



ISM Report On Business[®]

The Value of the ROB

You see them each month — those figures reported in the Manufacturing and Non-Manufacturing ISM *Report On Business*[®], but what do they really mean and how can you make them work for you?

As purchasing and supply professionals become more sophisticated with their approach to supply chains, it becomes imperative that they understand the value of economic data, and particularly the tools provided by ISM's Manufacturing and Non-Manufacturing Business Survey Committees, the groups in charge of providing the data results for the monthly reports. The Manufacturing ISM *Report On Business*[®] continues to provide an important measure by which to gauge the U.S. economy. It's the oldest of the two reports produced by the ISM Business Survey Committees. The Non-Manufacturing ISM *Report On Business*[®], developed in 1998, is the most recent. Over the years, the ISM *Report On Business*[®] has served ISM members, government leaders, economists and the financial community as the source of several leading economic indicators. Today, many different organizations are using the Manufacturing and Non-Manufacturing ISM *Report On Business*[®] as a key source in assessing the U.S. and global economies.

On the first business day of the month, the Manufacturing ISM *Report On Business*[®] is released to the world. Shortly after the release at 10:00 a.m. Eastern Time, there is a teleconference with the major wire services. The morning continues with several live and taped radio interviews, and is followed with in-depth interviews by major print media. Given the advent of the many business Web sites on the

Internet, the monthly releases are reviewed and evaluated in New York, Hong Kong, Tokyo, Sydney, London and Frankfurt at virtually the same time. So what exactly are in these reports sought by the media and economists each month?

The Nuts and Bolts

The concept for the Manufacturing and Non-Manufacturing ISM *Report On Business*[®] surveys is quite simple. Each month, survey respondents from both the manufacturing and non-manufacturing sectors who make up the ISM Manufacturing and Non-Manufacturing Business Survey Committees (these individuals and their organizations remain anonymous) are asked to assess their organizations' performance based on a comparison of the current month to the previous month. Through the use of non-quantitative questions, they are asked if the level is "Better/Higher," "Same," or "Worse/Lower" than the preceding month. The resulting Manufacturing and Non-Manufacturing ISM *Report On Business*[®] indexes measure the rate and direction of change, if any, for each surveyed activity.

This questionnaire is sent to committee members each month requesting information on various areas of activity within their organizations. Results are given in the following indexes:

- PMI (composite index for Manufacturing sector only)
- NMI (composite index for Non-Manufacturing sector only)
- Business Activity (Non-Manufacturing sector only)
- Production (Manufacturing sector only)
- New Orders (from customers)
- Backlog of Orders (growing or declining)
- Supplier Deliveries
- Inventories
- Customers' Inventories (Manufacturing sector only)
- Inventory Sentiment (Non-Manufacturing sector only)
- Employment
- Prices
- New Export Orders
- Imports

Membership of the Manufacturing and Non-Manufacturing Business Survey Committees is diversified by the North American Industry Classification System (NAICS). To achieve a valid, weighted sample, participants are selected based on each industry's contribution to gross domestic product (GDP). For example, in the Manufacturing sector, transportation equipment (NAICS Class 336) — which includes auto and airplane production — has a higher weight, and therefore more members on the committee, than textile mills (NAICS Class 313-314).

What It Tells Us

The index that attracts the most attention in the ISM *Report On Business*[®] is the PMI. This index was created by Theodore Torda, an economist at the U.S. Department of

The Whole Story

Each month's issue of *Inside Supply Management*[®] magazine brings readers a synopsis of the Manufacturing and Non-Manufacturing ISM *Report On Business*[®]. To view both reports in their entirety, visit the ISM Web site, www.ism.ws.

Commerce, and introduced in February 1982. The PMI provides a signal of the peaks and valleys in the manufacturing sector before they appear in government economic data. In recent years, the PMI has tended to lead manufacturers' profits. It's a composite of five of the indexes in the Manufacturing ISM *Report On Business*[®], seasonally adjusted, with equal weights. The NMI, released in January 2008, is the composite index for the non-manufacturing sector and is comprised of four of the non-manufacturing indexes at equal weights.

PMI	NMI
New Orders	New Orders
Production	Business Activity
Employment	Employment
Supplier Deliveries	Supplier Deliveries
Inventories	—

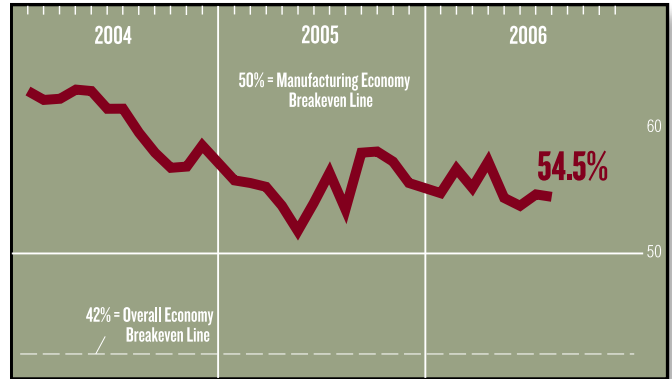
The ISM *Report On Business*[®] is considered by many economists to be the most reliable near-term economic barometer available. It is reviewed regularly by top government agencies, economists and business leaders for its timely, accurate information regarding the manufacturing and non-manufacturing sectors of the economy. Looking back at 2001, the Manufacturing ISM *Report On Business*[®] provided an accurate picture of the unique circumstances that shaped the global economy: the impact of the September 11 terrorist attacks. Although the September 2001 PMI at 46.2 percent was influenced by the attacks, the October PMI actually reflected the decline more as it fell 6.7 percentage points, an approximately 15 percent drop in manufacturing activity. This extended what might have been a very short and mild recession into a much deeper and lengthier event. Fortunately, the Federal Reserve had already lowered interest rates significantly to stimulate economic recovery, so the economy was able to benefit from the liquidity and the PMI bounced back, making up the decline by December with a reading of 48.1 percent. Prospects for 2002 improved as both the New Orders and Production Indexes rose above 50 percent, and the PMI strongly indicated overall growth in GDP.

During 2001, many goods-producing industries suffered through declining volumes and cost pressures. Hardest hit was the high-tech sector. While this sector weathered the Asian financial crisis in 1997 and 1998 quite well, it received a tremendous setback with huge numbers of order cancellations and growth plans that turned into survival plans. While the electronics industry was set on its heels, the telecommunications business was devastated. Excess capacity, reduced capital spending and falling prices were evidenced in every sector of manufacturing with the exception of the food industry.

How Supply Managers Use the Data

The information released each month in the Manufacturing and Non-Manufacturing ISM *Report On Business*[®] is only of value if professionals can apply the knowledge to their activities. Here are some ways that supply managers can use the data:

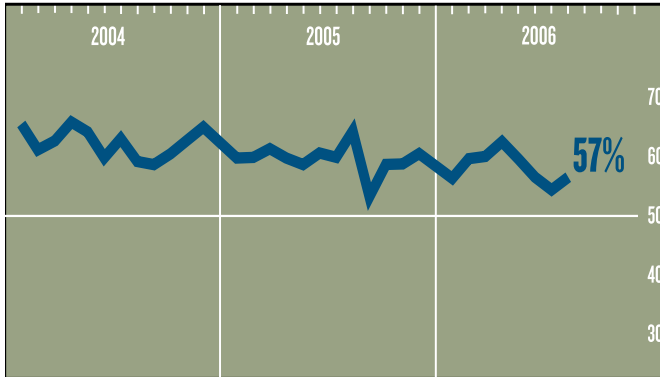
PMI



The PMI, above, provides a signal of the peaks and valleys in the manufacturing sector before they appear in government economic data. It, along with other indexes like the New Orders and Production Indexes, are used by professionals to predict future growth or contraction.

- Acquire an understanding of the capability of each of the indexes. The PMI, New Orders and Supplier Deliveries Indexes are leading indicators (typically by one or more months) and predictors of future growth or contraction. The Production Index is a coincidental indicator that historically correlates with the Federal Reserve Board's Index of Industrial Production, and is a good indicator of current production. The Inventories, Employment and Prices Indexes are considered lagging indicators and change as a result of variations in New Orders and Production.
- Trends can be plotted from the Prices Index to aid interpretation of the direction and rate of change. The Prices Index is considered by many to be a good indication of future inflation — a great concern earlier in this decade. Expectations are that it will also aid in analyzing deflation, should this become an issue.
- Each release of the Manufacturing and Non-Manufacturing ISM *Report On Business*[®] includes a list of commodities that are reported up or down in price. Close scrutiny of this list will provide early indications of actual price changes and any trends of continuing price movement.
- Check the Short Supply List. In recent months, survey members have reported few items in short supply, an indication that supply has been leading the demand for most products. Historically, this list has been very useful in identifying potential supply bottlenecks.
- The Buying Policy can be used to measure changes in capital investment, just-in-time deliveries, and maintenance, repair, and operating purchases. As an example, survey members are queried about their Buying Policy with regard to capital. They provide their current commitment based on average number of days.
- The Manufacturing ISM *Report On Business*[®] is used to forecast expansion or contraction in certain industries. Studies have correlated the PMI to growth in gross domestic product (GDP). Using the coefficient of percent change in GDP, it is possible to predict expansion or contraction in any of the NAICS manufacturing

BUSINESS ACTIVITY



The Business Activity Index, above, gauges activity in the Non-Manufacturing sector. Comparable to the Production Index in the Manufacturing ISM Report On Business®, the Business Activity Index measures the rate and direction of change, if any, in the level of business activity.

categories. This allows supply professionals to predict their own industry or that of their major suppliers.

- The ISM Report On Business® is used in numerous organizations as a leading indicator of other economic indexes. This is a more sophisticated use of the report and requires a monthly revision of the analysis. The ISM Business Survey Committees rely on assistance from the U.S. Department of Commerce to develop correlation to other indexes as validation of the monthly data. The ISM Business Survey Committees also assist these power users with information and explanations, but the development and interpretation is left to the user.

What Is a Diffusion Index?

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change. The percent response to the “Better,” “Same” or “Worse” question is difficult to compare to prior periods. Therefore, the percentages are “diffused” for this purpose. A diffusion index takes those indicating “Better” and half of those indicating “Same” and adds the percentages. This effectively measures the bias toward a positive (above 50 percent) or negative index (below 50 percent). For example, if the response is 20 percent “Better,” 70 percent “Same,” and 10 percent “Worse,” then the diffusion index would be 55 percent ($20\% + (0.50 \times 70\%)$).

The data for each question is converted to a diffusion index and then seasonally adjusted. (Manufacturing ISM Report On Business® data is seasonally adjusted for the PMI, New Orders, Production, Employment, Supplier Deliveries and Inventories. Data for the Non-Manufacturing ISM Report On Business® is seasonally adjusted for Business Activity, New Orders, Prices and Employment.) The seasonal adjustment factors are provided to the ISM Business Survey Committee by the U.S. Department of Commerce. This allows for the effects of repetitive intra-year variations resulting primarily from differences in weather conditions, various institutional arrangements and non-movable holidays. Though typically

minor, seasonal adjustments add to the credibility of the Manufacturing ISM Report On Business®.

For each index, a reading above 50 percent indicates expansion of an index, while a reading below 50 percent indicates it is generally declining. And a reading of 50 percent indicates “no change” from the previous month. Supplier Deliveries is an exception. A Supplier Deliveries Index above 50 percent indicates slower deliveries, and below 50 percent indicates faster deliveries.

Business Cycles

Supply managers are far more aware than most of business cycles. They tend to think in terms of “buyer’s markets” versus “seller’s markets.” Identifiable business cycles date back to the middle of the 19th century. Business cycles have a definite impact on sourcing strategies, and supply managers who are sensitive to upward and downward trends will be more effective in managing their supply network costs.

Business cycles are subject to dramatic variability. Both the length of the expansions and contractions and the intensity of the highs and lows are always unique to the cycle. Recent U.S. business cycles have been longer than average, and world events have played major roles (1973 oil embargo; 1991 Mexican financial crisis; 1997 Asian economic crisis; the September 11 attacks in 2001; and Hurricanes Katrina and Rita in 2005). A paradox is that the U.S. economy has been extremely well managed (high productivity, low government deficits, low interest rates) during the last decade, but has been slowed by major events. This offers proof that supply professionals must think globally even if they are not directly involved globally.

Follow the Trends

Even seasoned economists fall into the trap of looking at one month’s data and developing a forecast for the future. Supply managers need to constantly remind themselves of two basic tenets:

- React to trends, not the monthly data. Don’t assume that a change in direction in an index is the beginning of a change in direction for the manufacturing or non-manufacturing sector. Cycles tend to rise and fall in sawtooth movements. Computing a quarterly moving average will smooth the normal oscillations of the market.
- In every economic scenario, there is a winner and a loser. Even in a robust economy, there are industries struggling with growth due to over-capacity, loss of markets or new competition. Just as in the stock market, where every transaction involves a seller — who thinks the stock price will go down — and a buyer — who thinks the stock price will go up — there is always someone, somewhere, benefiting from the business cycle. In another example, falling oil prices are devastating to producing countries and to certain areas of the United States; however, they have a very positive impact on the U.S. trade deficit.

ISM Report On Business® Provides Early Recognition of Change in the Business Cycle

Since its inception in 1920, ISM's *Report On Business*® has grown to be one of the most widely respected economic indicators available. In 2004, the Federal Reserve Bank of Richmond's *Economic Quarterly* described the reports as "highly regarded by business analysts because they have proven to be a reliable gauge of economic activity over a long period." And while the ISM indexes provide an early warning system for the U.S. economy, the methodology developed over the years now plays an ever-increasing role in measuring global economic performance.

The greatest value of the type of data contained in the *ISM Report On Business*® may be in its ability to recognize change. Understanding the business cycle is important to the financial community, government policy-makers and to the businesses around the globe. But, the early recognition of change in the business cycle plays an even more significant role. In the United States, government policy-makers used the ISM data as a dependable early read on the U.S. economy after the September 11 attacks on the World Trade Center, and the ISM data did not fail them. The October 2001 data reflected the tremendous jolt that the U.S. economy absorbed, and the ensuing months showed a steady recovery. The data became even more important as it provided measures of economic activity during the 2001-02 recession in the United States.

Beyond measuring change, the *ISM Report On Business*® has also proven reliable in tracking movements in gross domestic product (GDP) in real time, as there is a high correlation between the ISM Manufacturing Production Index and the Non-Manufacturing Business Activity Index when measured against real GDP (see chart below). The significance of this type of correlation is that the monthly ISM data provides insight into conditions that can't be otherwise confirmed until other economic data is consolidated four to six months later.

While predicting the actual performance of the manufacturing sector is always a challenge, one thing is certain: Those purchasing and supply professionals who continue to analyze that data and use it as a forecast and economic tool will have the advantage.

By **Norbert J. Ore, C.P.M.**, ISM Manufacturing Business Survey Committee chair; and group director, strategic sourcing and procurement for Georgia-Pacific LLC.

Non-Manufacturing Sector Plays a Significant Role in Economy

The non-manufacturing sector currently makes up more than 80 percent of the gross domestic product (GDP). In addition to purchasing materials for production, manufacturing businesses also source for services from various non-manufacturing industries. Virtually every business is impacted by business activity in the non-manufacturing sector.

Because of the significant impact business activity within the non-manufacturing sector has on the economy, in 1998 ISM began issuing the *Non-Manufacturing Report On Business*® with results from purchasing and supply executives responding from the non-manufacturing sector.

Released on the third business day of the month, the *Non-Manufacturing ISM Report On Business*® provides data results for business activity, new orders, backlog of orders, new export orders, inventories, inventory sentiment, imports, prices, employment and supplier deliveries. In addition, the report lists commodities that respondents indicate are increasing or decreasing in price, as well as commodities reported in short supply for the month surveyed.

Beginning in January 2008, ISM began calculating a composite index for the non-manufacturing sector. The *Non-Manufacturing Index (NMI)* is a composite index based on the diffusion indexes for four of the indicators with equal weights: Business Activity (seasonally adjusted), New Orders (seasonally adjusted), Employment (seasonally adjusted) and Supplier Deliveries.

The lead index of the *Non-Manufacturing ISM Report On Business*® is the NMI, which is comparable to the PMI in the *Manufacturing ISM Report On Business*®.

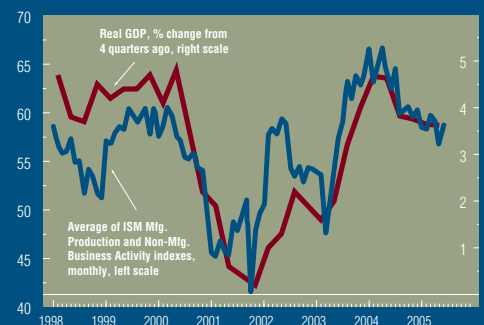
Reviewing the monthly NMI enables supply management professionals to further assess current and future business strategies and make adjustments as necessary. The Index is particularly helpful in developing commodity strategies and supplier collaborations.

By **Anthony S. Nieves, C.P.M., CFPM**, chair of the ISM Non-Manufacturing Business Survey Committee; and senior vice president — supply management for Hilton Hotels Corporation.

Real GDP and ISM Indexes

There is a correlation between the ISM indexes and real GDP, as illustrated in this chart. The red line represents real GDP and follows the scale on the right, which shows the percentage change from four quarters ago. The blue line reflects the average of the ISM Manufacturing Production Index and the ISM Non-Manufacturing Business Activity Index; it follows the scale on the left.

Source: U.S. Department of Commerce





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