

Market Indexes – The First 111 Years



This month in 1896 Charles Dow (pictured at left) created the Dow Jones Industrial Index (“DJIA”). It is the oldest continuing U.S. market index. Originally the index contained 12 leading companies of the day:

- American Cotton Oil Company
- American Sugar Company
- American Tobacco Company
- Chicago Gas Company
- Distilling & Cattle Feeding Company
- General Electric Company
- Laclede Gas Light Company
- National Lead Company
- North American Company
- Tennessee Coal, Iron and Railroad Company
- U.S. Leather Company
- United States Rubber Company

Today the DJIA includes just 30 companies. General Electric is the only original company that still remains in the index. When it was first published, the index stood at 55.6. It was calculated as a direct average, by first adding up stock prices of its components and dividing by the number of stocks.

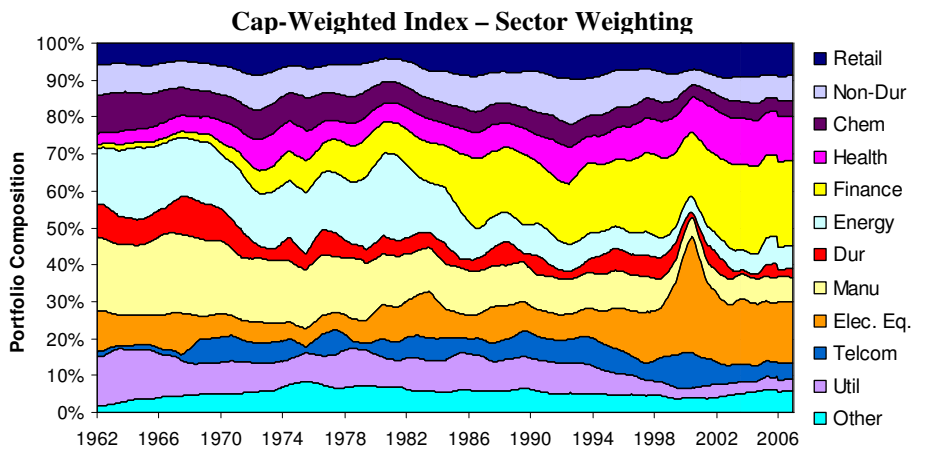
The DJIA is criticized for being a **price-weighted average**, which gives higher-priced stocks more influence over the average than their lower-priced counterparts. For example, a \$1 increase in a lower-priced stock can be offset by a \$1 decrease in a much higher-priced stock, even though the first stock experienced a larger percentage change. Additionally, the inclusion of only a small number of stocks in the average has brought on additional criticism of the average as not being very reflective of the overall economy. In spite of these criticisms the DJIA is still widely used as an indicator of overall U.S. stock market performance.

In March 1957, Standard and Poor’s introduced a broader, real-time stock market index called the S&P 500. Comprised of 500 companies, the new index was made possible by advancements in the computer industry which allowed the index to be calculated and disseminated in real time. The index is **market-cap weighted**; that is, price movements of companies whose total market valuation (share price multiplied by the number of outstanding shares available for public trading) are larger will have a greater effect on the index than companies whose market valuation are smaller. The components of the S&P 500 are selected by a committee, which attempts to select the companies it believes are representative of the various industries in the U.S. economy.

Since the entire stock market is itself capitalization-weighted, it makes sense to compare the results of an investor’s portfolio to these types of indexes just as we do today. But, cap-weighted indexes were designed to be measurement tools or benchmarks, not necessarily investment vehicles. Now that an estimated \$3 trillion or more is invested in vehicles designed to track cap-weighted indexes (i.e. index funds), their potential flaws are becoming more evident and investors are searching for a way to invest in an index, avoiding the potential pitfalls described above.

The biggest criticisms of the S&P 500 Index and other indexes that use the same calculation methodology is that they require investors to own ever more of a stock as its market value increases. Why should an investor want to own twice as much of a stock after it had doubled in price?

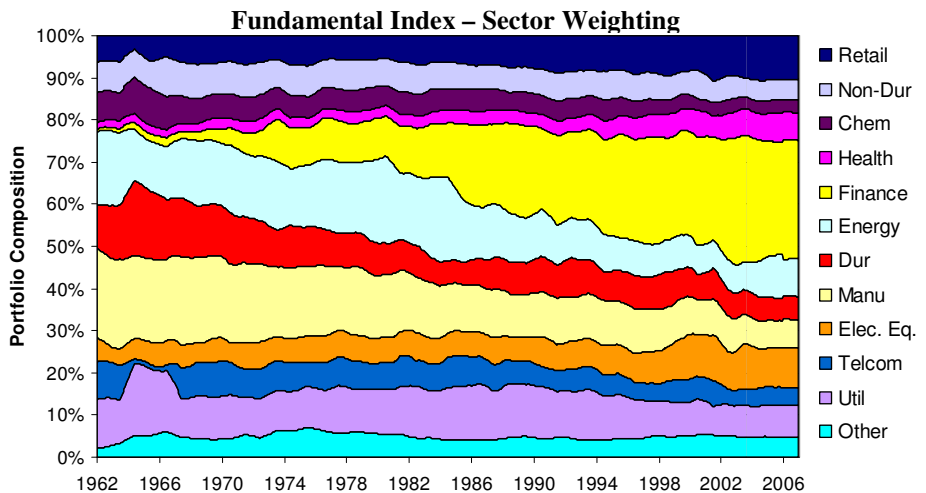
Certainly, in many cases the value of a company is justifiably higher if the company's earnings or revenues double, but in many cases a rapid increase in market value precedes any fundamental change in a company's financials. History has shown us that from time to time investors can become quite excited about certain stocks and push them to overvalued levels. The chart above shows the increasing weight in the technology sector (Elec. Eq. in orange) as valuations peak in 2000. The problem is that market cap-weighted indexes overweight every company that is overvalued and underweight all undervalued companies. This can lead to a return drag when the overvalued companies eventually come back to earth. The problem is that no one can identify in advance all the stocks that are overvalued and all the stocks that are undervalued; that is only known after considerable hindsight.



Source: Research Affiliates, LLC

In May 2005, another method of constructing indexes was proposed for investors who would like to invest in an index – a so called **fundamental index**. This new method effectively removes investors' judgment of a company's market value from the calculation, instead weighting companies by "fundamental" factors like sales, profits, dividends, and book value.

These measures can provide a good overview of the size of a company or its overall footprint in our economy without relying on investors' judgment to determine their weighting in the index. Because multiple measures of size are used and because none of them rely on the estimated value of any stock, the result is an index that isn't skewed towards overvalued companies. The chart to the right shows how



fundamental index sector weights gradually change over time. Although, the index isn't "smart" enough to overweight all the undervalued companies and avoid all the overvalued companies, it does effectively ensure that no more than half of the overvalued companies are over-weighted in the index at any given time - the same can not be said of a cap-weighted index like the S&P 500 Index.

For investors looking to replicate an index, this new index method may offer a preferable option by avoiding the huge run ups and subsequent corrections that have historically plagued cap-weighted indexes. The construction of stock market indices will likely continue to be refined, but it is becoming clearer that some indexes are better used as benchmarks, while others are better suited as investment vehicles. At Madison, we may include fundamental index vehicles in portfolios when appropriate, taking into account the unique objectives and needs of our clients.

"All things being equal, the simplest solution tends to be the best one." paraphrase of Ockham's Razor