

INVENTORY TURNOVER

Ratio analysis forms the cornerstone of fundamental stock analysis. There are a variety of ratios that analysts use to judge the attractiveness of a company as an investment. Ratios can help evaluate a company's liquidity, profitability, debt levels, cash flow, valuation, and operating performance.

Operating performance ratios look at how well a company turns its assets into revenue as well as the efficiency by which it converts merchandise into cash. When using these ratios, it is important to consider both short-term assets, such as inventory and accounts receivables, and long-term assets such as property, plant and equipment. In general, the better these ratios, the better the company is and the better it is for shareholders.

In this column, we take a closer look at one operating ratio: inventory turnover. Table 1 provides a quick look at the formulas used to calculate inventory turnover.

Overview

As an investor, you would like to know how much money a company has tied up in its inventory. This is because companies have limited funds to invest in inventory and cannot stock an unlimited supply of the items they sell. Furthermore, companies must sell merchandise to generate the cash needed to pay bills and turn a profit.

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 com-

pany sells and replaces its inventory of component parts, materials and final products.

Inventory turnover 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. Furthermore, average inventory is often used to minimize seasonal factors that may impact inventory levels. To arrive at average inventory for a period, 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.

We prefer to use cost of goods sold for measuring inventory turnover, and this is how the figure is calculated in AAll's fundamental database and stock screening program Stock Investor Pro. If you are comparing inventory turnover figures using various data vendors, you should make sure that the figures are computed using the same method.

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.

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 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.

Locating the Data

Morningstar.com offers a useful (and free) historical table for many different ratios at www.morningstar.com. Inventory turnover and related data is tracked for 10 years. Figure 1 illustrates the data provided by Morningstar.

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.

Applying the Concepts

Merely looking at the inventory turnover at a single point in time is meaningless when analyzing a company. In order to gain context, it is important to examine the trend in ratios over several periods.

Looking 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. In 2000,

Table 1. Quick Look at Inventory Turnover Calculations

	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

Apple had incredibly high inventory turnover of almost 220 times each year and an average of only 1.7 days of inventory on hand.

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.

Table 2 compares Apple Inc.'s ratios to its peers and the industry median. Please note that our trailing 12 months' data differs from the Morningstar data because that data is through the end of 2008, while the data in Table 2 is as of May 15, 2009.

Beyond looking at the trend for an individual company, it is also useful to compare ratios to industry, sector, or market benchmarks. In Stock Investor Pro, as of May 15, 2009, the median inventory turnover ratio for the industry is 11.5; inventory is kept on hand for 32 days on a median basis.

Even though its inventory turnover has been declining and inventory days increasing over the years, Apple still is among the leaders in its industry. Apple turns over its inventory close to 50 times in a year, which

Figure 1. Historical Inventory Ratios on Morningstar.com

Apple, Inc. AAPL											
Efficiency											
	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	19.1
Days Inventory	4.0	1.7	2.0	2.5	4.1	4.8	4.9	5.8	7.1	7.3	5.7
Payables Period	63.0	61.8	86.6	75.5	83.8	79.0	59.6	68.8	96.3	89.7	67.9
Cash Conversion Cycle	(10.3)	(22.8)	(36.3)	(40.3)	(40.5)	(40.3)	(32.8)	(42.7)	(67.2)	(59.6)	(43.2)
Receivables Turnover	7.5	9.8	7.6	11.1	9.3	10.8	16.7	18.0	16.6	16.0	19.1
Inventory Turnover	90.6	219.5	187.6	147.8	89.1	76.7	74.4	63.1	51.5	49.9	64.6
Fixed Asset Turnover	18.4	25.3	12.2	9.7	9.6	12.0	18.3	18.4	15.4	15.2	15.0
Asset Turnover	1.3	1.3	0.8	0.9	1.0	1.1	1.4	1.3	1.1	1.0	0.9

translates to the average item remaining in inventory for only 7.4 days.

Dell's inventory turnover only slightly lags that of Apple. Other competitors, however, are having a hard time matching Apple's inventory efficiency. Hewlett Packard has inventory sitting for an average of close to 32 days and IBM keeps its inventory for 18.5 days on average.

What Does It Mean?

When you see a noticeable trend in financial ratios, it is a good idea to ask "why." 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.

As an example, on April 22, 2009, Apple announced second-quarter earnings that were better-than-expected, but sales for Macs had declined 16% from last year. Some analysts point to customers opting for lower-priced offerings, and they are expecting further declines in sales due to Apple's premium-priced products.

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.

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. However, inventory analysis is only one part of the broader analysis process. 

Table 2. Comparing Inventory Ratios

Company (Exchange: Ticker)	Inventory Turnover 12 Mo	Average Days in Inventory
Apple Inc. (M: APPL)	49.6	7.4
Dell Inc. (M: DELL)	46.2	7.9
Hewlett Packard (N: HPQ)	11.5	31.7
International Business Machine (N: IBM)	19.7	18.5
Industry Median (Computer Hardware)	11.5	31.7

Source: Stock Investor Pro, Thomson Reuters. Data as of 5/15/2009.