

# Applied Equity Valuation

## SMALL CAPITALIZATION ACTIVE MANAGEMENT

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### INTRODUCTION

Within investing, two schools of thought regarding portfolio construction exist. The "top-down" approach attempts to utilize broad measures of economic activity, economic forecasts, and interest rate forecasts to determine which sectors of the economy are likely to outperform within the stock market. Thus, the economic sector a company represents, (banks, energy, etc.) is more important than the individual company's characteristics. As shown in Chapter 3, top-down investors believe a company's industry classification determines a majority of a stock's relative performance in the market.

In contrast, "bottom-up" managers focus on the individual characteristics of each company and build a portfolio of attractive companies one at a time. The economic sector is a secondary consideration (i.e., no matter how attractive banks are, they would not represent 80% of a diversified portfolio). Bottom-up managers believe that it is the individual characteristics of a company that represent the underlying value and thus are the primary source of the stock's performance in the market.

We at Dalton, Greiner, Hartman, Maher (DGHM) are a bottom-up manager. In the small cap universe where we specialize, the individual company's characteristics are much more critical in determining how that company will perform. Small cap companies are often single product/single market companies, and the loss of a large customer, for example, is considerably more detrimental to a small company than a larger, more diversified one. The small cap universe is one where the bottom-up manager thrives by uncovering inefficiencies in the marketplace. In this chapter, we discuss our bottom-up approach to small

capitalization active management.

### **Why Invest in Small Cap Stocks?**

We invest in small cap stocks because, to paraphrase Willie Sutton, "that's where the returns are." The first person to document the relationship between the size of a company, as measured by its market capitalization or market cap, and subsequent stock market returns was Rolf Banz in 1981. Further research was done by Roger Ibbotson and Rex Sinquefeld in 1982. While this research covered a much broader spectrum of issues related to returns from various asset classes such as equities, bonds, and Treasury bills, and how they are related to inflation, the methodology used by Ibbotson and Sinquefeld has become the standard method for researching how size (market cap) and returns are related. Ibbotson and Sinquefeld utilized portfolios provided by the Center for Research in Security Prices (CRSP) at the University of Chicago. These portfolios ranked all operating companies on the NYSE by capitalization and then split them into 10 equally populated groups or deciles.

For example, if there were 1000 companies on the NYSE, each decile would have 100 companies. These portfolios were held for one quarter and then rebalanced to reflect changing capitalizations. This process was repeated each quarter for the period 1926-1981. The resulting returns were analyzed and it was discovered that as you moved down the capitalization spectrum (Decile 1 → Decile 2 → Decile 3) the portfolio returns increased. This discovery led to the Wall Street axiom that small stocks outperform large stocks over the long-term. Subsequent research added stocks listed on the American Stock Exchange and NASDAQ with no change in the conclusion. This research is updated on a yearly basis and is available from Ibbotson Associates.

While comparing each decile to the other is interesting, it is more useful to look at broader categories of market capitalizations often referred to as large cap, mid cap, small cap, and micro cap. Although a concrete definition of these categories does not exist, many institutional investors would define the first two deciles of NYSE-listed stocks as large cap. Similarly, the next three deciles would be considered mid cap, the following three deciles small cap, and the final two deciles micro cap.

As shown in Exhibit 1, the ability to turn \$1.00 into over \$5,000 over a long period of time is the attraction of small cap investing in general and micro cap investing in specific. Investing in micro cap stocks has provided over 4 times the return as investing in large cap stocks over the long-term. While 70 years would be considered a very long time for an individual, it must be remembered that large institutional portfolios such as pension funds and endowments are considered to exist in perpetuity. The power of compounding makes a huge difference over time.

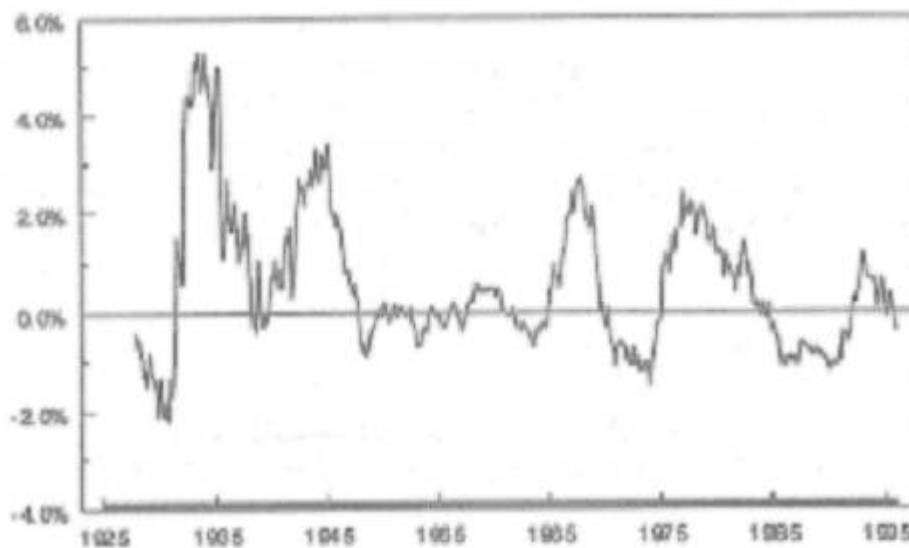
It must also be remembered that micro cap stocks do not outperform in every single month. On the contrary, micro cap outperformance actually runs in cycles. As shown in Exhibit 2, if we compare a rolling 36 month moving average of micro cap performance relative to large cap performance, we can see a number of cycles have occurred over the last 70 years. These cycles are driven by a number of factors but relative earnings growth seems to be the predominant factor. In periods of economic strength, small cap companies are generally able to grow their earnings faster than large cap companies. Conversely, large cap companies, with their diversified markets and geographics, tend to suffer less in an economic downturn. Thus, economic forecasts should play a role in expectations for small cap relative performance.

### **Exhibit 1**

	CRSP	Geometric Return	Value in 1996 of \$1.00
Name	Deciles	1925-1996	Invested in 1925
Large cap	1-2	10.4%	\$1,183
Mid cap	3-5	11.7%	\$2,567
Small cap	6-8	12.0%	\$3,024
Micro cap	9-10	12.7%	\$5,088

Source: Prudential Securities.

### Exhibit 2: CRSP 9-10 vs. CRSP 1-2 Relative Performance



Source: Prudential Securities.

### What are Micro Caps?

The long-term results for micro cap investing are very compelling, but what are micro caps and why do they provide superior returns? Applying the CRSP 9-10 decile definition yields a market cap cut-off on 12/31/97 of approximately \$270MM. Thus, the micro cap universe is defined as all listed companies (NYSE, AMEX, NASDAQ) with market caps below \$270MM. Over 3,400 companies had market capitalizations below \$270MM on 12/31/97. The *median* market cap of this universe is only \$71MM, a sharp contrast to Microsoft, whose market cap on 12/31/97 was \$156Bn!

### Why do Micro Caps Outperform?

While the stock market is thought to be generally efficient, it is likely that the degree of efficiency varies by market cap. Simply put, there is much greater Wall Street research being done on large cap stocks than on small cap stocks. This is driven by the economics of Wall Street. Wall Street analysts generally provide research on companies for two reasons: 1) large trading volumes earn their firms commissions and trading profits, and 2) security issuance and merger and acquisition activity reap investment banking fees. Small caps, in general, and micro caps, in specific, have neither of these traits. Research coverage is generally provided by small research boutiques and regional brokers who focus on specific sectors (i.e. technology) or regions of the country.

As shown in Exhibit 3, a dramatic difference exists between large caps and small caps/micro caps in terms of analyst coverage as well as trading volume. It is this lack of Wall Street coverage that drives the inefficiencies within the small cap/micro cap universe. As stated previously, there are over 3,400 companies within the micro cap universe. It is very difficult for investors to keep up with current trends within each of these companies, let alone perform the proper due diligence in order to invest in them. Nor can the entire micro cap universe be bought or sold efficiently and at low cost to capture the excess returns. Low liquidity, large bid-ask spreads, etc, make a passive or "complete indexing" approach not feasible within the micro cap universe. In order to capture the excess returns within the micro cap universe the ancient art of security analysis, also known as active management, must be applied.

### Exhibit 3

						Median		
		Market	Median	Total		Daily		
		Cap	Market	Market		Shares	Median	% of
	CRSP	Range	Cap	Cap	# of	Traded	# of	Cos with
Sector	Deciles	(\$MM)	(\$MM)	(\$Bn)	Names	(000s)	Analysts	Estimates
Large cap	1-2	≥ 4,212	9,055	7,543	422	540	14.0	99.0%
Mid cap	3-5	976-4,185	1,742	1,554	780	129	8.0	96.8%
Small cap	6-8	270-975	481	726	1,360	35	5.0	86.1%
Micro cap	9-10	≤ 270	71	312	3,438	8	2.0	64.6%

Source: FactSet Data Systems, First Call. Data as of 12/31/97.

### Styles of Investing Within Active Management

Active management requires discipline. Simply researching each company within the universe starting with AAON Inc. and ending with ZYTEC Inc. is not only time consuming but counter productive. Being able to rank stocks within the universe by traits deemed important is the most productive way of focusing research on the most attractive companies. It is these traits that distinguish what style of investing is adhered to. The two opposing camps in this investment style war are known as value and growth. Value investors focus on valuation driven traits such as Price/EPS, Price/Book, Price/Cash Flow and Yield. Growth investors focus on growth driven factors such as sales growth, earnings per share growth, and reinvestment rate. In reality, both sides pay attention to the other's factors yielding a spectrum of

investment styles, but by and large investors consider themselves members of one group or the other. We at DGHM consider ourselves value investors. We focus on a value style because historically, value investing (buying cheap stocks) has outperformed growth investing (buying rapidly growing companies) particularly within the small cap universe.

Exhibit 4 illustrates this point by comparing the Russell 2000 (a recognized small cap index consisting of 2000 companies), after it has been divided between Value and Growth stocks. For the 19 years for which data is available, the Value portion of the Russell 2000 index has outperformed the Growth portion by 470 basis points. At the same time, the Russell 2000 Value index had less risk as measured by standard deviation of returns. Higher returns with lower risk seems to us like a very smart strategy to follow.

#### **Exhibit 4: Russell 2000 Value vs. Growth (1979-97)**

	<b>Annualized Return</b>	<b>Annualized Risk</b>
R2000 Value	18.1	16.7
R2000 Growth	13.4	21.7

Source: Zephyr Associates/Frank Russell & Associates.

#### **Small Cap Value Active Management**

Now that the rationale for small cap value active management has been established, how can this strategy be successfully implemented? Our approach is a combination of quantitative and qualitative research. DGHM has developed a multi-factor model (MFM) comprised of nine factors which is designed to optimize the trade-off between valuation (low), profitability (high), and financial strength (strong). We have found through backtesting of historical data that our model's most attractive quintile (20% of name screened) will beat the CRSP 9-10 benchmark by 1,000 bps annualized over the last 15 years (*before* transaction costs). Creating our multi-factor model was not simply a process of testing every variable we could think of and taking the nine best factors, a process known as data mining. The variables we chose to use were based upon more than 25 years of investment experience. That experience, combined with common sense (i.e., companies with higher profitability, sell at higher valuations), helped us create a model which outperformed many of the well-researched single factor models such as low P/E or low P/Book investing. Optimizing the trade-off between valuation and profitability allows us to construct portfolios that outperform those that simply buy stocks with low P/E's or low P/Book measures.

A comparison between our DGHM's MFM and low P/E and low P/Book investing is shown in Exhibit 5. By using our MFM, our eight analysts start their screening with a potential buy list or first quintile of 690 names rather than the original 3,400+. Our research has further shown that not only has the first or most attractive quintile outperformed the benchmark (CRSP 9-10), it contains an above average percentage of companies that outperform the benchmark. Quintile results are shown in Exhibit 6.

**Exhibit 5: Model Comparison – Micro Cap Universe: 1982-97**

DGHM MFM (First Quintile)	23.0%
Low P/E	19.1%
Low P/Book	16.5%

Source: Dalton, Greiner, Hartman, Maher & Co.

**Exhibit 6: Multi-Factor Model Backtest – Micro Cap Universe: 1982-97**

First Quintile	23.0%
Second Quintile	17.5%
Third Quintile	10.6%
Fourth Quintile	9.8%
Fifth Quintile	0.5%
CRSP 9-10	13.0%

Source: Dalton, Greiner, Hartman, Maher & Co., FactSet Data Systems, and Prudential Securities.

While a 690 name list is more manageable than a 3,400 name list, the most attractive quintile is simply a starting point. As with any computer generated list, we must first delete from the potential buy list highly illiquid stocks as well as stocks with incorrect or out of date data. At this point the other portion of our process takes over. After deciding which of the names on our buy list warrant further research, our analysts apply rigorous securities analysis to those names in order to determine which companies offer a superior risk/reward trade-off.

Unlike large companies which are often involved in multiple industries and geographies, small companies tend to compete in much narrower industries with fewer products. This difference allows active management to add significant value to the process. It is much easier for the analyst to recognize and analyze the four or five critical issues that will enable a small company to be successful than it is when analyzing a global conglomerate such as General Motors. Thus, the focal point of the due diligenc

process is the management interview.

### **The Art of the Management Interview**

The management interview is a crucial aspect of the investment decision making process. It should be viewed as the analyst's opportunity to gain insights from senior management about the dynamics of their business and the industry(s) in which it operates, and to gauge the future prospects of the company. The analyst must take advantage of the interview opportunity in order to gain an edge over his competition. In a stock market that is fairly efficient, stock prices will generally reflect the market's view of a company's prospects. The interview will assist the analyst in determining whether this view is correct, or whether the market's pricing mechanism is missing something, albeit positive or negative. It is important to stay focused on information that may differ from Wall Street's perceived expectations. The interview is especially important for smaller companies who may not have a wide following among sell side analysts who publish research, because the critical decision making variables may not be as widely discussed or thoroughly understood by the investment community.

It is important to be thorough in the interview process, so that the analyst has as many decision inputs in his arsenal as possible. The goal is to achieve a high comfort level with each of the meaningful issues, and have considerable supporting information for those issues. The analyst should constantly be probing for things that excite or concern him.

The interview can be done via conference call, or perhaps more effectively, a face to face site visit to the company's headquarters. This can often be done in conjunction with a tour of some company facilities, which may afford an opportunity to speak with managers or employees at the operating level. This often provides further insights about how the company is run, and its' overall management philosophy. One point to keep in mind is that questions should be geared to provide guidance and insights, but not specific budgeted numbers. It is highly inappropriate to attempt to gain access to any material non-public information.

The analyst must be sure to do substantial homework on the company ahead of time, and be prepared with a list of questions to pose — wasting management's time could hamper access in the future. A company executive will be much more patient and helpful if he believes that you have some basic knowledge of his company, and a high degree of interest in learning more. Obtaining this fundamental knowledge entails reviewing the latest annual report, 10K, 10Q, proxy, recent press releases, product brochures, and Wall Street research reports if available.

The following sample interview outline is geared towards providing guidance on the topics that should be reviewed for companies across a wide array of industries. However, it is clearly not all encompassing and there will always be company or industry-specific issues that need to be considered in addition to, or in place of those given below:

### **Sample Interview Outline**

#### **Company Background Information:**

Review some basic company history in order to have an understanding of how the company has evolved

into its current form:

- When was the company founded?
- When did it go public?
- How/why has it evolved into the businesses in which it currently operates?
- How long has the current management team been in place?
- What are the management team's primary long-term goals?

### **Market and Competitive Overview:**

Gain an understanding of the market profile and competitive landscape in which the company operates. The analyst should try to gauge the attractiveness of the market, as well as the company's relative competitive position, and its ability to improve on this position:

- Approximate size of the market(s)
- Competitive advantages/disadvantages of size
- Market growth
- Historical cyclicalities
- Position in the current economic cycle
- Secular changes, if any, taking place that will affect the market profile going forward
- Barriers to entry
- Manufacturing capacity being added, and the impact on industry pricing structure
- Fragmentation of the competitive landscape
- Key industry competitors, ranked by strength
- Market share breakdown among these industry participants
- Market share shifts over the years, and the leading causes of these changes
- Key differentiators (i.e. price, product quality, delivery times, technology, distribution)

### **Product Line Overview:**

The analyst wants to secure a solid understanding of the company's products, their competitive advantages, and their positioning in the marketplace. Special attention should be given to any product(s) that the company is particularly dependent upon, and the company's ability to maintain a competitive edge with respect to these products:

- Value added from a customer's perspective of the company's product line
- Is any of the product line customized for customer specific applications?
- Product positioning in the market in terms of price point, and quality
- Where is the product in terms of its life cycle?
- How quickly do these cycles evolve?
- Proprietary aspects of the product line (i.e. patents, technology, trademarks, licenses, etc.)
- Products' drawbacks or competitive disadvantages
- Risk of obsolescence

- Company dependence on any single product or product line
- Overall product mix profile in terms of revenue generation
- How is this mix changing?
- How do operating margins differ within this mix?
- Level of resources put into research and development (R&D)
- Is R&D expensed or capitalized for accounting purposes?
- Company dependence on its ability to generate new and/or upgraded products
- Ability to enter new markets

### **Sales and Marketing:**

The analyst should try to understand how the sales and marketing functions are performed, and whether the company has gained any type of competitive advantage from these functions:

- Does the company have an internal sales force, or does it use independent representatives?
- Growth in sales force or number of independent reps.
- How are the salespeople incentivized?
- Customer retention rates
- Methodology for contacting new customers
- Types of advertising used for marketing purposes
- Ability to measure the impact of advertising on sales results
- Significance of these costs in terms of the overall cost structure
- Perceived competitive advantages/disadvantages of the company's sales and marketing efforts

### **Distribution:**

The analyst should try to understand how the distribution functions are performed, and whether the company has gained any type of competitive advantage from these functions:

- Channels of distribution used
- Percent of sales to Original Equipment Makers (OEMs), as opposed to the aftermarket
- Percent of sales that are wholesale versus retail
- How do margins differ by distribution channel?
- What changes are taking place industry-wide in the way product is distributed?
- How is the company responding to these changes?
- Trends in distribution costs as a component of the overall cost structure

### **Customer Overview:**

The analyst must gain an in depth knowledge of the customer base, and an understanding of the company's strengths or weaknesses in regards to its customer base. This is determined by various factors

such as the diversity of the customer base (diversification means less dependence on any one customer), the importance of the company's products to its customers (value added), and the financial health of the customer base:

- Composition of revenues by end market
- By geography
- Major customers
- Diversity of the customer base
- Does the company supply a dominant percentage of the customers' requirements?
- Price elasticity of customer purchasing decisions
- Are sales done on a contractual basis?
- If so, how long do contracts typically last?
- Are they obtained through a competitive bidding process?
- Price escalators/deflators based upon changing factors such as volumes, raw materials, etc.
- Typical payment terms
- What has the amount of bad debt write-offs been?
- What is the current profitability/cash flow profile of the customer base?
- Customer capital spending plans relative to historical spending patterns
- Does there appear to be pent up demand for the product(s)?
- How lean/full is the inventory pipeline?

### **Company Structure:**

The structure of the company's operations must be explored in order to gain an appreciation for the amount of operating leverage inherent in the business. This is important because the more operating leverage (fixed costs/total costs), the more profits will vary with changing volumes. It is also crucial to understand the relative cost advantages/disadvantages vs. the competition. The analyst must determine whether the company is a low cost producer, and if not, then why not?

- Are the company's operations centralized or decentralized?
- To what degree is the company vertically integrated in its production processes?
- Level of capital intensity involved in running the business
- Current capacity utilization
- To what degree is the cost structure fixed versus variable?
- Components of costs of goods sold (COGS) in percentage terms (i.e. raw materials, labor, overhead, etc.)
- Dependence on any one particular raw material supplier
- Unionized labor force?
- Competitive advantage/disadvantage created by this
- Geographic location of key production facilities, and reasons why
- Is there a large need for capital to upgrade or expand facilities and equipment?
- How do the above factors affect the company's overall cost position relative to its competitors?

## Earnings Model, Cash Flow, and Balance Sheet Discussion:

The interview should provide the necessary guidance to build appropriate financial models. These models, which are helpful for valuation analysis, will also determine whether the profitability, cash flow and balance sheet characteristics of the company can support its projected growth rate. These are all important variables which determine the ability to grow the value of an enterprise over the long-term, and they cannot be obtained from a static analysis of a company.

### Earnings Model:

It is critical to understand the relationship between sales growth and profitability. Ultimately the

value the stock market places on the company will be derived from a company's secular profitability. The following issues should be reviewed.

- Assess the various components of revenue growth: volume, price, product mix changes, market share changes, acquisitions.
- Evaluate gross margins: trends in the components of COGS; incremental/decremental leverage on gross margins as volume changes; is COGS valued on a LIFO or FIFO basis?
- Any accounting methods considered too aggressive or too conservative?
- Evaluate selling, general, and administrative (SG&A) costs: Typically vary in line with changes in revenues? Ability to gain leverage on these costs as the company grows; How significantly can these costs be reduced as a percent of sales?
- Average interest rate on the company's outstanding debt
- Recent or contemplated changes in capital structure that may change financing costs
- Tax rate; Are there any programs in place to try to reduce the tax burden?

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### Cash Flow

Even more important than the earnings model is the cash flow model. This model adjusts for the

various accounting choices the company is able to make and exposes management's ability to

efficiently run the enterprise. Whether the company is able to self-finance its growth or be forced to

tap the capital markets, will be determined through analysis of the cash flow statement. The

following issues should be reviewed:

- Trend in capital spending (CapEx) required over the next few years
- Amount for replacement of the capital base vs. growth
- Compare to depreciation and amortization (D&A) levels
- Any working capital required for growth?

*(Note: the calculation to determine whether or not a company generates free cash flow (FCF) is as follows: Net income, plus D&A, minus working capital needs, minus CapEx)*

- If expected to generate FCF, what are the priorities for utilizing it (i.e. acquisitions, share repurchases, dividend payments, debt pay down)?
- If the company is in a negative FCF situation, how will it be financed (i.e. additional debt, stock offerings, etc.)?

### Balance Sheet:

Financial strength is critical to a company's ability to grow and compete. Financial flexibility as well as asset productivity (a sign of management ability) are important conclusions to draw from analysis of the balance sheet. The following issues should be reviewed:

- What is the company's optimal capital structure (Debt/Equity)?
- Does this differ significantly from current capital structure?
- Strategy for bringing it in line
- Discuss trends in asset productivity (i.e. receivables, inventory, and fixed asset turnover)
- Inventory levels vs. expected revenue trends
- Long-term liability funding issues (i.e. large debt maturity, post retirement obligations)

### **Review of Recent Trends:**

The analyst must assess current fundamentals. While the previous sections have helped the analyst gain insight into how the business is run and its long-term fundamentals, this part of the interview focuses on the short-term. While we are always looking to invest in businesses based on their longer term outlook, it would be foolish to overlook near term fluctuations. The following issues should be reviewed:

- Recent order rate trends
- Backlog trends
- Margins in this backlog vs. typical margins in this type of operating environment
- Customer indications that order levels may change significantly in the near future for any reason
- Impact of seasonality
- Potential acquisitions (*it's not appropriate to ask for specific targets, but markets served, size, and valuation are appropriate discussion points*)

### **Reviewing Management Focus/Issues:**

An important issue that must be resolved in the analyst's mind during the interview is whether this management team has a coherent strategy, and the ability to execute it properly. By this point of the interview, the analyst should be able to determine whether management's long-term goals that were discussed early on are feasible. Any outstanding concerns should be addressed at this point. There should also be a review of management performance measurement, and it is always a plus when management's financial incentives are aligned with shareholder's best interests. In the case of small companies, the analyst must determine whether management has the capability and depth to grow the company to the next level.

- Review the stated long-term goals and the outlook for achieving them
- Review the greatest challenges being faced by this company near term and long-term
- How will the management team address these challenges?
- Review the largest opportunities for growth
- How will they be exploited?
- Key financial benchmarks used in managing the businesses (i.e. ROA, ROE, EPS growth, etc.)
- Do these benchmarks vary at different levels in the company, such as by division, by plant, etc.?
- Where are these benchmarks currently vs. long-term targets and vs. their competitors?
- How is meeting benchmarks tied into management compensation?
- Compare total compensation (including stock, options, etc.) with similar companies
- Discuss level of insider equity ownership, and how this has changed over the past few years
- Is the proper management team in place to take this company into the future, or are there voids which must be filled?
- Discuss employee turnover trends, and ability to recruit talented managers

### Miscellaneous Topics:

This is a catch all section where various questions can be asked to help the analyst make a decision at the margin.

- Review currency or foreign exchange issues that could potentially impact earnings
- Review outstanding legal or environmental issues which could have a material impact
- Are there any shareholders that hold a significant share of the company (10% or greater)?
- If so, have they held the shares a long time?
- What is their investment strategy?
- Which sell side analysts have the best understanding of the company and its philosophy?
- Which customers and suppliers would be worthwhile to speak with regarding their experience in doing business with this company? (*This is a good way to obtain more objective insights on the company.*)
- Who are some up and coming companies in this business to become more familiar with? (*The answer to this question can often provide solid leads for other investment opportunities.*)
- Any other outstanding issues that have not been covered

In addition to performing a thorough interview, the analyst will often want to follow up with shorter review sessions every so often. This will afford the ability to stay current on the issues discussed, and see whether events have played out as expected. Only through regular dialogue and review over a period of time will the analyst be able to determine a management team's ability to provide realistic guidance on

their business. The perceptive analyst will be able to determine whether management is realistic about the prospects for their business, or whether they are overly optimistic or pessimistic. The analyst will also gain an appreciation for the importance of a dialogue with management as a key part of the active management of investment portfolios.

## **Portfolio Construction**

The focus of the analytical process and the management interview is to identify those companies with the characteristics that typically result in corporate success. But there is a difference between a good company and a good investment — and this centers on valuation. One of a portfolio manager's primary functions is to determine *when* a good company's stock is undervalued. In addition to the usual financial and valuation characteristics, there are also some subjective factors which often correlate with superior stock performance. We try to identify companies that have "the wind at their backs," or companies involved in an industry or sector that has strong cyclical or secular fundamentals. It is much easier to overcome temporary problems in a growing industry than in one that is contracting.

Another intangible is management's degree of focus on creating shareholder value. We prefer to invest in companies whose management has a significant equity stake and thus has their interests aligned with ours. These companies are less likely to make unattractive acquisitions and are more apt to use free cash flow to repurchase shares, which generally benefits all shareholders.

As a value manager, the valuation component is our primary focus and is accomplished through our multifactor screening model as previously discussed. The portfolio's manager marries this valuation underpinning with the analysts' estimates of improving corporate fundamentals. We typically look for a "double play" in our investments: a period of surprisingly good earnings which will result in an upward revaluation of the price/earnings multiple. For example, if a stock selling at a 10 P/E (due to unexciting historical growth) has two years of 15% growth and the P/E expands to 15, then the net result is a doubling of the stock price.

The portfolio manager's other responsibility is to assemble individual stocks into a portfolio. Two considerations are the number of stocks held in the portfolio and industry concentration. We run very diversified portfolios with 80-100 stocks. Typically, small cap portfolios tend to have more names and smaller positions (1-2%) compared to large cap portfolios which are often concentrated in 20-50 positions. The primary difference is liquidity — it is much more difficult to trade small cap names. The other reason we like to own many stocks is that the timing of a fundamental improvement at a company and the market's recognition thereof is very uncertain in the inefficient world of small cap investing.

Industry concentration strategies differ significantly from manager to manager. Since we focus on "bottom-up" analysis, we restrict our industry sector bets to 50% over or under the sector weight in the corresponding index (e.g., the Russell 2000). This approach allows us flexibility in constructing the portfolio but retains our emphasis on stock selection.

While much of an analyst's or portfolio manager's effort is placed on the buy decision, the sell decision is equally important. As in buying, there are two primary reasons to sell: a change in fundamentals and/or a change in valuation. The analyst's job does not end with the decision to purchase a stock. Continued monitoring of the company's progress is required. Any deviations from expected results must be carefully scrutinized. Changes in the competitive or economic environment must be analyzed, and a dialog with management must be maintained. If the corporate outlook has significantly deteriorated, then

the stock must be sold.

The more pleasant, but often more difficult, sale is one due to valuation. By definition, a sale for valuation reasons usually means the stock has done well and is no longer attractively valued. However, it is human nature to hold onto winners since they look so nice in the portfolio with that very low cost! Thus, a strict sell discipline is required. Target prices can be set, typically when a stock is purchased, based on a full-value P/E multiple. Another method, which we employ, continually ranks a stock in a relative valuation model. When the stock reaches an over-valued ranking, it becomes a sale candidate.

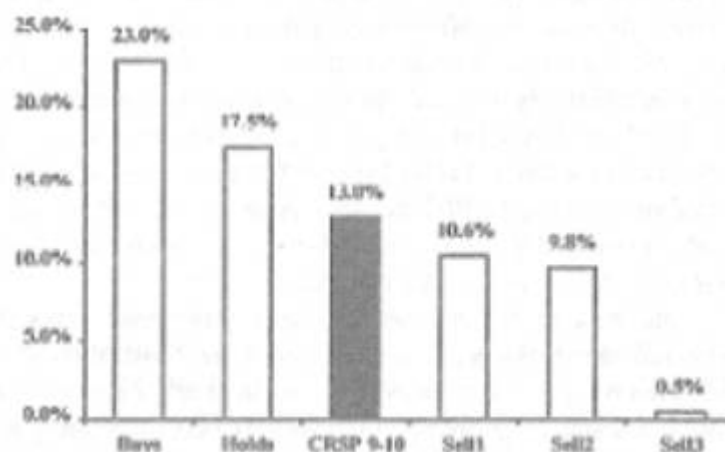
Once a purchase or sell decision has been made, trading becomes critical. The trading of small cap stock is a specialty unto itself. Most of the stocks trade on NASDAQ and often have a very limited number of market makers. One result of limited liquidity is substantially higher volatility and a corresponding higher cost of execution as capitalization size declines. A very patient trader (and portfolio manager) is a necessity. In many cases, completing a buy or sell order may take a month or more. In recent years, trading in ECN's (electronic communications networks, i.e. Instinet) has become much more important as a means to access liquidity in illiquid markets. New electronic trading mechanisms will continue to emerge, as institutional investors seek natural liquidity while maintaining their anonymity.

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### **Sounds Great, But Does It Work?**

We believe that all investors should have a long-term investment horizon, but this is especially true when investing in small cap. Our approach, combining quantitative screening, "bottom-up" security analysis, diversified portfolios, and patient trading has proved successful in adding value in small cap investing. To prove our point, we can analyze our historical results. (Exhibit 7)

**Exhibit 7: Historical Results DGHM Micro Cap MFM  
15-Yr. Annualized Return (1982-97)**



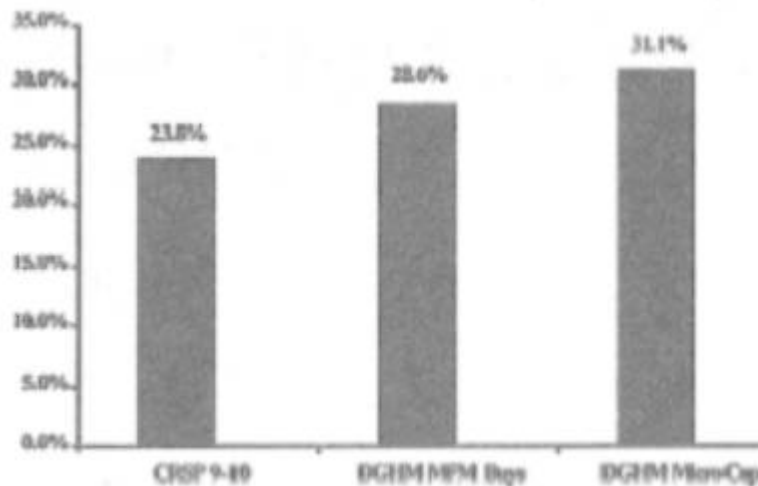
Source: Dalton, Greiner, Hartman, Maher & Co., FactSet Data Systems, and Prudential Securities.

Any quantitative model of value must backtest positively. DGHM's microcap model provides the desired

results: the quintiles of relative attractiveness are arrayed sequentially, and the first two quintiles (buy and hold) are ahead of the index. The historical model has been tested over the past fifteen years and the model portfolios are rebalanced annually.

Real life results from 1991-1997 are shown in Exhibit 8. The DGHM MFM buys consist of the capitalization weighted buy list at the beginning of each year. This list is positively biased by the presumption that the portfolio's desired position can be purchased on day one, and it does not incorporate transaction costs. The final bar represents the actual annualized return for the DGHM Micro Cap portfolio for the 1991-1997 period (31.1%).

**Exhibit 8: Actual Results DGHM Micro Cap  
7-Yr. Annualized Return (1991-97)**



Source: Dalton, Greiner, Hartman, Maher & Co.

Exhibit 8 shows that our model has been productive and our security analysis and stock selection has further improved returns. The net result is a value added process that has delivered to our clients results that are 730 basis points ahead of the relevant benchmark for the 1991-1997 period (DGHM MFM outperformance of the CRSP 9-10 by + 480 basis points plus DGHM Micro Cap outperformance of DGHM MFM by = 250 basis points).

This chapter shows that disciplined, bottom-up stock selection works very well in the inefficient world of small cap investing. We believe that analysts can gain more relevant insights in this sector of the market where the competition is less intense. Strong fundamental analysis combined with intelligent portfolio management can result in truly superior performance in small cap investing.