DOH)	$\frac{\text{Number of Days in period}}{\text{Average Inventory}}$	Number of days on average it takes to sell the inventory
3. Receivables turnover	$\frac{\text{Net credit sales}}{\text{Average net receivables}}$	Measures liquidity of receivables
4. Days of Sales Outstanding (DSO)	$\frac{\text{Number of Days in period}}{\text{Average Receivable}}$	Number of days on average it takes to collect accounts receivable
5. Payables Turnover	$\frac{\text{Purchases}}{\text{Average Trades Payable}}$	Measures how many times per year the company pays off all its creditors
6, Number of Days of Payable	$\frac{\text{Number of Days in period}}{\text{Payables Turnover}}$	The number of days the company takes to pay its suppliers
7. Working Capital Turnover	$\frac{\text{Revenue}}{\text{Average Working Capital}}$	Measures how efficiently the company generates revenue with its working capital
8. Fixed Asset Turnover	$\frac{\text{Revenue}}{\text{Average Net Fixed Assets}}$	Measures how efficiently the company generates revenue from its investments in fixed assets

9. Total Asset Turnover	$\frac{\text{Revenue}}{\text{Average Total Assets}}$	Measures the company's overall ability to generate revenue with a given level of assets
Liquidity Ratios		
10. Current Ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Measures short-term debt-paying ability
11. Quick ratio (our book calls it "acid test" or "quick ratio"	$\frac{\text{Cash + Short term Marketbable Jnvestments + Receivables}}{\text{Current liabilities}}$	Measures immediate short-term liquidity
12. Cash Ratio	$\frac{\text{Cash + Short term Marketbable Jnvestments}}{\text{Current liabilities}}$	Represents a Reliable Measure of a Company's liquidity in a crisis situation
13. Defensive Interval Ratio	$\frac{\text{Cash + Short term Marketbable Jnvestmentss}}{\text{Daily Cash Expenditures}}$	Measures how long the company can continue to pays its expenditures without receiving any additional cash inflow
Profitability Ratios (Return on Sales)		
14. Gross Profit Margin	$\frac{\text{Gross Profit}}{\text{Revenue}}$	Measures percentage of every dollar of revenue which became gross profit
15. Net Profit margin	$\frac{\text{Net Income}}{\text{Revenue}}$	Measures net income generated by each dollar of sales
16. Operating Profit Margin	$\frac{\text{Operating Income}}{\text{Revenue}}$	Measures percentage of every dollar of revenue which became Operating Income
Profitability Ratios (Return on Investments)		
17. Operating ROA	$\frac{\text{Operating Income}}{\text{Average Total Assets}}$	Measures percentage of operating income that can be generated on a given amount of average taxes
18. Return on Assets (ROA)	$\frac{\text{Net income}}{\text{Average total assets}}$	Measures overall profitability of assets
19. Return on Total Capital	$\frac{\text{EBIT}}{\text{Short and Long-Term Debt and Equity}}$	Measures the profit a company earns on all of the capital it employs (short term debt, long term debt and equity
20. Return on common equity (ROE)	$\frac{\text{Net income – Preferred stock dividends}}{\text{Average common stockholders' equity}}$	Measure profitability of stockholders' investment
21. Dupont Formula for calculating Return on Equity	ROE= Net Profit Margin x Total Asset Turnover x Equity Multiplier= Formula 15 x Formula 9 x Formula 13= (Net income/Revenue) x (Revenue/Assets) x (Assets/Equity) = Net Income/Equity A formula to calculate return on equity by breaking it into parts. It shows the 3 main drivers of return on equity. Profit margin, asset turnover or leverage. If you increase your	

	margin on any sale it increases your return on equity. If you increase your total sales per amount of assets it increases ROE. If you increase leverage it can increase ROE.	
Valuation Ratios		
22. Basic Earnings per share EPS)	Net income – Preferred stock dividends Weighted Average Number of Ordinary Shares Outstanding	Measure net income earned on each share of outstanding common stock
23. Diluted Earnings per share (EPS)	Adjusted income available for ordinary shares, reflecting conversion of dilutive securities Weighted Average Number of Ordinary Shares Outstanding and potentially ordinary shares outstanding	Measure net income earned on each share of outstanding common stock + plus the number of share that could be converted into common sotock
24. Price earnings (P-E) ratio	Market price per share of stock Earnings per share	Measure ratio of the market price per share to earnings per share
25. Dividend Payout ratio	Common Stock Cash Dividends Net income	Measures percentage of earnings distributed in the form of cash dividends
26. Cash Flow Per Share	Cash Flow from Operations Weighted Average Number of Shares Outstanding	Measures how much cash flow is being generated for each outstanding share of stock
27. EBITDA Per Share	EBITDA Weighted Average Number of Shares Outstanding	Measures how much EBITDA is being generated for each outstanding share of stock
Solvency Ratios		
28. Debt to Asset Ratio	Total Debt Total Assets	Measures percentage of total assets provided by creditors
29. Debt to Capital Ratio	Total Debt Total Capital + Shareholder's Equity	Measures percentage of a company's capital (debt +equity) represented by debt
30. Debt to Equity Ratio	Total Debt Total Shareholder's Equity	Measures the amount of debt relative to equity.
31. Interest Coverage or Time Interest Earned Ratio"	EBIT Interest Payments	Measures the number of times EBIT could cover a company's interest payments
32. Fixed Charge Coverage	EBIT + Lease Payments Interest Payments + Lease Payments	Measures the number of times EBIT (before interest, taxes and lease payments) could cover a company's interest payments and lease payments
33. Financial Leverage Ratio	Average Total Assets Average Total Equity	Measures the amount of total assets represented for each one unit of equity. The higher financial leverage ratio the more leveraged the company is in the sense of using debt and other liabilities to finance assets

Activity ratios	Ratio calculation
Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$
Days of inventory on hands (DOH)	$\frac{\text{Number of days in the period}}{\text{Inventory turnover}}$
Receivables turnover	$\frac{\text{Revenue or Revenue from credit sales}}{\text{Average receivables}}$
Days of sales outstanding (DSO)	$\frac{\text{Number of days}}{\text{Receivable turnover}}$
Payable Turnover	$\frac{\text{Purchases}}{\text{Average payables}}$
Number of days of payables	$\frac{\text{Number of days in a period}}{\text{Payable turnover}}$
Working capital turnover	$\frac{\text{Revenue}}{\text{Average working capital}}$
Fixed assets turnover	$\frac{\text{Revenue}}{\text{Average fixed assets}}$
Total assets turnover	$\frac{\text{Revenue}}{\text{Average total assets}}$

Liquidity ratios	Ratio calculation
Current	$\frac{\text{Current assets}}{\text{Current liabilities}}$
Quick	$\frac{\text{Cash} + \text{Short term marketable securities} + \text{Receivables}}{\text{Current liabilities}}$
Cash	$\frac{\text{Cash} + \text{Short term marketable securities}}{\text{Current liabilities}}$
Defensive interval	$\frac{\text{Cash} + \text{Short term marketable securities} + \text{Receivables}}{\text{Daily expenditures}}$
Cash conversion cycle	$\text{DOH} + \text{DSO} - \text{Number of days of payables}$

Coverage ratios	Ratio calculation
Interest coverage	$\frac{\text{EBIT}}{\text{Interest payments}}$
Fixed charge coverage	$\frac{\text{EBIT} + \text{Lease payments}}{\text{Interest payments} + \text{Lease payments}}$

Solvency ratios	Ratio calculation
Debt-to-assets	$\frac{\text{Total debt}}{\text{Total assets}}$
Debt-to-capital	$\frac{\text{Total debt}}{\text{Total debt} + \text{Total shareholders' equity}}$
Debt-to-equity	$\frac{\text{Total debt}}{\text{Total shareholders' equity}}$
Financial leverage	$\frac{\text{Average total assets}}{\text{Total shareholders' equity}}$

Return on sales ratios	Ratio calculation
Gross profit margin	$\frac{\text{Gross profit}}{\text{Revenue}}$
Operating margin	$\frac{\text{Operating profit}}{\text{Revenue}}$
Pretax margin	$\frac{\text{EBT (Earnings Before Taxes)}}{\text{Revenue}}$
Net profit margin	$\frac{\text{Net income}}{\text{Revenue}}$

Return on investment ratios	Ratio calculation
Operating ROA	$\frac{\text{Operating income}}{\text{Average total assets}}$
ROA	$\frac{\text{Net income}}{\text{Average total assets}}$
Return on total capital	$\frac{\text{EBIT}}{\text{Debt} + \text{Equity}}$
ROE	$\frac{\text{Net income}}{\text{Average total equity}}$
Return on common equity	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common equity}}$

Valuation ratios	Ratio calculation
P/E	$\frac{\text{Price per share}}{\text{Earnings per share}}$
P/CF	$\frac{\text{Price per share}}{\text{Cash flow per share}}$
P/S	$\frac{\text{Price per share}}{\text{Sales per share}}$
P/BV	$\frac{\text{Price per share}}{\text{Book value per share}}$

Per share ratios	Ratio calculation
Basic EPS	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of ordinary shares oustanding}}$
Diluted EPS	$\frac{\text{Price per share}}{\text{Cash flow per share}}$
Cash flow per share	$\frac{\text{Price per share}}{\text{Sales per share}}$
EBITDA per share	$\frac{\text{Price per share}}{\text{Book value per share}}$
Dividends per share	$\frac{\text{Dividend paid}}{\text{Number of shares outstanding}}$

Dividend-related ratios	Ratio calculation
Dividend payout ratio	$\frac{\text{Common share dividends}}{\text{Net income attributable to common shares}}$
Retention rate (b)	$\frac{\text{Net income attributable to common shares} - \text{Common share dividends}}{\text{Net income attributable to common shares}}$
Sustainable growth rate	$b \times ROE$

Credit ratios	Ratio calculation
EBIT interest coverage	$\frac{\text{EBIT}}{\text{Gross interest (prior to deductions for capitalized interest or interest income)}}$
EBITDA interest coverage	$\frac{\text{EBITDA}}{\text{Gross interest (prior to deductions for capitalized interest or interest income)}}$
FFO (funds from operations) interest coverage	$\frac{\text{FFO} + \text{Interest paid} - \text{Operatinf lease adjustments}}{\text{Gross interest (prior to deductions for capitalized interest or interest income)}}$
Return on capital	$\frac{\text{EBIT}}{\text{Average capital}}$ where Capital = Equity + Non-current deferred taxes + Debt
FFO (funds from operations) to debt	$\frac{\text{FFO}}{\text{Total debt}}$
Free operating cash flow-to-debt	$\frac{\text{CFO (adjusted)} - \text{Capital expenditures}}{\text{Total debt}}$
Discretionary cash flow-to-debt	$\frac{\text{CFO} - \text{Capital expenditures} - \text{Dividend paid}}{\text{Total debt}}$
Net cash flow-to-capital expenditures	$\frac{\text{FFO} - \text{Dividends}}{\text{Capital expenditures}}$

Leverage ratios	
Debt-to-assets ratio	$\frac{\text{Total debt}^{A}}{\text{Total assets}}$
Debt-to-capital ratio	$\frac{\text{Total debt}^{A}}{\text{Total debt} + \text{Total equity}}$
Debt-to-equity ratio	$\frac{\text{Total debt}^{A}}{\text{Total equity}}$
Financial leverage ratio	$\frac{\text{Average total assets}}{\text{Average equity}}$

Segment ratio	Numerator	Denominator	Indication
Segment margin	Segment profit (loss)	Segment revenue	Measures a segment's profitability relative to its revenues
Segment turnover	Segment revenue	Segment assets	Measures a segment's ability to generate revenue using assets
Segment ROA	Segment profit (loss)	Segment assets	Measures a segment's operating profitability relative its assets
Segment debt ratio	Segment liabilities	Segment assets	Measures segment solvency

Performance Ratio	Calculation	Indication
Cash flow to revenue	$\frac{\text{CFO}}{\text{Net revenue}}$	Operating cash generated per dollar of revenue
Cash return on assets	$\frac{\text{CFO}}{\text{Average total assets}}$	Operating cash generated per dollar of asset investment
Cash return on equity	$\frac{\text{CFO}}{\text{Average shareholders' equity}}$	Operating cash generated per dollar of owner investment
Cash to income	$\frac{\text{CFO}}{\text{Operating income}}$	Cash generated from operations
Cash flow per share	$\frac{\text{CFO} - \text{Pref. dividends}}{\text{Number of common shares oustanding}}$	Operating cash flow on a per-share basis
Debt payment	$\frac{\text{CFO}}{\text{Cash paid for long term debt repayment}}$	Ability to pay debts with operating cash flows
Dividend payment	$\frac{\text{CFO}}{\text{Dividends paid}}$	Ability to pay dividends with operating cash flows
Investing and Financing	$\frac{\text{CFO}}{\text{Cash outflows for investing and financing activities}}$	Ability to acquire assets, pay debts, and make distributions to owners
Debt Coverage	$\frac{\text{CFO}}{\text{Total debt}}$	Financial risk and financial leverage
Interest Coverage	$\frac{\text{CFO} + \text{Interest paid} + \text{Taxes paid}}{\text{Interest paid}}$	Ability to meet interest obligations
Reinvestment	$\frac{\text{CFO}}{\text{Cash paid for long term assets}}$	Ability to acquire assets with operating cash flows