The Muddled State of Manufacturing

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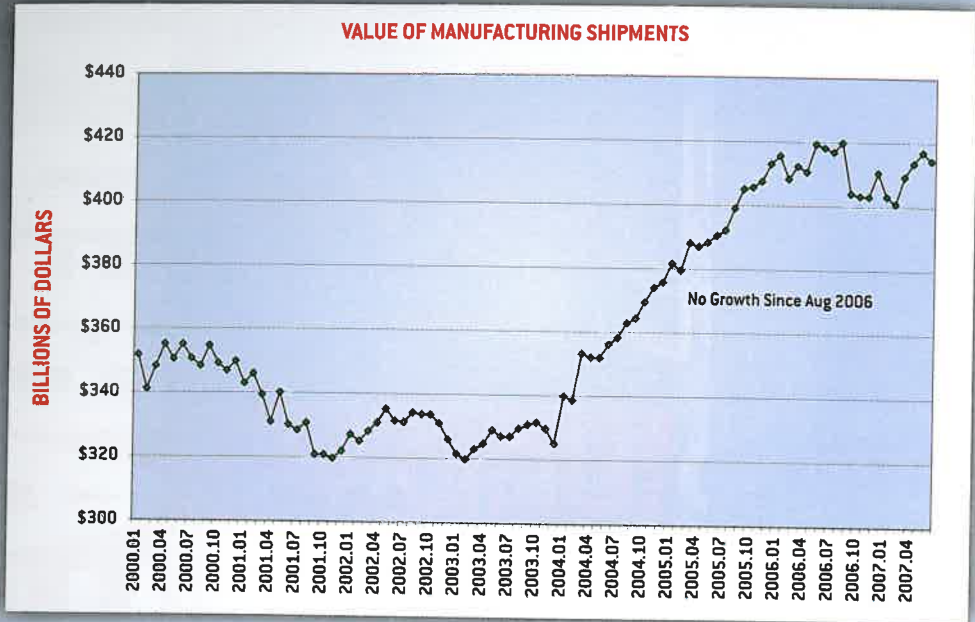
The decade did not start well for the manufacturing sector. The mild economic recession of 2001 was magnified in the manufacturing sector, and its slowdown was far deeper and longer. While the economy barely noticed that a recession occurred, manufacturing output fell by 10 percent. Then, in 2003, as the rest of the economy was recovering and starting to grow, the manufacturing sector had a second recession. This difficult start made the remarkable manufacturing growth in 2004 and 2005 all the more important. Both years posted double-digit growth and by the end of 2005, manufacturing output was twenty percent larger than it was in 2003.

Unfortunately, by mid-year 2006, the manufacturing expansion had dissipated. Concerns arose that manufacturing might be entering its third recession in six years. For the six month period from September 2006 through February 2007, the evidence was indeed pointing to that discouraging outcome. Manufacturing shipments declined in five of those six months and they ended the half year five percent below where they started. Things did not look good.

Fortunately, more recent evidence suggests that, at least for now, the manufacturing sector will avoid a full-fledged recession and will manage to "muddle through" a period of low growth.

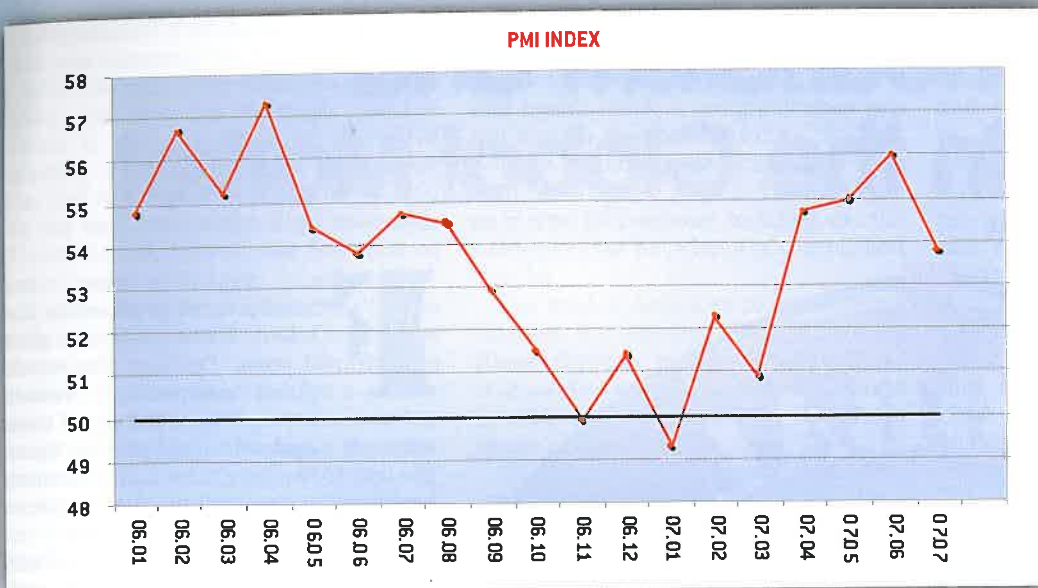


Conditions are not that great, but they are not terrible either. It is a mixed bag.

To understand why manufacturing is in this muddled state, and to assess the vulnerabilities for the future, let's examine the reasons the manufacturing expansion dissipated. First, and most obvious, the shenanigans in the real estate sector have had large negative effects for construction. The collapse in the credit market not only caused a lot more bankruptcies for homeowners, but also it severely limited credit for new builders and buyers. Lending institutions are again imposing relatively strict conditions for making mortgages to classes of buyers who could easily get credit before. In addition, the expectation of continuously rising real estate prices has been displaced with a much less optimistic view. This reduces the demand for new housing as consumers no longer count on housing capital gains to finance future credit needs. The resulting collapse in construction has had large negative spillover effects for manufacturing. For example, during the first half of 2007, shipments of construction equipment were 31 percent below their values for the first half of 2006. Similarly, the shipments of wood products (which includes wood building materials and mobile home manufacturing) is down by 15.4 percent

Another widely observed economic change has been the increase in gasoline prices. While this has not had the expected dramatic effect on the total number of vehicles purchased, it has changed the demand for the type of vehicles. As the cost of operating trucks and sport-utility vehicles has risen, their relative demand has fallen. This shows up in the manufacturing sector as the shipments of trucks and utility vehicles is down 12 percent this year.

Finally, the combination of higher interest rates and declining profit growth has taken the edge off the investment expansion of 2004-2006. This combination of effects means that external funds are more expensive and internal funds are less available. When these constraints are combined with tighter lending standards, it becomes clear that financing investment projects is tougher and more expensive. So even if the need for additional capital would spending remain relatively strong, the amount of it will decline as its financing becomes problematic. But, there is also some evidence that the need may be declining. Manufacturing capacity utilization peaked in August of 2006 and has declined since. This means that at least some of the pressure to expand capacity is reduced. Given the more difficult financing conditions and the decline in manufacturing capacity utilization, it is not surprising that the demand for non-defense capital goods has not grown recently. Shipments for non-defense capital goods are no higher in 2007 that they were in 2006. In addition,



shipments of metalworking machinery, which traditionally has been a leading indicator for the gear industry, are down three percent.

Yet the economic news is not uniformly bad for the manufacturing sector and, ironically, one reason for optimism lies in the negative pressures outlined above. A primary characteristic of the first two pressures, the downturns in construction spending and demand larger vehicles, is that these influenced tend to be targeted, not universal. While these negative pressures are severe for the affected sectors, they do not have widespread spillovers to other sectors. In fact, the same economic event that is negative for one sector can be positive for another. While higher oil prices have lead, eventually, to lower truck and SUV sales, they have also stimulated the demand for oil field equipment. Shipments of mining, oil field, and gas field machinery up 22.3 percent over 2006. This example illustrates one reason for the muddled state of manufacturing: some parts of it are contracting, some parts of it are growing, and some parts are remaining about the same. In times like these, it is important for an individual firm to drill down to the part of the manufacturing sector that constitutes its own set of end-use markets.

Another piece of relatively positive economic news comes from very recent data on the manufacturing sector. When the manufacturing expansion stopped, orders declined along with shipments and both fell off the cliff in the fourth quarter. However, both recently have shown signs that they have bottomed out and the earlier sharp decline is being offset by some modest increases. For example, manufacturing orders have increased in four of the five months since January 2006 and are now about five percent higher than they were at the beginning of the year. Shipments growth has not been as strong, but shipments also show signs of returning to last year's level of activity.

A last piece of relatively good news comes from the Institute of Supply Management's "Purchasing Managers Index," or PMI. This index is a widely respected measure of manufacturing activity and differs from the official government numbers in that it doesn't try to measure the level of manufacturing activity but rather its change. The PMI is based upon a survey of over 400 industrial companies and asks purchasing executives at those companies to indicate the changes in their companies' positions. These executives report changes in important economic variables such as their new orders, their inventories, their production, their employment, their deliveries form suppliers, and the prices they pay. The Institute of Supply Management then tabulates how many firms have indicated an increase, how many have indicated a decrease, and how many firms have indicated no change. From this it constructs the associated "diffusion index." For this index, a value above 50 (percent) indicates that the manufacturing sector is expanding, whereas a value below 50 means it is contracting. Finally, because the survey does not require firms to report data, it can be done very quickly. The July 2007 survey, for example, was reported on August 1.

Because it is done so quickly and because it is based upon changes, the PMI is considered a "leading index" for the manufacturing sector. That is, the PMI more indicates where the manufacturing sector is going rather than where it has been.

Recent performance for the PMI index is encouraging. After falling sharply throughout 2006, the index fell below 50 during the first quarter of 2007. Since then, however, the index has been more positive suggesting that the manufacturing sector may be generating positive momentum. Firms report growth in both new orders and production, which is encouraging, but typical of the muddled state of manufacturing, they also report that their customers seem to have more than enough inventory on hand. In general, though, the PMI is moderately optimistic.

The state of manufacturing is critical for performance in the gear industry, so divining its condition is an important task. Sometimes that job is relatively easy, as large parts of the manufacturing sector share common economic experience. That is not the case now. Different parts of the manufacturing sector are experiencing very different economic pressures and it is difficult to accurately characterize the overall state of manufacturing. During muddled times like these, it is important for gear manufacturers to "keep an ear to the ground" and to regularly track changes in the economic conditions influence their specific part of the manufacturing universe. □