Financial Statement Analysis

SBM Fund

Magdeburg | January 20, 2025

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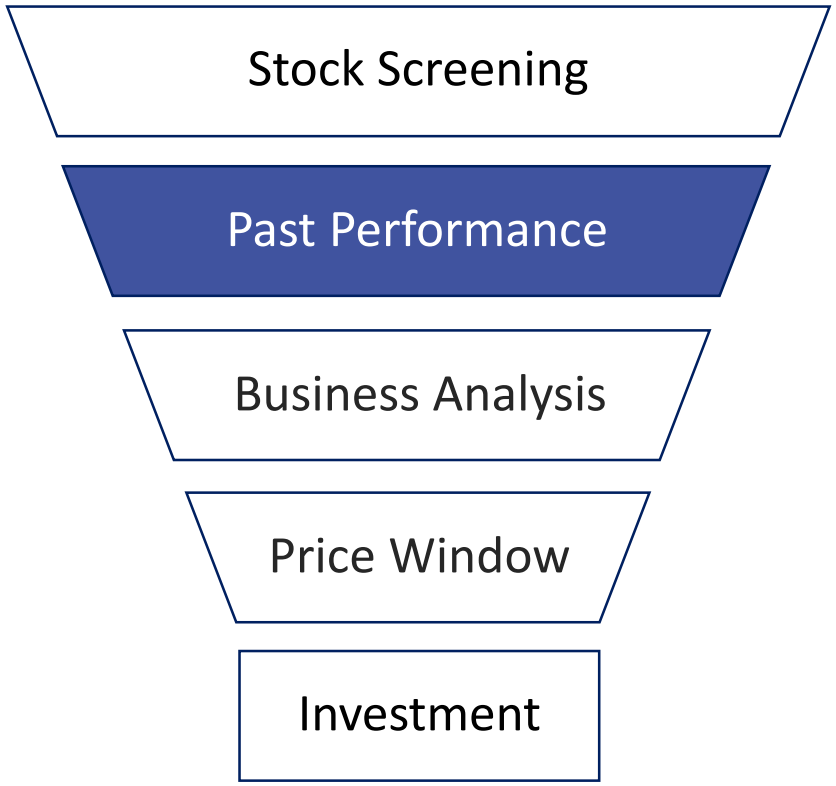
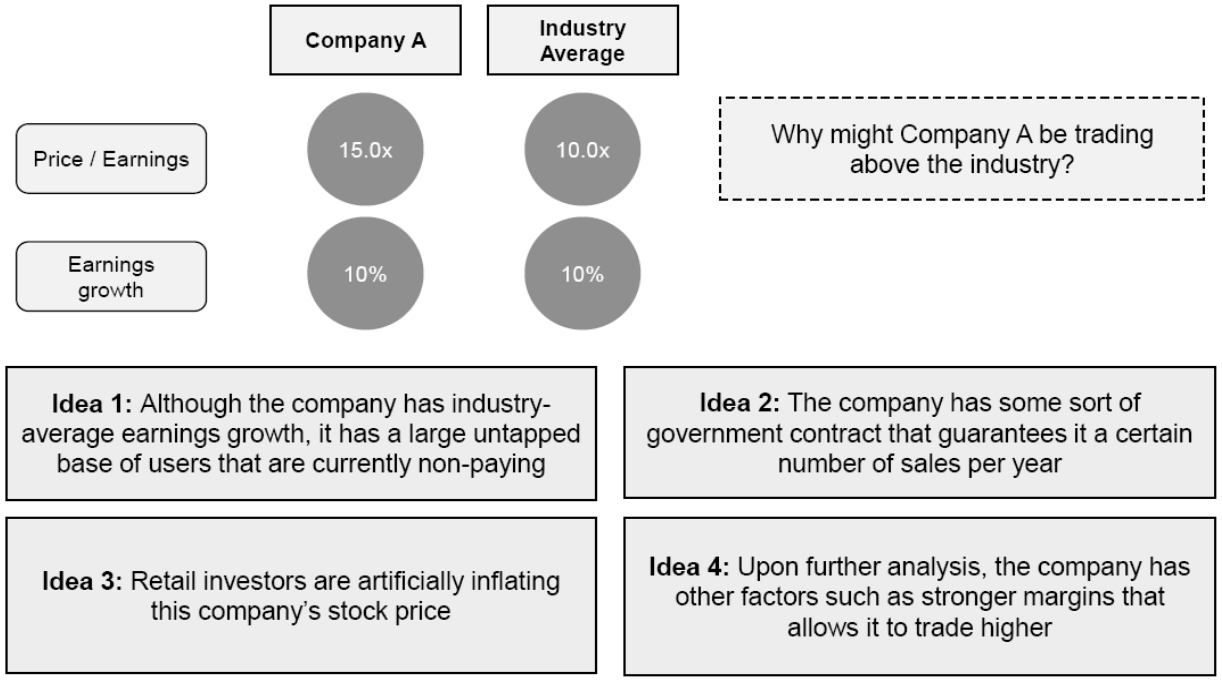
Four Step Investment Funnel



Critical Thinking in Corporate Financial Analysis

» Asking the right questions (i.e. knowing which questions to ask) and finding ways to answer them with data and your own opinion about the business



Key Questions to Answer

Do I understand the business?	Is the business good?	Is the stock inexpensive?
Products/services Distribution Customers Suppliers Management ESG Industry Geography	Past: Financials Shareholder friendliness Future: Market forces Competitive advantage(s) Growth Prospects Risks	Absolute valuation (DCF) Relative valuation (multiples) Scenario & sensitivity analysis

Key Questions to Answer

» Has/had the target company…

… sustainable **growth**? → growth rates of op. income/FCF, efficiency ratios

… low **risk**? → liquidity & solvency ratios

… high **capital return**? → profitability ratios

Performance Metrics

- Historical (trailing) performance metrics
  - *Backvaluation*: Assumes that historical values are going to repeat and that company has not fundamentally changed (invalid for cyclical businesses)
- Historical trend analysis over 3-5 years to normalize historical values
  - Growth metrics → use geometric mean
  - Profitability ratios → use arithmetic mean
  - Liquidity/solvency ratios → NO normalization (use most recent figures)
- Not remove line items of non-recurring events
- Compare the company's performance ratios to industry average or peers

Performance Metrics

Growth Metrics

- Measures how the annual financial output has changed over the previous (or more) years
- Focus on businesses with consistent positive operating income & free cash flows in recent years and economic downturns (non-cyclicity)

$$\Delta \mathrm{OI/FDS}\ (\%) = \frac{\mathrm{OI_t} - \mathrm{OI_{t-1}}}{\frac{\mathrm{FDS_t} + \mathrm{FDS_{t-1}}}{2}}$$

$$\Delta \mathrm{FCFE/FDS}\ (\%) = \frac{\mathrm{FCFE_t} - \mathrm{FCFE_{t-1}}}{\frac{\mathrm{FDS_t} + \mathrm{FDS_{t-1}}}{2}}$$

OI = operating income | t = last reporting date
Fully diluted shares (FDS) = weighted annual average of common shares, convertible securities, and stock options

Performance Metrics

Growth Metrics [cont'd]

- Focus on how the annual financial output has lead to a change in the (in)tangible equity book value over the previous (or more) years
  - Analyze growth rates of both ratios in conjunction, to identify companies that overpay for acquisitions by the growth in goodwill (Δintangible assets = ΔBV – ΔTBV)

$$\Delta \mathrm{BV/FDS}\ (\%) = \frac{\mathrm{BV_t} - \mathrm{BV_{t-1}}}{\frac{\mathrm{FDS_t} + \mathrm{FDS_{t-1}}}{2}}$$

$$\Delta \mathrm{TBV/FDS}\ (\%) = \frac{\mathrm{TBV_t} - \mathrm{TBV_{t-1}}}{\frac{\mathrm{FDS_t} + \mathrm{FDS_{t-1}}}{2}}$$

(T)BV = (tangible) equity book value | t = last reporting date

Performance Metrics

Efficiency Metrics

» Activity ratios measure how actively and efficient assets are utilized to generate revenue and cash flow

Turnover Ratios		365 Days / Turnover Ratio
Total or fixed assets		
Inventory	→	DOI: Days of inventory at hand (holding period)
Receivables	→	DSO: Days of sales outstanding (collection period)
Payables	→	DPO: Days of payables outstanding (payment period)
		Cash conversion cycle: DOI + DSO – DPO

Performance Metrics

Risk Metrics

» Liquidity ratios measure the company's ability to repay its short-term obligations when due through its current assets

more stringent liquid. measurement (less liquid assets stripped out)

$$\text{Current ratio} = \frac{\text{Cash} + \text{Marketable securities} + \text{Receivables} + \text{Inventory}}{\text{Payables} + \text{Short term debt} + \text{Current portion of long term debt}}$$

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Marketable securities} + \text{Receivables}}{\text{Payables} + \text{Short term debt} + \text{Current portion of long term debt}}$$

$$\text{Cash ratio} = \frac{\text{Cash} + \text{Marketable securities}}{\text{Payables} + \text{Short term debt} + \text{Current portion of long term debt}}$$

Performance Metrics

Risk Metrics

» Solvency ratios measure firm's ability to service and repay its financial obligations when due

$$\text{Liability to equity ratio} = \frac{\text{Total liabilities}}{\text{Total equity}}$$

$$\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest expense}}$$

Performance Metrics

Return Metrics

- Profitability ratios measure the annual financial output of a company relative to the capital invested or committed (employed)
- Focus on businesses with consistent positive profitability ratios in recent years and economic downturns (non-cyclicity)

$$\text{ROCE}_{\text{OI}} = \frac{\text{Operating income}}{\text{Capital employed}}$$

$$\text{ROCE}_{\text{FCFE}} = \frac{\text{FCFE}}{\text{Capital employed}}$$

ROCE = return on capital employed | ROE = return on equity

Performance Metrics

Return Metrics

$$\text{Tangible ROE} = \frac{\text{Net income}}{\text{Shareholders' equity (excl. goodwill)}}$$

» DuPont formula: dissect return on equity into its key components to expose weaker from stronger areas of the business financials

$$\text{Tangible ROE} = \frac{\text{Net income}}{\text{Revenue}} * \frac{\text{Revenue}}{\text{Total assets (excl. goodwill)}} * \frac{\text{Total assets (excl. goodwill)}}{\text{Shareholders' equity (excl. goodwill)}}$$

sales converted into NI available to shareholders ← assets converted into sales ← shareholder capital investments converted into assets

ROCE = return on capital employed | ROE = return on equity

Thank you for listening.

If this sounded interesting to you, join us at SBM!

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Appendices

Performance Metric Benchmarks, Formulas of Input Variables

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Performance Metric Benchmarks

Growth Metrics

Ratio	Historical Benchmark
$\Delta \text{OI/FDS (\%)} = \frac{\text{OI}_t - \text{OI}_{t-1}}{\text{Fully diluted shares}}$	Avg. 5 years > 2-3% p.a.
$\Delta \text{FCFE/FDS (\%)} = \frac{\text{FCFE}_t - \text{FCFE}_{t-1}}{\text{Fully diluted shares}}$	
$\Delta \text{BV/FDS (\%)} = \frac{\text{BV}_t - \text{BV}_{t-1}}{\frac{\text{FDS}_t + \text{FDS}_{t-1}}{2}}$	
$\Delta \text{TBV/FDS (\%)} = \frac{\text{TBV}_t - \text{TBV}_{t-1}}{\frac{\text{FDS}_t + \text{FDS}_{t-1}}{2}}$	

Source:
Good Stocks Cheap
(2017) by K. J. Marshall

Performance Metric Benchmarks

Risk Metrics

Ratio	Historical Benchmark
$\text{Liab. to Equity} = \frac{\text{Total liabilities}}{\text{Total equity}}$	Avg. 5 years ≤ 2

Source: Good Stocks Cheap (2017) by K. J. Marshall

Performance Metric Benchmarks

Return Metrics

Ratio	Historical Benchmark
$\text{ROCE}_{\text{OI}} = \frac{\text{Operating income}}{\text{Capital employed}}$	Avg. 5 years > 15% p.a.
$\text{ROCE}_{\text{FCFE}} = \frac{\text{FCFE}}{\text{Capital employed}}$	Avg. 5 years > 8% p.a.

Source: Good Stocks Cheap (2017) by K. J. Marshall

Formulas of Input Variables

» The values of these variables are published in a company's most recent annual or quarterly financial statement (10-K/10-Q)

Fully diluted shares:

$$\text{FDS} = \text{Common shares outstanding} + \underbrace{\text{Convert. securities}}_{\text{Convertible preferred shares \& bonds}} + \text{Stock options}$$

Cash Flow Statement

Free cash flow to equity:

$$\text{FCFE} = \underbrace{\text{NI} + \text{Noncash charges} - \text{NWC investment}}_{\text{CFO}} - \text{Capex} + \text{Net borrowing}$$

NI = net income | NWC = net working capital | Capex = capital expenditures

Appendix

Formulas of Input Variables

Balance Sheet

Enterprise/firm value:
(use MVs where possible)

$$EV = \text{Market cap} + \text{Pref. equity} + \text{NCI} + \underbrace{\text{Debt} - \text{Excess cash \& marketable sec.}}_{\text{Net debt}}$$

Market capitalization:

$$\text{Market cap} = \#\text{Common shares outstanding} * \text{Current common share price}$$

Equity book value:

$$\text{Shareholders'equity} = \text{Total assets} - \text{Total liabilities} - \text{NCI}$$

Tangible book value:

$$\text{Tangible shareholders'equity} = \text{Shareholders' equity} - \text{Intangible assets}$$

Capital employed:

$$\text{Capital employed} = \text{Total assets} - \text{Non interest current liab.} (- \text{Excess cash} - \text{Goodwill})$$

NCI = non-controlling interest | MV = market value | NCI = non-controlling interest (minority share)

Formulas of Input Variables

Income Statement

	Net revenues		
-	Operating expenses (COGS, SG&A, D&A)		
=	**Op. income**		
-	Non-op. net expenses		
=	**EBIT** (+ D&A = EBITDA)		
-	Net interest expense	-	Income tax expense
=	**EBT**	=	**NOPAT**
-	Income tax expense		
=	**NI**		

EBIT(DA) = earnings before interest, taxes(, depreciation | COGS = cost of goods sold
SG&A = selling, general & administrative expenses | D&A =depreciation & amortization | NOPAT = net op. profit after tax | NI = net income

About the Presenter

Alexander Neumann plays an active role in managing the SBM fund. At present, he completes his master's degree in finance and enjoys meeting like-minded people who share his passion for investing.

For his master's thesis, he is conducting an empirical comparison of the statistical accuracy of dividend-, free cash flow-, and earnings-based equity valuation models for mid-to-large cap public stocks, traded on German stock exchanges.

He has also passed the CFA level 2 exam. Current GPA: 1.5/1.0