Multiples Valuation

Multiples valuation is the preferred method to value stocks amongst practitioners in the finance industry. There are many different multiples that are used, some of the most common are:

- Share Price/Earnings (PE) ratio,
- Enterprise Value/EBITDA (EV/EBITDA) ratio
- Book value of equity/Market value of equity (Book to market) ratio
- Share Price/ Sales (Price to sales) ratio
- (Share Price/Earnings)/Earnings growth (PEG) ratio

We'll focus on the 'Price to Earnings' or PE ratio.

Earnings Per Share (EPS) Calculation

Earnings per share is reported in companies' financial reports. It is the total earnings of the firm divided by the total number of shares.

$$EPS = \frac{Total\ earnings}{number\ of\ shares} = \frac{NI}{n_{shares}}$$

Note that earnings are an American term for Net Income (NI) or Net Profit After Tax (NPAT).

PE Ratio Calculation

The PE ratio can be calculated in two different ways which give the same answer:

$$PE\ ratio = \frac{share\ price}{EPS} = \frac{P_{share}}{EPS}$$

If we multiply the top and bottom of the fraction by the total number of shares, then the denominator will be total earnings, and the numerator will be the market capitalisation of equity (E, as in V=D+E) which is the price of buying all shares ($E = n_{shares}.P_{share}$).

$$PE\ ratio = \frac{market\ capitalisation\ of\ equity}{total\ earnings} = \frac{E}{NI}$$

Price-Earnings Ratio Valuation

How to calculate stock XYZ's market capitalisation of equity using the price-earnings multiple (or PE ratio) approach:

- Make a list of similar firms from the same industry as XYZ with the same levels of risk and leverage (ratio of debt to assets).
- Calculate each similar firm's PE ratio by dividing its current share price by its earnings per share last year (historical EPS). Calculate the average of all of the similar firms' PE ratios. If any firms had negative EPS or EPS close to zero, then their PE ratios will be negative or extremely large so they should be excluded from the average.
- Multiply XYZ's EPS last year by the average PE ratio of similar firms. This will give the share price of XYZ now. Multiplying by the number of shares gives XYZ’s market capitalisation of equity.

Backward versus Forward Looking PE Ratios

In the above steps we valued our firm using 'backward looking' PE ratios since we used last year's EPS, also known as 'historical' EPS. This gives PE ratios which are accurate but stale since they reflect the past, not the future which is what we're interested in.

Another way of doing PE ratio valuation is to use 'forward-looking' PE ratios by using next year's expected EPS which are more useful, but less accurate because. They are less accurate because next year's EPS is unknown so they are usually based on analysts' forecasts which can vary widely.

Calculation Example: Multiples Valuation

Question: Estimate Westpac Bank's (WBC) **share price** using the comparable firms in the table.

Australian Banks' Financial Details as at 28/2/14

	ANZ	CBA	NAB	WBC
Share price ($)	32.14	74.66	34.74	?
Historical EPS ($)	2.24	4.94	2.26	2.15
Number of shares (billion)	2.72	1.61	2.29	3.10
Market cap of equity ($ billion)	87.42	120.20	79.55	?
Historical net income ($ billion)	6.09	7.95	5.18	?
PE ratio, backward looking	14.35	15.11	15.37	?

Source: Google Finance.

Answer: The other major Australian banks are comparable to Westpac so a PE ratio approach will work. Westpac's estimated share price equals the average of the comparable firms' PE ratios, all multiplied by Westpac's earnings per share:

$$P_{WBC} = \text{Average of comparable firms' PE ratios} \times EPS_{WBC}$$

$$= \frac{14.35 + 15.11 + 15.37}{3} \times \$2.15$$

$$= 14.9433 \times \$2.15 = \$\mathbf{32.13}$$

This is very close to Westpac's actual share price on 28/2/14 of $\$\mathbf{33.47}$. In this case the PE multiple approach to valuation has done a good job, probably because the 4 major Australian banks are so similar.