



Downshifting

Growth in U.S. manufacturing is expected to slow next year, but a gloomy picture is not on the horizon.

If you're examining the state of the U.S. manufacturing industry, what you see depends on which end of the economic seesaw you're sitting on.

If you're an automaker or a parts supplier to the Big Three, you're holding on as your side heads down, with lower demand for higher-profit products caused, in part, by high oil prices. If you're an energy producer, your side is headed up, with high oil prices stimulating new development. At the same time, the U.S. aerospace industry and its parts suppliers are headed upward as well to meet strong demand, as more fuel-efficient planes help airlines stay afloat despite high energy prices.

The U.S. manufacturing industry is relatively healthy, and the numbers tell the story. As of September, manufacturing technology consumption was up 26.2 percent for the year, based on the U.S. Manufacturing Technology Consumption report from AMT—The Association For Manufacturing Technology and the American Machine Tool Distributors' Association. The Institute for Supply Management reports that the PMI (Purchasing Managers' Index) grew in October for the 41st

consecutive month, registering 51.2 percent, which indicates that the manufacturing economy is generally expanding, but at its lowest level of growth since June 2003.

In addition, the U.S. Cutting Tool Institute's Carbide Product Billings Index increased 48.1 percent in the second quarter of 2006 compared to last year's second quarter, and the High Speed Steel Product Billings Index was up 4.9 percent in this year's second quarter compared to 2005's second quarter. Workholding shipments also gained, up 3.3 percent for the third quarter of 2006 from the same quarter last year, according to AMT's Workholding Product Group. And AMT's Laser Systems Product Group reported that second quarter shipments of industrial laser equipment and systems are up 5.4 percent from same quarter shipments in 2005.

Other economic indicators show that industrial production has risen 4.7 percent over the past year, while capacity utilization has increased 2.1

percent in the past 12 months, based on information published by the Federal Reserve Board.

But the numbers don't tell the whole story. For insight into what the numbers reveal and where the industry is heading next year, CUTTING TOOL ENGINEERING spoke with some prominent industrial economists and consultants.

Over a Barrel

Most manufacturing sectors are humming along, but domestic car manufacturers, particularly General Motors Corp. and Ford Motor Co., are experiencing difficult times. This is partly due to high gasoline prices, which reduced the demand for lower fuel-efficient light trucks and sport utility vehicles—a large and profitable portion of both automakers' offerings.

However, higher energy prices fuel production for other sectors.

“Normally, we think of higher energy prices as being detrimental to manufacturing, given that it’s a very intensive user of energy,” said William Strauss, senior economist and economic adviser for the Federal Reserve Bank of Chicago. “In fact, the number of projects that have been put in place to try to extract oil and gas has increased dramatically.”

When the cost to extract a barrel of oil is around, say, \$20, it doesn’t make economic sense for oil companies to pursue projects that produce oil at a higher cost than it can be sold. The scenario changes when the price of oil rises. “There are a whole host of projects the oil industry already knew about that were just not economically justifiable at prices in the \$20 range that have been put into play because they now view the long-term price at around \$40 a barrel,” Strauss said.

One example is the Horizon Oil Sands Project in Alberta, Canada. The oil sands of Alberta contain more than 300 billion barrels of oil reserves, according to Canadian Natural Resources Ltd., which is involved in the extraction of these reserves using open-pit mining and in situ techniques. However, extracting oil from sand is costlier than conventional methods, and, initially, didn’t appear economically viable. “When Canada put in the Oil Sands Project, it was kind of viewed as a boondoggle,” Strauss said. “But they went ahead with it. Now, of course, they’re making money hand over fist because of where the price of oil has moved.”

Strauss noted that one key piece of capital equipment needed for the project was the Caterpillar 797B. An extremely large truck, the 797B weighs 1.375 million lbs. empty, hauls 400 tons of material, costs \$5 million and generates work for a substantial num-

ber of part suppliers—now and in the future. “If you wanted to order one of these, you’d have to wait until 2009 for delivery,” he added.

The oil sands boom has led to massive investment in infrastructure, benefiting suppliers such as machine shops, who are scrambling to recruit workers. Canada produced 136.4 million cubic meters of crude petroleum in 2005, about two-thirds of which came from Alberta, and the massive sands resource accounted for 42 percent of Alberta’s total production.

Medical and Aerospace

Serving a population of just over 300 million—the third largest behind China and India—and a large percent of aging baby boomers, the U.S. medical device market is the world’s largest, according to a report from U.K.-based Espicom Business Intelligence. At an estimated \$85.1 billion, the U.S. market accounts for more than half

the global total. Although growth has slowed in recent years, the report states that the market is still one of the fastest growing and looks to reach \$100 billion in the next 5 years.

The report also notes that imports are increasing and account for about 30 percent of the total. This growth is partly explained by U.S. manufacturers employing lower-cost labor abroad, such as in Ireland and Mexico, in order to re-export to the U.S. market.

To help transport America’s growing population from place to place, airlines require more and more planes, and U.S. civil aerospace orders continue to rise sharply as a result. After a record-setting year in 2005, the aerospace sector registered \$78 billion in orders during the first half of 2006, and orders could surpass last year’s \$151 billion total, according to the Aerospace Industries Association, which represents U.S. manufacturers and suppliers of civil, military and business aircraft. Combined with defense orders, the sector logged \$116 billion in orders for the first two quarters, and the AIA projected an annual total of \$233 billion, or \$14 billion more than last year’s record total.

As sales rise, Scott Carson, head of The Boeing Co.’s commercial airplane division, said plane manufacturers have to avoid selling beyond the market’s ability to absorb new aircraft, the Associated Press recently reported. “In this hot market, it would be easy to be consumed by the desire to sell everything [that] people walking through the door want to buy, and push our production system to the point where we could break it,” he said to an aviation group. “It’s much harder to pause and say, ‘I’m sorry. We’re sold out.’ But I think doing that will be part of the maturity that we demonstrate to this industry and critical to our long-term success.”

However, the situation isn’t as rosy for jetmakers’ customers. In a report from Euler Hermes ACI, the largest provider of trade-credit insurance in

the U.S., the airline industry received a “D” risk grade, representing the highest probability of default and extremely poor payment behavior. Chief economist at Owings Mills, Md.-based Euler Hermes, Dan North, stated: “Currently, the airline industry faces continued challenges, and many of the major airlines have filed for bankruptcy. Revenue generation has improved, but the airlines have continued to be impacted by heavy competition and high fuel costs. In the future, the industry is expected to remain challenging. The bankruptcy of many of the major airlines will allow these companies

to restructure their debt and



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remain in a much better financial condition to compete with new low-cost airlines.”

Productivity Party

The rise in U.S. machine tool consumption is driven in part by manufacturers’ need for ever-increasing throughput to compete globally. “Not only are companies flush with cash,” said Larry Chimerine, president of Radnor International Consulting Inc., Bala Cynwyd, Pa., “but with all of them trying to improve their efficiency and productivity, they have a strong incentive to replace older equipment with new equipment, particularly if it has the latest technology.”

He added that “in some cases, they are expanding their capacity, but in a lot of other cases they’re ordering new machine tools to replace the old ones to improve cost-effectiveness within their organizations.”

The investment decline that occurred during the early part of the decade when the business climate headed south also played a role. “We had a lot of pent-up demand for investment

in equipment, and strong growth has occurred throughout 2005 and also in 2006,” said Tom Runiewicz, industrial economist for Global Insight’s Eddystone, Pa., office.

The recent IMTS trade show, which presented the latest machine tools and other manufacturing technology, is also predicted to increase demand. “Continued strength can be expected as a result of the trends that historically follow the International Manufacturing Technology Show in Chicago in September,” said John J. Healy, AMTDA president.

That investment in productivity-boosting machinery is one of the reasons Runiewicz projects U.S. production to expand 5.1 percent in 2006.

Down the Road

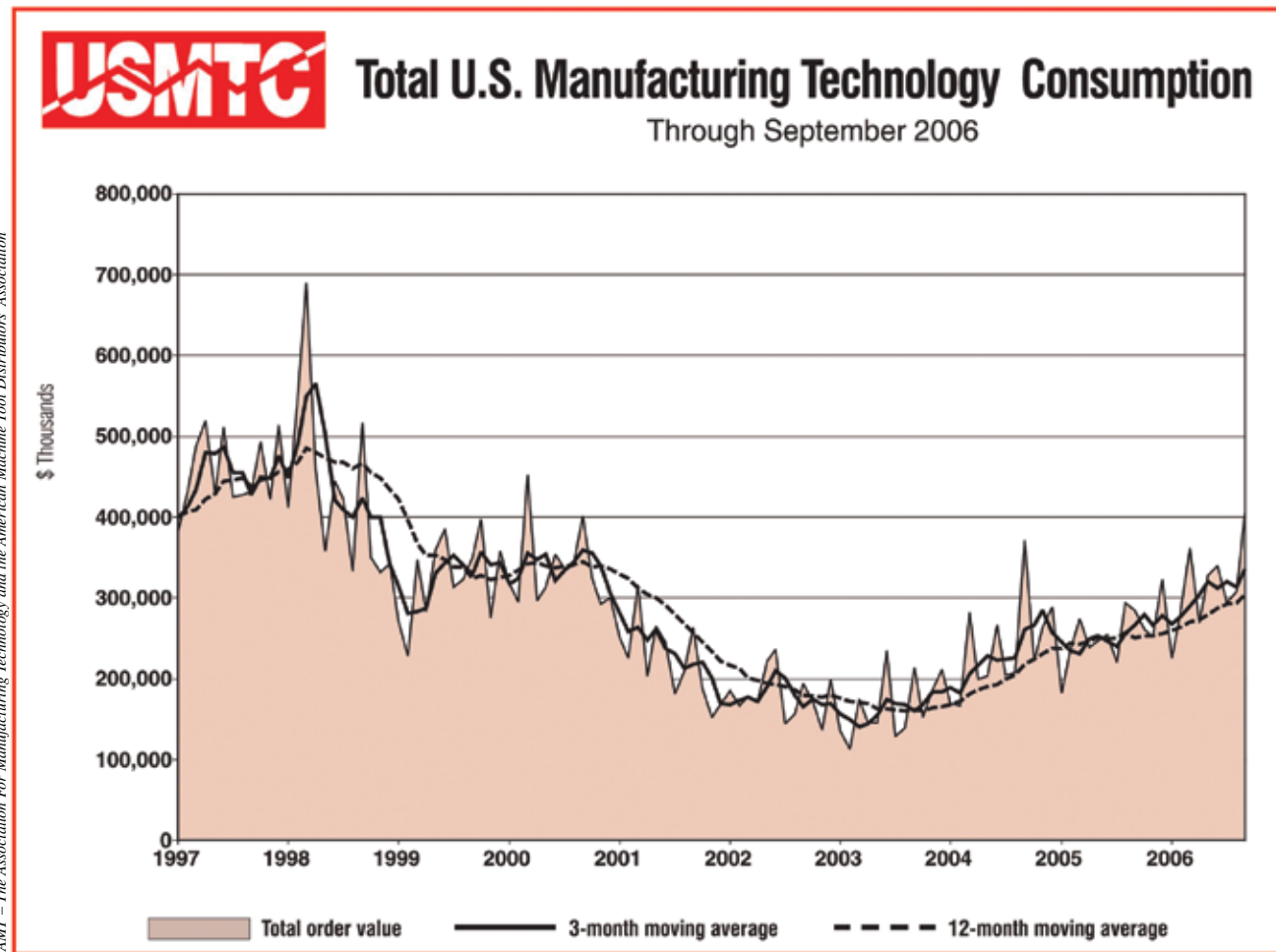
In 2007, Runiewicz expects production to continue to grow but at a slower rate—2.2 percent—and investment to grow at half the rate of 2006. “There’s going to be

a bit of belt tightening next year,” he predicted. “We’re not looking for a decline but a slowdown. We’re changing from 50 to 60 mph to about 25 mph for next year, and the downshifting is already starting to occur.”

Radnor’s Chimerine also predicts slower growth for manufacturing next year, but at about 4 percent. “For the overall economy, it’ll be something in the low 2 percent range, especially if the Fed starts cutting [interest] rates, which I think they should,” he said. “Hopefully, that will start in a few months when there’s no major risk of inflation and if the economy is slowing. We’ll avoid a recession, but it’s going to be relatively slow growth.”

After a 2-year period in which the Federal Reserve hiked rates 17 times, Euler Hermes’ North concurred that the Federal Reserve should cut interest rates by 2007. “It has been my contention that the Fed went too far in trying to put the brakes on the economy, and that has become evident in the recent economic slowdown,” he said.

North cited several economic fac-



Through September, manufacturing technology consumption was up 26.2 percent for 2006.

tors as proof of the slowing economy: the weak second quarter GDP growth of 2.6 percent, softening U.S. employment and a housing market he described as “no longer cooling—it’s now downright freezing.”

Barring any calamities, Strauss of the Federal Reserve Bank of Chicago also sees overall economic performance slowing, with manufacturing faring better. “I expect to see manufacturing output over the next year and a half at a rate that is better than the 3 percent I see for the [economy as a whole].”

Although he predicted that industrial production will grow 2.9 percent in 2007 after a growth rate of 4.4 percent in 2006, Ronald E. Nicely of Nicely Forecasting, Latrobe, Pa., projected that overall growth for the manufacturing industry will continue to improve slowly through the end of 2006, with further improvement in 2007. This was stated in his Nicely’s Cyclical Industry Analysis monthly newsletter for October.

Based on historical cyclical phases that he said occur every 4 to 5 years, 2006 represents the start of a recovery. “It will be better in 2007 and 2008 and then, as we move into 2009, we’ll probably start to see some reduction in growth activity and indications of a slowdown in late 2009 or 2010,” Nicely said.

He added that factors exist that can lessen a cycle’s high and low points, with inventory control being a significant one. Building too large an inventory when recovering causes a manufacturer to be out of synch with sales,

resulting in deeper slowdowns with more layoffs and higher recoveries. “Now, you’re seeing slower, and not as strong, recoveries because inventories never get out of hand,” Nicely noted.

In his newsletter, Nicely



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tracks 16 metalworking and manufacturing indicators. The majority he recently cited point upward for 2007. For example, he stated that the cycle for production of metalworking machinery has moved into the accel-

Survey Says:

Half expect growth

A recently released report from the Manufacturing Alliance states that “moderate acceleration in the manufacturing sector in 2006 will likely be followed by pronounced slowing in 2007.” In light of that, visitors to CTE’s Web site were asked: What do you project your company’s sales will do in 2007? Forty-nine percent indicated sales will increase, 27 percent said sales will remain steady and 24 percent predicted a decrease.

erating growth phase and will increase 4.9 percent this year and 6.0 percent in 2007. In addition, he forecasted durable goods manufacturing to climb 7.5 percent for 2006 and 8.5 percent next year, production of automobiles and light-duty vehicles to grow 2.0 percent in 2007, after slipping 3.5 percent in 2006, and production of aerospace products and parts to increase 21.5 percent this year and 24.0 percent next year.

In addition to the newsletter, Nicely prepares quarterly cyclical analysis and forecast reports for the U.S. Cutting Tool Institute. The

second quarter report stated that the sale of carbide products has improved solidly while HSS products have remained relatively weak during 2006, adding that both categories declined substantially from 2000 through 2003.

For manufacturing as a whole, “you’re looking at an industry that was good in ’06 and is going to be better in ’07,” Nicely said. The long-term picture isn’t quite so clear, but the projected change from a gasoline-powered automotive infrastructure to one that uses hydrogen to propel fuel-cell vehicles will have a significant impact. “You’ll end up with fewer metal engines and a lot more electric motors,” he said. “You will no longer need transmissions and heavy gearboxes and all of those things. That’s going to have a very detrimental effect on metalcutting at some point in time.” △

For more information about Nicely’s Cyclical Industry Analysis newsletter, e-mail nicelyguy@msn.com or call (724) 424-8138.