CME Group Fundamental Analysis Market Education

U.S. Economic Indicators

Goal Of Section

- Develop an awareness of major market-moving data from the government and related macroeconomic data from private sources
  - When are they reported
  - What markets are affected
- Develop a framework for placing the report data in a trading context

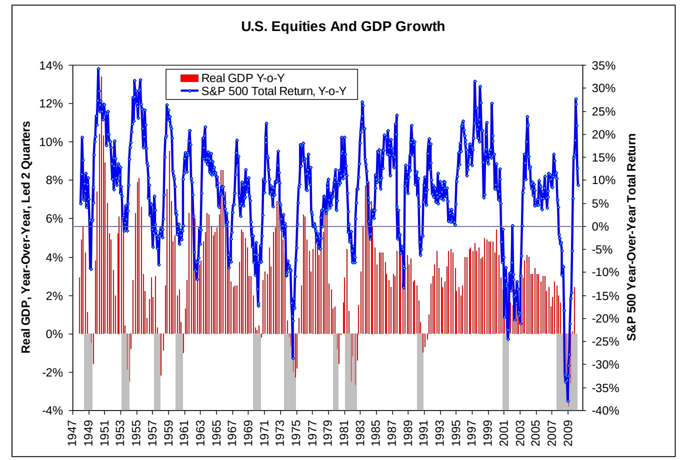
Official Sources

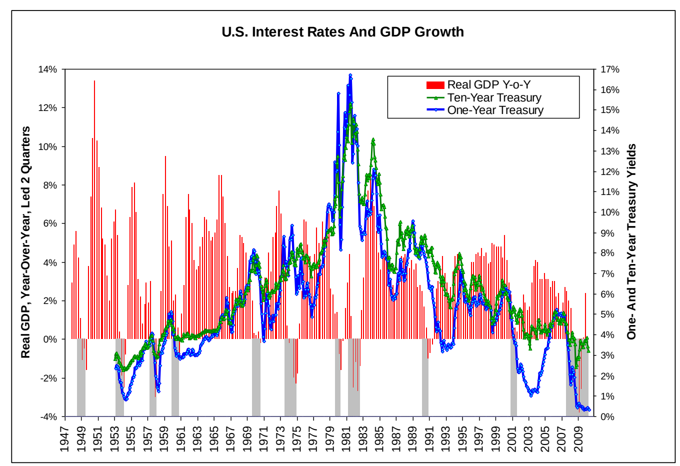
Gross Domestic Product

- This quarterly report on the total value of goods & services produced is the objective of every macroeconomic forecast and the indisputable answer to the question of how the economy "is doing"
- Produced by the Commerce Department's Bureau of Economic Analysis
- While no one is long or short GDP in a market sense, key markets often react as if they were in fact GDP futures

GDP Growth & Financial Markets

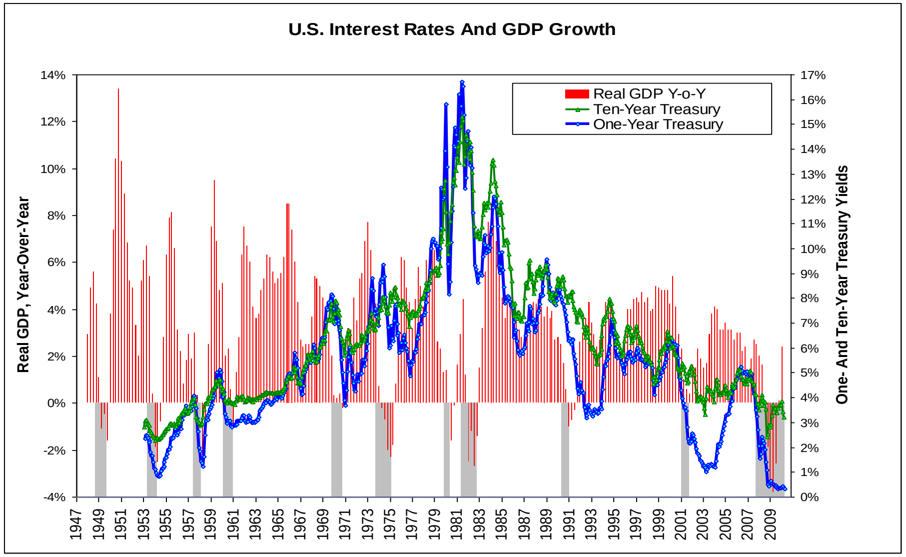
- While all recessions (shaded; GDP changes led by two quarters) have a stock market downturn associated with them (top chart), the opposite is not true: Stocks can have negative returns without a recession
- Similarly, all recessions see a decline in short-term interest rates, but both long- and short-term interest rates (bottom chart) can decline without a recession occurring





The Yield Curve & GDP Growth

- Yield curve inversions, or a movement of short-term interest rates over long-term interest rates, lead recessions
- The opposite is not true: An extremely steep yield curve, such as that of 2008-2009, does not always lead strong GDP growth



GDP (Cont.)

- GDP is not a single report; it includes:
  - "Real" or chain-weighted inflation-adjusted GDP
  - Nominal GDP
  - The GDP deflator, which unlike the Consumer Price index tracks changes in consumption baskets as well as prices
  - Government expenditures
  - Investment across categories
  - Inventories and final sales
  - Expenditures across durable goods, nondurable goods and services, along with subcategories such as food, housing, vehicles, energy, etc
  - Imports and exports of goods and services

Personal Consumption

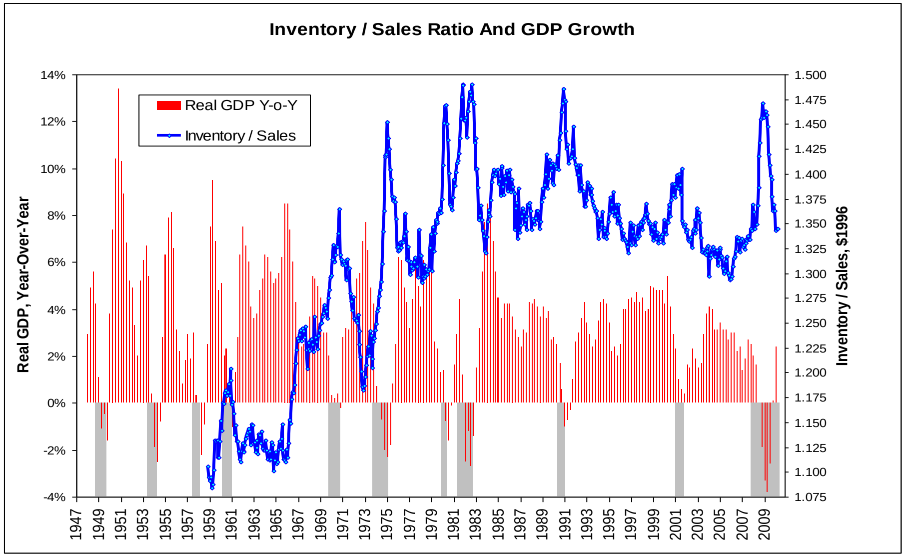
- As consumer spending accounts for approximately 65% of GDP activity, personal consumption & income data are watched closely as a barometer of economic health
- While part of the GDP statistics, personal consumption and income reports are released monthly at 0830 EST at the end of the following month, i.e., May for April

Investment & Inventories

- Investment is divided into fixed, both residential and non-residential, equipment, and changes in inventories
- The presumption remains low inventories represent demand for future production and/or imports and large inventory builds set the stage for slower future production and imports

Inventory / Sales Ratio

- The inventory-to-sales ratio is a commonly followed measure of the inventory cycle
- It is classified as a lagging indicator, one that follows rather than leads GDP growth
  - A rising ISR is generally bearish for stocks and bullish for bonds

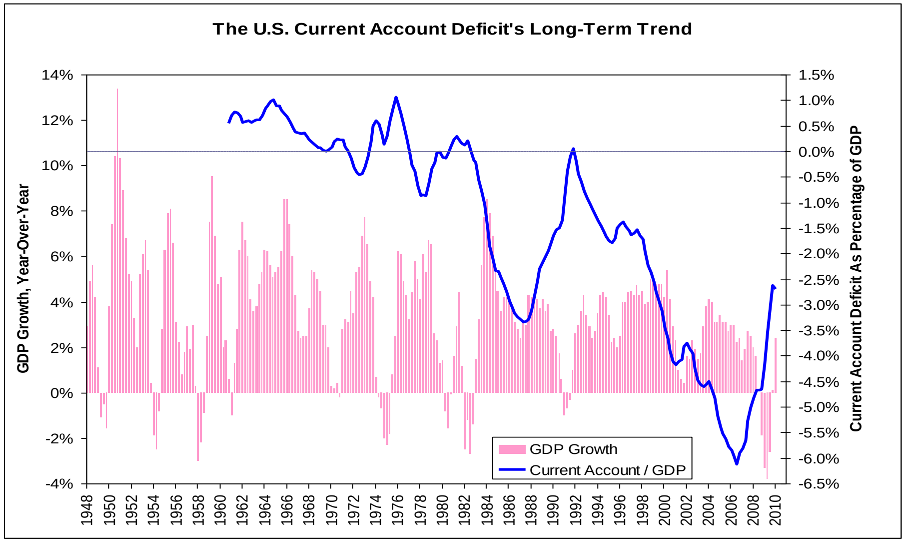


Net Exports

- Both imports and exports are divided into goods and services
- Petroleum products are broken out as a separate category
- Along with government-to-government transfers, the net exports number is the current account balance
- The current account balance once was a source of major concern, but this has diminished as the U.S. has been able to finance it

Current Account Deficit Over Time

- The trend in the U.S. current account deficit as a percentage of GDP has been lower since the mid-1970s
  - Each recession or period of slow growth lowers reduces this percentage as import demand slows
- The current account deficit has been associated with lower inflation and interest rates for most of this period

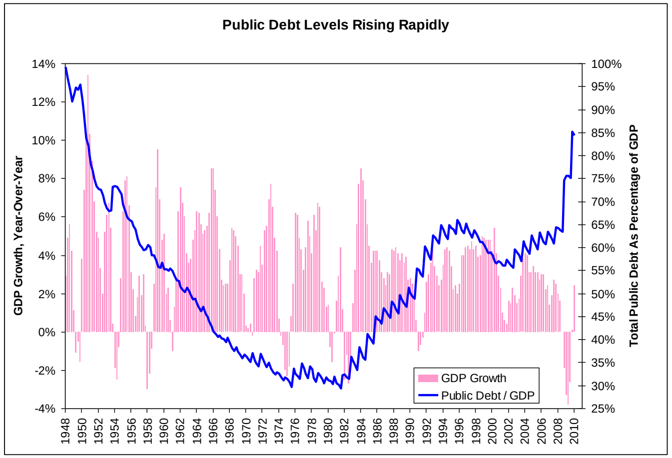


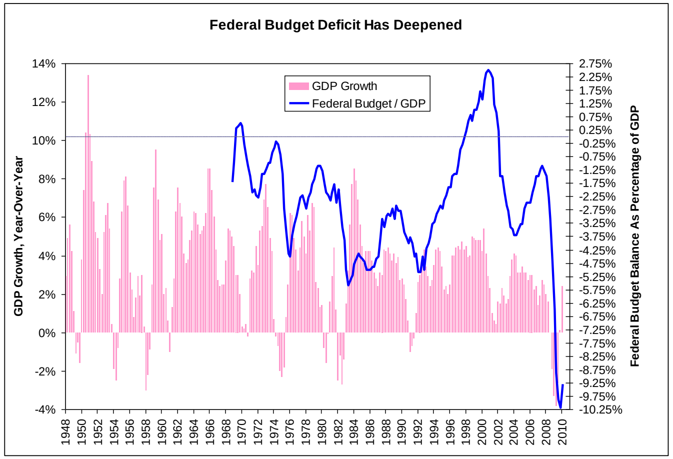
Government Spending

- Government expenditures at the GDP level are not reported in great detail
- At the GDP level, the primary breakdowns are for defense vs. non-defense and for state & local versus federal

Debt And Deficits

- The response to the 2007-2008 financial crisis produced massive changes in government budgets
  - Total public debt / GDP (top) has increased to levels not seen since the end of World War II
  - The federal budget balance as a percentage of GDP went into massive deficit
- The public's sectors debt service requirements will be a critical fundamental for years to come





Corporate Profits

- This is seldom a market-moving number in any sense as all of the data are known at the tradable firm level and have been priced into corporate securities
- An item of recent interest has been the reported division between financial and non-financial industries

Labor & Employment

- The Labor Department's Bureau of Labor Statistics' monthly employment situation report released at 0830 EST on the first Friday of the month has been the most important release since the late 1980s
- Two surveys are used, business establishments and households. The latter, which includes self-employed, may be more reflective of employment conditions than the establishment survey

Employment (Cont.)

- The household data produces the unemployment rate and the pool of available labor
- The business establishment survey produces the most important “headline” number, the monthly change in non-farm payrolls (NFP)

Market Reactions To Employment Data

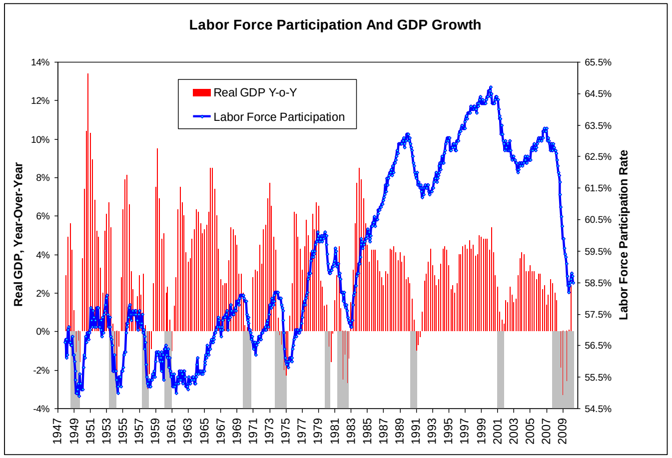
- In general, a stronger than expected number leads to higher interest rates, lower prices on interest rate futures, a stronger dollar and stronger stocks
- After an initial reaction to the headline NFP number, markets often start focusing on the report's internals, such as average workweek and hourly earnings

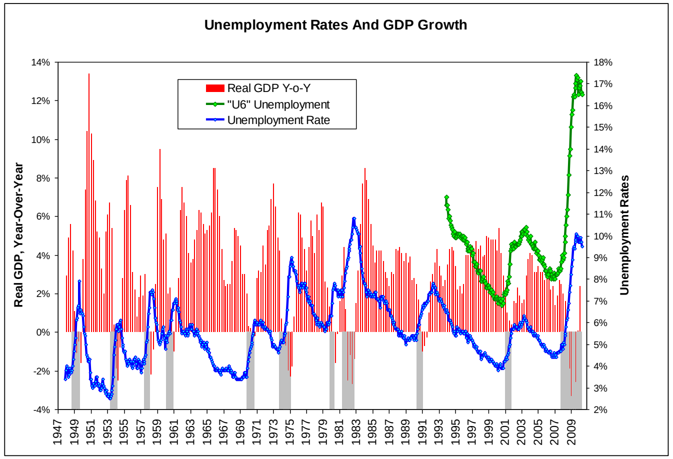
Guessing The Number

- The importance of the NFP number has attracted private surveys and economists' estimates
- Employment is a lagging indicator; it follows turns in the economy as employers are slow to shed workers and slow to rehire once conditions turn

Employment & GDP

- The civilian labor force participation rate trended higher as the Baby Boom generation and women entered the labor force in the 1970s (top).
  - This started to reverse in 2000
- Unemployment rates trended lower as participation grew (bottom)
- The post-2007 recession ended both trends. The implications for stock price trends are easy to see

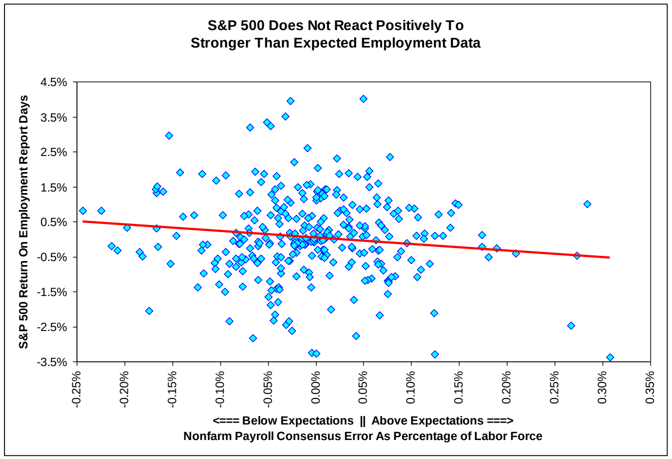


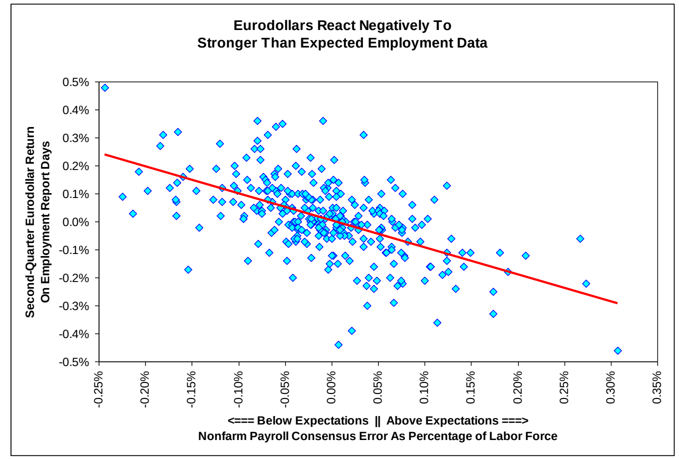


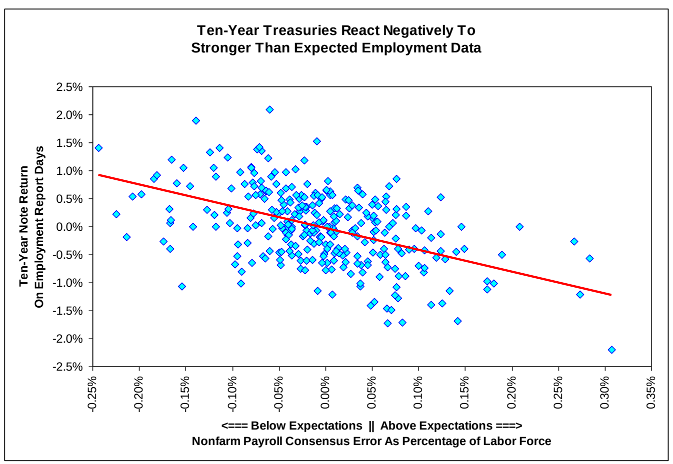
Financial Market Reactions To Employment Situation Report

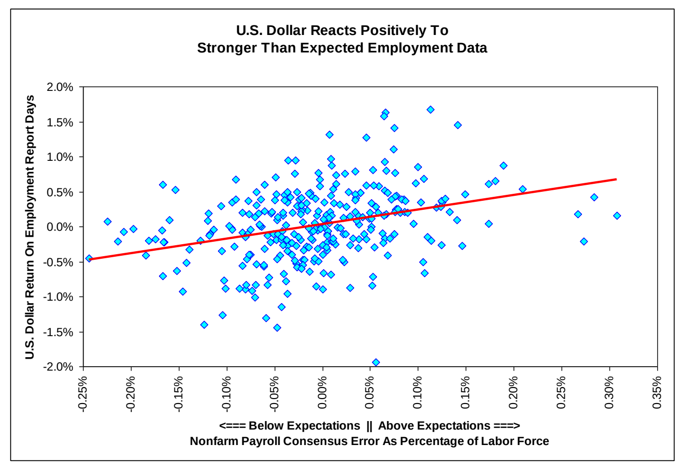
- The difference between the consensus for NFP additions and the actual number in the first release of the employment report, divided by the labor force, gives us an idea of how much the market was surprised by the actual report itself
- As expected, both ten-year Treasuries and Eurodollars sell off on higher than expected data
- The dollar rallies on higher than expected data
- The S&P, somewhat surprisingly, has a weakly negative reaction to higher than expected data
  – Fear of a monetary policy response explains this reaction

Financial Market Reactions To Employment Situation Report



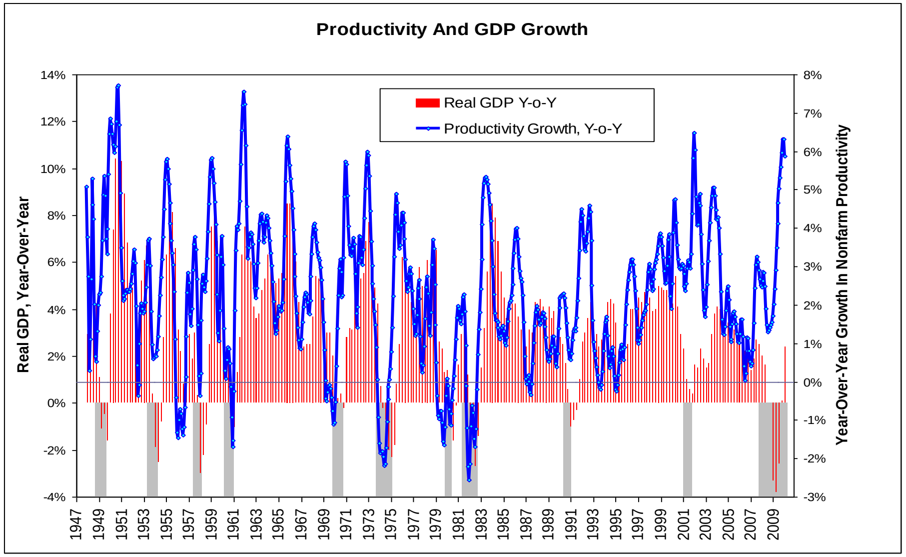






Productivity

- The BLS calculates productivity, or output per worker, on a quarterly basis, with a one-quarter lag
- Higher productivity is viewed as a positive for both stocks and bonds
  - More output at less cost
  - Lower inflationary pressure
- The last two recessions saw productivity rise, not fall as was the historic pattern. This reflects both the role of technology and the diminished bargaining power of labor

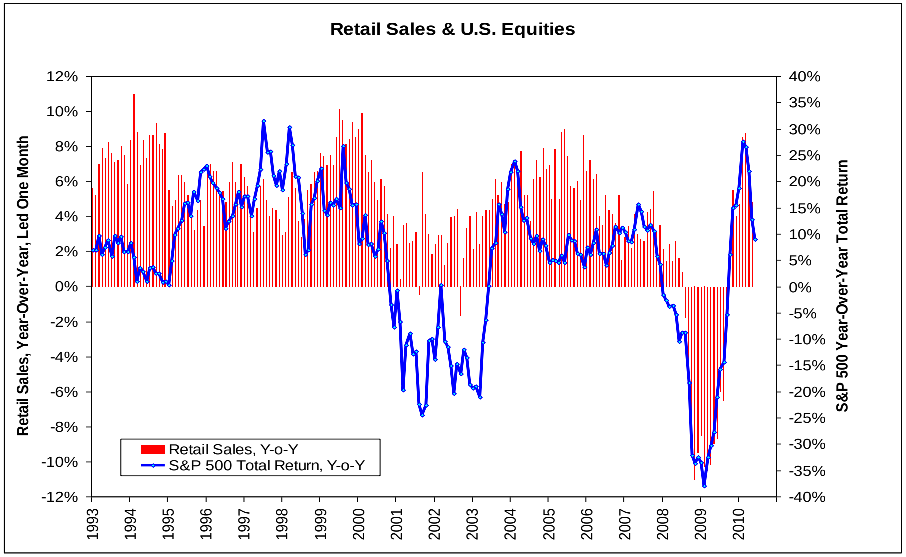


Retail Sales

- The Commerce Department's Census Bureau reports retail sales at 0830 EST in the middle of the month for the preceding month, i.e., in April for March
- The report splits out important categories such as automobiles and food; automobile sales are volatile due to a long history of sales promotions and rebates

Retail Sales & Equities

- The correlation between the S&P 500 and retail sales increased after the 1990s stock market boom
- This is the “wealth effect” in action: Portfolio values affected consumers’ willingness and ability to spend
- The S&P 500 now leads retail sales by one month on average



Consumer Price Index

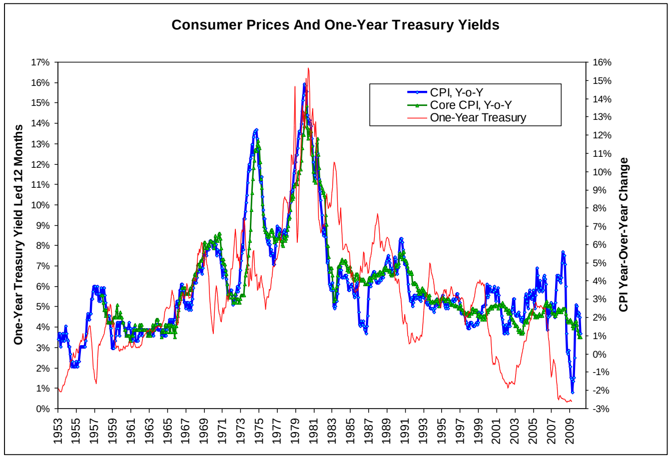
- The CPI is the most-referenced measure of inflation and the only government-released number underlying a financial product, Treasury Inflation-Protected Securities (TIPS)
- It also serves as the basis for many labor contract cost-of-living adjustments (COLAs) and for Social Security payments

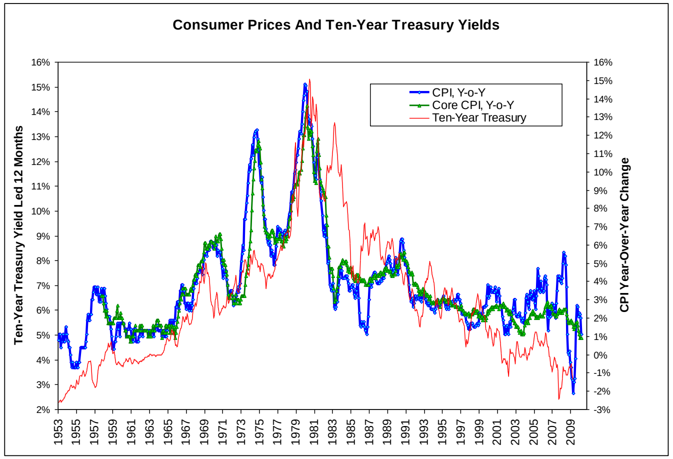
Market Reactions To CPI

- The markets' reactions vary according to whether they believe a policy response to the inflation data will be forthcoming
- Lower-than-expected CPI readings tend to boost Eurodollars and Treasuries, but their effects on stocks and currencies is conditioned by expectations for any policy changes

The CPI And Interest Rates

- One-year Treasury yields (top) used to rise and fall with the CPI, but this started to end with the financial crises of the 1990s
- Ten-year Treasury yields (bottom) followed this path, too, but actually started to fall faster than the CPI after the 2001-2002 bear market
- Core CPI is far less volatile than headline CPI and therefore has less of a market impact





The Producer Price Index

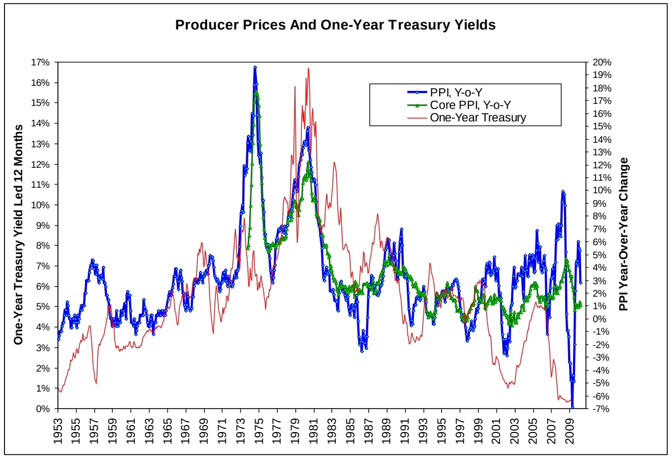
- The PPI measures prices received for crude materials, and both intermediate and finished goods
- Unexpected changes in the PPI, released in the middle of the month for the preceding month, i.e., July for June, at 0830 EST, and often on the day before the CPI, affects currencies, precious metals, interest rates and stocks

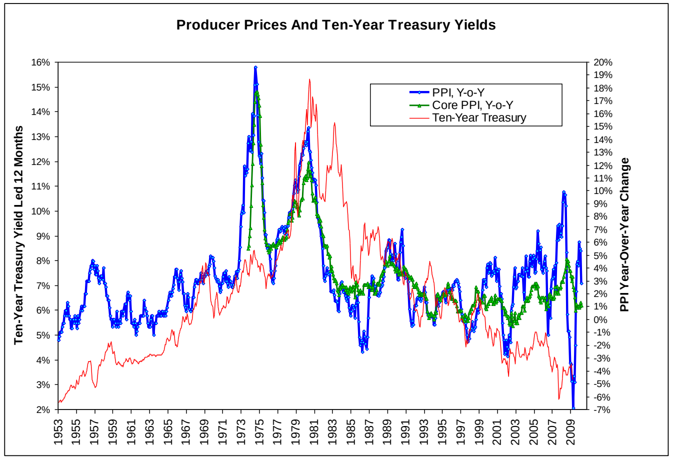
Market Reactions To PPI

- Years ago, the PPI was considered a precursor to the CPI; an inflation “in the pipeline” measure
- As a result, the PPI is not quite the market-moving number it once was

The PPI And Interest Rates

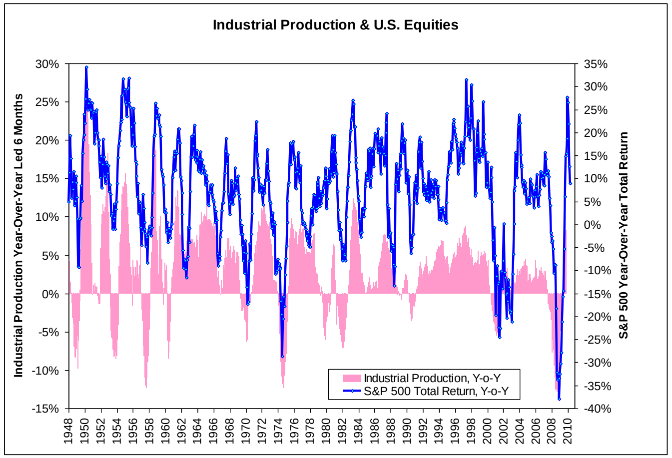
- One-year Treasury yields (top) have declined before and increased after changes in headline PPI; changes in core PPI have had almost no effect
- Ten-year Treasury yields (bottom) have a similar relationship to headline PPI, but they have declined much faster since Chinese exports began exerting downward pressure on prices in the mid-1990s

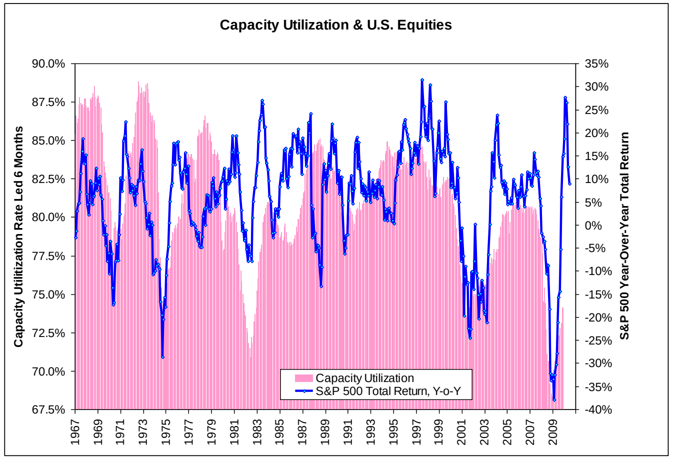




Industrial Production

- The Federal Reserve releases data on industrial production and capacity utilization (top and bottom, respectively) near the middle of the month for the preceding month, i.e., April for March, at 0815 EST
- These tend to be coincident-to-lagging numbers as the stock market in particular anticipates changes in conditions very well
- As a result, the numbers tend to lag the stock market



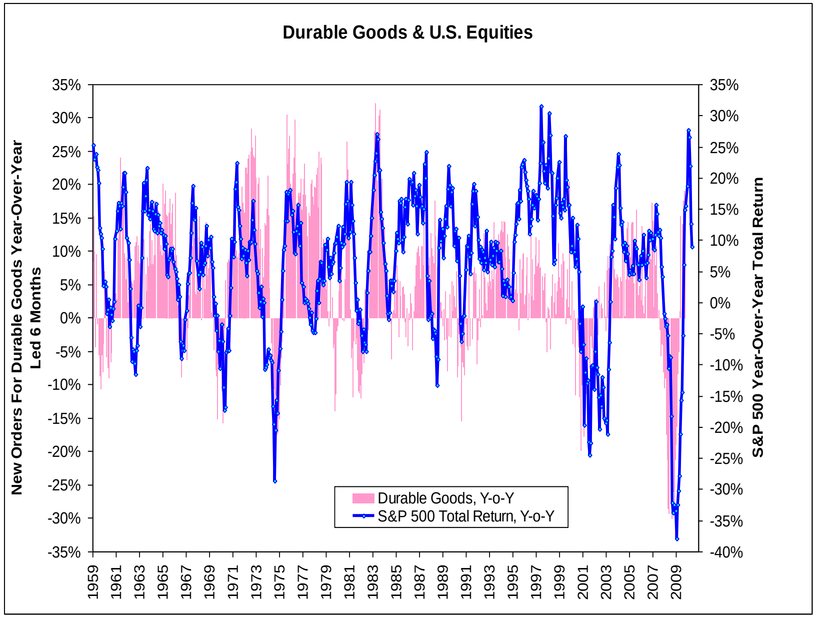


Durable Goods

- This report on machinery and equipment designed to last for more than one year is highly volatile as it can be skewed by orders for big-ticket items such as aircraft and ships
- It is reported by the Census Bureau at 0830 EST at the end of the month for the preceding month, i.e., May for April

Durable Goods Orders & Equities

- Durable goods orders tend to lag changes in the stock market
- The year-over-year change in the S&P 500 leads year-over-year changes in durable goods orders by six months on average

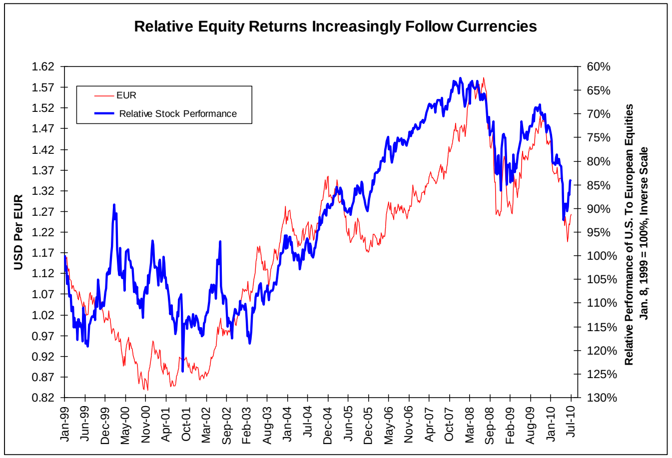


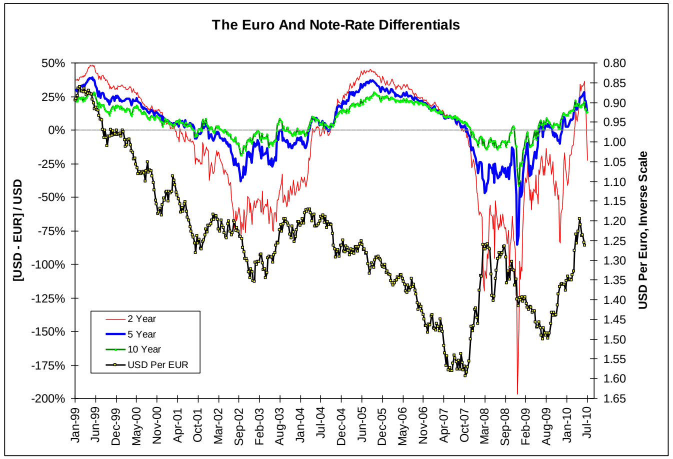
Merchandise Trade Balance

- The merchandise trade balance, is the difference between the dollar volume of exports and imports of goods
- This number is reported by the Census Bureau around the middle of the month for the preceding month, i.e., July for June, at 0830 EST

Market Reaction To Merchandise Trade

- The relative performance of national stock markets (top chart) increasingly follows currency rates
- Those currency rates in turn are affected by and affect note-horizon interest rate differentials (bottom chart)
- The movements of currencies thus affect all capital markets and therefore the allocation of resources within the respective economies



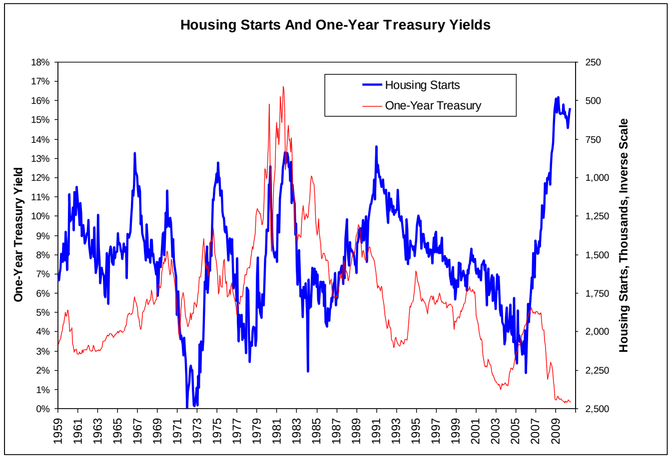


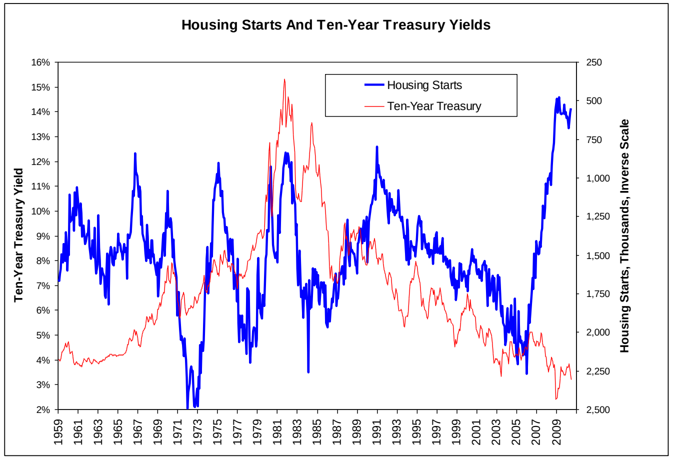
Housing Starts

- The Census Bureau reports housing starts and building permits at 0830 EST around the middle of the month for the preceding month, i.e., June for May
- This had never been a major data point until the housing boom and bust of the 2000s

Market Reactions To Housing Starts

- Lower interest rates for one- and ten-year Treasuries (top and bottom, respectively) had mirrored the gain in housing starts, plotted inversely, since the early 1980s
- The housing collapse kept interest rates low, but there was no level rates could be reduced to for housing's benefit





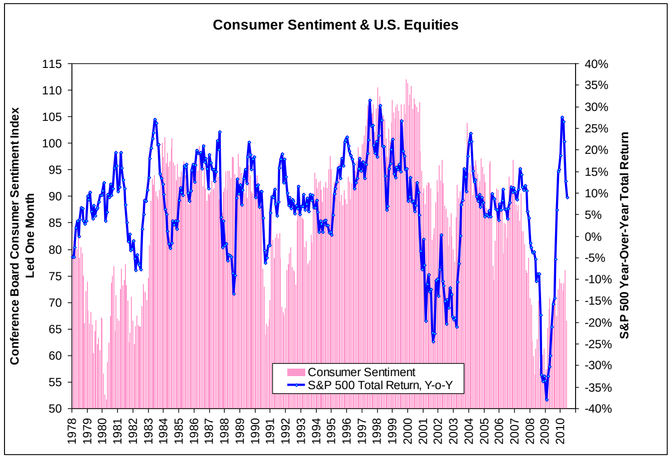
Non-Official Sources

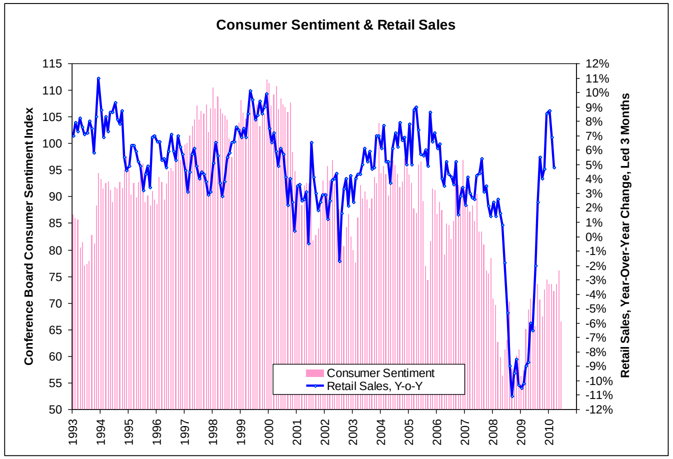
Consumer Sentiment

- Both the Conference Board and the University of Michigan conduct surveys of consumer sentiment and expectations
- These surveys often have a strong initial reaction, especially in stock indices

Consumer Sentiment

- As consumer well-being has become increasingly linked to portfolio values, consumer sentiment has become a lagging function of the stock market (top)
- Year-over-year changes in retail sales are led, but only erratically, by changes in consumer sentiment



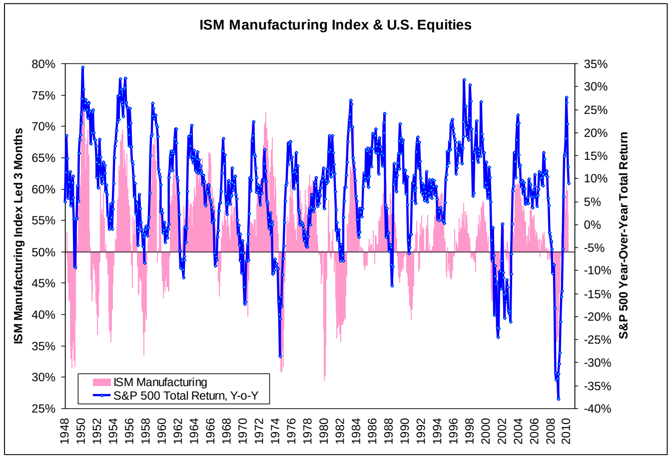


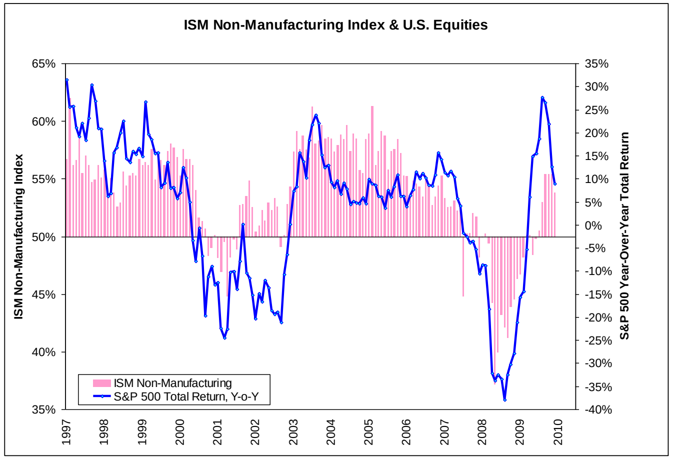
Institute For Supply Management

- The ISM surveys its purchasing manager membership on business conditions
- It releases its report on manufacturing on the first business day of the month and on services several days later at 1000 EST

Market Reaction To ISM Indices

- The year-over-year change in the S&P 500 leads the ISM manufacturing index (top) by three months on average
- The relationship between U.S. equities and the non-manufacturing index (bottom) is contemporaneous





Summarizing The Reports

- As noted in Section I, all economic data must be viewed not through an absolute lens but rather through the lens of what the markets are focused on and nervous about at the present time
- Markets are discounting mechanisms: The price generally anticipates the data, which means only unexpected data produce a significant change in price