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Stock Market Indexes – How do they Work?

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There are so many stock market indexes out there today; it is very difficult to keep them straight. And with the proliferation of indexes in the last 5 years it has gotten even harder.

The Dow Jones Industrial Average (DJIA) is the first index investors learn about. For over 100 years people have asked “What Did the Dow Do?” when they want to know if stocks are up or down. That’s exactly why Charles Dow started publishing indexes in the 1880s. As a newspaper publisher, he wanted to attract readers by giving them information about the financial markets and creating indexes was one of the attractions he used.

Mr. Dow’s “The Wall Street Journal” started publishing the DJIA in 1896. Everyday he calculated the index by adding up the stock prices of 12 large industrial companies and dividing by 12. In 1916 the DJIA expanded to 20 companies and grew to its present size of 30 companies in 1928.

The index’s component companies have changed, but not that much considering the length of time involved. The index does not have publicly published rules and any changes are up to the sole discretion its owners, Dow Jones & Co. Inc.

The DJIA continues to enjoy the starring role for people wanting a snapshot of how the market is moving. However, for investors interested in measuring market performance the DJIA has serious drawbacks.

The most critical flaw is that the DJIA is a “price index.” When any stock in the index goes up \$1, the index moves up 8 points (due to the divisor now being about 0.125). But we know instinctively that it’s easier for a high priced stock to move \$1 than for a lower priced stock and that this is not really the right way to measure performance.

Let’s look at some real prices. IBM is about \$85 and if it moves up \$1, which is 1.2%, the DJIA move up 8 points. Intel, on the other hand is only around \$25. If it goes up the same percentage amount, 1.2%, the \$0.30 change only moves the index 2.4 points. A price index allows stocks with high stock prices a greater influence on the index than stocks with lower prices.

To correct these problems Standard & Poor’s started publishing the S&P 500 in 1957 and it became the industry’s standard benchmark. The S&P 500 is constructed much differently than the DJIA and is “capitalization weighted” or a cap weighted index as opposed to a “price index.” Cap weighted indexes look at price changes on a percentage

basis and weight them based on company size. Importantly, since we are trying to measure the market, a company's size is determined by how much money is invested in their stock.

An individual stock's market cap is its stock price multiplied by its shares outstanding. For instance, IBM has 1.58 billion shares outstanding and at its recent price of \$85, its market cap is \$134.3 billion. That is how much money is invested in IBM's stock.

In the S&P 500 index each stock is weighted based on its market cap with General Electric currently the largest company in the index (weight of 3.26%) and Ciena the smallest (0.01%).

Back to IBM and Intel – Intel's market cap based on a \$25 stock price and 6 billion shares outstanding is about \$150 billion giving it a S&P 500 index weight of 1.35%. This compares to IBM's 1.21%; so unlike in the DJIA where IBM was much more important, in the S&P 500 both stocks are about equal with Intel currently the 11<sup>th</sup> largest and IBM the 12<sup>th</sup>.

A cap weighted index has a number of advantages. Most importantly it measures the performance of all the money invested in the stocks in the index and can be used as a benchmark to measure the performance of portfolios which invest in the same stocks.

The S&P 500 is firmly established as the benchmark for large stocks in the U.S. as it covers 80% of the U.S. market's capitalization. Other indexes have sprung up to cover other areas, most notably the Russell 2000 which has been successful in establishing itself as the benchmark for small cap stocks. Outside the U.S., Capital International (CI) started a group of indexes in the late 1960s to measure international markets to show clients how Capital performed relative to the market. When Morgan Stanley (MS) and CI formed a joint venture these indexes were branded MSCI. Its most popular index is EAFE (Europe, Australasia and the Far East) and covers the international developed markets.

In the next column I discuss how the index industry has been somewhat turned on its head and morphed into a provider of investment products.

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