# Chapter 18

# Earnings per share

- IAS 33 *Earnings Per Share*
- Basic EPS
- Effect on EPS of changes in capital structure
- Diluted EPS
- Presentation, disclosure

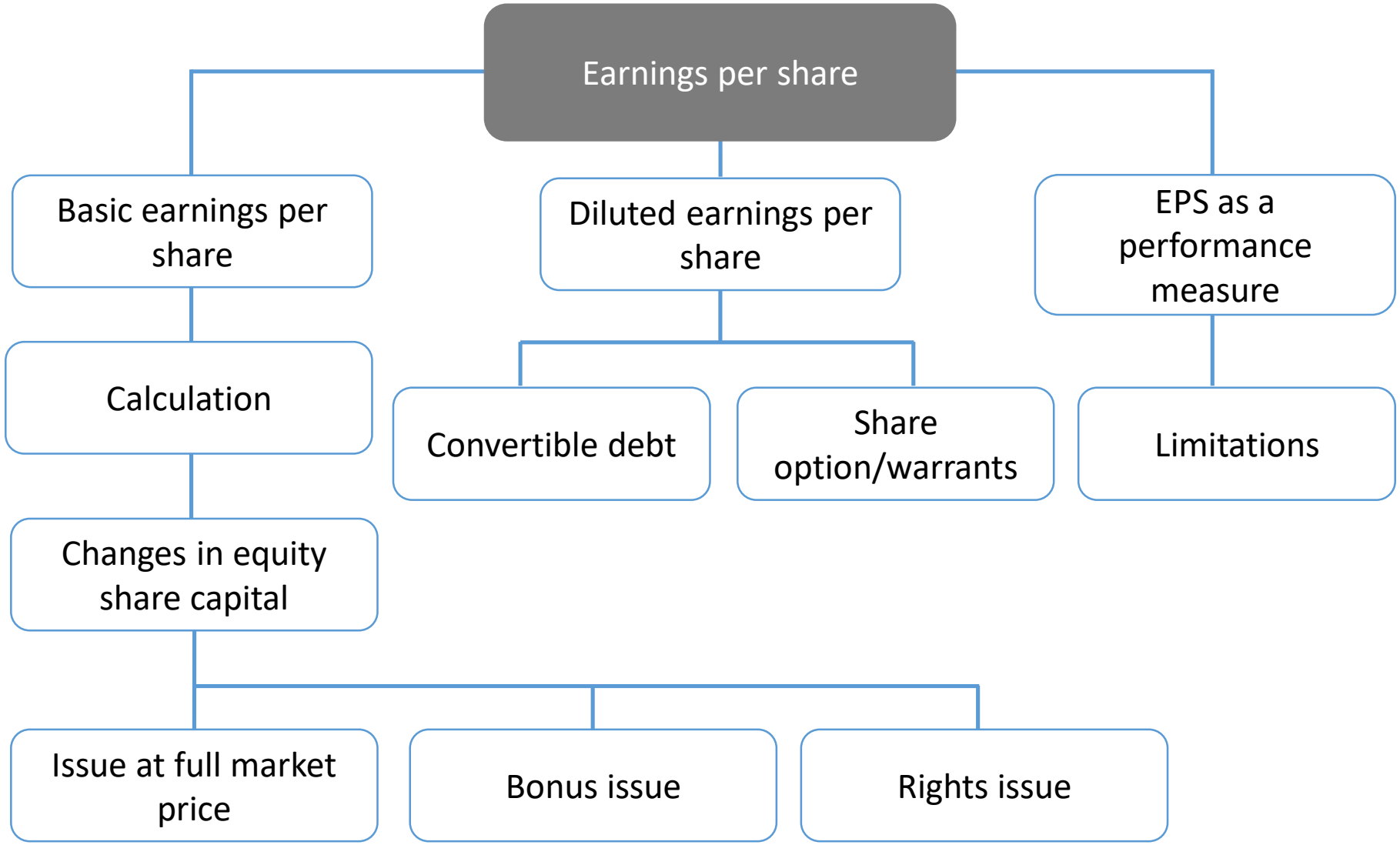
# Syllabus learning outcomes 1

- Calculate EPS in accordance with relevant accounting standards dealing with:
  - Bonus issues
  - Full market value issues
  - Rights issues
- Explain the relevance of the diluted EPS and calculate the diluted EPS involving convertible debt and share options (warrants)

# Syllabus learning outcomes 2

- Explain why the trend of EPS may be a more accurate indicator of performance than a company's profit trend and the importance of EPS as a stock market indicator
- Discuss the limitations of using EPS as a performance measure

# Chapter summary diagram



# IAS 33 *Earnings Per Share* 1

- Earnings per share or EPS is a ratio which measures the amount of profits earned by a company for each ordinary share in issue.
- The objective of IAS 33 was to provide a consistent method for the calculation of EPS in order to improve the comparison of the performance of different entities in the same period and of the same entity over time.

# IAS 33 *Earnings Per Share 2*

**Scope**

- IAS 33 only applies to companies whose ordinary shares are **publicly traded** (including companies in the process of obtaining a listing).
- EPS need only be presented on the basis on consolidated results in a set of consolidated financial statements which include the parent's separate financial statements.
- Where companies choose to present EPS information even though they are not required to they must do so in accordance with IAS 33.

# Basic EPS

**Calculation:**

- The basic earnings per share figure should be calculated as follows.

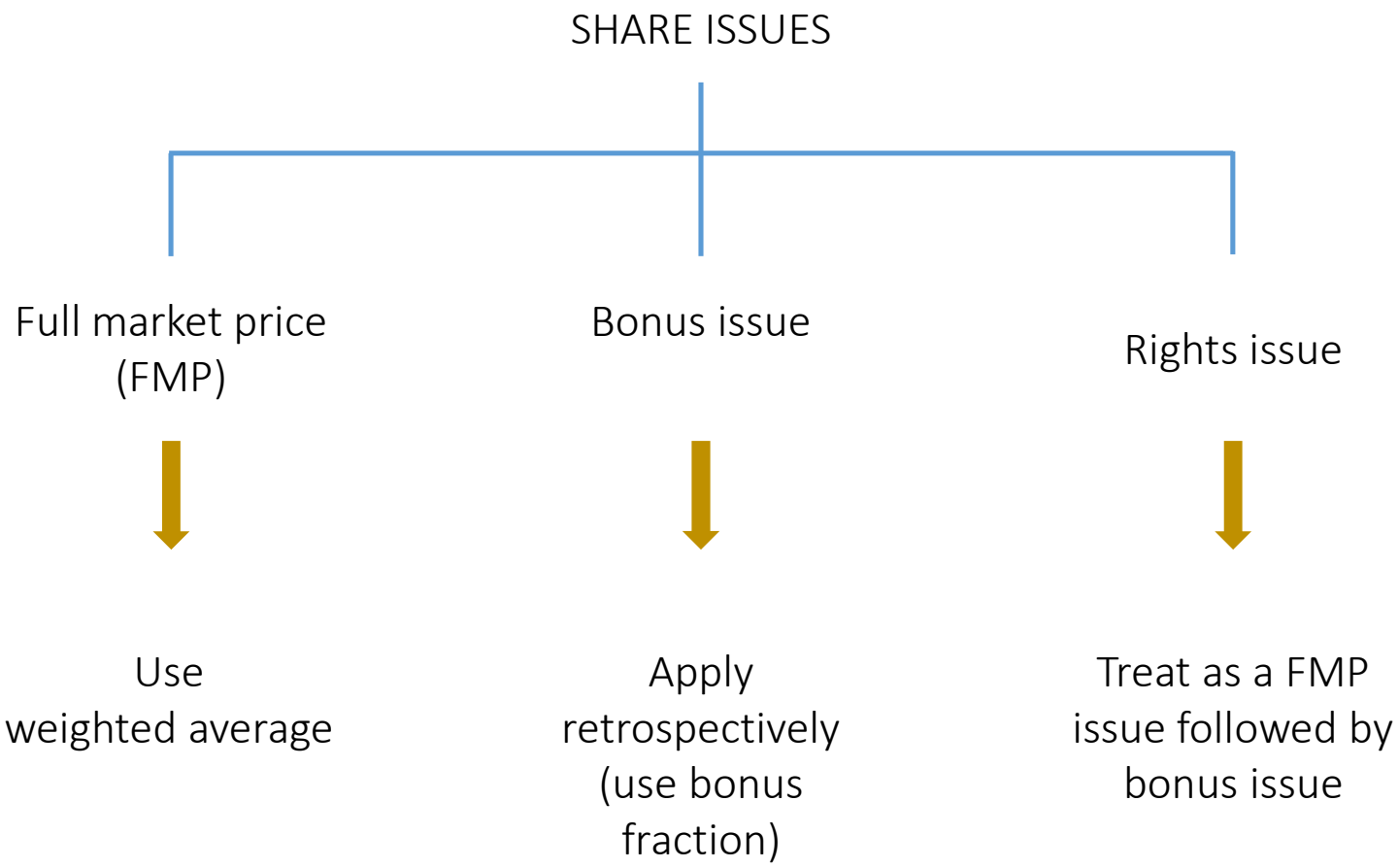
$$\frac{\text{Profit or loss for the period attributable to ordinary shareholders}}{\text{Weighted average number of ordinary shares in issue during the period}}$$

- Where the profit or loss for the period is the consolidated profit after income tax, non-controlling interest and preference dividends.

# Effect on EPS of changes in capital structure 1

- The EPS calculation essentially divides the profit figure by the weighted average number of shares in issue during the period.
- One of the ideas behind the EPS calculation is that if an entity issues shares during the period it will have additional resources with which it will be expected to generate an increased return.
- Any change in the number of ordinary shares during the period therefore will impact the EPS calculation.

# Effect on EPS of changes in capital structure 2



# Effect on EPS of changes in capital structure 3

**Issue at full market price**

- Where an entity has issued shares at the current market price it will have received a true price for its shares.
- It will therefore be expected to generate a return on these shares in the form of increased profits.
- However if the share issue occurred part way through the year the entity will only be expected to generate extra earnings for the time during which it had use of the additional funds.
- As such the number of shares in issue must be time apportioned.

# Effect on EPS of changes in capital structure 4

**Illustration**

- A company has earnings of $100,000 and a year end of 31 December.
- On 1 October 20X2 the company issued 300,000 shares at full market price.
- The share capital before the share issue was 600,000 shares.

# Effect on EPS of changes in capital structure 5

**Illustration (continued)**

The weighted average number of shares is calculated as:

| Date | Narrative | No. shares | Time period | Weighted average |
|---|---|---|---|---|
| 1.1.X2 | Bal b/d | 600,000 | × $^{9}/_{12}$ | 450,000 |
| 1.10.X2 | Full market price | 300,000 | | |
| | | 900,000 | × $^{3}/_{12}$ | 225,000 |
| | | | | 675,000 |

# Effect on EPS of changes in capital structure 6

**Illustration (continued)**

The EPS is: $\frac{\$100,000}{675,000} = 14.8$ cents per share

# Effect on EPS of changes in capital structure 7

**Bonus issue of shares**

- Bonus shares are issued at no consideration and therefore the company cannot be expected to generate the same return after a bonus issue.
- In order to make the EPS comparable year on year where there has been a bonus issue, it is necessary to restate the prior year EPS figure.
- This is done using the **reciprocal of the bonus fraction**.

# Effect on EPS of changes in capital structure 8

**Illustration**

A company has the following assets, earnings and share capital.

| | *20X2* | *20X1* |
|---|---|---|
| Assets (eg cash) | $100,000 | $100,000 |
| Earnings | $20,000 | $20,000 |
| Shares | 200,000 | 100,000 |
| | | |
| EPS | 10 cents | 20 cents |

On 1 January 20X2 the company makes a bonus issue on a 1:1 basis.

# Effect on EPS of changes in capital structure 9

**Illustration (continued)**

As it stands it looks like the company has not performed as well in 20X2 as it did in 20X1.

In 20X1 every share you owned would have earned you 20 cents of profit whereas this had fallen to 10 cents in 20X2.

However following the bonus issue in 20X2 for every one share you previously owned in the company you were issued one further share for free.

Therefore for every one share you owned in 20X1 which earned you 20 cents you now own two shares earning you 10 cents each.

Therefore you are no worse off.

**Illustration (continued)**

In order for the financial statements to show this we need to restate the prior year EPS using the reciprocal of the bonus fraction.

The bonus fraction is $^{2}/_{1}$ because for every one share you previously owned you now own two shares.

The reciprocal of the bonus fraction is therefore $^{1}/_{2.}$

The restated EPS for 20X1 is 20 cents $\times$ $^{1}/_{2}$ = 10 cents.

It is the restated EPS for 20X1 which should be compared with 20X2.

# Effect on EPS of changes in capital structure 11

**Rights issue of shares**

- When an entity wants to raise additional finance it may choose to do so through a rights issue.
- Here existing shareholders are offered the opportunity to buy more shares in the entity.
- The price they will have to pay for the shares (the rights price) will be lower than the current market price in order to encourage existing shareholders to subscribe to the rights issue.
- Consequently a rights issue includes both an issue of shares at full price and a bonus issue.

# Effect on EPS of changes in capital structure 12

**Rights issue of shares (continued)**

- Consistent with the bonus issue it is necessary to calculate the bonus fraction.
- This is calculated as:

$$\frac{\text{Fair value per share immediately before the exercise of rights}}{\text{Theoretical ex-rights price (TERP)}}$$

- It is applied to all periods (months) prior to the rights issue and the prior year EPS is restated using the reciprocal of the bonus fraction in order for the EPS to be comparable year on year.

**Rights issue of shares (continued)**

- The easiest way to see how the theoretical ex rights price (TERP) is calculated is through an example.
- Assume a company makes a rights issue on a 1:4 basis, the share price immediately before the exercise of rights is $10 per share and the rights price is $6.50.

| | $ |
|---|---|
| For every 4 shares @ $10 | 40.00 |
| 1 share @ $6.50 | 6.50 |
| A group of 5 shares @ | 46.50 |

$$\text{TERP:} \quad \frac{\$46.50}{5} = \$9.30$$

# Effect on EPS of changes in capital structure 14

**Rights issue of shares (continued)**

Bonus fraction = $\frac{10}{9.3}$

Reciprocal of the bonus fraction = $\frac{9.3}{10}$

# Effect on EPS of changes in capital structure 15

Exam questions on this topic can be reasonably straightforward if you approach them in a methodical way.

Make sure that you identify the dates on which each of the share transactions happen from the question.

Set up a table to record the number of months each different number of shares were in issue.

# Question: Lecture example 1

On 1 January 20X1 Saunders Co had 2,000,000 ordinary shares in issue.

On 30 April 20X1 the company issued at full market price, 270,000 ordinary shares.

On 31 July 20X1 the company made a rights issue of 1 for 10 at a rights price of $2.00. The fair value of the shares on the last day before the issue of shares from the rights issue was $3.10.

Finally, on 30 September 20X1 the company made a 1 for 20 bonus issue.

# Question: Lecture example 1 (cont'd)

Profit for the year was $400,000.
The reported EPS for year ended 31 December 20X0 was 18.6c.

*Required*

Calculate the EPS for year ended 31 December 20X1 and the restated EPS for year ended 31 December 20X0.

# Answer: Lecture example 1

EPS for year ended 31.12.X1

$400,000 / 2,431,508 (W1) = 16.5 cents

Restated EPS for year ended 31.12.X0

$18.6c \times (^{3.00}/_{3.10}) \times ^{20}/_{21}$ = 17.1 cents

# Answer: Lecture example 1 (cont'd)

*Workings*

1 *Weighted average number of shares*

| *Date* | *Narrative* | *Shares* | *Time* | *Bonus fraction* | *Weighted average* |
|---|---|---|---|---|---|
| 1.1.X1 | | 2,000,000 | × 4/12 | × 3.10 / 3.00 (W2) × 21/20 | 723,333 |
| 30.4.X1 | Full market price | 270,000 | × 3/12 | × 3.10 / 3.00 (W2) × 21/20 | 615,738 |
| | | 2,270,000 | | | |
| 31.7.X1 | Rights issue (1/10) | 227,000 | × 2/12 | × 21/20 | 436,975 |
| | | 2,497,000 | | | |
| 30.9.X1 | Bonus issue (1/20) | 124,850 | × 3/12 | | 655,462 |
| | | 2,621,850 | | | |
| | | | | | 2,431,508 |

# Answer: Lecture example 1 (cont'd)

2 *TERP*

| | $ |
|---|---|
| 10 @ $3.10 | 31.00 |
| 1 @ $2.00 | 2.00 |
| 11 | 33.00 |

∴ $3.00

# Diluted EPS 1

- The basic EPS is calculated by comparing the profits with the weighted average number of shares currently in issue.
- However it is possible that an entity might have a commitment to issue shares in the future, for example on the exercise of share options or the conversion of convertible debt.
- These commitments are known by IAS 33 as 'potential ordinary shares' and they may result in a change to the basic EPS.
- The **diluted EPS** shows how the basic EPS would change if the 'potential ordinary shares' such as convertible debt became ordinary shares.
- The diluted EPS therefore warns current shareholders of what may happen to the EPS in the future.

# Diluted EPS 2

The most efficient way to calculate the diluted EPS is to:

- Take the earnings figure used in the basic EPS calculation and determine how it would change if the 'potential ordinary shares' became shares
- Take the weighted average number of shares used in the basic EPS calculation and increase it for the number of 'potential ordinary shares'

# Diluted EPS 3

**Convertible debt**

- Adjustments to basic earnings and number of shares where an entity has convertible debt:

| Earnings: | | |
|---|---|---|
| Basic earnings | X | |
| Add back loan interest saved net of tax | X | |
| Diluted earnings | X | |

# Diluted EPS 4

**Convertible debt (continued)**

- Number of shares:

| | | | |
|---|---|---|---|
| Basic weighted average number of shares | X | | |
| Add additional shares on conversion | | | |
| (use maximum dilution) | | X | |
| Diluted weighted average number of shares | X | | |

# Question: Lecture example 2

Acorn Co had the same 10 million ordinary shares in issue on both 1 April 20X1 and 31 March 20X2.
On 1 April 20X1 the company issued 1,200,000 $1 units of 5% convertible loan stock.
Each unit of stock is convertible into 4 ordinary shares on 1 April 20X9 at the option of the holder.

The following is an extract from Acorn Co's statement of profit or loss and other comprehensive income for the year ended 31 March 20X2.

| | $'000 |
|---|---|
| Profit before interest and tax | 980 |
| Interest payable on 5% convertible loan stock | (60) |
| Profit before tax | 920 |
| Income tax at 30% | (276) |
| Profit for the year | 644 |

# Question: Lecture example 2 (cont'd)

*Required*

Calculate the basic and diluted earnings per share for the year ended 31 March 20X2.

# Answer: Lecture example 2

***Basic EPS***

$$\frac{\$644{,}000}{10{,}000{,}000} = 6.4c$$

# Answer: Lecture example 2 (cont'd)

***Diluted EPS***

*Earnings*

| | $ |
|---|---|
| Basic | 644,000 |
| Interest saving 1,200,000 @ 5% × 70% | 42,000 |
| | 686,000 |
| *Number of shares* | |
| Basic | 10,000,00 |
| On conversion | 4,800,000 |
| | 14,800,000 |

Diluted EPS = $\frac{\$686,000}{14,800,000} = 4.64c$

# Diluted EPS 5

**Share options or warrants**

- Where an entity has issued share options or warrants, individuals will have the right to buy shares at a certain point in the future.
- The price they will be required to pay will almost certainly be below the current market price.
- This amounts to a situation where some of the shares can be deemed to have been issued at full price and the remainder will effectively have been issued for no consideration.
- It is only the **shares deemed to have been issued for no consideration which are dilutive**.
- These are **added** on to the basic weighted average number of shares.

# Diluted EPS 6

**Share options or warrants (continued)**

- Proforma calculation:

| | | |
|---|---|---|
| Number of shares under option | | X |
| Number that would have been issued at average market price (AMP) | | |
| [(no. of options × exercise price) ÷ AMP)] | (X) | |
| Number of shares treated as issued for nil consideration | | X |

# Question: Lecture example 3

Galaxy Co has a profit for the year of $3m for the year.

1.4m ordinary shares were in issue during the year.

Galaxy Co also had outstanding 250,000 options for the whole year with an exercise price of $15.

The average market price of one ordinary share during the period was $20.

*Required*

Calculate the basic and diluted EPS.

# Answer: Lecture example 3

*Basic EPS*

$$\frac{\$3,000,000}{1,400,000} = \$2.14$$

*Diluted EPS*

| | |
|---|---|
| Number of shares under option | 250,000 |
| No. that would have been issued at average market price [(250,000 × $15)/$20] | (187,500) |
| ∴No. shares treated as issued for nil consideration | 62,500 |

$$\text{Diluted EPS} = \frac{\$3,000,000}{1,400,000 + 62,500} = \$2.05$$

# Presentation, disclosure and other matters 1

- The basic and diluted EPS should be presented on the face of the statement of profit or loss and other comprehensive income for each class of ordinary share.
- The basic and diluted EPS should be presented with equal prominence.
- Disclosure should still be made even if one or both of the EPS figures are negative (indicating a loss for the period).

# Presentation, disclosure and other matters 2

**Significance of EPS**

- EPS is frequently used to compare company performance.
- The EPS calculation is also used in Price/Earnings (P/E) ratio which is often used for investment decisions.
- It should however be noted that EPS is based on historical not prospective data, and so is an indication of past rather than future performance.
- The IAS 33 calculation of EPS includes **one-off income/expense items which distort the EPS** figure.
- IAS 33 does allow additional EPS calculations to be disclosed in the financial statements but they must be disclosed in the notes to the financial statements rather than on the face of the statement of profit or loss and other comprehensive income.

# Past exam questions

| Nature of question | Exam details |
|---|---|
| The calculation of the basic earnings per share figure can be tested as a part (b) in the financial statement preparation question for three or four marks. | Q2 June 2013<br>Q2 June 2012 |
| More detailed questions requiring the calculation of both basic and diluted earnings per share can be tested in other questions. | Q4 June 2011 |

# Past exam questions

| Nature of question | Exam details |
|---|---|
| It is also important to consider EPS in an interpretation question and to be able to discuss the limitations of the ratio as well. | |
| An MCQ on EPS is also possible. | |