Introduction to Financial Statements Analysis

Income Statement, Balance Sheet, Statement of Cash Flow

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1 Financial Statement Analysis: Principles

Learning Objectives

By the end of this module, students should be able to:

- List the most common financial statements
- Explain the objectives of financial statement analysis
- Describe a rational method to analyze financial statements
- Assess and explain a company profitability
- Assess and explain a company financing

Why Financial Statements?

Firms need to (and often **must**) convey information to various stakeholders and partners:

- Shareholders, directors, managers
- Creditors,
- Employees and organizations representing employees (unions…)
- Customers
- Tax administration,
- …

Which Financial Statements?

The most common set of financial statements includes:

- The Income Statement (or P&L, profit and loss)
- The Balance Sheet (or statement of financial position/situation)
- The Statement of Cash Flow

Additionally, one can find and use the business and operating review, the statement of changes in shareholders' equity and various notes and appendices.

Where to Find the Financial Statements?

Public listed companies have to publish financial statements on a regular basis. These documents are usually available:

- On the company website,
- From market or other authorities (SEC, …)
- From financial information services (Reuters, Bloomberg, …)
- In databases

Financial Statements Quality

Financial Statements must follow *standards* and be *accurate*.

Standards Financial statements are usually produced by the accounting dpt. The bookkeeping and accounting principles and rules should be the same for all companies: use local (GAAP) or international (IFRS) standards.

Accuracy One should be able to trust the information in the financial statements. Thus in most countries, the statements should be verified by an independant auditor.

Financial Statement Analysis Framework

1. Define objectives (why are you analyzing?) and context (what is your position regarding the analyzed firm? are there any special circumstances?)
2. Get the data (additional data besides the financial statements make interpretation easier: general information about economy, industry and sector, specific information about the company, its products, market, technology etc.)
3. Process the data (clean the data, calculate balances and ratios, prepare graphs)
4. Analyze the data
5. Write your report/analysis, keeping in mind the objectives you defined at step 1

Financial Statement Analysis Tips

- Always get 2-3 years of data to make comparison
- Beware of numbers: compare volumes and values, take inflation into account
- Beware of ratios (1) : a ratio can increase because the numerator increased, or the denominator decreased, or both
- Beware of ratios (2): literally hundreds of ratios exist, only use a few, those you know well and can interpret
- Don't *describe* ("the sales increased by 3%"), *explain* ("the launch of the new product is visible in the 14% growth of sales")

Financial Statement Analysis: Useful Questions to Ask

- Is the company profitable?
- Do the company earnings generate a cash inflow?
- Can the company fulfill its obligations towards its creditors?
- How is the company financed?
- Does the company financing fit its strategy and activity?

Financial Statements: Movements and Balances

All financial statements list numbers coming from the company accounting. But some statements list movements (*e.g.* income statement) when others list balances (*e.g.* balance sheet).

Movements Movements are the changes on a given account over a given period of time.
Balances The balance is the position of a given account at a given date.

Note that the movement on an account over a given period is the difference between the end of period and the beginning of period balances of this account.

2 Firm Performance: the Income Statement

The Income Statement: Presentation

Definition

The income statement lists the **revenues** and **expenses** of a corporation over a given period of time (usually a quarter or a fiscal year).

Thus the income statement lists *movements*, not balances.

Finally, the income statements allows to calculate the earnings or income:

$$\text{earnings} = \text{revenues} - \text{expenses}$$

The Income Statement: Structure

Income statement is usually structured in 4 parts:

- revenues and expenses from the company general operations (sales, cost of goods sold…)
- revenues and expenses from financing operations (interests paid…)
- other revenues and expenses (revenues from fixed assets sales…)
- corporate tax

The Income Statement Structure: Example

Income Statement	N	N-1
Net sales		
Cost of sales		
Gross profit		
Selling, general & admin expenses		
Wages and other expenses		
Depreciation		
Operating income		
Other income		
Earnings Before Interest and Taxes		
Interest income (expense)		
Pretax income		
Taxes		
Net income		

The Income Statement: Objectives

- calculate the period earnings
- expose the company profitability over the period
- allow calculation of the cash flow from operations over the period
- allow analysis of the operations leading to profitability
- expose how revenues are split between production factors

The Income Statement: Cash Flows vs. Earnings

The earnings reported in the income statement are usually different from the cash inflow generated by the company's operations over the period. The reasons are:

- most accounting principles (GAAP, IFRS) state that the revenue should be recorded at time of realization (i.e. upon goods delivery) rather than at collection time (i.e when the customer pays).
- the income statement reports some noncash items, particularly *depreciation*

The Income Statement: EBITDA

The EBITDA (Earnings before interests, taxes, depreciation and amortization) reflects the cash flow generated by the firms operations.

The EBITDA is important as it will be used to pay cash expenses which are in the other parts of the income statement, especially interest payments and corporate taxes.

Interest coverage is the ratio of EBITDA to interest expenses. It should consistently be over 2-3 otherwise that means that the company operations cannot generate enough cash to cover the cost of its financing.

3 The Balance Sheet

The Balance Sheet: Presentation

Definition

The balance sheet lists the assets and liabilities of a corporation at a given point in time (usually the end of a quarter or a fiscal year).

Thus the balance sheet lists *balances* (as its name implies), not movements.

Finally, the balance sheet also shows the shareholders' equity book value:

$$\text{assets} = \text{liabilities} + \text{shareholders' equity}$$

The Balance Sheet: Structure

Assets and liabilities are commonly split in two categories: *current* and *non-current*.

In addition, assets and liabilities are ordered from the less liquid (high duration) to the most liquid (low or zero duration).

Example

Bank and cash at hand are often on the last line of assets and long-term financial debt is often the first line of liabilities.

Note that by convention, shareholders' equity is listed before liabilities.

The Balance Sheet Structure: Example

Assets	N	N-1	**SE and Liabilities**	N	N-1
Non current assets			**Shareholders' Equity**		
Net plant & equipments			Common stocks, paid-in surplus		
Other non current assets			Retained earnings		
			Non current liabilities		
			Long-term debt		
Current assets			**Current liabilities**		
Accounts receivable			Accounts payable		
Inventory			Notes payable		
Bank and cash			Cash deficit		
Total			**Total**		

The Balance Sheet Structure: Current Items

Current assets or liabilities are supposed to have a duration shorter than one year.

That means that current assets are expected to be converted in cash shortly (e.g. inventories will be sold, receivables will be received). Similarly, current liabilities are due in less than one year.

Current assets or liabilities are often (but not always) related to day-to-day operations.

The Balance Sheet Structure: Non-Current Items

Non-current (or long-term) assets or liabilities have a duration longer than one year.

Non current assets are expected to have an economic life of (can be used for) more than one year (e.g. land, factories, machinery) and non-current liabilities are long-term obligations, due in more than one year (e.g. long-term debt).

The Balance Sheet: Objectives

- Expose the company financial situation
- Show the company's resources origin and uses
- Assess company solvency
- Assess company liquidity
- Estimate company's financing adequacy

The Balance Sheet: Book vs Market Values

Values shown in the balance sheet are *book values* coming from accounting. They might differ substantially from the *market values*, that is the value at which a given asset can be sold on the market.

The discrepancy between book and market value is usually small for current assets, as these have a relatively short life (duration).

If the company is listed on a stock market, the market value of equity is given by the total value of its shares on the market (also known as *market capitalization*).

4 The Statement of Cash Flows

The Statement of Cash Flows: Presentation

Definition

The statement of cash flows lists the different *sources of cash* and *uses of cash* the company had over a given period of time (usually a fiscal year).

The sources of cash minus the uses of cash give the change in cash over the period (a net increase or decrease). Adding the change in cash to beginning of year (BoY) cash position gives the end of year (EoY) cash position:

$$\text{sources of cash} - \text{uses of cash} = \text{change in cash}$$

$$\text{BoY cash position} + \text{change in cash} = \text{EoY cash position}$$

Note that the new sources or uses of cash over the period are *movements*, not *balances*. Thus the change in cash is a *movement*, and of course BoY and EoY cash positions are *balances*.

The Statement of Cash Flows: Structure

The statement of cash flows can be structured in different presentations, according to the way sources and uses of cash are grouped together.

The most common structure groups the cash flows in 3 parts: cash from *operating activities*, from *investing activities* and from *financing activities*.

Another often used presentation is split in 3 parts as well: *cash flow from assets*, *cash flow to creditors* and *cash flow to stockholders*.

The Statement of Cash Flows Structure: Model 1

Statement of Cash Flows	N	N-1
Operating activities		
Net income		
+ Depreciation		
- Change in Net Working Capital (NWC)		
Investment activity		
Cash flow from divestment		
- Capital expenditures		
Financing activities		
Net new equity raised		
- Dividends paid		
Net new borrowing		
Change in cash		

The Statement of Cash Flows Structure: Model 2

Statement of Cash Flows	N	N-1
Cash flow from assets		
After tax operating cash flow		
- Net capital spending		
- Change in Net Working Capital (NWC)		
Cash flow to creditors		
Interest paid		
- Net new borrowing		
Cash flow to stockholders		
Dividends paid		
- Net new equity raised		

Cash flow from assets = Cash flow to creditors + Cash flow to stockholders

The Statement of Cash Flows: Objectives

- Show the change in cash over the period, and the end of period cash position
- Explain the origin of the changes
- Check that the operations generate a cash flow
- Check the adequacy of the financing activity to the investment and operations

Appendix

Bibliography

- Berk, De Marzo, **Corporate Finance, Global Edition**, 3rd ed., Pearson, 2013, ISBN-13: 978-0273792024, *see Chapter 2*
- Ross, Westerfield, Jordan, **Fundamentals of Corporate Finance**, 10th ed., 2012, ISBN-13: 978-0077479459, *see Chapters 2 to 4*
- Vernimmen, Quiry, LeFur *et al.*, **Corporate Finance: Theory and Practice**, 4th ed., John Wiley & Sons, 2014, ISBN-13: 978-1118849330, *see Section 1*

Note: The books listed above are generally the latest editions. You can however use any older edition without any problem. Similarly, most of these books have so-called “International”, “Standard”, “Extended” editions. Again, this does not matter for the purpose of the topic under study.