EVALUATING VALUATIONS USING PRICE-EARNINGS RELATIVES

By John Bajkowski

Price-earnings relatives help to establish benchmark comparisons that can help identify firms that have deviated from their normal valuation levels, assuming nothing has fundamentally changed in the company, industry or market.

The price-earnings ratio, or earnings multiple, is one of the most popular measures of company value. It is computed by dividing the current stock price by earnings per share for the most recent 12 months. It is followed so closely because it relates the market's expectation of future company performance, embedded in the price component of the equation, to the company's actual recent earnings performance. The greater the expectation, the higher a multiple of current earnings investors are willing to pay for the promise of future earnings.

If the market has low earnings growth expectations for a firm, or views earnings as suspect, it will not be willing to pay as much per share as it would for a firm with high and more certain earnings growth expectations.

That does not mean that all stocks with low price-earnings ratios have little or no growth prospects. While most firms deserve their low ratios, value investors seek companies with low price-earnings ratios in the belief that through neglect or overreaction to bad news, the market has not correctly evaluated the earnings potential of the company. Value investors argue that although the market may be efficient in the long term, emotions often dominate in the short run. These emotions can overtake rational analysis, pushing a stock's price above its intrinsic value during periods of euphoria and below its true worth when reacting to bad news.

PRICE-EARNINGS RELATIVE

There are models to help gauge if a company's price-earnings ratio is reasonable. The relative price-earnings ratio approach looks back at the relationship of the price-earnings ratio of a stock either to the price-earnings ratio of the overall market or to the company's industry.

The price-earnings relative is determined by dividing a company's price-earnings ratio by that of the market. Based on relative growth and risk expectations, companies trade at multiples greater or smaller than that of the market multiple. One would expect a company with prospects better than the market, or with lower risk, or both, to have a higher price-earnings ratio than the market. Comparing a firm to its industry is an equally useful technique that has the benefit of isolating interesting candidates within a specific industry.

Changes in the relative levels of the price-earnings ratio may signal that the market, for whatever reason, is changing its expectations about the future earnings potential of a firm, or not paying attention and mispricing the security. It may also signal that a short-term change has already occurred or is expected to occur. The price-earnings relative valuation model, however, assumes that the long-term growth and risk profile of the firm has not fundamentally changed over time. A careful evaluation of each firm's relative price-earnings ratio must be undertaken before investing to determine if it represents a reasonable relationship to the market going forward.

A price-earnings relative average above 1.00 would indicate that a company's price-earnings ratio is typically above the market's price-earnings

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TABLE 1. CALCULATING THE PRICE-EARNINGS RELATIVE

	Market Price-Earnings Ratio		Pier 1 Imports (N: PIR) Stock Price			Price-Earnings Ratio		P/E Relative to Market	
	High (X)	Low (X)	High ($)	Low ($)	EPS ($)	High (X)	Low (X)	High (X)	Low (X)
1999	21.15	11.05	12.375	5.250	0.85	14.56	6.18	0.69	0.56
1998	24.85	12.59	20.750	6.063	0.77	26.95	7.87	1.08	0.63
1997	24.00	13.23	15.959	7.222	0.72	22.17	10.03	0.92	0.76
1996	21.98	13.00	7.944	4.611	0.47	16.90	9.81	0.77	0.75
1995	20.42	11.92	5.500	3.444	0.11	50.00	31.31	2.45	2.63
5-Year Average	22.48	12.36	—	—	—	26.12	13.04	1.18	1.07

Average Price-Earnings Relative Ratios:

1.18 = Five-year high
1.07 = Five-year low
1.13 = Five-year average

14.50 = Current market price-earnings ratio
$0.85 = Trailing 12-month company EPS
$0.94 = Expected next annual company EPS (I/B/E/S)

Price-Earnings Ratio, Based on Relative Ratio and Current Market Ratio:

Adjusted P/E = Current Market P/E x Average Stock P/E Relative
= 14.50 x 1.13
= 16.39

Stock Valuation (Using Trailing EPS):

Stock Valuation = Adjusted P/E x EPS
= 16.39 x $0.85
= $13.93

Share Price as a Percent of Valuation
= Current Price ÷ Valuation
= $12.94 ÷ $13.93
= 0.929 or 92.9%

Stock Valuation (Using Expected EPS):

Stock Valuation = Adjusted P/E x EPS
= 16.39 x $0.94
= $15.41

Share Price as a Percent of Valuation
= Current Price ÷ Valuation
= $12.94 ÷ $15.41
= 0.840 or 84.0%

ratio, while a price-earnings relative average below 1.00 would indicate that a company's price-earnings ratio tends to be lower than the market's. Changes in the price-earnings relatives compared to average levels may indicate a misvaluation.

Publications such as Value Line publish relative price-earnings ratios, but you can also calculate the figure yourself. Table 1 provides an example of the price-earnings relative model applied to Pier 1 Imports.

The complete domestic stock market universe within AAII's *Stock Investor Pro* was used to determine median price-earnings ratios for the last five years. The numbers are consistent with the median market figures reported in Value Line's Selection and Opinion publication. Standard and Poor's also reports price-earnings ratios for a number of market indexes. AAII members can view historical ratios and index performance of select S&P indexes on the AAII Web site (www.aaii.com). The S&P Reports link found within the Tools area leads members to data on individual companies and market indexes.

Over the last five years, Pier One Imports has averaged a price-earnings multiple above that of the overall market, leading to an average price-earnings relative of 1.13.

Multiplying the price-earnings relative by the market's current price-earnings ratio provides an adjusted price-earnings ratio. The current median market price-earnings ratio is 14.5, leading to an adjusted price-earnings ratio of 16.39 (14.5 × 1.13). The assumption behind this model is that the market is fairly valued and that the company's relationship to the market has not changed. A stock price valuation can be determined by multiplying this adjusted price-earnings ratio by earnings per share.

The example in Table 1 uses both trailing earnings per share and expected earnings per share to estimate a fair market value.

Dividing the current price by the valuation provides a useful screening measure; 1.00, or 100%, indicates that the valuation and current stock price are equal. Figures above 100% may point to stock prices above valuation estimates, while figures below 100% may highlight undervalued companies.

P/E RELATIVE SCREEN

Table 2 reveals the results of a screen seeking companies with current prices below their valuation estimates computed with trailing earnings per share and five-year average price-earnings relatives. *Stock Investor Pro*, AAII's stock screening program and company database was used to perform the screen.

To ensure reasonable liquidity our first screen looked for stocks traded on Nasdaq, the New York Stock Exchange, and the American Stock Exchange. We also eliminated American depositary receipt firms (ADRs), which are foreign companies that are traded on U.S. exchanges.

The next set of filters required that the firms have five years of data and that the earnings per share be positive for each of the last five years. A price-earnings ratio can only be calculated with positive earnings per share.

Beyond negative earnings, which lead to meaningless price-earnings ratios, unusually low earnings may also throw off standard price-earnings ratio screens. Short-term drops in earnings due to incidents such as special charges, extraordinary events, or in some cases even recessions may lead to unusually high price-earnings ratios. As long as the market interprets the earnings decrease as temporary, the stock price may not fall as dramatically as the earnings, resulting in a high price-earnings ratio. Because the average price-earnings relative model relies on a normal situation, these "outlier" price-earnings ratios should be excluded. In our Pier 1 example, the company had earnings per share of 11 cents in 1995, leading to above-average price-earnings ratios and price-earnings relatives for the year. Pier 1 Imports restated earnings downward in 1995 and 1996 when losses from concealed improper bond investments were discovered and disclosed to shareholders and the SEC. We did not exclude these years in our example in Table 1. Calculating the price-earnings relative average over the last three years results in a significantly lower figure of 0.78 compared to our original calculation of 1.13.

When performing a hands-on evaluation, you can manually exclude years with negative earnings or unusually high price-earnings ratios. However, when screening a large universe of stocks, it is best to establish criteria that try to eliminate companies with extreme price-earnings ratios. For our screen, companies with ratios above 100 for any of the last five fiscal years were excluded. If you want to be more conservative, a tighter requirement, such as ratios above 40 or 50, might be specified.

We did not screen for minimum historical or expected growth rates, but Table 2 indicates the consensus estimated earnings per share growth for the next three to five years. The expected growth rates range from 3.8% for the utility Consolidated Edison to 41.0% for EOG Resources, an energy stock.

It is important to remember that the growth rate is a raw growth figure that does not necessarily divulge any change in trend or indicate the variability of earnings. The easiest and most direct way to judge earnings is to examine the earnings directly year-by-year, looking for stability and accelerating growth. As a basic screen, positive earnings per share from continuing operations for the most recent 12 months and each of the last five years are required. Screens that are more stringent would require increases in each of the last five years or even an increase in the year-to-year growth rate for each of the last five years.

It is important to look at factors leading to the growth and determine if the growth is sustainable. When examining a firm's earnings patterns, it is necessary to carefully read both quarterly and annual reports, which can clue you in to possible explanations of the earnings growth pattern. Was a significant portion of the earnings growth achieved through acquisition or internal growth? Did earnings growth from franchises come from increases in same-store sales or the opening of new stores? Did currency translations impact earnings? Are competitive conditions changing within the industry? Are margins increasing or decreasing?

Price momentum is often used as a signal that the market has recognized the stock price is reacting to either proven performance, or an increase in expectations. Investors look for stock price performance superior to that of other stocks with the belief that the rising price will attract other investors, who will drive up the price even more. The current market price as a percentage of the 52-week high price is a popular measure of price strength and momentum. If a firm's stock price continues to be strong, it should be trading near its 52-week high. The figure is provided in the table to help gauge recent price behavior. Pier 1 Imports has been a strong performer recently, with a its current price 99% of its 52-week high. In contrast PolyOne Corp. is well off its 52-week high.

Table 2 ranks firms on the price as a percent of price-earnings relative valuation. To arrive at the valuation, the earnings per share for the last 12 months was multiplied

TABLE 2. FIRMS PASSING THE PRICE-EARNINGS RELATIVE SCREEN

Company (Exchange: Ticker)	Price (9/15/00) ($)	Price as a % of 52-Wk. High (%)	EPS Last 12 Mo. ($)	Est. EPS Growth Rate (%)	P/E Ratio (X)	Industry P/E Ratio (X)	5-Yr. P/E Rel. Avg. (X)	P/E Rel. Adj. P/E Ratio (X)	Price as a % of P/E Rel. Val. (%)	Description
PolyOne Corp. (N: POL)	8.94	26	2.28	11.2	3.9	16.4	1.56	22.62	17.3	Plastic compounds & servs
Toro Company (N: TTC)	30.69	81	3.40	13.5	9.0	12.4	2.61	37.85	23.9	Landscape equip & irrig sys
Occidental Petroleum Corp (N: OXY)	23.81	97	3.94	12.1	6.0	15.6	1.74	25.23	24.0	Crude oil, gas & chems
EOG Resources, Inc. (N: EOG)	39.50	98	4.90	41.0	8.1	15.6	1.58	22.91	35.2	Crude oil & natural gas
BostonFed Bancorp, Inc. (A: BFD)	18.75	98	1.91	na	9.8	11.8	1.69	24.51	40.1	Bank holding co
United Stationers Inc. (M: USTR)	30.88	81	2.72	15.7	11.4	11.0	1.76	25.52	44.5	General line business prods
Unocal Corporation (N: UCL)	37.56	91	1.88	10.9	20.0	15.6	2.97	43.07	46.4	Energy resources holding co
Texaco, Inc. (N: TX)	54.25	81	3.48	8.9	15.6	17.4	1.60	23.20	67.2	Crude oil & natural gas
Chevron Corporation (N: CHV)	90.19	93	5.41	9.2	16.7	17.4	1.60	23.20	71.9	Support for petroleum cos
KEMET Corporation (N: KEM)	32.50	73	1.69	14.3	19.2	25.2	1.82	26.39	72.9	Tantalum & ceramic capacitors
Florida Progress Corp. (N: FPC)	52.27	98	3.64	5.3	14.4	13.9	1.33	19.29	74.5	Electric holding co
Huntington Bancshares (M: HBAN)	17.75	63	1.68	9.8	10.6	11.9	0.96	13.92	75.9	Bank holding co
Phillips Petroleum Co. (N: P)	66.38	95	4.56	10.9	14.6	17.4	1.32	19.14	76.1	Crude oil, natural gas & liquids
Alcan Aluminium Ltd. (N: AL)	30.94	67	3.10	9.3	10.0	18.4	0.90	13.05	76.5	Aluminum business
Heartland Express, Inc. (M: HTLD)	17.38	90	1.30	13.0	13.4	10.3	1.15	16.68	80.1	Nationwide truckload carrier
ConAgra, Inc. (N: CAG)	18.88	71	0.86	10.6	21.9	14.6	1.87	27.12	80.9	Food co
Centex Corporation (N: CTX)	30.50	92	4.09	12.0	7.5	8.7	0.62	8.99	83.0	Homes, real estate & finan servs
M.D.C. Holdings, Inc. (N: MDC)	23.88	93	4.49	13.4	5.3	8.7	0.44	6.38	83.3	Single-family homes
ALLETE (N: ALE)	22.96	95	2.00	7.3	11.5	13.0	0.91	13.20	87.0	Electric, water & auto servs
Mandalay Resort Group (N: MBG)	26.19	92	1.31	17.0	20.0	13.9	1.55	22.48	89.0	Hotels & casinos
Pier 1 Imports, Inc. (N: PIR)	12.94	99	0.85	15.3	15.2	12.7	1.14*	16.53*	92.1*	Imported home furnishings
UMB Financial Corporation (M: UMBF)	37.00	92	3.00	14.0	12.3	11.9	0.89	12.91	95.6	Bank holding co
Casey's General Stores (M: CASY)	12.25	88	0.80	15.2	15.3	12.5	1.10	15.95	96.0	Convenience stores
New York Times Co. (N: NYT)	38.63	77	2.00	12.6	19.3	19.3	1.37	19.87	97.2	Media co
Consolidated Edison, Inc. (N: ED)	34.46	79	3.29	3.8	10.5	13.9	0.73	10.59	99.0	Energy-related prods & servs
Belden, Incorporated (N: BWC)	24.13	79	1.92	11.3	12.6	12.5	0.87	12.62	99.6	Wire, cable & fiber optic prods

** Numbers do not match Table 1 calculations due to rounding.*
Source: AAII Stock Investor Pro*, Market Guide, I/B/E/S.*
Data as of September 15, 2000.

Exchange Key:
N = New York Stock Exchange
A = American Stock Exchange
M = Nasdaq

by the adjusted price-earnings ratio. We followed the trailing earnings implementation presented in Table 1. Our screen looked for companies with current prices below their price-earnings relative valuation.

The current company and industry price-earnings ratio is provided to help gauge the valuation level of each firm's industry. KEMET Corporation's price-earnings ratio of 19.2 is higher than the 12.9 average price-earnings ratio for the firms in Table 2, but low compared to the technology industry's price-earnings multiple of 25.2. KEMET produces capacitors that store, filter, and regulate electrical energy and current flow. These are basic elements found in virtually all electronic applications and products and used in every type of electronic equipment, including computers, cell phones, automotive electronics, and consumer electronics. Demand for these components has been extremely strong recently, and the firm has participated in the strong technology price run up in 1999. KEMET has a high historical price-earnings relative of 1.82, but has also traded with price-earnings relative as little as 1.00 five years ago.

In contrast M.D.C. Holdings has a historical average price-earnings relative of 0.44. M.D.C. builds and sells single-family homes in a number of areas including Denver, Virginia, Maryland, California, Arizona, and Nevada. It has a similar expected growth rate to KEMET (13.4 versus 14.3) but trades with a current price-earnings ratio of 5.3. While both firms operate in a highly cyclical industry, the market must feel that M.D.C. has a higher risk of an earnings slowdown and therefore it normally trades with a lower multiple.

Investors often look for a catalyst to help attract attention to a company and boost its stock price. The stock prices of many attractively priced stocks often languish until investors find a reason to re-evaluate the prospects of the firm or its

Definitions of Screens and Terms

Price as a % of 52-Week High (%): Most recent stock price divided by the highest stock price over the last 52 weeks. Provides an indication of the recent price strength and momentum of a stock's price. Also highlights the range and movement of share price.

EPS Last 12 Mo. ($): Diluted earnings from continuing operations for the most recent 12 months divided by the number of common shares outstanding.

Est. EPS Growth Rate (%): The median growth rate in earnings per share from continuing operations over the next three to five years that is being forecasted by analysts as reported by I/B/E/S. An indication of the consensus in earnings growth expectations for the firm.

P/E Ratio (X): Price-earnings ratio. Market price per share divided by most recent 12 months' diluted earnings per share from continuing operations. A measure of the market's expectations regarding the firm's earnings growth and risk. Firms with very high price-earnings ratios are being valued by the market on the basis of high expected growth potential.

Industry P/E Ratio (X): The median price-earnings ratio for the industry in which a stock is classified by Market Guide. Provides an indication of the valuation levels for the industry in which a company competes.

5-Year P/E Relative Average (X): Ratio of historical company price-earnings levels relative to those of the overall market. Calculated over the last five years. Provides an indication as to whether a company normally trades at a premium or discount to the market.

P/E Relative Adjusted P/E Ratio (X): Current market price-earnings ratio multiplied by a company's average price-earnings relative. Provides an indication of the company's expected price-earnings ratio if its historical relative price-earnings average holds true.

P/E Relative Share Valuation ($): Price-earnings relative adjusted price-earnings ratio multiplied by the company's earnings per share (not shown in table). Gives an estimate of stock price value supported by the historical relationship of the price-earnings ratio to that of the market's considering the current market valuation levels. Can be computed with expected company earnings per share.

Price as a % of P/E Rel. Valuation (%): Current price divided by the valuation determined through the price-earnings relative. A figure of 100% indicates the valuation estimate is equal to the current price. A percentage above 100% indicates that the stock price is above the valuation estimates (overvalued), while a figure below 100% indicates the current price is below the valuation estimate (undervalued).

industry.

Upward earnings revisions and positive earnings surprises are events that make investors take notice of a company. Revisions to earnings estimates lead to price adjustments. When earnings estimates are revised significantly, stocks tend to show above-average performance. Stock prices of firms with downward revisions tend to show below-average performance after the adjustment.

Changes in estimates reflect changes in expectations of future performance. Perhaps the economic outlook is better than previously expected, or maybe a new product is selling better than anticipated.

For our screen, we required upward revisions to current and next year's earnings over the last month.

While a number of industries are represented in Table 2, energy stocks carry some of the most attractive valuations with the price-earnings relative model. The earnings of many energy stocks suffered a few years ago when gas prices were hitting low points. The temporary setback pushed the average price-earnings ratios and corresponding price-earnings relatives up. This distortion shows up in the adjusted price-earnings ratios and valuations. While these stocks may be attractively priced, one must question whether the calculated price-earnings relative represents the long-term norm going into the future.

CONCLUSION

Screening for stocks by looking at price-earnings ratios can help highlight firms that have fallen out of favor. Price-earnings relatives help to establish benchmark comparisons that can help identify firms that have deviated from their normal valuation level—with the critical assumption that nothing fundamental to the company, industry, or market has changed significantly. The analysis can highlight companies worthy of further analysis given the expectation that they will move back to their typical levels.

In constructing screening criteria, you may wish to include a number of conditioning criteria that help indicate items such as the future earnings potential of the firm, the financial strength of the firm, as well as the strength of the firm within its industry. Investing in low price-earnings stocks can be rewarding, but caution is required.

Simply looking at historical price-earnings ratios, stock prices, and earnings is informative. The price-earnings approach is far from a secret and will only be successful if the inputs—your expectations—are proven to be well-founded. ❖