



An educational review of basic investment concepts and techniques—in easy-to-understand terms.

“Stock” Supply Data: Inventory Turnover

For stock investors analyzing prospective investments and their own holdings, one important issue concerns how much money a company has tied up in its inventory.

Properly managing inventories is challenging. On the one hand, firms must sell merchandise to generate the cash needed to pay bills and turn a profit. But companies also have limited funds to invest in inventory, and cannot stock an unlimited supply of the items they sell.

How can you judge a company’s ability to manage inventories? Two operating performance measures are particularly useful:

- Inventory turnover ratio, and
- Number of days in inventory.

Inventory Turnover Calculations

Inventory turnover measures how quickly a company is moving inventory off the shelves to customers. It indicates how many times, during the course of a quarter or year, a company sells and replaces its inventory of component parts, materials and final products.

The inventory turnover ratio is calculated by dividing cost of goods sold by average inventory. On occasion, this ratio is calculated using sales or revenues as opposed to cost of goods sold. However, sales are recorded at market value, while inventory is typically recorded at cost. If you are comparing inventory turnover figures using various data vendors, you should make sure that the figures are computed using the same method.

Average inventory is often used to minimize seasonal factors that may impact inventory levels. To arrive at average inventory for a period, you merely add the inventory value at the beginning of the period to the inventory value at the end of period, and divide this sum by two.

Another way to look at how quickly a company

moves its inventory is with the inventory days, or days in inventory, measure. To find out the average number of days inventory is in stock, simply divide 365 by the inventory turnover ratio. The inventory days number measures how long it takes for a company to cycle through its inventory. The higher a company’s inventory turnover, the lower its number of inventory days.

Table 1 provides a quick look at the formulas used to calculate inventory turnover.

What Do They Mean?

A higher inventory turnover ratio indicates that inventory does not languish in warehouses or on the shelves. On one hand, too little inventory in stock could lead to lost sales if products are not there to meet customer demand. This can also lead a company to be caught flat-footed if there is a sudden spike in demand. However, high inventory levels are also unhealthy, as they represent an investment with a rate of return of zero.

A lower ratio can mean the company has a lot of cash tied up in inventory or that it has done a poor job of forecasting demand.

When looking at the number of inventory days, generally speaking, the smaller the number of days, the more efficient the company is, as it is holding inventory for less time and less money is tied up in inventory.

If the number of inventory days is higher, this could indicate that sales are poor and inventory is piling up.

Applying the Concepts

Merely looking at the inventory turnover at a single point in time is meaningless when analyzing a company. In

Table 1. Inventory Turnover Calculations

Calculation	Formula	What It Measures
Inventory Turnover Ratio	Cost of Goods Sold ÷ Average Inventory	How many times inventory is turned over in a year
Average Days in Inventory	365 ÷ Inventory Turnover Ratio	How long an average item stays in inventory

Figure 1. Historical Inventory Ratios on Morningstar.com for Apple, Inc.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TTM
Days Sales Outstanding	48.7	37.4	48.3	32.8	39.1	34.0	21.9	20.3	22.0	22.8	22.7
Days Inventory	4.0	1.7	2.0	2.5	4.1	4.8	4.9	5.8	7.1	7.3	7.6
Payables Period	63.0	61.8	86.6	75.5	83.8	79.0	59.6	68.8	96.3	89.7	69.9
Cash Conversion Cycle	(10.3)	(22.8)	(36.3)	(40.3)	(40.5)	(40.3)	(32.8)	(42.7)	(67.2)	(59.6)	(39.7)
Receivables Turnover	7.5	9.8	7.6	11.1	9.3	10.8	16.7	18.0	16.6	16.0	16.1
Inventory Turnover	90.6	219.5	187.6	147.8	89.1	76.7	74.4	63.1	51.5	49.9	48.2
Fixed Asset Turnover	18.4	25.3	12.2	9.7	9.6	12.0	18.3	18.4	15.4	15.2	14.3
Asset Turnover	1.3	1.3	0.8	0.9	1.0	1.1	1.4	1.3	1.1	1.0	0.9

turnover calculation, whereas *Stock Investor Pro* uses cost of goods sold.

Even though, up until recently, its inventory turnover has been declining and inventory days increasing over the years, Apple still is among the leaders in its industry.

When you see a noticeable trend in financial ratios, it is a

order to gain context, it is important to examine the trend in ratios over several periods.

Morningstar.com offers useful (and free) historical tables reporting many different ratios for individual stocks at www.morningstar.com (Figure 1). Inventory turnover and related data is tracked for 10 years. To find this data, enter a ticker symbol into the search box and then choose “Key Ratios” from the left-side menu bar. Inventory turnover is found under the Efficiency Ratios tab.

Looking at Figure 1, which shows historical inventory turnover and average days in inventory from Morningstar, you can see that Apple’s average days in inventory has increased steadily since 2000. An increasing number of days in inventory can be a good thing if sales are rising and the company is building inventory to meet an anticipated increase in demand. Apple is constantly updating its iPod, iMac, Mac mini, and Mac Pro lines, so one may expect the company to continually build up its inventory prior to these updates.

It is also useful to compare ratios to industry, sector, or market benchmarks. Table 2 compares Apple Inc.’s ratios to its peers and the industry median. This inventory data is taken from AAI’s *Stock Investor Pro*. Note that the trailing 12 months’ data in Table 2 differs from the Morningstar data. Morningstar uses annual sales in its inventory

good idea to ask “why?”

For example, are inventory days falling as a result of greater efficiencies gained through tighter inventory control, or is the company merely selling products more quickly because it has lowered prices?

In Apple’s case, it seems that the company is managing its inventory well and, in some cases, better than its competition.

Another thing to consider in tandem with inventory ratios is how sales are holding up. Perhaps inventory is building because sales are declining and the company has not adjusted to slackening demand. Or maybe inventory is declining as sales rise. This could point to a potential loss of sales if inventory runs out and demand is still rising.

A good way to see if a company may be boosting sales by cutting prices is by examining the trend in profit margins for the firm. If profit margins are declining, it means that the company is earning less for every dollar of sales; this is an indication that the company is using price cuts to drive increases in sales.

Overall, Apple is a strong brand in a competitive market. It appears that the company has thus far been able to weather the economic storm.

The Big Picture

Most people know to look at sales and earnings trends when analyzing a company, but looking at inventory turnover and the average days an item spends in inventory can provide a deeper look into the company’s operations.

Inventory analysis is only one part of the broader analysis process—but it is an important piece that can help provide a more detailed picture of the overall puzzle of how efficiently a company is being managed. ▲

Table 2. Comparing Inventory Ratios

Company (Exchange: Ticker)	Inventory Turnover (12-Mo Avg)	Average Days in Inventory
Apple Inc. (M: APPL)	55.8	6.5
Dell Inc. (M: DELL)	48.1	7.6
Hewlett Packard (N: HPQ)	12.3	29.7
International Business Machine (N: IBM)	19.1	19.1
Industry Median (Computer Hardware)	15.9	23.0

Source: Stock Investor Pro, Thomson Reuters. Data as of 8/14/2009.