Goldman Sachs

Economic Research

Understanding US Economic Statistics

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Section I. Introduction to the Sixth Edition

The importance of economic information to financial markets continues to rise. Thanks to the ongoing globalization of the financial markets, this information is now disseminated instantly throughout the world. Meanwhile, market participants have become more sophisticated in evaluating the significance of this information for asset prices. To keep abreast of these developments, we have revised and expanded our booklet, *Understanding US Economic Statistics.*

In the essay portion of this edition, we have added new sections explaining the purpose, construction, and use of two proprietary indexes that we have created since the last edition in 2001: the Goldman Sachs Analyst Index (GSAI) and the Goldman Sachs Surprise Index (GSSI). The GSAI, patterned after the Institute for Supply Management's indexes, summarizes the results of a monthly survey of our industry equity analysts and provides a cross-check for our forecasting and interpretation of macroeconomic trends. The GSSI measures the extent to which key market-moving data releases have surprised market participants. We have also included material intended to help readers understand the conventions that apply to the reporting of economic data and why they are revised so much.

The section on "Federal Reserve Policy Disclosures and Tools," beginning on page 102, has been updated extensively to provide more information on the structure of the Federal Open Market Committee, its ongoing efforts to be more transparent in explaining its monetary policy decisions and the rationale behind them to the public and the financial markets, and the new Term Auction Facility.

A number of new or increasingly important releases have found their way into these pages, mainly in the housing, labor market, and financial sectors. To help readers digest the relative importance of the growing array of economic reports, we have added assessments of their market impact—on a qualitative "high," "medium," and "low" scale—based on judgments developed through decades of experience working with these data. These additions have made this edition of *Understanding US Economic Statistics* more comprehensive than earlier editions, although there are still many economic reports, mostly of little or no market consequence, that we have not included.

Above all, we have tried to keep this booklet as user-friendly as possible. As always, we welcome your comments, questions, and suggestions for how we can make future editions more helpful. Please contact ed.mckelvey@gs.com, the editor of this edition, with any comments and suggestions.

The US Economic Research Group
February 19, 2008

Section II. Economic Data—Their Special Quirks

The collection and presentation of economic data differ in several respects from conventions that govern the market and company data used by investors and other market professionals. In particular, most economic data are revised, often many times, and most are also adjusted for seasonal variation. Also, economic reports usually tend to focus on sequential changes, from one month or quarter to the next, rather than on year-to-year changes.

Market participants who do not understand these differences and the reasons for them are often confused by economic reports and end up distrusting them. In this section, we explain these issues in hope of assuaging that distrust.

Revisions—Why They Occur; How to Deal With Them

With rare exceptions, economic data are revised extensively. For example, most monthly reports (*e.g.*, on retail sales or housing starts) contain revisions to figures for the preceding two months, and some (industrial production and consumer credit) contain revisions that go back farther. Quarterly data on GDP are revised every month, and other quarterly series (on productivity or the employment cost index) contain revisions to back data as well. As if this were not enough, most series undergo annual revisions that extend back several years.

As a result, the first observation available for a given month or quarter is almost never the final word on what happened. This stands in sharp contrast to the other data—generated by the marketplace or by companies—that market participants are accustomed to using. Market data on asset prices or interest rates obviously cannot change, and in the rare event that companies restate financial results investors who have transacted on the basis of the old data are rightly distrustful. So it is understandable that revisions to economic data generate distrust.

Why are the economic data revised so much? The main reason is that they are initially generated from samples, sometimes with incomplete information for the period in question. Retail sales provide a good example. As noted on page 49, the first ("advance") estimate of retail sales for a given month is drawn from a sample of partial month sales results for about 4,100 retailers, a comparatively small sample for the nation as a whole. A month later, for the "preliminary" estimate, the same sample reports full-month results, while a much larger sample of 12,000 contributes to the "final" figure the month after that. Even this "final" label is a misnomer, as the data are revised once a year to incorporate results from retailers that were not part of the sample and to recalculate seasonal factors. Such revisions are often called "benchmark" revisions because they line up the data to a specific period for which more comprehensive data are available.

A second reason for revisions is to accommodate evolution in the structure of the economy and to facilitate international comparisons. Again retail sales provide a suitable example. As the Internet emerged as a sales channel in the late 1990s, the Department of Commerce took steps to be sure that the retail sales data would reflect this activity. Similarly, in the spring of 2001 the agency shifted from the Standard Industrial Classification (SIC) to the North American Industry Classification System (NAICS) to bring the statistical conventions into closer alignment with the realities of a more service-based 21st Century economy.

We suspect that most market participants would readily accept the second reason but might question the first. After all, if the initial data are sure to be revised, why not wait for the final results? One answer is evident from the continuous nature of the revision process: waiting for final results is an elusive goal. Even if this were not the case, waiting would result in unacceptably long delays. For example, policymakers such as Federal Reserve officials must make decisions based in part on judgments about current economic performance. Far better to base these judgments on information that may be flawed than on none at all. The same holds for investors and the economists to whom they turn for forecasts.

Of course, this means that market participants should develop a healthy respect for the inherent imprecision of economic data. The latest observation should always be taken as tentative except in rare instances where revisions do not occur or are small and confined to the following month (*e.g.*, consumer confidence). For most other monthly series, two to three months are usually required to establish a shift in trend, and for some variables (new home sales come readily to mind), the latest month is so volatile that even a large move will not always stand up to revision.

Fortunately, in the vast majority of cases, revisions are not systematically in one direction. Thus, the first report, while uncertain, is usually an unbiased estimate of what happened. In many cases, economic reports contain information about volatility of the data and statistics on the revision history. We encourage clients to consult this information.

A Primer on Seasonal Adjustment

Seasonal adjustment strives to eliminate changes in the data that occur regularly at certain times of the year (*e.g.*, January's post-holiday drop in retail sales) or due to calendar effects (*e.g.*, differences in the normal number of business days from one month to the next). Elimination of these seasonal variations makes it easier to spot secular trends and cyclical fluctuations. It also permits a more meaningful examination of sequential changes from week to week, month to month, or quarter to quarter. In cases where data are not seasonally adjusted, analysts and investors are limited to making year-over-year comparisons. This makes it more difficult to spot changes in momentum as they start to develop.

The actual process of seasonal adjustment is complicated, but it boils down to this: For any given month, ratios of that month's observations to those for the adjacent months are computed for a period of several years—at least three but often five or seven. This process is repeated for each month, and the results are calibrated so that the resulting seasonal factors average to one. Thus, a *seasonal factor* of 0.90 for a given month means that the raw (unadjusted) figure tends to be 10% below what would occur in a normal month.[1] If data are available for a longer stretch of time, the whole process is rolled forward one year and repeated until the latest period has been covered.

Only a few years of data are typically used in computing seasonal factors to allow these factors to move over time. Such changes can occur for various reasons—demographic change, the shifting impact of major holidays, etc.

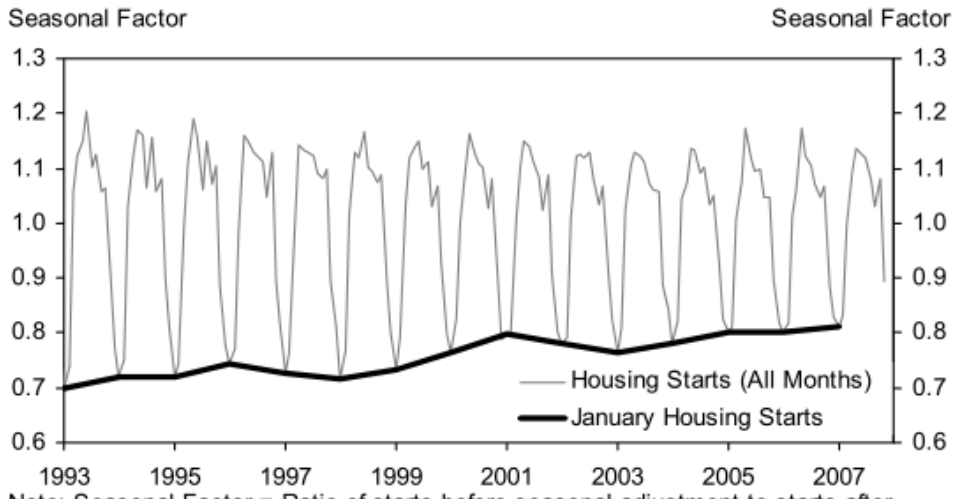
Housing provides a good example of why seasonal factors might shift over time. Because the climate is milder in the South and West, seasonal patterns are more moderate for starts in those regions. Thus, as the population migrates toward these parts of the country, the seasonal pattern in housing starts should diminish. This is one reason why the January seasonal factor has moved up (signifying less weakness) in recent years, as shown in Exhibit A. The exhibit also makes a strong case for seasonal adjustment of housing starts, as the level of such activity fluctuates widely but fairly predictably over the course of each year.

Apart from seasonal, cyclical, and secular forces, economic activity is sometimes affected by random or nonrecurring events, such as unusual weather, natural disasters, or regulatory changes. Such events can muddy the calculation of seasonal factors, especially if they themselves are seasonal in nature. For example, the devastation from Hurricanes Katrina and Rita in 2005 caused energy prices to spike and suppressed a variety of economic indicators for September, including nonfarm payrolls, retail sales, and construction data. Many of these sharp changes were reversed in October and November.

Although subsequent hurricane seasons thankfully were not as damaging, fears that they would be aggravated the normal spring energy price pressures in 2006 and to a lesser extent in 2007. For the government statisticians who calculate seasonal factors, this creates a dilemma: To what extent should the added pressure on energy prices be treated as a new twist in the seasonal patterns? Similar questions apply to the unusually warm winter weather experienced in much of the United States in late 2006 and early 2007.

[1] The use of ratios assumes that the forces giving rise to the seasonal variation cause the variable in question (*e.g.*, housing starts) to rise or fall by some percentage of its base level. Seasonal factors computed in this fashion are called multiplicative. The process can also be cast in terms of differences, in which case the seasonal factors are additive and sum to zero, with negative factors indicating a lower-than-normal level of activity.

Exhibit IIA: Seasonal Factors for Housing Have Moderated



Note: Seasonal Factor = Ratio of starts before seasonal adjustment to starts after adjustment.

Source: Census Bureau.

The problem is that no one will know for sure until several more years have passed. However, in the estimation of seasonal factors some decision has to be made. Several possibilities exist:

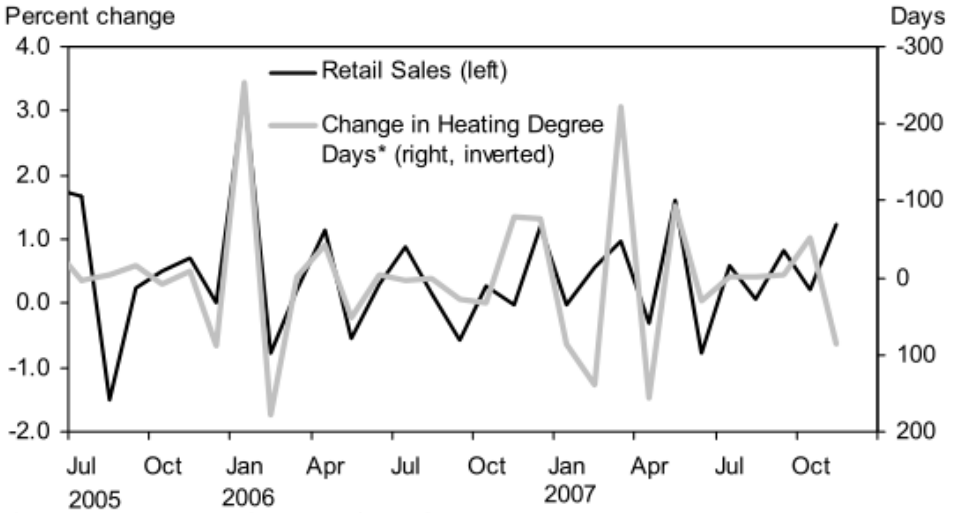
- The simplest and most traditional approach has been to set a limit on how far the result for any month can deviate from its norm. Outcomes that exceed this limit would then be thrown out of the calculation.

- A more sophisticated approach has been to use time-series analysis to estimate how much of any given observation is due to random versus other factors.

- Concurrent seasonal adjustment is the latest innovation. In this approach, statisticians recalculate seasonal factors in "real time" as each new data point is released. This contrasts with traditional methods, which calculate seasonal factors forward one year at a time. The concurrent seasonal adjustment process has the advantage of using all the data available, and according to analysis by the Bureau of Labor Statistics it "produces a slightly smoother seasonally adjusted series with less variability in the over-the-month changes." Effectively, the concurrent seasonal adjustment immediately subsumes part of any deviation from the norm into the seasonal factor. Currently, the payroll employment survey is the only major data series that uses this technique as far as we are aware.

Historically, the impact of distortions from weather has been largest in the winter, when activity is typically low for seasonal reasons. This is because the seasonally adjusted figure is derived by dividing the raw figure by the seasonal factor. If the seasonal factor is well below one, this will magnify the distortion. Exhibit B shows how month-to-month changes in retail sales have correlated with heating degree days, our preferred measure of unusual winter weather. (In the exhibit, heating degree days are plotted inversely relative to their norm; hence, an upward move in that line reflects warmer than normal temperatures.)

Exhibit IIB: Retail Sales Correlated with Heating Days



Source: Department of Labor. NOAA. Our calculations.

*Seasonally adjusted by GS.

Although financial market participants often scoff at seasonal adjustment because it seems so arbitrary and subject to fault, many of them implicitly recognize its importance by focusing on year-to-year changes rather than sequential month-to-month or quarter-to-quarter changes. In the context of the foregoing discussion, the limitations of this approach should be transparent: Whereas conventional seasonal adjustment combines the experience of several years in order to rule out or dampen the effect of extreme outcomes for a given month or quarter, reliance on year-to-year changes implicitly sets up the preceding year's observation as the only relevant experience. Analysts often recognize this problem by noting that the year-earlier period stands as an "easy" or "difficult" comparison. This implies that the year-earlier results should be discounted in some fashion, but goes no further. In contrast, seasonal adjustment programs provide a method for doing so in a systematic and statistically defensible way.

Like any procedure, seasonal adjustment is not well-suited to handle every problem of a seasonal nature, and it sometimes breaks down on those it is designed to handle. Easter stands out as an example of the first problem. Many families boost spending on apparel and other items as Easter approaches. However, because the timing of Easter varies from one year to the next, its impact on spending in March versus April is hard to pin down.

In general, seasonal adjustment will not capture:

- Calendar effects of holidays and events that are not fixed on a specific date, as illustrated by the Easter example above.
- Effects of weather patterns that deviate from seasonal norms (*e.g.* the extreme severity of hurricane seasons in recent years).
- Non-recurring holidays or events (*e.g.* the national days of mourning for Presidents Ronald Reagan in June 2004 and Gerald Ford in January 2007).
- The "echo" effects of highly abnormal data in the recent past: if the previous year or two saw unusual observations, seasonal factors would begin to compensate for this, in which case a return to normalcy could produce a seasonally adjusted surprise in the opposite direction.

Breakdowns in the seasonal adjustment process also occur from time to time. One such occurrence emerged in the US international trade accounts in the late 1990s. During that period the seasonally adjusted figures for export growth showed a systematic tendency to surge in the fourth quarter and to weaken in the first. This should not occur in data that have been properly adjusted for seasonal variation. The reason for it was not entirely clear, although the fact that it is now much less pronounced suggests that the seasonal adjustment process simply took awhile to adapt to changing patterns.

The easiest way to spot such a problem is to compare the growth rate or net change in a variable suspected of inadequate adjustment with a centered moving average of that growth rate computed over a period of about one year (*e.g.*, 5 quarters or 13 months). If the growth rate is systematically higher or lower than the centered moving average, that suggests the existence of a seasonal adjustment problem.

In summary, seasonal adjustment is an indispensable tool in economic analysis, but one that is far from infallible. When atypical events such as unusual weather occur, the seasonally adjusted data should not be taken at full face value because the seasonal factors will not anticipate such a development. Under more normal circumstances, however, seasonal adjustment is very useful because it allows observers to judge how the economy is behaving currently, rather than forcing them to base those judgments solely on performance relative to a year earlier.

Growth Rates—Sequential versus Year-to-Year Change

Most economic reports put the spotlight on changes from one period to the next, usually expressed on a seasonally adjusted basis. The reason for the focus on the sequential change is to highlight the incremental information. For weekly or monthly data, this change is usually stated as a simple percentage change; for quarterly data, the convention is to express it at a compounded annual rate. Thus, a 0.2% increase in retail sales means that the latest month's sales were 0.2% above sales in the preceding month, while 4.0% growth rate for GDP in a given quarter means that GDP was (about) 1% above GDP in the preceding quarter.[2]

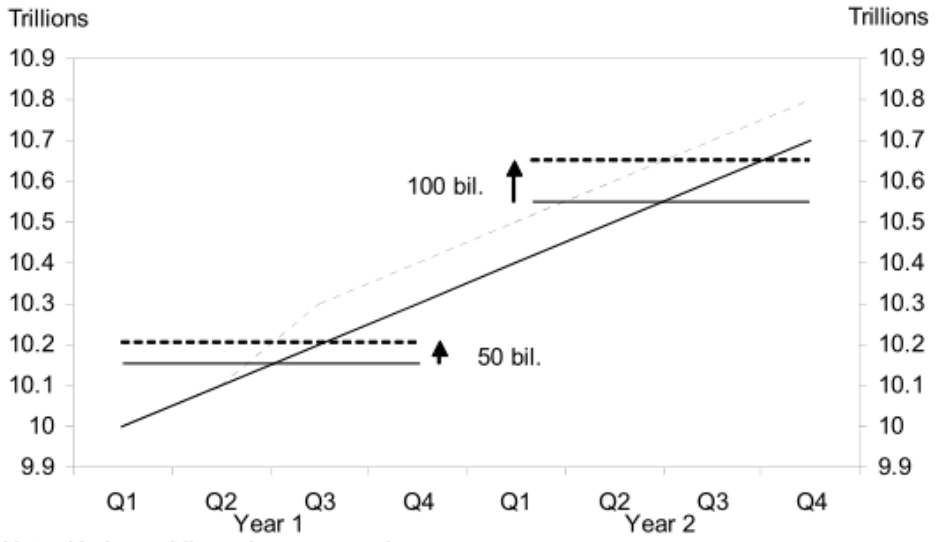
These conventions differ from those used for company sales and earnings reports, which focus on year-to-year percentage changes. The difference often causes confusion, especially about the links between quarterly and annual growth rates. For company earnings, the growth rate for a year will always equal a weighted average of the (year-to-year) quarterly growth rates. However, the same is not true for economic reports and forecasts because the quarterly growth rates are not expressed in year-to-year terms. Because they are stated in sequential terms, quarterly growth rates in the economic data usually affect not only the current year's growth rate *but also the growth rate for the next year*. This is because changes during a year affect the year-end platform for (sequential) growth in the following year.

Exhibit C illustrates the point, starting with an assumption that GDP grows steadily for two years at a 4% annual rate (solid upward-sloping line). Starting from an hypothetical $10-trillion base in the first quarter of the first year, this implies increases of about $100 billion per quarter. The horizontal solid lines show the average level of GDP for the two years; the difference between them—about $400 billion—represents the 4% growth between the two years.

Now assume that GDP growth surprises on the upside by $100 billion in the third quarter of the first year, doubling that quarter's annualized growth rate to about 8% (dotted upward-sloping line). Even though this occurs in the first of the two years, it increases the (annual average) growth rate for the second year; this is apparent in the fact that average level of GDP in year two rises by a full $100 billion whereas the average level in year one rises by only $50 billion. Note that this assumes no offset to the upside surprise; in subsequent quarters growth continues at a 4% rate. Given that assumption (commonly but not always made

[2] Exceptions exist. The most prominent one is employment, which is reported as a net change from one month to the next rather than as a percentage change. For quarterly data, the most notable exceptions are the employment cost index (ECI) and corporate profits, for which percentage changes are not annualized. As far as we can tell, the main rationale for these exceptions is that this is the way it has always been, though in the case of profits volatility is also a consideration.

Exhibit IIC: How Sequential Growth Rates Affect Annual Averages



Note: Horizontal lines denote annual averages.

by most economists when adjusting forecasts to surprises in the data), the discovery of "extra" economic activity—GDP in this example—during the course of the first year has an even stronger effect on the level of such activity in the second year than in the first year and hence boosts the second year's growth rate.

It should be clear from this example that the second year's growth rate starts to "build up" as early as the second quarter of the preceding year. From that point on through the fourth quarter of the second year a departure from the trend has differential effects on the average levels of GDP for the two years and, hence, an effect on the second year's growth rate. To a first order of approximation the weights of these seven quarters are triangular as follows (beginning with the second quarter of the first year): 1/16, 2/16, 3/16, 4/16, 3/16, 2/16, and 1/16.

One interesting implication, counterintuitive at first blush, is that the (sequential) growth rate for the final quarter of a year has more effect on the next year's growth rate than on that of its own year. A similar rule holds for the link between monthly and quarterly growth rates. In that case, the weights are 1/9, 2/9, 3/9, 2/9, and 1/9, beginning with the middle month of the preceding quarter. Again, the last month of the quarter has more effect on the next quarter's growth rate than it does on the growth rate of its own quarter. Isn't economics fun?

Section III. Which Economic Data Have the Biggest Impact on Financial Asset Prices?

Three criteria determine which economic data tend to have the greatest effects on financial markets:

1. **Relevance to economic growth**

   Reports that provide information about large segments of the economy, or ones that relate to the more volatile, cyclical components of business activity, generally get the most market attention. As an example of the first point, figures on retail sales are of great interest because consumer spending comprises about 70% of total US final sales; moreover, retail sales are the most cyclical component of spending. As an example of the second, data on home sales and housing starts also have significant market impact even though residential construction is less than 5% of GDP, because activity in this sector is highly cyclical.

2. **Timeliness of the information**

   Financial market participants seek the latest news, and therefore assign more importance to information culled from the recent past, rather than belated reports or updates covering earlier months. Some releases are clearly superior on this point. For example, weekly data on initial claims for jobless benefits are released just five days after the week to which they apply. Likewise, the monthly surveys on manufacturing and nonnmanufacturing conditions conducted by the Institute for Supply Management are issued on the first and third business days following the months to which they apply. In contrast, the final report on quarterly GDP comes out nearly three months after the period has passed, which makes it very stale by market standards.

3. **Reliability of the data**

   Economic data run the gamut insofar as reliability is concerned. In some cases, the figures are subject to revisions that can be large (*e.g.*, durable goods orders); recognizing that risk, market participants will pay less attention to such reports than they would otherwise. In some cases, the volatility occurs in certain components, such as civilian aircraft bookings in the durable goods orders report or food and energy prices in the consumer and producer price indexes; economists usually focus on "core" components that exclude these volatile items and/or focus on moving averages to minimize their influence.

Beyond these general considerations, it is crucial to take account of the economic and policy environment, in particular:

1. The stage of the business cycle

Early in a business expansion, the economy has plenty of slack with which to grow without causing inflationary imbalances, and Fed policy is typically neutral or accommodative. At those times, as well as in recessions, market anxiety about inflation tends to be low, and the focus is on data that provide leading signals of demand and output. Later, when the economy has expanded to the point where capacity is scarce, inflation reports become more important.

2. Structural change and the policy reaction function

Federal Reserve and other policy makers always have an implicit or explicit ranking of matters of concern, and perceptions of this ranking appreciably shape the markets' sensitivities to specific data. Additionally, over time the reliability of certain indicators may change as a result of structural changes in the economy.

The dramatic decline in the attention paid to weekly money stock data over the past 25 years illustrates both points. In the early 1980s, the Fed was directly targeting nonborrowed bank reserves. In this regime, changes in the money stock and related variables, such as factors affecting bank demand for reserves, were primary determinants of current and prospective short-term interest rates. Thus, for a few years the weekly money supply reports were by far the dominant statistical reports generating market price action. However, those days are long gone for two reasons: (1) the Fed stopped targeting bank reserves in late 1982, breaking the direct link between monetary growth and changes in short-term interest rates, and (2) the relationship between changes in money and economic growth has also broken down as the intermediation of credit has increasingly favored the capital markets. This has made the money aggregates much less useful for predicting the future course of spending and economic output. As a result, the publication of money stock data are now unnoticed in the markets.

3. Commentary by Federal Reserve and other officials

In addition to the data releases covered in this handbook, public statements by policy makers—mostly by Federal Reserve officials—can have a big impact on the markets. These include brief statements released after each meeting of the Federal Open Market Committee (FOMC), minutes to those meetings, and major speeches and testimony before Congress. Market participants

scrutinize these statements closely to discern possible changes in policy thrust, especially when the near-term direction of policy is uncertain.

To illustrate these points and keep abreast of how their relative importance is changing, twice a year we study the circumstances surrounding the largest moves in key asset prices; the latest such review covered the six months ending on October 23, 2007. Exhibits A-C below present, in rank order, the largest moves in the S&P 500 stock price index, the 2-year Treasury yield, and the dollar's exchange value over this period and show the specific economic reports and events that occurred on those days.[3]

Between late April and late October 2007, actions by the Federal Reserve and other central banks dominated the lists of "market movers," although the fixed-income market was also highly sensitive to developments in the mortgage and housing markets. The overriding importance of central bank activity is illustrated by the fact that most of the largest moves in the US fixed-income and equity markets occurred during August and the first part of September, leading up to the Federal Open Market Committee's decision on September 18 to cut its federal funds rate target by 50 basis points.

Exhibit IIIA: Equity Market Movers (S&P 500 index, April-October 2007)

Date	% Chge	Indicator	Explanation
Aug 9	-2.96	Jobless Claims. Chain Store Sales.	Severe liquidity problems in money markets prompt ECB injection of €94.8 bil and US$24 bil from the Fed.
Sep 18	2.92	FOMC announcement. PPI. Homebuilders' Index.	FOMC lowers federal funds target rate by 50 basis points to 4.75%, a larger than expected move.
Aug 3	-2.66	Employment Report. ISM Non-mfg Survey.	Weaker than expected payroll report. Unemployment rate increased 0.1 point to 4.647%.
Oct 19	-2.56	No major releases.	Weak earnings reports from banks, manufacturers and industrial companies prompt distress about the economic outlook.
Aug 17	2.46	Unscheduled FOMC statement. Consumer Sentiment.	Fed reduces primary credit (discount) rate by 50 basis points to 5.75% and acknowledges growth risks.
Aug 6	2.42	No major releases.	Markets expect dovish statement from FOMC the next day. Recovery from sharp drop the previous Friday.
Aug 28	-2.35	FOMC minutes. Consumer Confidence.	FOMC minutes reveal committee's continuing concerns about inflation, undermining market expectations of a rate cut.
Jul 26	-2.33	New Home Sales. Durable Goods Orders. Help Wanted Index. Jobless Claims.	Large drop in new home sales by 6.6%, following substantial declines in existing home sales the day before.
Aug 29	2.19	MBA Mortgage Applications. 2 Year Note Auction.	Solid consumer confidence report from the day before.
Jul 24	-1.98	No major releases.	Countrywide Financial reported large credit losses, igniting worries over the spread of the housing crisis.

[3] The paragraphs that follow have been adapted from "Markets Focus on Housing Turmoil and Fed Responses," *US Daily Financial Market Comment*, October 24, 2007.

Exhibit IIIB: Fixed-Income Market Movers (2-year Treasury yield, April-October 2007)

Date	Basis pt. Chge	Indicator	Explanation
Aug 16	-19	Housing Starts. Jobless Claims. Philadelphia Fed Survey.	Countrywide Financial drew down $11.5 billion bank credit line to maintain liquidity, causing distress over liquidity in the commercial paper market.
Jul 26	-18	New Home Sales. Durable Goods Orders. Help Wanted Index. Jobless Claims.	Large drop in new home sales by 6.6% and soft durable goods report.
Aug 28	-15	FOMC minutes. Case-Shiller Home Price Index. Consumer Confidence.	Home price declines accelerate, from -2.9% in May to -3.5%.
Aug 9	-15	Jobless Claims. Chain Store Sales.	Credit market problems raised by the ECB injection and weak chain store sales prompt investors to seek safety in treasuries.
Aug 3	-13	Employment Report. ISM Non-mfg Survey.	Both reports are weak, further decreasing the risks of a rate hike.
Sep 13	13	Jobless Claims. Treasury Budget.	Countrywide Financial announced it has secured $12 bil in new and existing loans, easing concerns over availability of business financing. Jobless claims at a relatively low 319,000.
Jul 10	-12	Bernanke Speech.	S&P placed credit ratings on about $12 billion of residential mortgage-backed securities (RMBS) issued in late 2005 and 2006 on a watch list.
Aug 15	-12	Homebuilders' Index. Consumer Price Index. Empire State Mfg Index. Industrial Production.	Core inflation slightly higher than expected. Continued flight to quality in money markets.
Oct 17	-12	CPI. Beige Book. Housing Starts. MBA Mortgage Applications.	Beige Book suggests slowing economic growth. Worse than expected housing data and moderate inflation prompt renewed expectations of a rate cut.
Aug 22	10	MBA Mortgage Applications.	Unwinding of flight-to-safety flows from treasuries to stocks.

Worries about spillovers from increasing evidence of payment difficulties in the subprime mortgage market turned into financial panic during the first week of August, causing yield spreads to widen sharply. The largest daily change in the S&P 500 over the period studied occurred on August 9, when severe liquidity problems in the money markets prompted the European Central Bank to inject €94.8 billion (about $130 billion) into short-term money markets; the Fed followed suit with $24 billion the same day and $38 billion the next day (the largest daily add since right after 9/11). In order to reassure market participants and maintain overnight rates at target levels, the Fed cut the discount rate by 50 basis points on August 17, to 5¾%, and acknowledged underlying growth risks. This sparked a notable equity rally. About one month later, the FOMC surprised the markets with a 50 basis point cut in the federal funds target rate, which led to the second largest daily increase in the S&P 500 over this six-month period.

Besides focusing on the Fed, the fixed-income market also was concerned with developments in the mortgage and housing markets. The largest move in the 2-year Treasury yield occurred after Countrywide drew on an $11.5-billion line of credit to maintain liquidity. The action lent support to the looming concerns over the performance of mortgage-backed securities and the credit profile of such

Exhibit IIIC: Exchange Rate Movers (Trade-Weighted Dollar, April-October 2007)

Date	% Chge	Indicator	Explanation
Sep 20	-0.78	Jobless Claims. Leading Indicators. Philadelphia Fed Survey.	Dollar continues to slide after Sep 18 Fed cut. Solid economic releases otherwise.
Aug 17	-0.59	Consumer Sentiment.	Fed's reduction in discount rate consolidates expectations of a cut in federal funds rate target.
Jul 2	-0.51	ISM Manufacturing Index.	Speculation of rate hike in Europe outweighs strong ISM report.
Sep 19	-0.51	CPI. Housing Starts. MBA Mortgage Applications.	Dollar weakens following Fed cut the day before. Both core CPI and headline CPI showed moderation. Starts and permits declined by 2.7% and 5.0% respectively.
Aug 15	0.45	Consumer Price Index. TIC. Empire State Mfg Index. Industrial Production. Homebuilders' Index.	Core inflation higher than expected but remains mild. Treasury International Capital data demonstrate strong foreign demand for U.S. securities.
Oct 5	-0.44	Employment Situation. Consumer Credit.	Better than expected payroll gains in September of +110k, with August revision from -4k to +89k.
Sep 28	-0.43	Personal Income and Outlays. Construction Spending. Consumer Sentiment. NAPM-Chicago Survey.	ECB retains its tightening bias.
Aug 14	0.43	Trade Balance. Producer Price Index.	PPI showed more pressures than expected due to increased energy costs. Trade deficit fell back to $58.1 bil vs. $60 bil in May.
Jul 25	0.41	Existing Home Sales. Beige Book. MBA Mortgage Applications	
Jul 27	0.41	GDP. Consumer Sentiment.	Stronger-than-expected real GDP growth of 3.4 percent in Q2.

financial institutions. Large drops in new home sales and home prices also triggered notable moves in the fixed income market. This illustrates the market's increased recognition of the significance of developments in the housing industry to the overall US outlook during this period.

In the foreign exchange market, the major moves were less concentrated in the August-September period and the trend was toward further depreciation of the trade-weighted dollar, which had begun in 2002. Reflecting this, five of the six largest dollar moves were down, including one that occurred (on October 5) despite better-than-expected payroll data. The Fed's cuts to the discount rate and later to the federal funds target rate induced the largest drops in the dollar as these actions occurred against to a backdrop of stable interest rates at the European Central Bank and Bank of England.

Of course, in principle economic data and other events will affect asset prices mainly to the degree they surprise market participants. In an effort to gauge the degree to which economic data were responsible for movements in 2-year yields, we introduced the Goldman Sachs Surprise Index in early 2003. This index is described along with other proprietary indexes in the next section.

Section IV. GS Proprietary Indexes

Over the years, the US economics group has developed two proprietary indexes that it maintains and publishes on a regular schedule. One is the Goldman Sachs Financial Conditions Index (GSFCI^{SM}), which helps assess the effects of changes in financial markets on the US economic outlook; this index is published daily at the end of our *US Daily Financial Market Comment*. The other is the Goldman Sachs Analyst Index (GSAI), which summarizes changes in economic conditions as seen by our industry analysts; this index published monthly, along with analyst commentary, as the focus of a *US Daily Financial Market Comment*, usually the next to last business day of the month. We have also developed the Goldman Sachs Surprise Index (GSSI), a third proprietary tool, as a device to quantify the effect of surprises in economic indicators on the yield on 2-year Treasury notes. We maintain this index on a regular basis, and focus on it from time to time in our research; its history is available to clients on request.

The Goldman Sachs Financial Conditions Index (GSFCI^{SM})

The Goldman Sachs Financial Conditions Index (GSFCI^{SM}) is our preferred measure of the financial climate in the United States, designed specifically to gauge the effects of monetary policy on US economic growth. Introduced in 1998, the GSFCI^{SM} has gone through several modifications, first to improve its performance and, more recently in early 2005, to make it a tradable index.[4] As now defined, the GSFCI^{SM} is a weighted average of 3-month LIBOR, a "synthetic" corporate bond yield (the 10-year swaps rate plus the 10-year credit default swap spread (CDX)), the Standard and Poor's 500 Index, and the Goldman Sachs broad trade-weighted dollar index (GSTWI).

Movements in the GSFCI^{SM} provide reasonably reliable guidance on how changes in financial conditions, whether due to monetary policy or other factors, affect US economic growth over the following year or so. However, the link is far from perfect. The simple correlation between real GDP growth in a given year and the change in the GSFCI^{SM} during the preceding year is 0.35.

The GSFCI^{SM} differs from other popular measures of the monetary policy stance. Unlike the federal funds rate, for example, it measures monetary policy by focusing on the financial variables that directly affect spending on US-produced goods and services. In contrast, the federal funds rate has only an indirect impact on the real economy, through its impact on financial variables such as the components of the GSFCI^{SM}. The GSFCI^{SM} thus focuses not on the Fed's actions *per se*, but on how financial markets transmit these actions to the real economy.

[4] For more details, see "Financial Conditions Need to Tighten Further," *US Economics Analyst*, 05/14 April 8, 2005.

The GSFCI[SM] also differs from quantitative measures of money and credit, such as growth rates of the monetary aggregates, by focusing on asset prices rather than asset quantities. We believe this is an advantage because financial changes over the past quarter century, due to innovation and deregulation, have loosened the link between the money supply (more accurately, the stock of outstanding money) and nominal GDP. One key change is that financial markets have become a larger channel of financial intermediation as the banking system has lost share. Meanwhile, asset prices have become more important for household and corporate spending decisions, as household equity holdings have become more widespread and the corporate bond market has grown.

Despite these advantages, the GSFCI[SM] should not be used mechanically for forecasting real GDP growth. After all, a shift in financial conditions is only one possible reason why the growth rate might change. Shifts in fiscal policy, technological innovation, changes in commodity prices (especially for oil), movements in home prices, and political events can also have important effects. In addition, it is not always clear whether the level of the GSFCI[SM] or its rate of change is more important for real GDP growth. In our view, both the level and the change are important to watch, but the change probably has a greater impact on near-term economic activity.

The weights of the four variables in the GSFCI[SM] were set using the Federal Reserve Board's macroeconometric model of the US economy, FRB/US, along with our own empirical work. This resulted in weights of 35% for LIBOR, 55% for the corporate bond yield, and 5% each for the dollar and the S&P 500.

However, these weights do not indicate the relative importance of the four components in affecting financial conditions, as volatility also matters. A highly volatile variable with a low weight can move the GSFCI[SM] more than a low-volatility variable with a high weight. For example, a 100-basis-point change in 3-month LIBOR is a large change. In contrast, stock prices might move several percentage points in a single day. This means that the weight on 3-month LIBOR must be high relative to the weight for the S&P 500 to have comparable impact on the index.

Technically, the equation used for calculating the GSFCI[SM] is as follows:

$$GSFCI^{SM} = 102.714 + 0.35*r3m + 0.55*rcorp + 0.05*100*\ln(\$/\$_{10202003}) - 0.05*100*\ln(eq/eq_{10202003}),$$

where *r3m* is the 3-month LIBOR, *rcorp* is the synthetic 10-year corporate bond rate as described above, *$* is the GSTWI, and *eq* is the S&P 500. The subscript *10202003* stands for the level as of October 20, 2003, and 'ln' refers to the natural logarithm of a variable. Since we can only calculate the GSFCI[SM] back to October 20, 2003, when the CDX started trading, it is natural to index it to 100 on that day. This determines the value of the constant term in the equation above.

The fact that the new GSFCI[SM] is only available back to October 2003 is a serious limitation. After all, for analytical purposes the index derives much of its usefulness from the fact that we have been able to track the historical link with monetary policy on the one hand and real economic activity on the other. Since we don't want to lose this history, we augment the index by a "research" GSFCI[SM]. This is a spliced series that uses our synthetic corporate bond yield back to October 20, 2003, and the Moody's A-rated corporate bond yield for prior periods. Except for the constant term, the research GSFCI[SM] is identical to the previous version of the index for every day prior to October 20, 2003.

A 100-basis-point rise (tightening) in the GSFCI[SM] is equivalent to the sum of a 100-basis-point rise in both the 3-month LIBOR and the corporate bond yield, a 1% rise in the GSTWI, and a 1% fall in S&P 500. Assuming only one variable moves, a 100-basis-point rise in the GSFCI[SM] could occur if 3-month LIBOR rose by 286 basis points, the corporate bond yield rose by 182 basis points, the S&P 500 fell by 20%, or the GSTWI rose by 20%. In practice, the respective contributions of the four components during episodes of GSFCI[SM] tightening or easing have varied widely, as shown in the bottom part of Exhibit A.

Exhibit IVA: Lots of Ways to Move the GSFCI[SM] 100 Basis Points

	3-month LIBOR (bp)	Corporate Bond Yield	GSTWI (%)	S&P 500 Index (%)
Assuming only one variable moves	+286	0	0	0
	0	+182	0	0
	0	0	+20	0
	0	0	0	-20
Examples from past FCI easing cycles:				
Sep 1984 – Apr 1986	-486	-413	-2.7	43.3
Oct 1987 – Feb 1988	-158	-108	0.0	-7.9
Jul 1990 – Dec 1991	-361	-89	2.1	5.6
Sep 1998 – Nov 1998	-17	13	-2.8	12.1
Examples from past FCI tightening cycles:				
Mar 1984 – Aug 1984	141	60	8.3	4.4
Mar 1988 – Feb 1989	288	25	5.8	10.4
Feb 1994 – Feb 1995	271	2	4.6	2.2
Jun 1999 – May 2000	158	81	2.3	7.3
June 2004 – July 2006	434	27	-6.4	11.3

*Moody's A-Rated Bond Yield (except 2004-2006)

Source: Federal Reserve Board. Department of Commerce. Goldman Sachs.

The Goldman Sachs Analyst Index (GSAI)

Since January 1996, we have surveyed the Goldman Sachs equity analysts once a month to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. We began publishing the GSAI in November 2001.[5]

The survey consists of two parts. First, in a set of questions patterned after those used by the Institute for Supply Management (ISM) in its monthly surveys of business conditions, we ask the analysts whether various aspects of business are picking up, slowing down, or about the same relative to prior trends. The areas covered include sales (or shipments), orders, inventories, backlogs, input and output prices, employment, capital spending, wages, and exports. We also ask the analysts to comment on developments of interest in their industries, occasionally directing those questions to issues of topical concern (*e.g.*, the effects of 9/11, the Gulf Coast hurricanes in 2005, or financial volatility in 2007). Although the analyst pool is small, a large percentage—typically more than four-fifths—respond to the survey. The respondents cover the gamut of industries with significant listings in the US equity market.

From the first set of questions we compute the Goldman Sachs Analyst Index (GSAI)—a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors (see pp. 33-35). Following the practice used by the ISM through 2007, we apply weights of 30% to new orders, 25% to production/shipments, 20% to employment, 15% to output prices (substituting for supplier deliveries), and 10% to inventories. As with those indexes, a reading above 50 theoretically signals growth while an index level below 50 signals contraction. However, as noted below, a GSAI of 50 appears more consistent with trend growth than with no growth.

Exhibits B and C plot the GSAI against two-quarter averages of the annualized growth rate of real GDP and monthly readings of the ISM's index of business conditions in the manufacturing sector, respectively. These exhibits and our analysis of the linkages they show, yield the following points regarding the performance of the GSAI and how to interpret it:

1. **The GSAI exhibits a noticeable correlation with real GDP growth.** The conventional quarterly growth rates in real GDP are too volatile to see much of a relationship, but on a half-year basis the correlation is fairly good—0.61 since the GSAI was initiated in 1996. This correlation has held up

[5] See *US Economics Analyst* 01/48, "Introducing the Goldman Sachs Analyst Index (GSAI)", November 30, 2001

reasonably well within the period; for example, since we first started publishing the GSAI, it has been 0.56.

2. **A GSAI of 50 corresponds roughly to potential growth.** Specifically, a regression of real GDP growth on the GSAI yields 2.8% as the growth rate consistent with a 50 reading on the GSAI—close to our 3% estimate for US potential growth. The regression also implies that the dividing line between growth and contraction in real GDP is in the low 20s. By comparison, the empirically derived growth/contraction lines for the ISM composite index of manufacturing are about 48 for industrial production and 42 for real GDP.

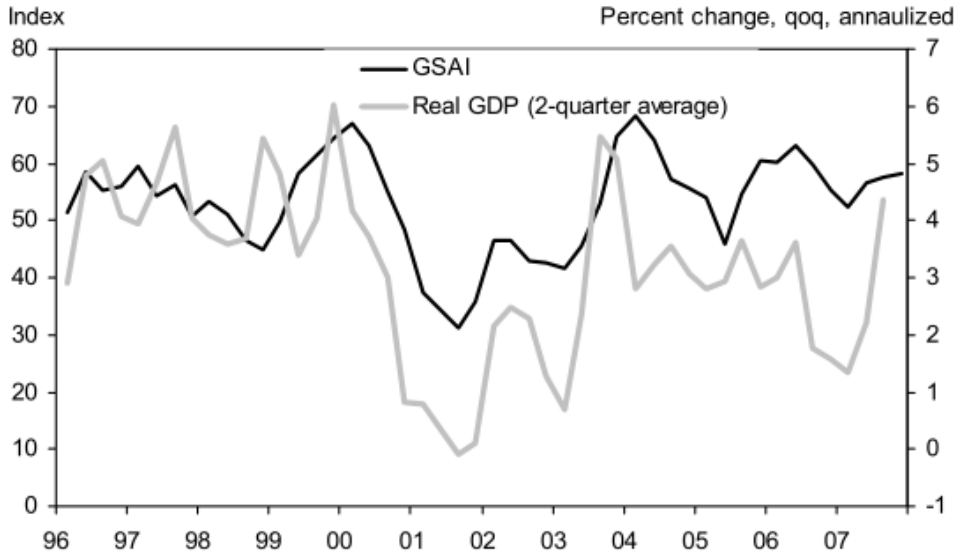
3. **The GSAI adds value relative to its ISM counterparts.** This is an obvious question given the similar nature of the two indexes. Although the difference is small, the correlation between real GDP growth and the GSAI is modestly higher than between GDP growth and the ISM composite—0.61 versus 0.50.

4. **However, the GSAI is more volatile.** As shown in Exhibit C, the GSAI has moved over a much wider range in the past ten years than the ISM index. It has also been more volatile from one month to the next. This is because the GSAI comes from a much smaller sample, with typically only analyst per industry.

5. **The GSAI also appears to be affected by the stock market.** This is implied by the sharper swings in the GSAI from 1999 through 2001, and it is confirmed by vector autoregression analysis, which shows a systematic influence of the market (represented by the S&P 500) on the GSAI.

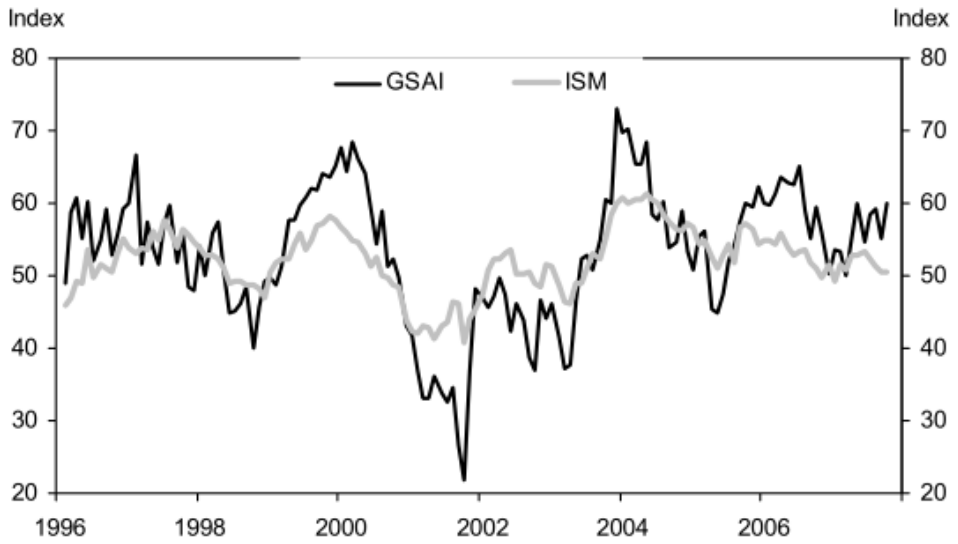
Does this last point undercut the credibility of the GSAI as a tool for tracking the economy? We think not, for two reasons. First, it is well known that the stock market affects economic activity via the wealth effect and other channels. To the extent the GSAI picks this up in a systematic way, then it may still be legitimately regarded as a useful gauge of economic activity. Second, both the market and the GSAI respond to news that, at the margin, indicates where the economy is headed.

Exhibit IVB: The GSAI & GDP Growth—Reasonably Correlated



Source: Department of Commerce. Our calculations.

Exhibit IVC: The GSAI vs. ISM Manufacturing—Correlated But Noisier



Source: Institute for Supply Management. Goldman Sachs.

The Goldman Sachs Surprise Index (GSSI)

The Goldman Sachs Surprise Index (GSSI) provides a systematic running "tally" of the degree to which economic indicators are surprising market participants and the direction of these surprises. We introduced the GSSI in February 2003 and revamped and expanded it in February 2007.[6]

The GSSI takes a more direct approach to assessing the importance of economic data in moving markets than the discussion on pp. 10-14 and in previous editions of this handbook. In those analyses, we compared the average market move on a day with a given economic data release to the average move on a day without any releases. However, this approach assumes that differences in volatility are due to the indicators themselves, whereas other interpretations are possible. For example, the ISM manufacturing survey is always released on the first business day of the month. If that day is systematically less volatile than other days, then we would underestimate the ISM survey's effect on the markets.

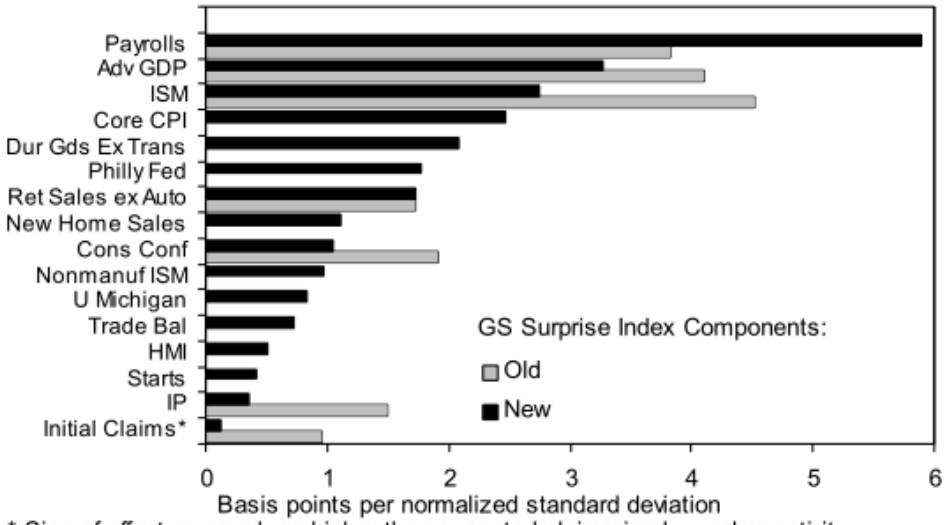
In constructing the GSSI we use daily data on all major indicators of economic activity and define a surprise for a given indicator as the normalized difference between the actual result and the consensus forecast for it. We then measure the impact of each indicator on the market by relating these surprises to changes in the 2-year Treasury note yield in a simple linear regression. The coefficients from this regression indicate how much the 2-year note yield will tend to rise if an indicator is stronger than the consensus forecast by one standard deviation.

Originally, the GSSI included seven variables—others were not found to have statistical significance—and it focused on one-day moves in the 2-year yield. However, both of these characteristics changed in 2007 as we implemented two improvements: First, the passage of time allowed us to use data from a longer time period—April 2001 through December 2006 as compared to early 2000 (different starting points for different indicators) through January 2003. This made the estimates of statistical significance more robust and provided data from more phases of the business cycle.

Second, we substituted intraday moves in the 2-year yield to isolate more cleanly the effect of a data release from other events occurring during that same day. Specifically, we focused on yield changes from 15 minutes before the data release to 30 minutes after it. As a result of these changes, we found statistical significance for 16 indicators. Exhibit D presents these indicators in order of their relative impact on the 2-year note yield and, in the case of the original seven, shows how that impact changed.

[6] See "The GS Surprise Index: Strength Likely to Fade, *US Economics Analyst*, February 23, 2003, and "Revamping the GS Surprise Index," *US Economics Analyst*, February 2, 2007.

Exhibit IVD: GSSI Components—Payrolls, GDP, ISM Top the List



* Sign of effect reversed, as higher than expected claims imply weaker activity.

Source: Our calculations.

The new index is quite similar to its predecessor, bearing a 0.73 correlation over the 2001-2003 period. However, the new index is more prone to extremes. Other differences are as follows:

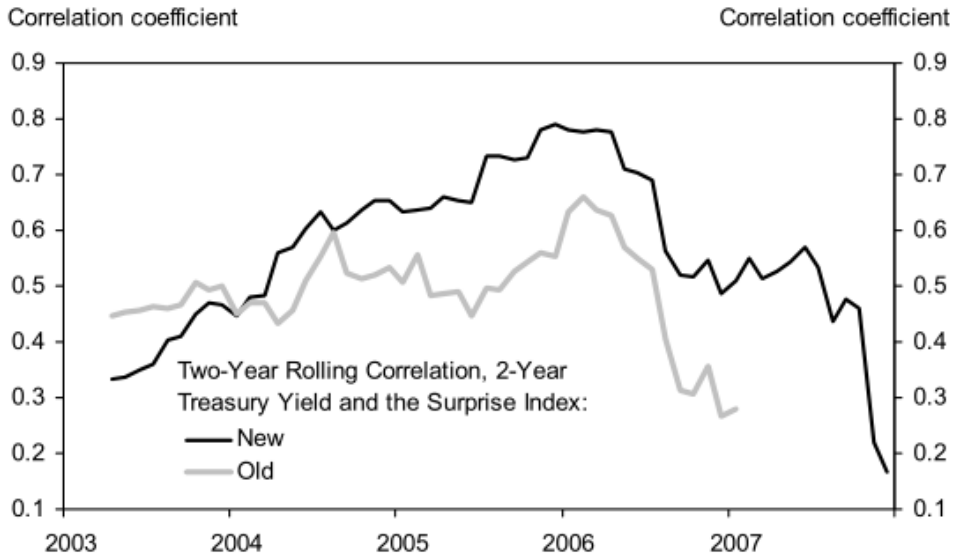
1. **The top three indicators remain the same, with payrolls gaining at the expense of the ISM index.** In the original GSSI, the ISM manufacturing index carried the most weight, followed closely by advance GDP and nonfarm payrolls. This order flipped in the new index, with payrolls leading by a wider margin as market participants exhibited increased sensitivity to signs of potential pressure on resource utilization as the US economic expansion matured.

2. **Housing indicators have had very little effect.** Although all three of the main indicators in this area (starts, new home sales, and housing market index) cleared the statistical significance hurdle, their effects are small compared to those of key gauges of factory activity (ISM, durable goods orders, and Philly Fed), total output (advance GDP), and pressure on resources (payrolls and core CPI). In fact, the effect of housing indicators on the new index is so small that a subindex constructed without housing looks almost the same as the overall index. This is quite surprising for 2006 given that most forecasts anticipated less weakness in housing than actually occurred. Three explanations are possible: (1) market participants (*i.e.*, traders and investors as opposed to economists) were more prescient; (2) those who forecast monthly housing indicators (and therefore set

the consensus) had a better bead on the housing outlook; or (3) the dimensions of the drop were clear enough as it was unfolding that surprises were small.

3. **The new index correlates more closely with interest rates and less closely with equity prices.** Two-year rolling correlations between monthly changes in the 2-year note yield and the new Surprise Index have been higher than for the old index since early 2004, as shown in Exhibit E. This link strengthened as the Fed was tightening monetary policy between mid-2004 and mid-2006, but it has since loosened. As we noted when introducing the GSSI in 2003, it tended to lag changes in stock prices (specifically the S&P 500 Index) by about two months. This link would have been looser for the new index. However, more recently it has disappeared altogether for both.

Exhibit IVE: The GSSI Correlates Well With 2-Year Yields



Source: Federal Reserve Board. Our calculations.

Although the GSSI represents a more systematic way to evaluate the impact of data on the markets than we have seen elsewhere, it does have important limitations. One is that the relative importance of indicators may change over time. For example, as developments in the housing market have dominated the overall trend in growth in the economy since the end of our sample in early 2006, it is reasonable to expect these indicators to move up on the list the next time we update the weights.

Another potential problem is that some reports are more complex than others and are therefore harder to summarize in a single number. The monthly employment

report is the most obvious example, as it includes not only the data on nonfarm payrolls included in the GSSI but also readings on unemployment and average hourly earnings. By contrast, indicators such as the ISM manufacturing index and the Conference Board's consumer confidence index are much more of the "what you see is what you get" variety. The necessity of collapsing the more complex reports to a single figure probably understates their importance to some degree.

Notwithstanding these caveats, the GSSI appears to capture important shifts in market sentiment. In the future, we plan to extend it to other markets. We are also in process of extending the surprise indexes to other regions of the world; in fact shortly before this booklet went to press we established a new website where they can be found. We invite clients to consult it at the following address: https://portal.gs.com/gs/portal/research/econ/econsubject/?action=viewpage&subjectid=42333e9f6d7e4129a3d5805ffef3d6c1&setPageSubTitle=Y.

Section V. GS US Economics Publications and Forecasts

The US economics group maintains several publications as well as a quarterly forecast of economic activity and related variables. In this section, we provide a brief summary of those items and information on where they can be found.

Publications

Our regular publications currently include the *US Economics Analyst*, the *US Daily Financial Market Comment*, and *Today's US Events*:

- The *US Economics Analyst* is the group's flagship publication. It was launched in January 1996 and has been published weekly ever since—normally on Friday afternoons but occasionally earlier during holiday weeks. The normal format is eight pages, featuring a three-page essay analyzing a topic of relevance to the financial markets and/or our outlook on the US economy, including political issues from time to time when we think they are of particular importance to the markets. In addition to pages summarizing the entire publication, the US forecast, and the upcoming weekly calendar of data and other developments, the *US Economic Analyst* devotes two pages to a discussion/analysis of recent and prospective events as they relate to potential market or policy developments in the near term. Occasionally we shorten the format to four pages, omitting the feature article and the forecast table.

- The *US Daily Comment* dates back to the late 1980s. It is published Monday through Thursday in the late afternoon, New York time, after the US markets have closed. In recent years, each one has been devoted to a single topic that we judge to be of current interest to financial markets; it may also include political issues. The *US Daily Comment* is usually one to two pages, and it includes an update of the latest observation on the GSFCI^{SM} (see pp. 15-17).

- *Today's US Events* is a new daily publication, begun in February 2006 with the purpose of providing a brief heads up on key data releases, speeches, and other events of significance regarding the US economy that are scheduled for that day. It is released every business day, normally between 7:00 and 7:15 New York time.

For those with permission, back issues of the *US Daily Comment* (from November 28, 2000) and the *US Economics Analyst* (from inception in January 1996) are available at https://portal.gs.com/gs/portal/research/econ/products/.

In addition, we publish a number of items on an irregular, as-needed basis. These include:

- *US Views:* From time to time Chief US Economist Jan Hatzius writes up an informal summary of his thinking on the economic and policy outlook. The latest is available at https://portal.gs.com/gs/portal/research/econ/products/.

- The *GS Skinny:* The purpose of the *GS Skinny* is to provide as quick a response as possible to major releases and events. It normally comes out between 15 minutes and half an hour after the event has occurred and is limited to a few short paragraphs of description and analysis.

- *Global Economic Papers:* From time to time, members of the US economics group contribute to this series of "white papers" by the global economics team. These are in-depth analyses of major issues affecting the US and/or global outlook and likewise can be found at the same URL as above.

Forecasts

The group also actively maintains quarterly forecasts on a wide range of US economic indicators. These include real GDP and its major components, key measures of the US inflation rate, and various interest rates. The horizon for these forecasts normally extends to the end of the calendar year following the one in progress; around the beginning of December each year this horizon is extended to include another year.

Until early 2006, these forecasts were published in *The Pocket Chartroom*; now they are available at a website labeled ERWIN (for Economic Research World INdicators), maintained by our global colleagues in London and accessed at https://portal.gs.com/gs/portal/research/econ/erwin/erwinforecasts/. As noted above, the *US Economics Analyst* contains a summary of these forecasts on page 7 of that publication.

In addition, the group forecasts some of the monthly indicators that are discussed in the pages that follow. These forecasts are published in a monthly calendar issued on the day of the payroll employment report (covering the four or five weeks until the next report) and, week by week, on the last page of the *US Economics Analyst*.

Section VI. National Output, Income, and Profits

Gross Domestic Product (GDP) — High Impact

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Quarterly data, revised monthly
Timing: About four weeks after month-end
Hour: 8:30 AM[7]
Address: http://www.bea.gov/national/index.htm

- GDP measures the total value of goods and services produced by people, businesses, governments, and property located in the United States. It is computed both in nominal (current-dollar) and real (inflation-adjusted) terms, the latter currently by reference to a 2000 base year. The annualized quarter-to-quarter percentage change in real GDP gets the most attention in this report.

- GDP is the broadest available measure of US economic activity. It includes the following main categories: (1) personal consumption expenditures (PCE), (2) business investment in structures, equipment, and software, (3) residential investment, (4) inventory investment, (5) net exports, and (6) government consumption and investment expenditures, both at the federal and the state and local levels. Estimates of activity in these sectors are in billions of dollars at annual rates.

- GDP differs from GNP (gross national product) by excluding "net factor income," the difference between income earned by US residents on property and labor located outside the country and income earned by foreigners on US-based property and labor. Put differently, GDP represents output generated within the country's borders, irrespective of the nationality of the owner of a factor of production, while GNP refers to output by US-owned factors of production, wherever they may be located.

- GDP data for each quarter are reported three times:

  1. *Advance* estimates are released late in the first month following the end of a given quarter (*e.g.*, in late April for the first quarter). Despite the fact that this estimate has a large quotient of previously released data in it, it is routinely among the most important market movers (see pp. 10-14).

  2. *Preliminary* data come one month later, and contain more complete source data on inventories, foreign trade, and construction as well as revisions to other source data such as retail sales and capital goods shipments. This

[7] All times mentioned are Eastern Time (typically GMT minus five hours).

report also includes the first estimate of corporate profits (except for the final quarter of the year, when the profit data are delayed one more month).

3. *Revised* figures are reported late in the third month after end of the quarter in question. This remains the official GDP estimate for a given quarter until comprehensive annual revisions are made, usually in late July.

- Personal consumption is by far the largest component of GDP, accounting for more than 70% of GDP since 2001. Monthly data for personal consumption expenditures are reported separately (see p. 51). However, other sectors tend to be more volatile and can therefore have a significant effect on quarterly GDP growth patterns.

- *Final sales*—GDP excluding the change in business inventories—is a widely followed broad measure of demand in the economy. At times, however, final sales can be a misleading gauge of spending activity, particularly when there are large swings in net exports or government purchases of farm commodities. Final sales to domestic purchasers, which excludes net exports, and to private domestic purchasers, which further excludes the government sector, are useful supplementary indicators of domestic demand.

- In interpreting the effects of inventories on GDP growth, it is important to bear in mind that the rate of accumulation in inventories—rather than their level—is a component of GDP. Hence, it is the *change* in the rate of inventory accumulation from one quarter to the next, rather than the rate of accumulation itself that influences GDP growth for that quarter. Thus, if inventories rise at a fast but stable pace, they neither add to nor subtract from GDP growth.

- In 1995, the government began to calculate real GDP using "chain-weighted" indexes, rather than the old "fixed-weight" measures. The advantage of the chain-weight method is that it automatically rebalances the weights for individual GDP components in the price base each year rather than allowing the base year for this calculation to drift further into the past, which tended to make the deflation from nominal to real data less statistically reliable. One complication of the new system, however, is that individual components of real GDP are no longer additive, as they were before.

- By convention, GDP is calculated by summing up the sales of US output and then converting this total to a production measure by adding in the net change in inventories as described above. An alternative approach would be to add up the income paid out to factors of production (wages and salaries for workers, corporate profits, interest, dividends, and proprietors' income for owners of capital, etc.). In a world of perfect measurement, the two methods should yield the same result, but in practice the alternative—*gross domestic income* or GDI—differs by an amount known as the *statistical discrepancy*.

Some people think the growth in GDI provides a better measure of GDP at times; however, it is more variable from one quarter to the next (increasingly so given the trend toward incentive-based labor compensation) and historically the convergence on revisions has usually been from GDI to GDP.

- The GDP report also provides information about a number of price indexes. The two most widely followed are the GDP price index, the most comprehensive measure of US output prices (see p. 86-87) and the "core" (ex food and energy) PCE price index, the measure that Fed officials and most private US economists regard as the best gauge of underlying trend of consumer inflation (see p. 84-86).

Personal Income **Low Impact**

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Monthly
Timing: About four weeks after month-end, usually the next business day following GDP report
Hour: 8:30 AM
Address: http://www.bea.gov/national/index.htm#personal

- Personal income measures total pretax earnings of individuals, non-profit organizations, and private trust funds. Although the data are reported monthly, figures are expressed at an annual rate. Markets focus mainly on the month-to-month growth in this figure and sometimes its principal components.

- Labor compensation is by far the largest component of personal income, comprising about two-thirds (68%) of the total, including supplements such as pensions, and insurance benefits (13%) as well as wages and salaries (55%). Other categories include interest income (about 9%), transfer payments (*e.g.*, Social Security, unemployment insurance, and other benefits, cumulating to about 15%), proprietors' income (both farm and nonfarm—9%), dividends (6%), and rental income (less than 1%). From the total of these categories, the value of personal contributions for social insurance (8%) is subtracted to arrive at personal income.

- *Disposable personal income* (DPI) measures personal income less personal tax and nontax payments, and is reported in both nominal and real terms. Most economists regard changes in real (inflation-adjusted) DPI or changes in its wage and salary component as key drivers of changes in real consumer spending.

- Personal saving is calculated by subtracting personal outlays from personal income. Personal outlays include consumption expenditures, nonmortgage interest payments and transfer payments by individuals to foreigners and the government. The saving figure is reported along with the income statistics, both as an absolute current-dollar level and as a percentage of disposable personal income, which is called the *personal saving rate*.

- The personal saving rate is the subject of much controversy, mainly because it does not include capital gains on assets held by the household sector. To the extent possible, the national income accounts—of which the monthly personal income and outlays data are a part—exclude such gains (and losses) because they do not represent income paid out of current output. Put differently, the personal saving rate is intended to measure the (net) amount of current income being set aside by households for net asset accumulation, not the amount by which their net worth is increasing. Contrary to popular perception, personal saving does include income added each year to 401(k) and other such vehicles to the extent it is properly measured and is not offset by increases in spending.[8]

- This report also covers personal consumer expenditures (PCE) and the PCE core (ex food and energy) price index, both of which in recent years have garnered more market attention than personal income itself, hence the low market impact rating on this portion of the report. These components of the report are covered on pp. 51 and pp. 84-86, respectively.

Corporate Profits **Low Impact**

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Quarterly data, revised monthly along with GDP data
Timing: Eight to nine weeks following quarter-end, with release of the preliminary (second-round) GDP report. Data for fourth-quarter profits are delayed an additional month.
Hour: 8:30 AM
Address: http://www.bea.gov/national/index.htm#corporate

- Corporate profits are reported two ways by the government: *tax-based or reported* profits, which are derived from corporate tax returns, and *adjusted or economic* profits, which are reflect earnings from current production. Although the tax-based figures tend to cross the tape first, adjusted profits are the more economically meaningful measure. Both are published on a pretax and after-tax basis. As is the case with other components of the national

[8] For more on the personal saving rate, see "Straight Talk on Personal Saving," *US Daily Comment*, December 6, 2004.

accounts, dollar figures for profits are annualized. However, quarter-to-quarter percentage changes are not annualized. Most analysts focus on year-to-year changes in corporate profits, especially when comparing them to profit data from other sources.

- In estimating profits from current production, the Commerce Department makes two adjustments to the tax-based figures:

  1. The *inventory valuation adjustment* (IVA) removes the implicit capital gains (or losses) reported as earnings by firms whose accounting systems value the inventories used or sold in a given period at higher (lower) prices than those at which the inventories were originally purchased (*i.e.*, accounting systems other than LIFO—last in, first out).

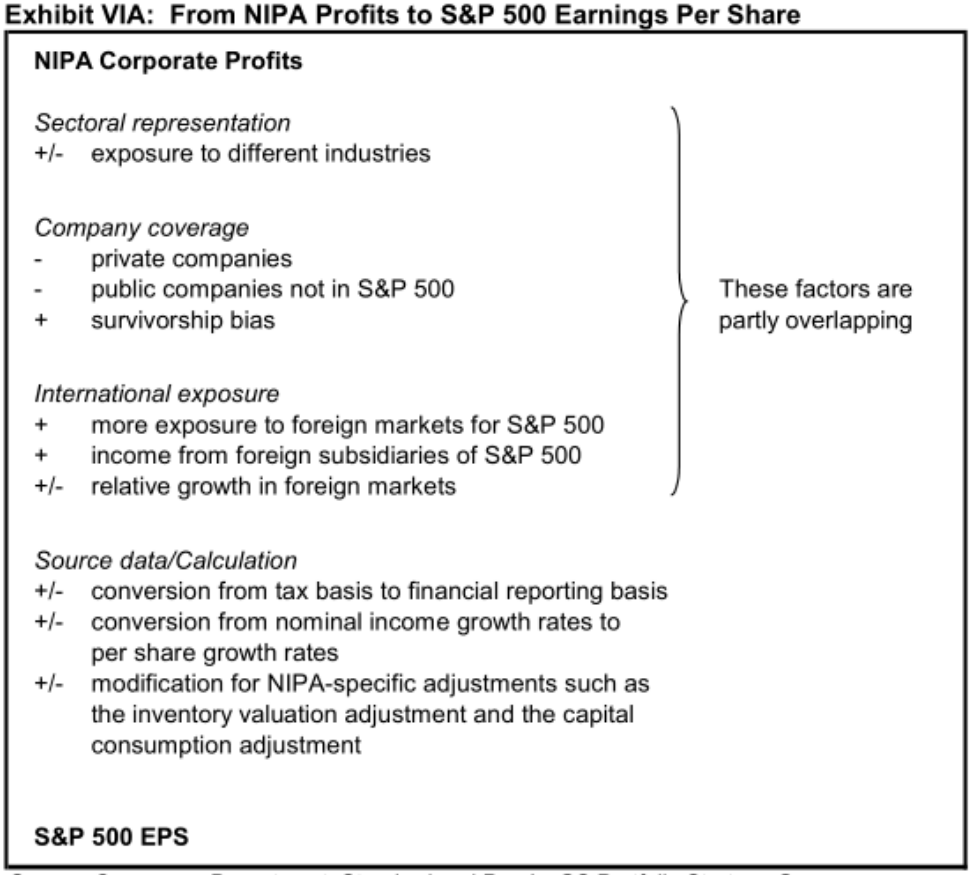
  2. The *capital consumption adjustment* corrects for the preferential tax treatment of depreciation, standardizing these charges to an economic (geometric) basis. This adjustment also converts depreciation from the historical costs allowed for tax purposes to a replacement cost basis.

- Strength or weakness in corporate profits often foreshadows increases or decreases in the contribution of capital spending to real GDP growth.

- Profit changes reported by the government often differ substantially from those published by Standard and Poor's Corporation, which are the focus of attention in the equity market. Key differences between the two measures are summarized in Exhibit A, with the caveat that some of them overlap one another.[9] In particular, the Commerce Department data cover all firms meeting the official description of a "corporation" (including profits earned by the Federal Reserve System), whereas the S&P data track the earnings of a select group of large, publicly traded firms whose composition can change as highly profitable new companies displace older ones whose profitability is diminishing (*"survivorship"* bias). As a result the two measures differ in terms of coverage of various sectors of the economy (most homebuilders are not publicly traded, for example) as well as exposure to international markets. Sources of data also differ as does the treatment of the inventory profits and capital consumption adjustments noted above. Finally, the S&P data are calculated on a per share basis, and can therefore be affected by changes in the number of shares outstanding, whereas the government data are reported in dollars (at an annual rate).

[9] This exhibit is drawn from Michael Moran and Andrew Tilton, "Accounting Ledger: Profit Growth—S&P vs. NIPA," February 14, 2008.

Exhibit VIA: From NIPA Profits to S&P 500 Earnings Per Share



Source: Commerce Department. Standard and Poor's. GS Portfolio Strategy Group.

Section VII. Sectoral Production, Orders, and Inventories

ISM Report on Business—Manufacturing — High Impact

Source: Institute for Supply Management
Frequency: Monthly
Timing: First business day of following month
Hour: 10:00 AM
Address: http://www.ism.ws/ISMReport

- Each month, the Institute for Supply Management (ISM) surveys about 350 purchasing agents on recent trends in their business. The ISM collects data on new orders, production, employment, supplier deliveries, inventories, prices paid, import and export orders, and unfilled orders. For each category, the agents are asked whether activity has risen, fallen, or been unchanged over the month (for supplier deliveries, the choices are whether times to delivery have lengthened, shortened or remained the same).

- The ISM calculates indexes for each category by adding to the percentage of those reporting higher activity (longer delivery times) half of the percentage reporting no change and then applying a seasonal adjustment factor. Thus, an orders index over 50, for example, means that the number of respondents reporting higher production exceeded the number reporting lower orders.

- The ISM combines five of these indexes—new orders, production, employment, supplier deliveries and inventories into a composite index, applying equal weights. Prior to January 2008, the weights were 30% for orders, 25% for production, 20% for employment, 15% for supplier deliveries, and 10% for inventories.

- According to the ISM, a composite index reading above 50 typically implies that the manufacturing sector of the economy expanded during the month; a reading below that level suggests industrial contraction. Readings below 42 are normally associated with an economy-wide recession. This figure is lower because output in the service sector usually grows, providing an offset to modest setbacks in manufacturing.

- As noted, the supplier deliveries index (formerly known as vendor performance) measures the percentage of purchasing agents who are experiencing slower deliveries from their suppliers. It is a component of the index of leading indicators (see pages 47-48) because it reflects changes in the degree of industrial slack in the economy, which normally lead the business cycle. Vendor performance is also a useful gauge of inflation pressure. This is because delivery times tend to lengthen when production

bottlenecks or shortages arise and when capacity is being strained, conditions that normally precede an acceleration in prices.

- The ISM survey is one of the first available reports on business activity for the prior month. Therefore, it can provide an early reading on the performance of the economy's industrial sector, which is highly cyclical.

- Although the ISM structures its sample of respondents to replicate the relative weights of industries within the economy, each respondent gets the same weight regardless of the firm's size. The process of constructing the indexes also does not distinguish between changes (*e.g.*, increases in orders) that are small or large. Despite these statistical drawbacks, the index does a good job of tracking shifts in the growth trend of US industrial output as measured by the Federal Reserve's industrial production index (see p. 44).

ISM Report on Business—Nonmanufacturing **Medium Impact**

Source: Institute for Supply Management
Frequency: Monthly
Timing: Third business day of the month
Hour: 10:00 AM
Address: http://www.ism.ws/ISMReport

- In July 1997, the ISM began to conduct a survey of nonmanufacturing firms that parallels its long-running and highly useful poll of manufacturers. The results were reported to the public beginning in May 1998.

- The nonmanufacturing survey covers about 350 purchasing and supply management professionals from 18 sectors of the economy, representing areas as diverse as: agriculture, forestry and fisheries, mining, construction, transportation, communications, wholesale and retail trade, finance, real estate, general services, and public administration.

- Respondents are asked to provide information concerning business activity (generally understood to be production or output), new orders, employment, supplier deliveries, inventories, prices, the backlog of orders, new export orders, imports, inventory sentiment, and customers' inventories.

- As is the case in the manufacturing survey, the ISM nonmanufacturing questionnaire asks respondents to classify each component as higher, lower, or stable for the month (longer, shorter, or unchanged for supplier deliveries). These responses are compiled into diffusion indexes that reflect the percentage of those saying activity was higher in a given area plus one-half of the percentage stating that things are stable. Index readings above 50

indicate growth in the relevant component, while those below 50 denote contraction.

- The ISM began to provide seasonally adjusted results for its composite nonmanufacturing index in 2000, as well as for a few of the survey components (new orders, employment, and prices). Historical information on this adjusted basis is available back to 1997.

- Effective with its January 2008 release of data, the ISM has introduced a composite nonmanufacturing index (NMI) defined as an equal-weighted average of the business activity, new orders, employment, and supplier deliveries indexes. Previously, the business activity component served as the "headline" index for this survey, with the result that it could sometimes move in a direction different from most other components.

- The employment index from this survey is a useful supplementary piece of information in gauging changes in nonfarm payrolls (see p. 73). Otherwise, this survey is less useful than its manufacturing counterpart even though it covers a much broader slice of the US economy. In part, this is because it is unclear which metrics to compare it to; industrial production and factory orders serve that purpose in the case of manufacturing. It also has a much shorter history, though over that period it has been moderately well correlated with the overall pace of real GDP growth.

ISM Semiannual Reports **Low Impact**

Source: Institute for Supply Management
Frequency: Semiannual
Timing: Early December (press conference in NYC) and early May (at the ISM's supply management conference)
Hour: 11:00 AM in December, variable in May (depending on the location of the conference)
Address: http://www.ism.ws/ISMReport

- This report asks purchasing and supply management executives whether several measures of activity and prices are changing and, if so, by how much. The information is combined into a net average change for each of the categories, the most prominent of which are business revenue, capacity utilization, employment, and prices paid.

- The December report asks for actual changes in the year just ending and for predicted changes in the upcoming year. The spring report asks for updated predictions for the year in progress.

Chicago Business Barometer™ **Medium Impact**

Source: National Association of Purchasing Management, Chicago
Frequency: Monthly
Timing: Last business day of the month
Hour: 9:45 AM
Address: http://www.napm-chicago.net/home/

- One business day before the ISM releases results from its monthly manufacturing survey, the Chicago chapter of the National Association of Purchasing Management (now the ISM) issues a similar report on factory activity in its region, which covers parts of three states (Illinois, Indiana, and Michigan).

- Like the ISM data, the Chicago purchasing survey results are presented in the form of diffusion indexes, with seasonally adjusted readings above and below 50 implying expansion and contraction, respectively. The Business Barometer™ is a weighted average of activity in several areas: new orders (35%), production (25%), backlogs (15%), supplier deliveries (15%), and employment (10%). Individual diffusion indexes for these areas are also reported. Note that, unlike the ISM manufacturing index, the Chicago Business Barometer™ does not include the inventory component.

- Moves in the Chicago Business Barometer™ do not always presage similar moves in the ISM manufacturing index. Since 1992 the two have moved in the same direction only about 57% of the time, although the correlation between those changes is 0.83. In other words, large moves in the Chicago index have some predictive power for the ISM, but the threshold for what constitutes a signal rather than pure noise is high.

Federal Reserve Surveys of Business Conditions **Low to Medium Impact**

Source: Regional Federal Reserve Banks
Frequency: Monthly
Timing: Various (see table on p. 37 and write-ups below)
Hour: Various (see table on p. 37 and write-ups below)

- Six Federal Reserve Banks conduct monthly surveys of business activity in their districts. In rough order of prominence in the eyes of participants in the financial markets, they are: Philadelphia, New York, Richmond, Kansas City, Dallas, and Chicago.

- The surveys are broadly similar in construction. All are patterned after the ISM survey, asking survey participants whether certain measures of activity

have increased, decreased, or remained unchanged. Results are presented in the form of diffusion indexes, which measure the differences between the share of respondents seeing an increase in a given area of activity and those seeing a decline.

- Thus, unlike the ISM and Chicago purchasing managers indexes, the Fed indexes are centered on zero rather than 50 as the dividing line between growth and contraction. Also, most of the "headline" indexes (except for the Richmond Fed's) are not composite indexes but instead constructed from answers to a separate question. This creates the possibility that the headline moves in a direction contrary to some of the detail in the survey. Finally, in many cases data for the prior month is subject to revision as more information is received and/or processed.

- Results from these surveys provide some of the input for contributions to the Fed's "beige book" (see pages 40-41). Exhibit A compares certain aspects of these surveys, four of which are described in more detail below. Separate comments are not provided for the Dallas and Chicago surveys, neither of which has generated much market interest so far.

Exhibit VIIA: A Cook's Tour of Regional Fed Surveys

Region	Start Date	Timing of Release	Headline = Composite Index?	Correl w/ ISM Manuf Index (Since July '01)[2]	Approx. % of US Manuf in District[3]	Special Notes
Philadelphia	May 1968	15th-21st	No	+0.89	4-5%	Arguably the most important Fed survey due to its long history and high correlation with the ISM
New York	July 2001	15th	No	+0.82	4%	The series are spliced with Philly Fed data to estimate seasonal factors
Kansas City	October 1994[1]	22nd-31st	No	+0.61	4-5%	Reports changes in activity relative to a year ago as well as changes from the previous month
Dallas	May 2004	24th-31st	No	+0.66	8%	Only 80 manufacturers typically respond (vs. 100+ for other surveys)
Richmond	November 1993	22nd-28th	Yes	+0.71	9.5%	Includes quantitative estimates of price movements
Chicago	January 1973	varies widely	Yes	+0.01	15%+	Based on hours worked data rather than qualitative responses; auto sector overrepresented

Notes:

1. Only quarterly data are available prior to July 2001.

2. This time period, for which data are available for all of the Fed surveys with the exception of the Dallas Fed's survey, was chosen in the interest of computing comparable correlation coefficients. In the case of the Dallas Fed's survey, the correlation coefficient listed was calculated using the data available from June 2004 until the present day.

3. Estimates for each district's share of national manufacturing output are based on the gross state product figures available for 2005. Since some district boundaries do not necessarily respect state boundaries, it was necessary to make rough estimations.

Source: Federal Reserve Banks, as indicated.

Philadelphia Fed Business Outlook Survey **Medium Impact**

Source: Federal Reserve Bank of Philadelphia
Frequency: Monthly
Timing: Third Thursday of each month
Hour: 10:00 PM
Address: http://www.phil.frb.org/econ/bos/index.html

- The Philadelphia Fed index is the oldest Fed survey, dating from May 1968.
- Manufacturing firms in the Third Federal Reserve district—eastern Pennsylvania, southern New Jersey, and Delaware—are polled by mail each month on "general conditions" as well as various categories of activity, with a focus on the six-month outlook as well as assessments of the most recent month. Categories include new orders, shipments, unfilled orders, delivery times, inventories, prices paid, prices received, number of employees, average workweek, and—in the case of the outlook—capital expenditures.
- Although the Philadelphia Fed labels its survey based on the month in which it is released, the data are actually drawn from a period that bridges the month in question and the prior month.
- As noted above for Fed surveys in general, the index of "general conditions" is based on responses to a separate question, usually soliciting respondents' views on conditions in their industry or in the economy. Therefore, its movements are sometimes inconsistent with those of the other indexes in the survey, which refer specifically to the respondent's company.
- Among Fed surveys, the Philadelphia Fed index exhibits the strongest correlation with the ISM index.

Empire State Manufacturing Survey **Medium to Low Impact**

Source: Federal Reserve Bank of New York
Frequency: Monthly
Timing: Fifteenth of the month or the first business day thereafter
Hour: 8:30 AM
Address: http://www.ny.frb.org/survey/empire/empiresurvey_reports.html

- The *Empire State Manufacturing Survey* tracks business conditions in New York State. Each month, executives of 200 large firms are asked whether various measures of activity have increased, decreased or remained the same from the previous month. They are also asked about expectations over the

coming six months. Surveys are mailed on the first day of each month and are accepted up until the fifteenth of the month. About 100 firms respond.

- The Empire survey is patterned after the Philadelphia Fed survey described immediately above. The New York Fed constructs diffusion indexes for each of nine measures of economic activity: employment, working hours, new and unfilled orders, shipments, inventories, delivery times, prices paid, and prices received. However, the Empire index is much younger than the Philadelphia index, dating only from July 2001.

- Like the neighboring Philadelphia index, the Empire index bears a fairly high correlation with the ISM, albeit over a much shorter period of time.

Richmond Federal Reserve Bank Survey **Low Impact**

Source: Federal Reserve Bank of Richmond
Frequency: Monthly
Timing: Fourth Tuesday of the following month
Hour: 10:00 AM
Address: http://www.richmondfed.org/research/regional_conditions/

- Each month since November 1993, the Richmond Fed has polled businesses in the Fifth Federal Reserve District about conditions in the manufacturing, service, and retail sectors. This district includes the District of Columbia, Maryland, Virginia, North Carolina, South Carolina, and most of West Virginia. Response rates are about 100 firms out of 220 contacted for the manufacturing survey and typically 90-95 out of 200 for retail and services.

- As is the case with other Fed surveys, most results are reported as diffusion indexes, with values of zero indicating a balance between those saying that a certain variable went up or down. The Richmond surveys also ask about expectations six months hence.

- Unlike other Fed surveys, the manufacturing index of the Richmond survey is a composite of three other indexes—new orders (40%), shipments (33%), and employment (27%). In addition to these indexes, this survey covers backlogs of orders, capacity utilization, vendor lead times (supplier deliveries), average workweek, wages, and inventories of finished goods and raw materials. The six-month outlook also includes a diffusion index for capital spending. Current and six-month expected trends for prices paid and received are also reported, but as arithmetic averages rather than as diffusion indexes.

- Compared to other Fed surveys, the Richmond Fed survey is in the middle of the pack as a predictor of the ISM index, with a correlation of 0.71.

- The parallel Service Sector Conditions Survey splits most of its data into retail and other service-sector indexes. In both cases, this survey generates diffusion indexes for revenues, employment, wages, and expected product demand, as well as average price changes (both current and expected over the next six months). For retailers, the survey also produces indexes for inventories, big-ticket sales, and shopper traffic.

Kansas City Federal Reserve Bank Manufacturing Survey **Low Impact**

Source: Federal Reserve Bank of Kansas City
Frequency: Monthly
Timing: Last Thursday of the following month
Hour: 11:00 AM
Address: http://www.kc.frb.org/mfgsurv/mfgmain.htm

- Each month, the Kansas City Fed compiles reports on business conditions from a survey of 160 manufacturers in the Tenth Federal Reserve District, which includes Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri. Seasonally adjusted diffusion indexes are computed and released midway through the following month.

- Items covered are: production, shipments, new orders, backlogs of unfilled orders, employment, workweeks, prices received, prices paid, new export orders, supplier deliveries, and inventories of both materials and finished goods. The production index serves as the "headline" index. An index of capital spending is also calculated on a year-to-year basis.

- This survey started as a quarterly report in October 1994 and was converted to a monthly report in July 2001. Its correlation with the ISM index, at about 0.6, is weaker than most other Fed surveys.

Current Economic Conditions ("Beige Book") **Low to Medium Impact**

Source: Federal Reserve Board
Frequency: Eight times per year, every six to eight weeks
Timing: The second Wednesday (*i.e.*, about two weeks) preceding each Federal Open Market Committee meeting
Hour: 2:00 PM
Address: http://www.federalreserve.gov/fomc/beigebook/2007/default.htm

- Prior to scheduled meetings of the Federal Reserve's policy-setting Federal Open Market Committee (FOMC), each of the 12 district banks prepares a report on regional economic and financial conditions. These typically

discuss recent developments in retailing, services, manufacturing, real estate and construction, banking and finance, agriculture and commodity markets, labor markets, and inflation, based primarily on conversations with business contacts in the region. On a rotating basis, one of the banks compiles these surveys and writes a summary of the findings. The resulting document, *Current Economic Conditions*, is one of three books provided to Fed officials as part of their briefing materials for the FOMC meeting.

- The report is popularly known as the "beige book" owing to the color of the cover that was traditionally used for the briefing book. The other two regular committee briefing documents—a "green book" describing the business climate and Fed staff outlook and a "blue book" outlining different policy options—are not released to the public.

- Because the "beige book" is based mostly on anecdotal reports, it can convey a different impression about the economy than might be gleaned from the latest government figures alone. By its nature, the information is less systematic; however, at times when the economy has been subjected to large shocks—such as natural disasters or turbulence in financial markets—the beige book may provide the most up-to-date information on events.

- Over time, the collection of information for this report has evolved into the publication of monthly indexes of activity, described in more detail above.

NFIB Small Business Optimism Index **Low Impact**

Source: National Federation of Independent Business (NFIB)
Frequency: Monthly
Timing: Second Tuesday of the following month, though occasionally with variation of a day or two
Hour: No specific time
Address: http://www.nfib.com/page/researchFoundation

- Each month the NFIB surveys its membership on a wide range of metrics concerning current economic activity and their expectations over the next six months. Results of the survey are published in a report entitled *Small-Business Economic Trends*. The data are quarterly from 1974 through 1985 and monthly from 1986 forward.

- Specific questions focus on current experiences in earnings, inventories, and filling jobs, expectations about credit, sales, and the economy, judgments about whether it's a good time to expand their businesses, and plans to add staff, build inventory, and incur capital expenditures in the next three to six months. From the answers to these questions, the NFIB constructs a small

business optimism index, giving each of the ten foregoing questions equal weight and calibrating the index to 100.

- Firms are also asked about current changes in inventories, current and planned increases in selling prices and in worker compensation, whether they have borrowed, and their recent experience in sales growth and obtaining credit.

Durable Goods Orders (Advance Report) **Medium Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: Three to four weeks after month-end
Hour: 8:30 AM
Address: http://www.census.gov/indicator/www/m3/adv/index.htm

- This report tracks the value of orders placed with US manufacturers for goods with life expectancies of at least three years. Major categories include primary metals, electrical and nonelectrical machinery, consumer hard goods, transportation equipment (including aircraft and automobiles), and military hardware. Figures for shipments, inventories and unfilled orders for durable goods are also released at this time.

- In 2001, the Department of Commerce adopted the North American Industry Classification System (NAICS) for its reports on activity in the US manufacturing, wholesale, and retail sectors. The goal of this change, implemented along with similar changes in Canada and Mexico, was to bring the statistical conventions into closer alignment with the realities of a more service-based 21st Century economy. The cost was a shorter history of data, as NAICS figures are available only back to 1992.

- Monthly changes in durable goods orders are volatile and subject to revisions as more complete data become available. The first such revision occurs a week to ten days following the advance figures, as part of the more comprehensive report on manufacturers' shipments, orders, and inventories (see pp. 43-44). Data for each month are then subject to another round of (double) revision in the pair of reports released for the subsequent month. Even after all these revisions, the standard deviation of the monthly change over the past five calendar years (2003-2007) was 3.4% (not annualized).

- Many analysts focus on orders excluding transportation or excluding defense, as these categories are especially volatile and, in the case of defense, not a reflection of private-sector activity. Aircraft orders, in particular, can swing

widely from month to month; moreover, long lead times between orders and shipments limit their relevance for near-term production.

- Within nondefense orders, bookings for capital goods are watched closely as a leading indicator of business spending on equipment; the corresponding series on shipments is useful for tracking this component of GDP. Other nondefense orders are for partly processed materials and consumer-related items; occasionally their changes are dominated by changes in shipments of motor vehicles (which in this industry are equivalent to orders).

- The Conference Board's index of leading economic indicators (see pages 47-48) includes two components related to bookings of durable goods: (1) manufacturers' new orders for consumer goods and materials, in 2000 dollars, and (2) manufacturers' new orders for nondefense capital goods, also in 2000 dollars. However, neither is directly observed in the durable goods report as it does not include any adjustment for inflation.

- Unfilled orders measure the degree to which output is keeping pace with incoming requests, with a rising backlog of unfilled orders suggesting that firms are not keeping up with demand. In principle, this should signal a pickup in the growth pace of industrial production; in practice, the trend in industrial production has varied more in recent years than a strong upward trend in backlogs would have implied. The reason: items with long lead times—notably aircraft—appear to have dominated the increase in backlogs.

- In fact, analysts often abstract from bookings for civilian aircraft because of their volatility and long production lead times. The residual measures, for (nondefense) capital goods as well as total durable goods orders, can then provide a more stable read on underlying trends.

- Changes in the durable goods inventory-to-shipments ratio have historically been a good leading indicator for shifts in the trend of industrial output. However, when these changes send a different message than the ISM index (pp. 33-34) for any extended period, the ISM index usually wins out.

Manufacturers' Shipments, Inventories, and Orders **Low Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: Four to five weeks after month-end
Hour: 10:00 AM
Address: http://www.census.gov/indicator/www/m3/

- This report offers data on new orders, backlogs of unfilled orders, shipments, and inventories for both durable and nondurable goods at US factories.

- Durable goods account for more than half (about 52%) of new factory orders. Thus, much of the information in the factory orders report is available a week earlier, in the advance report on durable goods.

- Figures released in the advance report on durable goods are routinely revised in the factory orders report, although the revisions are usually modest.

- In 2001, the Department of Commerce adopted the North American Industry Classification System (NAICS) for its reports on activity in the US manufacturing, wholesale, and retail sectors. The goal of this change, implemented along with similar changes in Canada and Mexico, was to bring the statistical conventions into closer alignment with the realities of a more service-based 21st Century economy. The cost was a shorter history of data, as NAICS figures are available only back to 1992.

- Changes in the ratio of manufacturing inventories to shipments can signal emerging imbalances between production and demand in the factory sector. Manufacturing inventory data also are broken down by stage of processing (raw materials, work-in-process, and finished goods), the analysis of which provides further insight into whether changes are the result of fluctuations in customer demand or decisions by the goods-producing firms themselves. For example, when (year-to-year) growth in work-in-process inventories exceeds (year-to-year) growth in the other two components, this is often a bullish sign for near-term production. The reason: if the accumulation of inventories is concentrated in the production process itself, then firms may feel they need to rebuild stocks at either end of the production pipeline, which in turn would boost growth.

Industrial Production **Low to Medium Impact**

Source: Federal Reserve Board
Frequency: Monthly
Timing: About two weeks after month-end
Hour: 9:15 AM
Address: http://www.federalreserve.gov/releases/g17/current/

- This report measures domestic output by manufacturing, mining, and utility firms operating in the United States. Seasonally adjusted production indexes are calculated for various industries and market groups, indexed to a base year of 2002=100.

- Of the three main components, manufacturing is by far the largest, comprising almost five-sixths (nearly 83%) of total industrial output. Mining is about 8%, utilities a bit more than 9%. In turn, industrial output accounts for about 16% of total GDP, although it should be noted that the Fed's data also cover intermediate product, which is netted out of GDP. In fact, final products constitute less than half (about 42%) of the overall industrial production index.

- Principal subsectors of manufacturing and their respective weights in the overall index are: chemicals (about 12%), food and tobacco products (11%), computer and electronic products (8%), printing and publishing (7%), fabricated metals (6%), motor vehicles and parts (5%), and machinery (5%).

- Motor vehicle production can be especially volatile. Monthly data on unit auto and truck output, which are available at the beginning of the following month, can be used in conjunction with seasonal factors provided by the Commerce Department and the Federal Reserve to estimate this component.

- In compiling this report, the Fed staff initially relies heavily on data from the Department of Labor's monthly employment survey (pp. 72-75), such as hours worked and employment in manufacturing and mining industries, from which changes in output can be inferred with an adjustment for productivity trends. Data from private firms or groups, notably electric and vehicle output, are also available fairly quickly. In subsequent months, these estimates of production are revised to incorporate information about actual physical output.

- Unseasonable weather, natural disasters, strike activity, or an unusually timed holiday can distort monthly changes in industrial production.

Capacity Utilization **Low to Medium Impact**

Source: Federal Reserve Board
Frequency: Monthly
Timing: About two weeks after month-end, coincident with industrial production data
Hour: 9:15 AM
Address: http://www.federalreserve.gov/releases/g17/current/

- Capacity utilization measures the percentage of estimated productive capacity in manufacturing, mining, and utilities in operation each month. Figures are available along the same industry and sector lines detailed in the data for industrial production (see immediately above).

- The utilization rate for manufacturing can be a useful indicator of inflation pressure in the goods sector, as high utilization over a sustained period or a sharp increase over a shorter period can signal the emergence of bottlenecks. Historically, most analysts have viewed utilization rates approaching 85% as a sign of heightened inflation risk, although others question the value of such benchmarks in an economy that is increasingly globally integrated.

- The growth rates of productive capacity in various industries are presumed to be relatively stable in the short run. Therefore, month-to-month changes in capacity utilization are almost entirely a function of changes in production. Every other year, in November, the Fed benchmarks its utilization data and the implied capacity indexes to new survey estimates of utilization.

Manufacturing and Trade Inventories and Sales **Low Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: About six weeks after month-end, an hour and a half after the advance retail sales report for the following month
Hour: 10:00 AM
Address: http://www.census.gov/mtis/www/current.html

- This report shows the volume of inventories on hand at retail, wholesale, and manufacturing establishments as of month end, measured in book value. It also shows, for the same sector breakdown, the dollar volume of sales during the month. Markets pay closest attention to monthly percentage changes, which are not annualized. Dollar figures for sales are monthly totals, also not annualized.

- The report usually has little market impact because most of the data have been released in previous reports. In fact, the only new information is for retail inventories, which in recent months have comprised about 35% of total manufacturing and trade inventories (with manufacturing and wholesale stocks accounting for about 37% and 28% of the total, respectively).

- In 2001, the Department of Commerce adopted the North American Industry Classification System (NAICS) for its reports on activity in the US manufacturing, wholesale, and retail sectors. The goal of this change, implemented along with similar changes in Canada and Mexico, was to bring the statistical conventions into closer alignment with the realities of a more service-based 21st Century economy. The cost was a shorter history of data, as NAICS figures are available only back to 1992.

- Inventory-to-sales ratios, which implicitly measure the months supply of inventories currently on hand, are also included in this report. I/S ratios can help judge whether recent changes in rates of inventory accumulation are sustainable given sales trends.

- Motor vehicle inventories are quite variable, and can therefore greatly influence monthly changes in total business inventory statistics. In addition, in estimating retail motor vehicle inventories in the GDP accounts, the Commerce Department relies on unit data rather than the date in this report. For these reasons, a special focus on nonauto retail inventories is warranted.

- Shifts in the accumulation rate of business inventories can have a significant impact on estimates of GDP growth, and the monthly book-value figures contained in this report (excluding retail motor vehicle inventories) serve as the basis for the inventory component of GDP. However, translation to the GDP inventory component involves several steps. Moreover, these data can be revised substantially from one month to the next. For this reason as well, the report tends not to have much market impact.

Composite Index of Leading Economic Indicators **Low Impact**

Source: The Conference Board
Frequency: Monthly
Timing: Approximately three weeks after month-end
Hour: 10:00 AM
Address: http://www.conference-board.org/economics/indicators.cfm

- The leading index is a composite of ten financial and nonfinancial indicators that have historically tended to anticipate business cycle peaks and troughs. It is reported as a month-to-month percent change in the total index value.

- Two other cyclical indexes—coincident and lagging—are also computed.

- The composition of the leading index has changed from time to time over the years as a result of efforts to improve its performance and adapt to changes in the structure and behavior of the US economy. The last major update occurred in December 1996, after a thorough review by the Conference Board's staff. (The Conference Board took over compilation of the cyclical indexes from the Department of Commerce in late 1995.) At that time, the change in the yield curve differential between 10-year Treasury notes and the federal funds rate was added and two components (the change in sensitive materials prices and the change in manufacturers' real unfilled orders) were dropped. Historical index values were revised to reflect the updated basket. In June 2005, the yield curve variable was modified to be the level rather than the change.

- The ten components of the leading index are as follows:

Nonfinancial Indicators	Financial/Expectations Indicators
Average factory workweek	Stock prices
Initial claims for unemployment insurance	Real money supply (M2)
Vendor performance (ISM supplier delivery index)	Yield curve (10-year note yield minus Federal funds rate)
Building permits	Consumer expectations
Real new orders for consumer goods and materials	
Real manufacturer's new orders, nondefense capital goods	

- The financial and expectations indicators give indirect signals about upcoming changes in business activity, whereas the nonfinancial group provides more direct evidence about economic trends.

- Most components of the index (all but the real orders components, the real money supply, and sometimes building permits) are known by the time it is released, and the missing items can be estimated with reasonable accuracy. As a result, the release itself provides little new insight into economic trends and has little market impact.

- In 2001, the Conference Board began releasing the leading index ahead of reports on the two orders components, in an effort to improve the timeliness of the information. However, this has made the index subject to substantially greater revisions.

- The ratio of the coincident to the lagging index is sometimes followed as an alternative leading indicator series. The coincident-to-lagging index ratio is generally a less reliable measure for presaging business cycle peaks than the leading index, and it has been no better than the leading measure at foreshadowing economic upswings.

Section VIII. Consumer Spending and Confidence

Retail Sales **High Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: About two weeks after month-end
Hour: 8:30 AM
Address: http://www.census.gov/svsd/www/fullpub.html

- This report tracks sales by retail establishments, including food services. The dollar figures are monthly totals, not annualized as are the comparable data for total consumer spending in the GDP accounts. The retail sales data are adjusted for normal seasonal variation, holidays, and trading-day differences. Markets pay closest attention to month-to-month changes, which are not annualized.

- "Advance" estimates of retail sales, meaning those provided for the latest month, are notoriously volatile, as these data come from a small sample of retailers (about 4,100) and may not include complete results. Survey forms are mailed to retailers five business days before the close of the reporting month, and the deadline for responses is three days after month-end. "Revised" and "final" data, reported one and two months after the "advance" estimates are published, are based on the full-month sales recorded by a much larger number of firms (about 12,000) and can result in substantial revisions to the advance figures. For this reason, only tentative conclusions can be drawn from the latest month of retail sales data, which can often be overridden by revisions.

- In 2001, the Department of Commerce adopted the North American Industry Classification System (NAICS) for its reports on activity in the US manufacturing, wholesale, and retail sectors. The goal of this change, implemented along with similar changes in Canada and Mexico, was to bring the statistical conventions into closer alignment with the realities of a more service-based 21st Century economy. The cost was a shorter history of data, as NAICS figures are available only back to 1992.

- Automobile dealer sales comprise a large portion (about 25%) of total retail sales. Unit auto and truck sales reports, issued monthly by the individual vehicle manufacturers, give an early indication of the monthly sales results for this sector (see p. 52). However, these unit sales figures and the dollar value of retail auto sales do not always move in tandem, in part because the retail figures include sales of used vehicles and parts.

- Monthly chain-store sales reports also provide information on retail activity, but they can be misleading for several reasons: (1) Chain-store data are reported on a year-to-year basis for four- or five-week periods, whereas retail sales are reported on a month-to-month basis; (2) chain-store reports focus on same-store sales, which tend to understate growth in aggregate spending; and (3) chain stores, whose focus is mainly on general merchandise and apparel, comprise only a small part (perhaps one-eighth) of total retail sales. Even so, we have found the Goldman Sachs Retail Index of such sales (see p. 54) to be of some help in estimating monthly total retail sales results.

- Unusual weather, changes in the timing of holidays (such as Easter or the interval between Thanksgiving and Christmas), tax law changes, and other special factors can influence monthly retail sales figures, even after seasonal adjustment.

- The retail sales data exclude purchases of gift cards until they are redeemed (as do the chain-store data). As gift cards have grown in popularity in recent years, this accounting treatment has introduced a distortion into the retail sales data, artificially depressing sales during the holiday season and boosting them in subsequent weeks. In principle, seasonal adjustment factors should eventually correct for this distortion, but that is unlikely until buying patterns stabilize.

- Retail sales figures do include purchases made online. All firms that receive the retail survey report form each month are asked to provide data on such activity. However, any nonretail online operations such as travel agencies, financial services, manufacturing, and wholesaling activity are excluded.

- In dollar value, this report is the largest single input into the Commerce Department's estimation of total consumer spending, although the retail sales figures exclude most services. In preparing its consumption estimates, Commerce excludes retail sales of motor vehicles, preferring to base this component of spending on the unit sales data (see p. 52), and building materials, because they represent intermediate product that ultimately affects residential investment. The resulting sub aggregate, commonly called *retail "control,"* constitutes about 30% of total consumer spending. Some analysts also exclude sales by gasoline service stations because volatile price changes often dominate short-term moves in this category, obscuring underlying changes in demand. This aggregate is called *control ex gas*.

Personal Consumption Expenditures (PCE) **Medium Impact**

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Monthly
Timing: About four weeks after month-end, usually the day after GDP
Hour: 8:30 AM
Address: http://www.bea.gov/national/index.htm#personal

- PCE measures household spending for all goods and services, which comprises roughly 70% of GDP. Monthly PCE data are reported at the same time as personal income figures (pp. 29-30), and are the monthly analog to the consumer spending component of the quarterly GDP data.

- PCE is reported both in nominal (current-dollar) and real (inflation-adjusted) terms. The data are broken down into three broad categories: durable goods, nondurable goods, and services, with additional detail available for numerous components of each category. Markets focus on month-to-month percentage changes, not annualized, and on what these changes—coupled with revisions to past data—imply for quarterly growth rates of real spending and GDP. Revisions normally go back to the first month of the quarter for which revisions to GDP are still being made.

- The monthly retail sales report is a key input into the calculation of PCE. Since the retail report predates the PCE report by about two weeks, it can be very helpful in gauging prospective changes in total consumer spending. In this regard, it should be noted that PCE figures for motor vehicle outlays are based on unit vehicle sales (see following) rather than the automotive dealers statistics in the retail sales report. For this reason, the motor vehicle component of retail sales is usually excluded (along with building materials) when assessing consumer spending trends. The residual—*retail control*—constitutes about 30% of consumer spending.

- Federal Reserve officials have identified the "core" (excluding food and energy) PCE price index, published in this report, as their preferred measure of underlying consumer inflation. As a result, financial markets are paying more attention to this index as an alternative to the core consumer price index (see pages 84-86).

- This report includes information on personal saving, both in absolute dollars and as a percentage of disposable income (the "personal saving rate"). The saving rate and its historical relationship to household net worth can be helpful in assessing long-term consumer spending prospects, as well as various other important economic relationships (see page 30).

Unit Auto and Truck Sales **Low to Medium Impact**

Source: Individual company reports, adjusted using seasonal factors provided by the Department of Commerce, Bureau of Economic Analysis
Frequency: Monthly
Timing: One or two business days after month-end
Hour: Variable, usually from 11:30 AM to 4:00 PM

- Monthly reports by major vehicle manufacturers provide useful information about demand trends in this sector and, by inference, for other big-ticket consumer items.

- The companies report year-to-year percentage changes in sales. These data are subsequently aggregated into a seasonally adjusted annual (sales) rate (SAAR), expressed in millions of units. This figure is usually available by late afternoon of the reporting day.

- These aggregates are generated for domestically produced passenger cars and lightweight trucks (gross weight under 14,000 pounds), imports of cars and lightweight trucks, and heavy trucks. Various combinations are useful in assessing consumer demand (total lightweight vehicles), capital spending (heavy trucks), or domestic production in this sector.

- Unit vehicle sales can be volatile; however, they can provide early signals of changes in consumer behavior because such activity is usually discretionary and responds to changes in financing rates, sentiment, and other economic conditions. In recent years, monthly fluctuations have reflected changes in special financing incentives.

- Over time, lightweight truck sales have risen steadily as a percentage of total vehicle demand, surpassing car sales (among domestically made models) in early 1999.

- Although these data are important, the fact that they are released in pieces by individual companies dilutes the market impact.

ICSC/UBS Warburg Retail Sales Index **Low Impact**

Source: The International Council of Shopping Centers/UBS Warburg
Frequency: Weekly, for week ending Saturday
Timing: Tuesday
Hour: 7:45 AM
Address: http://www.icsc.org/cgi/rsrchshow?section=st

- Using private survey information about nominal sales volumes at large retail chain stores, analysts at the ICSC and UBS Warburg calculate a seasonally adjusted weekly index of sales covering the prior week (ending Saturday).

- Monthly data are available back to 1969. The weekly series begins in 1989. These data are drawn from about 50 large companies, although the sample size changes over time and has been as large as 80. It includes department stores as well as other establishments that fit under the Department of Commerce's heading of "general merchandise."

- The data are reported on a "same-store" basis, measuring year-to-year percentage changes in sales at stores open one year or more. Although this is a sensible convention for analyzing company performance, it tends to understate growth in aggregate nominal spending.

- These data are of limited value in assessing broad trends in consumer spending for three reasons: (1) Although it is seasonally adjusted, the ICSC index (as it is commonly known) exhibits regular fluctuations around the prevailing trend that appear seasonal in nature; (2) The sample from which the data are drawn is small relative to retail sales and, by extension, total consumer spending; and (3) The data do not include online sales.

Johnson Redbook Report **Low Impact**

Source: Redbook Research Service
Frequency: Weekly, for week ending Saturday
Timing: Tuesday
Hour: 8:55 AM
Address: http://www.redbookresearch.com

- Based on information from 12 firms with about 9,000 stores (figures that have varied over time), the Redbook Research Service compiles and publishes a weekly report designed to measure sales trends. The data begin in 1983.

- Each week, the Redbook group uses the available information to calculate an estimated seasonally adjusted change in department store sales for the month as a whole.

- Figures are available for both aggregate sales and same-store comparisons. However, the financial markets pay most attention to the aggregate sales data.

- Estimated year-to-year sales gains for the current month are applied to year-earlier seasonally adjusted figures for retail department store sales reported by the Department of Commerce, so as to compute a percent change versus the

prior month. Thus, the Redbook report implicitly employs official seasonal factors in its estimates.

- Redbook results over recent years have shown only a modest correlation with monthly changes in nonauto retail sales as reported by the Department of Commerce. This is not surprising, given that department stores comprise only a small portion—roughly 10%—of total nominal US retail outlays.

Goldman Sachs Retail Index (GSRI) **Low Impact**

Source: Goldman, Sachs & Co.
Frequency: Monthly
Timing: First or second Thursday of following month
Hour: About 9:30 AM

- Based on monthly same-store comparison sales reports from large merchandise retailer firms, the Goldman Sachs retail industry analysts compute a sales index value and year-to-year percent change for the overall industry and for three subgroups (department stores, specialty retailers, and discount stores).

- Changes in the pattern of year-to-year sales growth in the GSRI can help discern shifts in the tone of consumer demand for goods.

- Unusual weather conditions, natural disasters, or movement in the timing of holidays obviously can influence year-to-year sales comparisons in any given month. For this reason, it is advisable to average results for three or more months.

- In addition, because it uses a same-store basis of comparison, the GSRI tends to systematically understate the rate of growth in current-dollar nonauto retail purchases.

Consumer Confidence (Conference Board) **Medium Impact**

Source: The Conference Board
Frequency: Monthly
Timing: Last Tuesday of the month to which the data apply
Hour: 10:00 AM
Address: http://www.conference-board.org/economics/consumerconfidence.cfm

- These data are compiled from a monthly survey of about 5,000 households conducted by TNS (Taylor Nelson Sofres) for The Conference Board, a

private research group based in New York. The poll has been conducted since early 1969.

- Respondents asked about their perceptions of national economic conditions, their personal circumstances, and their buying plans for new homes, various durable goods, and vacations.

- From these data The Conference Board calculates a consumer confidence index and subindexes on present conditions and expectations using a base of 1985=100. In addition, each of these indexes is reported for nine regions of the country.

- The poll includes a question about whether respondents see jobs as plentiful, not so plentiful, or hard to get. The difference between those seeing jobs as plentiful versus hard to get is a useful indicator of labor market tightness. Historically it has correlated well with the unemployment rate.

- The survey results also include an average expected change in consumer prices over the next 12 months. Changes in this figure from one month to the next generally correlate to recent moves in energy prices. The expectation itself has routinely exceeded the actual move in the CPI by one to two percentage points in recent years.

- The Conference Board's confidence index is more volatile than the Reuters/ University of Michigan consumer sentiment index (see below). From 1992 through mid-2007, for example, the average absolute monthly percent change in The Conference Board index was 4.9%, compared to 3.0% for the University of Michigan measure. During that period, moreover, The Conference Board index changed by 5% or more in 67 months, while the Michigan index did so only about half as much (32 times). The Conference Board index is also subject to revision one month back, although these revisions are usually small.

- Our analysis of the relationship between this index and consumer spending suggests that it is fairly loose. However, the consumer confidence index does seem to have a strong negative correlation with unemployment.

Consumer Sentiment (Reuters/University of Michigan) Medium Impact

Source: Reuters/University of Michigan Survey Research Center
Frequency: Semimonthly
Timing: Normally second and fourth Fridays of the months for preliminary and final data, respectively; third and fifth Fridays in

months with five Fridays, with some exceptions to this schedule to accommodate holidays
Hour: 10:00 AM
Address: http://www.sca.isr.umich.edu/

- Since the early 1950s, researchers at the University of Michigan's Survey Research Center have polled consumers regularly regarding their views of personal finances, national economic conditions, and buying conditions for houses and durable goods. In recent years the results of these surveys have been provided to subscribers via conference call and e-mail twice per month. In January 2007, Reuters secured the exclusive distribution rights for this index.

- The sample is remarkably small, consisting of just over 500 adult men and women from across the country. Interviews are conducted from the 1st through the 28th of the month. Respondents are asked to assess their current and expected personal finances and buying conditions for durable goods. They are also asked about the likely course of national economic conditions over the next year and for the next five years.

- From these raw data, analysts at the Survey Research Center compute seasonally adjusted indexes for overall consumer sentiment, current conditions (comprising current finances and buying conditions), and expectations (comprising expected finances and projected business conditions over the next one and five years). These indexes are based to 100 in first quarter of 1966.

- Respondents also are asked about their expectations for price changes over the next year and over the next five to ten years, from which mean and median expectations are calculated. Changes in these figures can have market impact. They tend to be negatively correlated with the overall sentiment index.

- As noted above in the discussion of the Conference Board confidence index, the Reuters/University of Michigan sentiment index has historically been the more stable of the two, posting changes that, on average, are only about half the size of the Conference Board moves. Moreover, the Reuters/University of Michigan index is not revised after the final figure for a given month is calculated.
- The expectations component of the Reuters/University of Michigan survey is a component of the leading economic indicators index (see page 47-48).

ABC News Consumer Comfort Index **Low Impact**

Sources: ABC News
Frequency: Weekly
Timing: Tuesday
Hour: 5:00 PM
Address: http://abcnews.go.com/US/PollVault/

- This survey covers attitudes about the state of the economy, personal finances, and the buying climate. ICR (International Communications Research) does the polling, contacting about 1,000 adults once a month on a rolling basis. The data go back to December 1985.

- Diffusion indexes are calculated for each of the three main components by subtracting the percentage of negative responses from the percent of positive responses. Thus, a value of zero signifies balance between those giving positive and negative answers. The overall Consumer Comfort Index is the arithmetic average of the other three indexes. All four are rounded to the nearest ordinal number.

- Since its inception, the composite index has usually been negative, turning positive only in 1986, 1997-2001, intermittently in 2001 and early 2002, and again very briefly in late 2006 and early 2007.

- Although it does not have nearly as long a history as the Reuters/Michigan or Conference Board indexes, the ABC News Consumer Comfort index is a useful collateral measure of consumer sentiment, especially since it is published weekly and therefore available on a more timely basis. This survey also breaks its results down by demographic groups (age, sex, race, education, political affiliation, homeownership, employment status, and income).

- The lack of market impact reflects, at least in part, the time of day that this index is released. US financial markets are closed at its 5:00 PM release time.

Other Measures of Consumer/Investor Confidence **Low Impact**

In recent years, surveying consumer and investor sentiment has developed into a cottage industry of sorts. In addition to those discussed above, several other indexes exist, including: IBD/TIPP Economic Optimism, UBS/Gallup Index of Investor Optimism, and the RBC CASH (Consumer Attitudes and Spending by Household) Index. These surveys have only a few years' history and little market visibility, making it difficult to assess how they correlate with other measures of economic activity.

Section IX. Housing and Construction

Housing Starts and Building Permits — Medium Impact

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: Two to three weeks after month-end
Hour: 8:30 AM
Address: http://www.census.gov/ftp/pub/const/www/newresconstindex.html

- This report shows the total number of private housing units on which construction started during the month and the number of permits issued by permit-issuing places during the month. Both are expressed at an annual rate and cover residential housing activity only. The data go back to January 1959 for starts and 1960 for permits. Not all jurisdictions require building permits; since 1960, the number of permit-issuing places covered by this series has risen from 10,000 (1960-1962) to 20,000 (since January 2004).

- Starts and permits are broken down by type of structure into single-family homes, two- to four-family buildings, and structures with five or more units. The latter two groups constitute the multifamily housing sector.

- Starts and permits are also reported by four major census regions: Northeast, South, Midwest, and West. This classification can help detect special influences on the report, particularly deviations from normal weather patterns that might temporarily influence home building in a particular region.

- Although building permits are seen by some analysts as a helpful leading indicator for housing starts, empirical work suggests that they are more accurately viewed as a coincident indicator for starts, except perhaps in the multifamily sector. However, because the housing sector does tend to lead the rest of the economy, the series on permits is one of the ten components of The Conference Board's index of leading indicators (see pp. 47-48).

- Although the starts and permits data command the most market attention, the report also includes data on units authorized but not started as of month-end, units under construction at the end of the month, and completions.

- Because of the inherently seasonal sensitivity of home construction, seasonal adjustments are especially large for starts and related indicators during the late fall and winter months. In turn, this means that departures from seasonal norms during such periods can have an especially pronounced impact on the seasonally adjusted data (see pp. 3-7 for a discussion of seasonal adjustment).

New Single-Family Home Sales **Medium to High Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: Three to four weeks after month-end
Hour: 10:00 AM
Address: http://www.census.gov/const/www/newressalesindex.html

- This report shows the number of new single-family homes sold during the month, adjusted for seasonal variation and expressed at an annual rate. Markets focus on month-to-month percentage changes in sales, which are not annualized. Data begin in January 1963.

- New home sales are also reported for each of the four major census regions: Northeast, South, Midwest, and West. This breakdown can help determine when unusual weather conditions, natural disasters, or other disruptions may influenced sales activity unduly.

- Seasonal patterns are quite pronounced for new home sales as they are for many other data in this sector; in the case of sales the weakest periods are the fall and early winter months. As noted above for housing starts, departures from seasonal norms during these periods can therefore have an especially pronounced impact on the seasonally adjusted data (see pp. 3-7 for a discussion of seasonal adjustment).

- The sales included in this report are only those for which land and structure are sold simultaneously. Historically, only about 60% of single-family housing starts met this test, implying that the remainder were custom-built on land already owned by the "purchaser." However this share rose in the late 1990s and has typically been about 75% in recent years.

- The house can be in any stage of construction, ranging from not yet started, to already completed. Typically about 25% of the houses are sold at or after completion although lately this figure has been more like 35%. The rest are about evenly split between those not yet started and those under construction.

- Along with home sales, the Department of Commerce reports the supply of completed new single-family homes being offered for sale and the associated months supply of new homes. Changes in this inventory/sales ratio often presage an opposite move in single-family housing starts as builders respond to undesired increases or declines in inventories. Historically a 6-month supply of inventory was considered normal but since the mid-1990s this figure has been more like 4 to 4½ months.

- Changes in new home sales are volatile and subject to revisions that often are large and can extend back several months. Even after these revisions, the standard deviation of monthly changes in new home sales remains large—6.2% over the past five calendar years (2003-2007) and higher (around 7%) over its entire history. For this reason, several months of data are usually required to discern a genuine change in trend.

- New home sales are measured based on the signing of a sales contract or the acceptance of a deposit. If contracts are subsequently canceled, the data on new home sales and inventories of unsold new homes are not adjusted to reflect the cancellation. This is in contrast to the existing home sales data (see directly below), which are reported only when the transactions have actually closed. This reporting convention for new home sales means that these data will overstate the sales that are actually consummated when cancellations are rising, usually in weak housing markets, and understate them in opposite circumstances, when homes that are actually on the market but not reported as such in the data are finally sold.

- The report also includes mean and median prices of new homes sold. These too are volatile and, unlike prices of existing homes, have no direct bearing on estimates of household net worth.

Existing Home Sales **Medium Impact**

Source: National Association of Realtors (NAR)
Frequency: Monthly
Timing: On or about the 25th of the following month
Hour: 10:00 AM
Address: http://www.realtor.org/research.nsf/pages/EHSdata

- Based on reports from its membership, the NAR compiles and seasonally adjusts data on sales of existing homes. Figures for the average and median home price are also reported for the nation as a whole and the four major census regions (Northeast, Midwest, South, and West), as are data on the inventory of unsold homes on the market and the associated months supply.

- Originally, the report focused only on single-family detached houses, with data on this basis beginning in 1968. Condominiums were added in 2004, with data for this sector of the market going back to 1999. Financial markets focus on the month-to-month percentage change in total sales (not annualized) and on the median price and months supply data.

- In contrast to new home sales, sales of existing homes are counted at the time of closing, which typically occurs one to three months after a contract of sale

is signed. Thus, changes in existing home sales lag shifts in housing demand by a few months, although they still exhibit a slight lead relative to the residential investment component of GDP.

- Although turnover of the existing housing stock has only a small direct effect on GDP (via the brokerage commissions and other fees paid to consummate the transactions), it can be a useful indicator of the demand for household durable goods. Home purchases typically stimulate spending on furnishings; they also liquefy accumulated capital gains for the sellers, who may use those gains to finance spending.

- Existing home sales are less volatile than new home sales but, like most housing indicators, still display considerable month-to-month variation. For example, between 2003 and 2007 the standard deviation of monthly changes was 2.7%, versus 6.2% for new home sales.

- Home price data, reported in dollars, help gauge how changes in the value of residential real estate are affecting US household net worth. To minimize the effects of changes in the mix of homes sold, most analysts focus on the median rather than the average price and on its year-to-year change given that the data are not seasonally adjusted. Even on this basis, the home price data have other flaws, notably the lack of any control on the quality of the home sold. Lately, other indexes—notably from the Office of Federal Home Enterprise Oversight (OFHEO) and Standard and Poors/Case Shiller—have been developed to address some of these issues (see pp. 66-67).

- From the median price data, the NAR also calculates an *affordability index* for home purchase. This index is intended to gauge whether a household with the median family income has can afford to purchase the median-priced house, based on assumptions of a 20% down payment and a 25% limit on the share of pretax income devoted to interest and principal repayment. An index value of 100 or more indicates that such a purchase is feasible at the going mortgage rate, with a value of 120, for example, indicating that the median-income family would have 20% more income than required. The NAR calculates a similar quarterly index for first-time buyers. For more information, see http://www.realtor.org/Research.nsf/Pages/HousingInx.

Pending Home Sales Index (PHSI) **Medium Impact**

Source: National Association of Realtors (NAR)
Frequency: Monthly
Timing: First week of the month
Hour: 10:00 AM
Address: http://www.realtor.org/Research.nsf/Pages/PHSdata

- The NAR introduced this report in March 2005 to provide a leading indicator for sales of existing homes by measuring housing contract activity. As noted above, existing home sales are reported as of the closing of the transaction, which occurs from one to three months after the contract is signed. This is in contrast to the reporting of new home sales, which is as of the signing of a contract or the deposit of earnest money.

- The PHSI bridges this gap by measuring the number of real estate contracts for existing single-family homes, condos, and co-ops that have been signed within the past month. According to NAR, over 80% of all pending home sales go to settlement within two months, and the fallout rate is consistent over time. Under these circumstances, the index should provide a consistent leading signal of changes in existing home sales.

- Unlike the sales data, which are reported as units sold, pending home sales are measured as an index, set to 100 for 2001. Changes in contract activity from one month to the next then push the PHSI up or down. Since contract activity was strong in 2001, a reading of 100 for the index represents a high level of pending home sales.

Construction Spending **Low Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: Four to five weeks after month-end, usually on the first business day of the second month following
Hour: 10:00 AM
Address: http://www.census.gov/const/www/c30index.html

- This report tracks outlays for new public and private construction projects seasonally adjusted in nominal terms (monthly rate). Markets focus mainly on the percentage change in total outlays. Data go back to 1964.

- These outlays are broken down into three main groups: private residential (housing), private nonresidential (*e.g.*, offices, industrial, commercial), and public (*e.g.*, highways, hospitals).

- This report has typically had little market impact for two reasons. First, other housing data are reported sooner and in some cases (*e.g.*, housing starts) with less revision. In this regard, construction outlay data are often revised back several months, and the revisions are occasionally large. Second, until recently this report almost always come out at the same time as the ISM manufacturing index for the subsequent month, which dominated market

attention. However, recently the construction spending report has sometimes been released a day earlier.

- Despite its limited impact, the construction spending data are important because they figure directly into the computation of several components of the quarterly GDP report, including residential investment, the structures component of business fixed investment, and government investment in structures (especially by state and local jurisdictions).

- In a separate monthly report, the F. W. Dodge Company tabulates the dollar amount of contracts for new construction. Changes in the volume of new contracts can foreshadow similar shifts in the level of construction outlays.

Housing Market Index (HMI) **Low (but Rising) Impact**

Source: National Association of Home Builders (NAHB)/Wells Fargo
Frequency: Monthly
Timing: Mid-month, usually the day before the housing starts release for the prior month
Hour: 1:00 PM
Address: http://www.nahb.org/generic.aspx?sectionID=1348&genericContentID=529

- The HMI is drawn from a monthly survey designed to take the pulse of the housing industry, focusing on the single-family sector. Data from this survey go back to January 1985.

- Each month the NAHB surveys its members regarding current sales conditions, sales expectations for the next six months, and buyer traffic. Respondents are asked to classify current and expected sales conditions as good, fair, or poor. Traffic at developments is rated as high, average, and low.

- Assessments of sales conditions are reported separately for single-family homes, apartments, and condominiums. Buyer traffic readings cover all types of units.

- From these data, analysts at the NAHB and Wells Fargo calculate seasonally adjusted diffusion indexes, with 50% as a neutral reading (meaning that the percentage rendering a positive response is added to half of those rendering a neutral response). In turn, the composite HMI is calculated as a weighted average of: (1) present sales conditions for single-family homes (59% weight), (2) expected sales conditions for single-family homes (14%), and (3) buyer traffic (27%).

- The HMI has developed into a useful leading indicator of housing activity, leading peaks in the residential investment component of GDP by about one year and troughs by a shorter period. In this regard, it has the additional advantage that its value is known sooner than most other leading indicators for housing. Although the index for the preceding month is often revised, the revision is not usually large.

Mortgage Application Indexes **Low Impact**

Source: Mortgage Bankers Association (MBA)
Frequency: Weekly
Timing: Wednesday morning
Hour: 7:00 AM
Address: http://www.mortgagebankers.org/ResearchandForecasts/ProductsandSurveys/WeeklyApplicationSurvey

- The MBA compiles weekly data on the number (not the dollar value) of mortgage loan applications received by its members. From these data, the association constructs various indexes. Three in particular command the attention of market participants: indexes of total applications, applications for loans to purchase a home, and applications for refinancing. Markets focus on the percentage changes in these indexes, which are based to the week of March 16, 1990, a period of low activity.

- Separate indexes are also calculated for product type—applications for fixed- or adjustable-rate loans—and for loan type—applications for conventional and government insured loans—as well as for various combinations of these features.

- Historically, the purchase index has been a leading index of housing activity. However, this property can be undermined by consolidation in the mortgage lending industry or by sudden changes in lending standards, which can alter mortgage bankers' share of loan application or change incentives for borrowers to submit multiple applications. In theory, both the purchase and refinancing indexes can also provide information about consumer spending since home purchases typically stimulate other outlays while refinancing can be used to lower monthly fixed expenses and/or liquefy equity that has accumulated in owner-occupied homes.

- Weekly changes in these indexes are volatile. Therefore, averages calculated over a short period—say, four weeks—will usually provide a more reliable signal of changing conditions.

Mortgage Delinquencies and Foreclosures **Low to Medium Impact**

Source: Mortgage Bankers Association (MBA)
Frequency: Quarterly
Timing: No specific date
Hour: No specific date
Address: http://www.mortgagebankers.org/ResearchandForecasts/ProductsandSurveys/NationalDelinquencySurvey.htm

- The MBA conducts a quarterly survey of delinquency and foreclosure rates on residential properties, based on more than 41 million loans serviced by a wide range of financial institutions. Delinquencies are broken down by past due categories (30-59 days, 60-89 days, and 90 days or more). The report also shows new foreclosures and the inventory of foreclosures in progress.

- Each of these measures of loan stress is calculated for product type (prime, subprime, VA, and FHA) and further by whether the loans are carry fixed or variable rates of interest.

OFHEO Home Price Index **Low to Medium Impact**

Source: Office of Federal Housing Enterprise Oversight (OFHEO)
Frequency: Quarterly
Timing: 10:00 AM
Hour: Fifth Thursday following quarter-end
Address: http://www.ofheo.gov/HPI.aspx

- The OFHEO home price index (HPI) is designed to provide a broad gauge of price movement for single-family homes based on the transactions financed by conforming, conventional loans purchased or securitized by Fannie Mae or Freddie Mac. Indexes are calculated for each of the 50 states (plus the District of Columbia) and for many metropolitan statistical areas (MSAs). Data go back to 1975; the HPI is indexed to 1980 Q1=100.

- In an effort to minimize the effect of changes in the composition of homes, which can affect the mean and median prices published in reports of existing and new home sales (see pp. 59-61), the HPI is constructed from repeat transaction pairs—*i.e.*, sequential sales of the same property. Sales pairs that occur within 90 days are excluded to mitigate the effect of "flipping."

- The HPI is not seasonally adjusted; therefore, markets focus most of the attention on year-to-year changes.

- Because the S&P/Case-Shiller index (see below) is also constructed from repeat transactions, the two are inevitably compared. In this regard, the HPI's main advantage is its broader geographic coverage. Against this, the HPI's disadvantages include: (1) exclusive focus on conforming loans, which under-weights both homes that appreciated beyond the size limit (currently $417,000) for conforming loans and the transactions that occur in high-priced areas, (2) the inclusion of refinancing loans, which tend to inflate property valuations, as well as the lack of other adjustments described below for the S&P/Case-Shiller indexes, (3) the weighting of regional indexes to produce the national HPI, which exacerbates the under representation of higher-priced homes, and (4) the fact that it is only produced quarterly, with a two-month lag.[10] Neither index includes condos or co-ops.

- To address the potential distortion from including refinancing loans in the HPI, a separate index for home purchase only is calculated beginning in 1991 and indexed to 100 in the first quarter of that year. Unlike the HPI, this index is available on a seasonally adjusted basis.

S&P/Case-Shiller Home Price Indexes **Medium Impact**

Source: Standard and Poor's (S&P)/MacroMarkets, LLC
Frequency: Monthly
Timing: Last Tuesday of the following month
Hour: 9:00 AM
Address: http://macromarkets.com/csi_housing/sp_caseshiller.asp

- These indexes are constructed from an extensive data set for repeat sales of existing single-family home based on information obtained from county assessors and recorders. Monthly indexes are constructed for 10 and 20 metropolitan areas (both individually and collectively). A quarterly national index is also available covering a wider geographical area.

- Data go back to 1987 for national and the 10-metro composite indexes and to 2000 for the 20-metro composite. All three are indexed to 100 for their first observation in 2000 (Q1 and January), and none is seasonally adjusted. For this reason, year-to-year changes get the most attention.

- Compared to the OFHEO indexes, the S&P/Case-Shiller indexes make a more concerted effort to restrict repeat sales to "arms-length" transactions by eliminating those occurring between family members or involving mortgage lenders or real estate developers. In addition, price changes that are extreme

[10] See "Measures of Existing House Prices: A Pro/Con List," *US Daily Financial Market Comment*, April 17, 2007 for more details.

relative to those in the same area or that occur over long stretches of time are "downweighted" on the view that they are more likely to reflect changes in the quality of the home or other nonmarket factors. These characteristics of the S&P/Case Shiller indexes, coupled with the fact that they is not limited to transactions financed by conforming loans, are distinct advantages relative to other indexes of home prices. That said, they are not as geographically diverse as the OFHEO's HPI.

Housing Vacancies and Homeownership Rates **Low Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Quarterly
Timing: Last week of the month following quarter-end to which the data apply, usually on Friday
Hour: 10:00 AM
Address: http://www.census.gov/hhes/www/housing/hvs/hvs.html

- This report tracks the number of housing units that are vacant at quarter-end. The rental vacancy rate is the fraction of total rental units (occupied units plus those awaiting occupancy plus vacant units) that are vacant. Similarly, the homeowner vacancy rate is the fraction of units for homeownership (occupied plus those awaiting occupancy plus those that are vacant and for sale) that are vacant and for sale.

- These data are available by four major Census regions (Northeast, Midwest, South, and West), type of structure (single-, two or more, and five or more family), and type of area (central city, other metropolitan, and outside metropolitan). They go back to 1956 and are not seasonally adjusted.

- This report also presents data on homeownership, defined as the percentage of occupied housing units that are owner-occupied. Regional and demographic splits are also available, not seasonally adjusted.

Section X. Foreign Trade and International Capital Flows

International Trade Balance **Medium Impact**

Source: Department of Commerce, Bureau of the Census
Frequency: Monthly
Timing: About five weeks after month-end
Hour: 8:30 AM
Address: http://www.census.gov/indicator/www/ustrade.html

- This report tracks exports, imports, and the balance between them in billions of dollars at a monthly rate (not annualized). The data cover trade in both goods (merchandise) and services and are seasonally adjusted. They go back to 1992.

- Data for merchandise exports and imports are broken down into six broad "end-use" classifications: (1) foods, feeds, and beverages; (2) industrial supplies and materials; (3) capital goods excluding autos; (4) automotive vehicles, parts, and engines; (5) nonfood consumer goods except autos; and (6) other merchandise. Within each category more detail is available by specific products. Major categories of services include travel, passenger fares, other transportation, royalties and license fees, other private services, and military transactions.

- The report includes figures on bilateral trade with most countries and various regions of the world. However, these data are not adjusted for seasonal variations; hence, year-to-year comparisons should be used to infer changes in patterns of bilateral trade.

- Merchandise exports and imports are reported on two different bases: (1) balance of payments, and (2) "census," which excludes the costs of duties, insurance, freight, and other charges.

- The census figures are reported both in nominal and real terms. The real (inflation-adjusted) figures are computed using monthly import and export price indexes (see p. 93-94). Historically, nominal figures have received the greatest attention, in part because of their significance for exchange-rate analysis. However, the real data are more important for judging the effect of changes in foreign trade on US economic activity and are also widely followed.

- Monthly export and import figures are volatile and therefore should be evaluated using moving averages. Exports of aircraft and imports of petroleum products are especially volatile.

- Customs receipts data—available from the Treasury Department about a month before the international trade report as part of the monthly budget statement—can provide an advance indication of import activity during a given month.

- Deviations in the trade figures from expectations or official assumptions can prompt significant changes to estimates of advance or preliminary GDP growth (see pp. 27-29).

Current Account Balance **Low Impact**

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Quarterly
Timing: Middle of the third month after quarter-end
Hour: 8:30 AM
Address: http://www.bea.gov/international/index.htm#bop

- The current account balance is the most comprehensive gauge of international trade and financial flows, It is the main focus of a quarterly report called *U.S. International Transactions*.

- The current account balance is the sum of balances in:

  1. *Goods and services* trade, adjusted to exclude military shipments;

  2. *Income*, including receipts of income earned on direct investment income abroad plus income earned on other income on assets less corresponding payments on US assets held by foreign entities;

  3. *Net unilateral transfers of funds*, excluding military grants.

  All of these data are adjusted for seasonal variation. Unlike most other data in the national income and product accounts, dollar figures for the current account and its components are reported as quarterly totals, not annualized. Also, imports and income payments to foreign holders of US assets as well as compensation to employees abroad are reported shown as negative figures, representing the fact that they involve outflows of funds (*i.e.*, transactions increasing the supply of dollars on currency markets, all else equal).

- The summary of international transactions report also includes information on international capital flows during the period, as well as data on US assets held abroad (which include official reserve assets) and foreign assets held in the United States.

- In principle, changes in the current account balance imply a corresponding shift in the flows of capital between the United States and the rest of the world. If the current account deficit goes up, then capital inflows into the United States also go up. In practice, the data do not add up because of reporting differences. Thus, the accounts also include a statistical discrepancy (formerly called errors and omissions). Much of this error is thought to be short-term capital flows that go unrecorded.

- Since 1935, the Treasury Department has also collected data on the size and types of financial transfers and other portfolio capital movements between the United States and foreigners. These data, published in the quarterly *Treasury Bulletin* (http://www.fms.treas.gov/bulletin/index.html), cover transactions in long-term domestic and foreign securities, claims on foreigners by US banks, and liabilities to and claims on foreigners reported by nonbanking business enterprises. They do not include capital transactions of the US government.

- Geographical breakdowns may not always accurately reflect the ultimate ownership of the assets in question, as reporting institutions may not know the country of domicile of the beneficial owner of property or claims.

- As of November 2007, foreign investors owned about 44% of all publicly held US Treasury securities (including nonmarketable issues). This is up from about 30% in 2000. In addition, as of the third quarter of 2007, overseas investors owned about 32% of outstanding US corporate bonds and 16% of US equity issues.

Treasury International Capital System (TICS) **Low to Medium Impact**

Source: Department of Treasury
Frequency: Monthly
Timing: About six weeks after month-end
Hour: 9:00 AM
Address: http://www.ustreas.gov/tic/ticpress.html

- The *Treasury International Capital System* (TICS) provides monthly data on cross-border portfolio investment flows into and out of the United States. Some market participants, especially in foreign exchange markets, regard these data as an indicator of the strength and health of portfolio flows into the United States, and surprises can affect the dollar exchange rate. The data go back to May, 1978.

- The headline figure measures net long-term flows as the difference between net purchases of US securities by foreigners and net purchases of foreign

securities by US investors. Long-term securities are defined as equities plus fixed-income assets maturing in one year or more. Net purchases of US securities are broken down into US Treasury notes and bonds, other government agency bonds, corporate bonds, and equities; net purchases of foreign securities are subdivided into bonds and equities.

- Aficionados of the TICS data pay close attention to the composition of flows by type of security and by type of transaction, specifically whether official (*e.g.* central bank) or private flows dominate. Data are also provided by country.

- Although the monthly TICS data are more timely than the quarterly balance of payments report, in other respects they suffer from several drawbacks. In particular, they exclude net flows in short-term securities, such as Treasury bills, and also do not cover direct investment. In addition, institutions are not required to report transactions unless they meet certain minimum activity requirements. These limitations coupled with a reporting lag that is still quite long by the standards of other indicators reduce their market impact.

- In this regard, the Federal Reserve Board provides weekly data on holdings of marketable securities held in custody for foreign official and international accounts in its report on *Factors Affecting Reserve Balances*. These data overlap some, but not all of the TICS data, as they cover official holdings only.

Section XI. Employment

The Employment Situation **High Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Monthly
Timing: Usually the first Friday of the following month; second Friday when the first Friday falls on the 1st and the prior month had fewer than 31 days[11]
Hour: 8:30 AM
Address: http://stats.bls.gov:80/news.release/empsit.nr0.htm

- This report provides a wealth of data on the US labor market, including key gauges of employment, unemployment, and wage earnings. It is consistently among the top market-moving data releases, in part because it is published earlier than most other data for a given month but mainly because of the importance of its area of coverage and its perceived reliability. Most of the main data series go back to the late 1940s and are seasonally adjusted.

- The data for this report are drawn from two surveys, conducted during week containing the 12th of the month, known as the survey or reference week:

  1. The Current Population Survey (CPS), commonly called the *"household" survey*, is based on personal interviews of about 60,000 households. It provides estimates of the labor force, the unemployment rate, and details on these and related figures by region, ethnicity, age, gender, and other demographic characteristics.

  2. The Current Employment Statistics (CES) program, known as the *"establishment" or "payroll" survey* compiles figures on employment, hours worked, overtime, and wage earnings from payroll data provided by about 400,000 nonfarm business establishments.

- In the household survey, people are classified as employed, unemployed, or not in the labor force. A person is considered unemployed if he/she does not have a job but is actively seeking work. The labor force is the sum of employed and unemployed workers.

- In the payroll survey, a person is considered employed if he/she is on a firm's payroll for any part of the pay period that includes the survey week.

[11] The precise formula is the Friday of the third week following the survey week, the Sunday-Saturday week that contains the 12th of the month.

However, federal government employment is measured at the end of each month.

- Key statistics include:

1. *Unemployment rate*—the percentage of the civilian labor force (defined as those who are working or actively seeking work) that is unemployed. The unemployment rate lags changes in other labor-market data, since most businesses alter work schedules before hiring or laying off employees. It measures the balance between demand and supply in the labor market and is widely regarded as the most important and timely measure of resource utilization, in part because labor is by far the largest factor of production and in part because the unemployment rate is subject to very little revision.

2. *Change in nonfarm payrolls*—the net number of payroll jobs added/lost in the nonagricultural economy between monthly surveys. Participants in the financial markets use this figure as a shorthand approximation of the employment report's overall tone. It also directly affects the calculation of personal income earned during the month.

3. *Change in manufacturing payrolls*—the net number of jobs added/lost in the factory sector. Components of this figure, specifically the net changes in production workers and their hours worked, are useful in predicting changes in industrial production to be published later for the same month.

4. *Nonfarm workweek*—the average number of hours worked per week by employees in nonagricultural businesses. This indicator directly affects the aggregate number of hours worked per week, which in turn can be used to gauge changes in real GDP.

5. *Manufacturing workweek*—the average number of hours worked per week by people on factory payrolls. Changes in the factory workweek often lead changes in manufacturing employment, as employers typically will adjust employees' hours before adding or cutting jobs. Shifts in the factory workweek include changes in overtime hours, which are also reported separately. The factory workweek is one of the ten components in the index of leading economic indicators (see pp. 47-48).

6. *Average hourly earnings*—the average pay per hour worked, excluding fringe benefits, of nonsupervisory payroll employees in the private nonfarm sector. This is a useful gauge of wage inflation on a monthly basis. It helps in estimating changes in personal income and the quarterly Employment Cost Index, a more comprehensive gauge of hourly pay (see pp. 87-88).

7. *Index of aggregate weekly hours*—total hours worked per week by non-supervisory employees in the private nonfarm economy, indexed to a base year of 2002. For a given quarter, estimates of the annualized growth rate in this index, adjusted for estimated changes in labor productivity, provide a rough proxy for real GDP growth.

8. *Payroll diffusion indexes*—the percentage of industries reporting an increase in payrolls over a given period. Calculated over one-, three-, six- and twelve-month spans for both total private and manufacturing industries, this information indicates the breadth of employment changes and can foreshadow shifts in overall employment.

9. *The pool of available workers*—a relatively new statistic meant to provide a broader measure of under-employment than the standard unemployment rate. In addition to those already classified as unemployed, it includes people who are: (1) not currently in the labor force but would like a job, and (2) working part-time for economic reasons. Our analysis suggests that it moves closely with the tally of unemployed workers and therefore provides only marginal information about the degree of slack in the labor market.

- The household and payroll gauges of employment tend to move closely over long periods, but they often diverge over shorter periods (a year or two) due to measurement differences. These gaps can be due simply to sampling error or to differences in coverage. For example, a worker holding two jobs counts twice in the payroll survey but only once in the household survey. On the other hand, the household survey includes self employed and agricultural workers. Also, because this survey comes directly from workers, it can reflect the effects of new business formation more quickly than the payroll data, which are collected from established firms (see immediately below).

- Most economists regard the payroll survey as the more reliable source of data on employment because it covers a broader sample of workers. As a result, it exhibits less month-to-month volatility than the counterpart measure from the household survey. In addition, the breakdown of payrolls into detailed industrial classifications permits analysis of changes in labor demand across various sectors of the economy. However, to compensate for the inability to include new firms in the sample of business establishments, the payroll measure of employment incorporates an assumption about the impact of net business formation (new firms versus those going out of business) on jobs. The model generating these adjustments is called the "birth/death model" and is subject to much debate about its accuracy.

- To facilitate comparisons between the two gauges of employment, the BLS publishes a household measure adjusted to the payroll definition. In effect, this isolates differences due to sampling error, which can still be quite large

on a monthly change basis because monthly changes are small relative to the level of employment.

- Strikes have different effects on the two surveys. They do not affect the unemployment rate, as striking workers are counted as employed in the household survey. However, employers do not report these workers as being on the payroll if the strike is in progress during all or much of the pay period that includes the survey week. The BLS issues monthly figures on the number of persons out on strike. For similar reasons, unusual weather or other unexpected events that occur during the survey week (*e.g.*, the national day of mourning for President Reagan in 2004) can also affect the payroll data on hours worked and/or employment.

- Each year, the monthly figures on nonfarm payrolls are benchmarked to a more comprehensive set of data compiled by the Labor Department from unemployment insurance tax filings by nearly all employers with state employment security agencies—the Quarterly Census of Employment and Wages (QCEW) . The revision is implemented in early February with the release of the data for January, at which point the data are lined up for March of the preceding year (the benchmark month). Four months ahead of this revision, the Labor Department announces a preliminary estimate of its size and direction. In most years, the revision is not large—on the order of 200,000 workers, or less than ¼% of total payrolls. However, sometimes the revision has been much larger. For example, in early 2007 the BLS added 752,000 (0.56%) to the March 2006 level of payrolls.

- Beginning with data for January 1994, the BLS introduced a redesigned monthly survey of households that produced: (1) a higher count of unemployed females, (2) longer durations of unemployment, and (3) a larger number of voluntary part-time workers, as more marginal work for pay or profit was uncovered by the new survey techniques. At the same time, the number of "discouraged workers"—those who wish to be employed but have given up looking for a job—was reduced as the definition was changed to require a recent effort to find employment as well as an expression of discouragement.

ADP National Employment Report **Medium Impact**

Source: Automatic Data Processing, Inc. (ADP)/ Macroeconomic Advisers
Frequency: Monthly
Timing: Wednesday, two days before the government's "Employment Situation" release (see p. 72)
Hour: 8:15 AM
Address: http://www.adpemploymentreport.com/

- In May 2006 ADP and Macroeconomic Advisers began to issue estimates of the monthly change in private-sector nonfarm payrolls two days ahead of the government's "Employment Situation" report. The ADP estimates are based on data from about 380,000 of ADP's business clients, covering about 23 million workers in all 19 of the major North American Industrial Classification System (NAIC) categories. Figures are available from January 2001 and are adjusted for seasonal variation.

- Besides its large sample size, one purported advantage of this report—yet to be confirmed by experience—is that it should pick up the effects of new business formation more quickly than the official data, as the ADP sample is weighted toward smaller firms. In fact, developers of the ADP report claim that it will be more accurate in tracking final rather than preliminary changes in payrolls despite a timing of its release that seems designed to perform the latter function.

- The ADP track record is short, but the experience thus far suggests that it will be a useful adjunct in refining estimates of changes in nonfarm payrolls (note that an estimate for the change in government payrolls needs to be added in, as the ADP report focuses on private-sector payrolls). For example, since various refinements were made in early 2007, the standard error of estimate (based on 13 observations) has been 63,000. This is about two-thirds that of most other estimates (which, of course, have much longer histories).

Unemployment Insurance Claims **Medium to High Impact**

Source: Department of Labor
Frequency: Weekly, for previous week ending Saturday
Timing: Thursday, five days after survey interval
Hour: 8:30 AM
Address: http://www.dol.gov/opa/media/press/eta/ui/current.htm

- This reports covers both the number of individuals filing claims for jobless insurance benefits (*"initial claims"*) and the number receiving payments (*"continuing claims"*). Initial claims are reported with a five-day lag; continuing claims are reported with at 12-day lag. Data go back to 1967.

- National data are seasonally adjusted, but detail for individual states—reported at a one-week lag relative to the national figures—are not adjusted.

- Both initial and continuing claims can fluctuate widely from week to week, especially around holidays or disruptions to normal activity (*e.g.,* unusual

weather, strikes, or other shutdowns). It is therefore advisable to use moving averages (*e.g.,* a four-week average for initial claims) to spot shifts in trends.

- Changes in initial claims can be a useful early signal of shifting trends in the labor market; for example, an increase of 30,000 to 50,000 that is sustained for a few weeks without some special explanation is often a warning sign of an impending rise in unemployment and potentially of recession. For this reason, this series has long been a component of the index of leading economic indicators (see pages 47-48). However, more recently our research has found that changes in continuing claims are more helpful as an indicator of payroll growth during periods of sustained economic growth.

Manpower Employment Outlook Survey **Low Impact**

Source: Manpower Inc.
Frequency: Quarterly
Timing: Second Tuesday of the month preceding quarter
Hour: 12:01 AM EST
Address: http://www.us.manpower.com/uscom/contentSingle.jsp?articleid=75

- This survey is conducted quarterly to gauge employers' intentions to increase or trim their workforce during the next quarter. The survey began in 1962; quarterly data go back to 1975. Since its inception, the survey has generated all of its data from a single question: "How do you anticipate total employment at your location to change in the three months to the end of [the next quarter] as compared to the current quarter?"

- The US survey is based on interviews of about 14,000 private and public employers. The data show trends in ten industry sectors and across four regions. Employers are polled beginning the end of the first month of the preceding quarter through the middle of the following month.

- The *"Net Employment Outlook"* for a given period, industry, or region is the difference between the percentage of employers expecting an increase in hiring and those expecting a decrease in employment at their location in the upcoming quarter. This figure is then seasonally adjusted.

- In recent years, Manpower has introduced similar surveys in other countries. As of this writing, it was available for 27 countries and territories, based on interviews with about 52,000 employers.

- The survey is a useful indicator of hiring intentions during most phases of the business cycle. However, it does tend to understate the degree of deceleration

in hiring when the economy is weakening. Its low market impact is due in part to the fact that it is released when US markets are closed.

Challenger, Gray and Christmas Employment Report — Low Impact

Source: Challenger, Gray and Christmas, Inc.
Frequency: Monthly
Timing: First week of the month
Hour: 7:30 AM
Address: http://www.challengergray.com

- The outplacement firm Challenger, Gray and Christmas, Inc. has published monthly data on gross layoff announcements by US firms since January 1993; quarterly data are available from 1989 through mid-1992. In May 2004, the report also began including gross hiring plans. Data are available for 29 industry categories, including government.

- The layoff component provides an interesting supplement to the initial and continuing unemployment claims reports for assessments of the labor market's health. The hiring component provides insight into hiring plans that, in time, could help anticipate changes in nonfarm payrolls. However, the links are loose because the plans may take time to implement and cover foreign as well as domestic workers.

- In addition, these data are not adjusted for seasonal variation despite clear seasonal patterns in these announcements over recent years. Therefore, it is necessary to focus on year-to-year changes in these figures to infer changes in business employment decisions from these data. Smoothing the data over three-month periods also makes sense given that layoff announcements often occur in conjunction with negative announcements of quarterly revenue or earnings results.

Help-Wanted Advertising Index — Low Impact

Source: The Conference Board
Frequency: Monthly
Timing: Last Thursday of the month for previous month
Hour: 10:00 AM
Address: http://www.conference-board.org/economics/helpwanted.cfm

- The Conference Board tracks help-wanted advertisements in the classified sections of 51 major newspapers across the nation.

- Raw advertising volume data (lines of print) are adjusted for each city, based on standard day factors (number of weekdays and Sundays in each month) and seasonal factors for the specific areas. City index levels are then computed using 1987 as a base year. Regional and national index readings are based on a weighted average of the city index results.

- The help-wanted index, once a component of the index of leading indicators, has generally been a reliable leading indicator of peaks in nonfarm payrolls, but a coincident to lagging indicator of business cycle and labor market troughs.

- This index no longer has a noticeable impact on financial markets, partly because it is released several weeks after the employment situation report but mainly because newspaper want ads have lost share to Internet job-placement activity. Even so, its short-term movements are helpful alongside other variables in forecasting changes in nonfarm payrolls.

Monster Employment Index **Low Impact**

Source: Monster Worldwide
Frequency: Monthly
Timing: Thursday, the day before the government's "Employment Situation" release
Hour: 6:00 AM
Address: http://www.monsterworldwide.com/Press_Room/MEI_US.asp

- The advent of online advertising has created an important new channel for employers to reach potential hires, and vice versa. Thus, a view into the behavior of online advertising is a useful supplement to The Conference Board's survey of offline help-wanted advertising (see immediately above).

- In October 2003 Monster.com, the largest online job site, initiated a monthly survey of the volume of online employer postings. Monster includes other job posting sites and individual employer sites in the survey.

- The survey breaks down online job advertising by region (9 Census regions), industry (20 industries corresponding to NAICS industry codes), and occupation (23 different categories). An overall index is also calculated. Indexes are scaled so that the average of the first 12 months of data (October 2003 through September 2004) equals 100.

- Although the Monster Index is usually published the day before the government's monthly employment report, it is not relevant to that report given the lag between posting a job advertisement and the hire that results

from that advertisement. However, the index does hold some promise as an aid to forecasting subsequent changes in payrolls, as changes in it bear a correlation of 0.51 with the next month's change in private-sector payrolls. This correlation diminishes into the 0.2-0.3 range for lags of 2-3 months. Because of the short history of the Monster Index, these correlations are calculated on the basis of seasonally unadjusted data.

Job Opening and Labor Turnover Survey (JOLTS) **No Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Monthly
Timing: Tuesday, about 5-6 weeks after month-end
Hour: 10:00 AM
Address: http://www.bls.gov/jlt/home.htm

- This report, introduced in July 2002, provides more detail on labor demand, specifically on shortages and turnover, than are available from the longer-standing national surveys that form the basis for the "Employment Situation" report. Data are provided on total employment (during the pay period that contains the 12th of the month), job openings (at month-end), and hires and separations (during the entire month). Data go back to December 2000.

- Although the report provides a richer set of detail for analysis of labor market trends, it does not have a visible effect on financial markets.

Business Employment Dynamics (BED) **No Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Quarterly
Timing: Eight months after quarter end, during the week that contains the 15th of the month
Hour: 10:00 AM
Address: http://www.bls.gov/bdm/home.htm

- This report tracks the number of jobs created by businesses that are opening or in process of expanding and the number lost at those that are closing or contracting. The data go back to 1992 and are seasonally adjusted.

- These data are drawn from the Quarterly Census of Employment and Wages (QCEW) to which the national payroll data are eventually benchmarked (see p. 75). The BED report thus provides not only additional detail on gross job creation and loss but also an indication of the likely direction of future such revisions. Even so, the report has exhibited no market impact to date.

Section XII. Prices, Wages, and Productivity

Consumer Price Index (CPI) — High Impact

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Monthly
Timing: Two to three weeks after month-end
Hour: 8:30 AM
Address: http://stats.bls.gov/news.release/cpi.toc.htm

- The CPI tracks the average price level of a basket of goods and services that consumers regularly buy in the United States. It is based on approximately 80,000 quotes sampled throughout the month. Data for many components go back to the late 1940s, and some go as far as 1913. Prices are indexed to 100 in a given year or period, currently 1982-1984 for most indexes.

- Indexes are calculated for two population groups:

  1. The *CPI for Urban Wage Earners and Clerical Workers* (CPI-W) covers about 32% of the population. This index is used as the basis for making annual cost-of-living adjustments to Social Security benefit payments. It is also frequently used to make similar adjustments to wage rates under collective bargaining agreements.

  2. The *CPI for All-Urban Consumers* (CPI-U) adds professional, managerial, and technical workers, self-employed, short-term workers, the unemployed, retirees, and others not in the labor force to urban wage earners and clerical workers,. Because of this broader coverage—about 87% of the population—the CPI-U receives the most public attention.

- The CPI is a fixed-weight (Laspeyres) index. The basket is updated every few years, based on an annual survey of consumer expenditure, to capture changes in tastes and in the items available for purchase. However, between these updates its composition is fixed. (Changes in *relative importance weights*, updated annually as of December, reflect the effects of changes in relative price levels on the cost of this fixed basket.) As a result, changes in the CPI over relatively short periods do not reflect changes in the composition of consumer spending, a feature that many analysts regard as a drawback. Currently, the basket reflects buying patterns in 2001 and 2002.

- Volatility in food and especially in energy prices can have significant effects on short-term movements in the CPI, as these components carry a combined weight of 22.6% in the "all items" index. For this reason, many economists and policymakers focus on the "core" CPI, which excludes these categories.

Exhibit XIIA: CPI Relative Importance Weights as of December 2006

	Total	Core
Housing	**42.7%**	**49.5%**
Shelter	32.8	42.3
Owners' equivalent rent	23.8	30.8
Rent of primary residence	5.9	7.7
Lodging away from home	2.6	3.4
Tenants' and household insurance	0.4	0.5
Fuel and utilities*	5.3	1.2
Household furnishings and operations	4.7	6.0
Food and beverages**	**15.0**	**1.4**
Transportation	**17.2**	**17.4**
New vehicles	5.0	6.4
Other private transportation	11.2	15.3
Motor fuel	4.3	
Maintenance and repairs	1.1	1.5
Used cars and trucks	1.7	2.2
Public transportation	1.1	1.4
Medical care	**6.3**	**8.1**
Apparel	**3.7**	**4.8**
Recreation	**5.6**	**7.2**
Education and communication	**6.0**	**7.8**
Other goods and services	**3.5**	**4.5**
Tobacco and smoking products	0.7	0.9
Memo:		
Food	13.9%	
Energy	8.7	
Core (ex food and energy)	77.4	100.0%
* Utilities only		
** Alcoholic beverages only		

Source: Department of Labor.

- Product areas and their relative importance weights as of December 2006 are shown in Exhibit A both for the overall index and the core.

- One controversial issue in the CPI is its treatment of the cost of owner-occupied housing. This index—termed "*owners' equivalent rent*" (OER)—estimates the rent that would be charged on such dwellings. Before 1983, the owner-occupied component of the CPI tracked mortgage carrying costs. However, this resulted in significant volatility whenever mortgage interest

rates were changing rapidly and was also considered, at least at that time, to be a conceptually inferior approach.

- The data underlying both the rents paid by renters ("rent of primary residence") and OER come from a large sample of properties that is balanced both geographically and across rent levels. Because rents change infrequently, specific units are sampled only every six months. This is one reason why these components of the CPI exhibit a lot of "persistence," i.e., a tendency for departures from previous trends to signal changes in trend (the opposite of mean reversion).[12]

- The two main rental components differ in two respects. First, the raw data are weighted differently, to reflect differences between the types of housing that are rented as apartments—typically smaller units with fewer amenities, usually in multifamily structures and modest neighborhoods—versus those that are owned—typically single-family structures that are larger and in more upscale neighborhoods. The second difference relates to the treatment of utilities. Because these costs are usually paid separately by homeowners but often included in the rental data, BLS strips them out in calculating OER. More detail can be found at http://www.bls.gov/cpi/cpifact6.htm.

- The CPI is widely used as the basis for indexation of various contracts. As a result, changes in the not seasonally adjusted CPI are only revised when the base year of the index changes. One unfortunate implication of this is that observations in the CPI that straddle shifts in methodology, such as the change in computation of owner-occupied housing costs discussed above, are not comparable.

- In 1996, a panel of experts appointed by the Senate Finance Committee and chaired by economist Michael Boskin (the "Boskin Commission") determined that the CPI as then constructed materially overstated the actual rate of retail price inflation. Analysts at the Bureau of Labor Statistics took issue with portions of this assessment but responded to others by changing several aspects of the CPI calculation methodology, in an effort to enhance its accuracy.

- Because these technical adjustments almost always acted to suppress the rate of increase in the index, and prior data were not revised, the updates made the pattern of sequential change in reported CPI inflation appear more favorable than it really was during the late 1990s, as the Boskin Commission recommendations were gradually implemented. In an effort to address this

[12] For a more extensive discussion of persistence versus mean reversion in the CPI, see "Some Inflation Surprises Matter More than Others," *US Daily Financial Market Comment,* September 25, 2006.

and other problems of historical data incompatibility, the Bureau of Labor Statistics has created a series (CPI-U-RS) that endeavors to apply the current CPI calculation methods back to 1978.

- The Federal Reserve Bank of Cleveland calculates a *"median CPI"* as an alternative measure of core retail price trends. For each month, the change in this index is simply the median change among 45 components, where each of these components is weighted by its relative importance weight. The point of this approach is to measure the central tendency of price changes without targeting specific components for systematic exclusion, in contrast to the approach taken in the core CPI. The median CPI is usually published about two to three hours after the CPI (see http://www.clevelandfed.org/Research/Inflation/US-Inflation/mcpi.cfm).

PCE Price Indexes **Medium to High Impact**

Source: Department of Commerce, Bureau of Economic Analysis (BEA)
Frequency: Monthly and quarterly
Timing: Both released about four weeks after month-end/quarter-end, revised monthly
Hour: 8:30 AM
Address: http://www.bea.gov/bea/dn/home/personalincome.htm (monthly)

- These price indexes for the personal consumption expenditures (PCE) component of GDP provide an alternate gauge of consumer price inflation based on final consumption goods and services purchased by individuals or non-profit institutions. Monthly data on these price indexes are included in the release on personal income and outlays; quarterly data are released as part of the GDP report, usually on the preceding business day (see pp. 27-29).

- In recent years, Fed officials have focused on the core component of the PCE price index, which excludes food and energy prices, as their preferred gauge of consumer inflation. In March 2005, Chairman Bernanke, an advocate of inflation targeting and then a Fed governor, identified the 1%-2% range as his "comfort zone" for the core PCE price index. More recently FOMC staff forecasts suggest a narrower 1½%-2% range.

- The basket of goods and services covered by the PCE price index (and the weight of each item within that basket) is based on the survey of business sales used to measure personal consumption expenditures. This is in contrast to the CPI, which covers only urban households and whose weights come from a consumer survey. The PCE indexes also impute to consumers outlays made on their behalf, notably medical costs covered by insurance as well as those paid

out of pocket, and they include final purchases by non-profit institutions and food produced and consumed on farms.

- As a result of these differences, the PCE basket is broader than the CPI basket. The weights of items within the basket also differ. For instance, the weight of owner's equivalent rent in the PCE index is less than half the weight in the CPI basket; much of that difference is made up by a larger share of medical services, as shown in Exhibit B.

Exhibit XIIB: CPI vs. PCE Price Indexes

	Consumer Price Index		PCE Price Index	
	Weight in Total	Weight in Core	Weight in Total	Weight in Core
Total Index	100%	na	100%	na
Food	13.9	na	13.8	na
Energy	8.7	na	6.4	na
Core Index	77.4	100%	79.8	100%
Shelter*	32.4	41.9	15.0	18.8
OER	23.8	30.8	11.0	13.8
Rent	5.9	7.7	3.0	3.8
Lodging	2.6	3.4	0.8	1.0
Medical Services	4.8	6.2	17.3	21.6
Services ex energy, medical, and shelter	18.4	23.8	25.0	31.3
Durable Goods	11.1	14.4	11.0	13.8
Nondurable Goods ex food and energy	10.6	13.7	11.6	14.5

* Farm dwellings are not included in the owners' equivalent rent or rent of primary residence subcomponents of the PCE Price Index but are included in its shelter component.
Note: Weights reported for the CPI are as of December 2006, and weights reported for the PCE Price Index are as of November 2007.
Source: Department of Labor. Department of Commerce.

- Another difference with the CPI is that the PCE index is not a fixed-weight (Laspeyres) index. Instead, price changes are measured through a chain-weight "Fisher ideal" index, which is an average of the changes in two fixed-weighted indexes, based on past and current consumption patterns. The idea is that when prices change, people's consumption habits also change (usually gravitating towards lower price substitutes), so the PCE index tries to measure this through its chain-weighted index. The CPI, on the other hand, is a fixed-weight index, with a basket that updates only every few years based on an annual consumer expenditure survey, as described above (see p. 81-85).

- For goods and services whose prices are difficult to measure, the BEA imputes these prices using other variables. Financial services provided without explicit charges, such as "free checking" are an example; in this case, interest rates, employment, and revenue data for banks are used to estimate the costs. For those skeptical of such measures, an alternative "market-based" PCE price index excludes most such imputed prices (though this measure does include the imputed rent for owner-occupied housing).

- Inflation as measured by the PCE price index has usually been lower than that from the CPI, typically by about ¼ to ½ percentage point, reflecting the

differences in measurement noted above. This gap has varied over time and is volatile on a monthly basis, including many instances when the PCE price index rises by more than its CPI counterpart.

- The Federal Reserve Bank of Dallas computes a *"trimmed mean PCE inflation rate."* The intent is similar to the Cleveland Fed's median CPI (see p. 84)—to provide an alternative core inflation rate that does not systematically exclude certain prices. However, the method is more complex, based on research that suggests the optimal exclusion in any given month is approximately the largest 25% of price changes (by total expenditure weight) and lowest 21% (see http://dallasfed.org/data/pce/index.html).

GDP-Based Price Indexes **Medium to Low Impact**

Source: Department of Commerce, Bureau of Economic Analysis
Frequency: Quarterly data, revised monthly
Timing: About four weeks after month-end
Hour: 8:30 AM
Address: http://www.bea.gov/national/index.htm#gdp

- The GDP report (see pp. 27-29) includes prices indexes for various measures of aggregate US output of goods and services as well as key components of that output. Market participants tend to focus on three main series:

  1. The *chain-weight price index for GDP* is the broadest measure of domestic prices, covering all goods and services produced in the United States. Thus, it is not limited to items purchased by consumers as is the case with the CPI and PCE price indexes. For example, it includes prices of construction, business equipment, and government spending. Changes in the GDP price index are calculated by applying weights that are updated annually (based on the composition of national output) to individual price indexes for the various components of GDP.

  2. The *chain-weight price index for gross domestic purchases*, by excluding net exports, focuses on prices paid by entities domiciled in the United States as opposed to prices of goods produced in the United States. Of the three, this index receives the least attention, although it may provide a better sense of trend price change during periods when the terms of trade is moving sharply due to changes in the price of oil.

  3. *The core PCE price index* measures changes in prices paid by US consumers for goods and services other than food and energy. In recent years it has gained importance as the Federal Reserve's preferred gauge for underlying consumer inflation trends (see above).

- GDP-based price measures are reported as quarter-to-quarter percent changes, expressed at annual rates. Price statistics are available for many individual components of GDP as well as for the aggregates noted above.

Employment Cost Index (ECI) **Medium Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Quarterly
Timing: About four weeks after quarter-end
Hour: 8:30 AM
Address: http://stats.bls.gov/news.release/eci.toc.htm

- The ECI measures changes in hourly labor compensation for specific types of work. Indexes are calculated, both with and without seasonal adjustment, for all workers except those in the federal government. Indexes are reported for the overall workforce (total civilian) and for private-sector workers. Private-sector indexes are further broken down by occupational category, and for all types of workers separate indexes are available for wages and benefits.

- Most economists regard the ECI as a superior gauge of labor compensation relative to the monthly data on average hourly earnings (AHE) in the employment situation report (pp. 72-75) for three reasons: (1) By focusing on pay rates for specific occupations the ECI abstracts from shifts in the mix of workers across jobs and/or industries and from changes in overtime on average pay, both of which can affect AHE; (2) the ECI includes benefits; and (3) the ECI covers all but federal workers, whereas AHE cover only production and nonsupervisory workers in the private sector.

- Against these advantages, the ECI is available only quarterly from the early 1980s. Unlike other quarterly data for the United States, the ECI is based on conditions prevailing during the last month of the quarter, and reported in terms of percentage changes from quarter end to quarter end, not annualized.

- The ECI for private-sector wages and salaries includes sales commissions, which sometimes change sharply. When this occurs, figures on nonsales wage compensation may provide a better measure of underlying pay trends.

- The ECI does not include the value of stock options granted as a form of compensation, which in recent years has been a source of significant volatility in the index of hourly compensation in the productivity and cost report (see below). Against this third measure of hourly compensation, the ECI has the advantage of abstracting from shifts in the composition of work and providing compositional detail (across industries and between wages and benefits) not available in the hourly compensation series.

- Because benefit costs include employer-paid payroll taxes, changes in these levies can influence the ECI for total compensation.

Productivity and Costs **Medium Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Quarterly, revised one month later
Timing: Five to six weeks after quarter-end, about a week to ten days after GDP
Hour: 8:30 AM
Address: http://www.bls.gov/news.release/prod2.toc.htm

- This report tracks various measures affecting costs of production for business firms in a quarterly data set of seasonally adjusted indexes that go back to 1947. The two main indexes of interest to financial markets are those for productivity and unit labor costs.

- Productivity indexes measure changes in output per hour of work. Output is measured as real GDP less the output generated by governments, nonprofit institutions, employees of private households, and the rental value of owner-occupied housing.

- The primary source for hours worked is the set of data collected monthly for production and nonsupervisory workers as part of the establishment survey underlying the monthly employment situation report (see pp. 72-75). These data are supplemented by estimates of nonproduction and supervisory workers and adjusted further to reflect changes in hours of self-employed workers and to convert from the concept of hours paid to hours worked.

- Markets focus on the nonfarm business sector, but indexes are also available for total business, including farms, manufacturing (subdivided into durable and nondurable), and nonfinancial corporate businesses.

- This report also provides quarterly indexes on total labor compensation per hour that stretch back much farther than the ECI. These indexes are the most inclusive measures of hourly compensation, covering wages and salaries, employee benefits, and other types of pay such as stocks and options. However, unlike the ECI, the index of hourly compensation is influenced by changes in the mix of employment between high- and low-paid jobs, as well as by variations in equity-based pay schemes. It is also not broken down into wages and benefits.

- Compensation per hour divided by productivity (output per hour) yields unit labor costs, the other main variable of interest to financial markets in this

report. Changes in unit labor costs indicate the degree to which firms are under pressure to increase prices in response to changes in their labor expenses. As a result, the index of nonfarm unit labor costs has historically been a key predictor of core inflation. However, in recent years this relationship has broken down, in part because of increased competitive pressure and in part because labor compensation has become more profit-based.

- This report also includes indexes of nonlabor costs, which include interest, depreciation, taxes, and other miscellaneous business expenses as well as profits.

- Productivity and cost indexes for the nonfinancial corporate sector are reported with a one-quarter lag relative to indexes for other sectors. Some analysts regard these figures as a more reliable indicator of the core trend in business output per hour and unit costs, because productivity in the financial sector can be volatile. Nonfinancial corporations account slightly more than half of total GDP.

Producer Price Index (PPI) **Medium to High Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Monthly
Timing: About two weeks after month-end
Hour: 8:30 AM
Address: http://stats.bls.gov/news.release/ppi.toc.htm

- The PPI is a family of indexes that measure the average selling prices received by US producers of goods and some services. For most items, establishments report product selling prices for the Tuesday of the week containing the 13th of the month. The survey covers more than 8,000 individual products and product groups, based on more than 100,000 price quotations.

- Three different broad indexes of producer prices are reported monthly:

  1. *The PPI for finished goods* is an index of prices of products ready to be shipped to wholesalers and retailers. The financial markets pay most attention to this index and its components.

  2. *The PPI for intermediate goods, supplies, and components* is a price index for a broad array of products that are part way through the production pipeline but not yet in finished form. Historically, changes in this index

have led changes in finished goods prices; however, in recent years this correlation has broken down.

3. *The PPI for crude materials for further processing* is an index of prices of raw, unprocessed commodities. It is considerably more volatile than the other two.

- Food and energy prices display a great deal of month-to-month volatility, and are heavily weighted in the finished goods PPI (totaling about 40%) and the intermediate index (about 23%). For this reason, analysts often remove food and energy to get a reading of so-called "core" producer price pressures.

- Major product areas of the finished goods PPI and their December 2006 weights are shown in Exhibit C. As shown in the table, prices of lightweight motor vehicles are a significant component of the core index; because financing incentives usually affect these indexes, they can have a pronounced effect on short-term movements in the PPI. Other volatile indexes of note outside the food and energy complex include apparel and tobacco. More detail can be found at ftp://ftp.bls.gov/pub/special.requests/ppi/soprel06.txt.

Exhibit XIIC: PPI Relative Importance Weights

	Total	Core
Food and beverages	**21.5%**	
Other consumer nondurables	**38.5**	**33.0%**
Apparel and footwear	1.7	2.9
Gasoline	5.3	
Residential natural gas	3.0	
Residential electric power	7.8	
Tobacco products	1.8	3.0
Other	18.8	-5.5
Consumer durable goods	**15.9**	**26.7**
Passenger cars	4.1	6.9
Other	11.8	19.8
Capital equipment	**24.0**	**40.3**
Light motor trucks	6.4	10.7
Other	17.7	29.6
		0.0
Memo		
Food	21.5%	
Energy	18.9	
Core	59.6	

Source: Department of Labor.

- The PPI is more volatile than the CPI because it excludes retail mark-ups, the costs of transporting goods to retail outlets, and prices of most services, all of which tend to impart more stability to retail prices (the latter two because they are more labor-intensive). This limits its value as an inflation indicator. However, because it is usually (though not always) released a day or two before the CPI, the PPI can still condition market expectations about the former and, in some instances, provide useful information to refine estimates of the upcoming CPI. PPI indexes on medical services are also helpful in forecasting that component of the PCE price index.

Goldman Sachs Commodity Index (S&P GSCI™)

Source: Standard and Poor's/Goldman, Sachs and Co.
Frequency: Daily
Address: http://www.gs.com/gsci

- The S&P GSCI™ serves as a performance benchmark for commodity investment. In addition to information about commodity price behavior on a production-weighted basis, it provides a measure of the total return achievable through an unleveraged investment in commodities over a period of time. Index levels are not adjusted for seasonal variation.

- Unlike other commodity indexes, individual commodities in the S&P GSCI™ are weighted according to their share of physical world production. The index is comprised solely of commodities with active futures markets worldwide. Exhibit D shows the weights as of January 2, 2008.

- Three indices are published:

  1. *The S&P GSCI™ excess return index* measures investor returns from an uncollateralized commodity futures investment.

  2. *The S&P GSCI™ total return index* measures investor returns from a fully-collateralized commodity futures investment, comparable to the S&P 500 (with dividend reinvestment).

  3. *The S&P GSCI™ spot index* measures commodity price levels, not investor returns.

- A futures contract on the spot S&P GSCI™ has been traded on the Chicago Mercantile Exchange since June 1992.

Exhibit XIID: S&P GSCI™ Components and Dollar Weights (%) (January 2, 2008)

S&P GSCI™ Components and Dollar Weights (%) (January 2, 2008)									
Energy	**74.2**	**Industrial Metals**	**7.0**	**Precious Metals**	**2.2**	**Agriculture**	**13.1**	**Livestock**	**3.5**
Crude Oil	39.3	Aluminium	2.2	Gold	2.0	Wheat	4.0	Live Cattle	2.1
Brent Crude Oil	15.7	Copper	2.8	Silver	0.3	Red Wheat	1.4	Feeder	0.5
RBOB Gas	1.4	Lead	0.5			Corn	3.1	Lean Hogs	0.9
Heating Oil	6.2	Nickel	0.9			Soybeans	2.2		
GasOil	5.4	Zinc	0.6			Cotton	0.8		
Natural Gas	6.3					Sugar	0.9		
						Coffee	0.6		
						Cocoa	0.2		

Source: Goldman Sachs.

Reuters/Commodity Research Bureau (CRB) Indexes — Low Impact

Source: Reuters/CRB
Frequency: Daily
Address: http://www.crbtrader.com/crbindex/

- Reuters/CRB publishes daily indexes for different commodity price measures. These are not adjusted for seasonal changes.

- The CRB Spot Market Price Index (spot price) reflects prices for 23 equally weighted commodities—10 foodstuffs and 13 raw industrial materials:

Foodstuffs
- Butter AA, 0.92, Chicago
- Cocoa Beans, NY
- Corn, #2 Yellow, Central Illinois
- Hogs, #2, Iowa/S. Minn
- Lard, Chicago
- Soybean oil, crude, Central Illinois
- Steers, choice, Tex/Okla
- Sugar, raw, NY
- Wheat, #1 Dark Northern Spring, Mpls
- Wheat, #2 Hard Red Winter, KC.

Raw Industrials
- Burlap, 10 oz. 40", NY
- Copper scrap, #2, NY
- Cotton, 1-1/16", 7-market avg.
- Hides, heavy native steers, Chicago
- Lead scrap, NY
- Print cloth, 48" 78 x 78, NY
- Rosin, windowglass, NY
- Rubber, #1 ribbed smoked sheets, NY
- Steel scrap, #1 heavy melt, Chicago
- Tallow, Packer's prime, Chicago
- Tin, Grade A, NY
- Wool tops (nominal), Boston
- Zinc, Special High Grade, NY (delivered)

- The CRB Raw Material Sub Index is a subset of the overall CRB spot index. It is a leading indicator of industrial activity, since material prices are greatly influenced by changes in demand for these goods.

- The Reuters-CRB Futures Index reflects prices for 17 commodities in the futures markets that receive equal weights in computing the index value. Its composition is somewhat different from the CRB spot index because it includes precious metals (gold, silver, and platinum) as well as energy

products (crude oil, #2 fuel). Following is a list of the commodities in the Reuters-CRB Futures Index:

Cattle "Live" (CME)
Cocoa (CSCE)
Coffee (CSCE)
Copper (COMEX)
Corn (CBT)
Cotton (NYCE)
Crude Oil (NYMEX)
Gold (COMEX)
Heating Oil 2 (NYMEX)
Lean Hogs (CME)
Natural Gas (NYMEX)
Orange Juice (NYCE)
Platinum (COMEX)
Silver (COMEX)
Soybeans (CBT)
Sugar "11" (CSCE)
Wheat (CBT)

- Because the CRB spot and Reuters-CRB futures indexes contain a large number of agricultural prices, they can be heavily influenced by the effects of weather or natural disasters on crop prices.

- Other commodity price indexes exist, such as those compiled by the *Journal of Commerce*, Dow Jones, and *The Economist* magazine.

- Commodity price indexes are quite volatile because they reflect prices of goods at the earliest stage of production that are highly sensitive to small shifts in supply and demand. As a result, sustained changes in commodity prices are usually required before they have a meaningful effect on inflation at the consumer level.

Import and Export Prices **Low to Medium Impact**

Source: Department of Labor, Bureau of Labor Statistics (BLS)
Frequency: Monthly
Timing: About 10 days after month-end
Hour: 8:30 AM
Address: http://www.bls.gov/news.release/ximpim.toc.htm

- The BLS has compiled and published detailed monthly price indexes for its international trade flows since 1989. These indexes are used to deflate the monthly merchandise trade figures, although they are not seasonally adjusted.

- Items in the index include raw materials, agricultural products, semi-finished manufactured goods, and finished capital and consumer goods.

- Markets tend to focus on movements in the price index for imports excluding the petroleum component as an indicator of the potential for pricing of foreign-produced goods to influence domestic inflation. However, the export price indexes, in conjunction with exchange rate changes, are also useful in judging the relative competitiveness of US-produced goods in foreign markets.

- In addition to the indexes for all imports and exports, price indexes are available for nearly all merchandise categories. They are useful for deflating trade statistics, analyzing terms of trade, exchange rates and price elasticities of trade volumes and measuring import and export price trends of product groups.

Section XIII. Monetary and Financial Data

Monetary Aggregates **Low Impact**

Source: Federal Reserve Board
Frequency: Weekly, for week ending Monday
Timing: Every Thursday, ten days after reporting period
Hour: 4:30 PM
Address: http://www.federalreserve.gov/releases/h6/

- Over the years, the Federal Reserve has tracked various gauges of the stock of money in circulation and related aggregates of liquid assets. Periodically, these measures have been redefined to recognize the effects of financial innovation, technological change, and other factors. Currently, the Fed focuses on two such measures in its data collection and publication (though not so much in its policy deliberations):

  M1
  Currency in circulation
  Travelers checks (nonbank issuers)
  Demand deposits
  NOW (negotiated order of withdrawal) accounts
  Credit union share draft accounts

  M2
  All of the above, plus:
  Overnight and continuing contract repurchase agreements
  Money market deposit accounts (MMDA's)
  Small denomination time deposits (less than $100,000)
  Savings deposits
  Overnight Eurodollar deposits
  Money market mutual fund balances
  (general purpose and broker-dealer)

- These aggregates—especially M2—had high market impact from late 1979 through the early 1980s, when the Federal Open Market Committee shifted its operating procedures from fixing the federal funds rate to indirect targeting of M2 growth via control of the growth in nonborrowed reserves in an effort to control runaway inflation. However, this impact waned after the Fed returned to an interest-rate setting regime during the 1980s, and it has disappeared altogether with increasing evidence that the link between growth rates of money and nominal GDP are quite loose. This has led Fed officials to abandon the measurement of two broader aggregates:

M3 All of the above, plus:
Large denomination time deposits ($100,000 or more)
Term repurchase agreements
Term Eurodollar deposits
Money market mutual fund balances (institution-only)

L All of the above, plus:
Nonbank public holdings of US savings bonds
Short-term Treasury securities (under 12 months to maturity)
Commercial paper
Bankers acceptances
(net of money market mutual fund holdings of these assets)

- Another analytically popular monetary aggregate (not reported by the Fed, but calculated from their data) is "MZM," which stands for "money-zero-maturity." It equals M2 minus small denomination time deposits, plus institutional money market mutual funds.

- Monetarist economic theory holds that changes in the money supply should, over time, yield fairly predictable changes in nominal economic output. According to this theory, accelerations or decelerations in money stock growth influence real economic activity in the short term but only inflation in the long term.

- Over the past two decades, deregulation of financial activity and increased globalization of business have caused many of the traditional relationships between the aggregates and economic activity to weaken or even break down completely. Therefore, before conclusions about a nation's economic growth or inflation prospects are drawn from movements in the monetary aggregates, it is appropriate to examine whether those movements are due to shifting asset preferences, temporary transactions, international developments, or other factors.

Monetary Base **Low Impact**

Source: Federal Reserve Bank of St. Louis; Federal Reserve Board
Frequency: Weekly
Address: http://research.stlouisfed.org/fred2/categories/124

- The monetary base is meant to measure the supply of "high-powered money" in the economy that can be leveraged by the banking system for future lending activity. Many monetarists believe that changes in growth of the monetary base presage similar changes in monetary aggregate growth rates.

- The monetary base consists of: (1) total bank reserves, (2) the currency portion of the money stock, and (3) vault cash held by banks in excess of that used to satisfy reserve requirements. All three elements are seasonally adjusted, while total reserves and excess vault cash are also adjusted for any breaks in the series associated with changes in official reserve requirements.

- The Federal Reserve Board and the Federal Reserve Bank of St. Louis employ different seasonal adjustment factors and use different treatments for definitional changes in their separate monetary base series.

- A major problem with the monetary base as a measure of the stance of monetary policy is that it is comprised mostly of currency, whose fluctuations can sometimes be related to changing domestic or international liquidity preferences rather than developments regarding final demand or lending. For example, the collapse of Communist governments in Eastern Europe in mid-1989 triggered a surge in demand for dollars in that region, which in turn prompted a sharp acceleration in monetary base growth. Since these extra dollars were being sought primarily as a store of value abroad, the monetary base expansion had little or no influence on US spending or borrowing patterns.

Senior Loan Officers' Survey **Low to Medium Impact**

Source: Federal Reserve Board
Frequency: Quarterly
Timing: Usually the Monday following every other FOMC meeting, although the Fed commits only to within a week of the meeting.
Hour: 2:00 PM
Address: http://www.federalreserve.gov/boarddocs/SnLoanSurvey/

- Every quarter the Federal Reserve staff surveys senior loan officers at about 60 large domestic banks and 24 US branches and agencies of large foreign banks. Questions cover changes in the standards and terms of bank lending as well as respondents' assessments of the demand for loans by businesses and households. The survey often includes special questions on topics of current interest. The timing of the survey is usually the first month of the quarter, and the results are one input to the FOMC meeting that follows.

- Survey results are available on a quarterly basis back to the second quarter of 1991; before then data are only available on an intermittent basis.

- Results are published as a report to heads of research at the district banks. The data are charted as net differences between the percentage saying that credit standards have tightened (or that loan demand has increased) and the

percentage voicing the opposite view. Additional detail, on both the intensity of changes and the reasons for them, is tabulated both for the entire sample and for large and small banks separately.

- The information in this report can be a valuable supplement to higher frequency data on credit spreads, changes in outstanding loans, etc., that help gauge changes in financial market conditions.

- Occasionally, when credit conditions are in flux and market conditions are turbulent, the Fed has conducted a supplementary survey. For example, this was done in September 1998, during the Russian default/LTCM crisis, and again in March 2001, when the economy was headed into recession. However, a special survey was not conducted in the wake of the market turmoil of August 2007.

Flow of Funds **Low Impact**

Source: Federal Reserve Board
Frequency: Quarterly
Timing: Second week of the third month of the following quarter
Hour: 12:00 PM
Address: http://www.federalreserve.gov/releases/z1/

- This vast data set provides a comprehensive look at the balance sheets of key sectors of the US economy—households, businesses, federal and state and local governments, the foreign sector, and a myriad of different types of financial institutions. The same data are also organized by major asset class, breaking down the ownership and issuance by various sectors. Data on quarterly flows are also tabulated, both in raw form and seasonally adjusted at an annual rate. This system of financial accounts begins in 1952, although some series start later.

- The report has low market impact because of the long reporting lag (10 to 11 weeks after the end of a quarter) and the sheer volume of the information (more than 100 pages). However, some economists pore over this report, focusing on the following key variables:

  1. *Domestic nonfinancial debt.* This is the most comprehensive measure of borrowing in the US economy. It tracks the liabilities of the four major nonfinancial sectors of the domestic economy—households (and other nonprofit organizations), businesses, state and local governments, and the federal government. Financial sectors are excluded because most of their borrowing facilitates the transmission of credit from the ultimate lender to

the ultimate borrower and hence involves double counting. The foreign sector is excluded to focus on the demand for funds from US sources.

2. *The financing gap (for nonfinancial corporations).* This gap is defined as the difference between business spending on investment, including capital spending as well as inventory accumulation, and internal cash flow. As such, a positive financing gap signals a need for the corporate sector as a whole to access external sources—bank loans or the issuance of securities—to fund their operations, while a negative gap means that the corporate sector is self financing, at least in the aggregate.

3. *The saving rate.* As noted on p. 30, the personal saving rate is typically defined as the difference between disposable personal income and personal outlays. In principle, the same concept of personal saving can be measured as the difference between the net change in household assets (excluding capital gains) and the net change in household liabilities. However, this immediately raises the question of how to deal with whether to recognize depreciation of tangible assets as saving or not. Recognizing these issues, the flow of funds accounts provide alternative measures of personal saving, both including and excluding depreciation of tangible assets. Although the latter should, in theory, foot with the income less spending gauge, measurement errors create some disparities.

Consumer Credit — Low Impact

Source: Federal Reserve Board
Frequency: Monthly
Timing: Five weeks after month-end
Hour: 3:00 PM
Address: http://www.federalreserve.gov/releases/g19/

- This report shows the dollar amount of short-term consumer installment credit outstanding at month-end, including loans to individuals by banks and finance companies, as well as by other institutions. Markets focus on the monthly change in billions of dollars (not annualized) and on the equivalent percentage change in outstanding obligations.

- Consumer credit is subdivided into *revolving credit* (mainly credit card balances that are outstanding—*i.e.*, not yet paid down—as of month-end) and *nonrevolving credit*, which includes home improvement loans, automobile credit, and other loans on which regular payments are required.

- The report also includes data on interest rates for car loans (at banks and finance companies), credit cards, and personal loans, although these data do

not get much focus in the markets. Car loan data for finance companies also include average maturities, loan-to-value ratios, and amounts financed.

- The focus in this report on short-term installment debt means that it provides only partial coverage of US household debt. In particular, the consumer credit data exclude: (1) mortgages and home equity loans, (2) balances on cards structured as consolidated billing conveniences rather than as extensions of credit, (3) other single-payment loans, and (4) auto leases. A more complete picture of household debt is available in the Federal Reserve's quarterly flow of funds data (see above)

- Consumer credit data are also subject to revisions that can be large and often extend back several months. Moreover, the data have several breaks in series when definitional or other changes have occurred. These statistical features, coupled with the relatively long lag in publication and changes in consumer usage of credit, severely limit the usefulness of these data as indicators of consumer activity. Examples of the last point include: (1) the phasing out of tax deductibility for nonmortgage interest in the Tax Reform Act of 1986, which discouraged the use of consumer installment credit relative to home equity loans and vehicle leasing, and (2) the increasing use of credit cards for convenience purchase, which has worked in the opposite direction.

Household Debt Service and Financial Obligations Ratios — No Impact

Source: Federal Reserve Board
Frequency: Quarterly
Timing: No set time, not formally released
Hour: NA
Address: http://www.federalreserve.gov/releases/housedebt/default.htm

- These data provide estimates of the percentage of disposable income required to service the debt obligations (payment of interest plus scheduled retirement of principal, if any) of US households. Figures are available quarterly from 1980.

- The debt service ratio (DSR) has been calculated for many years and focuses exclusively on mortgage and installment debt service. The broader financial obligations ratio (FOR) was set up in 2003 to address various legally binding exclusions from the DSR, notably auto lease payments, residential rent, and costs of homeownership other than mortgage payments (insurance and property taxes). The total FOR includes all of these items; it is then subdivided into renter and homeowner components, with the latter FOR further subdivided into mortgage and consumer (credit) components.

- These data are maintained on the Fed's website and updated following the release of flow of funds data (see pp. 98-99). However, they are not the focus of any published report; hence, they have no market impact. Even so, they are useful in assessing trend in the consumer debt burden.

Section XIV. Federal Reserve Policy

Federal Open Market Committee (FOMC)

- The FOMC is the main monetary policy-setting panel of the Federal Reserve System. It consists of 12 members, including: all seven members of the Board of Governors (located in Washington, DC), the president of the Federal Reserve Bank of New York as a permanent member, and four of the other 11 District Bank presidents in one-year rotations. The Chairman of the Federal Reserve Board also chairs the FOMC, while the president of the New York Fed serves as its vice chair.

- The Cleveland and Chicago presidents serve in alternate years. The others serve in three-year cycles as follows: Boston, Philadelphia, and Richmond share one seat; Atlanta, St. Louis, and Dallas share another; and Minneapolis, Kansas City, and San Francisco share the third.

- Vacancies or absences in these seats are filled by the next in rotation or, in the case of the New York Fed seat, by the First Vice President of the New York Fed. Vacancies on the Board do not have similar back-ups and thus reduce the number of voting members on the FOMC. All of the District Bank presidents attend the FOMC meetings and participate in the discussion, even if they are not voting that year.

FOMC Policy Statements — High Impact

Source: Federal Open Market Committee (FOMC)
Timing: FOMC meeting dates or whenever policy changes are made
Hour: Around 2:15 PM on FOMC meeting dates
Address: http://www.federalreserve.gov/fomc/#calendars

- The conduct of monetary policy has become increasingly transparent since February 1994, when the FOMC decided to announce all monetary policy changes on the day they were taken. Previously, official word came only when the Federal Reserve Board voted to change the discount rate (see pp. 107-108 below). Financial market participants were left to divine other policy steps by analyzing changes in open-market operations to determine whether they were truly designed to change market rates or just technical in nature. These statements have quickly shot to the upper echelons of high impact events for the financial markets.

- Since implementing this change, the FOMC has shown a strong preference to limit policy changes to regular meetings. For example, only six of the 55

changes in the federal funds target between February 2004 and January 2008 have occurred between meetings. Consequently, when an intermeeting rate change occurs, it signals an elevated degree of anxiety—usually either a threat to the normal functioning of the financial system (prompting a rate cut on October 15, 1998) or recession (three intermeeting rate cuts in 2001 and one in 2008). The sixth was a rate hike in April 1994 during an unusually long intermeeting period. On one other occasion (August 17, 2007), a seize-up in financial liquidity prompted the Federal Reserve Board to announce an intermeeting cut of 50 basis points in the discount rate; the FOMC piggy-backed on that statement to modify its assessment of policy risks but did not actually change the federal funds rate target.

- From early 1994 through the spring of 1999, substantive announcements were made only for policy changes; otherwise, the Federal Reserve simply announced that the FOMC meeting had ended without further elaboration. Since May 1999 the FOMC has issued substantive statements after every regular meeting, even when no rate changes were made. They have included not only the details of the policy change, if any, but also a brief (about 100-word) description of the committee's view of current economic conditions, usually including the balance of risks between unacceptably high inflation or unacceptably weak growth. In March 2002, the FOMC began to include the votes for the decision in the statement; previously these were available only when the minutes were published after the following FOMC meeting.

- Financial market participants scrutinize the language of the FOMC statement to discern the key factors weighing on policy determination and how they might be changing. These can provide clues as to policy makers' sense of urgency, and thus to the probable timing and magnitude of any further rate adjustments. On rare occasions—for example, after 9/11 and during the period of elevated market stress in August and September 2007—the FOMC has suspended its evaluation of the balance of risks.

FOMC Minutes and Transcripts **Medium Impact (Minutes)**

Source: Federal Open Market Committee
Timing: Three weeks following each FOMC meeting
Hour: 2:00 PM
Address: http://www.federalreserve.gov/fomc/#calendars

- As part of its ongoing effort to increase transparency, the FOMC decided in early 2005 to accelerate publication of the minutes of its meetings. Instead of waiting until the Thursday following the next meeting, the committee now releases these minutes three weeks after the meeting to which they apply.

This has increased the market impact of the minutes, as they now provide more detail on the committee's deliberations at the latest policy session.

- The minutes provide a summary of the panel's discussions and the votes that were taken, as well as a description of the economic and financial conditions that prevailed at the time, although since March 2002 the vote has been known as of the policy statement. When there are dissents, the reasons for them are given in a short paragraph. Minutes for intermeeting conferences, when they occur. are usually published with the minutes to the subsequent meeting.

- The minutes are carefully edited and do not attribute opinions or observations to any specific member. Accordingly, because dissents are also rare, phrases such as "a few members" or "a majority of members" help convey the degree of support or opposition that existed for a particular position at the time. In the minutes, the term "member" refers to voting members, while the broader term "participants" includes the nonvoting regional presidents as well.

- Once a year, the FOMC releases transcripts for meetings that occurred five years earlier. These are transcribed from tape recordings and can help flesh out analysts' understanding of the views of individual policy makers and the factors that led to specific decisions in the past.

Monetary Policy Testimony and FOMC Forecasts — High Impact

Source: Federal Open Market Committee
Frequency: Twice a year, in mid-February and mid-July for testimony, Four times a year for forecasts, as described below
Timing: Mid-February, mid-July for testimony.
Hour: 2:00 PM
Address: http://www.federalreserve.gov/boarddocs/hh/

- Twice a year the Chairman of the Federal Reserve reports to Congress on the conduct of monetary policy, both in written form and in testimony before the oversight committees (Senate Banking and House Financial Services). The testimony, usually delivered in successive days, has been a semiannual ritual commanding the markets' attention since the late 1970s, when the process of reporting regularly was mandated under the Full Employment and Balanced Growth Act of 1978 (commonly known as the Humphrey-Hawkins Act). The act expired in 2003, but the Fed has voluntarily continued the process.

- As part of this report, the FOMC has published summary statistics—ranges and "central trendency" ranges—of forecasts submitted by all 19 members for real GDP growth, inflation, and the unemployment rate. The growth and

inflation rates are reported as percentage changes from fourth quarter to fourth quarter; the unemployment rate is for the fourth quarter average. Over the years, the variables used for inflation have evolved from the CPI for all items originally to the core PCE price index most recently (see pp. 81-86).

- In a major revamping of the process in November 2007, the FOMC expanded the frequency of these forecasts to four times a year, with the other two to accompany the minutes to meetings held in late April/early May and late October/early November. The committee also added the headline PCE price index to the list of forecast variables while retaining the core index, extended the forecast horizon to three years from what had (most recently) been two years, and began to publish more written and visual detail about the reasons underlying the forecasts, the risks, and the dispersion of views.

- Perhaps the most important aspect of this change was the FOMC's revelation that each member assumes the pursuit of an "appropriate monetary policy" in formulating his/her forecasts. This implies that each member's "forecasts" for out years are his/her views of the Fed's objectives in the case of inflation and estimates of potential growth and the natural rate of unemployment in the case of these variables, except in situations where a member believes that three years are not enough time for the anticipated changes in policy to filter through to the economy. In turn, this means that the ranges for inflation can be interpreted as a statistical "comfort zone" of targets acceptable to the 19 voting and nonvoting members of the FOMC. By the same token, the ranges for unemployment could carry a similar interpretation for the maximum level of employment that FOMC member deem possible. It remains to be seen whether this more explicit publication of forecasts/objectives signals any meaningful change in how the FOMC conducts monetary policy.

Open-Market Operations

- The Federal Reserve manipulates the supply of nonborrowed bank reserves via open-market operations—its purchases and sales of Treasury and federal agency securities. These transactions are conducted by the Open Market Desk of the Federal Reserve Bank of New York with a small group of financial institutions certified to trade with the Fed and known as "primary dealers." Since the early 1950s, open-monetary operations have been the chief means by which the Federal Reserve achieved its monetary policy objectives, with changes in the discount rate and reserve requirements—the other two traditional policy tools—playing lesser roles.

- Prior to February 1994, open-market operations were used to implement and signal monetary policy changes (*dynamic* operations), as well as to counteract seasonal and other fluctuations in the demand and supply for bank

reserves (*defensive* operations). Because the Fed did not disclose whether a given open-market operation was for dynamic or defensive purposes, there was a cottage industry of analysts who predicted and interpreted the Fed's daily interventions or noninterventions in the markets, and their views could strongly influence market perceptions about the Fed's policy course.

- Since February 1994, however, the FOMC has announced all monetary policy changes (*i.e.*, changes in its federal funds rate target). Thus, open-market operations are now performed exclusively for technical, defensive purposes.

- The effect of a particular open-market operation on bank reserve supplies depends on three considerations:

  1. *The resulting flow of funds to or from the banking system:* When the Fed purchases securities, it pays for them with dollars that increase total bank reserve supplies. Conversely, when selling securities the Fed takes in dollars, and thus reduces overall bank liquidity.

  2. *The term of the transaction:* Open-market operations can have either temporary or permanent consequences for reserve supplies.

     Temporary Operations: Repos and Reverse Repos

     - When the Fed wants to add reserves to the banking system for a short period, it can do so through repurchase agreements ("repos"). These are short-term contracts in which the Fed purchases securities for a fixed period, receiving a negotiated interest rate on the funds thus invested. At the end of the period, the transaction is automatically reversed and the funds cease to be available for the banks.

     - When the Fed seeks a temporary decrease in reserves, it negotiates a reverse repurchase agreement (formerly known as matched sale-repurchase agreements, or "matched sales") with primary dealers. These reserve-draining measures consist of two transactions, under which the Fed sells securities and receives dollars at a negotiated rate of interest, and simultaneously contracts to buy back the securities on some specific future date.

     Permanent Operations: Outright Purchases and Sales of Securities

     - Because reserve needs rise over time in a growing economy, the Fed periodically faces a need to inject liquidity on a more permanent basis. This is accomplished via an outright purchase of Treasury securities—usually coupon securities—known as a "coupon pass."

Outright sales have the opposite effect in cases where the Fed wants to drain reserves for more than a temporary period. However, this is rare; in fact, to our knowledge no outright sale has occurred since 1990.

- The New York Fed has adopted a strategy of making numerous, small outright purchase transactions in the market, rather than the infrequent large passes employed in earlier years. This change was made so that securities dealers could narrow the focus of their offerings and thereby shorten the time that passes between initiation and completion of the transaction.

1. *The size of the transaction:* The size of a Fed open-market transaction is determined by the volume of reserves that must be added or drained for defensive reserve management purposes. Since the beginning of 1997, the Fed has announced the exact size of all its open-market operations immediately following their completion. However, in outright purchases the amounts of each issue purchased are not promptly disclosed.

Discount Rate **High Impact**

- Each district bank in the Federal Reserve System makes loans available to depository institutions in its district to meet short-term liquidity needs through a facility commonly known as the discount window. The interest rate charged on these loans is known as the "discount rate."[13] Changes in the discount rate are approved by the Board of Governors on application by the board of directors of the regional banks.

- In theory, this means that the discount rate can differ across regions. Such disparities occurred with some frequency in the early years of the Federal Reserve System but disappeared as the US financial markets became truly national. Nowadays, disparities are limited to just a day or two, reflecting differences in when banks apply for and get approval of changes.

- Historically, banks could borrow at the discount window at a rate somewhat below the federal funds rate, but access to the window was not automatic. Under this system, such borrowing came to have a sigma attached to it.

- On January 9, 2003, the Federal Reserve revamped the discount window in an effort to remove this stigma but also to make the facility a source of "last

[13] The origin of this term is that loans made under this program in the early days of the Federal Reserve System were collateralized by short-term money market instruments that typically traded at a discount and were "rediscounted" at the local Federal Reserve Bank. The term was subsequently shortened to "discount" window and rate.

resort" borrowing by adopting a policy whereby the rate on primary credit (see below) would be set one percentage point above the federal funds rate target. On August 17, 2007, this spread was narrowed to 50 basis points.

- Under this revamped setup, credit at the discount window is available under three programs, as follows (quotations taken directly from the Fed's discount window website, at http://www.frbdiscountwindow.org/index.cfm):

  1. *Primary credit.* This program provides loans for up to 30 days to "depository institutions in generally sound financial condition." Once an institution has set up a borrowing relationship with the discount window and posted collateral, it can obtain funds usually with "no questions asked" and without restrictions on the use of those funds, including the possibility that they are relent in the federal funds market.

  2. *Secondary credit.* Under this program, depository institutions who do not qualify for primary credit can obtain "short-term, usually overnight" funding. However, this credit is neither as automatic nor as unrestricted in the allowed uses of funds as is the case with primary credit; moreover, the interest rate is set 50 basis points higher. The term of a loan "can be extended for a longer term if such credit would facilitate a timely return to or reliance on market funding or an orderly resolution of a failing institution, subject to statutory requirements."

  3. *Seasonal credit.* This program is for "small depository institutions with a recurring, seasonal need for funds," usually an institution with deposits of less than $500 million whose deposit balances are heavily influence by "construction, college, farming, resort, municipal financing and other seasonal types of business." The rate is the same as for primary credit.

- With the emergence of open market operations as the Fed's primary means of conducting monetary policy in the post World War II era, the discount rate lost much of its significance as an independent policy tool. However, until the FOMC began to announce changes in its federal funds rate target in 1994, changes in the discount rate retained some importance as the only occasions when the Fed made immediate public statements about its policy changes and intentions. More recently, with the narrowing of the spread between the discount rate and the federal funds target in August 2007, markets have begun to pay more attention to the discount rate.

Term Auction Facility (TAF) **Medium Impact**

- On December 12, 2007, the Federal Reserve Board introduced the TAF as a new tool for providing funds to the financial system. The TAF was created

in response to persistent stresses in the money markets, and at this writing the experience with it has been limited. It is not even clear whether the TAF will be temporary or permanent, although our guess is that it will be permanent.

- Under the TAF, the Federal Reserve auctions a predetermined amount of loans to depository institutions that qualify for primary credit at the discount window. Collateral requirements are also the same as for discount window borrowing.

- Prior to each auction, the Fed announces the amount of loans to be auctioned, the dates they will be made and repaid, and the minimum rate that may be bid. The auctions that have occurred thus far have involved $20 to $30 billion in loans, generally for terms of 28 days. The minimum rate is the overnight indexed swaps (OIS) rate for the indicated maturity, which is the federal funds rate expected by the markets over the term of the loan as of the date of the auction announcement.

- At each auction, eligible institutions may submit up to two bids totaling no more than 5% of the amount being auctioned, specifying the rate they are willing to pay for each bid. Bids are collected between 10:00 and 1:00, and the results are announced at 10:00 a day or two thereafter. In allocating the loans, the Fed follows the *single-price* or *"Dutch" auction* method: bids are organized from highest to lowest rate, and Fed officials move down the list until enough bids have been included to cover the amount being auctioned. All bids above the market-clearing "stop-out" rate are satisfied fully at that rate; the remainder are allocated on a *pro rata* basis to those who submitted bids at the "stop-out" rate.

- In announcing the results, Fed officials publish the amount of bids received, the ratio of this figure to the size of the auction (the "bid-to-cover" ratio), the number of bidders, the stop-out rate, and the pro-rata allocation at the stop-out rate. However, consistent with its policy on handling information about discount window borrowing, the Fed does not release any data specific to a particular institution.

- In the first two auctions, the stop-out rate was 8-10 basis points below the discount rate; more recently it has been much closer to the minimum (OIS) bid rate. It makes sense that the TAF stop-out rate would be below the discount rate, as these loans are slightly more restrictive than discount rate loans. In particular, TAF loans cannot be prepaid, whereas discount window loans can be. Also, the rate on discount loans adjusts automatically on loans that are outstanding when the discount rate is changed, whereas rates on TAF loans remain fixed for the duration of the loan. This is an additional advantage for discount loans in a declining rate environment, though not in a rising rate environment.

- One of the Fed's hopes in creating the TAF was that the stigma of borrowing from the central banks, which has persisted in spite of the discount window changes noted above, would finally disappear. By taking a more proactive approach and setting up a facility in which many institutions would participate, the idea was that borrowing from the Fed would cease to be a highly unusual activity associated mainly with institution-specific difficulties. Only time will tell whether this objective has been accomplished; ironically, activity at the discount window was picking up as the TAF was being set up.

- If the TAF does become a permanent tool of monetary policy, it will bridge a gap between open market operations and discount window lending. In open market operations, the Fed takes the initiative in providing reserves through repurchase agreements with a small number of financial institutions and with fairly strict collateral requirements. In contrast, discount window loans are available to the vast majority of depository institutions and can be secured by a much larger array of collateral, but the initiative rests with the borrower.

Reserve Requirements

- The Federal Reserve Board establishes the percentage of deposits in various categories that domestic depository institutions must set aside as reserves. These reserve requirements can be met either through deposits at Federal Reserve district banks or through cash held in bank vaults.

- Reserve requirements are intended to provide a liquidity cushion for the banking system, so that withdrawals of deposits can be met without difficulty. They also provide the Fed with a blunt tool for discouraging or encouraging bank lending activity, as raising or lowering the requirements effectively boosts or reduces marginal costs for taking new deposits.

- In addition, a hike/cut in reserve requirements decreases/increases depositories' earnings by reducing/raising the volume of funds they can invest at market rates of return.

- Reserve requirement changes have been infrequent in recent years. The last reductions in these requirements took place in late 1990 and early 1992. Prior to then, the ratios had been left unchanged since 1983.

- Since early 1992, reserve requirements have applied only to transaction accounts; savings and time deposits are currently exempt.

Section XV. Federal Government Finances

Federal Budget Balance — Low Impact

Source: Monthly Treasury Statement from the Department of the Treasury, Financial Management Service
Frequency: Monthly
Timing: Eighth business day of the following month
Hour: 2:00 PM
Address: http://www.fms.treas.gov/mts/index.html

- The balance between federal receipts and outlays is the main item of interest to financial markets in this 32-page report, which also provides an extensive accounting of activity on both sides of the ledger as well as data on how the balance is financed (in the case of a deficit) or disposed of (in the case of a surplus). The figures are reported as monthly totals, not annualized and without seasonal adjustments. Monthly data extend back to 1954.

- Federal receipts exhibit considerable seasonal variation, rising sharply in April when taxpayers file returns for the preceding year, and in other months when quarterly corporate or personal estimated tax payments are due. Outlays are more stable, although interest outlays are especially large in midquarter months. Because of these seasonal patterns, the data are best evaluated by comparing figures on a year-to-year basis.

- Even these comparisons can be distorted by calendar shifts. For example, Social Security benefits and Defense Department paychecks, normally paid on the third and first day of the month, respectively, are usually accelerated to the last business day of the preceding month when these dates fall on weekends or holidays.

- Special programs or situations can also affect the budget data. For example, between 1989 and 1996 fluctuations in government deposit insurance costs associated with the federal workout from large losses in the savings and loan industry caused significant volatility in year-to-year budget comparisons.

US Treasury Borrowing Schedule

Source: Department of Treasury
Frequency: Depends on issue maturity
Timing: Variable
Hour: Announcements made at 11:00 AM; auctions held at 1:00 PM
Address: http://www.treasurydirect.gov/instit/annceresult/press/press.htm

- The US Treasury's pattern of market borrowing has changed substantially in recent years, as the fiscal balance has swung sharply from large and chronic deficits (through fiscal year 1997) to surpluses (FY 1998-2001) and back to deficits (from FY 2002 forward).

- The amounts to be sold at any given auction are announced a few days ahead of the auction. In contrast, changes in the types of securities to be auctioned and the frequency of these auctions are announced well ahead of time, usually with the terms of the mid-quarter refunding in early February, May, August, and November. These changes depend on shifts in the trend of the budget balance and hence the Treasury's longer-term financing needs.

- Exhibit A presents the timing and frequency of regular US Treasury bill, note, and bond auctions as of late 2007.

Exhibit XVA: Treasury Securities Auction Cycle

Issue	Frequency of Auction	When Announced	When Auctioned	Settlement Date (a)
Bills:				
4-Week Bills	Weekly	Monday	Tue/Wed	Thursday
13-/26-Week Bills	Weekly	Thursday	Mon/Tue	Thursday
Nominal Coupons:				
Monthly Minirefunding:	Monthly	Late Month (20th/26th)		
2-Year Notes			Tue/Wed	Month-end
5-Year Notes			Wed/Thu	Month-end
Quarterly Refunding	Quarterly	Wed (early 2nd mo)		
10-Year Notes	*		Tue/Wed	15th of Month
30-year Bonds	**		Wed/Thu	15th of Month
Treasury Inflation-Protection Securities (TIPS):				
5-Year Notes	Semiannual*** (Jan, Jul)	Late Month	Late Month	Month-end
10-Year Notes	Quarterly (Jan, Apr, Jul, Oct)	Early Month	Early Month	15th of Month
20-Year Note	Semiannual*** (Apr, Oct)	Late Month	Late Month	Month-end

(a) If the indicated date falls on a weekend or a holiday, then settlement occurs on the next business day.

* With one repoening in the first half of the last month of the quarter.

**Quarterly refunding.

***One issue per year, reopened six months later.

- In addition, the Treasury sometimes sells special bill issues known as cash-management bills to meet temporary funding needs. These are announced, auctioned, and settled on an as-needed basis. Normally, cash-management bills mature within a few days or a couple of weeks from the time they are issued, often on or a few days after large seasonal tax receipts are due. If the

funds are needed for a longer period, this will usually be accommodated by an appropriate change in the size of the four-week bill auction.

- For a brief period between 2000 and 2002, the Treasury responded to the emergence of large surpluses by repurchasing coupon debt securities in the market. The purposes were to (a) reduce interest expense, (b) prevent an unwanted extension of the average maturity of debt outstanding, and (c) mitigate the squeeze on new-issue debt supply. The sharp drop in the deficit from 2004 through 2007 has raised once again the possibility of buybacks as an alternative to major changes in the auction schedule if the deficit keeps shrinking.

Federal Debt Limit

- The federal debt limit is a legal ceiling on the aggregate amount of public debt that the US government can have outstanding. It originated in 1917, when the heavy financing burden of World War I convinced Congress to grant the Treasury responsibility for the amounts, terms, and types of US securities to be sold. In order to retain some control over government finances, Congress set a dollar limit on the amount of debt outstanding.

- The debt subject to limit includes all marketable Treasury bills, notes, and bonds as well as nonmarketable debt (*e.g.*, savings bonds, securities held by government accounts such as the Social Security and Medicare trust funds, and special securities held by state and local governments), but it excludes debt of the Federal Financing Bank and the unamortized discount on original-issue discount securities. Virtually all (about 99%) of the total public debt outstanding is subject to this ceiling.

- Many members of Congress do not like to vote for an increase in the debt ceiling. They therefore often delay hiking the debt ceiling until the Treasury nearly or completely exhausts its borrowing authority and faces a funding crisis. In addition, since bills to increase the debt limit must eventually pass to avoid default, they often act as magnets for controversial legislation that might otherwise not pass, which also can delay the bill's enactment. For these reasons, the Treasury in the past occasionally has found it necessary to deviate from its normal financing patterns in order to avoid breaching this legal limit.

Auction Techniques

- The US Treasury raises funds in the market by means of public auctions, at which competitive bids are submitted in yield terms. Several different auction techniques have been used, as described below.

- Since late 1998, all Treasury debt has been sold via *single-price* or *"Dutch auctions*. Under this system, allotments are determined beginning with the lowest yield bid submitted and moving up in yield until enough bids have been included to cover the amount being auctioned. All bids below the last, market-clearing yield are satisfied fully at that yield, while the remainder is allocated pro rata to those who submitted bids at the market-clearing yield.

- Prior to late 1992, all Treasury securities sales were conducted as *multiple-price auctions*. The Treasury awarded securities at the yields actually bid, starting at the lowest yields and moving up until the total auction amount had been allocated. An "average" yield was computed based on the percentages of the issue awarded at each separate yield; the "stop-out" yield was the highest at which securities were awarded; the auction "tail" was the difference between the average and stop-out yields.

- In a multiple-price auction, bidders risk what is known as a "*winner's curse*," namely, that they might pay more than someone else for the same securities. Auction theory suggests that participants in this type of auction will adjust their bid yields upward to guard against the winner's curse.

- Between 1992 and 1998, the Treasury employed both systems for selling securities. By adopting the single-price system for all auctions, the Treasury expected to achieve two benefits:

    1. **Eliminate the "winner's curse."** As noted above, the existence of a winner's curse in multiple-price auctions encourages more cautious bidding, or efforts to learn more about other bids so as to avoid paying more than someone else for the same securities In contrast, the single-price method should encourage participants to bid based on what they believe the securities are worth, because all auction winners will get the securities at the identical price.

    2. **Broaden participation.** By guaranteeing all auction awards will be at the same yield, the Treasury hoped to enhance the perception of fairness, which in turn could induce more investors to participate and increase the total volume of bids over time.

- In the distant past, the Treasury used *subscription sales* when it needed to raise an unusually large amount in a short period. In a subscription offering,

the coupon rate is set prior to sale, and potential investors are asked to state how many securities they would be willing to purchase at that yield. The issue is then allotted based on the relationship of the issue size to the volume of bids. Typically, the coupon rate on subscription issues must be set at some increment above market rates on outstanding issues with comparable maturities, due to the large size of the offering. This is a relatively expensive method for raising funds, and hence it has been used very infrequently—the last Treasury subscription sale was in 1976.

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