Latest BofAML Box Survey: Headline positives with some deceleration below the surface
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#4 European Equity Research / Advisory Vote Share 2016
## BofAML Americas Paper/Forest & Packaging team

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Stocks under coverage – 29 stocks / $175bn market cap
History of the BofAML Corrugated Survey

- Our first survey was conducted in the fall of 2003 when we launched on our first containerboard stock, Packaging Corp (PKG).
- The survey showed a surprisingly positive outlook when sentiment was negative.
- We have periodically used the survey, which has served as a useful barometer of industry trends over time.

Source: BofA Merrill Lynch Global Research
Takeaways from our latest survey

• Headline figures were positive,

\textit{BUT}

• There was weakening in some of the supplemental questions’ data.
What was positive?

- Headline growth expectations.
- E-Commerce, overall.
- Food & beverage growth expectations.
What was negative?

- “Second derivative” growth / other factors.
- More concerns about a slowdown.
What was positive?

Growth expectations are at a very solid level

- Headline growth expectations reached +3.1% in our September ’18 survey vs. the average of +2.1% since 2014.

Source: BofA Merrill Lynch Global Research
What was positive?

E-Commerce remains a key growth driver

- E-Commerce continues to be cited as a driver of growth, and averages ~10% of boxes.
- With e-commerce growing 10-20% annually, we estimate it could add 1 percentage point or more to box growth.

E-Commerce as Percent of Box Shipments

Source: BofA Merrill Lynch Global Research
What was positive?

Food & beverage expected to grow

- Nearly 60% of respondents expect better growth in food & beverage end markets over the next 6-12 months.
  - Respondents have tended to project their view of the entire economy through expectations in this category.
What was positive?

Sustainability & environmental focus a positive for box demand

- Respondents expect heightened attention to sustainability and concerns regarding plastics and other substrates to be positive for box demand.
  - More than 80% of respondents believe environmental concerns should increase demand for boxes over time.
  - However, only about 50% indicated that environmental concerns have actually increased demand for corrugated boxes.

**Environmental concerns should increase demand for my boxes**
- Yes, 83%
- No, 17%

**Environmental concerns have increased demand for my boxes**
- Yes, 52%
- No, 48%

Source: BofA Merrill Lynch Global Research
What was negative?
“Second derivative” has turned negative for other areas

- Growth expectations declined across several end markets:

- Paper & Paper Products
- Plastics, Synthetics & Rubber
- Glass & Metal Containers
- Electrical Equipment, Appliances, etc.

Source: BofA Merrill Lynch Global Research
What was negative?

E-Commerce decelerated

• E-Commerce as a percentage of box shipments declined from ~13% to ~10%.
  ○ Volatile series, for sure.
  ○ However, the near-term trend did coincide with deceleration cited by some e-tailers during 3Q reporting.

Source: BofA Merrill Lynch Global Research
What was negative?

Concern about an industry slowdown increased

- There seems to be more concern about an industry slowdown.
  - In our survey, 44% of respondents expressed concern vs. 13% in our prior survey.
  - Respondents cited trade tariffs/policy, rising costs and interest rates among the reasons for concern.

Source: BofA Merrill Lynch Global Research
Additional points

• We ask questions on additional topics, including price.
Who is the best?

- We have polled respondents as to which containerboard company offers the best level of service.
  - Packaging Corp (PKG) has over time tended to receive the top marks on best overall level of service, with 32% of the #1 votes in this category since 2011.
  - Georgia-Pacific and International Paper (IP) have on average performed the next best, with 16-18% of the #1 votes since 2011.
  - PKG also clear #1 on other questions we review with respondents.

Best Overall Level of Service (*)

(*) Defined as quality, order fulfillment, sales & marketing support.
Conclusions

- Volumes remain solid.
- E-Commerce is ~10% of box business.
- Key food & beverage market is in good shape.
- Fiber should gain vs. plastic over time.
- Packaging Corp continues in the #1 position in our survey.
Conclusions

• Volumes remain solid.
• E-Commerce is ~10% of box business.
• Key food & beverage market is in good shape.
• Fiber should gain vs. plastic over time.
• Packaging Corp. continues in the #1 position in our survey.

• Growth did slow in our last survey, ...
• ... including some deceleration in e-commerce...
• ... and some other end markets.
• The move from plastic to paper really hasn’t begun.
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<th>Total return expectation (within 12-month period of date of initial rating)</th>
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<tr>
<td>Buy</td>
<td>≥ 10%</td>
<td>≤ 70%</td>
</tr>
<tr>
<td>Neutral</td>
<td>≥ 0%</td>
<td>≤ 30%</td>
</tr>
<tr>
<td>Underperform</td>
<td>N/A</td>
<td>≥ 20%</td>
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