

CHAPTER 13

Market and Industrial Analysis: Top-Down Approach

Introduction

In the last chapter we examined how the values of stocks can be estimated using the multiplier and discounted cash flow models. Our analysis, however, was company/ stock specific, with no considerations given to the influences that the overall economy and industry have on a company's stock value. Analysis based just on company analysis is sometimes referred to as *bottom-up analysis*. Many fundamental stock analysts, however, incorporate a *top-down, three-step approach*, in which economic and industry analyses are used as inputs in evaluating a stock. This approach starts with an analysis of the aggregate economy: future gross domestic product, or *GDP* (aggregate output), prices, and the general level of interest rates. The macroeconomic analysis is followed, in turn, by an industry assessment to determine those sectors that will do well given the overall economic outlook. Finally, there is assessment of companies within industries to try to determine those stocks that investors should buy and those they should sell. Many security analysts and academics advocate this top-down approach to stock selection and portfolio management. Their justification is based, in part, on evidence that shows that general economic conditions tend to affect all companies. A recession, for example, not only adversely affects the earnings of bad companies, but also good companies. The top-down approach is also empirically supported: Studies have shown that there is a significantly high percentage of both company and industry earnings that can be attributed to aggregate economic activity.

In this chapter, we extend our examination of fundamental analysis by first looking at aggregate economic and industry factors. Consistent with the top-down approach, we start with a macroeconomic

analysis in which we examine how monetary and fiscal policy, global economic conditions, labor and energy costs, and technology impact aggregate output, prices, and interest rates, as well as the impact changes in these factors have on the overall stock market. Next, we look at how industries develop over time and their relationships with each other and with the overall economy. After examining the macroeconomy and industry, we then apply the valuation approach that we examined in Chapter 12 to the valuation of the overall stock market and to an industrial sector. Finally, we conclude the chapter by presenting an example of the management of an equity portfolio that uses a top-down fundamentalist approach.

Macroeconomic Environment

The values of most stocks are affected by macroeconomic factors. Among the determining factors are (1) the overall state of the economy; (2) government policies, such as monetary and fiscal policy; (3) international factors, such as global economic growth and exchange rates; (4) labor, energy, and primary resource costs and technological advances that affect the production side of the economy; and (5) expected inflation and deflation.

Economic Conditions

Economies grow through the saving, investment, and capital formation process. In this process, aggregate output in time period 0, GDP_0 , gives rise to a certain level of aggregate savings, S_0 , and new capital investment expenditures, I_0 ; the new level of investment expenditures, in turn, changes the economy's existing capital stock, ΔK (plants, equipment, machines, etc.), and the new level of capital changes the level of aggregate production (shifting to the right, the aggregate supply curve described in macroeconomics), leading to a new level of aggregate output in the next period, GDP_1 . The new level of output gives rise to a new savings and investment level, I_1 , which changes the capital stock and leads to a new aggregate output level, GDP_2 , new investment levels and capital, and so on:

$$GDP_0 \rightarrow S_0 \rightarrow I_0 \rightarrow \Delta K \rightarrow GDP_1 \rightarrow S_1 \rightarrow I_1 \rightarrow \Delta K \rightarrow GDP_2$$

This dynamic investment and capital formation process will lead to economic growth in aggregate output provided the return on capital (that is, the increases in aggregate output resulting from the increases in the economy's capital), creates a level of investment expenditures that is greater than the level needed to replace the economy's depreciated or obsolete capital. For the United States and other industrial countries, the twentieth century is a testimony to how economic growth occurs through the investment and capital formation process: the 1910 model-T Ford to the 2013 Mercedes, from the Wright brothers' first flight to the space shuttle; from Royal typewriters to laptop computers; from Alexander Bell's first

telephone to the cell phone. Economies such as that in the United States do experience, however, periodic declines in economic growth. In terms of the investment and capital formation process, economic decline can occur when the levels of investment expenditures are not sufficient to replace depreciated capital. In such a case, there is often a decline in the capital stock and the level of aggregate production. The 1970s was a period of stagnant economic growth. Not only was there recession and inflation—stagflation—brought about by high energy prices, but also the increase in interest rates decreased the aggregate level of investment expenditures to a level in which the United States was not making the necessary investments in its manufacturing facilities (steel plants, automobile facilities, etc.) to maintain its production advantages.

When an economy is expanding, earnings tend to increase and the value of assets and their financial claims tend to rise. In addition, when economies grow, business demand for both short-term assets, such as inventories and accounts receivable, and long-term assets, such as plants and equipment, tend to increase. As a result, companies find themselves issuing new stock and selling more bonds (demanding more loans) to finance the increases in their short-term and long-term capital formation. Aggregate economic growth is also likely to increase both the purchase of cars and homes by household and the number of public projects by municipal government (e.g., roads), augmenting the supply of bonds by financial intermediaries and state and local governments. Thus, the demand for funds tends to increase in periods of economic growth, causing interest rate rates to increase. By contrast, in recessionary periods, earnings tend to decrease and stock values tend to fall. There is also less capital formation, causing rates to decrease.

It should be noted that the direct impact of economic growth on stock value can be explained not only by the growth in *GDP*, but also a wealth effect that often accompanies economic conditions or in some cases precedes economic changes; that is, a country's economic state is measured not only in terms of the aggregate production of final goods and services (i.e., the flow of *GDP*), but also on the value of its assets or aggregate wealth: the value of its equity, real estate, business debt, and government debt. Typically, when economies grow, aggregate wealth also tends to increase, raising stock market values and increasing housing and real estate values (see [Exhibit 13.1](#)). Conversely, when economies decline, aggregate wealth also tends to decrease. There are also times when changes in aggregate wealth precede changes in economic growth. For example, in 2008, the decline in real estate values and the subsequent decrease in equity value preceded the slowdown that occurred in the United States and globally.

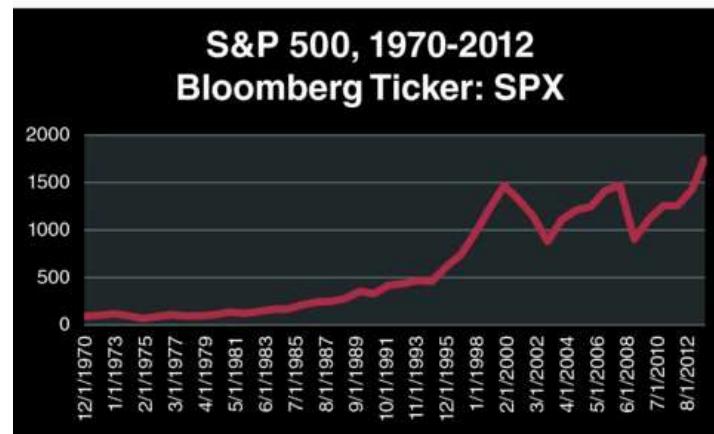
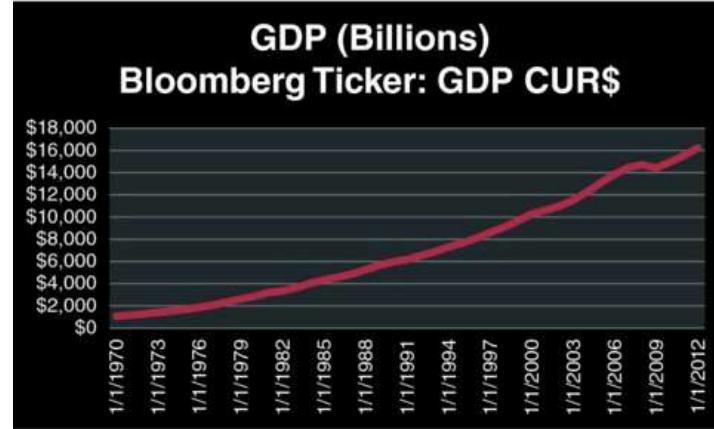


EXHIBIT 13.1 GDP and S&P 500, 1970–2013

Government Monetary and Fiscal Policy

Fiscal Policy

Fiscal policy can be defined as government actions that alter the levels of government expenditures and taxes. Expansionary fiscal policy consists of increasing government expenditures or decreasing taxes, and contractionary policy includes decreasing government spending or increasing taxes. Similar to the impact of an increase in investment expenditures, an increase in the level of government expenditures or a decrease in taxes increases aggregate demand, increasing average prices and aggregate output. The extent of the prices and output increases depends on the degree of excess capacity and employment in the economy. For example, an economy operating at or near full production capacity with full employment would likely find the impact of an expansionary policy to be inflationary with only a small impact on in-

creasing aggregate output; an economy with high excess capacity and unemployment, however, would likely find the impact of an expansionary fiscal policy to be one of increasing aggregate output without creating inflation.

The Obama administration's fiscal policy stimulants starting in 2008 were aimed at pulling the economy out of the recession and possibly averting a second one. The Administration's fiscal policy actions were on a scale similar to FDR's policies of the 1930s; they included government spending increases as part of the \$800 billion American Recovery and Reinvestment Act, increases in direct transfers (food stamps, unemployment insurance, and subsidies to state and local government for Medicaid), and a \$600 billion fiscal stimulant that included a two-year payroll tax reduction. The Obama administration's fiscal actions, however, significantly increased the federal government deficit (government revenue minus government expenditures). The deficit went from \$459 billion in 2008 to \$1.8 trillion in 2009 and to \$1.258 trillion in 2010 before declining to \$1.089 trillion in 2012. These deficits, in turn, pushed the U.S. debt from \$10.7 trillion in 2008 to \$16.4 trillion in 2012 and increased the percentage of debt to *GDP* from 40.5 percent in 2008 to 72.6 percent in 2012 (see [Exhibit 13.2](#)). These high debt levels, in turn, led to a temporary credit downgrade, brought into question the U.S. government's ability to continue incurring debt, and raised the possibility of a potentially deeper fiscal crisis in which the United States would have to implement more robust austerity programs.

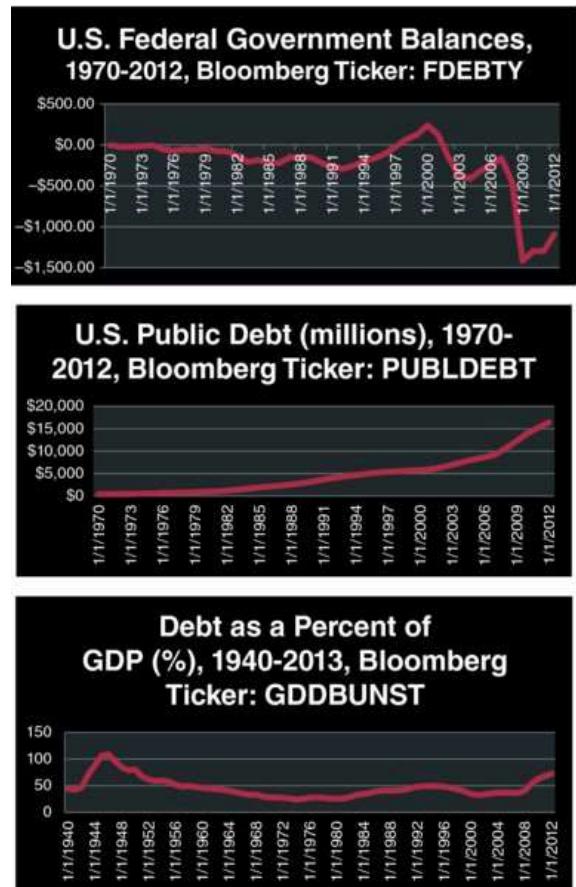


EXHIBIT 13.2 U.S. Government Deficits, Debt, and Debt/GDP

In the short run, the impact of expansionary fiscal policy depends on the nature of government spending and taxes. Some economists point out that while the size of the U.S. fiscal stimulant in 2008–2012 was large, many of the government expenditures were direct transfer payments that typically have GDP multiplier effects that are smaller and of shorter durations than the multiplier effects resulting from government capital expenditure increases. From 2009 to 2012, the growth rate in the U.S. economy was only 2.2 percent, making it one of the slowest economic recoveries on record—an economic recovery rate that was not able to bring about job growth. At the end of 2012, the unemployment rate was 7.9 percent and underemployment rate was 14 percent.

In the long run, deficit spending can lead to higher interest rates and high inflation once the economy moves back to full capacity. The long-run cost can be a lower steady-state economic growth accompanied by inflation and relatively high equilibrium levels of unemployment. In a seminal work by Reinhart

and Rogoff (*This Time is Different*), the authors found that public debt above 90 percent can reduce average growth rates by more than 1 percent.

Monetary Policy

Technically, monetary policy can be defined as central bank actions that alter the composition of asset holdings in the economy. In the U.S., one of the major monetary tools is an *open market operation* (OMO) in which the Federal Reserve (the Fed) either purchases (expansionary OMO) or sells (contractionary OMO) its holdings of Treasury securities. Such actions change not only the public's holdings of securities, but also the general level of interest rate in the economy. Monetary policy can be either expansionary (increasing the money supply) or contractionary (decreasing the money supply). It can also be consistent with fiscal policy, such as an expansionary monetary/fiscal policy mix in which the deficits resulting from increases in government expenditures and/or tax cuts are financed by the Treasury issuing new debt that is later purchased from the public by the central bank—*monetizing the debt*. Consider, for example, the case of an expansionary OMO in which the Fed buys Treasury securities held by the public. As they try to buy existing Treasury securities, their actions push the price of such securities up and their rates down. As the rate on Treasury securities decreases, investors (those investors selling their Treasuries, as well as other investors), begin to find other securities relatively more attractive. This security preference, in turn, increases the demand for other securities, causing their prices to increase and their rates to decrease. Thus, through a substitution effect, the rates on other securities also tend to fall. Finally, the sellers of Treasury securities deposit their proceeds in banks or financial institutions or use them to buy bank certificates of deposit (CDs); this can lead to an increase in the funds banks and other financial institutions make available for loans, causing lending rates to fall. Thus, the initial impact of an expansionary OMO is to lower not only the rates on Treasury securities, but also interest rates in general.

Lower interest rates, in turn, tend to increase capital investment expenditures in the economy; that is, lower rates decrease the cost of capital, making more potential investment projects acceptable, and the lower lending rates increase household purchases of new homes and other consumer durables. The increased demand for new capital goods and consumer durables and houses increases the demand for other goods and services, increasing the demand for aggregate output and leading to a higher level of price and aggregate output levels. As with expansionary fiscal policy, the extent to which prices and output increase depends on the degree of excess capacity and the level of unemployment in the economy.

In addition to open market operations and monetizing the debt, the central bank can also affect the level of interest rates by changing the discount rate it charges banks for borrowing and by reducing the amount of reserves banks are required to maintain with them or other banks to secure their deposits.

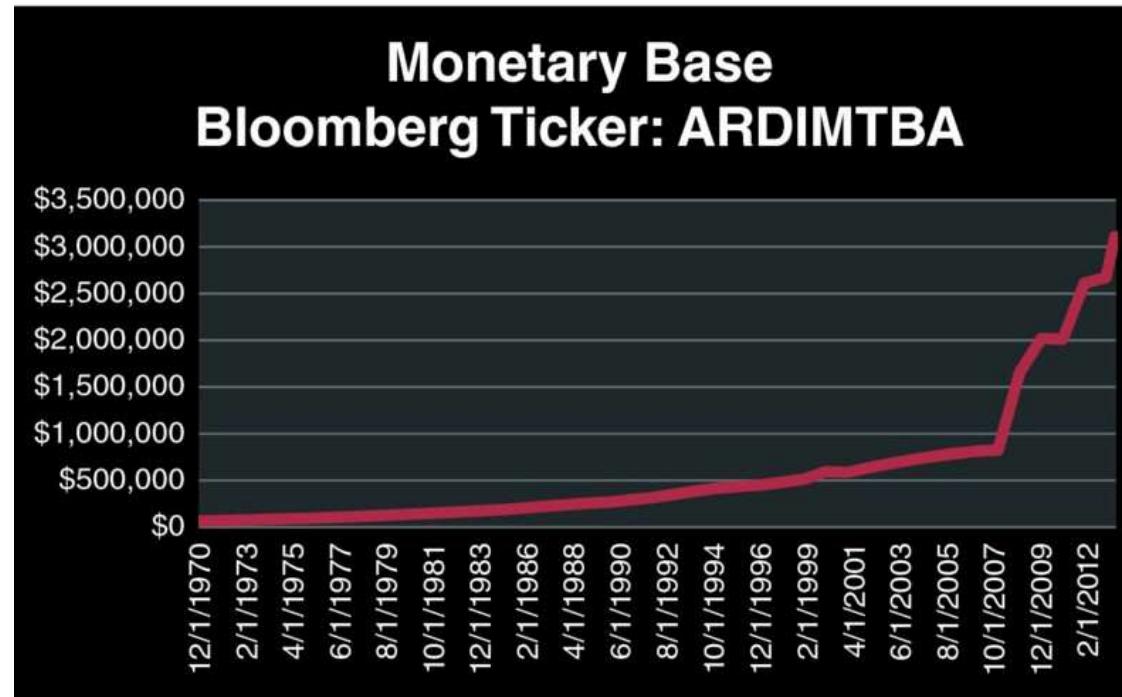
Similar to OMO, these monetary tools change interest rates and the level of capital expenditures, and by so doing change the level of aggregate output demand at any price level, thus shifting the aggregate demand curve.

For an advanced economy, monetary policy can be an effective tool provided interest rates are not too low or too high. Often contractionary policies are implemented when an economy is experiencing inflationary pressures, while expansionary policies are used when the economy is beset by unemployment, excess capacity, and recessionary pressures. Beginning in October of 1979 and extending through October 1982, for example, the Federal Reserve raised the discount rate, increased reserve requirements, and set lower monetary growth targets in an effort to combat high inflation and balance of payments problems in the United States. These actions, in turn, represented a directional change in the Fed's policies from the preceding three-year period in which they maintained lower discount rates and reserve requirements. Even though high energy prices had already contributed to inflation and high interest rates, these contractionary monetary actions served to push rates up even higher. By 1982, rates of Treasury bonds were 10 percent, mortgage rates were 15 percent, the prime rate was 21 percent, and the Dow Jones Average was at 700!

By contrast, the Fed implemented an expansionary monetary policy and undertook extraordinary monetary measures in dealing with the 2008 financial crisis. In an effort to stabilize financial markets and avert a recession in the aftermath of the subprime mortgage meltdown, the Federal Reserve cut interest rates from 4.25 percent at the start of 2008 to 2.00 percent by June 2008.¹ (Other central banks around the world took similar actions by also cutting rates.) The Federal Reserve also took action by pumping billions of dollars into the banking system via new lending programs. In aggregate, these programs provided over \$500 billion in lending capacity to U.S. and foreign financial institutions. By September 2008, however, the subprime mortgage meltdown had developed into a global credit crisis, culminating in a dramatic 10-day period from September 7 to September 17: The trillion dollar mortgage giants Fannie Mae and Freddie Mac were placed into conservatorship by the Treasury; Lehman Brothers filed for the largest bankruptcy in U.S. history (\$600 billion); and American International Group received an emergency \$85 billion lifeline from the Federal Reserve. During this period, the Federal Reserve took emergency steps by guaranteeing money market funds, backstopping commercial paper programs, coordinating a global interest rate cut with other central banks, making loans to institutions collateralized by mortgage-backed and asset-backed securities, and purchasing such securities as part of their open market operation. Similarly, the Treasury structured the Troubled Asset Relief Program (TARP) to shore up U.S. bank balance sheets with capital injections. The impacts of these unprecedented liquidity measures were to increase the Fed's balance sheet from \$850 billion in August to \$2.2 trillion in November and to

lower rates from their already existing low levels. In fact, short-term Treasury rates were at one point at negative levels, while credit spreads on BBB credits over Treasuries had widened to 7 percent.

From 2009 to 2013, the Fed implemented its *quantitative easing* policy of keeping short-term rates near zero, injecting cash into the financial system, and purchasing mortgage-backed securities and debt from FNMA, FHMC, and GNMA. As part of the quantitative easing policy, the Fed began selling short-term securities and purchasing long-term securities; a policy referred to as *Operation Twist*. These monetary actions all served to stabilize the banking industry, lower intermediate rates, support a fragile housing market, and monetize the U.S. government's debt (see [Exhibit 13.3](#)). Similar monetary and fiscal policy actions were also undertaken in other developed countries in which central banks lowered rates, implemented programs to support banks and guarantee assets, and increased their government budgets with fiscal policy stimulants. The recovery, as described by the *Economist* (January 9, 2010) was one in which many governments responded to the crisis by in effect taking the debt burden off the private sector's balance sheet and putting it on their own.



[EXHIBIT 13.3](#) U.S. Monetary Base, 1970–2012

Foreign Sector

For advanced economies, the foreign sector is an important factor in determining aggregate demand, direct investments of multinationals, and corporate revenues and costs. One of the major economic factors contributing to global economic growth over the last three decades has been the economic expansions that have occurred in China, India, and other advanced emerging economies.²

The globalization of financial markets over the past 25 years has also led to significant increases in investment flows in and out of countries. For example, China has invested a significant amount of its international currency reserves (U.S. dollars) resulting from its balance of payment surpluses in intermediate-term U.S. Treasury securities.³ China and other emerging countries also have sovereign-wealth funds that also invest in foreign assets. In China, for example, there is the state-owned China Development Bank that buys foreign assets as a sovereign-wealth fund.

The earnings of multinational companies and the demands for foreign goods and services are also influenced by exchange rates. For a number of subperiods between 2000 and 2013, the dollar prices of the British pound and euro were increasing (*dollar depreciation*). For dollar investors, the dollar depreciations over these periods made investments in foreign securities very attractive, whereas for British pound investors, the dollar depreciation made investments in dollar-denominated assets less attractive. For example, from January 3, 2006, to January 3, 2007, the dollar/British pound exchange rate increased 12.03 percent from \$1.7404/BP to \$1.9498/BP (see [Exhibit 13.4](#)). In January 2006, the one-year U.S. Treasury rate was yielding 4.46 percent and the one-year British Treasury rate was at 4.30 percent. With perfect foresight, a dollar investor would have earned 17.027 percent from investing in the British Treasury security. To attain 17.027 percent, the investor would have had to convert each of her investment dollars to $1/(\$1.7404/\text{BP}) = 0.57458\text{BP}/\$$ and invested the 0.57458BP at $R_F = 4.46\text{ percent}$. One year later, the investor would have 0.6002BP [=0.57458BP (1.0446)], which she would have been able to convert at the spot exchange rate of \$1.9498/BP to earn to \$1.17027 [= (0.6002BP) (\$1.9498/BP)]. Thus, the dollar investment in the foreign security would have yielded a dollar rate of 17.027 percent, compared to the U.S. Treasury yield of 4.30 percent.

$$\text{Rate} = \frac{(\$1.9498/\text{BP})[0.57458\text{BP}(1.0446)]}{\$1} - 1 = \frac{\$1.17027}{\$1} - 1 = 0.17027$$

Note that the same strategy would have yielded a negative rate if implemented on September 9, 2007, when the dollar/British pound exchange rate was at \$2.0278/BPE, and then liquidated one year later on September 9, 2008, when the exchange rate was at \$1.7543/BP (-13.49 percent).

Exchange Rates

Data: Euro <CURNCY>, GBP <CURNCY>

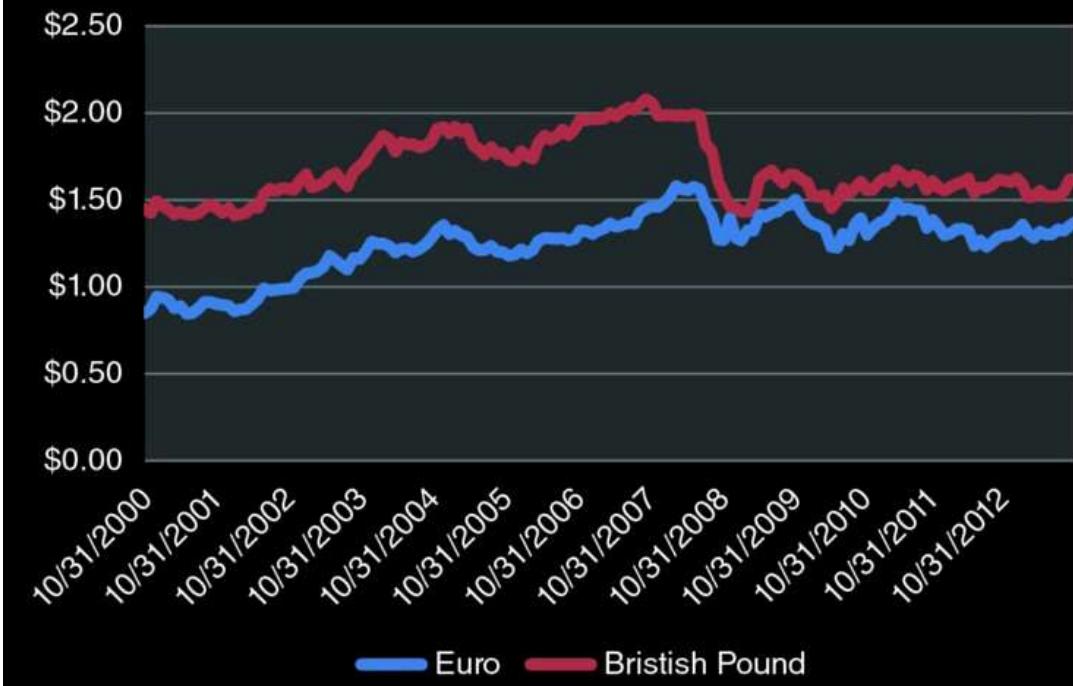


EXHIBIT 13.4 Exchange Rates, \$/BP and \$/€, 1970–2012

In contrast, British pound investors would find investing in dollar-denominated assets less attractive when the dollar is depreciating (or the pound is appreciating). For example, from January 3, 2006, to January 3, 2007, a British pound investor would find the British pound/dollar exchange rate (BP/\$) decreasing from 0.57458BP/\$ ($=1/\$1.7404/BP$) to 0.512873BP/\$ ($=1/\$1.9498/BP$), a 10.74 percent decrease. Such an investor would have seen a loss of 6.90 percent if he were to have converted 1BP to \$1.7404, invested the dollar at 4.30 percent for the year to earn \$1.8152, and then converted back to pounds at 0.512873BP/\$ to receive only 0.93098615BP:

$$\text{Rate} = \frac{[(\$1.7404)(1.043)][0.512873\text{BP}/\$]}{1\text{BP}} - 1 = \frac{0.93098615\text{BP}}{1\text{BP}} - 1 = -0.069$$

In general, when a currency like the dollar is experiencing sustained depreciation, more investment dollars can flow out as global institutional funds try to take advantage of the expected dollar depreciation

and less investment dollars can flow in. Just the opposite occurs when the currency is experiencing sustained appreciation.

Exchange rates can also have a significant impact on companies that have foreign markets for their products but who produce domestically and for companies that purchase materials and inputs for manufacturing or who buy goods to be sold from foreign suppliers. For example, an increase in the dollar price of the British pound from \$1.50/BP to \$2.00/BP would increase the dollar cost of buying British pounds to buy British goods and services denominated in British pound. On the hand, the dollar increase from \$1.50/BP to \$2.00/BP would lower the British pound price of a dollar from 0.6667BP/\$1 to 0.50BP/\$1. British consumers and businesses, in turn would find a lower cost of buying dollars to purchase U.S. goods and services denominated in dollars.

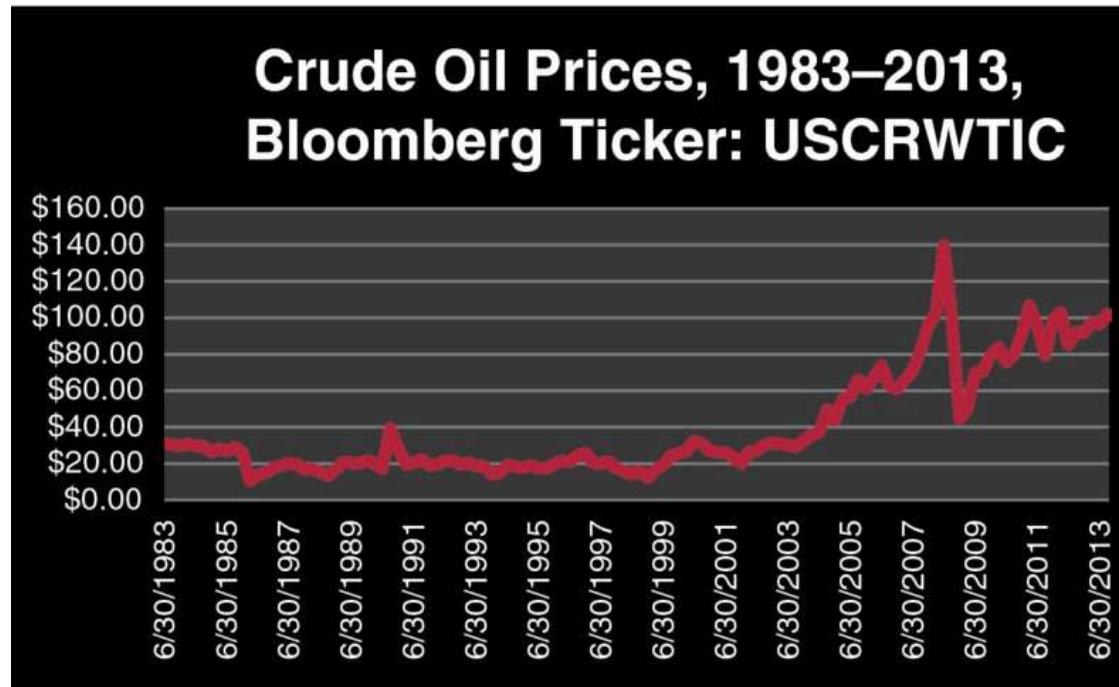
Labor and Energy Cost

At an aggregate level, an increase in labor cost, caused by a decline in labor productivity, an increase in average wages and salaries, or an increase in benefits or an increase in the cost of natural resources such as energy, increases the overall cost of producing aggregate output. Producers often try to pass such cost increases onto spenders by increasing prices. At a macroeconomic level, an increase in labor, energy, or other resource production cost can cause aggregate output to decrease and overall prices to increase (in macroeconomics, such cost increases shift the aggregate supply curve to the left). By contrast, a decrease in labor, energy, or resource costs would lead to lower prices and greater aggregate output.

Note that monetary and fiscal policy and exogenous changes in exports affect aggregate demand. As such, they can lead to prices and aggregate output changing in the same direction. In contrast, changes in energy or labor cost affect the production side of the economy, causing opposite changes in prices and output. An increase in energy or labor cost can cause higher prices and lower aggregate output; a decrease in such cost can cause lower prices and greater output. Thus, in the case of cost increases, an economy can experience not only inflationary pressures but also recession. Nobel Laureate Paul Samuelson described such an economic state in which there is both inflation and recession as *stagflation*. The 1970s was a period in which the U.S. economy experienced severe stagflation resulting from the increases in energy prices. Specifically, the price of OPEC oil increased from \$3 per barrel in 1972 to approximately \$35 per barrel in 1980. These energy price increases led to increases in the overall costs of production (which was passed on in the form of higher prices), lower demand and aggregate output, and higher interest rates (as a result of the higher prices). The U.S. suffered recessions in 1973, 1975, and 1978, with each of the recessions accompanied by increases in the inflation rate. For the decade, the annual inflation rate averaged over 10 percent, the growth rate in real *GDP* for the decade was only

5 percent (by contrast from 1982 to 1995, real *GDP* doubled), and in 1979 the prime rate interest charged by banks was at 15 percent.

The higher energy prices of the 1970s also encouraged greater world oil exploration, the development of alternative energy sources, and the implementation of energy conservation policies. By the mid-1980s, a worldwide oil surplus had developed, which began to bring energy prices down. Energy prices were relatively stable for most of the 1990s. For the period from 1983 to 2004, the average price of crude oil was \$22.61, with the range between \$10.40 (3/31/1986) and \$37.05 (6/31/2004). Since 2004, however, there has been a reversal, with energy prices increasing significantly. In 2012, crude oil prices averaged \$96 per barrel for (NYMEX WTI crude oil index), with a range between \$79.47 and \$109.8 (see [Exhibit 13.5](#)). Many economists, in turn, have argued that the economic recovery following the financial crisis was slowed partly because of the rise in oil prices. The higher energy prices from 2004–2012 also encouraged greater energy exploration, the development of alternative energy sources, and a greater adoption of new technologies for extracting energy, such as hydraulic fracturing—fracking.⁴



[EXHIBIT 13.5](#) Crude Oil Prices

Technological Changes

From 1970 to 2013, America's gross domestic product rose from \$1.076 trillion to \$16.246 trillion, and the stock market, as measured by the S&P 500, increased from 92.15 in 1970 to 1,703 on 10/11/2013 (see [Exhibit 13.1](#)). While some of this extraordinary growth can be explained by expansionary monetary and fiscal policy and energy prices, much can be attributed to the advances in science and technology in such areas as computer technology, genetic engineering, and telecommunications. Over the last 40 years, the U.S. and other developed and emerging economies have evolved into economic engines. The macroeconomic impacts of these advances in technology and science have served to increase the productivity of labor and capital, analytically shifting the economy's aggregate supply. Consistent with a positive supply-side change, the U.S. and other economies has enjoyed over this time period significant growth in GDP and relatively stable prices.

Expected Inflation and Deflation

Expected inflation is an important factor influencing investment and consumption demand. If investors expect the prices of consumer goods and services, as well as cars, houses, and other durables, to be higher in the future, they will decrease their holdings and current purchases of fixed-income securities, and possibly equity securities, to buy more consumption goods and consumer durables. This reduction will decrease bond prices and increase yields. The expected inflation may also increase aggregate output if there is excess capital capacity and unemployment. It is also possible in an inflation climate that investors will invest more funds in equity, where they expect the returns on stock to increase with the anticipated inflation rate.

In contrast, when there is an expectation of deflation, consumers and businesses find it advantageous to defer spending in expectation of lower prices for durable and nondurable goods and capital in the future. In the financial markets, expected deflation can increase the holdings and demand for fixed-income securities and possibly the demand for equity. That is, if investors expect the prices on goods and services, cars, houses, and other durables to be lower in the future, they will increase their current purchases of bonds and other securities so that they can buy more consumption goods and consumer durables later, after prices have fallen. It is also possible, that investors will invest fewer funds in equity where they expect the returns on stock to decrease with the expected deflation. The expected deflation is also likely to decrease aggregate output as consumers and businesses cut their current purchases, creating excess capacity and unemployment (see [Exhibit 13.6](#)).

Inflation, Consumer Price Index (%), 1914-2013 Bloomberg Ticker: CPI YOY

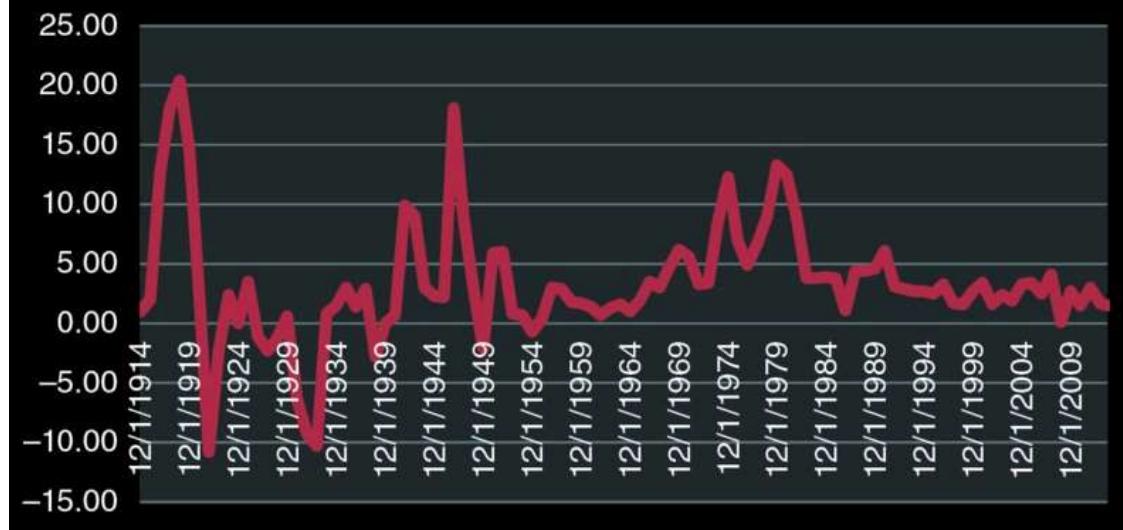


EXHIBIT 13.6 U.S. Inflation Rate

Business Fluctuations: Overshooting, Corrections, and Financial Crisis

Although the industrial economies have experienced significant economic growth over the last century, such long-run trends have also been characterized by business cycles in which economies have experienced peaks and troughs as they moved along their long-run growth trend. Economists have debated the cause of business cycles. In his classic 1939 work, the Austrian economist, Joseph Schumpeter, argued that fluctuations are the result of innovations, or the setting into use of new technological advancements. He argued that "what dominates the picture of capitalistic life and more than anything else is responsible for disequilibria is innovation, the intrusion into the system of new production functions."

On a more contemporary level, Schumpeter's business cycle theory can be explained in terms of an *overshooting* phenomenon in which businesses have a tendency to overproduce when aggregate demand is high, leading to an excess supply and an equilibrium adjustment in which they have to cut output. On the other hand, businesses have a tendency to underproduce in response to declines in aggregate demand, leading to an excess demand and an eventual equilibrium adjustment in which they increase output. This overshooting phenomenon has also been explained by different financial lending and investing behaviors during different economic periods: when the economy is expanding, financial institutions tend to extend

credit more liberally and investors tend to buy more securities, resulting in more loans, investments, and ultimately overproduction and overpriced asset values; when the economy is declining, financial institutions tend to tighten credit and investors tend to curb their investments, which results in underproduction and underpriced asset values. Thus, banks, financial institutions, and investors, by their lending and investing behaviors, tend to exacerbate the current economic trend, leading to an overshooting of the trend.

Many economists argue that the 2008 financial crisis and recession were a correction to a major overshooting of the U.S. and world economies. From 2000 to 2006, expansionary U.S. monetary actions, the uncontrolled expansion of derivatives and securitization, and the liberal credit policies by financial institutions led to excessive overshooting, especially in the housing industry. Prior to 2000, most potential homebuyers who did not meet strict qualification standards were denied loans. As a result, most mortgages were considered prime. In 2000, the Mortgage Bankers Association estimated that 70 percent of all loans were prime conventional, 20 percent were FHA-insured loans, 8 percent were VA-insured, and 2 percent were subprime. With the combination of the growth in securitization, the push by Congress to increase home ownership, and the introduction of innovative mortgage loans such as teasers, stretch loans, piggyback loans, and stated income loans, subprime mortgages accelerated from 2000 to 2006. In 2006, the Mortgage Bankers Association estimated that 70 percent of all mortgage loans were conventional, with 17 percent of those being subprime. As a rule, if property values increase, subprime borrowers are in a position to sell their properties and payoff their loans. Unfortunately, the real estate market, which had been accelerating since 2001, cooled in 2006 when a number of the innovative loans were reset at higher rates than many borrowers could not make. This led to defaults, bankruptcies, the decline in property values, and ultimately the collapse of the subprime market and the beginning of the financial crisis of 2008.

After the recession ended in mid-2009, U.S. GDP grew at an annualized rate of just 2.2 percent from 2009 to 2012. The slow recovery rate from the collapse of the real estate market in the United States is consistent with recovery rates from previous financial crises. Normally, recoveries from financial crises such as Japan's asset bubble, the 1980's emerging market crisis, or the 1930's stock market crash take longer than so-called V-shaped recoveries following cyclical recessions. From 2009 to 2012, the growth in the residential real estate market was sluggish. In 2013, however, the housing market did begin to pick up, with new home sales increasing to their highest level since 2008, housing inventories approaching an eight-year low, new construction increasing, foreclosures decreasing, housing prices starting to increase, and credit relaxing. See [Exhibit 13.7](#) for housing trend indicators.

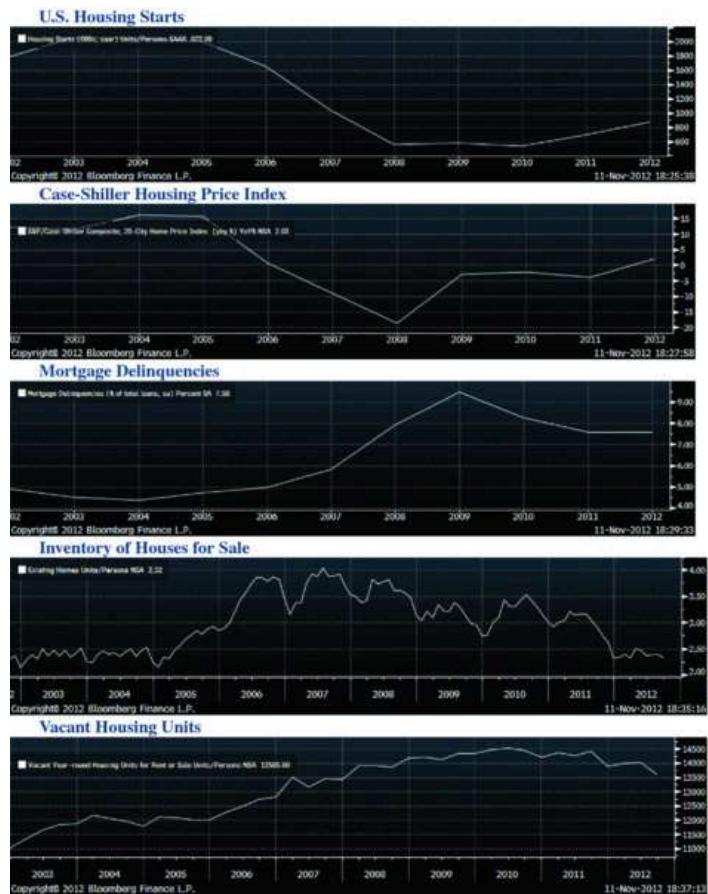


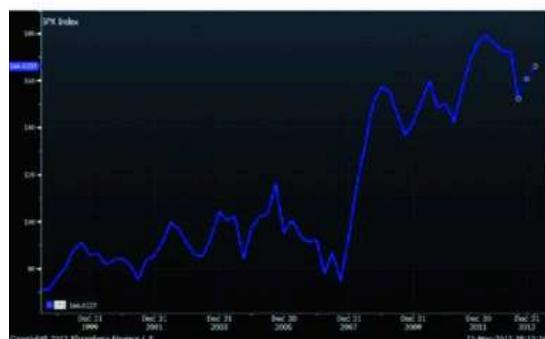
EXHIBIT 13.7 U.S. Housing Industry Indicators

Corporate Earnings and Cash Positions

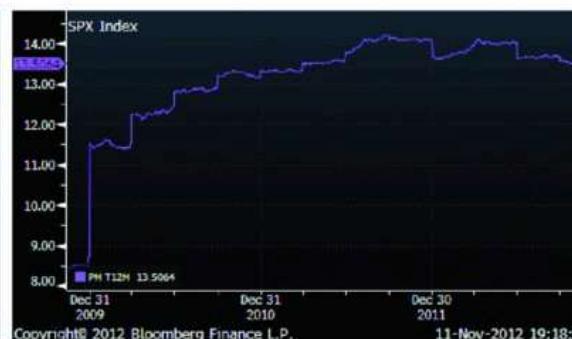
Often during periods of slow economic growth, and even recession, the earnings of many corporations are positive and their cash positions relatively large. This was the case for many companies during the slow economic recovery period from 2008 to 2012. The positive corporate earnings can be attributed to workforce reductions and to lower interest rates that had reduced corporate borrowing costs. During this period, many firms also reduced their investment expenditures. This decrease, coupled with earnings increases, resulted in significant increases in corporate cash positions. Many U.S. companies became net suppliers of funds instead of net users. As of June 2012, S&P 500 firms had approximately \$900 billion of cash, 40 percent higher than their holdings in 2008 (see [Exhibit 13.8](#)). In 2012, GE reported that they expected to have \$100 billion in cash holdings over the next few years, which they, in turn, estimated would be sufficient to finance their new investments, acquisitions, and share buybacks. Similar phenom-

ena were also occurring in 2012 in other countries, such as Japan, Britain, and Canada, where corporate liquidity holdings had increased.

Cash Per Share



Profit Margins



EPS



Return on Equity

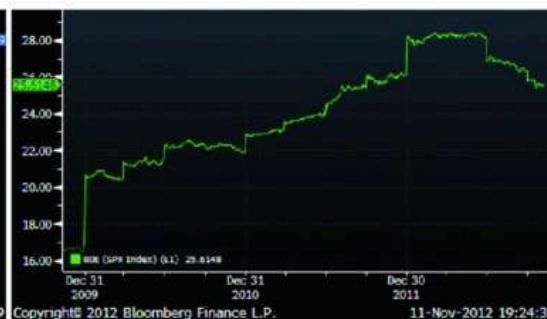


EXHIBIT 13.8 S&P 500 Financials: Cash per Share, Profit Margins, EPS, and Return on Equity

The large corporate cash positions also reflected an economic environment of uncertainty, leading, in turn, to lower levels of corporate investments. For investors, the large cash position of corporations creates uncertainty: On the one hand, large cash positions—liquid wealth—represents the potential for future corporate investments; on the other hand, large cash positions are also an indicator of a lack of corporate investments—*dead money*—that could possibly lead to lower growth rates in earnings-per-share (EPS) in the future.

BLOOMBERG ECONOMIC INFORMATION AND DATA

BLOOMBERG DATA COPIED TO CLIPBOARD

The economic data in the exhibits in this section were copied into a clipboard on the Bloomberg's GP graph and imported into Excel. On the Bloomberg QP screen, right-click to "Copy/Export Options" and click "Copy Data to Clipboard."

BLOOMBERG ECONOMIC INFORMATION SCREENS

ECOF Macroeconomic information (inflation, employment, economic indicators, housing prices) by country and region.

ECO Calendar of economic releases.

WECO World economic calendar and economic indicators.

FOMC Information on policy changes of the Federal Open Market Committee.

FED Calendar of Federal Reserve releases.

ECST Key economic statistics by country.

EIU Economist Intelligence Unit.

IECO Global comparison of economic statistics.

BRIEF Daily Economic Newsletter.

AV Bloomberg's media links.

CENB Central Bank menu: Use to access platforms of Central Banks.

ECB European Central Bank portal.

BOE Bank of England portal.

GGR Finds global summary of government bill and bond rates for countries.

YCRV Finds current and historical yield curves for government and corporate bonds.

IYC Finds yield curves for different countries using IYC.

CG Curve graph: Finds difference curves.

BLOOMBERG ECONOMIC INDICATORS

The statistic series for many economic variables can be accessed from ECOF, ECST, and other economic screens. Many of the series can be analyzed further by going to the series menu page: Ticker <Index> <Enter>; clicking Description, GP, or other screens.

BLOOMBERG: EXCEL TEMPLATES FOR ECONOMIC ANALYSIS

Bloomberg has a number of Excel templates for conducting economic analysis. Use DAPI to see a listing and to download: DAPI <Enter>; Click "Excel Template Library"; Click "Economics."

Templates of note:

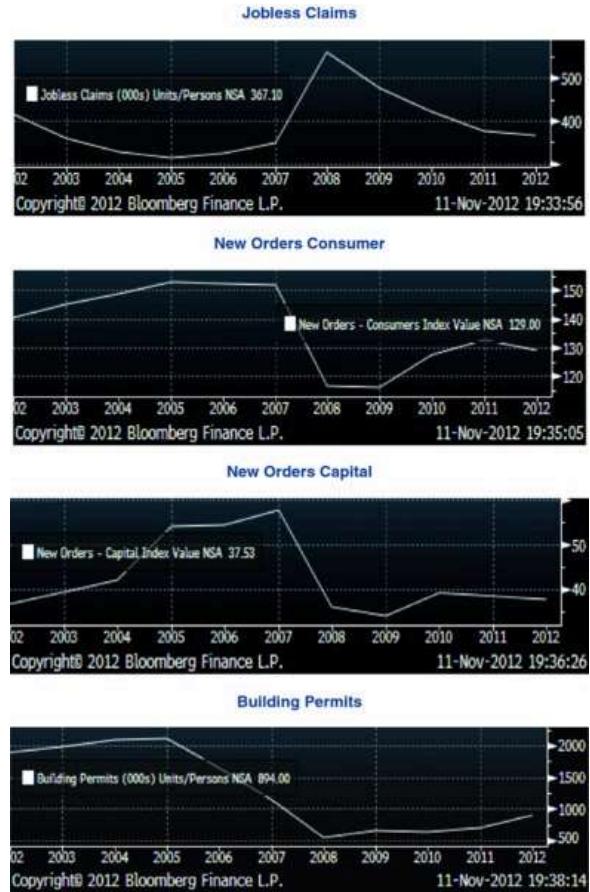
- Country Risk Assessment, XCRA.XLS.
- Economic Forecast, XECF.XLS.
- Custom Economic Forecast, XCEF.XLS.
- Emerging Market Overview, XEEM, XLS.
- Granger Causality Tests, XGCS.XLS.

Economic Indicators

Economies over time do experience peaks and troughs. Given the importance of the economy to stock prices, many security analysts follow a number of economic indicators to try to predict such trends.

There are three types of indicators: *leading*, *coincident*, and *lagging*. The leading economic indicators are economic series that reach their peaks and troughs before aggregate economic activity reaches its peak or trough. In using leading indicators, analysts often use a *composite indicator* (e.g., an average of all the leading indicators) and diffusion indexes. A *diffusion index* measures how pervasive the economic trend is. An example of such an index is the percentage of companies reporting higher orders. This index can be

combined with a leading indicator such as new orders and the composite leading indicator to determine both the direction and breadth of the movement. Coincident indicators include time series that have peaks and troughs that roughly coincide with the peaks and troughs of the business cycle. Lagging indicators, in turn, include time series that experience their peaks and troughs after the economy does. Country economic indicators can be accessed from Bloomberg's ECO, ECST, and ECOF screens. [Exhibit 13.9](#) shows the trends in the components of leading economic indicators from 2003 to 2012.



[EXHIBIT 13.9](#) Leading Economic Indicators—Components

It should be noted that no leading index can be expected to be a perfect predictor of future economic activity. Also, there are numerous political and economic events that occur that can significantly influence an economy that are not incorporated in economic time series. Given these limitations, one should always be aware that there are times when a series can give a false signal.

Leading Indicators of the Stock Market

As noted previously, the 2.2 percent growth rate in the U.S. economy from 2009 to 2012 represented one of the slowest economic recoveries on record—an economic recovery rate that had not been able to bring about job growth. In the fourth quarter of 2012, the U.S. unemployment and underemployment rates still remained high, with unemployment at 7.9 percent and underemployment at 14 percent. In contrast, however, the S&P 500 was trading at 1,426 at the end of 2012 and around 1,700 in October of 2013. The 1,700 level represented a 131 percent increase from the S&P 500's low of 735 in October 2008, with the market regaining and surpassing the value it had lost when it plunged 53 percent from its 2007 S&P high of 1,549 in late 2007 to its low of 735 in October 2008.⁵ This bullish market was, in turn, leading the overall economy.

The stock market has historically been a leading indicator of the economy. Given this, a pertinent question for equity investors is: What is a leading indicator of the stock market? For years, changes in the money supply were thought to lead the stock market. In their book *Monetary History of the United States*, Friedman and Schwartz reported that declines in the rate of growth of the money supply consistently preceded business contractions, in some cases as much as 20 months, whereas increases in the rate of growth of the money supply consistently preceded economic expansions.⁶ A study by Moore and others, however, found that monetary changes actually lag the stock market. These studies suggest that the market looks at leading indicators of monetary changes or looks at events or Fed announcements in an effort to portend changes in the money supply. If this is the case, then the market would respond to the anticipated changes in the money supply.⁷ Some analysts believe that a possible leading stock market indicator is the ratio of the composite of coincident index to the composite lagging index. This index is thought to be a leading indicator of the leading economic indicators.⁸

BLOOMBERG ECONOMIC INDICATORS

Economic indicators can be found on Bloomberg's ECOF and ECST screens. Bloomberg's ECO screen provides information on past, current, and future releases of economic information.

See Bloomberg Web [Exhibit 13.1](#).

Industry Analysis

Industry analysis is the next step in the top-down, three-step approach to fundamental stock analysis. In evaluating industries, it is important to note that if there is little difference in the performance among different industries, then there is no need to study industries. If the aggregate stock market, for example, is expected to generate a 10 percent rate of return, while the returns among all industries only range between 9 percent and 11 percent, then there would not be much purpose in conducting an industry analysis: One could get a 12 percent expected return by just randomly selecting industries. Studies of industrial performance, however, do show a wide dispersion in the rates of return among industries. This suggests industry analysis is important. Moreover, it is easier to find a stock from a good industry than to find a good stock from a bad or declining industry.

From an investment perspective, the identification of good industries comes from finding those sectors whose expected returns exceed their required returns. As a starting point, it is helpful to understand the nature of the industry in terms of its current stage of development and its interrelationship with other industries in the economy, as well as its relationship with the overall economy.

Stages of Industrial Development

Industrial organizational theory describes industries in terms of the five stages of development that define the typical industry's life cycle. These stages include pioneering, rapid accelerating growth, mature growth, stabilization, and deceleration and decline.

- **Pioneering Stage:** This is the start-up stage of the industry. It is the stage in which firms in the industry are just beginning to identify their markets. The stage is characterized by high development costs, small or modest sales, and small or negative profit margins. Examples of the pioneering stage would be the car industry at the beginning of the twentieth century or the computer industry in the 1950s.
- **Rapid Accelerating Growth Stage:** In this stage, the market for the industry starts to develop. From a low sales base, sales begin to increase at an increasing rate, often resulting in excess demand for the industry's product. During this phase, firms in the industry respond to their growing market by developing their production capacity. The rapid accelerating growth stage is characterized by high profit margins, with profit increasing significantly from a low sales base. The car industry in the 1950s, the computer industry in the 1970s, and the Internet and biotech industries of the 1990s would be examples of this second stage of industry development.
- **Mature Growth Stage:** This is a stage in which sales continue to increase, but not at an accelerating rate. From a relatively high sales base, sales growth tends to be above the growth rate of the econ-

omy, but below the rates experienced in the previous stage. For example, if the economy were growing at 5 percent, the industry might be growing between 7 percent and 10 percent during this stage. The mature growth stage is the period when the industry's profit attracts other firms into the industry. The increased competition resulting from the entry of new firms often causes prices to decrease in the industry during this time, lowering profit margins. The greater competition also may lead to increases in advertising expenditures and other costs related to differentiating a firm's product or to constraining entry of new firms into the industry.

- **Stabilization Stage:** This is a stage where the industry reaches an equilibrium in which the number of firms in the industry is set, demand is stable, and production capacity is at a level to meet demand. In this stage, the industry growth rate matches that of the economy and profit margins are tight but stable. For many industries, the stabilization stage is the longest period in their life cycle.
- **Deceleration and Declining Growth Stage:** In this stage, the industry's sales growth may increase at a decreasing rate or decline. It is a period in which there is a switch in demand brought about by better substitutes (e.g., home computers and word processing software for typewriters or cars for horses).

As we discussed in Chapter 11, finding a good company in a good industry does not necessarily mean that the stock of that company is a good investment. A good company in a growing industry may be experiencing high sales and profit margins, but it could also be selling at a price that yields a return below its required return; that is, the good company's stock could be overpriced.

Interindustry and Interfirm Relations: Supply Chain

Macroeconomic analysis is concerned with what determines broad aggregates: total output, total employment, total investment, and overall prices. In the 1930s, Wassily Leontief developed a general theory of production based on economic interdependence and later gave his theory empirical content by developing the first input-output model.⁹ Today, the interindustry and interfirm relations are captured by supply-chain models.

[Exhibit 13.10](#) shows Bloomberg's supply chain chart (SPLC) for Apple Inc. Examining Apple's supply chain, we find the company has 255 suppliers, 149 customers, and three peers (based on Bloomberg's Mobile Handset Manufacturers Index (BRMOBHP). Suppliers are sorted in decreasing order by the percentage of their revenue generated from Apple. As shown in the exhibit, Cirrus Logic generates 77 percent of its revenue from Apple. Apple's customers are sorted in descending order by the percentage of their cost paid to Apple. As shown, 24.81 percent of Verizon's costs of goods sold are paid to Apple, and 21.11 percent of AT&T's costs of goods sold are paid to Apple. The lower screen of [Exhibit 13.10](#) shows the supply chain table for Apple. The table shows Cirrus Logic with a market cap \$1.62 bil-

lion and a projected sales growth of 17.32 percent, with 77 percent of its revenue coming from Apple. Cirrus designs and manufactures precision integrated circuits. The company, in turn, has seven suppliers and 14 customers, with one of its principal suppliers being United Microelec. It is interesting to note that over the four-year period from 10/30/2009 to 9/30/2013, the total return from Apple stock was an impressive 159.96 percent (annualized return of 27.59 percent). Even more impressive, however, was the total return from the less well-known Cirrus Logic stock of 368.18 percent (annualized return of 48.25). See [Exhibit 13.11](#).



Supply Chain

Viewing: **APPLE INC**

Analyze: **Projected Sales Growth** | **PEERS** | **Display Data** | **Quantified Relationships Only**

Show All | **Chart** | **Table** | **View** | **Suppliers** | **100 Customers** | **100 Peers**

Add Column, e.g. P/E | **Print**

Name	Country	Market Cap	Proj. Sales Gr.(Abs)	%Revenue	Relationship Account Value (Q) As Type
1) APPLE INC	United	472.63B	-4.00%		
2) CIRRUS LOGIC INC	United	1.62B	17.32%	77.00%	119.45M COGS
3) DIALOG SEMICOND	German	1.38B	-46.13%	76.94%	138.46M COGS
4) HON HAI PRECISIO	Taiwan	33.50B	5.41%	-47.74%	12.96B COGS
5) CASETEK HOLDINGS	Taiwan	1.74B	19.13%	-47.17%	115.75M COGS
6) GLU MOBILE INC	United	257.41M	-15.05%	-44.10%	10.85M COGS
7) GUNGHO ONLINE EN	Japan	9.11B	25.01%	38.30%	26.15M COGS
8) AA TECHNOLOGIES	China	5.35B	9.47%	37.20%	111.77M COGS
9) INTEGRATED MEMOR	United	180.55M	16.69%	34.01%	6.25M COGS
10) ELECTRO SCI IND	United	347.33M	27.06%	31.00%	16.79M CAPEX
11) JHNDATA INC	United	59.12M	-6.56%	29.68%	6.43M COGS
12) PEGATRON CORP	Taiwan	3.12B	18.55%	27.15%	1.98B COGS

Australia 43 2 3727 8600 Brazil 2511 3040 4500 Europe 44 20 7226 2500 Germany 49 69 1004 1214 Hong Kong 457 2072 44330
Japan 81 3 5031 8900 Singapore 45 6215 1000 U.S. 1 215 318 2000 Copy Right 2013 Bloomberg Finance L.P.
09/10/2013 04:22:1019-0 21-Nov-2013 14:42:44

EXHIBIT 13.10 Bloomberg Supply Chain for Apple Inc., 10/21/2013



EXHIBIT 13.11 Total Return, Apple Inc. and Cirrus Logic, 10/30/2009–9/30/2013

BLOOMBERG SUPPLY CHAIN ANALYSIS, SPLC

Bloomberg's SPLC platform provides a comprehensive supply chain breakdown for a selected company. You can analyze revenue and cost for a loaded company, its suppliers, and its customers. You can also access functions that allow you to further analyze the performance of the selected company or peer companies.

- **Loaded Company** appears in the middle of the screen. The values in the central company box allow you to see how much of the company's spending and revenue has been quantified, as well as how much of the relationship data is based on proprietary Bloomberg analysis. This allows you to see what percentage of the company's supply chain is accounted for in the analysis, as well as how much of the data from the analysis is not available from other sources.

- **Suppliers** are listed vertically along the left side of the screen and represent the companies that receive revenue from the loaded company under analysis. The Rev percentages in each company box indicate the percentage of total revenue that the supplier company receives from the central company. The COGS, CAPEX, and SG&A percentages indicate the percentage of total spending that the loaded company paid to the supplier in cost of goods sold, capital expenditures, and selling, general, and administrative, respectively. You can click the up or down arrows to display more suppliers.
- **Customers** are listed vertically along the right side of the screen and represent the companies from which the loaded company under analysis receives revenue. The Rev percentages of revenue in each company box indicate the percentage of total revenue that the central company receives from the customer. The COGS, CAPEX, and SG&A percentages indicate the percentage of spending that the customer company paid to the central company in cost of goods sold, capital expenditures, and selling, general, and administrative, respectively. You can click the up or down arrows to display more customers.
- **Peers** appear across the bottom of the screen and represent the companies in the same competitive peer group as the loaded company under analysis. You can click the left or right arrow to display more competitors.
- **Control Area:** The tabs at the top of the screen allow you to adjust the data parameters, as well as display your data using different formats and sorting options. The toolbar at the top of the screen allows you to create supply chain alerts, set up supply chain monitors, and display company case studies. The menus and buttons below the toolbar allow you to select display options, the relationship between the companies that appear, and company filters.

See [Exhibit 13.10](#).

Aggregate Stock Market Analysis and Valuation

The objective of aggregate stock market analysis is to estimate the intrinsic value and expected rate of return of a major market series such as the S&P 500 using the discounted cash flow (DCF) or multiplier approaches that we examined in Chapter 12. Using the multiplier approach, this would require estimating the expected price of the index based on forecasting its EPS and estimating its price-to-earnings ratio (*P/e*) ratio.

Example: Intrinsic Value and EPS Forecast of the S&P 500

[Exhibit 13.12](#) shows annual data from 2000 to 2012 for the S&P 500 for sales per share (*SPS* or *S*), *EPS*, dividends per share (*DPS*), dividend-payout ratio (*D/E*), profit margin (*EPS/S*), *P/e* ratios, and the S&P 500 index values. [Exhibit 13.13](#), in turn, shows macroeconomic data on *GDP*, capital capacity, industrial production in manufacturing, and personal consumptions expenditures. The sales, *DPS*, *EPS*, and *P/e* data were accessed from Bloomberg's FA and GF screens, and the economic information was pulled from Bloomberg's ECST screens.

					Profit		Dividend			
		Sales per	Proportional		Proportional	Margin	Payout			
Date	Share	Change	EPS		Change	EPS/Sales	DPS	DPS/EPS	P/e	S&P 500
12/29/00	\$622.21		\$58.85			0.09458	\$15.816	0.26875	22.44	1320.
12/31/01	\$624.48	0.0036	\$52.98		-0.0997	0.08484	\$15.532	0.29316	21.67	1148.
12/31/02	\$622.90	-0.0025	\$55.22		0.0423	0.08865	\$15.713	0.28455	15.93	879.8
12/31/03	\$668.22	0.0728	\$61.78		0.1188	0.09245	\$17.273	0.27959	18.00	1111.9
12/31/04	\$763.60	0.1427	\$69.41		0.1235	0.09090	\$19.959	0.28756	17.46	1211.9
12/30/05	\$886.48	0.1609	\$76.07		0.0960	0.08581	\$22.468	0.29536	16.41	1248.
12/29/06	\$921.64	0.0397	\$90.41		0.1885	0.09810	\$25.131	0.27796	15.69	1418.
12/31/07	\$978.72	0.0619	\$89.09		-0.0146	0.09103	\$28.388	0.31865	16.48	1468
12/31/08	\$1,032.22	0.0547	\$71.79		-0.1942	0.06955	\$28.462	0.39646	12.58	903.1
12/31/09	\$888.65	-0.1391	\$61.94		-0.1372	0.06970	\$23.593	0.38089	18.00	1115.1
12/31/10	\$961.91	0.0824	\$85.39		0.3786	0.08877	\$23.595	0.27632	14.73	1257.
12/30/11	\$1,059.70	0.1017	\$99.14		0.1610	0.09355	\$26.616	0.26847	12.69	1257.
12/31/12	\$1,098.99	0.0371	\$103.81		0.0471	0.09446	\$31.970	0.30797	13.74	1426.
Average	\$856.13	0.05132	\$75.07		0.0592	0.08788	\$22.655	0.30275	16.60	1212.1

					Profit		Dividend		
		Sales per		Proportional	Proportional	Margin	Payout		
Date	Share	Change	EPS	Change	EPS/Sales	DPS	DPS/EPS	P/e	S&P 500
Standard Deviation	\$175.73	0.07759	\$17.03	0.1573	0.00888	\$5.469	0.04088	3.01	182.6

Bloomberg: EPS = Best EPS; Sales = Best Sales; P/e = Best P/e

Bloomberg P/e Ratio Calculations

Date	PE_RATIO	BEST_PE_RATIO	EST_PE_NEXT_YR_AGGTE
12/29/2006	16.606	15.688	14.4147
12/31/2007	17.3435	16.4823	14.2991
12/31/2008	15.3955	12.5819	11.6914
12/31/2009	18.2208	18.0017	14.1652
12/31/2010	15.0866	14.7281	12.9394
12/30/2011	12.7557	12.6854	11.6019
12/31/2012	14.1222	13.7382	12.4442

- **PE_RATIO:** Price of a stock as last price by trailing 12-month EPS.
- **BEST_PE_RATIO:** Ratio calculated by dividing the price of the security (Bloomberg Estimates) earnings per share.
- **EST_PE_NEXT_YR_AGGTE:** Index estimated P/e (price/earnings) next Last Price divided by estimated index earnings next year.

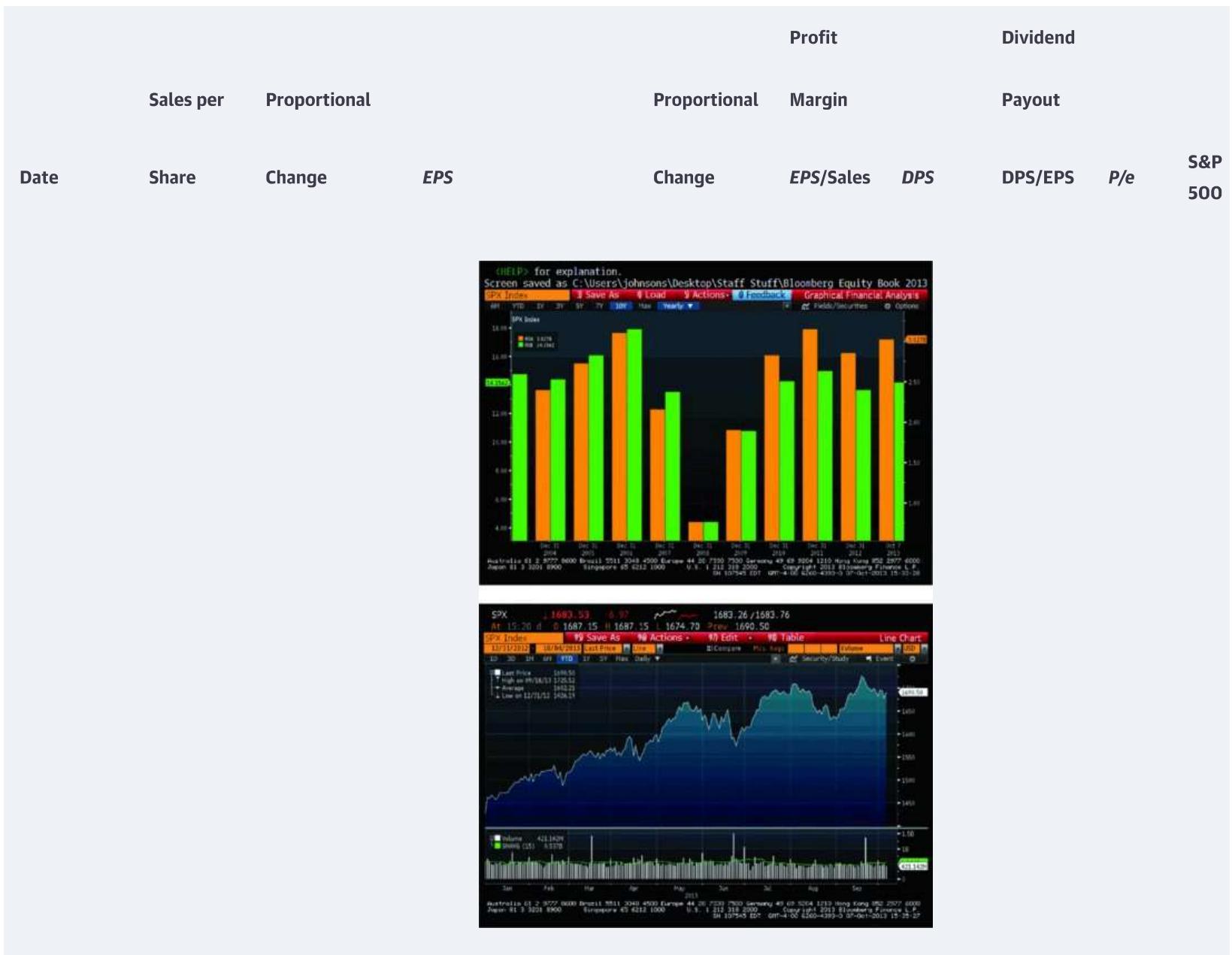


EXHIBIT 13.12 S&P 500: Sales, EPS, DPS, Profit Margin, Payout, and P/e Ratio

Date	GDP (billion)	Proportional Change	Capacity Utilization Index	Industrial Production Manufacturing Index	Personal Consumption Expend., PCE (billions)	PCE Per Capita	Proportional Change
12/29/00	\$10,289.70				\$6,989	\$26,608	
12/31/01	\$10,625.30	0.03262	73.80	-5.00	\$7,190	\$27,188	0.02180
12/31/02	\$10,980.20	0.03340	75.30	2.60	\$7,549	\$28,363	0.04322
12/31/03	\$11,512.20	0.04845	76.60	1.70	\$7,970	\$29,711	0.04753
12/31/04	\$12,277.00	0.06643	79.00	3.90	\$8,514	\$31,356	0.05537
12/30/05	\$13,095.40	0.06666	79.90	3.30	\$9,021	\$32,399	0.03326
12/29/06	\$13,857.90	0.05823	80.00	2.50	\$9,508	\$33,994	0.04923
12/31/07	\$14,480.30	0.04491	80.40	2.10	\$9,941	\$35,211	0.03580
12/31/08	\$14,720.30	0.01657	73.20	-14.60	\$9,737	\$35,803	0.01681
12/31/09	\$14,417.90	-0.02054	69.50	-3.30	\$10,001	\$35,687	-0.00324
12/31/10	\$14,958.30	0.03748	75.40	6.80	\$10,438	\$36,781	0.03066
12/30/11	\$15,533.80	0.03847	77.10	3.90	\$10,887	\$37,981	0.03263
12/31/12	\$16,244.60	0.04576	77.50	3.20	\$11,301	\$39,727	0.04597
Average	\$13,307.15	0.03904	76.48	0.59	\$9,157	\$33,139	0.03409
Standard	\$1,984.59	0.02370	3.25	5.74	\$1,414	\$4,234	0.01637

Date	GDP (billion)	Proportional Change	Capacity Utilization Index	Industrial Production Manufacturing Index	Personal Consumption Expend., PCE (billions)	PCE Per Capita	Proportional Change
------	------------------	------------------------	----------------------------------	--	---	-------------------	------------------------

Deviation

Source: Bloomberg; Tickers: GDP CUR\$; Capacity = CPTI CHNG; Ind. Prod. = IPM GYOY; PCE = PCE CUR\$;
PCE per Capita = PIDSDPC

EXHIBIT 13.13 Macroeconomic Data: GDP, Capacity Utilization, Industrial Production, and Personal Consumption Expenditures

As shown in [Exhibit 13.12](#), *EPS* for the S&P 500 increased each year from 2001 to 2006, followed by three years of decreases in the aftermath of the 2008 financial crisis, reaching \$61.94 per share in 2009. The index then increased again each year from 2009 to 2012, reaching \$103.81 in 2012. From 2000 to 2012, the average annual percentage change in *EPS* was 5.92 percent, with a relatively large standard deviation of 15.73. During this period, *GDP* increased from \$10.29 trillion in 2000 to \$16.244 trillion in 2012 (see [Exhibit 13.13](#)). The average percentage change in *GDP* (3.9%) was smaller than the changes in *EPS* (5.92%), and the fluctuations in *GDP* (standard deviation of 2.37%) over this period were smaller than the fluctuation in *EPS* (15.73%).

The disparity in fluctuations in *EPS* and *GDP*, suggests that *EPS* cannot be explained solely in terms of the aggregate economy. As we examined in Chapter 12, many analysts forecast the individual components of *EPS* instead of forecasting *EPS* directly in terms of *GDP* or some other economic aggregate. One approach, discussed in Chapter 12, is to estimate *EPS* by forecasting sales based on an economic forecast and profit margins-based on economic productivity.

	2012 12/31/12	2013 12/31/13	Reason
(1) Sales (S)	\$1,098.99	\$1,173.06	<p>2013 Forecast: $\Delta GDP/GDP = 0.045$</p> $\Delta S/S = -0.0581 + 2.7896(\Delta GDP/GDP) = 0.0674$ $S_{13} = (1 + \Delta S/S)S_{12}$ $S_{13} = (1 + 0.0674)(\$1,098.99) = \$1,173.06$
(2) Profit Margin $m = EPS/S$	9.49%	9.08%	<ul style="list-style-type: none"> Operating profit margins will decrease marginally Economy from 2012 to 2013 will continue to increase its capacity utilization rate (77.5% to 77.8%) but industrial manufacturing will stay at its 2012 level of 3.2%. $m = -0.01979 + 0.001393 (\text{Capacity Utilization}) + 0.00077 (\text{Industrial Production Manufacturing Index})$ $m = -0.01979 + 0.001395(77.5) + 0.00077(3.2) = 0.0908$
(3) EPS	\$103.81	\$106.52	$EPS_{13} = m_{13} S_{13}$ $EPS_{13} = (0.090802) (\$1,173.06) = \106.52
(4) Payout Ratio (d/e)	0.30797	0.3027	Dividend payout will equal its 12-year average of 0.3027.
(5) DPS	\$31.97	\$32.24	$DPS_{13} = (d/e)_{13} EPS_{13}$ $DPS_{13} = (0.3027) (\$106.52) = \32.24
(6) g	8.5%		<ul style="list-style-type: none"> Increase in retention ratio from 69.20% to 69.73% Increase in ROE from 11.4% to 12.19% Projected sustainable growth: $g = (0.6973)(0.1219) = 0.085$

	2012 12/31/12	2013 12/31/13	Reason
(7) k_e	10.486%	10.5%	Estimated market rate in 2013 will increase slightly from 10.486% to 10.5%.
(8) P/e	15.135	15.135	Estimate based on Gordon-Williams model and the estimates of d/e , g , and k_e :
			$\frac{P}{e} = \frac{d/e}{k_e - g} = \frac{0.3027}{0.105 - 0.085} = 15.135$
(9) Value, V	1,612	1,749	$V_t = (P/e)E(EPS_t)$ $V_{12} = (15.135)(\$106.52) = 1,612$ $E(EPS_{14}) = E(EPS_{13})(1 + g) = (106.52)(1.085) = 115.57$ $V_{13} = (15.135)(115.57) = 1,749$
(10) Market Price	1,426		Market underpriced by 11.54% ($= (1,426/1,612) - 1$)
(11) Expected Rate, $E(R)$	24.91%		Expected price equal to estimated intrinsic value of 1,749 $E(R) = [(1, 749 + 32.24)/1, 426] - 1 = 0.2491$
(12) Expected Rate, $E(R)$	15.30%		Expected price equal to current intrinsic value of 1,612 $E(R) = [(1, 612 + 32.24)/1, 426] - 1 = 0.1530$

Buy Recommendation: Market underpriced, so increase the investment fund's equity allocation.

EXHIBIT 13.14 Valuation and Forecast of S&P 500

A first-pass forecast made by the author on 12/31/2012 of EPS for the S&P 500 series for the next year (12/31/2013), along with an estimate of the P/e ratio and intrinsic value of the index as of 12/31/2012, is

shown in [Exhibit 13.14](#). The forecast for *EPS* is based on projecting sales and the profit margin, and the estimate of the *P/e* ratio is based on the Gordon-Williams model.

1. Sales: The first row in [Exhibit 13.14](#) shows projected *SPS* increasing by 6.74 percent from \$1,098.99 per share on 12/31/2012 to \$1,173.06 per share on 12/31/2013. The *SPS* projection is based on a forecasted 4.5 percent increase in *GDP* and on the following estimated relationship between the proportional change in *SPS* and the proportional change in *GDP*:

$$\Delta S/S = -0.0581 + 2.7896(\Delta GDP/GDP)$$

Proportional Δ Sales per Share	Coefficients	t Stat
Intercept	-0.05805	-2.3611773
Δ GDP/GDP	2.789567	5.12313908
R Square	0.724112	
Observations	12	

The sales and *GDP* relation was estimated by regressing data on the proportional change in *SPS* of the S&P 500 series against proportional changes in *GDP* from 2000 to 2012 (see [Exhibit 13.13](#)). The forecast of a 4.5 percent increase in *GDP*, in turn, was based on a composite of forecasts:

$$\Delta S/S = -0.0581 + 2.7896(\Delta GDP/GDP)$$

$$\Delta S/S = -0.0581 + 2.7896(0.045) = 0.0674$$

$$S_{13} = S_{12}(1 + \Delta S_t/S)$$

$$S_{13} = \$1,098.99(1.0674) = \$1,173.06$$

2. Profit Margin: As shown in the second row of [Exhibit 13.14](#), the forecast projects a small decrease in the profit margin from 9.49 percent to 9.08 percent. For this forecast, profit margins for the market were assumed to be determined by the overall economy's capacity utilization rate (i.e., the percentage of total plant and equipment capacity that is in use (Bloomberg ticker = CPTI CHNG) and by industrial manufacturing productivity, as measured by the U.S. Industrial Production Groups Manufacturing index (Bloomberg ticker = IPMGYOY). Historically, as the economy's capacity utilization rate increases, profit margins have tended to increase at a decreasing rate, with the margins leveling off around the

80 percent capacity utilization rate. The regression coefficient for profit margin was estimated by regressing the profit margin against capacity utilization and the industrial manufacturing index from 2000 to 2012:

$$m = -0.01979 + 0.001395 \text{ (Capacity Utilization)} \\ + 0.00077 \text{ (Industrial Production Manufacturing Index)}$$

Profit Margin	Coefficients	t Stat
Intercept	-0.01979	
Capacity Utilization	0.001395	2.55735
Industrial Production Manufacturing Index	0.00077	2.49379
R Square	0.76885	
Observations	12	

The projected profit margin of 9.08 percent is based on an assessment that the economy from 2012 to 2013 would continue to increase its capacity utilization rate (77.5 percent to 77.8 percent) but industrial manufacturing would stay at its 2012 level of 3.2 percent:

$$m = -0.01979 + 0.001395 \text{ (Capacity Utilization)} \\ + 0.00077 \text{ (Industrial Production Manufacturing Index)} \\ m = -0.01979 + 0.001395(77.5) + 0.00077(3.2) = 0.0908$$

3. **EPS:** The third row in [Exhibit 13.14](#) shows projected EPS increasing by 2.61 percent from \$103.81 on 12/31/2012 to \$106.52 on 12/31/2013. The projected EPS of \$106.52 is based on the projected profit margin of 9.080 percent and the SPS of \$1,173.06:

$$EPS_{13} = m_{13} S_{13} \\ EPS_{13} = (0.090802)(\$1,173.06) \\ EPS_{13} = \$106.52$$

4. **DPS:** Given the forecasted EPS, DPS were estimated by first estimating the dividend-payout ratio for the S&P 500 for 2013 and then multiplying that estimate by the forecasted EPS. [Exhibit 13.12](#) shows the annual dividend payout ratios for the period 2000-2012 for the S&P 500. The payout ratios range

from 26.847 percent to 39.646 percent, with an average of 30.27 percent and standard deviation of 4.088 percent. For this forecast, the DPS were projected to equal their average of 30.27 percent. With an estimated payout of 30.27 percent, the DPS for 2013 were projected to be \$32.24:

5. **Multiplier Estimate:** For the period from 2000 to 2012, the average multiplier value was 16.6, with a standard deviation of 3.013 percent. The fluctuations in the multiplier reflect, in part, investors' changing expectations about the long-run performance of the market, future earnings prospects, and future interest rates. The author estimated the multiplier in terms of the Gordon-Williams model. The author assumed that the payout ratio for the S&P 500 would equal its 12-year average of 0.3027; that the expected market rate, k_e , would be equal to Bloomberg's estimated expected market rate of 10.5 percent; and that the sustainable growth rate in EPS would be 8.5 percent. The 8.5 percent was approximately equal to the product of the S&P 500's ROE in 2012 of 11.4 percent, and the retention ratio was 69.20 percent. Based on these estimates, the author's estimated the equilibrium P/e value for the S&P 500 was 15.135:

$$\frac{P}{e} = \frac{d/e}{k_e - g} = \frac{0.3027}{0.105 - 0.085} = 15.135$$

The P/e of 15.135 was greater than the three Bloomberg P/e ratios on 12/31/2012 of 13.74, 14.12, and 12.44 that are shown in [Exhibit 13.12](#).

6. **Intrinsic Value:** With a P/e of 15.135 and a projected EPS for 2013 of \$106.52, the author's estimated intrinsic value of the S&P 500 on 12/31/2012 was 1,612.

$$V_{12} = \frac{P}{e} E(EPS_{13}) \\ V_{12} = (15.135)(\$106.52) = 1,612$$

On 12/31/2012, the S&P 500 was at 1,426. Based on this estimated intrinsic value of 1,612, an analyst confident in this analysis would consider the market underpriced on that date by 11.54% [= $(1,426/1,612) - 1$] and would recommend a bullish position on the market.

Using the estimated growth rate of 8.5 percent, the projection for EPS in 2014 would be 115.57 [= $106.52(1.085)$]. Assuming no change in the equilibrium P/e ratio of 15.135, the projected intrinsic value for 2013 would be 1,749:

$$V_{13} = \frac{P}{e} E(EPS_{14}) = \frac{P}{e} E(EPS_{13})(1 + g) \\ V_{13} = (15.135)(\$106.52)(1.085) = 1,749$$

Expected Market Value and Rate of Return Forecast

If the S&P 500 were priced on 12/31/2012 at its equilibrium value of 1,612, and not at its market price of 1,426, then with a projected DPS of \$32.24 and an estimated 2013 intrinsic value of 1,749, the expected one-year rate of return from investing in the market would be equal to the required rate of 10.5 percent.

$$E(R) = \frac{1,749 + 32.24}{1,612} - 1 = 0.105$$

The 10.5 percent expected return would consist of an expected price yield of 8.5 percent and an expected dividend yield of 2 percent:

Given the lower market price of 1,426 on 12/31/2012, the expected market rate would be 24.91 percent, given the projected DPS of \$32.24 and an expected price equal to the estimated 2013 intrinsic value of 1,749:

The projected 24.91 percent consists of an expected price yield of 22.65% [$= (1,749/1,426) - 1$] and an expected dividend yield of 2.26% [$= (32.24/1,426)$].

With an expected rate of 24.91 percent exceeding the required rate of 10.5 percent, a portfolio manager confident in this forecast would recommend increasing the investment fund's allocation to equity. The 24.91 percent rate, however, is based on an assessment that the market is underpriced now but would be equal to its intrinsic value one year later. It is possible that the market could continue to be underpriced one year later. If we assume, however, that the market would increase by 8.5 percent from its current level of 1,426 and that the expected dividend yield would be 2 percent, then on 12/31/2013 the projected value of the S&P 500 would be 1,547, dividends would be 28.52, and the expected return would still be equal to the required rate of 10.5 percent:

Thus, to obtain an expected rate greater than the required rate, a combination of expected price yield and dividend yield would have to exceed 10.5 percent. For example, if the estimated intrinsic value of 1,612 for 12/31/2012 is the projected value for 12/31/2013 and dividends were expected to be 28.52, then the expected price yield would be 13.04 percent [$= (1,612/1,426) - 1$], the expected dividend yield would equal 2 percent, and the expected rate of return would be 15.04 percent, exceeding the 10.5 percent required return:

Ex-Post Analysis

In our example, the market was underpriced on 12/31/2013 by 11.54 percent [$= (1,426/1,612) - 1$]. This was based on a forecast of *EPS* for 2013 reaching 106.52 and an estimate of the market's equilibrium *P/e* ratio of 15.135. As shown in [Exhibit 13.12](#), the S&P 500 on 10/4/2013 reached 1,690—an 18.5 percent increase from its 1,426 level on 12/30/2012. This price increase plus three quarters of dividends totaling \$27.35 equates to a periodic rate of return of 20.43% [$= [(1,690 + \$27.35)/1,426] - 1$] and an annualized rate of 27.24% [$= (4/3)(20.43\%)$]. Thus, the realized rate exceeded the expected market rate of 10.5 percent, justifying the bullish position taken on 12/31/2012. In retrospect, this ex-post analysis suggests that the bullish forecast of the market was correct. Recall that the driver for the optimistic forecast was an expectation of an improved economic climate, with *GDP* expected to grow by 4.5 percent, leading to a 6.74 percent expected increase in sales for S&P 500 stocks. As of 10/4/2013, *GDP* was at \$16.661 trillion (a 2.53 percent YTD periodic rate and 3.42 percent YTD annualized rate), and after the first three quarters of 2013, *SPS* were at \$1,124/share (a 2.84 percent increase). The estimate *P/e* of 15.135 was also greater than the *P/e* of 13.74, suggesting the market was underpriced relative to its earnings—at least based on the author's assessment.

Valuation Using the *P/S* Multiplier

On 12/31/2012, the price-to-sales ratio, *P/S*, for the S&P 500 was 1.305. Multiplying this ratio by the projected sales for 2013 of \$1,173.06, we obtain an intrinsic value of the index of 1,531. The sales forecast, in turn, calls for sales to grow at 6.74 percent based on a projected 4.5 percent growth in *GDP*. If we project the same sales growth in 2014, then expected sales for 2014 would be \$1,252.12. Assuming the same *P/S*

multiplier for 2013, the estimated 2013 value for the market would be 1,634. Based on a market price of 1,426, a projected end-of-the-year 2013 value of 1,634, and the forecasted *DPS* of 32.24, the expected rate of return would be 16.85 percent:

With an intrinsic value of 1,531 exceeding the market price of 1,426, and with an expected rate of 16.85 percent that exceeds the required rate of 10.5 percent, we would again consider the market underpriced and recommend a bullish position based on the *P/S* multiplier analysis. Note, however, that the *P/S* multiplier approach values the market less than the *P/e* approach (1,531 compared to 1,612). The difference in the two multiplier approaches is that the *P/e* model takes into account profitability and *P/S* does not. The forecasted profit margin of 9.08 percent used in forecasting *EPS* for 2013, in turn, is relatively high when compared to the 6.97 percent margin in 2009 (see [Exhibit 13.12](#)). The higher 1,612 value using the *P/e* multiplier captures the assumption that earnings will increase as a result of *GDP* growth and also because of a relatively high profit margin, while the 1,530 value using the *P/S* multiplier is based on just the growth in sales and not profitability. Recall that following the 2008 financial crisis economic growth was in fact slow, whereas corporate earnings were relatively strong. Many financial analysts attributed the positive earnings to companies improving their operations.

Industry Analysis and Valuation

Like the market series, the value and expected rate of return for an industry or an economic sector can be estimated by using the multiplier approach. For the multiplier approach, we need to estimate next year's

EPS and estimate the equilibrium *P/e* ratio for the industry. An industry's expected *EPS* can be projected using the same approach used to estimate the market series' *EPS*: estimating the industry *SPS* (*S*) and profit margin ($m = EPS/S$).

In applying this model to a particular industry, industry *SPS* can be related to a more disaggregated economic series than *GDP*. For a consumption-related industry like department stores that was examined in Chapter 12, its *SPS* may be better explained in terms of personal consumption expenditures. For a heavy-metal industry like steel, a high correlation might be found between its sales and aggregate capital expenditures, and for some industries, such as those in stage 4 of industrial development, *GDP* may still be the best explanatory variable. Like the market series, profit margins for an industry can be related to capacity utilization and unit labor cost for that industry. For an industry such as department stores, commodity cost related to textiles and apparel, hourly labor cost, and costs related to health care insurance can also influence profit, as well as can international factors, such as exchange rates, since many of the goods sold by large department stores are imported.

There are two common ways of estimating the industry multiplier. First, it can be forecasted based on its relationship to the market multiplier. In this case, an analyst would regress the percentage changes in the industry's multiplier against the percentage changes in the multiplier for the market series:

Using this relation, one would first forecast the multiplier for the industry and then use the regression relation to forecast the industry's multiplier. A second approach is to estimate the industry's *P/e* by forecasting the d/e , k_e , and g values for the industry. As we did with the market series, k_e can be estimated using the CAPM, estimating R_f , the market risk premium, and the industry's beta.

Example: Department Store Industry

In Chapter 12, we valued Macy's, using both the multiplier and DCF approaches, and we did a relative analysis of Macy's with some of its peers in the industry. In addition to conducting a relative analysis of the companies in the industry, industry analysis can also include estimating the value of the industry as a whole. [Exhibit 13.15](#) shows a forecast made by the author on 12/31/2012 of the Bloomberg Department Store North American Index (BRUSDEPC). This index consists of 11 companies, including Macy's, Belk, Kohl's, and Sears. The forecast projects *EPS* of \$5.18 for 2013 and estimates the intrinsic value of the index to be 167.78 on 12/31/2012. Data on *SPS*, *EPS*, *DPS*, profit margins, and *P/e* ratios that were used to make the forecast and estimate *P/e* was pulled from Bloomberg's FA and GP screens for the index (see [Exhibit 13.16](#)).

	2012 12/31/12	2013 12/31/13	Reason
(1) Sales (S)	\$613.78	\$631.15	<p>2013 Forecast: $\Delta PCE/PCE = 0.05$</p> $\Delta S/S = 0.566(\Delta PCE/PCE) = 0.0283$ $S_{13} = (1 + \Delta S/S)S_{12}$ $S_{13} = (1 + 0.0283)(\$613.78) = \631.15
(2) Profit Margin $m = EPS/S$	0.821%	0.821%	<ul style="list-style-type: none"> Profit margin for 2013 will equal the low profit margin for 2012. The low margin reflects the expected increases in cost of apparel and textile cost, the increases in labor cost, and exchange rates.
(3) EPS	\$5.04	\$5.18	$EPS_{13} = m_{13} S_{13}$ $EPS_{13} = (0.00821) (\$631.15) = \5.18
(4) Payout Ratio (d/e)	0.27579	0.2267	Dividend payout will equal its 8-year average of 0.22676
(5) DPS	\$1.39	\$1.17	$DPS_{13} = (d/e)_{13} EPS_{13}$ $DPS_{13} = (0.22676) (\$5.18) = \1.17
(6) g	11.6%	11.6%	The growth rate in the industry is projected to be 11.6%, close to projected growth rates of Macy's and Kohl's.
(7) k_e	12.3%	12.3%	

	2012 12/31/12	2013 12/31/13	Reason
(8) P/e	32.39	32.39	Estimated based on Gordon-Williams model and the estimates of d/e , g , and k_e :
(9) Value, V	167.78 or 172.44	187.24	$V_{12} = (P/e)E(EPS_{13}) = (32.39)(\$5.18) = 167.78$ $V_{13} = (P/e)E(EPS_{13})(1 + g) = (32.39)(\$5.18)(1.116) = 187.24$
(10) Market Price, P	149.30		Industry underpriced by 11% ($= (149.30/167.78) - 1$)
(11) Expected Rate, $E(R)$	16.28% or 26.20%		

Buy Recommendation for industry with the investment focused on industry leaders.

EXHIBIT 13.15 2013 Forecast of Department Store Index North America

Date	Share	Change	EPS	Change	EPS/Sales	DPS	DPS/EPS	P/e	Index	Dividend Payout	
										Sales per	Proportional
											Proportional
Date	Share	Change	EPS	Change	EPS/Sales	DPS	DPS/EPS	P/e	Index		Change
12/30/05	\$297.91		\$8.92		0.02994	\$0.75	0.08408	19.22	171.50		
12/29/06	\$380.94	0.2787	\$9.81	0.0998	0.02575	\$9.39	0.95719	25.71	252.28	0.4710	

Dividend Payout										
	Sales per	Proportional		Proportional		Profit Margin			Dept. Store	Proportional
Date	Share	Change	EPS	Change	EPS/Sales	DPS	DPS/EPS	P/e	Index	Change
12/31/07	\$433.53	0.1381	\$8.95	-0.0877	0.02064	\$0.95	0.10615	17.39	155.57	-0.3833
12/31/08	\$777.70	0.7939	-\$2.26	-1.2525	-0.00291	\$1.22	-0.53982	34.05	49.56	-0.6814
12/31/09	\$669.24	-0.1395	\$2.18	-1.9646	0.00326	\$1.26	0.57798	50.71	110.49	1.2294
12/31/10	\$491.36	-0.2658	\$6.91	2.1697	0.01406	\$1.01	0.14616	20.78	143.54	0.2991
12/30/11	\$510.92	0.0398	\$6.68	-0.0333	0.01307	\$1.38	0.20659	18.19	121.39	-0.1543
12/31/12	\$613.78	0.2013	\$5.04	-0.2455	0.00821	\$1.39	0.27579	29.61	149.30	0.2299
Average	\$521.92	0.14950	\$5.78	-0.1877	0.01400	\$2.17	0.22676	26.96	144.20	0.1443
Standard Deviation	\$157.88	0.34223	\$4.08	1.2890	0.01116	\$2.93	0.42908	11.27	57.56	0.6278

Bloomberg: EPS = Best EPS; Sales = Best Sales; P/e = Best P/e

EXHIBIT 13.16 Bloomberg Department Store Index North American, BRUSDEPC Sales, EPS, DPS, Profit Margin, Payout, and P/e

On 12/31/2012, the department store index was at \$149.30. An analyst confident in the author's analysis would consider the industry underpriced by 11 percent [$=(149.30/167.78) - 1$] and would recommend a bullish position on the industry. The forecast also estimates an expected rate for 2013 of 16.28 percent

and a required return of 12.3 percent. This assessment is based on an industry expected to have only a moderate sales increase for the coming year and a low growth rate in EPS for two years, but a relatively high long-term growth rate (reflected in the P/e) that is projected to approach the growth rates of the leaders in the industry. A portfolio manager confident in this forecast would recommend increasing the investment fund's allocation to department stores, but with a caveat that the investment focus on the leaders of the industry, such as Macy's, Kohl's, Dillards, or Nordstrom. The details of the forecast are described in Appendix 13A (text Web site).

An ex-post analysis of this 12/31/2012 buy recommendation shows that on 4/1/2013, the index hit 153.24 and paid a dividend of \$1.62 for a quarterly return of 3.72 percent [$=(153.24 + \$1.62)/\$149.30 - 1$] and annualized return of 14.90 percent (see [Exhibit 13.17](#)). The return exceeded the required return of 12.3 percent. The index did hit a high on 5/23/2013 of 184.90, for a 23.84 percent gain. At that point, the analyst with a buy recommendation would have been very happy. On 10/4/2013, however, the index was at 159.75. This 7.00 percent price increase combined with \$4.80 in dividends equated to a rate of return for the period of 10.21 percent and an annualized rate of 13.62 percent, modestly exceeding the required rate of 12.3 percent.

EXHIBIT 13.17 Bloomberg Department Store Index North American, BRUSDEPC: Bloomberg GP and COMP Screens

It should be noted that the annualized total return for the period from 1/04/2013 to 10/18/2013 (based on weekly returns) was 10.97 percent (see lower screen in [Exhibit 13.17](#)), which was significantly less than the 27.38 percent total return for the S&P 500. The drivers for the forecast, however, were for an industry moving toward consolidation, where its growth rates would reflect those of its leaders. The bullish position taken on the industry required selecting the correct stocks that make up the index, such as Macy's, which was analyzed in Chapter 12. Macy's total return for the period was, in turn, 24.53 percent, closer to the return of the S&P 500.

The last step in the top-down, three-step approach is to analyze and forecast the performances of each company in the industry. This entails conducting a relative analysis of the companies in the industry and then applying the same type of analysis and forecast for each company. In Chapter 12 we applied this type of analysis to Macy's. Recall from that analysis that Macy's was a strong buy; the stock, in turn, generated a total return of 23.3 percent for the period.

BLOOMBERG SECTOR AND INDUSTRY SCREENS AND TEMPLATES

Bloomberg Excel Add-In:

The data in Exhibits 13.12, 13.13, and 13.16 were imported into Excel using Bloomberg's Excel Add-In and the "Import Data" tab.

- On the Bloomberg Add-In in Excel, click "Historical End of the Day" from the "Import Data" and follow the Wizard's steps.

Bloomberg FA Screen for Indexes

- The income statements, balance sheets, valuation, and other information for indexes can be accessed from Bloomberg's FA screen. You can also create customized screens: Index Ticker <Index> <Enter>; FA.
- Note: To compare a company to the index, enter the company's ticker in the Compare box.

Bloomberg RV Screen for Indexes

- Relative analysis screens, RV, for companies in an index can be found by using the RV screen for one of companies and then importing the index from the Comp source dropdown. The RV screen can also be customized (Custom Tab, "Create Templates," and click "Save as" tab to save the screen). The Bloomberg RV screen can be used to do a relative analysis of companies in the industry in terms of valuation, ratios, and earnings.
- BI comparative analysis screens of the stock in an index can be accessed from the BI screen: BI <Enter>, select sector (e.g., "Consumer Discretionary"), select industry (e.g., Department Stores, North America), and select "Comp Sheets." The industry of a company can also be found by entering the company's name (or ticker) in the "Search BI" box.

BLOOMBERG: EXCEL TEMPLATES FOR INDUSTRY ANALYSIS

Bloomberg has a number of Excel templates for conducting industry analysis and relative analysis of a company with its peers. Use DAPI to see a listing and to download: DAPI <Enter>; Click "Excel Template Library"; Click "Fundamentals." Templates of note are as follows:

- Bloomberg Comparable Volatility Analysis, XCVA.XLS.
- Financial Statements of Equity Indexes, XFAI.XLS.
- Multiple Securities Total Return Applications, XTOT.XLS.

- Company Snapshots with Financial Analysis, XCSF.XLS.
- Energy Company Snapshot, XNRG.XLS.
- Company Snapshot 5, XCS5.XLS.
- Portfolio Classification by S&P 500 Sectors, XPC.XLS.
- Historical Financial Template for an Industrial Company, XHFN.XLS.
- Insurance Company Snapshot, XICS.XLS.
- Fundamentals and Estimates Report, XFAE.XLS.
- Product/Geographical Segmentation, XPGE.XLS.
- Top 5 Bloomberg Peers Estimates Comparisons, XPGP.XLS.
- Index Performance and Peer Ranking, XTIR.XLS.
- Bloomberg Industries Global Aluminum Supply Model, XGSA.XLS.
- Natural Gas Basis, XNGB.XLS.
- Bloomberg Drug Prescription Data, XDRG.XLS.
- MSCI Country Weights Matrix Grouped by Sectors/Industry Groups, XMSX.XLS.
- Historical Template for an Energy Company, XHFG.XLS.
- Historical Financials for a Mining Company, XHFN.XLS.
- Historical Financial Template for a Utility Company, XHFU.XLS.
- Equity Fundamentals and Peer Group Comparison, XFCT.XLS.

See Bloomberg Web [Exhibit 13.2](#).

Top-Down Portfolio Management

Many fundamental stock analysts incorporate a *top-down, three-step approach* in which economic, industry, and company analyses are used as inputs in evaluating stocks. Top-down does not necessarily have to be sequential. Many portfolio managers require economic, industry, and company analysis. They then use the collective information to make their investment decisions. We conclude this chapter by summarizing the management of a student equity fund that uses economic, industry, and firm analysis to manage a \$1 million equity fund.

Student Investment Equity Fund: Philosophy, Construction, and Guidelines

Philosophy

- The Student Equity Investment Fund manages a portion of the university's endowment as a tactical index fund using economic, sector, and company fundamental analysis. The fund uses the S&P 500 index as its benchmark.
- The stocks selected are based on sector analysis. Stocks in a sector that are expected to be strong have a greater allocation than that sector's allocation to the index. The overweighting or underweighting of sectors relative to the index takes into consideration current and expected economic and sector conditions. Stocks selected in different sectors are those that are considered to have good fundamentals.

Construction

- **Sector allocation** decisions are based on the following types of analysis:
 - Macroanalysis of the sectors to determine how the sectors relate to the business cycle and what factors drive the industry.
 - Strategic rotation analysis to determine how different sectors perform in different stages of a business cycle.
 - Economic analysis of structural changes to determine when the economy is experiencing major changes (e.g., globalization, downsizing, and political changes) and the implications they hold for the sector.
 - Macroeconomic analysis to determine the current and forecasted economic conditions.
- **Stock Selection:** Stocks selected in different sectors are those that are considered to have sound fundamentals. Among the quantitative and qualitative factors that are considered in determining a stock's fundamental value are the following:
 - Relative valuations.
 - Expected earnings and sales growth.
 - Sustainable growth.
 - Fundamental risk factors: liquidity risk, business risk, financial risk, exchange-rate risk, and external liquidity risk.
 - SWOT.
 - Stocks are selected based on technical or efficient market considerations when such opportunities are believed to exist.

Guidelines Approved by the University

- Stocks in the portfolio can be selected outside the index's (S&P 500) universe provided they meet the index's features of market capitalization and marketability.

- Sectors are identified by the S&P 500 Global Industry Classification Standard (GICS).
- The proportion of a sector's allocation is limited to a range equal to plus or minus 50 percent of the sector's allocation to the index.
- Sector ETFs are included in the fund.
- The cash position of the fund can be no more than 10 percent.
- No more than 8 percent of the market value of the portfolio may be invested in any single security.
- The portfolio must have a minimum of 25 holdings.
- The fund can invest in preferred stock.

Student Fund Managers' Report: Portfolio Management of the Fund, 2010, First Quarter—Economic Considerations

In January, the portfolio consisted of 55 stocks with a market value of \$1,145,963, beta of 0.937, and a P/e of 18.96. The portfolio's top holdings were Microsoft (5.44 percent), Apple (5.15 percent), Cognizant (4.74 percent), Federal Express (3.41 percent), and Total (3.33 percent).

In early January, the release of the fourth-quarter *GDP* figure showed that the U.S. economy had grown at an annualized rate of 5.5 percent. In spite of the good economic numbers, there were still major concerns. A number of economists pointed out that the U.S. *GDP* figures were driven by government spending and the rebuilding of depleted inventories. There was also no positive indicator on job growth, household debt was still high, and U.S. bankruptcy rates were high and increasing. In China, there was growing concern over the increasing excess production capacity and excessive real estate property development, raising apprehension about a possible "China Bubble." In Europe, there was sluggish economic recovery in Spain, Ireland, Portugal, and Greece. Greece faced a fiscal crisis, potential sovereign debt default, and a credit squeeze.

The overriding concern underlying the economic climate in January and February of 2010 was that the U.S. and global economies, as well as equity values, were being maintained by an unsustainable fiscal and monetary stimulus. The relevant question was: Could the recovery be sustained? Given the uncertain economic climate in the months of January and February, the fund managers became concerned with a possible correction in the stock market. Accordingly, the managers decided to adjust the portfolio by implementing the following strategy:

1. Sell some holdings of stocks meeting their sell criteria; this would include some stock holdings that were purchased at low prices and were trading either near their 52-week high, their target value, or their 2007 peak.

2. Increase the fund's cash position.
3. Increase the fund's allocation to preferred trust stocks (these preferred stocks traded close to the subordinated debt underlying the issue and provided a more stable asset class for the fund).
4. Increase the fund's allocation to the financial sector (given the stronger balance sheets of banks).

As the result of these trades, the adjusted portfolio on February 26 consisted of an 83 percent allocation to common stocks and ETFs, 7 percent to preferred stocks, and 10 percent to cash. The adjusted portfolio was positioned to underperform the market if the market were to increase or stay flat and outperform if there was a market correction. At that time, the managers took the position that the current economic conditions would, at best, lead the market sideways around its February level, but with greater price volatility. With this investment climate, the managers' strategy moving forward was to increase the stock allocation of the portfolio based on strong fundamentals as opposed to market factors.

From February 26 to April 21, the market increased 9.3 percent, going from 1,106 to 1,209. During this period, the fund managers increased their stock holdings by 5 percent (from the cash position) with the following stock purchases: Kohl's, Archer Daniels Midland, Abbott, Tiffany, Progress, Devon, and SalesForce. As the result of these trades, the portfolio on April 21 consisted of a 91 percent allocation to common stocks and ETFs, 6.5 percent to preferred stocks, and 2.5 percent to cash. The portfolio was overweight in the consumer staples, information technology, utilities, and telecommunication sectors, underweight in the consumer discretionary, financials, energy, industrials, and materials sectors, and approximately equal weight in the health care sector. The portfolio consisted of 57 securities with a market value of \$1,259,907, beta of 0.891, and a P/e ratio of 17.53, compared to the P/e of 18.40 for the S&P 500. The portfolio's top holdings were Apple (6.20 percent), Microsoft (5.25 percent), Cognizant (5.05 percent), Federal Express (3.28 percent), and PepsiCo (3.16 percent).

For the period from November 30, 2009, to April 4, 2010, the total return of the fund was 8.67 percent compared to the index return of 9.57 percent. The fund's lower return reflects the portfolio beta of 0.829 during this period when the market was increasing. The current portfolio was positioned to slightly underperform the market if the market were to increase or stay flat, and outperform if there was a market correction.

BLOOMBERG PORT SCREEN

Bloomberg's PORT screen can be used to breakdown a portfolio in terms of sector allocations: PORT, Performance tab, and Main View Tab.

Bloomberg's PORT screen can be used to analyze a portfolio in terms of its features relative to the market: PORT, Add index, Characteristics tab, and Characteristics Summary tab.

See Bloomberg Web [Exhibit 13.3](#).

Conclusion

This completes our investigation into fundamental analysis. Over the last three chapters, we have examined the financial anatomy of a company and the fundamental factors that determine its equity, looked at different quantitative and qualitative approaches that can be used to estimate the intrinsic value of stock, and in this chapter, examined the aggregate economic and industry factors influencing equity values and the valuation of the overall market and industries. Recall that the objective of fundamental analysis is to earn abnormal returns by purchasing stocks considered to be underpriced and selling or shorting stocks considered to be overpriced. In the next chapter, we examine technical analysis. Different from the fundamental approach, technical analysis is not directly concerned with determining a stock's value, but rather in identifying trends in stock prices that could lead to profitable trading strategies.

Web Site Information

Economic Information

1. Federal Reserve sites:
 1. www.federalreserve.gov/releases/h15/data.htm
 2. FRED: www.research.stlouisfed.org/fred2
2. For information on Federal Reserve policies, go to www.federalreserve.gov/policy.htm.
3. For information on European Central Banks, go to www.ecb.int.
4. For information on the U.S. Treasury's debt, go to www.publicdebt.treas.gov.
5. For information on the distribution of U.S. debt, go to the Treasury Bulletin:
<http://www.fms.treas.gov/bulletin/>.

6. For information on U.S. government's expenditures, revenues, deficits and debt, go to:
www.federalreserve.gov/releases/z1/current/data.htm.
7. For tables on U.S. government's expenditures, revenues, deficits and debt to download, go to:
www.federalreserve.gov/releases/z1/current/data.htm.
8. For information on government information submitted by Congress, go to:
www.gpo.gov/fdsys/search/home.action.
9. Information on the Federal Reserve System can be found by going to the Federal Reserve site:
www.federalreserve.gov/pubs/Frseries/frseri.htm. The site has useful information on important monetary actions such as open market operations, changes in the discount rate, and reserve requirement changes.
10. For the Federal Reserve report on the state of the economy, go to the Federal Reserve "Beige Book":
www.federalreserve.gov/monetarypolicy/beigebook. The book provides analysis of current and future economic condition for the nation and regions.
11. For information on exchange rates and euro and yen bond yields, go to FXStreet.com:
www.fxstreet.com.
12. For information on U.S. security holdings by foreigners, go to Treasury tic information:
www.treas.gov/tic.
13. For information and report from the U.S. Treasury, go to www.treas.gov/.
14. For information on economic indicators and economic performance from the Council of Economic Advisors at the Federal Reserve Archival System for Economic Research (FRASER), go to
<http://fraser.stlouisfed.org/publications/ei/>.

Notes

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1. In June 2008, the subprime mortgage meltdown that began in August 2007 had developed into a global credit crisis. This crisis gained steam throughout the first half of 2008 with the fire sale of Bear Stearns to JP Morgan Chase, substantial asset value write downs by many global financial institutions, and a subsequent panic by these firms to raise billions of dollars in new capital from a variety of sources to repair their balance sheets. By September 29, 2008, asset write downs exceeded \$590 billion and capital raised by financial firms totaled over \$430 billion.
 2. China grew at a rate of 8.9 percent in 2011 and a slightly slower rate of 8.4 percent in 2012. This contrasts with a growth rate of 11.5 percent in 2007. There were also growing concerns about China's investment expenditures and export growth occurring at the expense of consumption, its growing wealth gap, and its excessive misinvestments. In addition to China, the International Monetary Fund (IMF) reported in 2012 that the growth rates of emerging market countries had slowed and those world economic indicators showed a slowing global economy.

3. In general, when a country operates with a persistent balance of payments surplus, then there is often an accumulation of foreign currency by the country's central banks. In an effort to keep their currency values low (to maintain their export sales), such countries often invest their currency reserves in the country whose currency they are holding. Such actions describe the policies of China over the last 10 years, as well as a number of energy-producing countries in the Middle East.

4. According to the *Economist*, fracking in the 600-mile Marcellus Shale formation reserve—an area that encompasses Ohio, Pennsylvania, New York, and West Virginia—created over 100,000 jobs in energy and related industries, such as steel. The shale-gas boom also took hold in Texas, Louisiana, Arkansas, Oklahoma, and North Dakota. The increase in fracking and drilling led to significant decreases in domestic gas prices (from \$13 per million BTUs in 2008 to \$2 in 2012). Cheap energy prices, combined with the U.S. extensive pipeline network, also contributed to lower electric prices, increased exports, greater foreign direct investment, and increased investments in energy-intensive industries, such as liquid fuels, plastics, fertilizers, steel, and chemicals. The growth in unconventional oil and gas exploration and development in the United States accounted for \$238 billion in economic activity and 1.7 million jobs. Moreover, over the next decade this growth was expected to lead to a "manufacturing renaissance" that could contribute an additional 0.5 percent to GDP growth.

5. Global equity markets had also rebounded strongly, and in the credit market, rates were relatively low, and credit spreads had narrowed.

6. Studies by Sprinkle (1971) and others conducted in the 1960s and 1970s also provide empirical evidence of the money supply as a strong leading indicator of the stock market. In general, these empirical findings support the liquidity transmission mechanism hypothesis as an explanation of how monetary changes affect the economy. The liquidity transmission mechanism posits that changes in the money supply precede changes in interest rates and security prices that, in turn, precede changes in aggregate output.

7. In the 1980s and early 1990s, many analysts believe that Federal Reserve Chair Alan Greenspan's primary goal was to offset any inflationary pressure. This led to many looking at capacity utilization and other factors that would portend inflation.

8. Some scholars argue that the ratio of the composite of coincident index to the composite lagging index consistently leads the leading indicators, including the stock market.

9. See Wassily W. Leontief (1936 and 1951) and William Miernyk (1965).

Selected References

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Bloomberg Exercises

1. General economic conditions, inflation, the size of the government debt, monetary and fiscal policies, and international capital flows all have impacts on the macro-economy. Examine some of the economic trends using the ECOF screen or by pulling up the economic indicator's screen: Ticker <Index> <Enter>. Examples:
 1. U.S. Nominal GDP: GDP CUR\$ <Index>.
 2. U.S. Real GDP: GDP CQOQ <Index>.
 3. U.S. Inflation: CPI YOY <Index>.
 4. S&P/Case-Schiller: SPCS20 <Index>.
 5. U.S. Unemployment Rate: USURTOT <Index>.
 6. U.S. Deficit: FDEBTY <Index>.
 7. Government Debt: PUBLDEBT <Index>.
 8. Money Supply (M1): M1NS <Index>.
2. Provide some economic and policy analysis using information from the Federal Reserve sites (FED <Enter>; FOMC <Enter>) and some of the economic indicators from ECOF or ECST. Possible indicators are as follows:
 1. U.S. Nominal GDP: GDP CUR\$ <Index>.
 2. U.S. Real GDP: GDP CQOQ <Index>.
 3. U.S. Inflation: CPI YOY <Index>.
 4. S&P/Case-Schiller: SPCS20 <Index>.
 5. U.S. Unemployment Rate: USURTOT <Index>.
 6. U.S. Deficit: FDEBTY <Index>.
 7. Government Debt: PUBLDEBT <Index>.
 8. Money Supply (M1): M1NS <Index>.
 9. Balance of Payments: USCABAL <Ticker>.
 10. Energy Services Price Index: CPRPENER <Ticker>.
3. Using the ECST screen, provide some analysis of recent trends in the following markets and sectors:
 1. Labor market
 2. Housing market
 3. Industrial sector
 4. Service sector
 5. Demographics
4. Using the ECST screen, provide some analysis of current and future economic conditions using the following indicators:

1. Business conditions
2. Consumer confidence
3. NBER business cycle indicators
4. Leading indicators
5. Leading indicators components
5. Using the ECO screen, identify some of the current economic releases. Study some of releases by reading the analysis of some of them provided at the bottom of the ECO screen.
6. Using the BI screen, select an industry sector and evaluate the sector using the following BI screens:
 1. Comp Sheets
 2. Key Indicators
 3. News/Research
 4. Events
 5. Data Library
 6. Analysis
7. Analyze the industry sector you selected in Exercise 6 by examining the sector's index on the index's menu screen. The following are some possible screens to examine:
 1. DESDescription
 2. MovEquity movers
 3. GPPrice graph (activate events and volume)
 4. FAFinancials
 5. GFFundamental graphs
 6. TRATotal return analysis
 7. COMP Comparative returns
8. Do a relative analysis of the companies in an industrial or peer index. The RV screen for companies in an industrial can be created by using the RV screen for one of companies and then importing the index from the Comp source dropdown on the company's RV screen.
9. Do a relative analysis of the companies in the sector or industry index you selected in Exercise 8 by customizing the RV screen. Some custom screens you may want to consider are the following:
 1. Earnings in terms of sales per share and profit margins
 2. Multipliers: P/e and P/S
 3. Business Risk: margins
 4. Financial Risk: leverage ratios
 5. Liquidity Risk
 6. Growth: Sustainable growth, payout ratios, and ROE
 7. DuPont Ratios

10. Supply chain analysis:

1. Analyze the supply chain of a large market cap company (SPLC) in terms of its suppliers, customers, and peers.
2. Analyze the supply chain of the supplier with the greatest percentage of its revenue generated from your selected company.
3. Analyze the supply chain of the customer with the greatest percentage of its cost paid to your selected company.
4. Analyze one of the peers of your selected company to see if it has similar customers and suppliers.
5. Use your selected company's COMP screen to compare its total returns with the total returns to one of its suppliers and one of its customers.

11. In the slow economic recovery following the 2008 financial crisis and recession, many companies had positive earnings and cash positions for the period from 2008 to 2012. Study this trend by examining the following ratios for the S&P 500 on Bloomberg's FA screen (SPX <Index>; FA):

1. Cash-per-share
2. EPS
3. Profit margins
4. ROE
5. ROA

You may want to customize your FA screen: Cash-per-Share, Profit Margin, EPS, ROE, and ROA.

12. Conduct an FA analysis that is similar to the one you did Exercise 11 for a large cap company like GE.

13. Analyze an equity portfolio that you have constructed (possibly one from an exercise in a previous chapter) in terms of its sector allocations relative to the allocations of broad-based index (DJIA, Russell 3000, or S&P 500). Use Bloomberg's PORT screen and the following tabs:

1. PORT, Performance tab, and Main View Tab
2. PORT, Characteristics tab, and Main View Tab
3. PORT, Characteristics tab, and Characteristics Summary tab

14. Select a major currency (e.g., British pound, euro, yen, or Swiss franc) and study the dollar price of the currency over the last 10 years (currency ticker <CRNCY> <Enter>; GP).

Questions:

1. Identify periods in which a U.S. investor (dollar investor) could have made significant returns from investing in securities denominated in that currency.
2. Identify periods in which a foreign investor (e.g., a British pound investor) could have made significant returns investing in dollar denominated securities.
3. Identify periods in which a U.S. company with foreign sales would have had its products or services priced lower in the currency you selected. Identify periods in which its products or services would

have been priced higher in that currency.

4. Identify periods in which a U.S. company with inputs, resources, or goods purchased in the currency you selected would have had greater cost. Identify periods in which it would have had smaller cost.