With Box Shipments Growing at a Faster Rate Than GDP, Are We Entering a New Era?

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Our Packaging & Forest Products team at Vertical Research Partners covers a wide array of sub-industries: Timber REITS, wood products, rigid & flexible packaging as well as traditional paper and pulp companies. Yet nothing in recent months has garnered as much attention as companies engaged in the production and manufacturing of containerboard and corrugated boxes.

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For decades, these activities did not generate adequate returns on their investors' capital on a consistent basis. The real price of US linerboard is only now approaching its mid-1990s peak, and, while following a clear upward trend since the early 2000s, the real price of linerboard was higher in the three decades preceding 2000 than in the years after the turn of the millennium.

Since the Great Recession, however, increased consolidation (vertically as well as horizontally) and capacity-expansion discipline have helped containerboard producers realize significant cost savings while also obtaining more-stable pricing. Not only have producers' investment returns improved, but customers have also benefited from greater price stability, some sharing of producers' real cost savings in pricing, and an improved supply-chain. Yet it is not just the supply side of the equation that is on boosting the fortunes of the containerboard companies. We are currently experiencing unusually strong demand for corrugated boxes.

2016 was a significant milestone; corrugated box shipments in the US expanded by 2.1% on an annual basis, to 376 billion square feet, surpassing the country's GPD growth of 1.6%. Historically, box shipment growth has trended below GDP growth; from 1984 until 2016, US GDP expanded at an annualized rate of 2.6% while box shipments grew by just 1.1% per year. For decades, the manufacturing base of the country has been eroded, gradually at first, more rapidly later. This development is clearly seen on box shipment volumes.

Drivers of Box Demand

Let's take things one step at a time. From the 1950's to the mid-1980's, US corrugated box demand grew at a slightly faster pace than real GDP. During this period, manufacturing was a key driver of economic growth and corrugated boxes were taking share from more-primitive shipping containers, such as wooden crates. By the mid-1980's, when services were starting to consistently outgrow manufacturing activity in the US, corrugated boxes began to grow more slowly than overall GDP. Specifically, from 1984 until 1999, US GDP grew at a 3.4% rate, ahead of the 2.8% volume growth seen in corrugated boxes. Shifting towards a more service-oriented economy, the US needed fewer boxes. Manufacturing as a percentage of GDP fell from 19.3% in 1984 to 15.5% in 1999.

Aided by China joining the World Trade Organization in 2001, outsourcing of manufacturing became more prevalent as we exited the last millennium. As more and more industrial activities moved overseas, demand for boxes declined. From 1999 until 2009, box shipments actually fell by a cumulative 7.7%. The resulting 1.1% annualized box-shipments decline significantly trailed US GDP annual expansion of 1.8% per year over this 10-year period. Not only did box volume shipments stopped closely following economic expansion, but they actually declined. Put differently, containerboard and corrugated boxes was a shrinking industry within the US. During this "lost decade" of 1999 to 2009, demand for boxes from producers of food and other consumer-related non-durable items continued to grow. However, a more than one-third implosion in box demand from industries impacted by "outsourcing" more than offset this growth — causing the overall demand to decline.

But the story did not end there. Starting in 2009, in the immediate aftermath of the most severe post-war recession experienced in the US, demand for corrugated boxes started growing again. Even though it still trailed GDP growth (growing at 1.2% per year compared to GDP growth of 2.1%), the gap was clearly closing. Enter 2016. US box shipments outpaced the country's economic expansion, with this trend continuing so far in 2017.

Is this an anomaly? Data so far this year do not suggest so. US box shipments are up 2.8% year-on-year from January until July. Our view is that we are shifting to a new era were box demand and shipments will again move closer to GDP growth, and for the first time in decades may run ahead of economic expansion on a consistent basis. Two factors are contributing to this paradigm shift: The first one is the end of outsourcing. The second is the continued rapid expansion we see in e-commerce — which has now reached critical mass.

Box Prices Hinged to OCC

Assuming we are correct, and that US box demand continues its recent trend of growing close to the rate of general economic growth, customers likely will see their box costs rise in line with, or possibly greater than, the rate of inflation. The future of box prices will in large measure be a function of the cost of recyclable old corrugated containers (OCC) which, in turn, could be impacted by the degree of future growth in kraft (or virgin-fiber) linerboard capacity. Over the past quarter-century, as the global corrugated box industry has doubled, virtually all of the capacity built to supply this growth has been recycled (or OCC) based. As a result, close to 80% of global containerboard capacity is predicated on the use of recycled fiber (and thus cannot process wood).

Despite high OCC collection rates, the world's supply could be approaching structural tightness given the "loss" of roughly 1 in 6 fibers as OCC moves through the process of being converted into new containerboard. This suggests the need for more kraft (or virgin-fiber) capacity. However, the regions with attractive softwood trees for containerboard production are limited, and gaining environmental permits for new mills is quite challenging. While we see a handful of mill conversions from white paper production in the US, it could be challenging for kraft linerboard capacity to grow sufficiently to allow for ample supplies of OCC. As a result, global corrugated box prices could rise a bit faster than inflation. That said, we see relatively few opportunities for substitution in ways that would save box customers money.

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