Indices and Style Based Investing©

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Stock indices serve a couple of useful purposes. They can be used as a benchmark to evaluate performance on a portfolio relative to an index or indices. Indices can also be used to facilitate passive investing in an efficient manner. Pooled-investment vehicles such as mutual funds or exchanged traded funds (ETFs) can be designed to mirror the index. They invest in all or most securities representing the index and depending on the structure may require no-rebalancing and very little trading, keeping costs low. The closer the fund mimics the index the closer the funds returns to that of the index (low tracking error). Indices are generally very broad reflecting many underlying securities and therefor generally provide broad diversification.

Indexing Approaches

There are a few ways to construct an index designed to represent investments in particular type of securities such as large company stocks, small company stocks, and international stocks. A major factor in index construction is how the individual stocks are weighted as part of the portfolio – typically either market value weighted, equal weighted or weighted on fundamental factors (such as earnings, cash flow and assets). Price-weighted indices also exist.

Market-Value Weighted Indices. One of the most well-known indices is the Standard & Poor's 500 Index. The S&P 500 index is comprised of 500 large U.S. companies which are selected by a committee to be representative of that asset class. Each stock is basically weighted in the index by its float adjusted overall market capitalization - total number of shares outstanding and available for trading times the price per share. This type of index represents a very passive investing style, as market prices increase or decrease the individual securities automatically adjust to the new market capitalization without the need to rebalancing. As a result the only income from a fund following such an index is interest and dividends. Capital gains are deferred indefinitely (until the fund is sold). The initial investment in forming the index, however, does not represent how most investors would form a portfolio. Most investors are more likely to equally weight individual securities in a portfolio – not weight securities by their relative market prices. Further, as individual securities increase in value they represent a larger portion of the portfolio, not 1/500 of the portfolio. In fact in early 2022, the top 10 holdings in the S&P 500 portfolio (apple, Microsoft, Amazon, Facebook, etc.) represent almost 29% of the index. As a result, movements in the index are heavily influenced by a small

number of the underlying holdings not 500 companies. Investing in such a portfolio is diversified but not as diversified as most investors and their advisors assume.

Equal-Weighted Indices. An equal weighted index is straight forward. In such and index if it is designed to represent 500 stocks each stock is weighted 0.2%. This is more representative of how most investors would initially form a portfolio. However, as time passes an equal-weighted index requires constant rebalancing, selling securities which have increased in value and buying securities which have declined in value in order to maintain an equal weighting. As a result, a fund following such an index will have some realized capital gains (or losses) on a continuous basis. They are very highly diversified relative to similar market weighted indices and funds that follow them.

Fundamental-Weighted Indices. Another method of weighting securities within an index is based on a fundamental factor or factors. For example, The RAFI Fundamental Indices weight investments within the index based on four factors – adjusted sales, adjusted cash flow, dividends plus buybacks and book value plus intangibles. So companies with higher sales, cash flow, dividends and asset value would have a higher weighting in an index. Companies with lower values on these fundamental factors would have a lower weighting. This is sometimes viewed as a contrarian or "value" strategy relative to a market capitalization weighted index. It is certainly more of a stock pickers/active manager approach – buying more of those companied that have better underlying fundamentals. Similar to an equal weighted strategy it does require more rebalancing and generates more current income that a market capitalization weighted approach.

Price-Weighted Indices. A less common approach today than the above methods are price weighted indices. However, one of the most well know indices, the Dow Jones Industrial Index is a price-weighted index. In a price-weighted index the price per share not market capitalization is used to construct the index. Hence, higher priced stocks have a greater impact on the index.

Asset Class Indices and Index Styles

Indices can be created for any asset class to represent that asset class or sub- asset class. In addition to large company stock indices, there are mid-cap, small-cap and micro—cap indices. There are indices for different types of fixed income investments and different types of alternative investments. There are indices for individual stock sectors such as energy or financials. There are indices for different geographies – individual countries, regions, global developing markets and global emerging markets. There are indices for different investing strategies such as covered calls, selling puts, "growth" and "value" investing, to name just a few. Today there are many investable ETFs in each of these styles. It should be noted that indices do not consider expenses and trading costs, so ETF performance should be expected on average to be lower than

the index itself. Some ETFs also do not buy all the securities in an index and may have "tracking error" which enhances or degrades performance.

There are also indices based on investor preferences. For example, S&P has the following target risk portfolios:

- S&P Target Risk Conservative (70% fixed income, 30% equity)
- S&P Target Risk Moderate (60% fixed income, 40% equity)
- S&P Target Risk Growth (40% fixed income, 60% equity)
- S&P Target Risk Aggressive (20% fixed income, 80% equity)

The nice thing about this set of indices is that they are well diversified within asset classes including large-cap stocks, mid-cap stocks, small-cap stocks, international developed and emerging market stocks, U.S. bonds and international bonds. These indices also well represent the net returns to be obtained in such a strategy as the indices are based on ETFs which represent each of the asset classes. They therefor include some expenses and trading costs (but alas, not all).

Style Based Investing Using Index Products

There are some limitations to style-based investing using indices. Indices are often created to represent a particular style of investing strategy, however when you examine the underlying construction of the index it may not be a great proxy for that style. It is important to understand index construction for any product you purchase to provide exposure to a particular strategy or style. A good example can be seen by looking at the popular dichotomy of "growth" versus "value" investing.

There are many value indices and value ETFs based on these indices. Is this an effective way to invest using a value approach? The answer my friends is not so easy. If there were what I consider to be a true value investing index - one that seeks to identify stocks of good companies with good management selling at reasonable or cheap prices relative to their current and future prospects the answer would be easy. Unfortunately, in my opinion, no such value index currently exists. Instead, most value indices use cheapness (measured by price-to-earnings, price-to-book value or price-to-cash flow ratios) alone as a measure of value with no consideration of the quality of operations, management, or future prospects. A company selling at a low P/E ratio may deserve that P/E ratio due to poor management and or future prospects for generating earnings and cash flow. A similar approach is growth at a reasonable price (GARP) which I consider to be one of the better value-oriented approaches.

Let's look at how one of the most popular suites of index products creates their value and growth style indices – the S&P 500 indices. As noted above, S&P creates a number of indices in the S&P 500 suite, such as:

S&P 500 Index (Market Weighted) – the most popular

S&P 500 Growth Index

S&P 500 Value Index

S&P 500 Pure Growth Index

S&P 500 Pure Value Index

Performance of these indices over a recent 10 year period, along with some average fundamental metrics, is as follows (All data from https://www.spglobal.com/ as if August 31, 2020):

	S&P 500 Index				
	Mkt Cap Weight	Growth	Value	Pure Growth	Pure Value
Number of Stocks	505	279	390	109	103
Total Annualized Return over last 10 years	15.16%	18.22%	11.45%	16.93%	10.68%
Annualized Risk (using monthly st. dev.)	13.38%	13.51%	14.02%	15.73%	19.15%
Annualized Risk Adjusted Returns	1.13	1.35	0.82	1.08	0.56
P/E Trailing	22.22	24.35	19.95	N/A	N/A
P/E Projected	24.29	30.86	18.1	28.18	14.13
P/B	2.97	5.98	1.79	N/A	0.60
Indicated Dividend Yield	1.62%	0.98%	2.66%	0.80%	2.55%
P/Sales	1.83	3.29	1.17	N/A	0.28
P/Cash Flow	19.79	23.27	16.57	N/A	5.55

At first blush, one is likely to conclude that "growth" investing is clearly the highest return over the decade and the greatest return relative to risk while "value" investing has underperformed for the decade. "Growth" has even trumped what S&P terms a "pure growth" approach. The worst performer was a "pure value" approach. Certainly, we have all read many articles about values underperformance the last decade through 2020 (but stronger performance by value over the longer term). However, a great deal of the difference in returns is how the growth component (or pure growth) is determined relative to the value component. You also might be curious as to why the sum of the number of companies in the growth and value indices is 669 while the S&P 500 only includes 505. Let's understand how the style portions of these indices are determined.

For each company in the S&P 500, a growth rank and value rank are computed. The growth rank is based on a ranking of companies on a composite of the following growth factors:

Three-Year Net Change in Earnings per Share over Current Price

Three-Year Sales per Share Growth Rate Earnings to Price Ratio

Momentum (12-Month % Price Change) Sales to Price Ratio

Effectively these ratios are measuring growth relative to price (or inversely the price relative to growth). The value rank is based on a ranking of companies on a composite of the following value factors:

Book Value to Price Ratio

Earnings to Price Ratio

Sales to Price Ratio

These ratios clearly measure value on the current price relative to some underlying fundamentals (book value, earnings and sales). However, it does not consider value relative to growth. Next S&P divides the Growth Rank by the Value Rank to get a Growth/Value Rank. Companies with the highest Growth/Value Rank score are those with higher growth rates and higher relative prices. These are classified as pure growth companies (the top 1/3 of market cap based on this score – hence not 1/3 of the companies but 1/3 of the market value of the index). Companies with the lowest Growth/Value Rank are classified as pure value companies (again 1/3 of the index based on market cap). The pure growth and pure value companies are included in the pure growth and value indices, respectively. The middle companies are classified as blended and they are distributed to the overall growth and value indices (some are allocated to both – hence the sum of these two indices exceeding 505).

Effectively, in my view the pure growth companies represent “winners.” Those with higher growth that is reflected in higher price multiples. The pure value companies on the other hand are “losers”. Some may truly be companies selling below their intrinsic value, but others are selling at lower price multiples because they have lower growth, poor management and other issues. To me this is not value. Value should be price relative to intrinsic value, where intrinsic value is a function of underlying fundamentals and future prospects – including growth prospects. The true value stocks for me are likely found in the blended category – companies with good management and decent

growth prospects selling at reasonable multiples. Some value stocks can be found in the pure value category, but these indices do not distinguish between true value and just cheap. Value stocks can even be found in the pure growth category (they may be selling at high multiples but may deserve those multiples based on growth prospects).

I hope this provides a good understanding of these indices and the limitations in evaluating the performance of growth versus value using them. More importantly if you are planning to invest in a basket of securities based on these indices you need to understand what you are getting. You may be getting exposure to some value factor/stocks, but it is based on low prices AND low growth. You are at the same time getting exposure to companies in the value or pure value index that deserve the multiples they are getting (poor management, low growth prospects, value traps, etc.). This is not the ideal exposure you want. I am looking forward the creation of better value indices going forward. Admittedly, it is not easy to do as you ideally need to measure intrinsic value which is like beauty – in the eye of the beholder. However, we could at least improve on how we allocate securities to the value basket where growth is allowed in the determination of relative value. One way to do this is to use expected return models such as one where the expected return is a function of the current earnings or cash flow yield plus expected growth. Ranking stocks on this expected return would be measuring value relative to both fundamentals and growth. Fundamental indexing does get us closer to a value approach and hence ETFs based on fundamental indexing are often classified as value.

