Financial Statement Analysis

Financial Statement Modeling

Exam Focus

- Sales based pro forma model
- Behavioral bias
- Porter's 5 forces
- Forecasting sales and cost in an inflationary environment
- Forecast horizons and beyond

Income Statement Forecast Process

1. Revenue forecast
2. Operating expense forecast
   - COGS forecast
   - SG&A forecast
3. Pro forma EBIT forecast
   - Segments forecast check
4. Non-operating expense forecast
   - Interest forecast
   - Tax expense forecast
   - Shares outstanding forecast
5. Income statement forecast

Revenue Forecast

- Segmental basis
  - Volume
  - Price/Mix
- Organic operations and results of M&A separated
- Exchange rate implications forecasted separately

Expenses

COGS:

Estimated using historic margin and analysts forecast of segmental revenue growth.

Mix of products significant.

SG&A:

Focus on major components, historic trends, analyst interpretation of future events.

Other operating expenses:

Items such as impairments, divestiture gains, restructuring.

Historic trends and strategic business plans

Segmental Operating Profit Forecasts

Operating profits typically forecast on a consolidated basis.

Segmental forecast used to check reasonableness of consolidated forecasts.

Sum of segmental forecast should ≈ consolidated forecast.

However operating profit is a pro forma not GAAP measurement: what has been included or excluded?

Segmental margins should be compared to competitors for reasonableness.

Non Operating Items

Net interest:

- B/S debt, cash and investment positions.
- Blend of fixed vs floating rates.
- Requires forecast of interest rates paid and received.

Tax expense:

- Consider effective rate and it’s historic stability.
- Impacts of product mix and overseas operations.
- Statutory and effective tax rate reconciliations.

Non Operating Items

Shares outstanding:

- Potentially dilutive instruments
- Employee stock compensation plans
- Share buy backs
- Secondary issues

Cash Flow Statement Forecast Process

Net income: income statement forecast
Share based compensation
Working capital → CFO
Depreciation and amortization

Capex → CFI

Share repurchase and issuance
Dividends → CFF
Debt: net principal flows

Capex and Depreciation Forecasts

Depreciation and amortization forecasts a function of prior year PP&E and intangibles in the B/S.

Capex often forecast as a % of sales

Working Capital Forecast

Examine historic trends in:

- Days sales outstanding (DSO): Forecast = AR (receivables)
- Days inventory on hand (DOH): Forecast = Inventory
- Days payables outstanding: Forecast = AP (payables)

Consider stability of ratios over time and normalization.

Free Cash Flow to the Firm

Component	
EBIT	X
Effective tax rate	%
After tax EBIT	X
Depreciation & amortization (NCC)	X
Capex	(X)
FCFF	X/(X)

EBIT × (1– effective rate)

Behavioral Aspects: Forecasting

1. Overconfidence:

   Analyst had overconfidence in their abilities

   Mitigation: Peer reviews, analysis of previous forecasts, scenario analysis

2. Illusion of control:

   Belief that more information will improve accuracy

   Belief that more complicated models are more accurate

   Reality: marginal returns for additional data diminish

   More data can lead to overfitting

   Mitigation: restrict model to key variables

Behavioral Aspects: Forecasting

3. Conservatism bias:

   Stick to original forecast and fail to update for new or conflicting information

   Anchoring and adjustment – adjustment typically too small

   Mitigation: Peer reviews, flexible models with fewer variables

4. Representativeness bias:

   Information categorized based on past experiences when in reality it is different

   Inside view = specifics of the situation/company, outside view = industry averages/norms

   Mitigation: consider both inside and outside views

Behavioral Aspects: Forecasting

5. Confirmation bias:

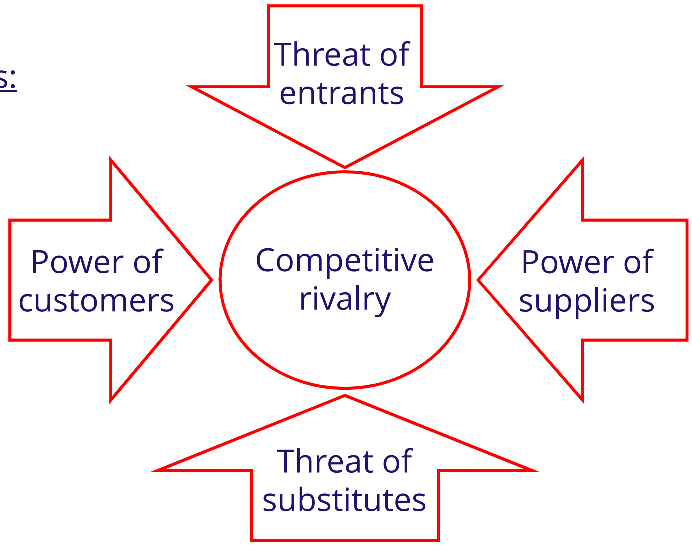
   Focus on information that confirms past beliefs and ignore information that contradicts

   Mitigation: Read analysts' recommendations that contradict, peer review by colleagues with no psychological investment in the security

Impact of Competitive Factors: Price and Costs

Porter's 5-Forces:

Industry attractiveness



Inflation and Deflation

Sales projection:

1. Pass on higher costs via higher prices
2. Accept lower margins

Forecasting: analyst may normalize over business cycle

Factors to consider:

1. Price elasticity of demand in each market
2. Competitive position: monopoly to perfect competition
3. Impact on exports: high overseas inflation
    - Cheaper for overseas consumers (higher volumes)
    - Revenues lower when converted back to domestic currency

Inflation and Deflation

Cost projection:

Different costs inflate at different rates.

Geographic rates differ.

Factors to consider:

1. Use of forward contracts to delay impacts of price increases
2. Analysis of inflations drivers e.g. weather, geopolitical conflict etc.
3. Power of suppliers
4. Switching cost and cheaper alternative suppliers
5. Reduction in discretionary costs to preserve margins

Forecast Horizon

1. Match investment holding period
2. Capture cyclicality of industry: mid cycle normalization
3. Company specific factors e.g. M&A time to impact financial statements
4. Analyst firm preferences (fixed parameters of in-house models)

Normalization = captures mid-point of cycle

Terminal Values

Estimate of cash flows beyond the forecast horizon.

Typically rely on a constant growth assumption.

Normalization:

- Mid-cycle
- Periods of economic disruption
- Inflection points (difficult to forecast)
- Long-term growth rates relative to historic rates

Normalization: Example

Turkish Airlines (THYAO.IS) operates in the highly cyclical global airline industry. Operating margins for 2011–2019 are shown in the following table:

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Operating margin %	1.0	10.8	6.5	5.6	8.6	-2.9	9.0	9.9	7.9

On the basis of only the information in the table, which of the following operating margins would most likely be appropriate to use in a perpetuity calculation for Turkish Airlines to arrive at a reasonable intrinsic value estimate?

A. 6.0 percent
B. 9.0 percent
C. 9.9 percent

-1

Inflection Points: Example

For each of the companies in the following problems, indicate which of the choices is least likely to cause a change in the company's outlook.

ABC Diesel (hypothetical company), a manufacturer of diesel-power trucks

A. Consumers have started switching to trucks with electric engines, threatening ABC's historic strength in diesel engine trucks.

B. ABC Diesel has formed a partnership with Electrico (hypothetical), a company involved in research and innovation in electric engines.

C. Environmental regulations have been getting tighter in most regions, and consistent with prior experience, this need to make the engines less polluting is expected to continue over the next several years.

Inflection Points: Example

Abbott Laboratories, a diversified manufacturer of health care products, including medical devices

A. Management reiterates its long-standing approach to capital deployment.

B. A competitor has demonstrated favorable efficacy data on a medical device candidate that will compete with an important Abbott product.

C. It has become more difficult for medical device manufacturers to receive regulatory approval for new products because of heightened safety concerns.

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