

ADJUSTING ANALYST FORECASTS

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1. Overview

Analyst forecasts drive value. Therefore, it is useful to understand potential biases in analyst forecasts and adjust those forecasts to remove some of the biases. This spreadsheet examines analyst forecasts of sales and EPS for the forthcoming two years because they are readily available. Forecasted EPS growth typically exceeds forecasted sales growth 75% of the time. An expected increase in leverage and reduction in number of shares due to stock buybacks, can sometimes explain why EPS is expected to grow faster than sales. More frequently, the discrepancy is due to an overly optimistic forecast of margin expansion. This spreadsheet deconstructs EPS forecasts into their parts to separate these two effects. The spreadsheet does the following:

- It removes the effect of changes in financial policy and stock buybacks by unleveraging EPS forecasts to arrive at analyst expectations regarding after tax enterprise profit margin for the upcoming two years. Databases of analyst forecasts typically provide forecasts of net income, not operating income. It is useful to derive the implied growth in operating income to remove the effect of financial policy. Unleveraging requires forecasts of shares outstanding and net after tax financial expense.
- It removes the effect of analyst optimism regarding improvements in operating margin. Such improvements may be attributed to operating leverage or reduction in variable costs that may not be justified. Therefore, the spreadsheet adjusts the forecast of EPS for Y2 under the assumption that there will be no operating margin expansion. Typically, the Y2 margin is greater than the Y1 margin suggesting an upward bias in the Y2 figure.
- It removes the effect of differences in EPS growth that is driven by differences in dividend payouts across firms. The spreadsheet recognizes that the growth in earnings depends on dividend policy. To compare EPS growth, one needs to adjust EPS for the earnings foregone in Y2 on dividends paid in Y1. The spreadsheet recomputes EPS growth by increasing Y2 earnings by Y1 dividends times the rate of return that could have been earned on Y1 dividends.

2. Detailed steps to be read with the spreadsheet

Current year is Y0. The next two years are denoted by Y1 and Y2, respectively.

2.1. Analyst forecasts of sales and EPS

1. Input: Forecasts of sales for the forthcoming two years
2. Input: Forecasts of earnings per share for the forthcoming two years

2.2. Required forecasts of interest and taxes

3. Input: Number of shares outstanding is needed to convert per share amounts to dollar totals.
 - 3.1. As a practical matter, you can generally set future number of shares outstanding to the current number of shares outstanding unless the firm has known plans to buy back or issue shares.
4. Input: Net interest expense
 - 4.1. As a practical matter, you can generally set future net interest expense to the current net interest expense. Refining the forecast of net interest expense via capital structure assumptions will generally not be material to justify the effort.
5. Input: Tax rate

- 5.1. As a practical matter, you can generally set this to the current year tax rate after removing the effect of non-recurring items.

2.3. Deleveraging analyst forecasts to derive enterprise profit

6. Start with net income = $\text{EPS} * \text{number of shares outstanding}$
7. Add back interest expense, net of tax = $\text{interest expense} * (1 - \text{tax rate})$
8. = Enterprise profit, net of tax implied by the analyst EPS forecasts

2.4. Comparing enterprise and net margins

9. Enterprise profit margin after tax = $\text{Enterprise profit after tax [EPAT]}/\text{Sales}$
 - 9.1. This key metric summarizes analyst views regarding the enterprise activities of the company.
10. Net margin = $\text{Net income}/\text{Sales}$. The relative effect of financial activities becomes visible by comparing the net margin to the enterprise margin.

2.5. Comparing sales growth and earnings growth

11. We start with sales growth from Y1 to Y2.
12. We then compare it with corresponding EPS growth. EPS growth differs from sales growth because of two reasons:
 - 12.1. Enterprise margin expansion: Analysts often forecast an improvement in enterprise margins.
 - 12.2. Interest expense does not grow in direct proportion to sales.

2.6. Dissecting growth: Earnings growth without enterprise margin expansion

To extract the effect of enterprise margin expansion, we recompute enterprise profit by assuming that the enterprise margin remains unchanged from Y1 to Y2.

13. Start with sales in Y2.
14. Assume that the enterprise margin, after tax will remain unchanged from Y1.
15. Multiply sales by enterprise margin, after tax from Y1 to derive enterprise profit, after tax.
16. Subtract the after-tax interest expense computed earlier.
17. This gives us the re-estimated net income without enterprise margin expansion.
18. Divide by the number of shares outstanding in Y2 to derive the new EPS_2 .
19. Compute the revised growth rate in EPS_2 . This should be compared with EPS_2 growth rate without adjustments.

2.7. Dissecting growth: Earnings growth adjusted for dividend payout

Another factor affecting earnings growth is dividend payout. Dividend payout reduces reinvestment and thereby reduces earnings growth.

20. Input: Discount factor or the opportunity cost of equity.
21. Input: Dividend payout ratio for Y1, extrapolated from the past record
22. Dividends per share for Y1 = $\text{EPS}_1 * \text{Payout ratio}$
23. We assume that DPS_1 could be reinvested by the firm to yield a return at the rate of cost of equity. Thus, the earnings foregone due to DPS_1 equal $\text{DPS}_1 * \text{Cost of equity}$.

24. Adjusted $EPS_2 = EPS_2 + \text{Earnings foregone on } DPS_1$
25. We compute the revised growth rate in EPS_2 .