

Packaging Corporation of America - Where Should the Next Investment Go?

Internal ID: S&F-STR-439

Topic: Operations Strategy, Capital Allocation, Pricing Strategy

Industry: Paper & Plastic Packaging Products & Materials

Source: Strategy & Finance

Publication date: 5 October 2026

License: Not specified

Decision date and information cutoff: 7 November 2024, 11:59 p.m. ET

Decision scope: Hypothetical next-cycle growth and productivity priorities

Case convention: PCA's public disclosures are historical evidence. The next-cycle choice is hypothetical; no private deliberation or board proposal is represented.

The decision

You are advising the strategy team at Packaging Corporation of America (PCA) as it considers priorities for its next planning cycle. The company has an active investment program that includes converting a paper machine to produce linerboard. Its third-quarter operating data show strong volume across its packaging operations, while nine-month results show lower packaging prices and mix, higher operating and converting costs, and nearly flat segment EBITDA excluding special items.

Where should PCA direct the next increment of discretionary growth and productivity effort?

1. **Containerboard mills:** continue conversion, modernization or bottleneck projects that could support mill operations and supply.
2. **Corrugated converting and customer-facing capacity:** expand, upgrade or improve selected box-plant capabilities and customer service.
3. **Financial and operating flexibility:** pace new growth commitments while current projects and facility changes are executed and demand, margins and bottlenecks are better understood.

Recommend a priority, explain the strongest case against it, and identify what additional evidence would change your view. These are classroom alternatives, not a disclosed PCA budget, investment ranking or plan to cancel work already underway. The company has not published facility-level returns that would support a numerical ranking.

An integrated packaging system

PCA reported that it operated eight mills and 86 corrugated-products manufacturing plants. The mills make linerboard and corrugating medium, which are used to manufacture corrugated products. The plants make conventional shipping containers, multi-color boxes and displays, honeycomb protective packaging, and other products. PCA also has a Paper segment that manufactures uncoated freesheet and other communication papers. [S1-S2]

This footprint links distinct steps in the value chain, but the public data do not show how much containerboard moves internally to PCA's own converting plants, how those flows are priced, or

which customers and products generate the strongest incremental returns. Containerboard production, mill outside shipments, corrugated shipments, and segment sales are different measures. They should not be added together or treated as interchangeable evidence of end-market demand.

A strong quarter and a more mixed year to date

PCA's third-quarter 2024 results were markedly better than its year-earlier quarter. Consolidated net sales were \$2.182 billion, up 12.7%; GAAP net income was \$238 million versus \$183 million. Reported diluted EPS was \$2.64 versus \$2.03. PCA also reported \$2.65 diluted EPS excluding special items, a non-GAAP measure; the company says such measures should be considered alongside GAAP results. [S2, pp. 17-18; S3]

In the Packaging segment, sales were \$2.009 billion, up 14.1%. PCA attributed \$241 million of the \$249 million increase to higher volume and \$8 million to higher containerboard and corrugated-products prices and mix. The company separately reported a 25.8% increase in domestic and export containerboard outside shipments and corrugated-products shipments up 12.9% in total, or 11.1% per workday. The quarter had one additional shipping day. Domestic containerboard prices were reported 8.5% higher year over year and export prices 9.4% higher. "Price and mix" combines effects; it does not disclose a like-for-like price change by grade, customer or location. [S2, p. 18]

PCA management called demand strong and reported record containerboard production of 1.3 million tons and record corrugated-plant performance. At the same time, industry data cited in PCA's filing showed North American corrugated shipments up 0.6% in total but down 1.0% per workday, with one extra shipping day. Reported industry containerboard production rose 3.1%, and inventories at the end of the quarter were about 2.6 million tons, up 1.9%. The company attributed these industry figures to trade publications. They provide context, but company and industry measures may differ in scope, mix, geography and definitions. The shipment comparisons alone do not establish PCA's market-share change or durable customer gains. [S2, p. 17]

Selected operating measures

Measure	Q3 2024 vs. Q3 2023	First nine months 2024 vs. first nine months 2023	Interpretation limit
Containerboard outside shipments	+25.8%	+22.7%	Outside shipments are not the same as mill production or internal flows
Corrugated-products shipments	+12.9% total; +11.1% per workday	+11.0% total; +10.4% per workday	Shipment volume is not revenue, margin, market share or retention
Domestic containerboard price	+8.5%	+2.3%	Company-reported average; not a customer- or grade-matched price series
Export containerboard price	+9.4%	−7.7%	Different channel and period; mix can affect realized averages
Packaging segment sales	\$2.009bn; +14.1%	\$5.715bn; +6.7%	Includes volume and price/mix effects
Packaging operating income	\$321m vs. \$257m	\$804m vs. \$811m	Company bridge attributes changes but does not reveal project returns

Source: PCA Q3 2024 Form 10-Q, Item 2, pp. 17-21. Company and industry figures are reported as disclosed; industry measures are cited by PCA from trade publications.

The nine-month sales bridge provides a different view from the latest quarter. Higher Packaging volume contributed \$598 million to sales, while lower prices and mix reduced sales by \$241 million. Domestic containerboard prices were up 2.3%, but export prices were down 7.7%. Packaging operating income declined \$6 million. PCA's bridge attributed \$314 million to higher sales and production volume and \$22 million to lower freight expenses, offset primarily by lower prices and mix (−\$257 million), higher operating and converting costs (−\$70 million), depreciation and project/outage expenses. Packaging EBITDA excluding special items was essentially unchanged at \$1.172 billion versus \$1.171 billion. These are company explanations of reported results, not independent estimates of each cause. [S2, pp. 20-21]

The quarter's \$58 million increase in Packaging operating income attributed to higher volume and the year-to-date flat EBITDA excluding special items can both be true. They cover different periods and measures. Neither establishes the performance of a specific mill conversion, converting plant or customer program. Higher converting costs can offset added shipment volume; company-level averages do not identify whether a plant is constrained or whether additional throughput would be profitable.

Capacity, conversion and capital spending

PCA disclosed a conversion of the No. 3 machine at its Jackson, Alabama mill from uncoated freesheet production to linerboard. It recorded \$7.6 million of conversion-related costs in the first nine months of 2024, compared with \$1.5 million in the same period of 2023. The company did not disclose the conversion's full cost, added capacity, schedule, cost to complete, expected utilization, customer commitments or return. This project was already in progress at the cutoff; the hypothetical decision concerns the next discretionary increment, not an assumption that this work can be canceled. [S2, pp. 23-24]

PCA spent \$468 million on internal capital investments during the first nine months of 2024, compared with \$329 million in the same period of 2023. Management estimated full-year 2024 capital investment of \$670 million to \$690 million. That range was a forecast at the cutoff, not actual year-end spending or a specific pool available for growth. PCA reported \$866 million of operating cash flow over the first nine months, down from \$980 million a year earlier; operating cash flow is not free cash flow or a project budget. [S2, pp. 22-23]

Operating costs also reflected facility timing. PCA said its Wallula, Washington mill ran for all of Q3 2024, whereas it had been temporarily idled during Q3 2023; management cited this as a reason costs were higher. Comparing costs across periods therefore requires attention to mill operations, outages, conversion costs, facility closures and depreciation, as well as prices and volumes. [S2, p. 19]

A competitor's different approach

International Paper's Q3 2024 filing described a separate "80/20" strategy intended to focus resources on customers and products and reduce complexity and costs. IP also reported restructuring and mill-closure actions. Its Q3 discussion attributed performance to a mix of higher prices, improving box demand, seasonality and commercial actions. The two companies differ in footprint, product mix, geography, integration and reporting measures. IP's actions show one possible industry response, but they do not establish the right path for PCA or explain PCA's shipment growth. [S4]

What research may contribute

Li and Zhang's 2006 working paper studies the U.S. linerboard industry using monthly data from 1980 through 1999. It pairs linerboard transaction prices with inventories at mills and box plants, then estimates whether price or output is more likely to rise or fall in response to inventories. The authors report that inventory changes precede price movements: a 0.1 decline in inventory-to-capacity was associated with a 2% higher probability of a price increase in the following month; a 0.1 increase was associated with a 2.9% higher probability of price decline. A 0.1 rise was also associated with a 5.8% greater probability of an output decrease in the next month, with no significant later-month effect. These are probabilities of a change event in historical linerboard data, not price-per-ton effects or estimates for PCA. [A1]

The numbered main text is pages 1-15; the full displayed version continues with references and appended tables. This is a working-paper/conference manuscript, not a peer-reviewed journal article. It uses industry-level observations, binary change outcomes and data ending in 1999. Its Granger tests indicate predictive ordering, not structural causal proof. [A1]

Li and Luo's 2008 journal article uses a dynamic demand-and-supply system for U.S. linerboard. Its accessible abstract reports slow price adjustment, a small positive association between operating rates and prices, and no statistically significant concentration effect on price. The full article was not available for this case, so no coefficient magnitudes are used. Christensen and

Caves' 1997 article abstract describes how project commitment, new information, rival expansion announcements and utilization relate to previously announced capacity-project decisions across pulp-and-paper industries; its full text was also not accessed. Both studies raise questions about inventory, utilization, market structure and irreversible investment, but neither ranks a PCA mill or converting project. [A2-A3]

Assignment

Prepare a short recommendation to PCA's leadership:

1. Where should the next increment of effort go: mills, corrugated converting/customer-facing capacity, or flexibility?
2. What does the contrast between PCA's Q3 volume and price/mix results and its nine-month results tell you? What does it leave unresolved?
3. What plant, customer, market and project evidence would you require before a larger commitment?
4. What downside indicator or threshold would cause you to change your priority?

State your assumptions. Do not treat management's explanation as proven causation, a forecast as an actual result, or a public shipment trend as evidence of project economics. No financial model is required.

Sources

- **[S1]** Packaging Corporation of America, 2023 Form 10-K, filed 29 February 2024. [SEC filing](#), business/segments and risk factors.
- **[S2]** PCA, 2024 Q3 Form 10-Q, filed 7 November 2024. [SEC filing](#), Item 2, pp. 16-24: operating results, shipments, price/mix, segment bridges, capital investment and Jackson conversion.
- **[S3]** PCA, “Packaging Corporation of America Reports Third Quarter 2024 Results,” 22 October 2024. [Company release](#).
- **[S4]** International Paper, 2024 Q3 Form 10-Q, filed 1 November 2024. [SEC filing](#), Item 2 and Item 1A: Q3 context, 80/20 strategy, restructuring and closures.
- **[A1]** Haizheng Li and Feng Zhang, “Inventory, Price, and Output in the Linerboard Industry,” Georgia Tech/CPBIS Working Paper 2006-01, February 2006. [Working-paper listing](#); [full displayed text](#). Numbered main text pp. 1-15; references pp. 16-17; tables follow.
- **[A2]** Haizheng Li and Jifeng Luo, “Industry Consolidation and Price in the US Linerboard Industry,” *Journal of Forest Economics* 14(2) (2008):93-115. [Publisher abstract](#); [DOI](#). Abstract/partial publisher text only.
- **[A3]** Laurits R. Christensen and Richard E. Caves, “Cheap Talk and Investment Rivalry in the Pulp and Paper Industry,” *Journal of Industrial Economics* 45(1) (1997):47-73. [Publisher abstract](#); [DOI](#). Abstract only.