Article – Simplifying Earnings Per Share

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INTRODUCTION

This article seeks to explain the main principles for the determination and presentation of both the basic and diluted earnings per ordinary share (EPS) in an entity's financial statements. EPS is a key component of the Price Earnings Ratio (Market Price per Ordinary Share/EPS) and is widely used by both existing and potential investors to compare the:

(a) results of a company over a period of time; and

(b) performance of one company's equity shares against the performance of another company's equity, and also against the returns obtainable from loan stock and other forms of investment.

The purpose of any earnings yardstick is to achieve as far as possible clarity of meaning, comparability between one company and another, one year and another, and attribution of profits to the equity shares. IAS 33 *Earnings per Share* attempts to ensure that these aims are achieved.

IAS 33 *EARNINGS PER SHARE*

IAS 33 applies to entities whose ordinary shares or potential ordinary shares are publicly traded and to entities that are in the process of issuing ordinary shares or potential ordinary shares in public markets. EPS need only be presented on the basis of consolidated data. If an entity is not publicly traded but wishes voluntarily to disclose earnings per share, then EPS should be prepared in accordance with IAS 33. The focus is primarily on ensuring consistency in the calculation of the denominator i.e. the 'bottom line' – the number of shares.

BASIC EPS

The basic EPS is the profit in cents attributable to each equity share, and it is calculated as follows:

$$\frac{\text{Profit/loss attributable to ordinary shareholders (Earnings)}}{\text{Weighted average number of ordinary shares outstanding during the period}}$$

The problem is defining what is meant by 'earnings' and what is meant by 'number of ordinary shares':

- Earnings are the net profits after tax, interest, minority interest (in the case of a group) and dividends on other classes of shares (i.e. preference dividends); and

- An ordinary share is an equity instrument that is subordinate to all other classes of equity instruments. Issued ordinary shares are all ordinary shares in circulation during the year. The weighted average approach is taken to calculate this amount.

Example 1:

RED plc (RED) has the following issued share capital throughout 2008: 200,000 ordinary shares of €1 and 50,000 10% preference shares of €1. RED's financial statements for the year ended 31st December 2008 showed the following:

	€	€
Net profit before taxation		60,000
Taxation		20,000
Net profit after taxation		40,000
Preference dividend	5,000	
Ordinary dividend	9,000	(14,000)
Retained profit for the year		26,000

Calculate RED's EPS for 2008.

Answer:

EPS $\frac{€35,000}{200,000} \times 100 = 17.5c$

Note
If the earnings figure is negative, then the EPS should be calculated in the normal way but shown as a loss per share.

Changes in Ordinary Share Capital and the Effect on Basic EPS

If new shares are issued during the period, the denominator in the basic EPS calculation has to be changed. This may arise as a result of:

1. Issue at full market price;

2. Bonus issue, share split and share consolidation;

3. Rights issues; and

4. Shares issued as part of the purchase consideration for a business combination.

Note
When considering how to deal with each of the above, it is important to ask: is the share issue time apportioned and is there an impact on the prior year figures?

1. *Issue at full market price*

Where new ordinary shares have been issued either for cash at full market price or as consideration for the acquisition of an asset, the earnings should be apportioned over the average number of shares ranking for dividend during the period *weighted on a time basis*. There is no retrospective effect.

> ***Note***
> Therefore time apportion the issue but do not adjust prior year figures.

Example 2:

BLUE plc (BLUE), whose financial year ends on 31st December, has a capital structure consisting of: 100,000 10% €1 preference shares and 100,000 €1 ordinary shares. BLUE had profits after tax of €50,000 in 2007 and €60,000 in 2008. On 30th September 2008, BLUE made an issue at full market price of 50,000 €1 ordinary shares.

Calculate BLUE's EPS for 2008, together with the corresponding figure for 2007.

Answer:

	2008	2007
	€	€
Profit after taxation	60,000	50,000
Preference dividend (€100,000 x 10%)	(10,000)	(10,000)
	50,000	40,000
Shares at 1st January	100,000	100,000
Issue at full market price: (50,000 x 3/12)	12,500	-
	112,500	100,000
EPS	44c	40c

2. *Bonus issue, share split and share consolidation*

(a) A bonus issue is the capitalisation of reserves and will have no effect on the earning capacity of the company. There is no flow of funds. Where new equity shares have been issued by way of a bonus issue during the period, the earnings should be apportioned over the number of shares ranking for dividend after the capitalisation.

> ***Note***
> Therefore no time apportionment, but the comparative figures must be adjusted.

Example 3:

At 31st December 2007, WHITE plc (WHITE) had 4,000,000 ordinary 25 cent shares and 500,000 10% €1 cumulative preference shares in issue. On 1st October 2008 WHITE made a one for four bonus issue, and the company's profit after tax for the years ended 31st December 2007 and 2008 was €450,000 and €550,000 respectively

Calculate WHITE's EPS for 2008, together with the corresponding figure for 2007.

Answer:

	2008
	€
Profit after tax	550,000
Preference dividend (€500,000 x 10%)	(50,000)
	500,000
Number of ordinary shares (4,000,000 + 1,000,000)	5,000,000
	EPS = 10c

The comparative figure must be adjusted: 2007

Either: $\frac{€400,000}{5,000,000}$ or: $\frac{€400,000}{4,000,000}$ x 4/5 EPS = 8c

(b) Share splits and share consolidations

Similar considerations apply where equity shares are split into shares of smaller nominal value (e.g. a share of €1 nominal value is divided into four shares of 20c each) or consolidated into shares of a higher nominal value (e.g. four shares of 25c each are consolidated into one share of €1).

i.e. number of shares outstanding before the event is adjusted for the proportionate change.

Note
Therefore no time apportionment, but the comparative figures must be adjusted.

3. Rights issue

This is an issue of shares for cash to existing shareholders at a price (usually) below the current market price. It is equivalent to a cash issue at full market price combined with a subsequent bonus issue. When a company makes a rights issue at less than full market price, this results in there being a new market price (after the rights issue), which will be less than that which existed when the rights issue took place. The new market price is known as the theoretical ex rights price (TERP).

Example 4:

PURPLE plc (PURPLE) whose financial year ends on 31st December had the following capital structure: €200,000 10% €1 preference shares and €200,000 €1 ordinary shares.

On 1st October 2008, PURPLE made a one for five rights issue at a price of €1.20. The market value of one ordinary share on the last day of quotation cum rights was €1.50.

Calculate the TERP:

Answer:

	€
Wealth of shareholder with five ordinary shares prior to rights issue: 5 x €1.50	7.50
Cost of taking up the right to buy one ordinary share: 1 x €1.20	1.20
	8.70
Number of shares in issue	6
TERP	€1.45

Example 5:

The following information relates to SILVER plc (SILVER):

	2006	2007	2008
	€	€	€
Earnings (i.e. after minority interests and preference dividends)	24,000	30,400	36,000

SILVER whose financial year ends on 31st December had 100,000 €1 ordinary shares in issue before the rights issue, and the fair value of one ordinary share before the rights issue was €2.20. In 2006, SILVER made a one for five rights issue, with an exercise price of €1 per share. This was exercised in full on 1st April 2007 (i.e. giving 20,000 new shares in 2007).

Calculate SILVER's EPS for 2006, 2007 and 2008.

Answer:
2006:

EPS $\frac{€24,000}{100,000}$ = 24c

(i.e. in 2006 there is no impact on the 2006 EPS as the rights issued had not been exercised.)

2007:	€
5 shares at €2.20	11
1 share at €1	1
	12
Number of shares in issue	6
TERP	€2

Before rights issue: 100,000 x 3/12 x €2.20/€2	27,500
After rights issue: 120,000 x 9/12	90,000
Number of shares to be used	117,500

EPS $\frac{€30,400}{117,500}$ = 26c

In the 2007 financial statements, the comparative EPS figure for 2006 has to be adjusted:

Adjust EPS for 2006 $\frac{2}{2.20}$ x 24c = 22c

2009:
EPS $\frac{€36,000}{120,000}$ = 30c

4. *Shares Issued as Part of the Purchase Consideration for a Business Combination*

The shares issued are included in the weighted average number of shares as at the date of acquisition. This is because the results of the new subsidiary are only included in the consolidated financial statements from that date (i.e. consistent with the treatment of pre and post acquisition profit and losses).

Note
Therefore time apportion the issue but do not adjust prior year figures.

Example 6:

YELLOW plc (YELLOW) whose financial year ends on 31st December had 1,000,000 €1 shares in issue on 1st January 2008. On 1st July 2008, YELLOW acquired 80% of the ordinary shares of GREEN plc. As part of the consideration, YELLOW plc issued 400,000 €1 ordinary shares with a market value €2.50 per share.

Calculate the number of shares that to be used in YELLOW's EPS calculation for year ending 31st December 2008.

Answer:
(1,000,000 x 6/12) + (1,400,000 x 6/12) = 1,200,000

Disclosure – Basic EPS

- On face of the income statement – the basic EPS for the profit/loss attributable to ordinary equity holders and, if presented, the profit/loss from continuing operations attributable to the ordinary equity holders, including comparative figures. Disclosure is still required if the basic EPS negative.

- In the notes – the amount used as the numerator in calculating the basic EPS and a reconciliation of that amount to the net profit/loss for the period, together with the weighted average number of ordinary shares used in the calculation.

DILUTED EPS

A company may have securities which do not have a claim to equity earnings *now*, but may do in the *future*. For example:

1. Share options and warrants;

2. Employee share options;

3. Contingently issuable shares; and

4. Convertible loan stock or preference shares.

Each of the above could increase the number of equity shares ranking for dividend and so dilute or 'water down' EPS. Dilution is therefore a reduction in EPS or an increase in the loss per share resulting from the assumption that convertible instruments are converted, that options or warrants are exercised, or that ordinary shares are issued upon the satisfaction of specified conditions. The diluted EPS is calculated as follows:

$$\frac{\text{Net profit/loss attributable to ordinary shareholders (adjusted for dilutive ordinary shares)}}{\text{Weighted average number of ordinary shares outstanding during period (adjusted for dilutive ordinary shares)}}$$

The calculation usually involves adjusting the net profit/loss attributable to ordinary shareholders by the after tax effects of:

- dividends or other items related to dilutive potential ordinary shares (POS) (i.e. a financial instrument or other contract that may entitle its holder to ordinary shares);

- interest recognised in the period related to dilutive POS; and

- other changes in income or expense that would result from the conversion of the dilutive POS.

The calculation of the diluted EPS is a two stage process:

- In considering whether POS are dilutive or anti-dilutive, each issue of POS is considered separately rather than in aggregate; and

- In order to maximise the dilution of the basic EPS, each issue of POS is considered in sequence from the most dilutive to the least dilutive.

Note
POS should be treated as dilutive when conversion would decrease the net profit per share from *continuing ordinary operations*.

1. *Share options and warrants*

These are financial instruments that give the holder the right to purchase ordinary shares at a favourable price i.e. less than the fair value of existing shares. The proceeds are assumed to be a mixture of an issue at fair (market) value and an issue for no consideration (i.e. 'free' shares), and it is the latter that is deemed to be dilutive since they result in an increase in shares without any increase in resources that can be used to increase earnings.

Example 7:

Earnings for the year ended 31st December 2008	€1,000,000
Weighted average number of ordinary shares for 2008	10,000,000
Average fair value of one ordinary share	€2.40
Weighted average number of shares under option during 2008	3,000,000
Exercise price for shares under option in 2008	€2

Answer:

Earnings		€1,000,000
Weighted average shares for 2008		10,000,000
Basic EPS		= 10c
Number of shares on option		3,000,000
Number of shares that would have been issued at fair value	$\frac{3{,}000{,}000 \times €2}{€2.40}$	2,500,000
Therefore issued for no consideration		500,000
Earnings		€1,000,000
Shares		10,500,000
Diluted EPS		= 9.5c

2. *Employee share options*

These are an increasingly popular incentive scheme, and many include performance criteria which mean that they are contingent on certain conditions being met. As with the share option approach above, only those shares deemed as issued for no consideration are included.

Example 8:

VIOLET plc (VIOLET) has an employee share option scheme based on period of service. At its financial year end 31st December 2008, details of the scheme and other relevant information were:

Date of grant	1st January 2008
Market price at grant date	€2.24
Exercise price of option	€1.80
Date of vesting	31st December 2010
Number of shares under option	3,000,000

Earnings for 2008	€1,000,000
Weighted average number of ordinary shares at 31st December 2008	10,000,000
Average fair value of an ordinary share during 2008	€2.70

Answer:

Earnings		€1,000,000
Weighted average shares for 2008		10,000,000
Basic EPS		= 10c
Number of shares on option		3,000,000
Number of shares that would have been issued at fair value	$\frac{3{,}000{,}000 \times €1.80}{€2.70}$	2,000,000
Therefore issued for no consideration		1,000,000
Earnings		€1,000,000
Shares		11,000,000
Diluted EPS		= 9.1c

> ***Note***
> IFRS 2 *Share-based Payment* requires an entity to reflect in its profit and loss and financial position the effects of share-based payment transactions, including expenses associated with share options granted to employees. While IFRS 2 is not examinable, students need to be able to deal with options in the context of IAS 33.

3. Contingently issuable shares

These are ordinary shares issuable for little or no cash or other consideration upon the satisfaction of specified conditions in a contingent share agreement. For purposes of diluted EPS, these shares are included in full. Many employee share option schemes operate in this manner.

Example 9:

ORANGE plc (ORANGE) whose financial year ends on 31st December had 500,000 €1 ordinary shares in issue at 1st January 2006. A new business venture commenced in 2006 gave rise to the following contingently issuable shares:

- 10,000 €1 ordinary shares for every new branch opened in the three years 2006 to 2008; and

- 1,000 €1 ordinary shares for every €2,000 of earnings in excess of €900,000 over the three years ended 31st December 2008. The shares are issued on 1st January following the period in which the condition is met.

A new branch was opened on 1st July 2006, 31st March 2007 and 1st October 2008.

The reported earnings of ORANGE during the three years 2006 to 2008 were €350,000, €400,000 and €600,000 respectively.

Answer:

	2006	2007	2008
Earnings	€350,000	€400,000	€600,000
Ordinary shares	500,000	510,000	520,000
Branch contingency (pro rata during year)	5,000	7,500	2,500
Earnings contingency (not certain until after 3 years)	-	-	-
Total shares	505,000	517,500	522,500
Basic EPS	69.3c	77.3c	114.8c
Earnings	€350,000	€400,000	€600,000
Ordinary shares	505,000	517,500	522,500
Branch contingency (included in full)	5,000	2,500	7,500
Earnings contingency (for exceeding €900,000)[a]	-	-	225,000
Total shares	510,000	520,000	755,000
Diluted EPS	68.6c	76.9c	79.5c

[a] These would be issued in 2010 and included in the 2010 basic EPS calculation.

4. Convertibles

If the issue of shares will affect earnings, the numerator should be adjusted accordingly. This occurs when bonds or preference shares are converted. It is important to remember that:

- while interest is paid on a bond, when conversion takes place this interest is no longer payable. Although, as interest is allowable for tax purposes, it is only the after-tax amount that is 'saved';

- preference dividends are 'saved' when the preference shares are converted (but remember, unlike interest, dividends are not deductible for tax purposes).

Example 10:

Earnings	€500,000
€1 ordinary shares in issue	1,000,000
€1 convertible 15% bonds	200,000

Each block of five bonds is convertible to eight ordinary shares.
The tax rate (including any deferred tax) is 40%.

Answer:

Basic EPS = €500,000/1,000,000	= 50c
Diluted EPS	€
Earnings per basic EPS	500,000
Add interest saved net of tax €200,000 x 15% x 60%	18,000
	518,000
Shares per basic EPS	1,000,000
Add maximum shares on conversion 200,000 x 8/5	320,000
	1,320,000
Diluted EPS	= 39.2c

Determining the order in which to include dilutive securities in the calculation of weighted average number of shares:

Example 11:

The following information has been extracted from the financial statements of PLUM plc in respect of the year ended 31st December 2008:

Earnings	€
Net profit attributable to continuing operations	16,400,000
Less preference dividends	(6,400,000)
Profit from continuing operations attributable to ordinary shareholders	10,000,000
Loss from discontinued operations	(4,000,000)
Net profit attributable to ordinary shareholders	6,000,000
Ordinary shares outstanding	2,000,000
Average market price of one ordinary share during 2008	€75

The tax rate (including any deferred tax) is 40%.
POS:
100,000 options with exercise price of €60.
800,000 8% €100 convertible cumulative preference shares, with each preference share held convertible into two ordinary shares.
100,000,000 5% €1 convertible bonds, with each 1,000 block convertible into 20 ordinary shares.

Answer:
Increase in earnings attributable to ordinary shareholders on conversion of POS.

	Increase in Earnings	Increase in shares	Earnings per incremental share
Options			
Increase in earnings	Nil		
Incremental shares (100,000 x (€75-€60)/€75)		20,000[b]	Nil
Convertible preference shares			
Increase in earnings (€8 x 800,000)	6,400,000		
Incremental shares (2 x 800,000)		1,600,000	4
5% Convertible bonds			
Increase in earnings (100,000,000 x 5% x 0.6)	3,000,000		
Incremental shares		2,000,000	1.50

Ranking: (1) options, (2) convertible bonds, (3) convertible preference shares.
[b] Total options 100,000 – (100,000 x €60/€75) = 20,000 free shares.

Computation of diluted EPS:

	Earnings	Ordinary shares	EPS
As reported	10,000,000	2,000,000	5.00
Options	-	20,000	
	10,000,000	2,020,000	4.95 dilutive
5% Convertible bonds	3,000,000	2,000,000	
	13,000,000	4,020,000	3.23 dilutive
Convertible preference shares	6,400,000	1,600,000	
	19,400,000	5,620,000	3.45 antidilutive

The convertible preference shares are ignored in calculating the diluted EPS as they are antidilutive.

Computation of EPS:	Basic EPS	Diluted EPS
From continuing operations	5.00	3.23
From discontinued operations	(2.00)[c]	(0.99)[d]
Net profit	3.00	2.24

[c] (€4,000,000 ÷ 2,000,000) = (2.00)
[d] (€4,000,000 ÷ 4,020,000) = (0.99)

IN SUMMARY

The comparative for both the basic and diluted EPS should be adjusted for the effects of:

- a capitalisation, bonus issue, share split and reverse share split; and
- errors and changes in accounting policies accounted for as per IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*.

Presentation and Disclosure

The key points to remember are:

- the basic and diluted EPS should be shown on the face of the income statement for each class of ordinary share with equal prominence;
- show even if negative (i.e. a loss per share);
- disclose the amounts used as numerators for the basic and diluted EPS, reconciled to net profit or loss for the period; and
- disclose the weighted average number of ordinary shares for the basic and diluted EPS, with a reconciliation of these denominators to each other.