FINANCIAL ACCOUNTING AND FINANCIAL STATEMENT ANALYSIS

DATA ANALYSIS

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* final level

1. Income vs. Cash Flow

The relationship between income and cash flow has already been covered in "Principles and Standards". Let us quickly recall that cash flow represents the flow of cash over a financial year, while income represents the profit available to the firm from its operations. The reconciliation occurs because of the use of the accrual concept for determining income.

Cash flow is affected by the difference between the beginning of the year accounts receivable and end-of-the-year accounts receivable and the sales during that year. Similarly, non-cash expenses like depreciation, amortisation and other write-offs affect cash flow. Cash flow is also affected by changes in payables and accrued liabilities. Thus cash flow is reduced whenever there is an increase in revenue and an increase in accounts receivable. Whenever there is an increase in expenses but also an increase in payables, then there is an increase in cash flow or a decrease in cash outflow. We therefore find that the cash flow statement is the link between the cash balances of a firm and the statement of comprehensive income prepared under the accrual concept.

1.1 Relationship between income and cash flow from operations

Sales have an effect on cash flow only when the sales proceeds are collected. So the principal relation between income and cash flow is through the collection mechanism. The most important component in the cash flow statement affected by profit or loss is the cash flow from operations. The consolidated cash flow statement of a company is given below. Let us reconcile this company's relation between accounting profit and cash flow from operations.

Consolidated Cash Flow Statements (for the years ended December 31, N and N-1)

	Notes	N	N-1
		CU millions	
Profit for the year		**6'659**	**6'010**
Reversal of non-cash items			
Minority interests		27	26
Taxes		1'833	1'882
Depreciation and amortization on			
Tangible fixed assets		1'261	1'161
Intangible assets		248	227
Income from associated companies		-383	-239
Divestment gains		-288	-89
Net financial income		-793	-759
Interest and other financial receipts		1'816	2'114
Interest and other financial payments		-815	-1'366
Taxes paid		-1'690	-1'843
Cash Flow before working capital changes		**7'875**	**7'124**
Restructuring payments		-488	-698
Change in net current assets and other operating cash flow items	23	-494	-573
Cash Flow from operating activities		**6'893**	**5'853**
Investment in tangible fixed assets		-1'371	-1'577
Proceeds from disposals of tangible fixed assets		286	303
Purchase of intangible and financial assets		-733	-384
Proceeds from disposals of intangible and financial assets		385	91
Acquisition/divestment of subsidiaries	24	239	235
Acquisition of minorities		-68	-1
Investment in marketable securities		-1'755	-2'503
Cash Flow used for investing activities		**-3'017**	**-3'836**
Premium from option rights			2
Change in treasury shares		-1'919	722
Change in long-term financial debts		-336	-691
Change in short-term		-130	-1'583
Dividends paid		-1'935	-1'663
Cash Flow used for financing activities		**-4'320**	**-3'213**
Net effect of currency translation on cash and cash equivalents		74	-31
Net change in cash and cash equivalents		**-370**	**-1'227**
Cash and cash equivalents at the beginning of the year		**6'651**	**7'878**
Cash and cash equivalents at end of the year		**6'281**	**6'651**

The accompanying notes form an integral part of the consolidated financial statements.
N-1 has been restated to be comparable with N.

Notes to accounts:

Cash flows arising from changes in working capital excluding restructuring items

	N	N-1
	CU millions	
Changes in inventories	469	-384
Changes in trade accounts receivable and other net current assets	-1'257	52
Changes in trade accounts payable	294	-241
Total	**-494**	**-573**

The cash flow from operations has been arrived at by adjusting the figures from the statement of comprehensive income by:

- adding minority interests;
- adding taxes as per the income statement;
- deducting the actual taxes paid during the year;
- adding the depreciation and amortisation on both tangible and intangible assets;
- deducting the income from associate companies;
- adding the interest and financial receipts including disinvestment gains;
- deducting restructuring payments;
- adjusting for the changes in net current assets and other operating cash flow items;
- removing the net effect of currency translation.

One can see clearly that adjustments fall into three groups, namely:

1. non cash expenses;
2. non operating cash flows;
3. changes in operating assets and liabilities.

Changes in operating assets and liabilities are sometimes known as changes in net working capital.

1.2 Income and cash flows at various stages of the life cycle

It is obvious that a firm undergoes various stages in its life cycle, during which the needs of the firm differ. During the initial stages the firm needs cash inflows or cash from external sources to develop its activities. It also needs cash flow during the growth stage. This cash flow could come either from financing activities or from net income from other divisions of the business. During the maturity stage the firm would have started earning income resulting in positive contributions to the statement of comprehensive income as well as to the cash flow from operations. During the decline stage there will be a decreasing contribution to the statement of comprehensive income, but cash flow from operations may be maintained. More detailed explanations about cash flows at different stages of the life cycle of a firm are given in the following paragraphs.

Figure 1-1 shows cash flow as a function of business development stages. There is no scale on either axis, as the length of the various stages largely depends on the nature of the firm's activity as well as on factors which are more or less under the control of its management, such as the time-span of research, production and marketing decisions, etc. Most new businesses do not generate positive and sufficient cash flows immediately. One must understand the impact of growth on financial needs: the operating cash flow of a business might be quite good as a result of its high profitability, but insufficient to support its growth.

From an investment point of view it is important to see the return potential, and the risk associated with investments, at the various business development stages. Risks are often very high during the initial stages, and the risk premium is not always in proportion to the level of risk. This is true regardless of the form of the investments such as loans, bonds or shares. We must, furthermore, be aware of agency problems, especially conflicts of interests between managing shareholders, who are often the founders of the business, and shareholders whose interests are purely financial.

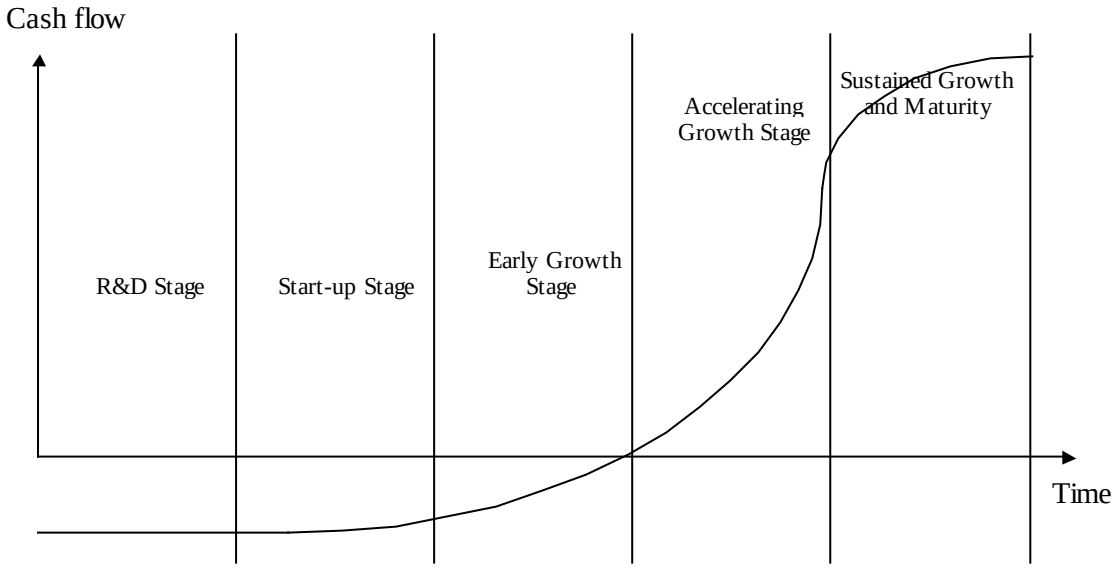

Figure 1-1: The cash flow "S" curve of business activity

Stage 1: Research and development stage

At this stage one person, or a small group of people begins a business based on an idea. The finance comes from the founders themselves, and sometimes from their families and friends. The rate of failure is very high, which makes rational investment decisions almost impossible at this stage. The most important criterion for such 'seed' financing is the quality of the founders of the business - their past performances elsewhere, competence, and their ability fully to motivate their employees, etc.

Stage 2: start-up stage

At this stage, the product is ready to be sold, but most of what has to happen next is still on the drawing board. The firm needs money to finance production. There may be doubts on how the product will work in real life and on how potential customers will accept it. With a good business plan, the firm might get money from a venture capital firm: this possibility seems easier in the United States than in many other countries. This first-stage financing through venture capital is a difficult process, with the reduction or curtailment of risk as its main task. The objective is often reached by having recourse to investment funds that specialise in specific industrial sectors. Such funds take an active role in the management of the firms in which they invest. In addition, some investment funds create a portfolio consisting of shares in a wide spread of specialised venture capital investment funds. If these "funds of funds" are well managed, the risk-return figures can become acceptable. For the founders, the problem is to maintain a large stake in the business while placing a sufficiently high value on its potential development. They become frustrated if they feel they have had to give too much away to their new shareholders. The most important thing at this stage is to find solutions that maintain the rights of the founders - stock options for example - and minimise possible conflicts of interests.

Stage 3: Early growth stage

By this stage production problems are solved and the product is well accepted. The firm may enjoy positive operating cash flows, but the finance required to cover investments in fixed assets, and the working capital required for inventories and customer receivables, may be substantial. The risks are still too high for standard bank loans and, in addition, there is a need for equity funds. The solution is again to obtain money from venture capitalists. If the growth of the business is fast, the founders are forced to accept a high dilution of their stake in the firm. From a purely financial point of view, the total return on their shares might be very high anyway for many reasons: the size of the firm is increasing, its financial situation is improving, and these good results are demonstrable to the banks and the public.

Stage 4: Accelerating growth

The firm is successful and its annual financial results are excellent. Its operating cash flow is, however, insufficient to cover the financing needs arising from its growth and new developments. The past results may allow the firm to go for an IPO (Initial Public Offering). Going public will give a broader base for future financing. The role of venture capitalists is, furthermore, soon over: they are ready to cash in their capital gains in order to invest all over again in firms still at stages 2 or 3. The alternative to going public is to sell a large stake in the firm - or all of it - to a larger company.

Stage 5: Sustained growth and maturity

During this stage the business has a reasonable rate of growth and internal financing can cover most of its financing needs. Being known and profitable, the firm can obtain external funds from the financial markets through classic financial transactions such as bank loans, the issue of bonds, and equity capital increases, etc. At some point the level of operating cash required might, particularly if the firm is very profitable, be larger than the level of finance required for fixed assets renewal and a more modest growth. At this stage managers often justify diversification and growth through mergers and acquisitions. A leverage buy-out may also be an appealing prospect for them personally. At this point one can only hope that the company will not reach what we could call stage 6, namely the decline and disappearance stage.

2. Quality of earnings, earnings management

The integrity of data is crucial for all analysis, and for financial analysis, the data integrity of the financial statements is vital. The entire financial analysis rests on this. Every analyst is interested in the firm's earning potential based on its past earnings as reported in its financial statements. The usefulness of past earnings data depends entirely on the quality of the reported earnings and the way the firm has managed them.

Management of earnings refers to the deliberate subjective adjustments that the firm has made to the reported earnings. As we know firms have some flexibility in treating certain items and use this flexibility in accounting principles to manipulate the reported earnings with certain motives in mind.

The main indicators of quality of earnings are:

- conservative revenue recognition methods;
- appropriate inventory valuation, say use of lower of cost or net realisable value, with proper net realisable values;
- use of proper depreciation methods, use of accelerated methods for short-lived items, proper write-offs when assets become useless or obsolete;
- adequate disclosure of contingent liabilities and making suitable provisions for their possible impact on the balance sheet.

Quality of earnings is, therefore, the analyst's subjective judgment after examining the firm's disclosure practice for its financial statements. Next we come to the management of earnings. As mentioned earlier, the firm may use flexible reporting to manipulate the timing of the occurrence of an event to suit its needs. Another ploy is to classify items into usual or unusual items, to suit its needs of the moment. Apart from these, firms also resort to the following manipulations. They are:

- classification of good/bad news;
- income smoothing;
- big bath behaviour;
- accounting changes.

Later sections will deal with the last of these accounting changes. Classification of good and bad news refers to the behaviour of firms in reporting good news as a part of operations, and bad news as an exceptional event. This, though, cannot be done too frequently. In most cases careful analysis of the annual report reveals the true story.

Income smoothing is deliberately charging high discretionary expenses during good years and the restrained charging of such expenses during any bad year. The main purpose of this exercise is to give the market the impression that the firm has low volatility of earnings.

Big bath behaviour refers to the tendency of firms to absorb all losses and expenses in one bad year. This is done with a view to cleaning up the balance sheet completely. Once the balance sheet has been completely sanitised, the market will discount all the bad points at one go, after which it will perceive the company as a turnaround case and react positively.

These are the main considerations regarding the reliability and usefulness of earnings data as reported by firm' financial statements.

2.1 Data issues when analysing financial statements

Data issues when analysing financial statements deal with the reliability of the financial statements rather than the integrity of the data itself. Major issues here are the segregation of non-recurring items and adjustments for changes in accounting principles. Such segregation is needed to determine the firm's sustainable earnings. Once this is done, estimating the firm's value is easier.

2.1.1 Non-recurring income items

Non-recurring income items deal with non-sustainable incomes. These are also incomes that are normally not from the operations of the business, and which should be taken as rare or once-off events. These are usually, by their nature, infrequent transactions. Typical examples are gains or losses from sales of assets, or from investments, or from restructuring. These are normally reported as a sub-section of income from operating activities and on a pre-tax basis.

2.1.2 Income from continuing operations

Having seen the treatment of unusual items we turn to income from continuing operations. The analyst must examine the notes to accounts to ascertain the income from continuing operations. One starting point might be the segment information. This is dealt with in section 5. Once the aggregate of segmental data is obtained, more than 75% of the continuing operations would have been covered.

After this, the effects of non-recurring and unusual items that have been included in the operating activities will have to be separated. Then we will get a fairly good estimate of the income from continuing operations.

2.1.3 Income, gains and losses from discontinued operations

Income, gains and losses from discontinued operations are a special case of non-recurring items; here a part of the business is discontinued. IFRS 5 classifies an operation as discontinued at the date it meets the criteria to be classified as held for sale or when the enterprise has disposed of the operation.

A non-current asset must be classified as held for sale if its carrying amount will be recovered principally through a sale transaction rather than through continuing use. For this to be the case, the asset must be available for immediate sale and its sale must be highly probable. Such assets are presented separately in the balance sheet. They are carried at the lower of carrying amount and fair value less costs to sell and no longer depreciated.

IFRS 5 also specifies that the results of discontinued operations are to be shown separately in the statement of comprehensive income. Analysts should nevertheless be very careful in dealing with this situation. They must exercise appropriate caution to ensure that the effects of the discontinued operations are clearly identifiable.

2.2 Significance and implications of alternative accounting policies on the financial statements

The implications of alternative accounting policies on financial statements are dealt with in IAS 8, which relates to accounting policies, changes in accounting estimates and errors. As mentioned in the earlier sections, the analyst has to make adjustments for changes in accounting policies. These changes may relate to one or more of the following items:

- methods of inventory valuation;
- accounting for long-term contracts;
- employee benefits plans;
- accounting for affiliates;
- changes that take place as a result of changes in accounting standards;
- etc.

Of these the first four are voluntary actions by the firm, while the last one is a legal requirement imposed from outside. Analysis of the effects of these changes is, however, the same.

2.2.1 Definitions

IAS 8 makes a distinction between:

- changes in accounting policies,
- and changes in accounting estimates.

This distinction must be clearly understood because the treatment of these two categories is different.

Changes in accounting policies are defined as "*changes in the principles, bases, conventions, rules and practices applied by the enterprise in preparing and presenting its financial statements*".

Examples of changes in accounting policies are:

- the abandonment of the LIFO convention for the FIFO method in the valuation of inventories,
- the decision to capitalise borrowing costs in the cost of eligible assets whereas these costs were previously recognised as expenses,
- the replacement of the proportionate consolidation by the equity method for the treatment of interests in joint ventures,
- etc.

Changes in accounting estimates are adjustments of the carrying amount of an asset or a liability resulting from a reassessment of its expected future benefits.

An enterprise makes a change in an accounting estimate when it modifies the amount of an existing provision or the depreciation period of an asset, based on new information regarding the risk concerned or the useful life of the asset.

A change in accounting policy should be made only:

- if required by a standard;
- or if it will result in a more relevant presentation of events or transactions.

By contrast a change in an accounting estimate must be made as soon as previous estimate are no longer valid.

2.2.2 The treatment of changes in accounting estimates

Any change in an accounting estimate is recognised **prospectively**, i.e. in the period of the change (and future periods if the change affects both). It has no impact on previous financial statements.

Example 1:
An asset was acquired for CU 100'000 at the beginning of year N-3. At the date of acquisition, the estimated useful life was 10 years and the residual value was 0. In year N, the remaining useful life is re-estimated to 3 years because of rapid obsolescence.
The depreciation expenses will be calculated as follows:

N-3: 100'000 / 10 =	10'000
N-2:	10'000
N-1:	10'000
N: (100'000 – 30'000) / (3+1) =	17'500
N+1:	17'500
N+2:	17'500
N+3:	17'500
	100'000

2.2.3 The treatment of changes in accounting policies

Any change in accounting policy must be applied **retrospectively**. This means that the comparative information for the prior periods is restated using the new policy, as if the new policy had always been in use.

The cumulative effect of this change is given as an adjustment to the retained earnings at the beginning of the year. All other information of prior periods is also restated.

Let us take an example to understand this treatment.

Example 2:
In the year N, ABC company decided to shift to the percentage-of-completion method of accounting for its long-term contracts. Till then it had used the completed-contract method of revenue recognition. Below are the details of income and retained earnings.

	Year N-1	Year N
Profit from operating activities	150'000	100'000
Income taxes at 30%	-45'000	-30'000
Profit after taxes	105'000	70'000
Dividends	-40'000	-30'000
Retained earnings beginning	135'000	200'000
Retained earnings end	200'000	240'000

The effects of changes in accounting policy are:

- prior to year N-1: increase of 30’000
- during N-1: decrease of 10’000

Adjustments to periods prior to N-1:

Increase in retained earnings, net of taxes = 30’000 · 0.70 = 21'000

Adjustment to the statement of comprehensive income of year N-1:

Decrease in profit net of taxes = 10’000 · 0.70 = 7’000

Statement of comprehensive income for year N-1 restated:

Profit from operating activities	140’000
Income taxes at 30%	- 42’000
Profit after taxes	98’000
Dividends	40’000
Retained earnings beginning:	156’000 (retained earnings at the beginning are increased by 21’000 to take care of the prior period adjustments)
Retained earnings end:	214’000

Adjusted statement of comprehensive income for year N:

There is no change as the statement has been prepared with the new accounting policy.

Adjusted statement of retained earnings for N:

Retained earnings in the beginning	214’000
Retained earnings at the end	254’000

Necessary notes to accounts will contain an explanation about the impact of the change in accounting policy.

We find that the analyst thus has to look carefully at the notes to accounts. He has to evaluate the impact of changes in accounting policies on the financial statements. This is essential to make the financial statements of different periods comparable. Similar adjustments need to be made to the financial statements when different companies are compared. Once the impact is known the corresponding financial statements, including those of the previous years, need to be reworked on a pro forma basis. Only then will any analysis of financial statements be meaningful.

Unfortunately some companies continue to make such changes without providing all the information necessary to adjust accounting figures accordingly. The analyst should thus be very watchful and pay particular attention to the possible impact of such changes on ratios, and on any other indicators he uses in his analysis.

Most accounting changes do not normally have an effect on cash flows. It is this feature of cash flows that has made cash flow statements such an important tool of performance analysis. So much so that it has become a mandatory part of the financial statements.

3. Earnings per share

For an equity investor, return on investment is of major importance. He may not be very concerned about the type of industry or products involved, as long as his investments earn returns commensurate with his risk appetite. Because of this lack of concern investors always look at measurements that are common to many organisations, among which EPS, or earnings per share, has gained prominence. It is a ratio that captures the earnings per share outstanding and is independent of the size of the firm, the type of industry, the nature of the products, the market characteristics, and so on. Because of its universal applicability it has become the most popular measure used by investors.

IAS 33 deals with the calculation of EPS. Under this standard enterprises whose shares are publicly traded have to disclose two EPS measures:

- basic earnings per share,
- diluted earnings per share.

3.1 Basic earnings per share

Basic earnings per share is calculated by dividing profit or loss attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding during the period.

$$\text{Basic EPS} = \frac{\text{profit or loss attributable to ordinary shareholders}}{\text{weighted average number of ordinary shares outstanding during the period}}$$

The numerator corresponds to net income less preferred dividends.

For the calculation of the weighted average number of ordinary shares, two adjustments must be made:

- treasury stocks are excluded,
- ordinary shares that are issued without a corresponding change in resources (stock dividends, share splits…) are treated as if they had been issued at the beginning of the earliest period reported (i.e. as if these shares had always existed).

Example 3:
A company had 10'000 ordinary shares outstanding at the beginning of year N (of which 500 are treasury stocks). Its profit or loss for year N is CU 100'000. There are no preferred shares.

The following changes occurred during the period:

- April 1, N: issue of 5'000 ordinary shares
- October 1, N: repurchase of 500 ordinary shares by the enterprise
- November 1, N: distribution of 7'000 ordinary shares by incorporation of retained earnings into share capital (stock dividend).

The average number of ordinary shares outstanding during the period is:

(10'000 – 500) · 12/12 =	9'500
+5'000 · 9/12 =	3'750
- 500 · 3/12 =	- 125
+7'000 · 12/12 =	7'000

$$\text{Basic EPS} = \frac{100'000}{\overset{20'125}{20'125}} = \text{CU } 4.97$$

In case of discontinued operations, the entity must also disclose another basic EPS based on profit or loss from continuing operations.

3.2 Diluted earnings per share

Diluted earnings per share is obtained by taking into account the effects of all dilutive potential ordinary shares.

A potential ordinary share is a financial instrument that may entitle its holder to ordinary shares. Examples of potential ordinary shares are convertible bonds, warrants, and stock options. A potential ordinary share is dilutive if its conversion to ordinary shares would decrease net profit per share.

For the calculation of diluted earnings per share, the profit or loss attributable to ordinary shareholders is increased by the after-tax amount of dividends and interest recognised in the period in respect of dilutive potential ordinary shares.

Similarly, the weighted average number of ordinary shares outstanding is increased by the number of additional ordinary shares, which would have been outstanding assuming the conversion of all dilutive potential ordinary shares. Additional ordinary shares are counted as if they had been issued at fair value.

Diluted earnings per share is thus calculated as follows:

$$\text{Diluted EPS} = \frac{\begin{array}{c}\text{profit or loss atributable to ordinary shareholders}\\ \text{+after tax interest on dilutive potential ordinary shares}\end{array}}{\begin{array}{c}\text{weighted average number of ordinary shares outstanding} + \text{number of ordinary}\\ \text{shares resulting from the conversion of all dilutive potential ordinary shares}\end{array}}$$

Example 3 (continued):
Other securities outstanding are:

- 5'000 bonds convertible into 2 ordinary shares
- 3'000 warrants. Each warrant entitles its holder to acquire one ordinary share for CU 150.

Average market price of the ordinary share in N: CU 200.
Interest on convertible bonds: CU 20'000 per year.
The income tax rate is 30 %.

Adjusted profit or loss attributable to ordinary shareholders:
100'000 + (20'000 · 70 %) = CU 114'000*

Adjusted number of outstanding ordinary shares:

weighted average number of ordinary shares	20'125
+number of ordinary shares resulting from the conversion of bonds: 5'000 · 2 =	10'000
+number of ordinary shares resulting from the exercise of warrants:	3'000
-number of shares issued had these shares been issued at fair value:	
(3'000 · 150) / 200 =	- 2'250**
= adjusted number of ordinary shares	30'875

Diluted earnings per share is thus:

$$\text{Diluted EPS} = \frac{114'000}{30'875} = \text{CU } 3.69$$

Explanations:

* After-tax interest on convertible bonds is added to the current profit or loss to obtain the profit or loss after conversion of these bonds.

** Only dilutive potential ordinary shares must be taken into account. If shares were issued at fair value, there would be no dilution. To obtain the number of dilutive potential shares it is thus necessary to deduct the number of shares that could be issued with the collected amount if the exercise price was equal to fair value.

3.3 Using EPS to value firms

EPS is used for valuation of firms by combining it with the price earnings ratio. This is useful for firms that are not traded or only thinly traded. In the case of highly traded firms, market capitalisation may be a better valuation model.

The value of the firm is determined by multiplying EPS by the average price earnings ratio applicable to that industry. This method can be used to value firms for mergers, acquisitions, restructuring, stock price forecasting and investment strategies. It can be used to find out whether a stock is under priced or overpriced. But caution needs to be exercised when applying EPS in this way.

In the case of constant earnings and full payout, we can look at EPS as the product of price and the cost of capital. This model is, however, unrealistic. A better model to apply is the constant dividend growth model (given by Gordon–Shapiro). As per this model,

$$\text{EPS} = \frac{P_0 \cdot (k_e - g)}{\pi \cdot (1 + g)}$$

where:

P_0	initial market price
g	growth rate
k_e	cost of equity
π	payout ratio

3.4 Criticism of EPS

A criticism of this method stems from its inability to handle complex capital structures.

The fully diluted method does not take into account the possibility of some conversions not taking place. The adjustment for options is also unrealistic. Option holders may not exercise the option if they expect the market price to go down on exercise of the option by a large number of people.

The EPS method contradicts the Modigliani-Miller hypothesis about indifference between dividends and retained earnings as well as indifference to debt-equity ratios.

It does not take into account multiple classes of common stock. There may be graded rights and claims for preferred stock holders. This method may not be applicable in those cases.

In spite of all its drawbacks, though, it is still used very widely by analysts all over to world to measure a firm's performance.

4. Segment reporting*

We know that the main purpose of financial reporting is to provide a 'true and fair view' of the operations of a business. It is in this regard that segment reporting assumes significance.

Prior to 2009, the IASB standard on segment reporting was IAS 14. It required the disaggregation of the enterprise's activities into segments based on products and services, and on geographical areas. This approach was criticized for not providing information reflecting the firm's internal organisation that could enhance the user's ability to predict management's actions.

IAS 14 was thus replaced by IFRS 8 that adopts a management approach. This new standard is applicable for periods beginning on or after 1 January 2009.

4.1 Segment identification*

IFRS 8 defines an operating segment as a component of an enterprise:

- that engages in activities from which it may earn revenues and incur expenses;
- whose operating results are regularly reviewed by the company's chief operating decision maker (CEO, chief operating officer...), i.e the person who makes decisions about resource allocation and performance assessment;
- for which financial information is available.

A company must report information about each operating segment that exceeds any of the following thresholds:

- revenue (including inter-segment sales) ≥ 10% of combined revenue of all reporting segments;
- profit or loss ≥ 10% of combined profit or loss of all reporting segments;
- assets ≥ 10% of combined assets of all reporting segments.

Two or more operating segments may be aggregated into a single operating segment if they have similar characteristics with regard to:

- the nature of the products and services,
- the nature of the production processes,
- the type or class of customers,
- the distribution methods,
- the regulatory environment.

However IFRS 5 specifies that the total external revenue reported by operating segments cannot be less than 75% of the firm's revenue. Otherwise additional operating segments should be identified until the 75% threshold is reached.

4.2 Disclosure requirements*

For each reportable segment, a company must report:

- a measure of profit and loss,
- total assets,
- a measure of liabilities (if regularly provided to the chief operating decision maker),
- revenues from external customers,
- revenues from transactions with other operating segments,
- interest revenue,
- interest expense,
- depreciation and amortization,
- income tax expense,
- material non-cash items.

A company must also disclose the following general information:

- factors used to identify reportable segments (for example whether management has chosen to organise the firm around differences in products and services, geographical areas, or a combination of factors);
- types of products and services from which each reportable segment derives its revenues.

Below are excerpts from LVMH and Sony annual reports regarding segment data (they refer to year 2007, i.e. a period before the implementation of IFRS 8).

LVMH GROUP

Notes to the condensed consolidated financial statements

22. SEGMENT INFORMATION

22.1. Information by business group

Year ended December 31, 2007

(EUR millions)	Wines and Spirits	Fashion and Leather Goods	Perfumes and Cosmetics	Watches and Jewelry	Selective Retailing [6]	Other and holding companies	Eliminations [1] [4] [5]	2007
Sales outside the Group	3,220	5,591	2,563	818	4,167	122	-	16,481
Sales between business groups	6	37	168	15	12	6	(244)	-
Total revenue	**3,226**	**5,628**	**2,731**	**833**	**4,179**	**128**	**(244)**	**16,481**
Profit from recurring operations	1,058	1,829	256	141	439	(154)	(14)	3,555
Other operating income and expenses	(4)	(18)	(17)	(3)	(24)	(60)	-	(126)
Operating investments [2]	199	241	116	28	243	173	-	1,000
Depreciation and amortization	71	210	103	21	125	24	-	554
Impairment	-	-	-	1	-	10	-	11
Brands, trade names, licenses and goodwill [3]	3,187	4,887	927	979	2,525	45	-	12,550
Inventories	3,036	622	263	268	626	45	(48)	4,812
Other operating assets	2,429	1,739	709	266	1,745	1,622	4,869	13,379
Total assets	**8,652**	**7,248**	**1,899**	**1,513**	**4,896**	**1,712**	**4,821**	**30,741**
Equity	-	-	-	-	-	-	12,528	12,528
Operating liabilities	1,064	977	833	155	1,053	458	13,673	18,213
Total liabilities and equity	**1,064**	**977**	**833**	**155**	**1,053**	**458**	**26,201**	**30,741**

Year ended December 31, 2006

(EUR millions)	Wines and Spirits	Fashion and Leather Goods	Perfumes and Cosmetics	Watches and Jewelry	Selective Retailing [6]	Other and holding companies	Eliminations [1] [4] [5]	2006
Sales outside the Group	2,989	5,190	2,379	724	3,879	145	-	15,306
Sales between business groups	5	32	140	13	12	6	(208)	-
Total revenue	**2,994**	**5,222**	**2,519**	**737**	**3,891**	**151**	**(208)**	**15,306**
Profit from recurring operations	962	1,633	222	80	400	(137)	12	3,172
Other operating income and expenses	(12)	(44)	(30)	(9)	(27)	2	-	(120)
Operating investments [2]	107	308	99	25	186	50	-	775
Depreciation and amortization	61	208	98	21	117	16	-	521
Impairment	-	5	-	-	7	10	-	22
Brands, trade names, licenses and goodwill [3]	2,936	4,978	920	1,009	2,643	56	-	12,542
Inventories	2,730	603	244	235	558	50	(37)	4,383
Other operating assets	2,220	1,752	648	229	1,575	1,548	3,888	11,860
Total assets	**7,886**	**7,333**	**1,812**	**1,473**	**4,776**	**1,654**	**3,851**	**28,785**
Equity	-	-	-	-	-	-	11,594	11,594
Operating liabilities	1,025	935	736	156	1,010	428	12,901	17,191
Total liabilities and equity	**1,025**	**935**	**736**	**156**	**1,010**	**428**	**24,495**	**28,785**

Year ended December 31, 2005

(EUR millions)	Wines and Spirits	Fashion and Leather Goods	Perfumes and Cosmetics	Watches and Jewelry	Selective Retailing [6]	Other and holding companies	Eliminations [1] [4] [5]	2005
Sales outside the Group	2,639	4,781	2,161	575	3,637	117	-	13,910
Sales between business groups	5	31	124	10	11	6	(187)	-
Total revenue	**2,644**	**4,812**	**2,285**	**585**	**3,648**	**123**	**(187)**	**13,910**
Profit from recurring operations	869	1,467	173	21	347	(129)	(5)	2,743
Other operating income and expenses	(3)	(25)	(10)	-	(183)	-	-	(221)
Operating investments [2]	100	302	115	26	135	36	-	714
Depreciation and amortization	59	187	91	19	112	27	-	495
Impairment	-	-	-	-	72	11	-	83
Brands, trade names, licenses and goodwill [3]	2,830	5,033	938	1,041	2,861	86	-	12,789
Inventories	2,479	661	227	219	534	64	(50)	4,134
Other operating assets	1,899	1,672	669	220	1,542	1,647	3,481	11,130
Total assets	**7,208**	**7,366**	**1,834**	**1,480**	**4,937**	**1,797**	**3,431**	**28,053**
Equity	-	-	-	-	-	-	10,484	10,484
Operating liabilities	932	960	666	145	1,043	592	13,231	17,569
Total liabilities and equity	**932**	**960**	**666**	**145**	**1,043**	**592**	**23,715**	**28,053**

(1) Eliminations correspond to sales between business groups; these generally consist of sales from business groups other than Selective Retailing to Selective Retailing. Selling prices between the different business groups correspond to the prices applied in the normal course of business for transactions involving wholesalers or distributors outside the Group.
(2) Operating investments correspond to amounts capitalized during the fiscal year rather than payments made during the fiscal year with respect to these investments.
(3) Brands, trade names, licenses, and goodwill correspond to the net carrying amounts shown under Notes 3 and 4.
(4) Assets not allocated include investments in associates, available for sale financial assets, other financial assets, and income tax receivables.
(5) Liabilities not allocated include borrowings and both current and deferred tax liabilities.
(6) Of which revenue for the Samaritaine department store: 15, 14 and 51 million euros respectively, as of December 31, 2007, 2006 and 2005.

Since De Beers-LV was reclassified in 2006 from Other activities and Holding companies to Watches and Jewelry, data for 2005 was restated to facilitate comparability with 2006 data.

22.2. Information by geographic region

Revenue by geographic region of delivery breaks down as follows:

(EUR millions)	2007	2006	2005
France	2,348	2,197	2,073
Europe (excluding France)	3,790	3,332	2,850
United States	4,124	4,009	3,686
Japan	1,856	1,985	2,013
Asia (excluding Japan)	3,044	2,651	2,301
Other	1,319	1,132	987
Revenue	**16,481**	**15,306**	**13,910**

Operating investments by geographic region break down as follows:

(EUR millions)	2007	2006	2005
France	399	295	317
Europe (excluding France)	231	119	126
United States	199	138	126
Japan	32	91	18
Asia (excluding Japan)	94	78	95
Other	45	54	32
Operating investments	**1,000**	**775**	**714**

Operating investments correspond to the amounts capitalized during the fiscal year rather than payments made during the fiscal year with respect to these investments.

Sony (Japan)

Segment Information

Sony Corporation and Consolidated Subsidiaries—Years ended March 31

SALES AND OPERATING REVENUE BY BUSINESS SEGMENT*

Years ended March 31	Yen in millions		
	2005	2006	2007
Electronics	¥4,827,663 67.1 %	¥4,782,173 63.7%	¥5,421,384 65.4%
Game	702,524 9.8	918,252 12.2	974,218 11.7
Pictures	733,677 10.2	745,859 9.9	966,260 11.7
Financial Services	537,715 7.5	720,566 9.6	624,282 7.5
All Other	389,746 5.4	343,747 4.6	309,551 3.7
Consolidated total	¥7,191,325	¥7,510,597	¥8,295,695

*Sales and operating revenue to customers

ELECTRONICS SALES AND OPERATING REVENUE TO CUSTOMERS BY PRODUCT CATEGORY

Years ended March 31	Yen in millions		
	2005	2006	2007
Audio	¥ 571,864 11.8%	¥536,187 11.2%	¥ 522,879 9.7%
Video	1,036,328 21.5	1,021,325 21.4	1,143,120 21.1
Televisions	921,195 19.1	927,769 19.4	1,226,971 22.6
Information and Communications	816,150 16.9	842,537 17.6	950,461 17.5
Semiconductors	184,235 3.8	172,249 3.6	205,757 3.8
Components	751,097 15.6	800,716 16.7	852,981 15.7
Other	546,794 11.3	481,390 10.1	519,215 9.6
Total	¥4,827,663	¥4,782,173	¥5,421,384

Note: The above table is a breakdown of Electronics sales and operating revenue to external customers by product category. The Electronics segment is managed as a single operating segment by Sony's management. Effective for the fiscal year ended March 31, 2007, Sony has partly changed its product category configuration. The main change is that the low-temperature polysilicon thin film transistor LCD product group has been moved from "Semiconductors" to "Components." Accordingly, sales and operating revenue for the fiscal years ended March 31, 2005 and 2006 have been restated to conform to the presentation for the fiscal year ended March 31, 2007.

SALES AND OPERATING REVENUE BY GEOGRAPHIC INFORMATION

Years ended March 31	Yen in millions		
	2005	2006	2007
Japan	¥2,132,462 29.7%	¥2,203,812 29.3%	¥2,127,841 25.6%
U.S.A.	1,977,310 27.5	1,957,644 26.1	2,232,453 26.9
Europe	1,612,576 22.4	1,715,775 22.8	2,037,658 24.6
Other	1,468,977 20.4	1,633,366 21.8	1,897,743 22.9
Total	¥7,191,325	¥7,510,597	8,295,695

Note: Classification of geographic segment information shows sales and operating revenue recognized by location of customers.

4.3 Using segment information for the analysis*

It is clear from the above paragraphs that segment information can be put to a number of uses. Various uses of segment information are:

- comparison of performance of various divisions;
- comparison of performance of various products;
- comparison of performance of various managers in charge of different geographical locations;
- decisions regarding the sub-division of major activities and the discontinuing of non viable activities;
- comparison of performance with companies in the same product line.

While comparing performances, it should be borne in mind that only comparable items should be compared. For example, the pharmaceutical division of one firm should be compared with the farm divisions of other companies. Similarly, comparing the performance of farm products in the USA, say, should be done with the products of other farm companies in the USA.

Segment data can be used for trend analysis. One of the main uses of segment data is to forecast future performances. We know that for a multi-product company, the overall performance is the aggregate of the performances of its units after adjusting for inter-segmental transactions. Thus, once we have the segment data, then this is projected into the future. The overall picture is projected from the projections of individual divisions or segments, and that picture is then adjusted for inter-segmental transfers. The resultant figures give us a good idea of the expected future performance.

5. Interim reporting*

Most organisations report their performance in the form of financial statements once a year. As these financial statements are prepared after the year is over, they relate to past data. This delay is not acceptable to the analyst and other users. Most countries therefore require that listed firms make interim performance reports, such that most organisations do so. Owing to the importance of this requirement the IASB has developed a standard (IAS 34).

An interim financial report is defined by IAS 34 as, "a financial report containing either a complete set of financial statements (as described in IAS 1) or a set of condensed financial statements (as described in IAS 34) for an interim period."

An interim period is defined as' *"a financial reporting period shorter than a full financial year"*. In most countries, the interim financial reporting period covers 3 or 6 months.

The objectives of interim financial reporting are:

- to provide timely and frequent information to users such as analysts and creditors;
- to provide a basis for projecting annual performance;
- to provide an ongoing basis for adjusting estimates of projected performance s.

It must also be noted that as the time period reduces, errors become magnified. Annual events like tax credits, taxes, projections of expenses, the effects of future issue of bonds or stocks, annual maintenance periods or shut downs cannot be projected accurately from such interim reports. Projections based on interim reports may not allow for seasonality of earnings or temporary market conditions. Providing the analyst makes allowances for such things, interim reports can be a useful tool in financial forecasting and analysis.

Two distinct views exist on this issue. In the US interim reports are viewed as an integral part of annual reporting, while in Europe, preparing annual financial statements and interim reports are considered as distinct activities. The integral approach requires an estimation of the full year's performance and hence is prone to forecasting errors. Because views on this are so divided IAS 34 takes a combined view.

IAS 34 does, however, stipulate that interim statements be prepared in accordance with the accounting policies adopted in the most recent full year financial statements. The same standard specifies the items that are to be disclosed in these statements. The main thrust has been on the reporting of events and circumstances that have occurred after the publication of the latest annual report. It discourages repeating the information already given in past annual reports.

There are three important aspects of interim financial reporting. They are:

- A firm can provide a condensed form of reporting, but there is no prohibition on providing detailed financial statements.
- Even in condensed form, the firm is free to add items it considers significant.
- The standards of disclosure and accounting principles apply to the complete set of interim financial statements as they apply to the condensed version.

An interim report contains at least the following components:

- a condensed or detailed balance sheet;
- a condensed or detailed statement of comrehensive income;
- a condensed or detailed statement of changes in equity;
- a condensed or detailed statement of cash flows;
- a selected set of footnote disclosures;
- disclosure of EPS (both basic and diluted);
- interim reports of the parent company as well the consolidated report for the group if such items have been included in the more recent annual financial statements.

It is here that we will find detailed information on any change in accounting policies, annual effects as mentioned in the previous paragraphs and some idea of seasonality and temporary events.

The main points to be disclosed in the footnotes are given below:

- any change in accounting policies or methods from the most recent annual financial statements;
- notes on seasonality of operations;
- unusual items which can affect forecasts based on these reports;
- dividends and other forms of distribution to all classes of owners;
- issues, repurchases and repayments of debt and equity;
- the nature and amount of changes in estimates reported in prior interim reports of the current financial year or changes in estimates from reports of the previous financial years;
- any change in the composition of the firm during the interim period such as merger, amalgamation, disposal of investments, long-term investments, restructuring or discontinued operations;
- changes in contingent liabilities or contingent assets;
- selected disclosures on operating segments.

IAS 34 also mandates reporting of comparative performance, i.e. the firm has to present information for the comparative period of the previous year as well as data to date. An interim income statement will therefore have four columns:

- current period data;
- year to date data;
- data for the corresponding interim period in the previous year;
- year to date data for the corresponding period in the previous year.

The balance sheet, however, will only have the data as at the end of the present interim period and as at the end of the corresponding period in the previous year. The same principle applies for cash flow statements and statements of changes in equity.

Some firms also report on a rolling 12-month period basis to eliminate the effect of seasonality.

Apart from what is explained above, there are some other requirements given in the standards. These are essentially in the nature of adjustments to be made by the analyst to the reported figures in the interim reports before analysis. A list of these items is given below.

- costs incurred unevenly during the year;
- obligations based on annual figures, for example the bonus based on annual performance to be paid to the managers;
- contingent lease agreements or franchise charges based on things like sales revenue;
- paid vacations and holidays;
- pension and retirement benefit costs;
- income taxes, especially in the cases of multiple jurisdictions and multiple categories of income;
- tax credits;
- rebates and bonuses to dealers based on sales volumes;
- depreciation and amortisation during the interim period. This is taken care of by following the same method as followed in the annual financial statement.
- inventory valuation, if the net realisable value is different from that taken for the financial statements;
- foreign currency translation adjustments during the interim period.

However, part of the problem is taken care of by the accounting standard itself. It mandates that whenever there is a significant change in the policy, then that should be reflected in the footnote itself.

So we may conclude that interim financial statements are extremely useful for financial analysts in forecasting the performance of firms, as well as in evaluating current performances on a reasonably up-to-date basis.

6. Non-GAAP Financial measures*

6.1 Definition and overview*

Going through a company's financial statements is often akin to going through a maze. Investors encounter a lot of noise in the form of financial or accounting elements that can make it difficult to see how a company is really performing and what its true profitability is. Restructuring charges, sales of assets or investment securities, sometimes illogical accounting treatments all tend to confuse the picture. Companies have thus tried to make adjustments to numbers in the financial statements. These measures are usually known as "Non-GAAP financial measures" or Supplemental Financial Measures. We include an example at the end of this section of the reconciliation and definition for non-GAAP measures as shown by Siemens.

In brief, non-GAAP financial measures are supplemental financial measures of performance or liquidity used by companies and investors to gain additional insight to a company's performance and financial condition. Some common examples of non-GAAP financial measures include EBITDA, Free Cash Flow and pro forma or adjusted earnings.

They have gained a lot of popularity both in the USA and increasingly in Europe too. There have also been a number of abuses, as it is very often in the company's best interests to present itself in the best light possible, given that management compensation can be based on non-GAAP measures and that better earnings can lead to higher multiples.

For this reason, in 2003, the SEC adopted a new regulation, known as **Regulation G**, to address companies' disclosure or release of financial information calculated and presented on the basis of methodologies other than in accordance with generally accepted accounting principles (GAAP). Other countries have since followed suit.

Regulation G requires public companies that disclose or release non-GAAP financial measures to include:

- a presentation of the most directly comparable GAAP financial measure
- a reconciliation of the disclosed non-GAAP financial measure to the most directly comparable GAAP financial measure
- a statement disclosing why management believes that presentation of the non-GAAP financial measure provides useful information to investors regarding its financial condition and results of operations

We show below an example. In this case, Colgate explains its use of non-GAAP financial measures for the three months ended March 31, 2011 and the additional information is quite useful to understanding the underlying performance of the company.

Colgate (USA)

To supplement Colgate's condensed income statements presented in accordance with accounting principles generally accepted in the United States of America (GAAP), the Company has disclosed non-GAAP measures of operating results that exclude certain items. Operating profit, operating profit margin, effective tax rate, net income and earnings per share are discussed both as reported (on a GAAP basis) and excluding the impact of the one-time charge related to the transition to hyperinflationary accounting in Venezuela as of January 1, 2011. Management believes these non-GAAP financial measures provide useful supplemental information to investors regarding the underlying business trends and performance of the Company's ongoing operations and are useful for period-over-period comparisons of such operations.

Colgate's non-GAAP reconciliation for the three months ended March 31, 2011 and 2010 (in millions except per share amounts) (Unaudited)

	2011	2010		
	As Reported	As Reported[1]	Venezuela Hyperinflationary[2]	As Adjusted Non-GAAP[1]
Other (income) expense, net	$ 12	$ 235	$ 271	$ (36)
Operating profit	915	678	(271)	949
Operating profit margin	22.9%	17.7%		24.8%
Income before income taxes	899	662	(271)	933
Effective tax rate	32.5%	41.5%		29.5%
Net income including noncontrolling interests	607	387	(271)	658
Net income attributable to Colgate-Palmolive Company	$ 576	$ 357	$ (271)	$ 628
Earnings per common share[3]				
Basic	$ 1.17	$ 0.71	$ (0.55)	$ 1.26
Diluted	$ 1.16	$ 0.69	$ (0.52)	$ 1.21

[1] Includes a $46 pretax ($59 aftertax, $0.11 diluted earnings per share) gain related to the remeasurement of the Venezuelan balance sheet and lower taxes on accrued but unpaid remittances resulting from the currency devaluation in January 2010.

[2] Represents the one-time charge of transitioning to hyperinflationary accounting in Venezuela as of January 1, 2010. This amount primarily represents the premium paid to acquire U.S. dollar-denominated cash and bonds. Prior to January 1, 2010, these assets had been remeasured at the parallel market rate and then translated for financial reporting purposes at the official rate of 2.15.

[3] The impact of Non-GAAP adjustments on the basic and diluted earnings per share may not necessarily equal the difference between "As Reported" and "As Adjusted Non-GAAP" as a result of rounding.

The SEC prohibits measures that contain an untrue statement of material fact or omit a material fact that would make the presentation of the measure not misleading.

However, the SEC does not include the following in its definition of non-GAAP measures:

- operating and other statistical measures (such as unit sales, numbers of employees, numbers of subscribers, or numbers of advertisers)
- ratios or statistical measures that are calculated using exclusively one or both of:
    - financial measures calculated in accordance with GAAP (for instance, an operating margin calculated by dividing revenues into operating income with both elements calculated in accordance with GAAP)
    - operating measures or other measures that are not non-GAAP financial measures (for instance, sales per square foot or same store sales, if sales are calculated in accordance with GAAP)

This regulation has provided a bit more information on the motives and calculation of non-GAAP measures, but it certainly did not stop companies from using them. In the following sections, we will look at some of the most widely used non-GAAP elements and their uses and limitations.

6.2 Adjusted net income / operating income*

Earnings reported under GAAP very often include non recurring or unusual items that can obfuscate the underlying profitability of a company. These can include restructuring charges, legal settlements, goodwill impairments and a host of other items. Analysts typically want to get a feel for what the company really earned during that period, so companies provide these numbers in the form of adjusted net income (also called operating income or pro forma income).

This is clearly one of the most controversial non-GAAP measures, as there is no common definition and companies include or exclude very different items. It is also not surprising that adjusted net income is generally higher than GAAP earnings. There is also evidence that companies tend to report adjusted income when their GAAP earnings are likely to miss expectations.

So, are pro forma earnings used more to inform and enable investors to properly calculate a company's performance or are they used by management to manage expectations, maybe even mislead?

We would argue a bit of both, which is why pro forma earnings should always be treated with caution. Whilst it is undeniable that pro forma earnings can provide valuable information on a company's performance and can be used as a basis to forecast future earnings, analysts need to be vigilant and try to understand what the company is trying to achieve. It is also up to the analyst to use common sense in deciding what to use and not to use to derive his own pro forma earnings number and to do so in a consistent manner across companies.

For instance, some companies (very often tech companies) will choose to exclude stock-based compensation from pro forma earnings. This, for example, is what Motorola Solutions has to say about it:

Motorola (USA)

Stock-based compensation expense: The Company has excluded stock-based compensation expense from its non-GAAP operating expenses and net income measurements. Although stock-based compensation is a key incentive offered to our employees and the Company believes such compensation contributed to the revenue earned during the periods presented and also believes it will contribute to the generation of future period revenues, the Company continues to evaluate its performance excluding stock-based compensation expense primarily because it represents a significant non-cash expense. Stock-based compensation expense will recur in future periods.

Motorola Solutions: reconciliation of operating earnings to GAAP earnings

(Per diluted common share)	Fourth Quarter 2010††
GAAP Earnings from Continuing Operations	$0.61
Highlighted Items:	
Separation-related transaction costs	0.17
Reorganization of business charges	0.09
IP settlement	(0.17)
Total Highlighted Items	**0.09**
Stock-based compensation expense	0.14
Intangible assets amortization expense	0.12
Stock-Based Compensation Expense and Intangible Assets Amortization Expense	**0.26**
Total Non-GAAP Adjustments	**0.34**
Non-GAAP Earnings from Continuing Operations	**$0.95**

†† Earnings per share amount does not add up due to rounding

Source: Motorola Solutions

True, stock based compensation is a non cash expense, but it does carry a real cost to shareholders, so should arguably be included.

Non recurring items are also a controversial item. When they are transitory in nature, they can be excluded. An example of this is found below with Covidien.

Covidien: reconciliation of adjusted earnings to GAAP earnings

	Quarter Ended March 25, 2011							
	Sales	Gross profit	Gross margin percent	Operating income	Operating margin percent	Income from continuing operations before income taxes	Income from continuing operations	Diluted earnings per share from continuing operations
GAAP	$ 2,801	$ 1,596	57.0%	$ 615	22.0%	$ 570	$ 459	$ 0.92
Adjustments:								
Inventory charges [1]	-	8		8		8	5	0.01
Restructuring credits, net	-	-		(2)		(2)	(2)	-
As adjusted	$ 2,801	$ 1,604	57.3	$ 621	22.2	$ 576	$ 462	0.93

	Quarter Ended March 26, 2010							
	Sales	Gross profit	Gross margin percent	Operating income	Operating margin percent	Income from continuing operations before income taxes	Income from continuing operations	Diluted earnings per share from continuing operations
GAAP	$ 2,551	$ 1,453	57.0%	$ 545	21.4%	$ 529	$ 422	$ 0.83
Adjustments:								
Restructuring charges [2]	-	-		26		26	18	0.04
Impact of tax sharing agreement [3]	-	-		-		(13)	(13)	(0.03)
Tax matters [4]	-	-		-		-	8	0.02
As adjusted	$ 2,551	$ 1,453	57.0	$ 571	22.4	$ 542	$ 435	0.86

Source: Covidien

Coviden has some non recurring items that are actually different from year to year. But what happens if these non recurring items occur year after year?

One such example is Bank of America, which was somewhat of a serial acquirer, acquiring MBNA (credit cards) in 2006, US Trust in 2007Countrywide in 2008 and finally Merrill Lynch in January 2009. Bank of America took merger and restructuring charges every single quarter between Q1 2007 and Q4 2008 and added those to pro forma earnings. Should one consider these as non recurring or are they an integral part of the way the company is run?

Bank of America: reconciliation of GAAP net income /(loss) to operating earnings

	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008
Net income	5'255	5'761	3'698	'268	1'210	3'410	1'177	-1'789
Merger and restructuring charges	11	75	84	140	170	212	247	306
Related income tax benefit	-41	-28	-31	-52	-63	-78	-64	-100
Operating income (loss)	**5'225**	**5'808**	**3'751**	**'356**	**1'317**	**3'544**	**1'360**	**-1'583**

Well, fast forward to 2010. Bank of America recorded goodwill impairment charges of USD 10.4bn in the third quarter and USD 2.0bn in the fourth quarter, relating to the Global Card Service unit (which included MBNA), respectively to its Consumer Real Estate Services unit (i.e. Countrywide). Whilst excluding these charges does provide a basis for forecasting future earnings, these goodwill impairments also reflect management failings in its M&A strategy.

Of course, that is not all. Though Bank of America did stop excluding restructuring expenses from non-GAAP operating earnings, it does – as do other companies – present significant items impacting earnings in its results presentation (see below). Street analysts will typically exclude some or all of these items in their operating earnings estimate and for use to forecast future earnings. Again, some of these items will be helpful but others look to be related to the underlying business and could be a result of bad management decisions in the past.

Bank of America's Q1 2011 results presentation – significant items

Significant items in 1Q11 earnings include ($ in billions, except EPS)	Pre-tax	Approximate EPS impact[1]
Revenue		
Representations and warranties provision	$ (1.0)	$ (0.06)
Negative fair value adjustment on structured liabilities	(0.6)	(0.04)
Equity investment gains	1.1	0.07
Debt securities gains	0.5	0.03
Trading DVA loss	(0.4)	(0.02)
Expense		
Litigation expense	(0.9)	(0.06)
Mortgage-related assessments and waivers	(0.9)	(0.06)
Retirement eligible stock-based compensation expense	(1.0)	(0.06)
Merger and restructuring charges	(0.2)	(0.01)
Provision		
Loan loss reserve reduction	2.2	0.14

Source: Bank of America

In conclusion, pro forma earnings can be useful, provided that one understands what management is doing and why and that one uses the same treatment consistently across companies.

6.3 EBITDA*

Net income is widely used as a basis for valuing companies. By applying a multiple (the P/E ratio) to earnings, one can very quickly derive a value for the company. However, it is not very useful if one wants to compare companies with dissimilar capital structures or even different tax regimes. In addition, companies do have some flexibility when it comes to assigning depreciable lives to property, plant and equipment and intangibles, so two otherwise identical companies but with different depreciation policies would not have the same income.

To try to circumvent this and to be able to determine the actual operating performance of a company without taking into consideration its financing and depreciation decisions as well as to exclude the effect of taxes, analysts and companies turn to Earnings Before Interest Taxes Depreciation and Amortisation (EBITDA). EBITDA to sales can thus be used to compare companies with different financing structures. It is a widely used measure and is often also used to measure management performance, as can be seen below.

Flowers Foods (USA)

EBITDA is used as the primary performance measure in the company's Annual Executive Bonus Plan. The company defines EBITDA as earnings from continuing operations before interest, income taxes, depreciation, amortization and income attributable to non-controlling interest. The company believes that EBITDA is a useful tool for managing the operations of its business and is an indicator of the company's ability to incur and service indebtedness and generate free cash flow. Furthermore, pursuant to the terms of our credit facility, EBITDA is used to determine the company's compliance with certain financial covenants. The company also believes that EBITDA measures are commonly reported and widely used by investors and other interested parties as measures of a company's operating performance and debt servicing ability because EBITDA measures assist in comparing performance on a consistent basis without regard to depreciation or amortization, which can vary significantly depending upon accounting methods and non-operating factors (such as historical cost). EBITDA is also a widely-accepted financial indicator of a company's ability to incur and service indebtedness.

Indeed, EBITDA is quite popular in the private equity and leveraged buy-out sectors where the potential buyer plans to change the capital structure after the acquisition and wants to get a feel for the profitability of the company.

EBITDA is also very often seen in debt covenants, where, for instance, a company's debt is limited to a multiple of EBITDA.

In its simplest form, EBITDA is defined as:

	Net income before discontinued operations
+	Interest expense
+	Taxes
+	Depreciation
+	Amortisation
=	**EBITDA**

Alternatively, and even more simply, one can compute EBITDA from earnings before interest and tax (EBIT):

	Total sales
	Operating costs
=	**EBIT**
+	Depreciation and amortization
=	**EBITDA**

The following example illustrates this concept. Company A and Company B are virtually identical companies, the only difference between them being their capital structure and their depreciation policy. This leads to very different net income figures, even though the underlying profitability is identical.

	Company A	**Company B**
Total sales	1'000.00	1'000.00
- cost of sales	800.00	800.00
- depreciation and amortisation	50.00	20.00
- sales, general and administrative expense	30.00	30.00
EBIT	120.00	150.00
Interest expense	7.50	0.00
Income before taxes	112.50	150.00
Income taxes	33.75	45.00
Net income	**78.75**	**105.00**
Total debt	150.00	0.00
Shareholder's equity	350.00	500.00
EBITDA		
EBIT	120.00	150.00
+ Depreciation and amortisation	50.00	20.00
= EBITDA	170.00	170.00

Unfortunately, companies have widely varying definitions of EBITDA as they will try to include and exclude certain items (for instance, non-recurring items), so it usually up to the analyst to build his own version of EBITDA to render it comparable across companies, applying some skepticism and common sense.

EBITDA is sometimes used as a proxy for operating cash flow. It does not, however, take into account an important factor: working capital needs. These can be significant for a growing company, so using EBITDA might be very misleading. It is therefore usually wise to use this in combination with other measures.

6.4 Free Cash Flow*

One other very popular non-GAAP measure is free cash flow. Free cash flow will be addressed in detail in the module on Equity so we will be rather brief here.

Free cash flow is defined as follows:

	Earnings from operations before interest and taxes (EBIT)
-	Taxes (calculated as EBIT x marginal tax rate)
+	Non cash relevant expenses (depreciation, provisions for doubtful debt, etc.)
-	Non cash relevant revenues (adusjtments for currency changes, etc.)
=	**Gross cash flow**
-	Changes in net working capital
-	Investment outlays (buildings, equipment, etc.)
	Free cash flow from operations

It is an indicator of a company's financial strength. Free cash flow is the amount available to the providers of capital (in the form of dividends, share buybacks and repayment of debt) or for investments in growth through acquisition.

A company generating a lot of free cash flow will have quite some flexibility. A company generating negative free cash flow for a period of time will likely need additional financing. Fast growing companies, for instance, though profitable, might post negative cash flow as investment outlays and/or changes in net working capital might be quite hefty.

6.5 Net debt*

Net debt is fairly straightforward. It is defined as follows:

	Long-term debt
+	Short-term debt
-	Cash and cash equivalents
=	**Net debt**

Net debt gives a quick indication of a company's financial strength and liquidity. It can also be an additional indication of a company's leverage since cash and cash equivalents could theoretically be used to repay debt. A company is net cash positive if its cash and cash equivalents are greater than its debt, implying a strong financial position.

Philips (Netherlands)

	2008	2009	2010
Long-term debt	3,466	3,640	2,818
Short-term debt	722	627	1,840
Total debt	4,188	4,267	4,658
Cash and cash equivalents	(3,620)	(4,386)	(5,833)
Net debt (cash) (total debt less cash and cash equivalents)	568	(119)	(1,175)

Source: Phillips

6.6 Organic sales*

This is a very useful measure, especially for companies with international exposure or which acquire other companies. It measures sales growth excluding the impacts of acquisitions, divestitures and foreign exchange. This gives investors a better understanding of the underlying sales trend and provides a solid basis from which to make projections.

Indeed, given that it is hard to forecast currency movements and a company's potential acquisitions, most analysts will primarily forecast organic sales growth, adjusting the estimates as the year evolves to take into consideration new information. We show below Procter and Gamble's reconciliation to US GAAP.

Procter and Gamble (USA)

	Net Sales Growth	Foreign Exchange Impact	Acquisition/ Divestiture Impact*	Organic Sales Growth
Q1 '09	9%	-5%	1%	5%
Q2 '09	-3%	5%	0%	2%
Q3 '09	-8%	9%	0%	1%
Q4 '09	-11%	9%	1%	-1%
Q1 '10	-6%	7%	1%	2%
Q2 '10	6%	-2%	1%	5%
Q3 '10	7%	-3%	0%	4%
Q4 '10	5%	-1%	0%	4%
FY '10	3%	1%	-1%	3%
FY '11 (Estimate)	2 to 4%	3%	-1%	4 to 6%

Source: Procter & Gamble

6.7 New orders, backlog, book-to-bill*

*6.7.1 New orders (orders received)**

A company books and reports new orders when a contract is considered legally effective and binding. The company then recognizes the total value of the new order. The value of orders received during a period represents the sum of the value of all the orders.

*6.7.2 Order backlog**

The order backlog is the amount of open orders, either incomplete or in the process of completion, that a company has on hand. It is calculated by adding the new orders of the current period to the balance of the order backlog from the prior period and subtracting the revenue recognized in the current period.

It is mainly disclosed by manufacturing companies and semiconductor companies. The level of backlog is usually specific to the business. For instance, highly customized products might need to be ordered well in advance. Also, some projects (for instance, power plants) will need several months or years to complete.

The backlog level can be used to give an idea about future revenue, but it must be noted that orders can be cancelled or delayed.

ABB: order, backlog and book-to-bill ratio

	2008	2009	2010
Orders	38'282	30'969	32'681
Order backlog at December 31	23'837	24'771	26'193
Revenues	34'912	31'771	31'589
Book-to-bill ratio	1.10	0.97	1.03

Source: ABB

*6.7.3 Book-to-bill ratio**

The book-to-bill ratio measures the relationship between orders received (booked) and the amounts of products shipped and billed.

$$\text{Book} - \text{to} - \text{Bill ratio} = \frac{\text{Orders received}}{\text{Products shipped and invoiced}}$$

A book-to-bill ratio of more than one indicates that the company has received more orders than it has billed which is a sign of strong demand. A book-to-bill of less than one would imply weaker demand. This ratio is commonly used by semiconductor investors.