OF SPECIAL INTEREST

...Examining a timely topic of interest

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Styles, Boxes, and Paradoxes

Leuthold Select Industries is the mutual fund incarnation of our Group Selection Scores (GSS), the primary equity discipline at our firm. The GSS process employs a multi-factor approach to identify themes and groups scoring highly on characteristics that typically lead to future outperformance. Stocks are selected from our proprietary Leuthold 3000 universe, which captures most of the tradeable domestic market including some ADRs. Combining this broad universe with the model's focus on themes and groups rather than investment styles means that *Select Industries* behaves like a multi-cap fund, owning larger companies when certain groups are in favor and tilting toward smaller companies when other groups are scoring well.

Since a multi-cap fund can tactically shift between cap ranges, this flexibility creates unique challenges in finding the appropriate benchmark and peer group for fund comparisons. Most equity market benchmarks are weighted by market cap, meaning it is almost a mathematical certainty they will fall into the large cap space even though they purport to represent the entire market. Peer group analysis is similarly challenged in that it can be useful when the roster of funds is relatively stable and homogenous, but historical results become muddled when funds are constantly moving into and out of the comparison group. When this happens, ***a fund's historical performance is recast to be compared to a peer group of which it was never a member.*** These fund evaluation quirks, which affect multi-cap funds more than single-style funds, call for a closer look at the problem.

The Multi-Cap Indexing Challenge

Using the popular Morningstar methodology as the cornerstone of our analysis, we first consider some of the widest-ranging indexes as potential benchmarks. Morningstar reports two designations for equity investments; a ***style box*** label that signifies the asset's current style placement, and a ***category*** assignment based on the asset's average style over the last three years. Because multi-cap funds such as *Select Industries* draw from a broad universe, even the S&P 500 tends to be too narrow to properly reflect this range of options. Comparing a multi-cap fund to an index like the S&P 500 says more about their design differences than their relative investment merits, so how about using indexes that are broader than the S&P 500?

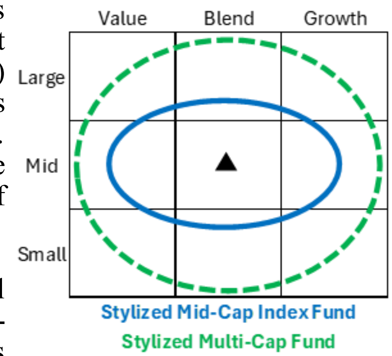
Table 1 lists the classifications for several popular indexes, and right away we notice that the S&P 500 is tagged as a large growth index based on its current holdings (not surprising given the Magnificent 7's huge weight in the index) but still retains its large blend rating on a rolling three-year basis. Focusing on broader indexes does not improve the situation; since they are also cap-weighted, the mega-cap growth names tend to overwhelm each index. *The S&P 1500 Composite Index, the Russell 3000 Index, and the Vanguard Total Market Index all score as large growth today, even though in theory they are intended to represent the broad domestic market.*

Table 1: Index Styles And Categories

Ticker	Name	Style Box	Style Category
IVV	iShares Core S&P 500 ETF	Large Growth	Large Blend
SPTM	SPDR® Port S&P 1500 Comps Stk Mkt ETF	Large Growth	Large Blend
IWV	iShares Russell 3000 ETF	Large Growth	Large Blend
VTI	Vanguard Total Stock Market ETF	Large Growth	Large Blend
IVOO	Vanguard S&P Mid-Cap 400 ETF	Small Blend	Mid Blend
RSP	Invesco S&P 500® Equal Weight ETF	Mid Blend	Large Blend
EQAL	Invesco Russell 1000 Equal Weight ETF	Mid Blend	Mid Blend

Source: Morningstar Direct

Exhibit 1



If large growth indexes are not a clean fit for multi-cap funds, what about a mid-cap index? This idea also falls short, because these indexes are restricted to stocks that are each mid-cap in their own right. Exhibit 1 provides a stylized representation of this issue; mid-cap indexes (blue) tend to concentrate around the mid-blend style whereas multi-cap funds (green) source their holdings from across the entire nine box spectrum. Even though both may have a central value in the mid-blend style, the fishing pond for multi-caps is much wider and far more disparate than of the mid-cap indexes.

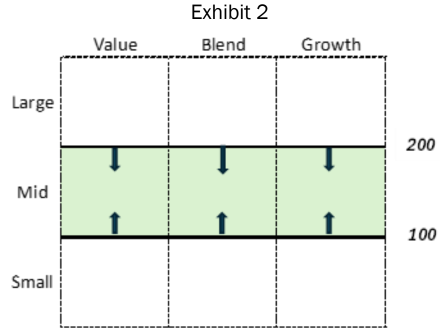
Table 1 noted that the S&P MidCap 400 Index is classified as small blend today, yet another anomaly caused by the huge weights of mega-cap growth stocks that have distorted just about every index metric this year. The cumulative weight of market indexes has become more top heavy in recent years, acting to make everything else appear smaller than normal, including mid-cap indexes.

Well then, what about equal weight indexes? This option avoids the top-heavy bias of cap-weighted indexes, and both the S&P 500 Equal Weight and the Russell 1000 Equal Weight indexes land in mid-blend today. The S&P 500 EW shows a disconnect in that it falls into the large blend category, but the R1000 EW lands in mid-blend over both time periods. While not an ideal fit for multi-cap portfolios, it could be argued that a broad, equally weighted index might be the alternative with the fewest negatives.

The Middle Kingdom

Our look into the best indexes for multi-cap portfolios led us to focus more closely on the mid-cap space itself, with the aim of understanding the style characteristics of this middle slice of the market. **One defining feature of the mid-cap space is that it is the only size category that is bounded on both sides.** Large caps are unbounded to the upside and small caps are unbounded to the downside, but the middle tranche must fit into defined limits in both directions. Exhibit 2 visualizes the uniquely constrained nature of mid-caps, and notes that under Morningstar's methodology the mid-cap zone is defined as falling between 100 and 200 using their customized size score.

Exhibit 2



For perspective, the range of size scores for individual stocks runs from roughly +500 to -500. The range of mutual fund size scores in the Morningstar database ranges from approximately +360 to -95. With these two size ranges in mind, we can see that the mid-cap zone of +100 to +200 is a fairly narrow expanse compared to the unbounded highs and lows that act to widen the large and small zones.

Shape Shifters

The narrow, bounded nature of mid-caps relative to the entire size spectrum caused us to wonder how problematical it is for mid-cap funds to stay in their home style box, i.e. how difficult is it for mid-caps to "stay in their lane?" Our first line of inquiry was to review the current style placement for all active funds categorized as mid-blend in the Morningstar database. Table 2 reveals that only 45% of mid-blend funds currently reside in that style box. Of the remaining 55%, the majority have slipped to small blend, again the result of a top-heavy domestic market. Mid-growth picks up another 12%, while the remainder are strewn across the grid.

Table 2

Current Styles for Mid-Blend Funds

	Value	Blend	Growth
Large	0%	0%	1%
Mid	6%	45%	12%
Small	2%	32%	3%

Looking for a point of comparison, we conducted the same analysis on funds that are currently slotted in the large blend category. Table 3 reveals that large blend funds are also having trouble staying at home, with just 32% falling into their normal style today. **A whopping 60% of large blend funds have shifted to large growth,** undoubtedly influenced by the Magnificent 7 phenomenon. These LB funds may have shifted to growth because (a) they loaded up on mega-cap growth to chase their amazing returns, or (b) risk budgets and tracking error compelled them to own more of the names residing at the top of the S&P 500. It is also instructive to note that very few large blend funds have become smaller in their quest for returns this year, indicating that style rather than size was their main alpha-generating tactic.

Table 3

Current Styles for Large-Blend Funds

	Value	Blend	Growth
Large	2%	32%	60%
Mid	1%	4%	1%
Small	0%	0%	0%

Just Passing Through?

The combined insights that mid-cap is a bounded market segment and that fewer than 50% of active mid-cap blend funds currently reside in their home box made us curious about the longer-term stability of the mid-caps in general. We investigated this question by identifying all active portfolios that have slotted in any of the three mid-cap styles *at any point over the last ten years* and then noting their current style box designation. The results in Table 4 show that only 58% of funds that were mid-cap at some point in the last decade reside in a mid-cap category today.

Table 4

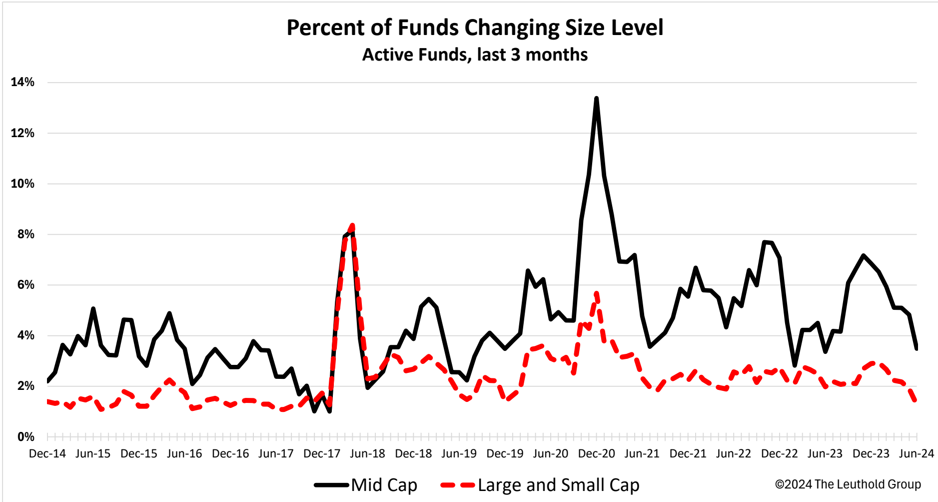
Current Categories for "Ever Mid" Funds

	Value	Blend	Growth
Large	11%	7%	4%
Mid	16%	19%	23%
Small	2%	6%	12%

We concluded our analysis of the nomadic nature of mid-cap funds by plotting the percentage of active funds that changed their size placement over three-month rolling windows. For example, if a fund switched from mid to large or mid to small during the last 90 days, that fund would score as a size switch. Note that we are not measuring style changes (such as value to blend), this tally is limited to changes in size classification.

Chart 1 indicates that the percentage of mid-cap funds switching sizes has been running at 4% to 8% per quarter in recent years, a step up from the rate prevailing before 2019. We compared this metric with the same measure of size-switching for small and large cap funds, shown by the dashed line. These two unbounded zones experienced far less size switching because they only had one threshold to cross before triggering a hit, whereas mid-caps could trigger a switch if they move through either the upper or lower boundary.

Chart 1



We believe Table 4 and Chart 1 lend credence to our notion that mid-cap style and category designations are more volatile than large or small caps precisely because their boxes are so narrowly defined. One episode that stands out in Chart 1 is the spike in early 2018, when size shifting jumped across multiple cap ranges. A closer inspection reveals that almost all of this shift involved going up in size; small caps going to mid-cap and mid-caps going to large cap. This occurrence followed a short burst of small cap outperformance in 2016 into early 2017 that rewarded a tilt toward smaller names. Large caps regained the upper hand in 2017 into early 2018, and the size shift of so many funds may have been caused by profit-taking in small cap winners and/or a rotation to chase the new market leadership of the S&P 500 during that period.

Multi-Cap Paradoxes

The final step in our examination is to consider two subjective difficulties that impact multi-cap fund analysis. A key step in the due diligence process employed by consultants and gatekeepers is to make certain that a fund is guided by a sound and successful investment process. The next step is to make sure the portfolio managers follow that process rigorously rather than chasing the market willy-nilly. This notion of process consistency can be approximated by tracking a fund's style and category over time. A consistent style pattern is generally viewed as a positive reflection on the fund and its managers, while style changes can sometimes be seen as a yellow flag.

Having posited that employing a rigorous investment process is desirable *and* that style consistency is seen as a preferable trait, we arrive at the first multi-cap paradox. The investment process of a multi-cap fund is tactical in nature, seeking opportunities across the market. Those opportunities may be found in equities that tend towards large or small, value or growth. In the case of *Select Industries*, we look for opportunities at the group, thematic, and industry levels, wherever they may be found. By the very act of staying true to its process and discipline, a multi-cap fund may be forced to shift from one size zone to another. As such, the positive attribute of following a well-defined process conflicts with the negative attribute of an apparent change in style. ***Paradox #1 is that a tactical multi-cap fund cannot always fulfill both of these aspirations,*** and this paradox demands a choice. We believe most investors would agree that following the fund's chosen investment philosophy and process is the more desirable route, and if styles shift from time to time then this is an understandable byproduct of the process itself.

Paradox #2 follows from the same potential for tactical shifts in portfolio exposures. In terms of peer group comparisons, the paradox is that a successful multi-cap fund will always be compared to the toughest peer group. The recent dominance of mega-cap stocks provides a perfect example of this situation. A multi-cap fund holding the normal spread of exposures might well be slotted as a mid-cap and be matched against other mid-cap funds. As the mega-cap run began, let's assume this fund's process recognized the new environment and moved portfolio weight into larger companies, acting on its mandate to find the best opportunities across the cap spectrum. After a time, this fund would be ranked as a large cap fund and be compared to the higher-returning large cap peer group. ***Paradox #2 is that a successful multi-cap fund will always be focused on the best performing market cap zone and will therefore always be compared to the best performing peer group at the time.*** Ironically, unsuccessful multi-cap funds that overweight the wrong size range will be compared against a poorer performing peer group, potentially creating a misleading impression of solid relative performance.

Investment Takeaways

- Multi-cap funds that are active across style boxes present a unique challenge to consultants and gatekeepers. It is difficult to find a representative index or peer group, forcing the fund analyst to exercise special care in making the most appropriate comparisons.

- Multi-cap funds often slot into the mid-cap blend style, but mid-caps are a bounded range of the overall market which leads to more frequent style box shifts at the fund level. The more transient nature of mid-cap funds muddies the process of finding a suitable and stable peer group for analysis.

- Multi-cap funds face two paradoxes that introduce subtle hurdles into their fund analytics. While it is desirable for a fund to rely on a sound investment process and to follow that process consistently, a successful multi-cap fund might not be able to meet both desires simultaneously. Second, a successful multi-cap fund will always be compared to the highest performing peer group while unsuccessful funds will be compared to a less successful set of peer funds.

- Attentive fund analysts can overcome the challenges we have identified in this study, assuming they are cognizant of the unique issues facing multi-cap and mid-cap funds. This report is intended to arm analysts with just such insights to ensure that benchmark and peer group comparisons are meaningful and constructive.