

Understanding Basic Ratios



This paper examines several widely used ratios in the financial industry, which help enable investors to make decisions on whether to buy or sell shares at a given price.

The ownership of a publicly listed company is split into shares. The unit price for these shares is the price quoted on the share market. To compare the company's fundamental financial information with its share price, we calculate per share ratios, such as **Earnings per Share (EPS), Dividend per Share (DPS), Discounted Cash Flow (DCF) and Net Tangible Assets (NTA).**

Should you have any questions about the information discussed in this booklet, please contact your Forsyth Barr Investment Adviser on 0800 367 227.

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Earnings per Share (EPS)

EPS is the proportion of a company's after tax earnings attributed to each share on issue. As well as looking at the absolute level of EPS, the strength and stability of a company's earnings may be ascertained by also measuring EPS growth and reviewing the predictability or volatility of earnings over time. The information for calculating a company's EPS comes from its Statement of Financial Performance (Profit & Loss Statement).

EPS and EPS Growth are calculated as:

$$\text{EPS} = \frac{\text{Net Profit after Tax}}{\text{Shares on Issue}}$$

$$\text{EPS growth} = \frac{\text{Year 2 EPS} - \text{Year 1 EPS}}{\text{Year 1 EPS}}$$

Example Question: Calculate the 2019 EPS for Company A, using the information below.

Statement of Financial Performance	2019	2018
Revenue	\$100m	\$90m
Operating Expenses	(\$60m)	(\$55m)
Earnings before Interest, Taxation, Depreciation and Amortisation (EBITDA)	\$40m	\$35m
Depreciation and Amortisation	(\$5m)	(\$5m)
Earnings before Interest and Taxation (EBIT)	\$35m	\$30m
Net Interest	(\$5m)	(\$5m)
Profit before Taxation (PBT)	\$30m	\$25m
Taxation Expense	(\$10m)	(\$10m)
Net Profit after Taxation (NPAT)	\$20m	\$15m
Shares on Issue	100m	100m

Answer:

$$\text{2019 EPS} = \frac{\$20\text{m (Net Profit after Tax)}}{100\text{m (Shares on Issue)}} = 20\text{c}$$

Example Question: Calculate the 2019 EPS growth for Company A, using the same information.

Answer:

$$\text{2018 EPS} = \frac{\$15\text{m (Net Profit after Tax)}}{100\text{m (Shares on Issue)}} = 15\text{c}$$

$$\text{2019 EPS growth} = \frac{20\text{c (2019 EPS)} - 15\text{c (2018 EPS)}}{15\text{c (2018 EPS)}} = 33\%$$

Basic PE Ratio

The price to earnings ratio (PE) is a widely used value indicator. A PE is a rough proxy for the time required in years for an investor to recover the purchase price from a company's future earnings. A PE is a universal indicator, which presents earnings and share prices in a common ratio, enabling comparisons to be made between companies, irrespective of the currency and country in which they trade and report profits (i.e. PE's enable a comparison to be made between a New Zealand company and an Australian or a United States company). Most commonly, a PE comparison is undertaken to compare a company with its industry peers or against an overall market.

A low PE may suggest the company is cheap or has a poor earnings growth outlook. Conversely a high PE could indicate an expensive stock or a high earnings growth company (the accelerating earnings would repay the purchase price more quickly).

The formula for calculating a PE ratio is:

$$PE = \frac{\text{Current Share Price}}{\text{EPS}}$$

Example Question: Using the 2019 EPS derived from the previous question, and assuming a current market price of \$2.50, calculate Company A's 2019 PE ratio.

Answer:

$$2019 \text{ PE} = \frac{\$2.50 \text{ (Current Share Price)}}{20c \text{ (2019 EPS)}} = 12.5x$$

Example Question: Kiwi Construction, a New Zealand based building company, reported a 2019 EPS of 50c and trades at a current share price of \$5.00. Wallaby Building, an Australian based building company, reported a 2019 EPS of A60c and trades at a current share price of A\$6.60. Which trades on a higher PE ratio?

Kiwi Construction

$$2019 \text{ PE} = \frac{\$5.00 \text{ (Current Share Price)}}{50c \text{ (2019 EPS)}} = 10.0x$$

Wallaby Building

$$2019 \text{ PE} = \frac{\$6.60 \text{ (Current Share Price)}}{60c \text{ (2019 EPS)}} = 11.0x$$

Answer: Wallaby's PE of 11.0x is higher than Kiwi's PE of 10.0x.

Dividends

A dividend is a payment or distribution made to share holders from a company's profits. Most commonly, dividends are paid twice a year (although sometimes they are paid annually or quarterly). The first payment is referred to as an interim dividend and corresponds with a company's interim profit result. The second dividend is the final dividend and is paid soon after a full year result is released. The interim and final dividends are sometimes the same amount but may be of differing amounts.

Payout Ratio

Some companies aim to provide smooth (and gradually increasing) dividend payments over time, while others have a dividend policy which stipulates a certain percentage of profits in each year to be distributed to shareholders. The payout ratio for a company is the percentage of profits distributed each year in dividends.

The formula for calculating a payout ratio is:

$$\text{Payout Ratio} = \frac{\text{Dividend Per Share (DPS)}}{\text{Earnings Per Share (EPS)}}$$

Companies that are growing rapidly and require funds for expansion tend to retain a large proportion of their profits and have a low payout ratio. In contrast, companies in a mature industry with often predictable earnings streams and little need for expansion capital tend to have a high payout ratio.

Dividend Yield

The dividend yield is the expected income return over the next year on a share investment at a given purchase price.

The formula for calculating a dividend yield is:

$$\text{Dividend Yield} = \frac{\text{DPS}}{\text{Current Share Price}}$$

Example Question: Calculate the payout ratio for Company B if DPS is 15c and EPS is 20c.

Answer:

$$\text{Payout Ratio} = \frac{15\text{c (Dividend Per Share)}}{20\text{c (Earnings Per Share)}} = 75\%$$

i.e. 75% of Company B's earnings were paid out in dividends and 25% of its earnings were retained.

Example Question: Calculate the dividend yield for Company C if DPS is 15c and current share price is \$3.00.

Answer:

$$\text{Dividend Yield} = \frac{15\text{c (Dividend Per Share)}}{\$3.00 \text{ (Current Share Price)}} = 5\%$$

Valuation of Shares

While a PE is a useful value indicator for comparison purposes and a dividend yield gives an idea of expected income return, neither give an estimate of a share's value or what price it should trade at. Two valuation estimates we will examine are Discounted Cash Flow (DCF) and Net Tangible Assets (NTA).

Discounted Cash Flow (DCF)

The theory behind a DCF is that the price paid for a share today should be equivalent to the sum of its expected future cash flows discounted back to present value using a required rate of return (these cash flows would translate into dividends and capital gains for a share holder). A DCF is often used to estimate a "fair value" for a share.

The formula for calculating a DCF is:

$$\begin{aligned}
 \text{DCF} &= \frac{\text{Sum of (Present Value of Future Cash Flow)}}{\text{Shares on Issue}} \\
 &= \text{Sum of} \left(\frac{\text{Cash Flow}_n}{(1+\text{Required Rate of Return})^n} \right) \frac{1}{\text{Shares on Issue}}
 \end{aligned}$$

V = Present Value (Estimated Cash Flow x Present Value Factor)
 n = Number of years.

Notes

* Present Value Factor = $1/(1+r)^n$. In this example $r = 10\%$ denoted as 0.1 so to calculate the Present Value Factor of Year 5 it would be $1/(1+0.1)^5 = 0.621$.

Present Value = Estimated Cash Flow x Present Value Factor. In this example to calculate the Present Value of Year 5 it would be $\$113\text{million} \times 0.621 = \70million .

‡ The terminal value of a firm is its estimated value at a future point in time. (Current value, interest rates and projected growth are all taken into consideration to calculate the terminal value).

Example Question: Calculate the DCF for Company D, using the information in the table below. The required rate of return is 10%. Shares on issue = 300m.

Year	Estimated Cash Flows
1	\$100m
2	\$105m
3	\$112m
4	\$111m
5	\$113m
6	\$116m
7	\$121m
8	\$118m
9	\$122m
10	\$125m
Terminal‡	\$600m

Answer:

Year	Estimated Cash Flows	Present Value Factor*	Present Value#
1	\$100m	0.909	\$91m
2	\$105m	0.826	\$87m
3	\$112m	0.751	\$84m
4	\$111m	0.683	\$76m
5	\$113m	0.621	\$70m
6	\$116m	0.564	\$65m
7	\$121m	0.513	\$62m
8	\$118m	0.466	\$55m
9	\$122m	0.424	\$52m
10	\$125m	0.385	\$48m
Terminal‡	\$600m	0.385	\$231m
Total			\$921m

$$\text{DCF} = \frac{\$921\text{m (All Present Values added together)}}{300\text{m (Shares on Issue)}} = \$3.07$$

Example Question: Using the answer above and given a current share price of \$3.00, calculate the premium/discount Company D is trading at compared to its DCF estimate.

Answer:

$$\begin{aligned}
 \text{Premium/Discount} &= \frac{\$3.00 \text{ (Current Share Price)}}{\$3.07 \text{ (DCF)}} - 1 \\
 &= -0.0228 \times 100 = \mathbf{2.28\% \text{ discount}}
 \end{aligned}$$

Net Tangible Assets (NTA) Per Share

Usually investors focus on a company's ability to generate future cash flows in ascertaining a value for its shares. An NTA is a "break-up valuation" i.e. the amount per share which would be realised if a company's assets were sold and its debts repaid. An NTA is a particularly useful measurement tool for investment companies (i.e. companies which invest in other companies) whose annual earnings from buying and selling investments do not include unrealised gains or losses in asset values and do not represent a true picture of the share's underlying value. Information for calculating an NTA comes from a company's Balance Sheet.

The formula for calculating for an NTA is:

$$\text{NTA Per Share} = \frac{\text{Tangible Assets} - \text{Liabilities}}{\text{Shares on Issue}}$$

Note: NTA excludes intangible assets such as brands and goodwill.

Example Question: Calculate the NTA for Company E, using the information in the table below.

Balance Sheet	2019
<i>Current Assets</i>	
Cash	\$5m
Debtors	\$10m
Inventories	\$10m
Total Current Assets	\$25m
<i>Long-Term Assets</i>	
Property, Plant & Equipment	\$90m
Goodwill	\$5m
Other Assets	\$5m
Total Long-Term Assets	\$100m
TOTAL ASSETS	\$125m
<i>Current Liabilities</i>	
Creditors	\$10m
Short-Term Borrowings	\$10m
Total Current Liabilities	\$20m
<i>Long-Term Liabilities</i>	
Borrowings	\$40m
Total Long-Term Liabilities	\$40m
TOTAL LIABILITIES	\$60m
<i>Shareholders' Equity</i>	
TOTAL EQUITY	\$65m
Shares on Issue	100m

Answer:

$$\begin{aligned} \text{Tangible assets} &= \$125\text{m (Total Assets)} \\ &\quad - \$5\text{m (Goodwill)} = \$120\text{m} \\ \text{NTA Per Share} &= \frac{\$120\text{m (Tangible Assets)} - \$60\text{m (Liabilities)}}{100\text{m (Shares on Issue)}} = 60\text{c} \end{aligned}$$

Example Question: If the current share price for Company E is 75c, calculate the premium/discount to NTA.

Answer:

$$\begin{aligned} \text{Premium/Discount} &= \frac{75\text{c (Current Share Price)} - 60\text{c (NTA)}}{60\text{c (NTA)}} = 1.25 - 1 \\ &= 0.25 \times 100 = 25\% \end{aligned}$$

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