
Practical Tools for Analyzing Value Stocks

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Because of their focus on managing risk and seeking consistent returns, relative-value managers are best served by a four-step process: quantitative analysis to narrow the number of potential stocks for investment, qualitative analysis to supplement the quantitative analysis, portfolio construction, and portfolio monitoring and performance attribution. Value managers should conduct their own examinations of financial statements because, as recent history has shown, to rely solely on Street research is foolhardy. Furthermore, value managers need to remain vigilant in selling stocks that become too expensive and continue to refresh the portfolio by buying cheap stocks.

My presentation will incorporate the practical aspects of value investing with a focus on how relative-value managers, as opposed to deep-value managers, choose to invest. Relative-value managers spend more energy managing risk and seeking more consistent returns. For example, the relative-value teams that I have managed over the past 12 years have outperformed the market in 10 of those years. After I give a brief overview on the general philosophy of value investing and its application in selecting stocks, I will then analyze how the different approaches of value investing affect portfolio construction in terms of breadth of diversification, cash level, and portfolio characteristics.

Value Investing Philosophy

The market reflects human nature as much as it does underlying fundamental value. People have a tendency toward excess. On some Monday mornings, investors wake up full of vim and vigor, eager to buy the stock they had been thinking about all weekend that they believe will make money. On other Monday mornings, investors may be moody, depressed, and unsure whether their stocks can outperform the market. The stock market cannot help but be a reflection of the human psyche because it is nothing more than many human minds coming together to decide at what price to transact stocks on any given day.

At least two human beings are behind every single trade. Even if both sides of the trade represent an institution, a person is behind each trade. Investors bring to that trade their own emotions—their sense of optimism, pessimism, or overall view of life—as well as their confidence about the market, whether it is heading up, down, or sideways. They also bring their sense of aggressiveness over pricing: Is an investor so desperate to acquire a stock that she will take whatever she can get at whatever price, or is she more patient and able to wait until she can get it more cheaply?

Another factor that is most often overlooked in the marketplace is the ubiquitous “group-think” phenomenon. Psychologists have shown that individuals will behave much more outrageously when part of a group dynamic than they ever would on their own. Thus, markets and individual stocks can go to euphoric highs and depressed lows, well above and well below true long-term net worth, which is relatively stable. Value managers seek to take advantage of such behavior. By using a disciplined process that allows them to stand above the fray of emotionalism in the market, value managers study the long-term, historical fundamentals of stocks and observe how they have traded in the past relative to the market in order to predict how they will behave in the future. Value managers refer to this type of analysis as finding the long-term true net worth, or intrinsic value, of a stock: A stock that is trading well above its long-term intrinsic value will eventually decrease to that

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value, and if a stock is undervalued (trading below its intrinsic value), it will presumably migrate back up to its long-term intrinsic value over time. In both instances, the stock is said to be reverting to its mean.

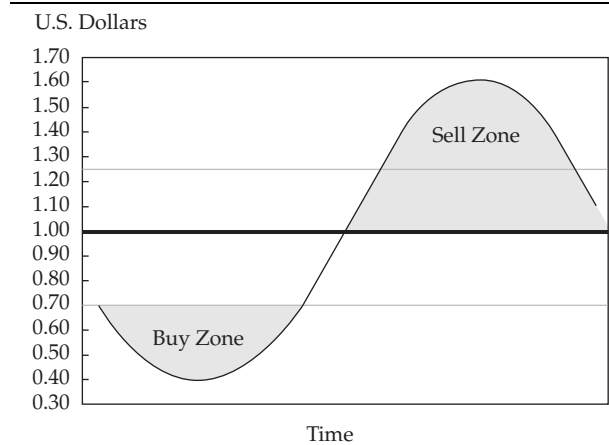
Finding Value

In simple terms, value managers search for stocks that happen to be trading at 70 cents on the dollar, assuming \$1 is the intrinsic value of the stock. If the risk factors are acceptable, value managers will buy the stock and patiently wait for the price to return to \$1. **Figure 1** illustrates how this process works. If a stock's intrinsic value equals \$1, the sell zone is everything above \$1. To provide a margin of safety and gain assurance that the manager is actually getting a bargain, the buy zone is 70 cents or less. Once the stock returns to its intrinsic value, however, the sell decision takes a more nuanced approach than the buy decision. Experience shows that stocks tend to trade at an average price of \$1.25 to \$1.30 (if the intrinsic value is \$1) because of the optimistic and positive bias typically prevalent in the market. For a high-risk stock, value managers will want to sell at \$1 because the likelihood that the stock's price will reach \$1.25 or \$1.30 is not good. For a moderate- or low-risk stock, managers will be more comfortable that the stock will rise well above its intrinsic value, but to be safe, they will sell some shares at \$1 and more as the stock hits \$1.05, \$1.10, and \$1.15. Value managers then analyze how the stock has traded relative to the market throughout its history. If a stock has 70 years of history and the company is mature, this cycle is unlikely to be significantly different from the past. Therefore, value managers will try to incrementally sell down the weighting of the stock as it approaches the upper end of its normal trading range. Value investors tend to buy and sell early. An early sell decision is usually made out of the desire to avoid riding the stock price down only to have to wait for it to rise again.

To determine a stock's intrinsic value, most value managers use a quantitative model as an efficiency tool. Given the size of the market, looking at all the value factors of all available stocks would be too time consuming. A quantitative model helps reduce the number of stocks that require intensive analysis to a manageable size. Many value managers will use a composite approach to determine intrinsic value by looking at factors such as book value, historical return on equity (ROE), and relative P/E.

Book Value. Benjamin Graham advocated buying stocks that are trading below their book value because they are unquestionably cheap. But building an entire portfolio of stocks trading below book value

Figure 1. Investing According to Intrinsic Value



is difficult because not that many “cheap” stocks are available. In the Canadian marketplace, the Toronto Stock Exchange (TSE) has historically traded at an average 1.5 price-to-book (P/B) value, so I like to buy stocks with a P/B below 1.5. The current market is trading at a P/B of 2.1, so buying stocks with a P/B below 1.5 is a big discount compared with how stocks are trading today. P/B values are much higher in the United States than in Canada, so managers in the United States might want to set their decision point a little higher than mine.

Historical ROE. A historical ROE factor seeks to capture the earnings “machine” capability of a firm. All other things being equal, investors value more highly those companies with more earnings, profits, and cash flows than those that offer less of the same. A manager embeds this information about a stock into the valuation model by using a 10-year average historical ROE, which should encompass the two most recent market cycles. To paraphrase Mark Twain, although history often repeats itself, it does so only in a rhymed fashion. For this reason, we use fundamental analysis to modestly adjust the raw historic annual number to a figure that will more accurately forecast the future. If the annual ROE has been in a decreasing trend over the past 10 years, a manager can “normalize” the historical ROE by lowering it a notch or two. Or if a company has made a major acquisition recently that will be highly accretive to earnings (although few acquisitions are), a manager should slightly increase the historical ROE so that it better reflects current events.

Relative P/E. Relative P/E tries to capture how a stock has tended to trade relative to the market throughout its history. For example, in the past, when the market traded up 10 percent, did this stock show a tendency to rise exactly like the market, or more than the market, or less than the market? Analyzing

long-term P/E multiples and P/E multiples relative to the market and then calculating long-term medians and long-term averages can give managers sufficient information to derive a number that reflects the relative historical trading performance of the stock.

A Sample Model

I want to delve into more detail about how value managers calculate a stock's intrinsic value, discuss how to calculate an expected return for a stock, and rank that stock using a model. Most value managers, including me, are reluctant to give away the guts—the secret core financial number—of their model. And although I am not presenting my exact model, by the time I have finished this presentation I will nevertheless have given enough information for an astute person to figure out what it is.

Basically, price, if it is disaggregated, is the stock's EPS times its P/E multiple. A value manager translates this number into a future price as equivalent to a normalized EPS over a given future period times a normalized P/E multiple of the stock. The manager arrives at the normalized numbers from a composite of past experience and a projection of the likely future normal value; this calculation is used to determine a stock's intrinsic value.

Value managers like to pay 70 cents on a dollar of intrinsic value, so a typical entry point for a stock is an expected return of at least 30 percent over a two-year investment horizon (however, some other value managers use up to a five-year investment horizon). By definition, this two-year horizon translates into a minimum expected return of 15 percent a year from each stock. The TSE 300 historically has returned 9.5 percent a year. So, if I use a return goal of 15 percent a year for a stock less the historical market return of 9.5 percent, I have created a margin of safety of 5.5 percent. In other words, the stock can underperform my expectations by as much as 5.5 percent and I should still outperform the market. U.S. data say that the long-term historical market return falls between 9 and 11 percent, depending on the index and the time horizon studied, which is not significantly different from the Canadian equity market experience.

Our model is a ranking machine that narrows the entire universe of stocks to a more manageable number. The model allows me to focus on the 140 cheapest stocks in the universe and ignore the rest. For the sake of efficiency, once I own a stock or it is one of my 140 cheapest stocks, I do not even bother following other stocks. The 140 stocks in my model are ranked based on their two-year pretax expected return. The model lists current book value and adds the one- and two-year consensus earnings estimates to calculate the

two-year projected book value. At CM Investment Management, we decided to focus on fundamental analysis and not spend a lot of time calculating earnings; thus, consensus EPS is sufficient for our purposes (book value times ROE by definition equals EPS). Embedded in our model is the normalized ROE, which is the historical ROE adjusted by fundamental analysis to better reflect current and expected future earnings capability. Typically, because of the principle of reversion to the mean, an extremely high historical ROE that does not seem sustainable will be adjusted lower.

A note of caution: I find the top 10 cheapest stocks are often what I call "value trap" stocks—cheap stocks that can stay cheap seemingly forever. I rarely buy any of the 10 cheapest stocks. Frequently, they are high-financial-risk stocks. Companies that are headed for bankruptcy will migrate quickly to the top of the model just prior to their demise. So, fundamental analysis must be used to interpret the raw numerical model to help avoid obvious value traps.

Qualitative Analysis: Digging Below the Numbers

Quantitative analysis, which is extremely useful in narrowing down the universe of attractive stocks, must be combined with fundamental analysis to put the whole picture together for a stock. Value managers must be able to synthesize the two methods and become more accustomed to poring over financial statements themselves. They cannot simply rely on the information coming from Wall Street because, as the past few years have shown, many Street analysts do not even read financial statements. Value managers also use management interviews (which Daniel Nordby discusses in further detail)² and structured research reports to assist in security selection.

At the present time, aggressive accounting practices are a hot topic, and financial statements can reveal important information about both conservative and aggressive accounting techniques. We always read the "Notes" to the financial statements because that is where any anomalies in a company's accounting practices are disclosed. If I see signs of conservative accounting (i.e., a company is hiding how good its earnings are), I get excited about the return the model is projecting because then I know I am likely to get that expected return or something even better. Conversely, if I see signs of aggressive accounting, then I am wary that the model might have been fooled, in which case I step back and instead of asking for a minimum 30 percent expected

²See Mr. Nordby's presentation in this proceedings.

return, I ask for a 40–50 percent expected return to allow for a wider margin of safety. If too much aggressive accounting is evident, however, I simply walk away from that stock.

Major Risks. For relative-value investing, assessing risk is particularly important. There are many reasons a stock may be selling cheaply and managers have to weigh all possibilities. The stocks value managers are interested in are difficult to buy because they are often overlooked, underfollowed, or (more likely) in some sort of trouble or difficulty. I joke that they stink a little and are covered with warts, pimples, and hair. Companies face three major forms of risk: cyclical, operational, and financial. I consider the first two risks as “beautiful” forms of risk from a relative-value manager’s point of view because they offer the chance to buy good, quality companies cheaply. Financial risk, however, must be avoided because it leads companies to bankruptcy.

■ *Cyclical risk.* Good management teams know that cyclical risk—for example, being in the stock of a forest products company at the bottom of the forest products cycle—happens occasionally. At the bottom of the cycle, the company is probably selling its products for less than the cost to manufacture them, but they continue to do so in order to maintain their customer base. A prudent cyclical company management will minimize financing through debt to better weather the storms that are likely to hit. A stock at the bottom of its sector’s cycle may offer a good buying opportunity for value investors if operational and financial risks are acceptable, because sooner or later, the stock’s value in the market will rise to its intrinsic value.

■ *Operational risk.* Operational risk is risk that is unique to the industry or the company itself. It occurs because the industry is changing or the competitive environment is heating up. It can also happen if a company’s new facility does not operate well, as was the case with the Gallatin Steel Company mill that never worked to specifications. Operational risk can also stem from a human resources issue, such as the death of a CEO and the subsequent succession issues that can arise. In all cases, a good management team that has proven itself in the past can likely deal with those types of problems. The company’s stock price may decline temporarily, but eventually, the management team will resolve the issue and the stock price will recover. A stock in the throes of operational problems offers a good buying opportunity because the company’s transitory problems eventually will be overcome and the stock’s value will revert to its normal intrinsic value.

■ *Financial risk.* A company with an excessive level of financial risk is one with too much debt relative to equity and operating cash flow. When a

company with high financial risk is also hit by an instance of cyclical risk or an operational risk or two, the additional pressures often push the company into bankruptcy.

■ *Summary.* In stock selection, these three risks—cyclical, operational, and financial—must be evaluated in view of the potential return opportunities that the stock presents. As a tool to maintain discipline in our relative-value approach and guard against emotional decision making, at CM Investment Management, we use a questionnaire to evaluate a company and its prospects for regaining its intrinsic value.

Proprietary Questionnaire. Value managers seek to take advantage of the emotion in the markets and need to use techniques and tools to remain dispassionate in their analysis of stocks. We use a questionnaire to force us to look at each company 360 degrees around. Our questionnaire is about five pages long (consisting of 20 questions, each containing a subset of questions within the main question) and tries to capture all aspects of a company’s capabilities. The biggest challenge a fund manager faces is how to balance the potential reward a stock offers against the potential risks, and no simple decision rule exists that can help in this process. It would be easy to just push a stock to the back of the desk and postpone the purchase decision because no firm conclusion could be reached using traditional analytical tools. A month later, however, if the stock had increased in value, the buying opportunity would have passed. We find that by forcing ourselves to thoroughly research the company by focusing on the rewards and the risks through the use of the questionnaire, by the end of the questionnaire process we are able to get off the fence and make a portfolio recommendation. The recommendation may well be to wait and see if the stock will fall another \$5, at which point the reward will outweigh the risks and the stock should be purchased for the portfolio.

Portfolio Construction

Fund management is about selecting from the universe of investable stocks (in Canada there are approximately 2,000 publicly listed stocks on the major exchanges) and choosing a particular stock or subset (our portfolios usually hold about 60–70 names) of the universe to outperform a broad index. Value stocks are usually cheap because they are facing some challenge or problem that makes them unpopular and difficult to buy. These stocks are not easy to buy even for value managers, so I generally start with a position of 1 percent, building the size as the stock price falls or my confidence in the outlook of the company improves.

Breadth of Diversification. Diversification in terms of industry group weightings marks the real divide between deep-value and relative-value managers. Deep-value managers say they are sailors who read the sea; they simply go wherever they find cheap stocks. In a sense, they are market timing the industry groups. If they uncover a lot of cheap stocks in a certain industry, they overweight that industry, and they will avoid expensive sectors altogether. Relative-value managers, on the other hand, want to minimize their risk relative to the index. They usually seek to maintain the same industry group weightings as their benchmark index and rely on their strong stock-selection skills to outperform.

Cash Level. Determining ideal cash levels is an important issue for value managers, who tend to be a pessimistic lot overall and relatively bearish about the market. When they think the market is too expensive and tilting to the bearish side, they tend to let cash pile up in their accounts. In Canada, some deep-value mutual fund managers will hold up to 25–30 percent of their portfolios in cash at certain points in the market cycle because they can find no “value” in the market. We keep cash at 2–4 percent for pension portfolios and typically 5–7 percent for mutual funds. The determination of the overall market as “value,” however, is a lousy timing indicator. Reversion to the mean occurs over a two- to five-year time horizon, not a quarter or two. In early 1999, the market was expensive, but it got even more expensive. As the year wore on, remaining in cash based on the opinion that the market was too rich was painful; it was a bad short-term decision. Relative-value managers keep the amount of cash in their portfolios at no more than a set maximum by forcing themselves to buy stocks that are comparatively the best value at any given point in time, which is where the term “relative-value” manager originates; relative-value managers break some of the rules of cheapness (i.e., they are not always able to buy stocks as “cheaply” as they would prefer in order to remain invested in the market).

Portfolio Monitoring and Attribution Analysis. A good value portfolio should be at least 10–15 percent less than the market index on a P/E, P/B value, price-to-sales, and price-to-cash-flow

basis. Relative-value managers have to be vigilant and frequently reassess the relative difference between the valuation of the stocks in their portfolios and the market index, because as the market becomes more expensive, the relative difference between value managers and the index can shrink. Value managers constantly have to correct for this type of portfolio drift by selling stocks that become expensive. In turn, they have to force themselves to buy the cheap names, even though they may have to step down the quality ladder to do so. By definition, a good value manager has an above-average dividend yield because good quality stocks that become cheap only infrequently cut their dividend, so the stock’s yield rises.

Conclusion

The process of value investing follows four distinct steps: quantitative analysis, qualitative analysis, portfolio construction, and portfolio monitoring and performance attribution. A quantitative model is a useful tool for narrowing the universe of stocks that fit the value criteria, but qualitative analysis helps managers pinpoint the truly cheap stocks and whether the manager should pass, buy, hold, or sell a particular stock. Most value managers are conservative and cautious, but they also have to be slightly schizophrenic and contrarian in nature to summon the courage to buy out-of-favor stocks. Having a personality that suits value investing is thus an important aspect of being a successful value investor. Furthermore, how a value manager assesses risks and constructs a portfolio will determine whether the manager has a deep-value or relative-value bias; breadth of diversification, acceptable cash levels, and asset allocation decisions are all highly variable aspects of portfolio construction that affect long-term performance. Vigilant examination of a portfolio’s characteristics in view of current market conditions will force trades as the market moves through its various cycles. Therefore, verifying that the portfolio composition is accurate and remains in line with the manager’s investment style (value) is an important component of value investing. Performance attribution can be used as a tool to detect a drift in portfolio composition away from the value style.