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A SIMPLE FORECASTING TRICK

Everyone "knows" you can't forecast commodity prices. Indeed, extremely precise forecasts are rare and probably impossible. However, it's more possible than most people realize to forecast commodity prices with a useful degree of reliability. Let's use bleached hardwood kraft market pulp (BHKP) to illustrate.

First, we must agree on what makes a forecast "useful." Is the need short-term tactical or long-term strategic? If it's short-term tactical, then the timing and cyclicality of the price can be of great importance. Reliable short-term forecasting is in fact feasible, but it requires sophisticated modeling and good input data. We have such forecasting technology in the Fisher-STE Market Pulp Model, but it doesn't fall into the category of this article's title, "a simple forecasting trick", so I'll only describe it briefly below.

On the other hand, if one's forecasting need is to support a long-term investment decision, the forecast's main job is to predict the trend in average price. The amount of volatility and how it fluctuates over time probably doesn't matter as much as whether the average price is trending up or down and how much.

Let's say, for example, that you've decided to invest in a new tissue machine and the next choice is where to build it. One option is to put it close to the intended customers, which would mean it would be non-integrated to fiber and, therefore, a purchaser of market pulp. The other option would be to build it near a pulp mill far away from the end client, say a mill where declines in printing and writing paper demand have made some bleached kraft fiber capacity available.

If the new machine is located near customers, it will have lower logistics costs but will be subject to the prevailing market price for pulp. The advantages of integration to fiber can include lower energy costs and more stable and often lower fiber costs. We can easily model tissue costs in integrated operations via Fisher*Solve*'s proprietary Virtual Mills software.

Over the life of the machine, pulp prices will certainly have volatility, but the key question is what the average market-pulp price will be compared to the long-term average cost of making integrated slurry pulp in the host mill. So, all we need now is a reasonable long-term pulp forecast, which we can get from a relatively simple forecasting trick.

The trick is made possible by the behavior of commodity markets like pulp. The price of pulp never stays for long below the cost of its production by the higher-cost producers. We call this the "floor price" and we know where the floor price is because we model the cost of every pulp producer in the world. Those costs can be displayed on cost curves like the one in Figure 1.

If we plot the floor price over time, we can see that it, too, has some volatility as shown in Figure 2.

If we compare pulp prices to the floor price over a long period (see Figure 3), we see pulp prices never fall below

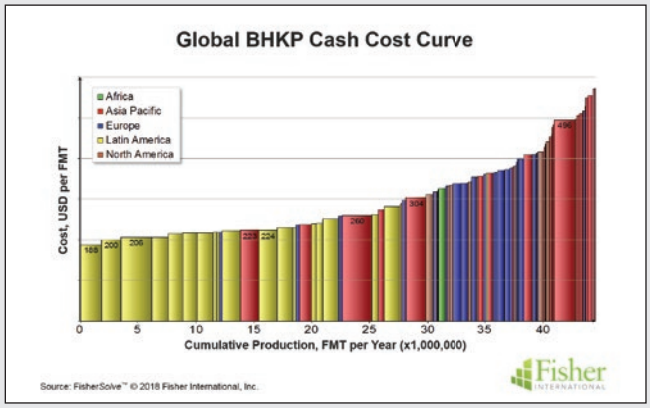

Figure 1

Figure 2

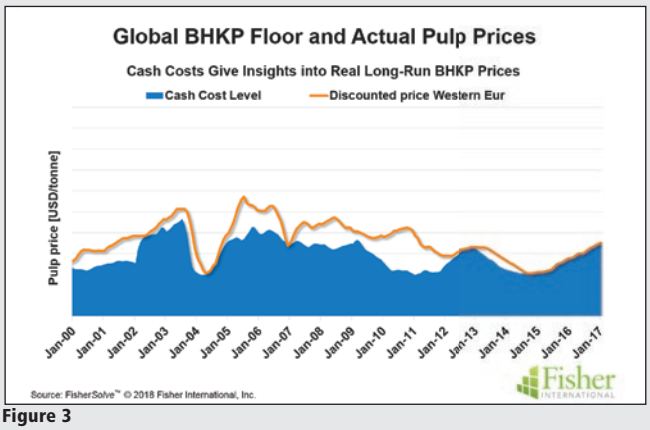

Figure 3

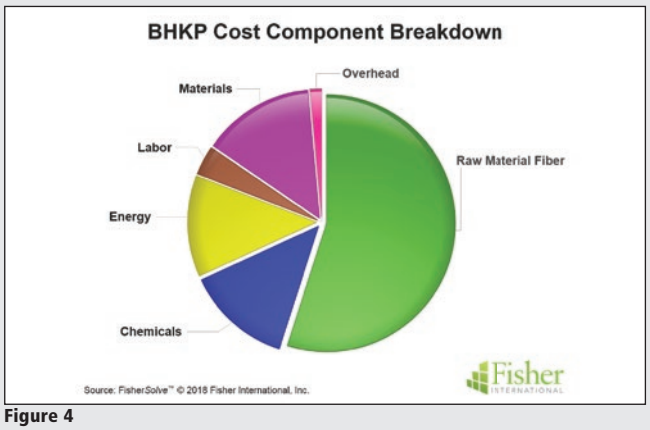

Figure 4

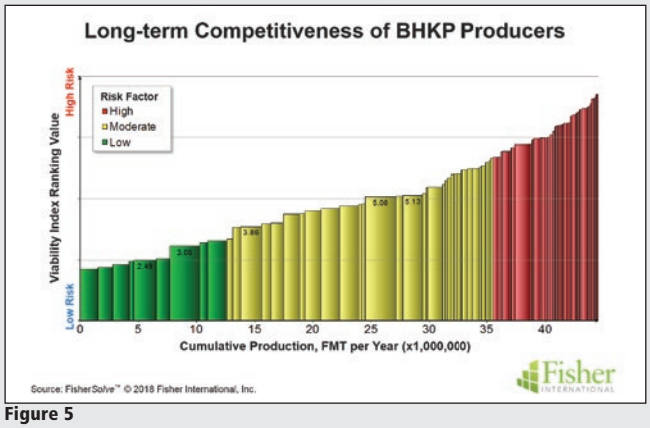

Figure 5

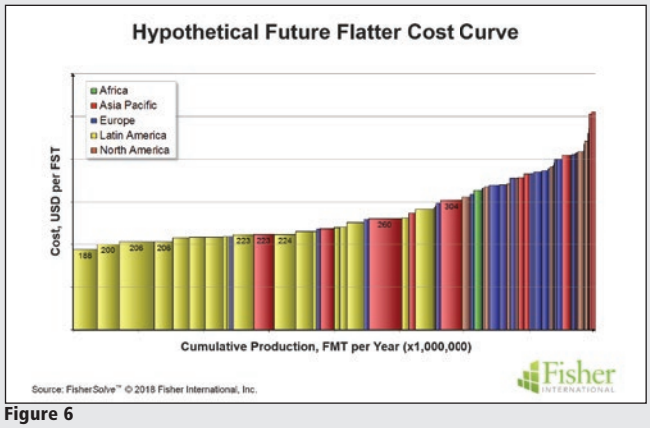

Figure 6

the floor price. The pulp prices shown are not the "list" prices that are typically quoted, but rather prices that, after discounts, real buyers actually pay. And, while pulp prices sometimes lie directly on the floor and sometimes rise above it, there's a band above the floor in which they operate.

To predict long-term pulp prices with a reasonable degree of reliability, therefore, all we need to do is predict the floor price. This is much easier to do than traditional forecasting approaches that focus on the supply-demand balance. That method requires knowledge of the future of demand, of how investors will respond to demand with supply, and then somehow a way to relate supply and demand to price behavior – tasks which have eluded forecasters to date.

Predicting the floor price, however, is much easier. Basically, we need to know only two factors. One is how pulp's key cost inputs will behave and the other is how the shape of the cost curve will change. The most important input cost is wood (Figure 4) and its prices in each wood basket can be known quite far out from growth and removal rates. Other key input costs are stable and predictable enough to allow reliable floor price forecasting.

The second factor we need is the future shape of the cost curve. In Figure 1, we can see that there still are many high-cost producers, mainly in Asia. As investors build new capacity over time, it typically comes in at the left-hand, low-end of the cost curve as they typically don't build high-cost facilities. While some new capacity serves new demand growth, some drives high-cost producers out of the market. The impact of this is to change the shape of the cost curve and lower the floor price.

Fortunately, we can predict this change reasonably well by understanding the underlying competitiveness of each asset globally. We do this with the Fisher*Solve* tool called Viability Benchmarking that shows which assets are most likely to close over time as illustrated in Figure 5. As high-cost assets close, cost curves tend to flatten, as shown in the hypothetical future cost curve in Figure 6. We combine trends in new capacity investment with their likely impact on high-cost incumbents to predict the future shape of each grade's cost curve and, therefore, where that commodity's price level is likely to be over the next decade or two. ■

Note: If you're interested in shorter-term forecasting, you can read more about the Fisher-STE model at http://www.fisheri.com/products-services/consulting-services/ or feel free to get in touch with us.