CHAPTER 1

The Small-Cap Advantage

This chapter explains how exposure to the small-cap asset class can benefit both managers and institutions. First, the two sources of small-cap outperformance are introduced. The common small-cap indices are then analyzed to show that their outperformance has occurred despite some structural flaws. Finally, a discussion of market efficiency reveals how limited professional participation in the space can give diligent researchers an opportunity to outperform.

TWO SOURCES OF OUTPERFORMANCE

The small-cap advantage is the return premium that investors can experience when investing in small publicly traded companies. This performance advantage over mid caps and large caps can come from two different sources. First, investors can receive a tailwind from the historical outperformance of the asset class by confining their investment universe to small-cap stocks. Despite some handicaps that penalize small-cap index performance, small companies as a group have posted returns that exceed mid-cap and large-cap stocks over the long term. Second, investors have the opportunity to exploit greater market inefficiency in small caps. The opportunity set is larger in number, and there are fewer professionals researching and publishing information on these companies than on mid and large caps. Structural characteristics of the investment industry make it difficult for larger firms to operate within small caps, and the resulting vacuum of information creates an opportunity for diligent investors to gain an edge. The two sources of return advantage, the tailwind of outperformance and market inefficiency, must be dissected further to get a better understanding of their potential benefits and to navigate the pitfalls and traps inherent in this asset class.

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SMALL-CAP DEFINITIONS

Professional investors seeking a performance advantage from investing in small companies must decide at the outset what "small cap" really means. The definition is important for two reasons. First, a manager must have a comparative benchmark, so that institutions can assess whether value is being created beyond what is available from a similar passive investment. The pressure to decide on a specific comparative benchmark is often led by clients or prospects. They desire a common measuring stick for evaluating managers and have probably chosen one of the common definitions to work into their internal processes. Second, the definition is also important because small-cap investors desire a return premium over mid-cap and large-cap stocks. For this reason, investors would seem to demand a definition that most accurately captures the segment of the market that has provided such a premium. Current industry-accepted definitions of *small cap* seem to have coalesced around existing standards rather than being derived from data supporting the greatest return premium.

Market capitalization is simply a snapshot dollar figure that represents the amount of capital required to purchase all outstanding shares of stock at prevailing market prices. It can range from hundreds of billions of dollars for the largest companies to hundreds of thousands of dollars for the smallest. An investor studying a company with 1 million shares of stock outstanding and a quoted market price of $50 per share would, in theory, be able to purchase the entire company for its market cap of $50 million. In general, companies with market caps below a few billion dollars are considered small in the industry.

The popular small-cap benchmarks fail to capture the highest-returning segment of small companies, and they are increasingly labeling larger companies as small. Going forward, this mislabeling is likely to diminish the historical performance advantage that small stocks have enjoyed over larger stocks. It may also make it harder for managers who restrict their investment universe to stocks included in these indices to exploit market inefficiency.

The Russell 2000® Index

The most common association that investors make with small-cap stocks is the popular Russell 2000® Index. Russell Investments launched the index in 1984, and it approximates the smallest 2,000 constituents of the Russell 3000® Index—the latter containing the largest 3,000 U.S. companies that

make up approximately 98 percent of the investable U.S. equity market.[1] Despite containing two-thirds of the companies in the Russell 3000, the Russell 2000 comprises only 10 percent of its total market capitalization. Investors often visualize the enormous universe of opportunity in small-cap stocks as large in size, but they often forget that the small-cap category is truly small in terms of total market capitalization. For example, the aggregate market cap of all Russell 2000 companies was roughly equivalent to that of the five largest companies in the Russell 1000 as of December 31, 2009.[2]

As Table 1.1 indicates, the market-cap range for inclusion in the index correlates with up and down years in the market. The numbers also indicate that the long-term trend is for larger companies to be included in the index. Despite the periodic reconstitution of the index, the Russell 2000 is, in effect, a slave to the rank-ordering of the Russell 3000. As larger companies grow in market capitalization, small caps are gradually pulled along with them. The largest companies included in the index are more than twice as large as they were in 1995. This is important, as larger companies in cap-weighted indices have a disproportionate impact on performance. The interim periods between the yearly reconstitution of the index allow the largest companies to become even more meaningful in their impact. For example, as of December

TABLE 1.1 Russell 2000 Index Constituents by Market Capitalization (in millions)

Year	Largest	Smallest	Mean
2009	$1,688	$78	$445
2008	$2,751	$167	$634
2007	$2,500	$262	$883
2006	$1,960	$218	$759
2005	$1,800	$183	$694
2004	$1,600	$176	$632
2003	$1,200	$117	$457
2002	$1,300	$128	$473
2001	$1,400	$147	$560
2000	$1,500	$178	$660
1999	$1,300	$178	$570
1998	$1,400	$222	$590
1997	$1,100	$172	$500
1996	$1,000	$162	$410
1995	$750	$104	$310

Source: Russell Investments, as of the 6/30 annual reconstitution date.[3]

31, 2009, the index's largest company had a market capitalization of more than $5.5 billion.[4]

MSCI US Equity Small Cap 1750 Index

Another leader in indexing data, MSCI, also rank-orders the domestic stock market by size. They define small cap as the bottom 1,750 companies out of the top 2,500 in their MSCI Investable Market 2500 Index.[5]

Despite having fewer companies than the Russell 2000, this index has boundaries for inclusion that are slightly wider. Again, Table 1.2 indicates a gradual increase in market cap for the average small company. The trend for MSCI's small-cap index is also for increasingly large companies to be considered for inclusion at the upper boundary. At various times in the last decade, companies over $5 billion in market cap were considered small. The index, like the Russell 2000, is market-cap weighted, and because such large companies are included in the index, performance can become top-heavy.

The S&P SmallCap 600

The Standard & Poor's (S&P) SmallCap 600 was introduced in 1994 and covers approximately 3 percent of total domestic stock market

TABLE 1.2 MSCI US Equity Small Cap 1750 Index Constituents by Market Capitalization (in millions)

Year	Largest	Smallest	Mean
2009	$5,523	$31	$733
2008	$3,442	$9	$555
2007	$5,514	$30	$1,000
2006	$4,330	$42	$1,065
2005	$4,860	$49	$960
2004	$4,862	$51	$909
2003	$5,398	$25	$746
2002	$1,875	$28	$492
2001	$2,841	$50	$746
2000	$3,473	$24	$796
1999	$5,724	$44	$891
1998	$3,366	$43	$750
1997	$3,146	$57	$786
1996	$3,222	$33	$631
1995	$2,286	$35	$514

Source: MSCI Barra, as of calendar year-end.

capitalization. Even though the market-cap eligibility for inclusion in this index stretches from approximately $250 million to $1.2 billion, the largest company in the index had grown to $3.1 billion as of June 18, 2010.[6] An interesting attribute of this index is that inclusion is done on an as-needed basis, which S&P claims is an improvement over the method used by the popular Russell 2000, as the latter's summer reconstitution may have allowed traders to game the index before Russell revised its procedures to lessen its impact. Their avoidance of a defined reconstitution date has made the changes to S&P's small-cap index less predictable. This, coupled with its smaller relative market caps, has caused a slight historical performance disparity in favor of S&P's small-cap index over Russell's.[7]

The Dow Jones U.S. Small-Cap Total Stock Market Index℠

The Dow Jones U.S. Small-Cap Total Stock Market Index℠ is part of the Dow Jones size-segmented total stock market index lineup and was introduced in February 2005. This segment includes 1,693 stocks and broadly, but not precisely, represents stocks 751 through 2,500 ranked by market capitalization. The index offers monthly data back to 1991. Constituents are reviewed quarterly, and the aggregate market cap of the small-cap index is roughly 10 percent of total market cap.[8] Both the S&P and Dow Jones Small-Cap indices are weighted by market capitalization.

Index Returns

All of the indices listed in Table 1.3 vary slightly in their methodologies for inclusion and reconstitution. Certain indices use float-based metrics that can exclude companies where insiders own a high percentage of shares outstanding. Others have minimum requirements for stock price and daily liquidity. But they all attempt to capture a certain segment of the market that lies below the mid-cap and large-cap universe. Each represents a small sliver of total U.S. market capitalization, and their performance disparities are the result of different inclusion methodologies. In general, the indices that include smaller companies outperform the indices that include larger ones, but by this very fact, they also become less "investable" to those seeking to replicate their performance.

The inclusion of larger companies in these indices over time presents a problem for investors. The largest companies have a disproportionate impact on returns, but the smallest companies actually perform better. Evidence for this is introduced in the next section. Investors looking to replicate the returns of a small-cap index through an index fund, exchange-traded fund,

TABLE 1.3 Small-Cap Index Returns

	Russell 2000 Index	MSCI Small-Cap 1750 Index	S&P SmallCap 600	Dow Jones U.S. Small-Cap Index
2001	2.49%	3.22%	6.54%	2.43%
2002	−20.48%	−18.37%	−14.63%	−16.98%
2003	47.25%	47.38%	38.79%	46.78%
2004	18.33%	20.01%	22.65%	17.34%
2005	4.55%	7.48%	6.65%	7.98%
2006	18.37%	15.77%	14.07%	15.35%
2007	−1.57%	1.20%	−1.22%	2.32%
2008	−33.79%	−36.20%	−31.99%	−36.39%
2009	27.17%	36.15%	23.78%	38.80%
annualized	**4.27%**	**5.58%**	**5.11%**	**5.71%**

Source: Russell Investments, MSCI, Standard & Poor's, Dow Jones Indices.

or separate account find themselves overexposed to the worst-performing segment of the asset class and underexposed to the highest-performing segment. Market-cap weightings in indices render exposure to the smallest companies irrelevant, as drastic price moves are meaningless to overall index performance. This is why many index fund managers do not even bother purchasing many of the smallest names in their benchmark.

So what is the most appropriate definition for *small cap?* Fastidious managers or institutions may attempt to parse the various methodologies in order to tailor their portfolios optimally around a specific index. But the descriptions and returns of these indices illuminate a key point: *Their definitions of* small cap *are somewhat arbitrary*. They simply represent an attempt to brand a distinct segment of market capitalization along a smooth continuum. Despite being categorized as a small company, stock number 1,001 in the Russell 3000 is not necessarily "small" in any meaningful sense, any more than the 1,000th stock is "large."

What really matters for managers and institutions is the first source of the small-cap advantage: *The smallest companies have historically produced superior long-term performance results*. This stems from the ability of small companies to rapidly compound smaller absolute levels of capital. Their larger peers encounter difficulty maintaining high percentage growth rates in business value as maturation and market saturation impose practical limits on expansion.

The second source of the small-cap advantage, the relative absence of professional investors engaging in company research and making

informed trading decisions, also puts investors in an advantaged position if the definition of *small cap* becomes biased toward tiny companies. The superior return characteristics and opacity of market information in the smallest companies call for a more restrictive definition for *small cap*. As constituent companies grow increasingly large, the advantages inherent in the asset class begin to disappear.

There is an increasingly compelling reason for small-cap managers and their institutional clients to abandon an intensive comparison of the various indices in search of an optimal definition. While the return information presented in Table 1.3 would logically suggest that institutions should choose an index that has performed better than its peers as a benchmark for the small-cap managers they hire, changes in index methodologies are slowly creating less differentiation as they cluster around best practices. Similarly, managers may be seduced into reasoning that it is to their advantage to compare themselves to the weakest historical benchmark. But again, gradual adoption of best practices among index information providers has actually led to less differentiation in methodology, and investors should expect less return dispersion going forward. Paul Lohery, chief investment officer of Vanguard Europe, posits this same argument:

> *Less than a decade ago, major index providers had very different index construction methodologies, and as a consequence, indexes purportedly tracking the same market or market segment exhibited significant variation in performance. Since then, indexes have become more alike as major index providers changed their respective methodologies to incorporate best practices.*[9]

Since index parity is likely to remain a fact of life for small-cap investors going forward, choosing a comparative benchmark is likely to be client driven. Because of its substantial history and recognition, the majority of institutions have gravitated to the industry standard Russell 2000 as their small-cap benchmark. Since many institutions compare the small-cap portion of their portfolio with this index, managers seeking funding would be wise to choose this as a benchmark, despite its minor drawbacks. Again, Paul Lohery supports this contention:

> *Determining the securities of relevance for a market or market segment is not a matter of mathematics or cold, hard science. The boundaries between large-cap, mid-cap, and small-cap, growth and value, and (in a growing number of cases) country of domicile are more subjective than objective. Practitioners including portfolio managers, consultants, institutions, financial advisors, and individual investors apply their own subjective judgment to determine*

> *these boundaries. While there is no universal agreement as to where these boundaries are drawn, the subjective assessments formed individually by practitioners tend to gravitate towards certain conventions.*[10]

Choosing an index for comparison does not necessarily resign a manager to accept the hard-and-fast definitions of the benchmark. Building an institutional small-cap strategy from scratch allows a manager to incorporate different market-cap boundaries into the execution of the investment process. While the manager may be forced to forfeit certain opportunities that lie outside these boundaries, the strategy will satisfy institutional needs for specific exposures, so long as the manager's boundaries do not egregiously overlap other asset classes. The forgone opportunities that lie outside a manager's own definition should be only marginally constraining, considering the profusion of companies that are considered small cap. Managers who make minor market-cap accommodations to their strategy in order to better match the definition used by their prospective client base are unlikely to jeopardize their performance edge, so long as they have a robust and repeatable investment process. By doing this, they increase the potential long-term viability of the management company by positioning themselves to successfully raise institutional capital.

Newer managers encounter difficulty in the fund-raising process when they pitch an all-cap or "go-anywhere" strategy to institutions that are looking for more specific exposure (like small cap). A manager may have a sound investment process that is compellingly presented to an institutional due diligence team, but the potential client may be unable to predict what types of exposures they will experience in the execution of the investment strategy. This is likely to be a roadblock that ultimately precludes funding.

By defining *small cap* coincident with the definition used by their potential clients, budding managers structure themselves for industry tenure while maintaining the advantages of the asset class. Most managers end up choosing either $1 billion or $2 billion as a defining upper limit for initial purchase in their small-cap strategy. Some managers (usually those who are experiencing asset bloat) may increase this to $4 billion or $5 billion, but the vast majority attempt to operate broadly within the universe represented by the Russell 2000.

Note that this discussion of small companies and the descriptions of the small-cap asset class really include both small-cap stocks *and* micro-cap stocks. The two universes merge at a few hundred million dollars in total market capitalization. The bottom 1,000 companies in the Russell 2000 actually overlap into Russell's micro-cap index. All of the advantages present in small-cap stocks are amplified in micro-cap stocks. Micro caps

TABLE 1.4 CRSP Decile-Based Size and Return Data from 1927 to 2009

Decile	Value Weighted Returns	Equal Weighted Returns	Number of Firms (year-end 2009)	Mean Firm Size (in millions)
1	9.07%	8.97%	155	49,800
2	10.36%	10.30%	163	9,713
3	10.78%	10.53%	171	4,611
4	11.41%	11.12%	171	3,023
5	11.63%	11.58%	198	1,964
6	11.53%	11.48%	226	1,281
7	11.85%	11.78%	271	847
8	11.95%	12.28%	393	523
9	11.34%	12.40%	556	271
10	12.87%	18.12%	1,625	67
9+10	11.88%	16.11%	2,181	119

Note: Returns are annualized, assume no transaction costs, and include dividends. See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
Source: CRSP.

are even more thinly traded and underfollowed. They provide even more opportunity to exploit market inefficiency, and they have the capability to grow even more quickly. This is evident in the numbers of Table 1.4, where the smallest two deciles are representative of what most professionals would consider micro-cap stocks.

Many small-cap managers include micro-cap stocks in their potential investment universe and ultimately in their small-cap portfolio. They project this to their potential clients and tout the benefits of prospecting in such fertile territory. After a brief discussion of historical returns in the next section, the presumption for the rest of this book is that small caps encompass much of the micro-cap space, and together are simply referred to as small caps or small companies. The fundamental characteristics and opportunities are shared for both, and the distinction between the labels *micro* and *small* is academic. It is another attempt to make artificial distinctions along a smooth continuum. Managers and clients alike should simply understand that market inefficiency is something that gradually provides greater opportunity as market caps get smaller: The smaller the companies, the better the historical outperformance, and the greater the dearth of information.

A manager, in theory, should experience the greatest performance advantage in the smallest of small companies. But this poses a practical problem for the aspiring small-cap manager concerned with building a viable business, as most institutions also desire the stability and critical mass that come

with an investment manager's fee-based revenue stream. Clients want to invest with a firm capable of servicing a diverse set of accounts and able to accommodate enough capital to ensure ongoing operational viability. A strategy structure with ample capacity to provide for the revenue needs of the manager also precludes focused investment in the smallest of small companies. It is possible to execute on this strategy, but the manager must forgo institutional clients of significant size. Large clients will not be able to obtain enough exposure to the manager's strategy for it to be material in their overall portfolio. Individuals and small institutions are in the best position to exploit this bottom layer of market capitalization. Here, their limited capital base becomes a distinct advantage. This is one of the few areas in the stock market where the hobbyist investor can take advantage of opportunities that are off-limits to more experienced professionals.

Ultimately, a manager's definition of *small cap* should balance the capital and account diversity demands of institutional clients with the predominant goal of capturing the historical outperformance and market inefficiency in the smallest companies. Limiting total strategy capital can help achieve this objective, conditioned upon the firm remaining above breakeven. But even if a manager perfectly balances capital constraints with market inefficiency, convention often becomes the deciding factor for benchmark selection. The industry standard Russell 2000 Index will probably become the comparative choice for most managers seeking institutional funding.

THE OUTPERFORMANCE OF SMALL-CAP STOCKS

There is widespread belief that adding small-cap stocks to a portfolio increases its potential for total return. Evidence from historical price data supports this contention. Table 1.4 details the advantages of small-cap investing and illustrates how the advantage generally increases along a continuum of decreasing market capitalization. The greatest outperformance opportunity comes from the category of companies that is generally considered micro cap by investors.

The average firm size of the 2,181 companies in the Center for Research in Security Prices (CRSP) 9th and 10th deciles, representing the smallest 20 percent of total market capitalization, was approximately $119 million as of December 31, 2009. A company of this size would have barely qualified for inclusion in the Russell 2000 Index, the most widely recognized benchmark for small-cap managers. The data suggest that managers should include in their portfolios the smallest companies in the Russell 2000, and those that lie below it, to benefit from the return premium that is commonly expected in small-cap stocks.

CRSP IS THE CENTER FOR RESEARCH IN SECURITY PRICES

CRSP is the Center for Research in Security Prices, an outgrowth of the University of Chicago. Started in 1960 with a grant from Merrill Lynch, the center is now the gold standard for historical U.S. stock market return data. CRSP slices their universe of stocks by deciles, and the 9th and 10th capture the bottom 20 percent of stocks ranked by market cap on the New York Stock Exchange. Data for the NYSE Amex Equities (formerly the American Stock Exchange) began in July 1962, and prices for NASDAQ and Arca exchange-traded stocks were added as of December 1972 and March 2006, respectively.

Source: www.crsp.com/documentation/product/stkind/background.html.

The returns for the 10 deciles of the CRSP dataset are presented in Table 1.4. As company size decreases, the number of companies in each decile increases. Returns follow a similar path. Generally, the smaller deciles have provided historical returns in excess of the larger ones. As evidence that the truly small have outperformed, equally weighting the smallest decile would have averaged an astounding 18.12 percent compounded annual rate of return since 1927, outperforming the largest decile by more than 9 percentage points annually. The fact that this is a theoretical return must be emphasized, as the smallest of the small are off-limits to almost any professional money manager investing material levels of capital.

Returns for small caps have also been more volatile than returns for large caps. Figures 1.1 and 1.2 illustrate this point. Notice that volatility for both asset classes is significantly reduced over increasingly long holding periods. Investors have been more likely to experience the average historical return for increasingly long holding periods.

Small-cap return dominance is illustrated in Figure 1.3. The rolling returns of small caps less corresponding large-cap returns reveal positive values most of the time. These positive values indicate small-cap outperformance. Return data reveal that the smallest two deciles outperform the largest two deciles for rolling one-year and five-year periods about 53 percent of the time. Over 10-year rolling periods, small outperforms large 74 percent of the time, and over 20-year rolling periods, small outperforms large 80 percent of the time.

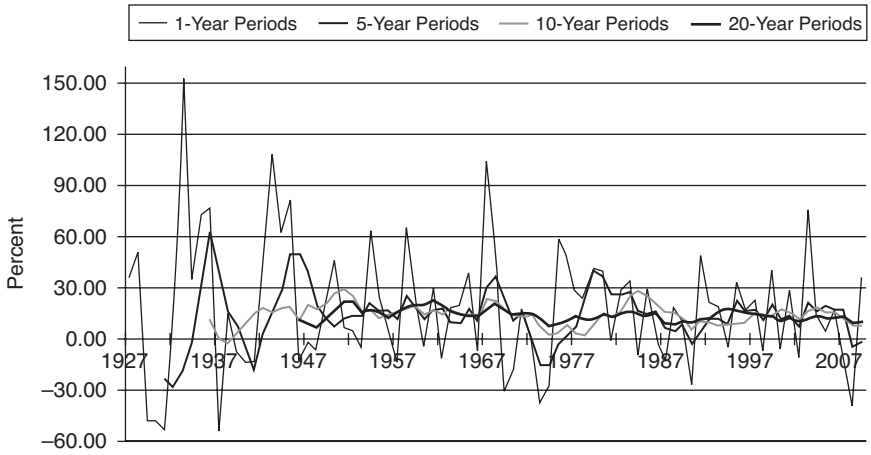

FIGURE 1.1 Rolling Returns of CRSP deciles 9 and 10

The data is compelling for investors. *Long-term investors in the smallest 20 percent of companies enjoyed a performance advantage of more than 2 percentage points annually, and they outperformed their large-cap peers in rolling 20-year periods 80 percent of the time.*

So why do investors enjoy a return premium in small-cap stocks? In addition to their growth potential, small stocks have historically been more volatile. As the graphs illustrate, the peaks and valleys are more pronounced

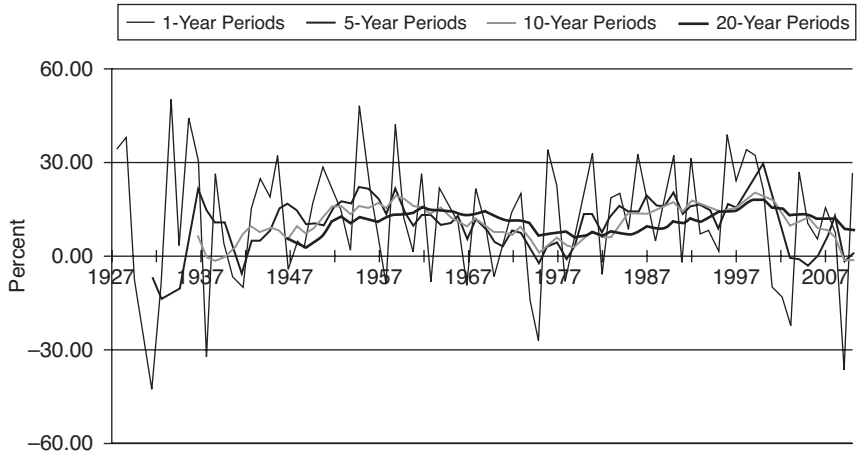

FIGURE 1.2 Rolling Returns of CRSP deciles 1 and 2

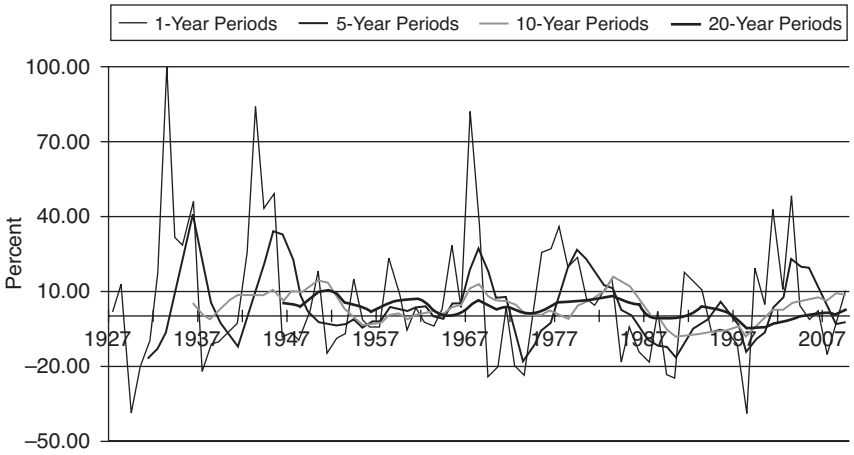

FIGURE 1.3 Rolling Outperformance of Small Caps versus Large Caps

for shorter-period returns in small stocks. For those investors who equate volatility with risk, the underlying reason for small stock outperformance is that many of the constituent companies are new, untested, and on shaky financial footing. This argument conveniently dovetails with the academic theory that higher returns come from riskier assets.

Smaller Companies Are Easier to Grow

The comparative ease with which a small company can grow is an intuitive but often overlooked reason for the increased returns available in the asset class. Returning absolute levels of profit that meet percentage hurdle rates on large amounts of capital employed becomes a mathematical problem for multibillion-dollar businesses. Mature multinational companies like Cisco, General Electric, and ExxonMobil will have an extremely difficult time doubling or tripling their value going forward through large percentage gains in earnings. On the other hand, small companies that are just entering corporate adolescence may have a long runway for rapid growth. *The growth potential in small firms is a key reason to participate in the asset class*. It is much easier for a $100 million company to double in size to $200 million than it is for a $10 billion company to double in size to $20 billion.

The S&P 500 Index had an aggregate market capitalization of approximately $9.7 *trillion* as of January 25, 2010, but the S&P 600 Small Cap Index had an aggregate market capitalization of $398 *billion*. To put the latter number in perspective, ExxonMobil alone had a market value equivalent

to the entire small-cap space when it traded at $83 per share in February 2009. It takes truly staggering amounts of absolute profit dollars to create meaningful percentage increases in the largest large-cap companies. And since the indices are cap weighted, the largest companies disproportionately affect the movement of the index. The mathematics of compounding clearly favors small companies.

Institutional Investment in Small-Cap Stocks

It makes sense for long-term investors, particularly institutions, to accept more volatility in exchange for higher returns. Despite their volatility, common stocks are a preferred anchor asset class for institutions needing to increase financial resources in excess of inflation and spending. For those with sufficiently long time horizons, common stocks can provide relatively high average annual returns. The volatility inherent in common stocks usually scares away investors who desire principal protection in the short term, and it even prevents many individual investors from making commitments to the space when their suitability would otherwise invite it; however, for most investors with a medium-term or long-term investment horizon, common stocks should play a part in powering returns.

Most institutions need to maintain their purchasing power and recoup the spending that is required by their constituency. Universities need to spend endowment dollars to meet current and future needs, foundations are required to spend a portion of their assets to maintain their preferred tax status, and pension funds have obligations to their beneficiaries. Generally, these spending requirements amount to roughly 5 percent of principal. Inflation has averaged an additional 3 percent drag on an annual basis. This means that most institutions require at least 8 percent annually from their investments to simply maintain their value, a number that could prove conservative if inflation edges higher. This hurdle is unlikely to be met through large allocations to lower-returning fixed-income investments. To maintain purchasing power, these institutions need to make allocations to equities and equity-like investments in relatively high proportions. In a period of low yields, a traditional allocation of 60 percent stocks and 40 percent bonds may actually cause a modern foundation to shrink on a yearly basis if the blended return consistently fails to exceed inflation and spending hurdles.

Institutional investors typically have the time horizon to accept the amplified volatility that is present in small-cap stocks. The short-term swings may be too much for individuals, but institutions have time horizons measured in decades or centuries, which enable them to ride out the inevitable down periods. The historical return premium introduced in the last section

makes a case for the addition of small caps to institutional portfolios, particularly those companies at the smallest end of the capitalization spectrum. By adding a small-cap allocation, institutions can further increase expected returns beyond what is available in larger companies. They also increase their chances of growing capital beyond what is necessary for current spending and for the preservation of their purchasing power.

OUTPERFORMANCE WITHIN THE SMALL-CAP SPACE

If an investor equates risk with stock-price volatility, then small-cap stocks have certainly exhibited higher short-term risk. But a premise of fundamental analysis is that any investment in a common stock simply represents ownership in an underlying business, and wild swings in price in the short term do not necessarily reflect corresponding changes in fundamental business appraisal. Short-term price swings most often represent changes in investor mood or sentiment in the general market. These are often amplified in small caps, given the relative lack of trading liquidity. The rational investor should view the increased volatility experienced in small caps as separate from the underlying business risk that individual companies face at a fundamental level. Small companies inevitably experience more bankruptcies and other business problems, given their increased numbers and their proximity to the origin of the market-cap continuum, but this notion should not necessarily lead to the conclusion that small-cap companies in aggregate are riskier than large companies at the fundamental business level.

What is clear is that small companies are *easier* to understand for a fundamental research analyst than mid-cap or large-cap companies. With fewer products, segments, and geographies, small companies can be assessed for their strengths and vulnerabilities more quickly and accurately. This allows the cautious analyst to avoid potential blowups with relative ease. A detailed understanding of the potential risks and rewards of investing in a company can actually *reduce* fundamental investment risk. This may seem counterintuitive, but only if investors equate risk with price volatility.

Warren Buffett is famous for eschewing this academic view of financial risk. He makes this clear in his response to a question about investment risk in his 2007 Berkshire Hathaway annual shareholders' meeting: "Risk comes from not knowing what you are doing." Since it is easier for fundamental research analysts to "know what you are doing" in small caps, then investors should logically focus on this more comprehensible asset class to perform careful research and minimize fundamental investment risk.

The small-cap asset class is filled with healthy, growing companies equipped with robust business models. *Their increased price volatility in the*

short term could become yet another advantage of investing in small caps. Periodic swings in price can occasionally offer compelling opportunities for knowledgeable investors to purchase superior companies at discounted prices.

By making the simple, rational assumption that risk in the market is really fundamental business risk, and not short-term price volatility, managers who service institutions with long time horizons enable themselves to overcome one of the traditional knocks on the asset class and can successfully turn a perceived disadvantage into another performance advantage.

Index Issues

Curiously, small-company outperformance is evident despite the "reverse survivorship bias" inherent in index performance calculations. This bias encapsulates the dual drag caused by underperforming companies that remain in an index (or drop down into an index) over time while their high-growth peers move on to larger ones. When an index reconstitutes, certain companies are removed. In small-cap indices, these names are often the star performers that move up the market-cap ladder into the mid-cap or large-cap universe. Conversely, troubled larger companies are added to small-cap indices as they fall in market cap and lose investor interest. One study examined the additions and deletions from the Russell 2000 Index from 1979 to 2004 and found that, on average, a buy-and-hold portfolio of index constituents outperformed the annually reconstituted index by 2.22 percent the first year and 17.29 percent for five years after reconstitution. This persistence holds across the history of the sample data, and it appears that stocks deleted from the index would have increased returns had they not been removed.[11]

Aspiring managers can structure their small-cap strategies with this handicap in mind. The most obvious tweak to take advantage of index weakness is to let successful firms remain in the portfolio even after they exceed the upper market-cap boundary of the index. So long as the company does not become egregiously large for a small-cap strategy, institutional clients will embrace this rationale. An eventual sale of a portfolio company can be made, based on fundamental characteristics or when other opportunities become more compelling. Conversely, managers should heavily scrutinize new index entrants. Troubled firms that fall from the mid-cap space may be sidestepped, further boosting comparative performance.

The superior growth potential of small companies has powered asset class outperformance even when accounting for the drag of reverse survivorship bias. This should galvanize active managers to structure their strategies

in a way that uses careful research to avoid investment in troubled companies and allows winners to remain in the portfolio even as they graduate into the mid-cap or large-cap indices. These dual performance drags support a more active approach to contemplating an investment in small caps. Passive strategies have the historical performance tailwind but come with some built-in structural deficiencies. Diligent small-cap managers can boost their returns by simply implementing an investment process that remedies these problems.

Market Inefficiency

A practical reality of the market is that increasing a company's size and liquidity also increases its availability to professional managers. As more professionals dig for relevant information and make buy and sell decisions based on this information, the market price of a stock becomes a blended reflection of consensus opinion on the company's value. For larger companies, information germane to a company's value becomes dispersed into the market quickly. The speed with which buy and sell decisions adjust to market prices makes it more difficult for everyone to add value through fundamental analysis. The result is a more efficient market for large stocks than for small ones.

Increasing size and liquidity also attract large financial intermediaries seeking to profit from trade execution and investment banking. Research, trading, and investment banking are synergistic for financial firms because as liquidity increases, trading commissions also increase, which often prompts research coverage. Research coverage then attracts more professional investment managers. Company management may solicit strategy input from analysts and consultants, who inevitably recommend investment banking services like acquisitions, debt issuance, spin-offs, tender offers, or other fee-generating activity. All of this interest contributes to more efficient appraisals in large companies.

Small-cap companies tend to fly below the radar. The market is slow to digest what little information is publicly available, and market prices are less likely to reflect all relevant information. These companies usually lack analyst coverage, and they have little need for investment banking services. Diligent researchers can discover nuggets of information through company filings, conference calls, industry trade shows, or other public sources that support the contention that the market is not fully appreciating a company's value. This is classic market inefficiency ripe for exploitation.

The extent to which *future* information about a company is incorporated into the current stock price is also greater with larger companies.

The mathematics of discounting future cash flows relies on assumptions about company profitability in the years ahead. This informational horizon usually lengthens with larger companies, reflecting a larger cadre of analysts attempting to outdo each other's predictive precision. Understanding a large company like IBM in its current state is not enough for most professional large-cap analysts and portfolio managers. They also require an understanding of how the company's future strategy will affect the coming quarters and years. With a vast array of opinions about the company's future being acted on by informed market participants, a weighted average consensus is formed. It is difficult for a large-cap analyst or portfolio manager to consistently outsmart this consensus.

In small caps, there may not even be a consensus opinion, let alone market participants that thoroughly analyze companies in their current state. Bargains may be hiding in plain sight for the analyst willing to do minimal research. A stock price may reflect legacy company events that are no longer relevant, given changes in management, financial structure, or company strategy. An opportunistic investor can get a competitive understanding of a company simply by talking to management about its vision or by visiting the company's facilities.

A screen run on February 10, 2010, using Baseline, a Thomson Reuters analytics tool, revealed that approximately 6 percent of the Russell 2000 constituents did not have a single analyst providing next year's earnings estimates. Another 13 percent had only one analyst doing so. On average, estimates from five analysts were available from the companies in the Russell 2000, whereas companies in the S&P 500 Index had estimates from 16 analysts. There are also fewer managers making buy and sell decisions in the small-cap space. A screen on the Morningstar mutual fund database revealed 1,737 small-cap funds compared with 6,533 mid-cap and large-cap funds.[12]

The semistrong form of the efficient market hypothesis suggests that all publicly available information is immediately incorporated into stock prices and no excess return is available for investors trading on technical or fundamental information. The contention that information is not disseminated as widely or quickly in small-cap stocks seems to run counter to this hypothesis. Wesley Gray and Andrew Kern, in a fascinating paper titled "Do Hedge-Fund Managers Have Stock Picking Skills?" found that certain fundamentals-based investors with relatively small pools of investment capital can create excess returns through the exploitation of market inefficiency in smaller companies.[13] This makes intuitive sense. If the asset class proffers less information dissemination, then managers have an opportunity to exploit competitive understanding through careful research.

CHAPTER SUMMARY

- The definition of *small cap* is arbitrary.
- Most institutional investors consider the industry-standard Russell 2000 Index as the benchmark for their small-cap managers.
- The small-cap asset class has outperformed mid and large caps based on historical price data.
- Managers should include the smallest of small companies to increase performance.
- Small-cap stocks have been more volatile than mid-cap or large-cap stocks, which has led to more compelling purchase opportunities.
- Institutions with long time horizons should allocate capital to small caps to help them meet ongoing spending needs and to retain purchasing power.
- Small-cap indices are structurally flawed and provide investors with opportunities to outperform.
- Small-cap stocks lack the broad-based interest and information dissemination present in mid-cap and large-cap stocks.
- Careful research in small-cap stocks can actually lower fundamental investment risk.
- Small-cap stocks allow exploitation of market inefficiency.