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Whipping Supply Chain Chaos, One Company at a Time

Recent headlines have highlighted the "bullwhip effect" among major retailers with extensive supply chains in Asia.

Long used in logistics, this term refers to the difficulty suppliers face in keeping up with sudden changes in demand, resulting in inventories that swing from complete stockouts to bloated supplies in short order. A bullwhip starts when purchase ordering is accelerated upstream in a supply chain as companies attempt to build buffer stocks of inventory to sustain market positioning. When demand fails to materialize, excess inventory becomes costly to warehouse, insure, and finance and may face near-term obsolescence.

Sitting on high inventory levels, Amazon held its two-day event for Prime subscribers in July, which, according to a press release, was its biggest Prime Day event in company history. One deal that garnered a lot of media attention was a 50" 4K smart television on sale for $99 that originally listed for $469—a 79% discount! While this limited-supply item may have been a "loss leader" to draw traffic to the site, there is little doubt that good bargains were to be had across a range of categories that bit into margins. Adding pressure to Amazon and other retailers, more supply is coming in this fall for the traditional shopping season that will face a weakening consumer.

What are the root causes?

Reasons for the drop-off in demand for discretionary purchases have been repeated *ad nauseum*, including the cutoff in stimulus payments to consumers, changes in post-pandemic work/life habits, higher consumer debt, declining real wages, substitution of the consumption basket toward necessities, and declining sentiment in the state of the economy. Even with perfect demand foresight, supply chains still face risks of ongoing port and trucking congestion, labor and trade tensions, threats of hostilities around major shipping routes, and structural shortages of critical inputs in complex products (think semiconductors).

The bottom line is that maintaining proper stocks of inventories for all manner of goods has become exponentially more difficult and costly in today's environment. This threatens the near-term profitability of even well-run businesses, like Amazon, Target, Walmart, and Costco. The same basic set of challenges extends deep into industrial product sectors. While there are certainly cyclical factors at play, the secular drivers of supply chain chaos imply longer-term challenges to profitability. Let's take a minute to see why.

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Feeling the squeeze: Decomposing return on equity (ROE)

Margins can be volatile in the short term, but they will likely be under pressure for some time from both demand and supply dynamics as noted above. And there are additional longer-term costs to safeguarding a business through this storm.

For example, one way companies will seek to avoid future shortages is by maintaining a larger strategic stock of inventory in steady state. Another is to duplicate sources of supply or to nearshore production to shrink lead times. At the margin, these actions are costly because they increase the working capital intensity of a business and/or require additional fixed investment in property, plant, and equipment. Moreover, higher costs of debt financing may lead to heavier reliance on equity in the capital structure.

Now, if we consider how value is created for shareholders in Figure 1, we can see how lower margins, lower asset turnover, and lower financial leverage conspire to reduce ROE. If we think about ROE as the profit-generating efficiency of equity ownership, it's clear that supply chain chaos throws sand in the gears. Put another way, the world has changed, and the optimal response for many companies may result in lower profitability.

FIGURE 1: SUPPLY CHAIN CHAOS SQUEEZES LONGER-TERM PROFITABILITY

ROE **=** NET PROFIT MARGIN **x** ASSET TURNOVER **x** FINANCIAL LEVERAGE

= Reduced **x** Reduced **x** Reduced

Source: Allspring. This decomposition is based on the DuPont model. ROE is defined as net income divided by equity. Net profit margin is net income divided by sales. Asset turnover is sales divided by total assets. Financial leverage is total assets divided by equity.

However, not all companies are equally at risk. For example, companies with balance sheet strength and flexibility should have access to cheaper financing and be able to deploy capital strategically into the business or respond opportunistically through acquisition of distressed assets. Other companies may have a head start on operational solutions. Our equity teams have for years discussed the importance of technologies and services that facilitate inventory management and provide improved transparency with partners up and down the supply chain. While initial investment in these solutions can be high, effective deployment promises more efficient use of working capital and more dynamic responses to future shocks. On balance, companies making the right decisions for their unique businesses should be able to protect and grow expected profitability. Of course, providers of these solutions are seeing accelerating demand today and have a long runway due to the structural nature of supply chain challenges. We highlight two of them on the next page.

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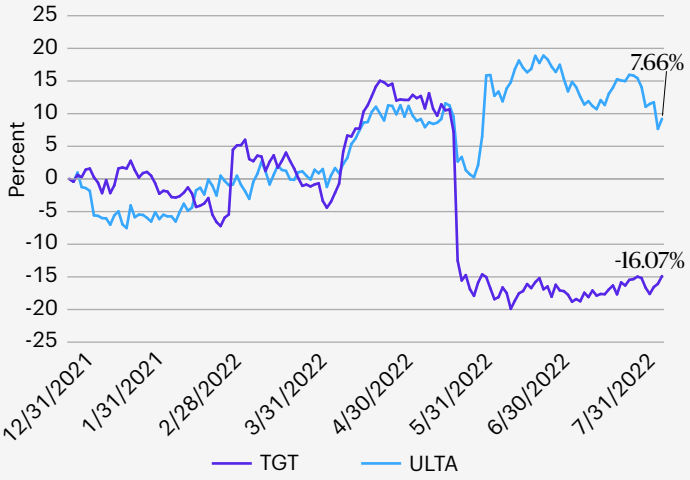
Senior Portfolio Manager and Team Leader, Select Equity

Small is beautiful

Large retailers that sell a diversified range of goods, by definition, cannot avoid the supply chain challenges noted herein. However, many specialized retailers are better positioned in their sourcing and product mix to navigate these systemic headwinds. Take ULTA, a leading U.S. skincare and beauty products retailer.

ULTA sources very little from China, largely avoiding disruptions related to shutdowns and West Coast port issues. The small packaging of its beauty care products allows for more economic airfreight when necessary. High brand recognition, pricing power, and price points all help buffer profit margins from inflationary cost pressures. Moreover, ULTA is proactively expanding its distribution center network to deliver products to stores and customers faster, with an emphasis on expediting higher-turning stock. All of these factors help ULTA maintain inventories that are more dynamically matched to changing demand, thereby protecting margins. As noted below, the divergence in stock price performance between Target, a much larger brick-and-mortar retailer, and ULTA has been significant.

TARGET VS. ULTA SHARE PRICE DIVERGENCE SINCE MAY 2022



Source: FactSet. Based on closing prices from end of December 2021 through end of July 2022.

CHRIS WARNER, CFA
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Discovery Growth Equity: Impinj (PI)

PI is one of two suppliers of RFID chips (radio-frequency ID). Of the two, PI is the only supplier of an end-to-end solution. The RFID system includes a tag (costing pennies per item) and a scanner that can read thousands of items per second without direct line of sight. This contrasts with the old methods of scanning each item individually or manual system entry based on paper. Use of RFID provides huge reductions in data error rates, timeliness of data, and labor savings. Demand for RFID solutions has accelerated throughout the pandemic due to labor shortages and supply chain disruptions, increasing the need for real-time data.

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Dynamic Growth Equity: SPC Commerce (SPSC)

SPSC offers software that allows retailers to communicate and collaborate electronically with suppliers, distributors, and consumer packaged goods manufacturers on a variety of order types, creating a trading network among channel partners. Benefits include real-time visibility that helps retailers fill orders quickly, reduce stockouts, and respond to unexpected events. The pandemic has accelerated supply chain automation trends that were already in place, fueling demand for SPSC's electronic order fulfillment as retailers increasingly embrace digital commerce and omnichannel programs.

Conclusion: An opportunity for active management

Managing supply chains is an enormously complex task that is mission critical for a wide range of businesses. If we think about recent supply chain chaos as part of a larger secular trend toward deglobalization, it is easier to see the long-term threat to the operating efficiency that had been enjoyed by global businesses employing just-in-time inventory management models prior to the onset of the pandemic.

A key takeaway from this discussion is that unique businesses will handle the selection and implementation of supply chain solutions with varying degrees of efficacy. This should create wide disparity in outcomes, even among companies in the same industry, that may be identified early only by knowing the business fundamentals and views of company management intimately. To the point, as active managers, we think this creates enormous opportunities for investors to benefit from fundamentally driven security selection in this age of supply chain chaos.

To learn more

We want to help clients build for successful outcomes, defend portfolios against uncertainty, and create long-term financial well-being. To learn more, investment professionals can contact us.

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