CIMA MANAGEMENT LEVEL · F2 FINANCIAL MANAGEMENT

Earnings per Share

IAS 33 · Basic EPS & Diluted EPS

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Value Nest Tuition

CHAPTER ROADMAP

Learning Outcomes

By the end of this session you should be able to:

1

Calculate Basic EPS

Deal with full market value issues, bonus issues, and rights issues of ordinary shares, including restatement of comparative EPS.

2

Calculate Diluted EPS

Explain the relevance of diluted EPS and calculate DEPS involving convertible debt and share options (warrants).

3

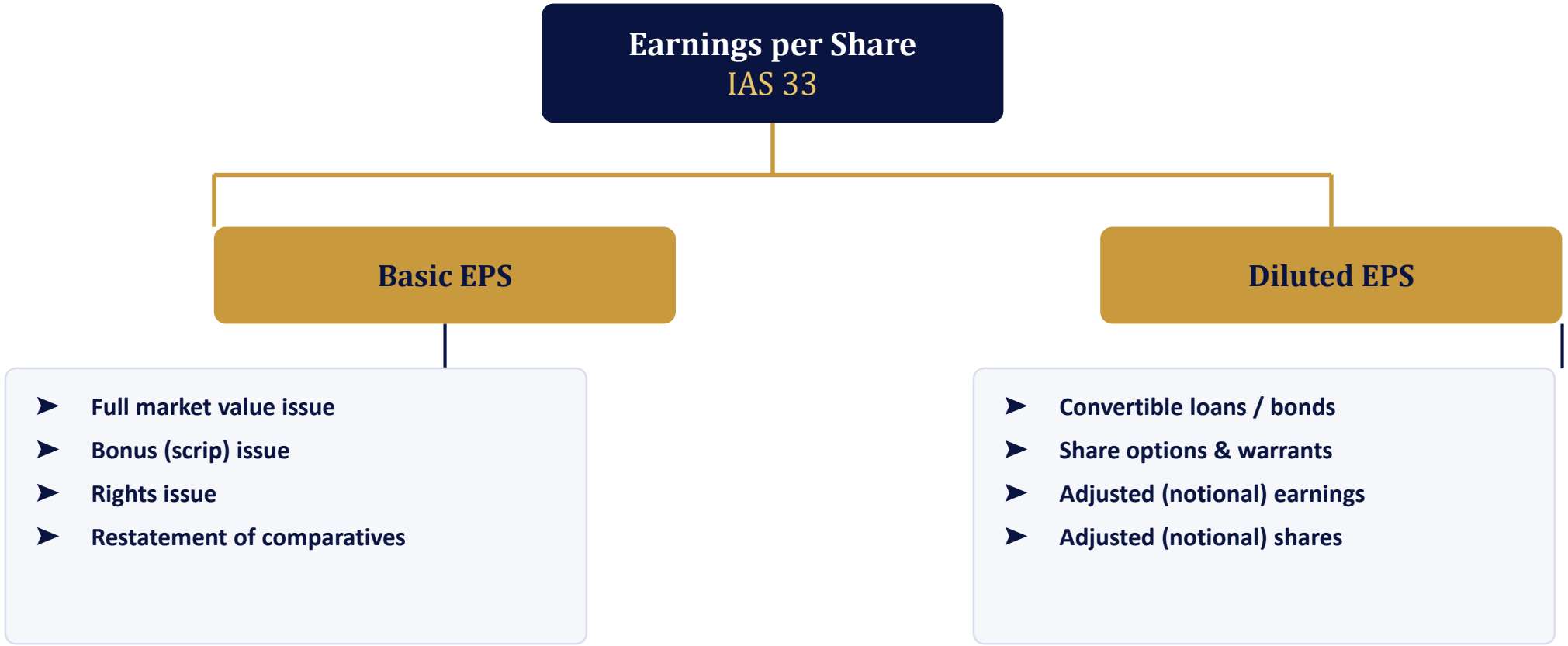
Present & Disclose EPS

Produce the disclosures required by IAS 33 for basic and diluted earnings per share.

CIMA F2 Exam Blueprint — F2C: Group Accounts · Skill level: Application · "Calculate basic and diluted earnings per share (EPS)" | IAS 33 Earnings per Share.

ROADMAP

Overview



Basic EPS measures historical performance per share; Diluted EPS shows the 'worst case' impact of future share issues on that performance.

Objective of Earnings per Share

- EPS is an analysis tool used to assess a company's underlying performance and profitability.
- It is utilised by potential and existing investors in its own right, and is a key input into the Price/Earnings (P/E) ratio.
- **Listed entities must disclose basic EPS and diluted EPS on the face of the statement of profit or loss.**

IAS 33

Earnings per Share

Applies to entities whose shares are publicly traded.

Why it matters

EPS allows users to compare a company's profitability over time, and (via the P/E ratio) to compare relative valuations across companies — even though companies differ in size and capital structure.

Basic EPS

Earnings

Weighted average number of shares (WAV)

– **Earnings**

= Profit attributable to ordinary shareholders

= PAT – NCI share of profit – irredeemable pref. dividends

– **Number of shares**

= weighted average number of ordinary shares (WAV)

Why aren't redeemable preference dividends removed from earnings?

Redeemable preference shares are classified as debt under IAS 32, so their dividends are treated as a finance cost — already deducted in arriving at profit after tax (PAT). Only irredeemable preference dividends (an equity distribution) are deducted separately from earnings.

Using the weighted average (rather than the year-end number) of shares avoids overstating EPS when new shares were only in issue for part of the year.

Weighted Average Number of Shares (WAV)

The calculation of the WAV depends on the type of share issue made during the year:

1	**Full market value issue**	New shares issued for cash at full price. Time-apportion using a weighted average table.
2	**Bonus (scrip) issue**	Free shares issued to existing holders. Treated as if always in issue — no time apportionment needed.
3	**Rights issue**	Shares issued to existing holders below market price — part full price, part bonus. Pre-issue shares are scaled up by a bonus fraction.

Weighted Average Table: Pro-forma

Cash raised from a full-price share issue can be invested to generate returns, so the new shares are time-apportioned from the date of issue.

Actual number of shares in issue	Fraction of year		Weighted average
Number of shares before issue	months before / 12	×	x1
Number of shares after issue	months after / 12	×	x2
WAV number of shares (total)			**x1 + x2**

Then: Basic EPS = Earnings ÷ WAV number of shares

Question 1

Robert Co

Robert had 6,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Robert issued 1,500 new shares at full market value.

Robert's earnings for the year to 31 December 20X3 were $1,200.

Required: Calculate Robert's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution 1

	No. of shares	Fraction of year	Weighted average
b/f 1 January	6,000	3/12	1,500
Full price issue 1 April	+1,500		
c/f (6,000 + 1,500)	7,500	9/12	5,625
WAV number of shares			**7,125**

Basic EPS = Earnings ÷ WAV = $1,200 ÷ 7,125 shares = $0.1684

Basic EPS for the year to 31 December 20X3 **16.8 cents**

Exercise 1

Frenkie Co

Frenkie had 10,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Frenkie issued 2,000 new shares at full market value.

Frenkie's earnings for the year to 31 December 20X3 were $2,300.

Required: Calculate Frenkie's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution — Exercise 1

	No. of shares	Fraction of year	Weighted average
b/f 1 January	10,000	3/12	2,500
Full price issue 1 April	+2,000		
c/f (10,000 + 2,000)	12,000	9/12	9,000
WAV number of shares			**11,500**

Basic EPS = Earnings ÷ WAV = $2,300 ÷ 11,500 shares = $0.20

Basic EPS for the year to 31 December 20X3 **20.0 cents**

Basic EPS: Bonus Issues

- A bonus issue is an issue of free shares to existing shareholders, in proportion to their existing shareholding.
- Example: a 1-for-4 bonus issue gives one new free share for every four shares currently held.
- EPS calculations treat bonus shares as if they had always been in existence — no cash is raised, so there is no time-apportionment.
- **Any share issues BEFORE the bonus issue must be scaled up by the bonus fraction.**
- NB. A bonus issue may also be called a scrip issue.

$$\text{Bonus fraction} = \frac{\text{Shares after the bonus issue}}{\text{Shares before the bonus issue}}$$

WAV Calculation with a Bonus Issue

Actual shares in issue	Fraction of year	Bonus fraction		Weighted average
Shares before bonus issue	months before / 12	BF	×	x1
Shares after bonus issue	months after / 12	—	×	x2
WAV number of shares				**x1 + x2**

Bonus issues and comparatives

IAS 33 treats the bonus issue as if it had always existed — including in the prior year. The prior year's (comparative) EPS must therefore be restated:

Adjusted comparative EPS = Last year's EPS × inverse of the bonus fraction

BONUS ISSUE

Question 2

Robert Co

Robert had 6,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Robert made a 1-for-4 bonus issue of 1,500 shares.

Robert's earnings for the year to 31 December 20X3 were $1,200.

Required: Calculate Robert's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution 2

- A 1-for-4 bonus issue on the existing 6,000 shares creates 1,500 free shares (6,000 ÷ 4).
- As this is the only issue in the year, the bonus shares are treated as in issue for the whole year — no weighted-average table is required.

	No. of shares
Shares b/f	6,000
Bonus issue (1 for 4)	+1,500
WAV number of shares (whole year)	**7,500**

Basic EPS = $1,200 ÷ 7,500 shares = $0.16

Basic EPS for the year to 31 December 20X3 **16.0 cents**

Exercise 2

Frenkie Co

Frenkie had 10,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Frenkie made a 1-for-5 bonus issue (1 new share for every 5 held).

Frenkie's earnings for the year to 31 December 20X3 were $2,300.

Required: Calculate Frenkie's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution — Exercise 2

– A 1-for-5 bonus issue on the existing 10,000 shares creates 2,000 free shares (10,000 ÷ 5).

	No. of shares
Shares b/f	10,000
Bonus issue (1 for 5)	+2,000
WAV number of shares (whole year)	**12,000**

Basic EPS = $2,300 ÷ 12,000 shares = $0.191667

Basic EPS for the year to 31 December 20X3 **19.2 cents**

Basic EPS: Rights Issues

- A rights issue is an issue of new shares to existing shareholders, in proportion to their holding, at a price BELOW market value.
- For EPS purposes, a rights issue is treated as part full-price issue and part bonus issue.
- The bonus (free) element is treated as if it has always existed — pre-issue shares are scaled up by a bonus fraction, exactly as for a pure bonus issue.

Rights issue bonus fraction

Cum rights price (CRP)

Theoretical ex-rights price (TERP)

Theoretical ex-rights price (TERP)

The weighted average value of a share immediately after the rights issue — calculated as the total value of the holding (at the cum-rights market price) plus the value of the new rights shares (at the discounted rights price), divided by the new total number of shares.

TERP & Weighted Average: Pro-forma

Step 1 — Theoretical ex-rights price (TERP)

No. of shares		Price/share	Value
Holding	n	$x	$x
Rights	1	$x	$x
Total	**n+1**		**$x**

TERP = Total value ÷ Total shares

Step 2 — Weighted average number of shares

Shares	Yr fraction	Bonus fr.	WAV
Before rights	m/12	CRP/TERP	x1
After rights	m/12	—	x2
WAV total			**x1+x2**

Comparatives

Just like a bonus issue, the impact of the rights issue on the prior year's (comparative) EPS must be considered:

Adjusted comparative EPS = Last year's EPS × inverse of the bonus fraction (TERP ÷ CRP)

Then: Basic EPS = Earnings ÷ WAV number of shares

Question 3

Robert Co

Robert had 6,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Robert made a 1-for-4 rights issue of 1,500 shares at $2.50, when the market price per share was $4.00.

Robert's earnings for the year to 31 December 20X3 were $1,200.

Required: Calculate Robert's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution 3 (1 of 2): TERP

Theoretical ex-rights price (TERP)

	No. of shares	Price/share	Total value
Holding (cum-rights)	4	$4.00	$16.00
Rights	1	$2.50	$2.50
Total	**5**		**$18.50**

TERP = $18.50 ÷ 5 shares = $3.70

Bonus fraction = Cum-rights price ÷ TERP = $4.00 ÷ $3.70 = 1.081081

Continued on the next slide → weighted average number of shares and basic EPS.

Solution 3 (2 of 2): WAV & EPS

	Shares	Yr fraction	Bonus fr.	WAV
b/f 1 Jan (scaled up)	6,000	3/12	× 1.0811	1,622
c/f (6,000+1,500)	7,500	9/12		5,625
WAV number of shares				**7,247**

Basic EPS = $1,200 ÷ 7,247 shares = $0.1656

Basic EPS for the year to 31 December 20X3 **16.6 cents**

Note: because the rights price ($2.50) is below market value ($4.00), part of the issue is a 'free' bonus element — hence the bonus fraction scaling of the pre-issue shares.

Exercise 3

Frenkie Co

Frenkie had 10,000 ordinary shares in issue on 1 January 20X3.

On 1 April 20X3, Frenkie made a 1-for-4 rights issue of 2,500 shares at $3.50, when the market price per share was $5.00.

Frenkie's earnings for the year to 31 December 20X3 were $2,300.

Required: Calculate Frenkie's basic earnings per share for the year to 31 December 20X3. Give your answer in cents.

Solution — Exercise 3

TERP

	Shares	Value
Holding 4 @ $5.00	4	$20.00
Rights 1 @ $3.50	1	$3.50
Total (TERP=$4.70)	**5**	**$23.50**

WAV number of shares

	Yr fr.	Bonus fr.	WAV
10,000 (scaled)	3/12	×1.0638	2,660
12,500	9/12		9,375
WAV total			**12,035**

Bonus fraction = CRP ÷ TERP = $5.00 ÷ $4.70 = 1.0638

Basic EPS = $2,300 ÷ 12,035 shares = $0.1911

Basic EPS for the year to 31 December 20X3 **19.1 cents**

Adjustment of Comparatives

- Where shares issued during the year include a bonus element (a bonus issue or a rights issue), that bonus element is deemed to have been in issue at the same time as the original shares — including throughout the prior year.
- To make a meaningful year-on-year comparison, the previous year's reported EPS must be restated.
- **This is done by multiplying the previous year's EPS by the inverse of the bonus fraction.**
- The restated comparative EPS is always LOWER than the amount originally reported — because the bonus fraction is always greater than 1.

Restated comparative EPS = Originally reported EPS × (1 ÷ bonus fraction)

Question 4 & Solution

Robert Co

Robert had 6,000 shares in issue on 1 Jan 20X3.

On 1 April 20X3, Robert made a 1-for-4 bonus issue of 1,500 shares.

Robert's originally reported EPS for the year ended 31 December 20X2 was 18.0 cents.

Required: restate the comparative EPS for the year to 31 December 20X2.

Solution

- Bonus fraction = shares after ÷ shares before = 7,500 ÷ 6,000 = 1.25
- Restated EPS = 18.0c × (1 ÷ 1.25) = 18.0c × 0.8

Restated 20X2 EPS **14.4 cents**

This lower, restated figure is the comparative shown alongside the current year's EPS in the 20X3 financial statements.

Question 5 & Solution

Robert Co

Robert had 6,000 shares in issue on 1 Jan 20X3.

On 1 April 20X3, Robert made a 1-for-4 rights issue of 1,500 shares at $2.50 (market price $4.00).

Robert's originally reported EPS for the year ended 31 December 20X2 was 18.0 cents.

Required: restate the comparative EPS for the year to 31 December 20X2.

Solution

- TERP (from Question 3) = $3.70
- Bonus fraction = CRP ÷ TERP = $4.00 ÷ $3.70 = 1.0811
- Restated EPS = 18.0c × (3.70 ÷ 4.00) = 18.0c × 0.925

Restated 20X2 EPS **16.65 cents**

Test Your Understanding

Aluminium Co

Aluminium Co has in issue $200,000 of equity share capital (ordinary shares of $0.50 each) and 11,000 7% preference shares of $2.80 each.

Extracts from the financial statements for the year to 30 June 20X5:

Profit before interest and tax	$600,000
Interest paid	$5,550
Preference dividend	$2,156
Taxation	$130,000
Ordinary dividend paid	$11,200

Required: In accordance with IAS 33, what is Aluminium's basic earnings per share for the year ended 30 June 20X5?

Test Your Understanding — Solution

- Number of ordinary shares = $200,000 ÷ $0.50 par value = 400,000 shares
- PAT = $600,000 − $5,550 interest − $130,000 tax = $464,450
- Earnings for ordinary shareholders = PAT − preference dividend = $464,450 − $2,156 = $462,294
- Note: the ordinary dividend of $11,200 is a distraction — dividends paid to ordinary shareholders never affect the EPS calculation.

Basic EPS = $462,294 ÷ 400,000 shares = $1.1557

Basic EPS for the year ended 30 June 20X5 **$1.16 (115.6 cents)**

SECTION 6

Diluted Earnings per Share (DEPS)

- At the year-end, instruments may exist that could create future ordinary shares — for example convertible loans/bonds and share options.
- Diluted EPS shows investors the potential ‘worst case’ impact of those future share issues on EPS — what EPS would look like if maximum dilution occurred.
- Instruments to consider: convertible debt (loan stock, bonds) and share options / warrants.

Diluted EPS is calculated as:

$$\frac{\text{Earnings + notional extra earnings}}{\text{WAV shares + notional extra shares}}$$

Impact of Diluting Instruments

Instrument	Impact on earnings (numerator)	Impact on shares (denominator)
Convertible loans / bonds	Add back notional interest saved (post-tax), assuming conversion at the start of the year	Add the maximum number of shares issuable on conversion — assume maximum conversion
Share options / warrants	No impact — earnings are unaffected by options	Add the bonus (free) element of shares issuable under the option, using the average fair value of shares in the year

A dilutive instrument always REDUCES basic EPS (that's the definition of dilutive). If including an instrument would increase EPS, it is anti-dilutive and excluded from the diluted EPS calculation — though it is still disclosed.

Question — Convertible Loans

Robert Co

Robert had 6,000 ordinary shares in issue throughout the year to 31 December 20X3.

At that date, Robert also had in issue $5,000 of convertible loan stock with an effective interest rate of 10%. Robert's rate of income tax is 30%.

The loan is convertible into ordinary shares on the basis of 60 shares per $100 of loan stock.

Robert's earnings for the year to 31 December 20X3 were $1,200.

Required: Calculate Robert's diluted earnings per share for the year to 31 December 20X3.

Solution

(W1) Notional extra earnings

Interest saved (5,000 × 10%)	500
Less: tax thereon (500 × 30%)	(150)
Notional extra earnings	**350**

(W2) Notional extra shares

Loan $5,000 ÷ $100 × 60 shares	**3,000**

	Earnings	Shares	EPS
Basic EPS	1,200	6,000	20.0c
Convertible loan adj.	+350	+3,000	
Diluted EPS	**1,550**	**9,000**	**17.2c**

Diluted EPS for the year to 31 December 20X3 **17.2 cents**

Since diluted EPS (17.2c) is lower than basic EPS (20.0c), the convertible loan is dilutive and DEPS must be presented.

Exercise — Convertible Loans

Brass Co

Brass Co had 14 million ordinary shares in issue in the year ended 31 March 20X8, and earnings available for ordinary shareholders amounted to $6.2 million.

There are 1.5 million 11% $1 convertible loan notes in issue, convertible at the rate of 4 ordinary shares for every $5 of loan notes in the year ended 31 March 20X8.

The rate of tax is 25%.

Required: What is the fully diluted EPS for the year ended 31 March 20X8?

Solution — Convertible Loans

- Notional extra earnings = (1.5m × 11%) interest saved, $165,000, less (165,000 × 25%) additional tax, $41,250 = $123,750
- Notional extra shares = 1.5m × 4/5 = 1,200,000 shares

	Earnings ($)	Shares	EPS
Basic EPS	6,200,000	14,000,000	44.3c
Convertible loan adj.	+123,750	+1,200,000	
Diluted EPS	**6,323,750**	**15,200,000**	**41.6c**

Diluted EPS for the year ended 31 March 20X8 **41.6 cents**

Question — Options

Robert Co

Robert had 6,000 ordinary shares in issue throughout the year to 31 December 20X3.

At that date, Robert also had in issue 2,000 share options, exercisable at $1.20 per ordinary share.

The average fair value per ordinary share during the year was $1.50.

Robert's earnings for the year to 31 December 20X3 were $1,200.

Required: Calculate Robert's diluted earnings per share for the year to 31 December 20X3.

Solution

(W1) Bonus element of the options

Proceeds if exercised: 2,000 × $1.20	$2,400
Shares at fair value: $2,400 ÷ $1.50	1,600
Bonus (free) shares: 2,000 – 1,600	**400**

Options have NO effect on earnings — only on the share count.

	Earnings	Shares	EPS
Basic EPS	1,200	6,000	20.0c
Option adjustment	—	+400	
Diluted EPS	**1,200**	**6,400**	**18.8c**

Diluted EPS for the year to 31 December 20X3 **18.8 cents**

Exercise — Options

Tiger Co

Tiger Co had 9 million shares in issue at the start of the year and made no issue of shares during the year ended 31 March 20X6, but on that date there were outstanding options to purchase 880,000 ordinary $1 shares at $1.80 per share.

The average fair value of ordinary shares was $1.90.

Earnings for the year ended 31 March 20X6 were $3,000,000.

Required: Calculate the diluted earnings per share for the year ended 31 March 20X6 (to 1 decimal point).

Solution — Options

(W1) Number of bonus shares from the options

Proceeds: 880,000 × $1.80	$1,584,000
Shares at fair value: $1,584,000 ÷ $1.90	833,684
Bonus (free) shares: 880,000 − 833,684	**46,316**

	Earnings ($)	Shares	EPS
Basic EPS	3,000,000	9,000,000	33.3c
Option adjustment	—	+46,316	
Diluted EPS	**3,000,000**	**9,046,316**	**33.2c**

Diluted EPS for the year ended 31 March 20X6 **33.2 cents**

Presentation & Disclosure

- Basic and diluted EPS must be presented on the face of the statement of profit or loss, for profit or loss attributable to ordinary equity holders, with equal prominence for all periods presented.
- If diluted EPS is presented for any period, it must be presented for all periods presented — even if it equals basic EPS.
- Disclosure includes: the earnings figures used as the numerator for basic and diluted EPS (reconciled to profit or loss), and the weighted average number of shares used as the denominator (reconciled between the two calculations).
- Instruments that could dilute EPS in the future, but were excluded from the diluted EPS calculation because they were anti-dilutive in the current period, must still be disclosed.

Significance of EPS

Strengths

- Allows better comparison of the performance of companies of different sizes.
- Widely used and understood — a key input into the Price/Earnings (P/E) ratio.
- Based on audited financial statement figures.

Limitations

- Affected by choice of accounting policies — not always comparable between companies.
- Historical — cannot reliably be used to predict future earnings.
- Concentrates on profitability only, ignoring cash flow, risk, and growth prospects.
- Can be distorted by share issues, buybacks, and one-off items in earnings.

Real-World Example

Phoenix Beverages Limited — Note 29: Earnings per Share

The Group	2020 MUR'000	2019 MUR'000
Profit attributable to owners of the Company	446,278	632,710
Number of ordinary shares in issue	16,447,000	16,447,000
Basic and diluted earnings per share (cents)	**27.13**	**38.47**

Basic EPS equals diluted EPS here because Phoenix Beverages has no convertible instruments or share options in issue — there is nothing to dilute. A fall in profit attributable to owners (632,710 → 446,278) directly reduces EPS (38.47c → 27.13c) since the share count is unchanged year-on-year.

RECAP

Key Formulae — Summary

Formula	Definition
Basic EPS	Earnings ÷ WAV number of ordinary shares
Bonus fraction	Shares after bonus issue ÷ shares before bonus issue
Rights issue bonus fraction	Cum-rights price (CRP) ÷ Theoretical ex-rights price (TERP)
Restated comparative EPS	Last year’s EPS × inverse of the bonus fraction
Diluted EPS	(Earnings + notional extra earnings) ÷ (WAV shares + notional extra shares)
Convertible loan adjustment	Add back post-tax interest saved; add shares issuable on maximum conversion
Option / warrant adjustment	No earnings effect; add the bonus (free) element of shares only



Thank You

Questions? — Now try the OT Questions and Exam Practice Kit for Chapter 4.