

## FIRST QUARTER 2007

### A TALE OF TWO INVENTORIES

by David A. Penn

The first quarter of 2007 can perhaps be best characterized as a period of inventory adjustment for two major industries: housing and manufacturing. The problem is that businesses produced too many goods and built too many houses relative to demand; when production rises faster than demand, inventories rise. Growing inventories are a problem for businesses because costs have been incurred in production without producing sales; consequently, profit

falls. Rising inventories are also a problem for workers since producers will probably cut output by reducing hours worked. This can occur in a number of ways: through temporary layoffs, reducing the number of temporary and seasonal workers, or a permanent reduction in force.

To judge whether inventories are too high or too low, divide inventories by shipments (or sales) and plot the ratio over time. A rising inventory/shipment ratio means that production is growing more quickly than demand; when this occurs, a cutback in production is likely in the near future. It is interesting that the inventory/shipments ratio for manufacturing has steadily declined in the long-term, as shown in Figure 1. Due to improvements in supply chain management and competitive pressures

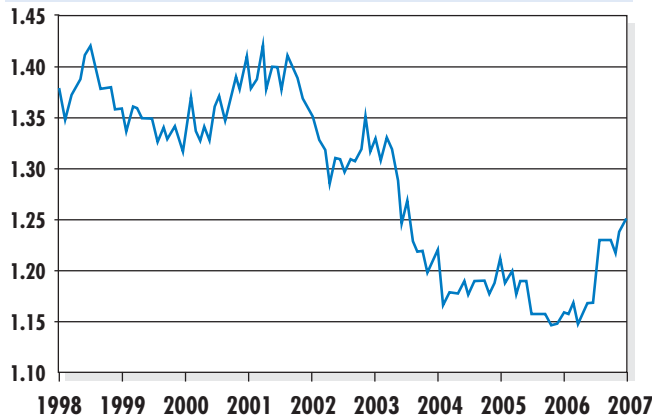
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Table 1. Economic Indicators for Middle Tennessee

Series (seasonally adjusted)	Geographical Area	2006Q1	2006Q2	2006Q3	2006Q4	2007Q1	% Change 06Q4-07Q1	% Change 06Q1-07Q1
<b>LABOR FORCE AND EMPLOYMENT</b>								
Midstate Total Employment	Midstate**	1,103,316	1,111,754	1,118,131	1,125,681	1,135,539	0.9%	2.9%
Midstate Labor Force	Midstate	1,162,053	1,171,913	1,176,511	1,178,971	1,189,779	0.9%	2.4%
Midstate Unemployed	Midstate	58,900	60,027	58,275	53,053	54,721	3.1%	-7.1%
Midstate Unemployment Rate	Midstate	5.1%	5.1%	5.0%	4.5%	4.6%		
Nashville MSA Nonfarm Employment	Nashville MSA*	747,868	750,817	753,412	755,044	759,506	0.6%	1.6%
Average Hours Worked per Week in Manufacturing	Nashville MSA	39.2	39.6	40.1	40.2	40.1	-0.2%	2.3%
Counties with Increased Employment (percent)	Midstate	78.0%	80.5%	80.5%	82.9%	95.1%		
Counties with Increased Unemployment (percent)	Midstate	34.1%	56.1%	26.8%	4.9%	58.5%		
Counties with Increased Labor Force (percent)	Midstate	73.2%	78.0%	65.9%	68.3%	90.2%		
Initial Claims for Unemployment Compensation	Midstate	34,648	38,529	43,019	41,180	41,735	1.3%	20.5%
<b>HOUSING CONSTRUCTION</b>								
New Residential Permits	Nashville MSA							
Single-Family		3,514	3,499	3,169	3,262	3,111	-4.6%	-11.5%
Total		3,894	3,702	3,826	3,608	3,529	-2.2%	-9.4%
Value of New Residential Units (million \$)	Nashville MSA							
Single-Family		561.2	592.6	520.9	535.0	532.7	-0.4%	-5.1%
Total		585.5	608.8	577.9	558.7	567.8	1.6%	-3.0%
<b>TOURISM</b>								
Hotel Tax Revenue (million \$)	Davidson Co.	5.94	5.89	5.98	6.50	6.20	-4.6%	4.4%
Total Air Passengers, Nashville International Airport	Davidson Co.	2,338,118	2,309,979	2,449,257	2,586,931	2,428,355	-6.1%	3.9%
<b>TAXABLE SALES (estimates, million \$)</b>								
Nashville MSA	Nashville MSA	6,960	7,192	7,179	7,311	7,510	2.7%	7.9%
In-State Sales Only		5,913	6,122	6,083	6,238	6,405	2.7%	8.3%
Midstate	Midstate	9,465	9,733	9,734	9,905	10,176	2.7%	7.5%
In-State Sales Only		8,031	8,294	8,235	8,464	8,668	2.4%	7.9%

Notes: Seasonal adjustment with X11. \*Nashville MSA includes 13 counties. \*\*Midstate is a 41-county area. Sources: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Bureau of the Census; Davidson County Clerk's office; Metropolitan Nashville Airport Authority; U.S. Bankruptcy Court, Middle Tennessee District.

**Figure 1. Inventories/Sales Ratio, Manufacturing**



**Table 3. Quarterly Growth of Nonfarm Employment for Selected Metropolitan Areas (seasonally adjusted)**

Metropolitan Area	06Q1-06Q2	06Q2-06Q3	06Q3-06Q4	06Q4-07Q1
Atlanta-Sandy Springs-Marietta, GA	0.6%	0.2%	0.4%	0.5%
Birmingham-Hoover, AL	0.8%	0.4%	0.1%	0.3%
Charlotte-Gastonia-Concord, NC-SC	1.0%	0.4%	0.6%	1.1%
Indianapolis, IN	0.4%	0.1%	0.4%	0.3%
Louisville, KY-IN	0.7%	0.0%	0.2%	1.2%
Memphis, TN-MS-AR	0.1%	0.5%	0.5%	0.5%
Nashville-Davidson-Murfreesboro, TN	0.4%	0.4%	0.2%	0.6%

*Source: Bureau of Labor Statistics, CES series*

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domestically and from abroad, manufacturers are tying up fewer resources in unsold production than they have in the past. Consequently, they don't need as much inventory on hand to satisfy demand. As for the current situation, the figure shows a sharp rise in the inventory-to-shipments ratio beginning in mid 2006, caused by a sharp drop in shipments without a cut in output. In short, production grew faster than demand. Consequently, manufacturers need to cut back output to bring inventories in line with demand. Both inventories and shipments have leveled off

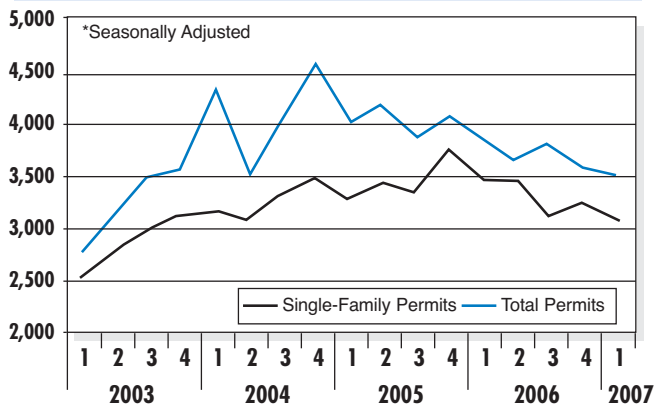
since the beginning of the year; to return to the trend inventory-shipments ratio will require at least six months for inventories to adjust to lower demand.

There are two ways that inventories can be reduced. First, producers could just cut prices, thereby giving buyers more incentive to buy now. In other words, just have a sale: cut prices, reduce inventories, and start planning for the next market cycle. Rebates and special low borrowing rates are frequently used by auto manufacturers to help reduce inventories of unsold vehicles. Cutting prices is more unlikely in the market for new homes. After all, when was the last time you recall a builder having a price-cutting sale? Special financing, yes; price cuts, no. However, sellers of existing homes seem to be getting the message; prices of existing homes actually dropped in the

**Table 2. Nashville-Davidson-Murfreesboro MSA Nonfarm Employment (seasonally adjusted in thousands)**

Sector	2005Q4	2006Q1	2006Q2	2006Q3	2006Q4	2007Q1	% Change 06Q4-07Q1	% Change 06Q1-07Q1
<b>Total Nonfarm</b>	<b>743.0</b>	<b>747.9</b>	<b>750.8</b>	<b>753.4</b>	<b>755.0</b>	<b>759.5</b>	<b>0.6%</b>	<b>1.6%</b>
<b>Total Private</b>	<b>645.5</b>	<b>650.2</b>	<b>653.3</b>	<b>655.0</b>	<b>656.7</b>	<b>660.2</b>	<b>0.5%</b>	<b>1.5%</b>
<b>Natural Resources, Mining, and Construction</b>	<b>37.2</b>	<b>38.9</b>	<b>39.0</b>	<b>39.2</b>	<b>40.0</b>	<b>41.7</b>	<b>4.1%</b>	<b>7.0%</b>
<b>Manufacturing</b>	<b>84.8</b>	<b>84.5</b>	<b>84.1</b>	<b>84.6</b>	<b>84.3</b>	<b>83.8</b>	<b>-0.6%</b>	<b>-0.9%</b>
<b>Durable Goods</b>	<b>57.9</b>	<b>57.7</b>	<b>57.7</b>	<b>58.1</b>	<b>58.0</b>	<b>57.5</b>	<b>-0.9%</b>	<b>-0.4%</b>
<b>Computer and Electronic Products</b>	<b>4.7</b>	<b>4.5</b>	<b>4.4</b>	<b>4.2</b>	<b>4.1</b>	<b>4.3</b>	<b>5.4%</b>	<b>-5.2%</b>
<b>Electrical Equipment, Appliances, and Components</b>	<b>7.4</b>	<b>7.3</b>	<b>7.5</b>	<b>7.6</b>	<b>7.7</b>	<b>7.5</b>	<b>-2.7%</b>	<b>2.6%</b>
<b>Transportation Equipment</b>	<b>19.5</b>	<b>19.7</b>	<b>19.9</b>	<b>20.2</b>	<b>20.1</b>	<b>19.6</b>	<b>-2.6%</b>	<b>-0.7%</b>
<b>Nondurable Goods</b>	<b>26.9</b>	<b>26.8</b>	<b>26.4</b>	<b>26.5</b>	<b>26.3</b>	<b>26.3</b>	<b>0.1%</b>	<b>-1.8%</b>
<b>Wholesale Trade</b>	<b>36.4</b>	<b>36.7</b>	<b>36.7</b>	<b>37.0</b>	<b>37.0</b>	<b>37.3</b>	<b>0.8%</b>	<b>1.6%</b>
<b>Retail Trade</b>	<b>85.2</b>	<b>85.9</b>	<b>86.8</b>	<b>86.5</b>	<b>86.0</b>	<b>86.7</b>	<b>0.8%</b>	<b>0.9%</b>
<b>Transportation and Utilities</b>	<b>30.8</b>	<b>31.3</b>	<b>31.4</b>	<b>31.2</b>	<b>31.3</b>	<b>31.9</b>	<b>1.9%</b>	<b>2.0%</b>
<b>Information</b>	<b>19.7</b>	<b>19.6</b>	<b>19.7</b>	<b>19.7</b>	<b>19.8</b>	<b>19.8</b>	<b>0.1%</b>	<b>1.2%</b>
<b>Financial Activities</b>	<b>45.4</b>	<b>45.7</b>	<b>46.1</b>	<b>46.2</b>	<b>46.1</b>	<b>46.0</b>	<b>0.0%</b>	<b>0.7%</b>
<b>Professional and Business Services</b>	<b>98.4</b>	<b>97.6</b>	<b>97.8</b>	<b>99.3</b>	<b>99.9</b>	<b>99.4</b>	<b>-0.6%</b>	<b>1.8%</b>
<b>Educational and Health Services</b>	<b>102.4</b>	<b>103.4</b>	<b>103.9</b>	<b>104.2</b>	<b>104.8</b>	<b>105.4</b>	<b>0.6%</b>	<b>2.0%</b>
<b>Educational Services</b>	<b>22.4</b>	<b>22.6</b>	<b>22.8</b>	<b>22.8</b>	<b>23.1</b>	<b>23.2</b>	<b>0.2%</b>	<b>2.7%</b>
<b>Health Care and Social Assistance</b>	<b>80.0</b>	<b>80.9</b>	<b>81.1</b>	<b>81.4</b>	<b>81.7</b>	<b>82.3</b>	<b>0.8%</b>	<b>1.8%</b>
<b>Leisure and Hospitality</b>	<b>75.4</b>	<b>76.7</b>	<b>76.8</b>	<b>76.4</b>	<b>76.8</b>	<b>77.6</b>	<b>1.1%</b>	<b>1.1%</b>
<b>Arts, Entertainment, and Recreation</b>	<b>9.5</b>	<b>9.8</b>	<b>9.9</b>	<b>10.1</b>	<b>9.8</b>	<b>10.1</b>	<b>2.5%</b>	<b>2.6%</b>
<b>Accommodation and Food Services</b>	<b>65.9</b>	<b>66.9</b>	<b>67.0</b>	<b>66.3</b>	<b>67.0</b>	<b>67.5</b>	<b>0.8%</b>	<b>0.9%</b>
<b>Other Services</b>	<b>29.8</b>	<b>30.2</b>	<b>30.5</b>	<b>30.8</b>	<b>30.9</b>	<b>31.1</b>	<b>0.7%</b>	<b>3.0%</b>
<b>Government</b>	<b>97.4</b>	<b>97.6</b>	<b>97.7</b>	<b>98.5</b>	<b>98.2</b>	<b>99.2</b>	<b>1.1%</b>	<b>1.6%</b>

**Figure 2. Building Permits Issued for Housing, Nashville MSA\***



U.S. last quarter (compared with last year) for the first time since the Great Depression. Now that she is rehabilitated, we can quote Martha Stewart: "It's a good thing." Lower prices now will more quickly move supply in line with demand, creating fewer layoffs of construction workers than would occur if sellers don't cut prices.

As for the housing market in the Nashville area, inventory is clearly rising faster than sales. In April this year, the inventory of homes on the market equaled 5.7 months of sales, up substantially from 4.1 months in 2006 (Figure 2). Housing construction has tapered off with notable exceptions of activity in Davidson County and Wilson County. From a peak of 3,700 single-family units in the fourth quarter of 2005, building permits dropped to 3,100 in the first quarter of 2007, the lowest level in nearly three years. The number of permits issued for multifamily dwellings has also dropped. Single-family permits are down 11.5 percent from a year ago but not much different from the third quarter 2006.

And what is going on with construction employment, anyway? Both locally and nationally, employment in the

construction industry is growing even though housing construction is on the ropes. This could be due to increased highway, street, and infrastructure activity, or it's possible that much more construction work is occurring on commercial, industrial, and government projects.

Another possibility is that producers don't cut prices but cut production instead; this would definitely create more pain for workers in the manufacturing and home building industries because significant layoffs would be needed to reduce output sufficiently to match demand. A risk with this approach for manufacturers is the loss of market share to lower-cost foreign producers; once lost, market share may be difficult to reestablish.

For the Nashville area economy, the biggest change in our indicators has to do with the annual payroll employment revisions. This year the effect of the revisions is to shave off nearly a full percentage point in year-to-year employment growth by revising 2006 monthly figures higher and 2007 monthly figures lower. Monthly payroll employment estimates are based on a sample of all employers who must pay unemployment insurance (UI) taxes on behalf of their employees. During the course of a year, employment estimated from the sample of employers can differ from actual employment among all UI tax-paying establishments. Once each year, the sample figures are adjusted to correspond to the entire population of employers. Occasionally, as is the case this year, the revisions are large.

In any event, nonfarm employment increased 1.6 percent from the first quarter of 2006, a gain of 11,600 jobs (Table 1). Even though year-to-year employment growth is not as large as suggested by initial employment reports, the gain from the fourth quarter is vigorous, up 0.6 percent (an annualized rate of 2.4 percent). The largest year-to-year percentage increases occurred in educational services; arts, entertainment, and recreation; and transportation and utilities. Manufacturing, as predicted by the growing

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**Table 4. Economic Indicators for Chattanooga MSA and Clarksville MSA**

Series (seasonally adjusted)	2005Q3	2005Q4	2006Q1	2006Q2	2006Q3	2006Q4	2007Q1	% Change 06Q4-07Q1	% Change 06Q1-07Q1
<b>CHATTANOOGA MSA</b>									
Nonfarm Employment (thousand)	241.3	241.8	242.1	245.4	247.1	246.9	248.6	0.7%	2.7%
Unemployment Rate	4.7	4.6	4.5	4.6	4.4	4.1	4.1	-1.0%	-9.4%
Taxable Sales (million \$)	1,581.9	1,563.8	1,609.5	1,621.8	1,644.7	1,641.2	1,671.4	1.8%	3.8%
<b>Permit-Authorized Housing Construction</b>									
Total	811	747	765	686	740	636	557	-12.4%	-27.2%
Single-Family	718	732	719	638	584	615	518	-15.7%	-27.9%
<b>CLARKSVILLE MSA</b>									
Nonfarm Employment (thousand)	83.1	83.1	83.1	83.1	83.8	84.7	84.8	0.0%	2.0%
Unemployment Rate	5.5	6.0	5.6	5.9	5.4	5.0	5.4	7.6%	-4.1%
Taxable Sales (million \$)	543.6	535.5	515.6	542.7	567.6	591.2	602.7	1.9%	16.9%
<b>Permit-Authorized Housing Construction</b>									
Total	850	440	476	623	1,159	782	705	-9.9%	48.2%
Single-Family	484	369	399	470	536	583	436	-25.21%	9.4%

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inventory-to-sales ratio, lost a small number of jobs, but construction is very strong, increasing by seven percent over the year.

The unemployment rate is drifting lower, reflecting the effects both of rising total employment and falling unemployment (Table 2). The large 20.5 percent over-the-year rise for initial unemployment insurance claims is not as bad as it looks since the comparison quarter (first quarter 2006) was very low. Initial claims, seasonally adjusted, are actually little changed from the fourth quarter.

Taxable sales continue to show strong growth both over the year and from the previous quarter. Sales are 7.9 percent higher over the year for the Nashville MSA and 7.5 percent higher in the 41-county midstate area.

Compared with some other metropolitan areas, Nashville's performance is in the middle (Table 3). Quarterly employment growth is better than Indianapolis, Memphis, Louisville, Birmingham, and Atlanta but trails Louisville and Charlotte. It should be noted, however, that Louisville and Charlotte ranked in the top 10 performers nationally in the first quarter. Among the 53 largest metro-

politan areas, Nashville's first-quarter employment growth ranks 20th.

The Chattanooga and Clarksville metropolitan areas are showing stronger over-the-year employment growth compared with the Nashville MSA (Table 4), with the Chattanooga MSA up 2.7 percent and the Clarksville MSA 2.0 percent higher. Unemployment rates are falling in both areas, and taxable sales are rising. Clarksville has experienced four solid quarters of taxable sales gains, dating back to the first quarter of 2006. Single-family permits are down substantially for the Chattanooga MSA and tend to show much more volatility in the Clarksville MSA. ■

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