



**DuPree Financial Analysis Lab**

800 West Peachtree St. NW

Atlanta, GA 30332-0520

404-894-9473

<http://www.dupree.gatech.edu/finlab>

---

**Dr. Charles W. Mulford, CPA, Director**  
Invesco Chair and Professor of Accounting  
[charles.mulford@dupree.gatech.edu](mailto:charles.mulford@dupree.gatech.edu)

**Narayanan Jayaraman**  
Associate Professor of Finance  
[narayan.jayaraman@dupree.gatech.edu](mailto:narayan.jayaraman@dupree.gatech.edu)

## **Seeking Guidance for the Dow? Try GDP**

### **Executive Summary**

With the Dow Jones Industrial Average once again trading above 10,000, investors understandably are wondering where the blue chips 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 over time.

January, 2004

**DuPree Financial Analysis Lab  
DuPree College of Management  
Georgia Institute of Technology  
Atlanta, GA 30332-0520**

**DuPree Financial Analysis Lab**

The DuPree Financial Analysis Lab conducts unbiased stock market research. Unbiased information is vital to effective investment decision-making. Accordingly, we think that independent research organizations, such as our own, have an important role to play in providing information to market participants.

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

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

**Contact Information**

Charles Mulford. Invesco Chair, Professor of Accounting and the Lab's Director.

Phone: (404) 894-4395

Email: [charles.mulford@mgt.gatech.edu](mailto:charles.mulford@mgt.gatech.edu)

Michael L. Ely. MBA, Financial Analyst.

Phone: (404) 894-9473

Email: [michael.ely@mgt.gatech.edu](mailto:michael.ely@mgt.gatech.edu)

Kerianne Maloney. Graduate research assistant and MBA student.

Mario Martins. Graduate research assistant and MBA student.

Raul Quiroz. Graduate research assistant and MBA student.

Website: <http://www.dupree.gatech.edu/finlab>

©2003 by the DuPree College of Management, Georgia Institute of Technology, Atlanta, GA 30332-0520. **ALL RIGHTS RESERVED.** The information in this research report was based on sources believed to be reliable and accurate, consisting principally of required filings submitted by the companies represented to the Securities and Exchange Commission. However, no warranty can be made. No data or statement is or should be construed to be a recommendation for the purchase, retention, or sale of the securities mentioned.

## Seeking Guidance for the Dow? Try GDP

By Charles W. Mulford  
and Narayanan Jayaraman

January, 2004

With the Dow Jones Industrial Average once again trading above 10,000, investors understandably are wondering where the blue chips 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 over time.

**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 recent super-bull market.

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 averaging about twelve percent less than nominal GDP. Then in 2003 stock prices came back strongly, moving the Dow much closer to nominal GDP. Depending on growth of the U.S. economy during the fourth quarter, nominal GDP for 2003 will likely be reported somewhere around 11,000(\$B), suggesting a Dow trading in the vicinity of 11,000 would be about right.

**A Stable Share of the Economy**

On the surface, nominal GDP, which in recent years replaced GNP as our preferred measure of total economic output and is closely tied to it, 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 16.4 percent of GDP - on the high end of average, but very close to where it was as far back as the 1970s. 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 interest rates, a significant run up or decline in share prices would not appear to be likely.

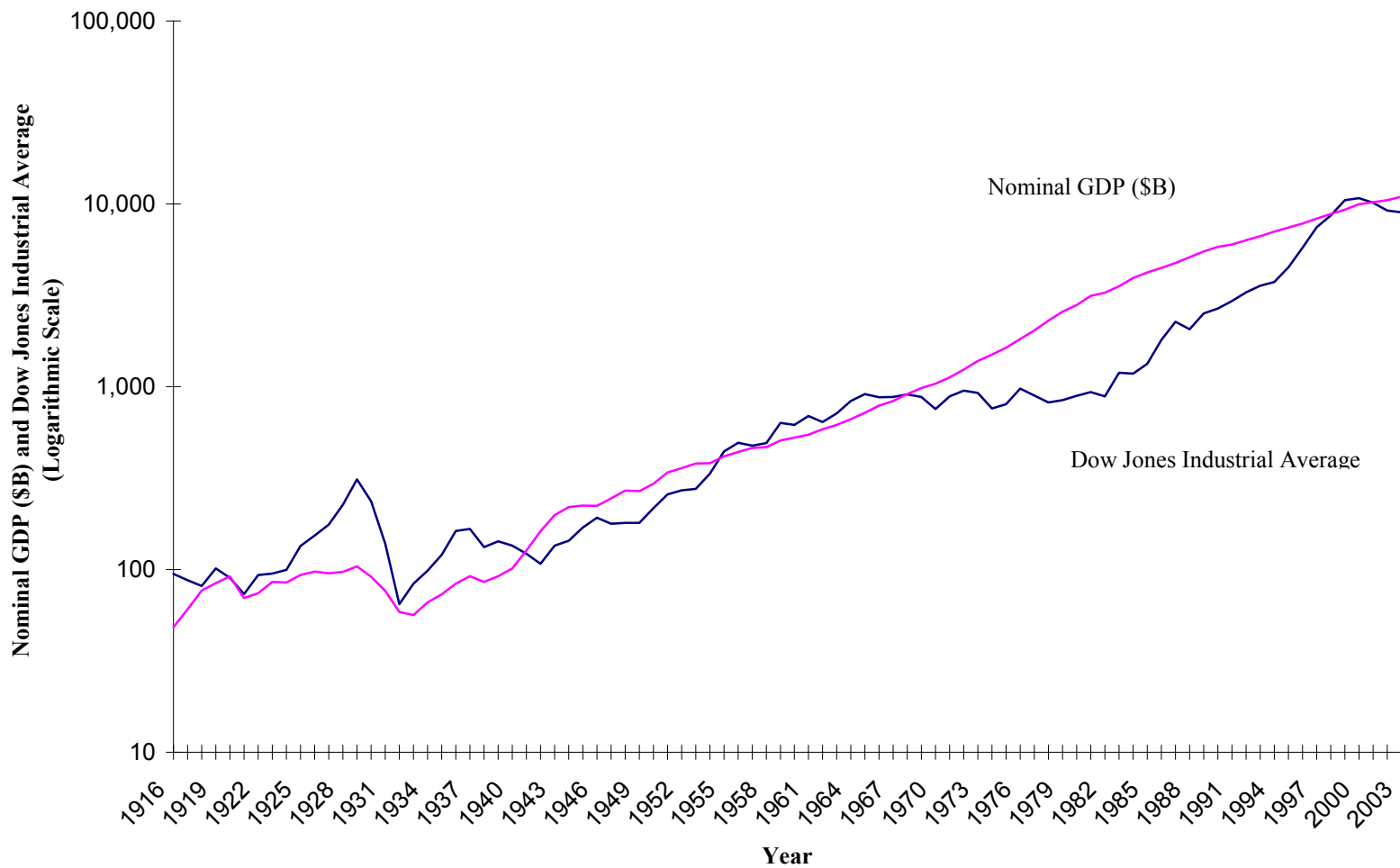
Using the accompanying figure, it can be seen that there are periods when share prices, as represented by the Dow industrials, may grow either faster or slower than nominal GDP and move above or fall below the GDP line. However, the figure also indicates that these above or below-average returns are 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 8% to 10% should be anticipated. That would allow, depending on one's forecast, for 5% to 6% nominal GDP growth and, assuming an eventual return to more historical levels, 3% to 4% for an annual dividend yield.

Dr. Mulford is Invesco Chair and professor of accounting and  
Dr. Jayaraman is associate professor of finance  
in the DuPree College of Management,  
Georgia Institute of Technology.

The authors thank Melissa Frye for her research assistance.

**Whither the Dow?**  
**The Dow Jones Industrial Average Tracks Nominal GDP in \$Billions**



Sources: Dow Jones & Co., The Value Line Investment Survey, and U.S. National Income and Product Accounts