Executive Summary

Following the Great Recession in 2008 and 2009, equity prices have enjoyed a steady and unprecedented rebound for close to a decade, surpassing 26,500 in January 2018.

Investors are understandably intrigued by potential valuation tools that could indicate where stocks are headed next. An interesting long-term perspective on the subject can be gained by examining the extent to which Nominal Gross Domestic Product has explained the movement of share prices, in particular, the Dow Jones Industrial Average, over time.

In this report, we look at the relationship between the two metrics since 1916, updated with data through the fourth quarter of 2017. This data suggests the market is fully-valued and anticipating more rapid growth after a period of slow growth. While a major selloff is not imminent, the emergence of market catalysts tends to create higher uncertainty and downside risk for extreme valuations.
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The Georgia Tech Financial Analysis Lab conducts research on issues of financial reporting and analysis. Unbiased information is vital to effective investment decision-making. Accordingly, the Lab thinks that independent research organizations, such as this Lab, have an important role to play in providing information to market participants.

Because the Lab is housed within a university, all of its research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Its focus is on issues that it believes will be of interest to a large segment of stock market participants. Depending on the issue, it may focus its attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in the work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. The Labs defines earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, its research may look into reporting practices that affect either earnings or cash flow, or both. At times, its research may look at stock prices generally, though from a fundamental and not technical point of view.

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Seeking Guidance for the Dow? Try GDP

By Charles Mulford, Narayan Jayaraman
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Following the Great Recession in 2008 and 2009, equity prices have enjoyed a steady and significant rebound for close to a decade. Investors are understandably intrigued by potential valuation tools that could indicate where stocks are headed next. An interesting long-term perspective on the subject can be gained by examining the extent to which Nominal Gross Domestic Product has explained the movement of share prices, in particular, the Dow Jones Industrial Average, over time. In this report, we look at the relationship between the two metrics since 1916, updated with data through the fourth quarter of 2017. This data suggests the market is fully-valued and anticipating more rapid growth after a period of slow growth. While a selloff is not imminent, the emergence of market catalysts tends to create higher uncertainty and downside risk for extreme valuations.

Historical Links

As the accompanying figure attests, the per-year mean Dow Jones Industrial Average tracks quite closely annual nominal GDP, or the total market value measured in billions of dollars of all goods and services produced in the U.S. Reviewing the figure, which was drawn on a logarithmic scale to highlight percentage changes, it can be seen that since 1916, the year in which the Dow industrial average was expanded to a more representative twenty stocks from the original twelve (the Dow average was increased to thirty stocks in 1928), the Dow Jones Industrial Average has departed significantly from GDP on only a couple of occasions.

One year of departure was 1929, when the Dow industrials averaged 311.2, exceeding GDP of 103.9($Billions) by nearly 200%. By 1932, this discrepancy had been all but erased, with the Dow industrials averaging 64.6 as compared with GDP for the year of 58.5($B). After another brief departure in the late 1930s, the Dow industrials correlated closely with GDP through the late 1960s. Even in the bull market year of 1966, the Dow industrials averaged 873.6 in a year in which GDP came in very closely at 787.8($B). In 1968, the two measures were almost identical. After 1968, the Dow industrials and GDP parted company again. GDP moved upward as the U.S. economy continued to grow, at least in nominal terms. However, the Dow industrials lagged, as the market doldrums of the late 1960s, 1970s and early 1980s gained a stronghold. The disparity between the two grew as oil shocks, inflation, and high interest rates took their toll on share prices. In 1982 the Dow industrials averaged 73% below GDP. That year, 1982, was the first year of the super-bull market that ran into 2000.

In this light, the bull market of the 1980s and 1990s can be seen as having been a case of catch-up, where the Dow worked its way back toward GDP after having been left behind sometime in the late 1960s. For example, as recently as 1994, the Dow industrials averaged more than 46% below GDP. However, by 1998, as the bull market accelerated, the difference between the two was eliminated.

In 1999 and 2000, the Dow industrials exceeded nominal GDP. During 2001, however, with declines in the Dow and increases in nominal GDP, the two measures were once again, nearly identical. Continued weakness in stock prices during 2002 resulted in the Dow ending the year less than nominal GDP. Then, beginning in early 2003, with the Dow average trading below 8,000, a bull market began, moving the Dow to close the gap with nominal GDP. The Dow’s peak above 14,000 in 2007 was in-line
with nominal GDP of 14,478 ($B) in 2007. Soon thereafter, as the effects of the credit crisis took hold, stock prices began a precipitous decline, taking the Dow back down to the 8,000 range in 2008. Recession notwithstanding, nominal GDP continued to increase, and gradually, share prices began increasing again. Relative parity between the Dow and nominal GDP was reached again by the end of 2013, and continued to closely track each other through most of 2016. Since the latest US election, the gap between these metrics has widened significantly. The Dow represented 125% of nominal GDP by the end of 2017, approaching a level of disparity that has not been seen since the 1929 stock market crash.

Depending on growth of the U.S. economy, in 2018 nominal GDP will likely be reported somewhere around 20,000($B). Historical evidence would suggest that a Dow trading significantly above 20,000 would suggest a market which is fully-valued, and anticipating more rapid growth after a period of slower growth. However, some have suggested that a change in U.S. monetary policy and shift away from the recent low interest rate environment could impact growth conditions in the U.S. economy. If so, as we have seen in the past, share prices may suffer and retreat towards the nominal GDP line.

A Stable Share of the Economy

On the surface, nominal GDP would appear to be too simplistic to provide a good indicator of the direction of our stock market. However, as a measure of economic output, it is, at the company level, the equivalent of a measure of revenues. And share prices are often valued, though admittedly somewhat crudely, as a multiple of revenues.

Interestingly, even with changes in the component companies, over the past 50 years, the share of GDP represented by the revenues of the firms comprising the Dow industrials has been rather stable, averaging approximately 14 percent. More recently, revenues of the Dow companies comprise approximately 18 percent of GDP - on the high end of average, but very close to where it was as far back as the 1970s. In 2016, revenues of Dow firms comprised 16.5% of GDP. Thus, using GDP as a model to value the shares in the Dow industrials is tantamount to using a revenue multiplier - crude but useful. Moreover, there is a certain intuitive appeal to the observation that the value of the companies comprising a significant component of our overall economy should be expected to grow at a rate commensurate with the economy’s growth.

Looking Ahead

So what does GDP as a stock market barometer imply about the future direction of stock prices? The implication is that as long as we are able to maintain economic growth with low inflation and reasonable interest rates, a significant run up or decline in share prices would not appear to be likely.

Using the accompanying figure, it can be seen that there are periods when share prices, as represented by the Dow industrials, may grow either faster or slower than nominal GDP and move above or fall below the GDP line. However, the figure also indicates that these above or below-average returns are followed by returns that adjust to the average rate of growth in nominal GDP.

What level of stock-market returns can investors in the blue chips comprising the Dow expect in future years? Using GDP as a market barometer would imply that something on the order of 5% to 8% should be anticipated. That would allow, depending on one’s forecast, for 3% to 5% nominal GDP growth and 2% to 3% for an annual dividend yield. However, given that at year-end, 2017 the Dow was approximately 127% of nominal GDP, returns on the low end of these estimates should likely be expected going forward.
The Dow Jones Industrial Average Tracks Nominal GDP

Sources: Dow Jones & Co., Compustat, US Bureau of Economic Analysis, FRED Economic Data