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'Bullwhip' Hits Firms as Growth Snaps Back

By TIMOTHY AEPPEL

PEORIA, Ill.—Caterpillar Inc. recently told its steel suppliers that it will more than double its purchases of the metal this year—even if the company's own sales don't rise one iota.

In fact, the heavy-equipment maker has been boosting orders to suppliers for everything from big tires and hydraulic tubes to shatterproof glass.

How is that possible? Chalk it up to the "bullwhip effect," which is reverberating across the U.S. economy.

This phenomenon occurs when companies significantly cut or add inventories. Economists call it a bullwhip because even small increases in demand can cause a big snap in the need for parts and materials further down the supply chain.

The bullwhip has broad implications now as companies rush to fill orders while also restocking warehouse shelves. It touches everyone from retailers to the industrial companies that supply the grease, bolts and coal needed to churn out more products. The manner in which companies, large and small, respond to market shifts determines which ones emerge first from the slump and start growing again.

Most forecasters expect the Commerce Department on Friday will report that the U.S. economy grew at an inflation-adjusted annual rate of better than 5% in the fourth quarter, the fastest pace since 2003. Economists estimate that the bulk of the growth came not because consumers were buying more, but because businesses stopped reducing inventories and, therefore, had to produce more of what they sold.

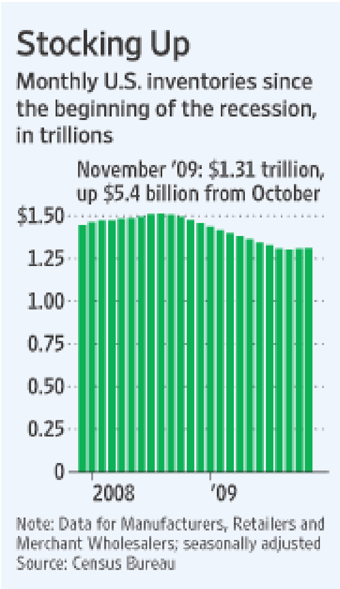
"The inventory burn-off is over," says Caterpillar CEO Jim Owens, a Ph.D. economist who has run the world's largest manufacturer of construction and mining machines since 2004.

Caterpillar, which many investors see poised to benefit from the nascent global recovery, is likely to talk about its bullwhip preparations when it reports fourth-quarter results Wednesday.

Going forward, a big question is how well suppliers are positioned to ramp up production. Bottlenecks and other headaches may occur as spot shortages cause unexpected price hikes and hamper companies' ability to meet demand.

That's why Caterpillar took the unusual step late last year of visiting with key suppliers to ensure they had the resources to quickly boost output. In extreme cases, the equipment maker is helping suppliers get financing.

Caterpillar says that even if demand for its equipment is flat this year—an unlikely projection it calls its "Great Recession scenario"—it would still need to boost production in its factories by 10% to 15%, just to restock dealer inventories and meet ongoing customer demand.



Meanwhile, output at Caterpillar's suppliers would have to rise 30% to 40% in this scenario, because Caterpillar would also be refilling its shelves.

Executives at Caterpillar, though, are betting on growth. In that case, demand for parts will jump even more. If Caterpillar increases its production 15%, says Mr. Owens, "many of our suppliers would more than double their shipments" to us.

A surge in orders is certainly good news for businesses hungry for work, especially at a time when the revival of economic growth has yet to translate into more jobs.

The unemployment rate remains above 10%. Indeed, economists have been revising upward their projections for fourth-quarter growth in gross domestic product in recent weeks, with much of the extra growth attributed to companies' rebuilding inventories or trimming them at a slower rate.

During the financial crisis, companies slashed $207 billion worth of inventory, helping businesses conserve cash to weather the economic storm.

The swing of the pendulum became visible in October, when total business inventories grew by $4.1 billion—the first month of growth since August of 2008, shortly before the collapse of Lehman Brothers sent global credit markets into a tailspin.

Inventories grew an additional $5.4 billion in November, the latest monthly figures available.

The inventory turnaround is global. Jay Feldman, senior economist at Credit Suisse, says that the U.S. now buys a large share of its inventories overseas, and "given that, it's no surprise we've gotten this swing in inventory at the same time we've got a swing in imports."

But inventory bullwhips can become too much of a good thing, especially in today's unusual economic environment. That's because the recession created lingering problems that could hamper the ability of suppliers to respond to a sudden jump in orders.

Many are smaller companies hurt by the credit crunch as they continue to have difficulty obtaining loans.

A flow of new orders to suppliers could encourage banks to start lending to them more freely. But if that doesn't happen quickly, there could be bottlenecks and shortages as suppliers miss shipments or turn away orders because they can't afford to buy the materials or hire more workers to do the job. Prices could spike.

Inventory swings also inspire less confidence than actual demand growth. Some business leaders are likely to fear the uptick will fade once inventories are restored, so they put off adding workers or making other investments until they are certain underlying demand is growing. "This is not going to go smoothly," predicts William Strauss, senior economist at the Federal Reserve Bank of Chicago. "I'd be very surprised if everyone could grow at the rate they desired."

One factor that could complicate things is China. Caterpillar, like many big companies, is counting on continued growth there to fuel a global rebound. But some analysts caution that China could slow if Beijing tries to cool down inflation.

Caterpillar's sales in China are relatively small—about 5% of total sales in 2008—but the market is growing fast for the manufacturer. And China's economy is a driver of global commodity prices, which in turn affects demand for Caterpillar machines in commodity-producing superpowers like Australia and Saudi Arabia.

Mr. Owens, the Caterpillar CEO, voiced his concerns about the potential disruptions that could come with a inventory bullwhip when he spoke to investors about third-quarter results last fall.

Shortly thereafter, the company dispatched two top executives on a four-week tour to hold meetings with 500 of the company's major suppliers around the world, traveling to Japan, China, India and Europe. The goal: explain that a bullwhip was likely coming, and ensure they were making adequate preparations.

The Caterpillar executives made half-day presentations to groups of suppliers and visited dozens of plants along the way. Those 500 suppliers represented 80% of all the goods bought by the manufacturer.

"Many of these smaller companies have breached their bank covenants," says Steve Wunning, the Caterpillar group president, who is among other things responsible for purchasing and led the recent meetings with suppliers. "When they come in and say they need to borrow more money because they're hiring people and buying more material, what are these banks going to say? They're probably going to say, 'Wait a minute.' "

To smooth the way, Caterpillar this month unveiled a program that allows suppliers to borrow money from a bank, against their receivables, at a favorable interest rate. This means they can tap the loan funds within five days of delivery of goods to Caterpillar—as opposed to a typical 60-day wait.

Mechanical Devices Co. is already feeling the crack of the whip. The small factory in Bloomington, Ill., supplies Caterpillar with metal parts. It struggled through last year, shedding about 100 of its 275 workers and scrounging for other clients to keep its machines running. Workers unscrewed most of the factory's exterior lights to save money.

"But now it's as if we flipped overnight," says Linda Fillingham, a spokeswoman for the family-owned business, founded by her grandfather in 1914.

Orders from Caterpillar have grown 19% in a matter of weeks, she says, albeit from a very low base, with orders set to increase even more in March and April. The company also got an influx of orders recently because a competitor in Michigan failed.

The story is much the same at Morton Industries LLC, in Morton, Ill. The company, which supplies Caterpillar with metal tubing for engines and hydraulic systems, filed for Chapter 11 bankruptcy protection in 2008 and was purchased by a local investment group this past June.

Morton expects orders from Caterpillar to grow 25% in the first quarter, compared to the last quarter of 2009, and has started hiring. The company is also adjusting to probing questions from Caterpillar.

"They asked us things like, 'How much affiliation do you have to the auto industry?'" and whether Morton has researched the viability of its own suppliers, says Steve Leitch, an account manager.

Caterpillar has turned more pro-active in other ways. The company has promised to stick by "freeze periods" as it transitions to growth: For a three-month span after it places an order, it promises not to change it. The freeze periods will give suppliers greater ability to plan ahead and persuade banks to increase their financing, since there's no chance of the business suddenly falling away again during that three-month span. Once the freeze ends, Caterpillar will be free to increase or decrease what it buys.

Caterpillar is also changing how it sells its products. The company offers a dizzying array of features, and until now, that complexity often led to delays in delivering machines to customers. Customers love the variety, but were often frustrated by delivery delays.

Mr. Wunning, the group president, says Caterpillar is replacing this with a "lane strategy." The first "lane" is made up of machines that contain the most commonly requested features and typically will be kept in stock by dealers and at Caterpillar staging facilities around the country. At the other extreme is lane four, custom machines that take six months or more to build and deliver.

The implication for Caterpillar and its suppliers is clear: Many customers who would normally order a unique machine will instead opt for something readily available once they learn the lane-one machine is close to what they want and can be delivered fast. This in turn makes it easier to set production schedules.

One reason Caterpillar is so attuned to the inventory cycle is its history. The company went through a massive growth spurt in the past decade, fueled by the twin forces of a commodity boom and a housing boom. Sales of the company's iconic yellow machines grew to $51 billion in 2008 from $20 billion in 2002.

But Caterpillar had a hard time meeting that demand because of supply bottlenecks and other problems. Those past hurdles informed the company's more recent policies with its suppliers.

Caterpillar is also requiring a detailed written plan from its suppliers for each part they produce, explaining how the supplier will respond to the bullwhip in that individual case. Meanwhile, the company is stepping up its long-standing effort to measure the risk of failure among its suppliers.

A risk-assessment group meets weekly at the company's hulking downtown headquarters in Peoria, assigning ratings to suppliers based partly on Caterpillar's assessment of their viability.

"We give them a number," says Dan Murphy, the company's vice-president of global purchasing. "But it really boils down to two colors—reds or greens. We watch the reds and it's usually because of a liquidity issue."

Meanwhile, up the road at supplier Morton Industries, they are still trying to get used to the new marching orders from Peoria. Sitting in a conference room near the front of the small factory, Mr. Leitch, the account manager, and the company's president, Chris Ober, say they "looked at each other and smiled" last July when Caterpillar started asking them about their ability to increase orders rapidly when the time comes.

"They were still dropping orders," says Mr. Ober, "but here they were asking about increases."

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