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Inventory Trends and What They Mean for Cash Flow

Over the last year we have seen stresses on the Statement of Cash Flows that require further examination. Well documented supply chain challenges have led to elevated inventory levels based on shortages and, possibly, a partial abandonment of the 1980s-driven US adoption of Just-In-Time inventory management. This gets our attention for two reasons:

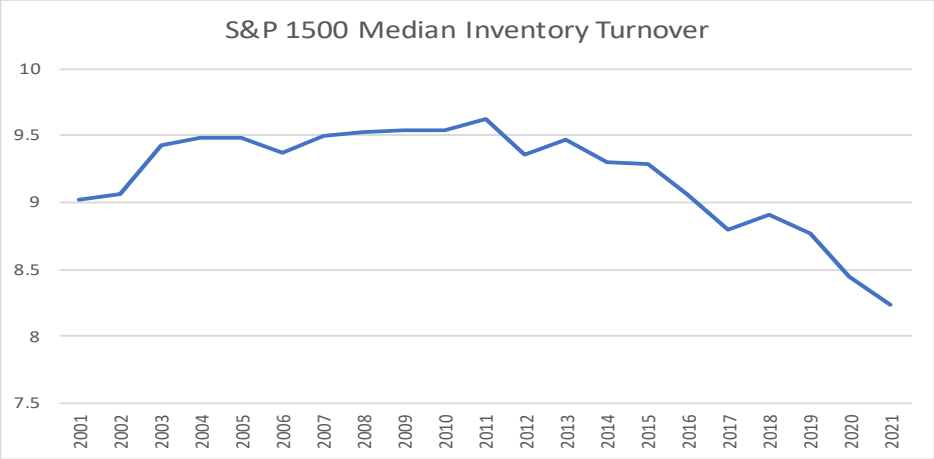
1. Reduced cash flows related to holding additional inventory need to be financed;

2. Reduced cash flows imply lower Enterprise Value. Moreover, a higher debt balance due to financing weaker cash flow would result in a greater deduction from Enterprise Value to arrive at the value of equity, all else equal.

We set our sights on not only inventory trends but also on the inventory make-up. In a normal environment, this imbalance can provide signals. For example, a high proportion of finished goods in relationship to raw materials and work-in-process inventories can signal possible obsolescence. Conversely, a high proportion of raw materials and work-in-process inventories can be a signal of management optimism in advance of strong customer demand. What follows is an analysis of the above, stretching back to 2001.

To analyze our hypotheses, we pulled data from the current constituents of the S&P 1500 Index (excluding the Banking, Insurance and other Financials sectors) going back either twenty years or as far back as data was available for a each company. As depicted in Chart 1, the median inventory turnover for the entire list of constituents (calculated as Sales ÷ Ending Total Inventory) has been heading lower for some time and reached a period low 8.2x at year-end 2021. That is over 2.5 standard deviations away from the mean for the period, clearly demonstrating that the current supply chain environment has created a long-tail event as it relates to the amount of inventory sitting on companies' balance sheets.

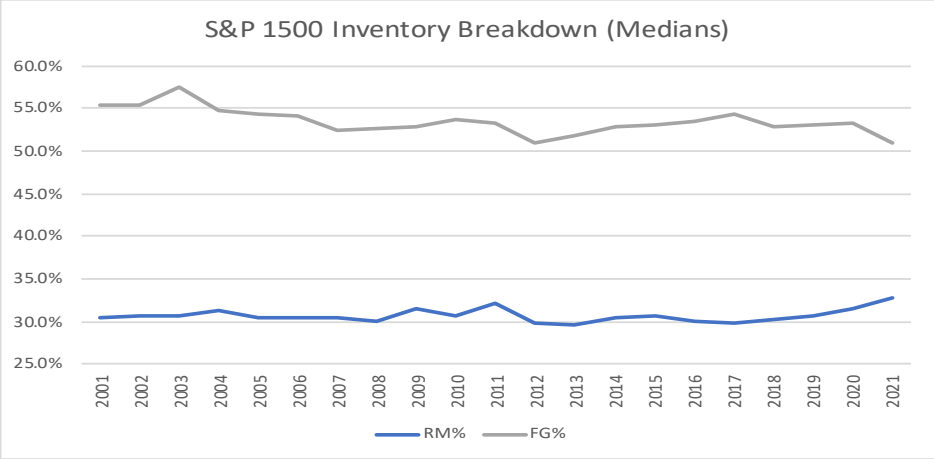
CHART 1: S&P 1500 Median Inventory Turnover



Source: FactSet Research Systems Inc.

We wanted to dig further, however, into the breakdown of inventory given the dynamics we have been reading about from a wide array of companies. To do that, we specifically homed in on the level of raw materials and finished goods inventory for each company and calculated their respective values as a percentage of total inventory. The results can be seen in Chart 2 below.

CHART 2: S&P 1500 Median Inventory Breakdown



Source: FactSet Research Systems Inc.

You will notice that the categories remain within a tight range for most of the time period. That said, you can clearly see that the data points for 2021 represent a period high for raw materials at 32.7% of total inventory and a period low (tie) for finished goods at 50.9% of total inventory. Moreover, the changes from 2020 to 2021 for both raw materials and finished goods were quite large. Finished goods decreased 2.27 percentage points, nearly 2.5 times the average absolute value of the annual change over the period of 0.92 percentage points. Raw materials' increase to 32.7% is 2.75 standard deviations away from the mean of 30.7% over the last twenty years for this dataset, again demonstrating the dramatic impact of the supply chain environment on today's companies. There are a number of potential reasons for this that we have seen through our coverage of Isthmus Partners' Large Cap and Small Cap Core equity holdings. First, we have read numerous examples of companies ordering and holding much more than their typical amount of inventory to mitigate the current and potential future supply chain disruptions. Moreover, many companies are struggling to source key components needed to finish their goods, resulting in the inability to complete and ship products. Again, the result is higher levels of raw material inventory relative to finished goods.

We also wanted to look at the data by sector to see if there were any interesting conclusions to be made. While a handful of industries did not lend themselves to this analysis (Retail, Services, and Telecommunications, for example, typically classify 100% of inventory as finished goods while Transportation and Utilities show a remarkably high percentage of raw materials), a few stood out. After three years of near parity between raw materials and finished goods, the Capital Goods/Industrial sector – one area profoundly impacted by the supply chain environment from our research – saw raw materials jump 340 basis points while finished goods declined 410 basis points as a percent of total inventory on a median basis, the latter four times and over 2.4 standard deviations higher than the average annual change (in absolute value) over the last decade. Consumer Durables has seen a 5-7 point shift from finished goods to raw materials over the past three years. Even the Technology sector saw a 250-300 basis point swing in the same direction. These themes were not uncommon across the applicable sectors as a whole; finished goods finished 2021 at its smallest percentage of total inventory in the last decade for the Capital Goods/Industrial, Chemicals, Consumer Durables, Consumer Staples, Semiconductors and Technology sectors.

Conclusion

Lower working capital efficiency can have meaningful impacts on the cost of operating an enterprise. Consider the following: of the $5.2 trillion in annual revenues of companies that report holding inventories, a one turn degradation in inventory turnover (from 8.23x to 7.23x) equates to approximately $87 billion in additional inventory that must be financed (either through line of credit utilization or existing cash & equivalents held). Assuming a current level of short-term interest rates of 3.62% (using 1 yr LIBOR plus 100 basis points spread) and layering on at least an additional 100 basis points from potentially forthcoming Federal Reserve tightening, the $4.0 billion in additional financing costs (or foregone interest income) get amplified by the hit to enterprise value via the additional debt requirement. Moreover, the cash flow reduction should inventory turnover fail to revert amounts to approximately $117 billion in enterprise value reduction over the long-term (assuming revenues grow at historical nominal GDP and other factors held constant, capitalized at 8%). In other words, these three higher "costs" of having to hold extra inventory, including (1) the operating cash flow reduction related to carrying extra inventory, (2) the reduction in equity values as more debt is deducted from enterprise value and (3) the higher costs of financing extra inventory due to higher short-term interest rates, amounts to real money, to be sure. It is for this reason that not only are we being conservative with modeling margin assumptions in the current environment, but we are also factoring slower turns over the near-term in calculating enterprise values for our strategies' holdings.

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