Analyzing Growth Rates

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Article Highlights

- Growth in sales over the long term is crucial because it allows a company to spend and earn more.
- Changes in shares outstanding make it important to look at both net income and earnings per share growth.
- Return data from AAII's stock screens imply that the presence of growth is more important than the rate of growth.

Much of financial analysis is focused on determining a company's financial strength or weakness, how profitable the firm is and how well management uses assets and debt. However, there is another important component: growth. Specifically, this analysis focuses on determining whether a company is growing sales, earnings and cash flow and the likelihood of it continuing to do so in the future. As part of my series on financial statement analysis, this article delves into growth rates and discusses how you can use them not only to evaluate a company's financial strength but also to make an educated guess as to how a company will perform going forward.

Calculating Growth

Growth measures a company's sales, earnings or cash flow at one point in time compared to a point in time in the past. Growth can be analyzed for various time ranges, though analysts typically look at periods ranging from the past 12 months (often times referred to as trailing 12 months, or TTM) up to the past five or seven years.

Calculating total growth is straightforward: You simply subtract the beginning value of a financial figure from its ending value, and then divide that result by the beginning value. Annualized growth shows the average growth rate experienced over a specified time period (e.g., seven years). Annualized growth is also referred to as compound growth; the calculation is presented in the box on page 23. You can estimate annualized return, however, by simply dividing total growth by the number of periods. This estimate works well for off-the-cuff analysis, but it does not accurately reveal the impact of fluctuations in growth or compounding.

With this said, it is almost never necessary to calculate growth rates manually because they are easily obtained from investment websites and software programs. For example, AAII's *Stock Investor Pro* fundamental stock screening and research database program provides growth rates for one-, three-, five- and seven-year periods for each of the data elements discussed here. The top comprehensive investment websites also offer similar data (these sites can be found in AAII's Guide to the Top Websites at www.aaii.com/guide/webguide).

Revenue Growth

On a company's income statement, the top line shows the total revenues, or sales, for a given period. This is why

Figure 1. Sales Growth Rates for Hewlett-Packard Co.

Hewlett-Packard Company (HPQ) Price $16.870 ($30.000-$11.350)

Sector 10 - Technology Industry 1006 - Computer Hardware

	1 Year	3 Year	5 Year	7 Year	1 Year Ago
Sales					
Company	-5.4	1.7	2.9	4.8	-5.4
% Rank	25	42	43	43	29
Sector	6.8	8.2	6.3	6.9	3.3
Industry	4.1	2.5	2.2	4.8	-4.5

Source: AAII's Stock Investor Pro*/Thomson Reuters. Data as of February 8, 2013.*

the change in sales is often referred to as "top-line growth." Sales are the lifeblood of any company and, needless to say, growing sales over the long term is crucial. Greater sales bring in more money to the company. This is money that can be spent on capital expenditures, advertising, research and development, salaries, projects that can lead to future growth and, most importantly, profits and cash flow. Though a company can increase its profits and cash flow through cost-cutting measures, there is a limit to how much expenses can be reduced. Plus, the impact of inflation, even low rates of inflation, require a company to boost its revenues if it wants to maintain current margins and profitability.

Companies in different stages of their life cycle have different revenue growth rates. Smaller companies with increasing production of strong-selling new products will have higher growth rates than larger, well-known companies with mature product lines. Larger companies also can often have lower sales growth rates because of the sheer amount of business they do. A 20% increase in sales of $50 million is $10 million. A 20% increase in sales of $5 billion is $1 billion. In order to achieve the same percentage growth rate, the number of additional products or services that have to be sold varies widely.

Additionally, companies operating in different industries can have vastly different sales growth rates. This is why when comparing several companies' growth in sales, it is important to choose companies that are "comparable." Comparing a company against its industry or sector median shows how strong a company's growth is relative to the growth of its peers. Though this analysis can be helpful, the difference between a company and its peers can be considerable, so make sure you understand how a company differs from other firms in the same industry or sector when making these comparisons.

For example, I pulled up Hewlett-Packard Company's (HPQ) sales growth rate using *Stock Investor Pro* with data as of February 8, 2013, as you can see in Figure 1. Looking at the long-term growth rate, the program reports that Hewlett-Packard has grown 2.9% annually over the last five years. For the technology sector, the median growth rate is 6.3%, suggesting that Hewlett-Packard has grown much slower than other technology firms. However, this masks the fact that the industry in which HPQ operates, computer hardware, has not fared as well as other industry groups within the technology sector due to the proliferation of mobile devices and other events. Over the past five years, the computer hardware industry's median growth rate is only 2.2%, which actually implies that Hewlett-Packard has grown faster than its industry peers over the past five years.

Net Income Growth

Net income is displayed at the bottom of an income statement. As such, increases in net income and earnings per share are referred to as "bottom-line growth." The key question that net income growth answers is: How much are shareholders benefiting from sales after all expenses are deducted?

As discussed in my article "The Income Statement: From Net Revenue to Net Income" (March 2012 *AAII Journal*), net income is influenced by changes in revenues and expenses. A company can increase sales, but if growth is being driven by promotional pricing or other forms of discounting, each new sale is less profitable. Money spent on overhead, research and development, and marketing also influences how profitable the growth is. A company in the midst of a strong growth cycle may spend heavily on increasing its internal infrastructure (sales staff, distribution, facilities, etc.), causing profit growth to lag revenue growth. On the other hand, a company engaged in cost-cutting can experience stronger net income growth than sales growth.

You can gauge the "quality" of a company's net income growth by analyzing its gross margin and operating margin. Declining margins reduce profits, while rising margins increase profits. If a company's gross margins are declining, competitive pressures could be intensifying (a threat to future growth) or the mix of products may be changing. Declining operating margins also hurt net income growth and can signal that costs are growing at a disproportionately faster rate than sales.

An ideal scenario may seem to be one in which net income and sales growth approximate each other. This is rarely the case, as various factors influence both. Plus, you need to consider the factors driving the growth. Reducing prices may reduce the relative growth rate of net income, but the absolute dollar amount may be higher because the lower prices allow the company to sell a greater number of products or services. Similarly, cost-cutting measures can accelerate net income growth over the short term, but they could potentially hurt long-term growth. A company that wisely spends on new projects and expansion may realize greater profitability over the long term. This is why it is important not only to look at the rate of growth, but to also ask if management has and is taking reasonable steps

Calculating Compound Growth Rate

Calculating growth over several years requires more than just simply determining the percentage difference between the beginning-period and ending-period values. Fluctuations in the rate of change, particularly any periods with negative growth, require a more complex calculation: compound growth.

Consider a company that realized $1.2 billion in revenues last year and $600 million in revenues five years ago. This equates to a total change of 100% ((1,200 – 600) ÷ 600 = 100%) or 20.0% per year (100% ÷ 5 years). However, the 20% growth number gives only an off-the-cuff estimation of sales growth. As sales grow each year, it takes an ever larger amount of dollars to achieve the same rate of growth. Thus, if a 20% growth rate were maintained each year, revenues at the end of 2012 would have been $1.24 billion instead of $1.2 billion.

A more significant weakness occurs when sales or earnings decline over the analyzed period. Such occurrences make the simple growth rate calculation unreliable. This is why compound growth should be calculated instead.

The formula for compound growth is: [(ending value divided by beginning value) raised to the power of (one divided by the number of compounding periods)] minus one. Using the example above, the math works out like this:

Compound Growth = [(ending value ÷ beginning value) ^(1 ÷ number of compounding periods)] – 1

= (2012 revenues ÷ 2008 revenues)$^{(1 \div 4 \text{ years})}$ – 1
= ($1.2 billion ÷ $600 million)$^{1/4}$ – 1
= $2^{0.25}$ – 1
= 1.189 – 1
= 0.189 × 100 (to convert to percentage)
= 18.9%

As you can see, the compound growth rate was not 20%, but rather 18.9%. The advantage of compound, or annualized, growth is that it smoothes out fluctuations in the rate of change and accounts for the fact that as sales or earnings increase in size, a bigger absolute change in the actual number is required to keep the percentage change the same.

The formula displayed here works for companies reporting profits at both the starting and ending period. Should a profit be reported at one point of the period being analyzed (e.g., the ending date) and loss reported at the other (e.g. the starting date), this formula will not work properly. The change from a negative to a positive sign requires a more complex equation that is beyond the scope of this article.

to increase profits.

Ideally, you want the rate of net income growth to approximate the rate of sales growth over long periods. Over shorter periods, various factors can cause top-line and bottom-line growth rates to differ.

Earnings per Share Growth

Earnings per share (EPS) is calculated by taking net income and dividing it by the number of shares outstanding. Intuitively, earnings per share growth should be the same, or very close to, net income growth. In reality, though, earnings per share may grow faster or slower than net income due to share issuances or buybacks. Earnings growth that is higher than net income growth is indicative of a company that is buying back its shares, while earnings growth slower than net income growth suggests that the company is issuing additional shares. This is why it is important to look at both net income growth and earnings per share growth. Though share repurchases increase the amount of total profit each share of outstanding stock can lay claim to, share buybacks can cause profit growth to appear stronger than it actually is. Conversely, the issuance of additional shares can help fund long-term projects that are beneficial to net income growth, but they also depress the rate of earnings per share growth.

Earnings per share can be reported in several ways. The most common reported earnings are basic earnings, diluted earnings, basic earnings from continuing operations and diluted earnings from continuing operations.

The difference between basic and diluted earnings is fairly straightforward: Diluted earnings per share is calculated with the assumption that all convertible securities are exercised. Convertible securities include outstanding convertible preferred shares, convertible debentures, stock options and warrants. The exercise of convertible securities dilutes ownership (increases the number of shares outstanding) and reduces the amount of income each share of common stock can lay claim to. Diluted earnings per share represents a "worse-case" scenario where all convertible securities are exercised.

Oftentimes, earnings from continuing operations can provide a better representation of what the performance of the company may be going forward. Earnings from continuing operations represent earnings of a firm from "normal" or core operations. They exclude nonrecurring expenses and income: discontinued operations, extraordinary items and the cumulative effect of accounting changes. For instance, if a firm sold off a unit or subsidiary and realized a large gain on the transaction, the sale would not be repeated in the future and would therefore be excluded when calculating earnings from continuing

Figure 2. Earnings Estimates for Procter & Gamble

Procter & Gamble Company, The (PG) Price $75.750 ($76.690-$59.070)

Quarterly Earnings Surprises

Fiscal Qtr.	Announced	Estimate	Actual	Difference	% Surprise	Std. Dev.	SUE Score
12/31/2012	01/25/2013	$1.111	$1.220	$0.109	9.8%	$0.02	5.5
09/30/2012	10/25/2012	$0.959	$1.060	$0.101	10.5%	$0.01	10.1

	Qtr (3/2013)	Qtr (6/2013)	FY (6/2013)	FY (6/2014)	FY (6/2015)	Growth Rate	% Rank
Current Est.	$0.964	$0.827	$4.075	$4.392	$4.783	8.025%	27%
High Est.	$1.030	$0.890	$4.200	$4.550	$4.890	10.000%	
Low Est.	$0.930	$0.780	$4.000	$4.240	$4.590	7.000%	
Std. Dev.	0.021	0.027	0.041	0.075	0.087	1.372%	
# of Estimates	23	23	24	25	12	4	
Expected Report Date	04/29/2013	08/05/2013					
Current Est.	$0.964	$0.827	$4.075	$4.392	$4.783	8.025%	27%
Month Ago Est.	$0.948	$0.852	$3.958	$4.297	$4.643	7.550%	
# Revisions Up	13	2	24	22	9	2	
# Revisons Down	4	17	0	0	0	0	
3 Month Ago Est.	$0.948	$0.854	$3.953	$4.291	$4.617		

Source: AAII's Stock Investor Pro*/Thomson Reuters. Data as of February 8, 2013.*

operations. When researching earnings growth, look closely at the growth in earnings from continuing operations, as this should be more representative of the company's business going forward. This number represents growth for core business operations.

Estimated Growth

Historical growth rates are useful when examining the fundamental strength of a company. However, since the stock market is forward-looking, expected future growth in earnings plays an important role in determining a stock's price.

Approximately 4,000 companies have analysts that provide forward-looking growth estimates. Typically, analysts provide earnings estimates to data companies that compile these estimates and offer a "consensus" or average estimate of earnings or revenues. (An example is Thomson Reuters' I/B/E/S.) Analysts also offer a long-term growth estimate on many of the companies they cover. Typically, these long-term growth rates cover a five-year period, but they can vary between three and seven years. Figure 2 shows the earnings estimates for Procter & Gamble Company (PG) as of February 8, 2013.

Although these estimates are simply educated guesses, stock prices are influenced by the actual estimate and also changes to the estimate as the earnings announcement date nears. A positive revision to earnings estimates can provide a short-term, positive catalyst for a stock's price. A negative revision can be a negative short-term catalyst. This is why when reviewing earnings estimates, you should review not only the actual number but also the magnitude by which it has been revised. (AAII's stock screen Estimate Revisions Up 5% is among those with the best risk-adjusted returns, and the screen Estimate Revisions Down 5% is among those with the worst risk-adjusted returns.) Keep in mind that while revisions have a short-term impact, the actual estimate influences a stock's valuation and can have a long-term impact on the stock's price movement.

EPS Growth and Valuations

Analysts look closely at earnings growth and factor it into their valuation analysis. One of the most popular valuation ratios, the price-earnings ratio, measures the valuation of stocks simply by dividing the current share price by the earnings per share. As net income grows, share price should follow suit if the stock is to maintain its present valuation.

A commonly used variation of this ratio is the price-earnings-to-earnings-growth (PEG) ratio. The PEG ratio divides the price-earnings ratio by the long-term growth rate. There are a few variants of this ratio, but two of the more common ones use historical and projected earnings growth. The historical PEG ratio divides the current price-earnings ratio (price divided by fully diluted earnings per share for the last 12 months) by the five-year historical growth rate in earnings per share. The forward-looking PEG ratio divides the forward price-earnings ratio (price divided by the consensus earnings per share estimate for the current fiscal year) to the estimated three-to-five-year growth rate in earnings per share.

The concept behind both versions of the PEG ratio is to determine whether the valuation (price) of the stock is out of line with earnings and the growth rate in earnings. A PEG ratio of 1.0 means the stock is fairly valued relative to historical or projected future earnings growth. A PEG ratio below 1.0 means the stock is trading at a discount relative to its growth rate; conversely, a PEG ratio above 1.0 implies the stock is trading at a premium. In both cases, you should take into consideration the likelihood that future growth will differ from past growth and current projections.

Dividend Growth

Investors seeking income through dividend-paying stocks should pay attention to the pace of dividend growth. If the dividend is not raised, but the stock's price appreciates, the dividend yield will fall. (Yield and price are inversely related.) A rising dividend is also necessary to ward off the impact of inflation. A dividend that has not changed will be worth less in tomorrow's dollars than in today's dollars. A lack of dividend growth may suggest that a company's executives do not have a strong commitment to returning cash to shareholders. It may also suggest management's concerns about the ability of the company to sustain a rising dividend in the future. A falling or suspended dividend is a sign that the firm is saving cash. There could be positive reasons of doing so,

such as productive expansion, but typically dividend cuts are a bad sign. Ned Davis Research calculates that since January 31, 1971, stocks of companies that cut or eliminated their dividends have produced an average annualized return of –0.1%. Conversely, stocks of companies that initiated or raised their dividend have realized an average annualized return of 9.7% since 1972, according to Ned Davis.

When looking at dividend growth, pay attention to both the rate at which the dividend is rising and the company's payout ratio. The payout ratio is the percentage of earnings a company pays out as dividends. A payout ratio of 100% means the equivalent of all earnings are paid out as dividends; such high payout ratios are not sustainable. A low payout ratio (e.g., 20%) implies the company has room to raise its dividend. If the payout ratio is low, the company has the ability to grow its dividend at a rate faster than earnings. If the payout ratio is high, the future dividend growth may be slower than earnings growth. It can be helpful to compare the payout ratio against those of a company's peers since some industries (e.g., electric utilities) have higher payout ratios than others (e.g., semiconductors).

Free Cash Flow Growth

Free cash flow is the amount of cash generated over a certain period (e.g., one year) that is available to be spent at management's and the board of directors' discretion. Free cash flow is calculated as cash flow from operating activities less capital expenditures and dividends paid. (Some calculations simply use cash flow from operating activities less capital expenditures.)

Free cash flow growth has two primary uses. First, it tells you whether the company is increasing its ability to invest in projects, raise the dividend or buy back more stock. Positive growth rates in excess of the rate of inflation suggest a company's financial position is getting stronger. Secondly, free cash flow is used by many analysts in assessing a company's valuation. Analysts attempt to forecast the future growth rate of cash flows as part of a complex model known as discounted cash flow (DCF). If the DCF model implies that the stock is currently worth less than the future value of the company's free cash flow, the stock is considered to be undervalued; if it is worth more, than the stock is considered to be overvalued.

What to Look For

Over the years at AAII, we have performed a significant amount of research, especially in the form of our stock screens, to try to get an idea of what works in stock investing and what does not. It is easy to understand that growth is good, which is why fast-growing firms usually trade at higher valuations than firms that are growing slower. But, as we all know, there can actually be too much of a good thing. So what should investors focus on when looking for growth companies?

The answer to that is not clear-cut, but we do have some thoughts. AAII's growth screens that have the best risk-adjusted long-term performance do not always target stocks that are growing the fastest. In fact, AAII's Stock Market Winners screen and Value on the Move—PEG with Estimate Growth screen both simply require earnings per share growth. Neither screen seeks a specific rate of growth, only that earnings for the past few quarters are growing.

O'Neil's CAN SLIM screen differs in that it seeks a five-year earnings growth rate of at least 25% and year-over-year growth of at least 20% for the most recently reported quarter. The screen couples these traits with a requirement that annual earnings have increased during each of the last four fiscal years and during the most recently reported 12-month period. The goal of the screen is to find companies that are sustaining a strong rate of growth.

For those who do want a range of growth rates, you could use the O'Neil CAN SLIM screen's growth rate requirements as a guide. You should note that this is the only screen among the top 10 screens ranked by risk-adjusted performance that requires a specific minimum rate of growth as opposed to simply requiring growth, however.

Conclusion

Growth rates play an important role in stock analysis. After all, a stock's value is represented by its future earnings and dividends paid. However, using growth is not always simple. Historical growth tells you the exact rate at which the company has grown in the past, but this growth rate may not be indicative of the future. Future growth rates provide a gauge of what earnings growth may look like in the years ahead, but these are forecasts and there is no guarantee of their accuracy.

As stated, historical growth rates can be found at most major investment websites as well as AAII's *Stock Investor Pro* stock screening and research database program. *Stock Investor Pro* also provides analyst estimates and long-term growth rate estimates. When using growth rate estimates, keep in mind that larger firms typically have more analysts following them. Firms with only one or two analysts tracking them can have estimates that vary dramatically. It is also important to note the range of estimates. A narrow range suggests that analysts are more or less in agreement, whereas a wide range of estimates suggests otherwise. ▲

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