



PROCURE ANALYTICS

# **Market Point of View Update - Packaging**

**Procure Analytics**

November 2023

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- These slides are a living document that contain information related to the packaging industry and current market conditions.
- The objective is to communicate the market dynamics impacting the overall health of the packaging industry. These include changes in the supply chain, operating rates, capacity adjustments, price movements, and lead times.

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*“Understanding industry structure is also essential to effective strategic positioning.”*

Michael E. Porter, HBR's 10 Must Reads on Strategy

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# Agenda

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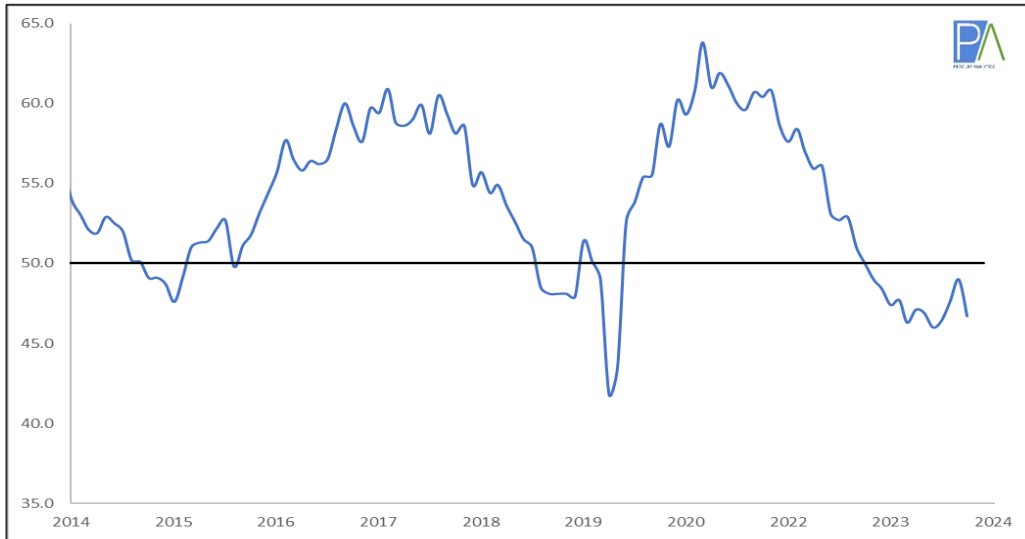
- Executive Summary (page 4)
- Manufacturing Updates (page 5 - 9)
- Supply Chain Updates (page 10)
- Packaging Price Forecasts (page 11 - 16)
- Pallet Market Overview (page 17 - 19)
- Appendix (page 20 - 26)

- **Manufacturing & Lead Times:** U.S. Manufacturing declined in October and remains in contraction territory. Box shipments improved in 3Q2023 and projected to grow in 2024. Suppliers continue to take significant downtime and shutter machines. Lead times for boxes and sheets are holding steady.
- **Supply Chain Update:** Global supply chains have stabilized. Transportation costs have flattened over the past quarter.
- **Price Forecasts:** Containerboard prices held firm in October and are projected to steady in 2024. Box prices are also stabilizing. Polyethylene prices held firm in October and are projected to flatten through 1H2024.
- **Pallet Update:** The pallet market continues to experience weakness. Prices are stable to down across all regions. Prices are projected to flatten out through 1Q2024
- **Call to Action:** PA encourages you to ask how we can help you drive sustained savings on your packaging as market conditions change. We have a plethora of options to help you achieve your goals. Speak to your PA representative to learn more!

# Manufacturing declined in October; Inflation persists

## ISM® PMI®

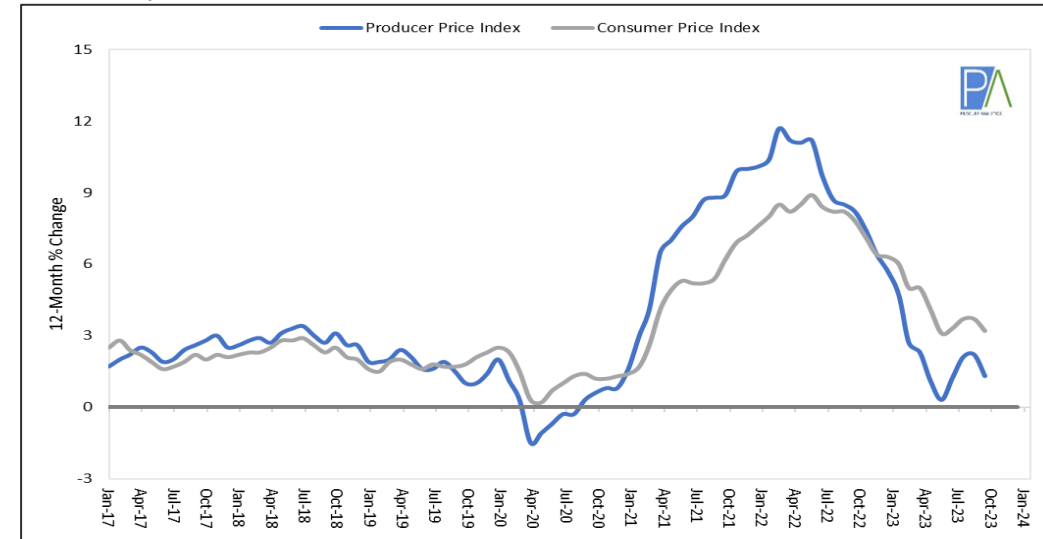
A reading below 50 indicates manufacturing sector contracting



Data source: Institute of Supply Management®, Fastmarket RISI estimates, PA internal analysis

## Price Indics: Producer Price Index (PPI) + Consumer Price Index (CPI)

Commodity Data + All Urban Consumers



Data sources: US Bureau of Labor Statistics, Producer Price Index, Consumer Price Index, PA Internal Analysis

## Commentary

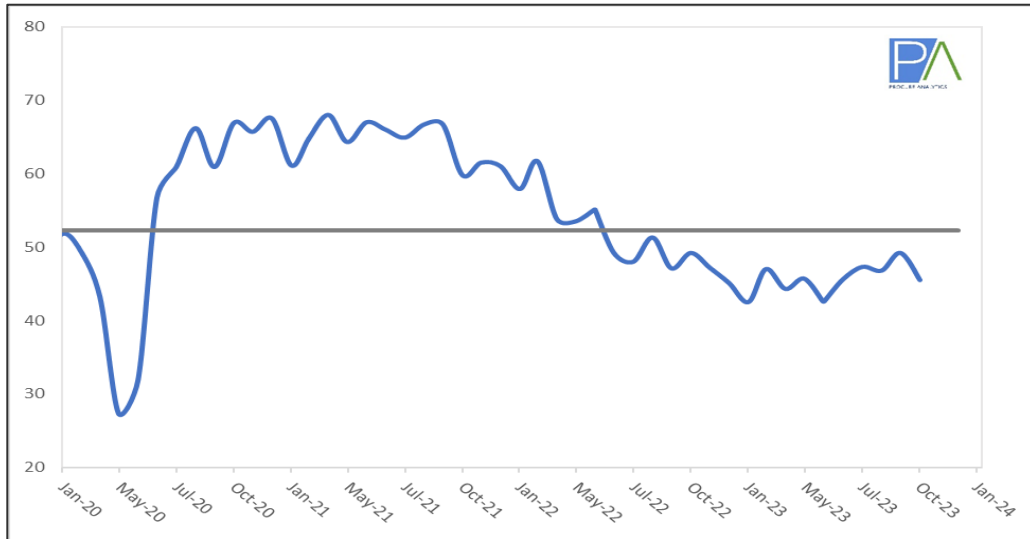
- U.S. Manufacturing activity regressed in October. The October Manufacturing Purchasing Managers Index was reported at 46.7, falling from September's rating of 49.0. Manufacturing weakness is expected to continue through the balance of the year before stabilizing in 2024.
- Both the Producer Price Index (PPI) and Consumer Price Index (CPI) declined in October. PPI is up 1.3% year-over-year, while CPI is up 3.2%. Reduced energy costs were the primary drivers of decreased inflationary pressure across both indicis.

# New orders remain in contraction territory; Inventories fell in October



## ISM® New Orders

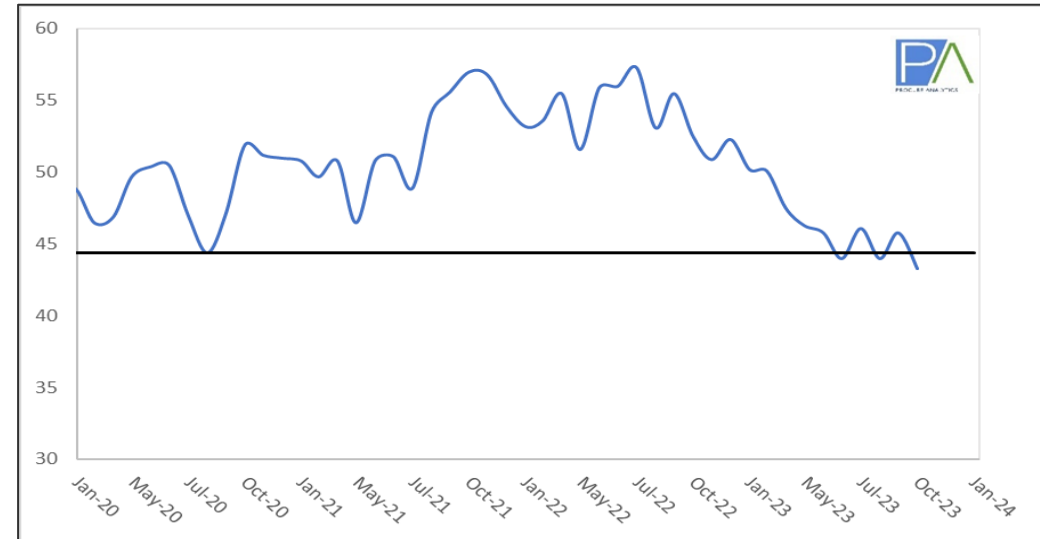
A reading below 52.2 indicates new orders contracting



Data source: Institute of Supply Management®, Fastmarket RISI estimates, PA internal analysis

## ISM Manufacturing Inventory Levels

44.4 is the B.E.A. Overall Mfg. Inventories Breakeven Line



Data sources: US Bureau of Labor Statistics, Producer Price Index, Consumer Price Index, PA Internal Analysis

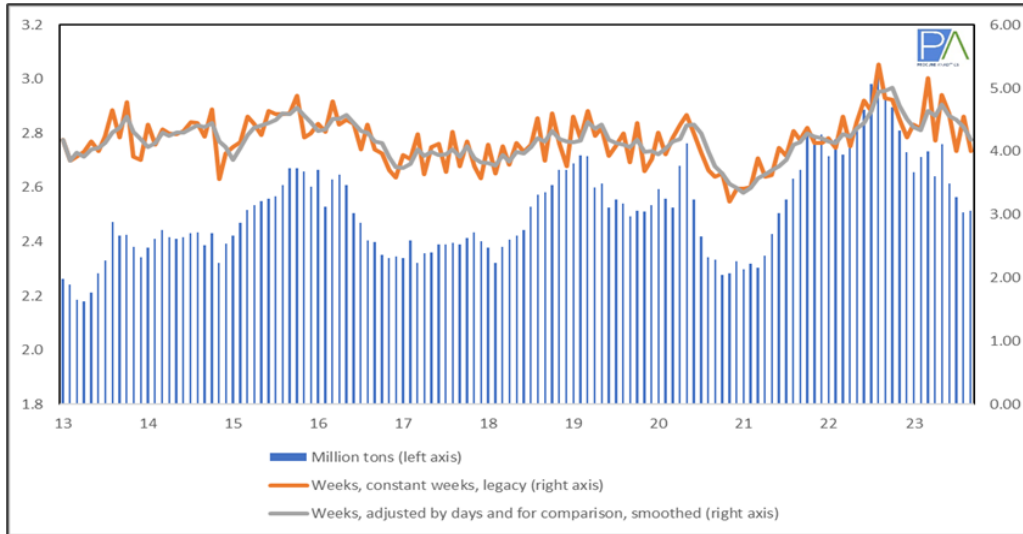
## Commentary

- New orders in November were reported at 45.2, decreasing from October's rating of 49.2.
- Inventory levels declined in October were reported at 43.3, decreasing from September's rating of 45.8.

# Containerboard inventories have returned to healthy levels; Box shipments are projected to grow in 2024

## Containerboard Inventories at Box Plants and Mills

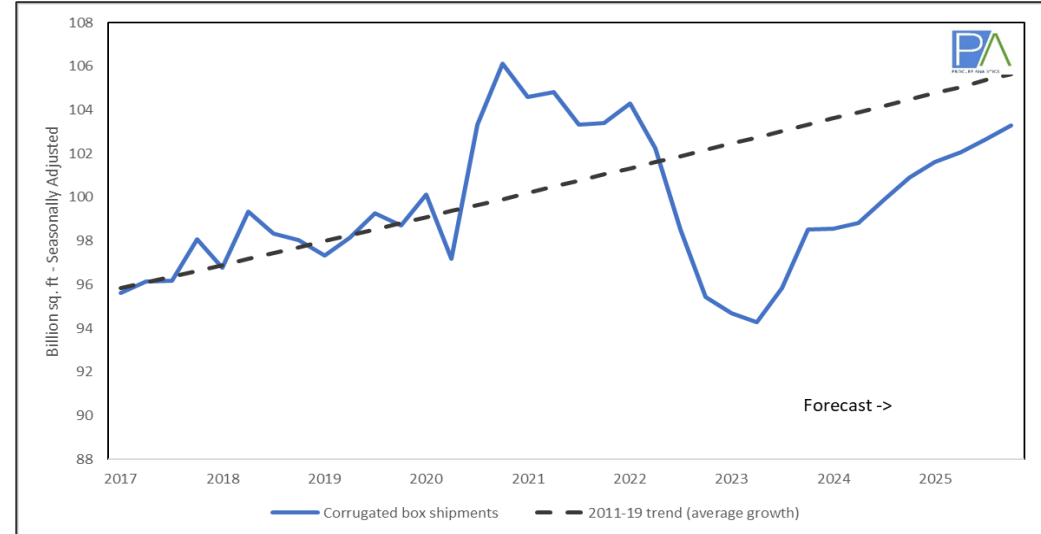
Million tons and weeks of supply



Data sources: Shipments and plant inventories - Fibre Box Association; mill inventories - AF&PA; Fastmarkets seasonal adjustments and calculations; PA Internal Analysis

## US Quarterly Box Shipment Forecast

Billion sq. ft - Seasonally Adjusted



Data sources: Fibre Box Association with Fastmarkets RISI seasonal adjustment and forecast; PA Internal Analysis

## Commentary

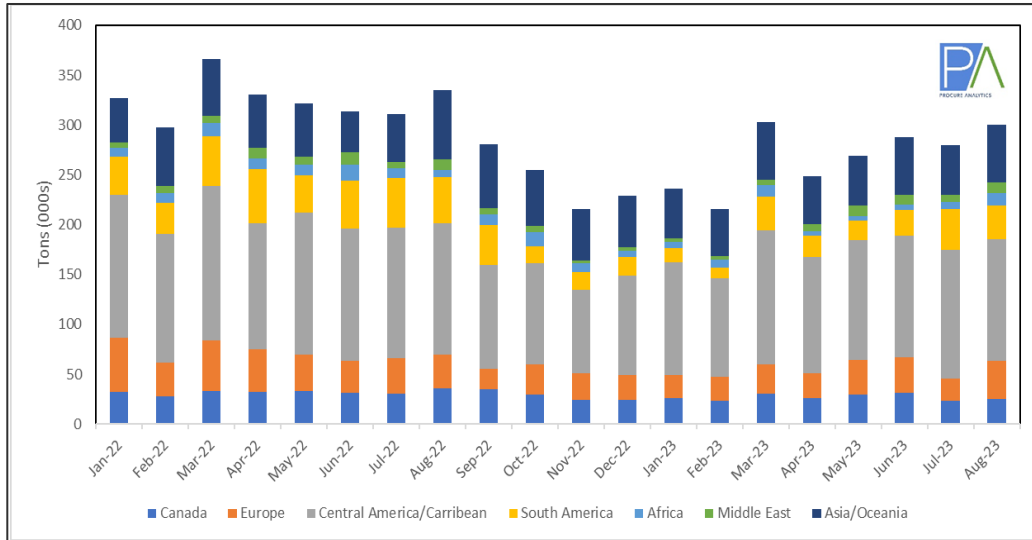
- Corrugated box shipments began to recover in 3Q2023, with non-seasonally adjusted box shipments rising 0.4%. This equates to a -4% decline in year-over-year shipments in the quarter, a significant improvement from the previous three (3) quarters, which averaged -8.3% year-over-year declines. Box shipments are expected to grow 3.9% in 2024 and 2.9% in 2025.
- Suppliers have responded to weak market conditions with extensive downtime or mill closures to manage inventory levels (see appendix for more details). Inventories currently sit at 4.0 weeks. Operating rates are projected to stay at or below 90% through 2024



# Kraftliner exports have stabilized; Export prices were flat for first time in one (1) year in September

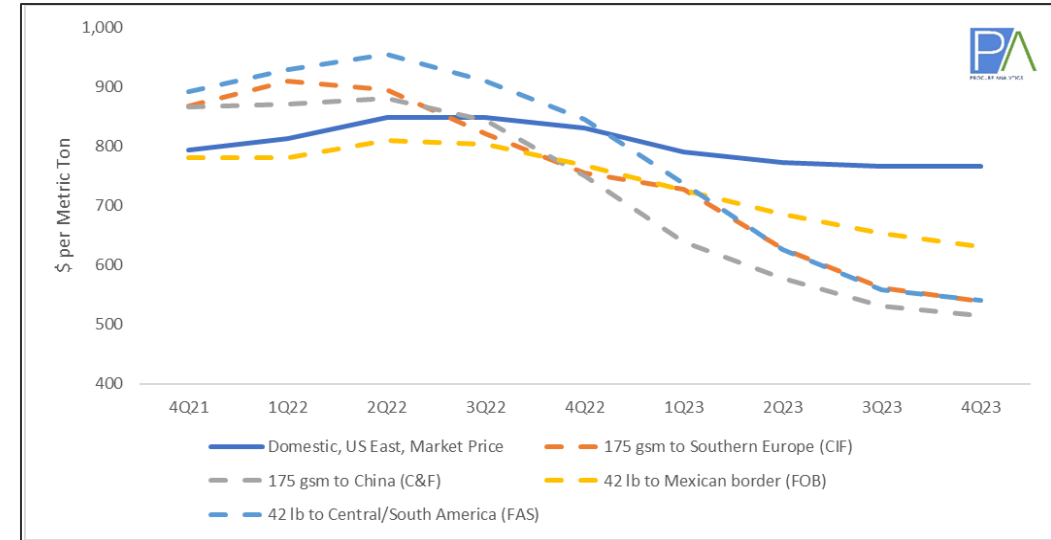


US Kraftliner Exports by Destination



Data Source: US Commerce Department Trade, aggregated by Fastmarkets, PA internal analysis

42# Kraftliner | Domestic and Export Prices



Data sources: Data Source: RISI Fastmarket estimates, PA internal analysis

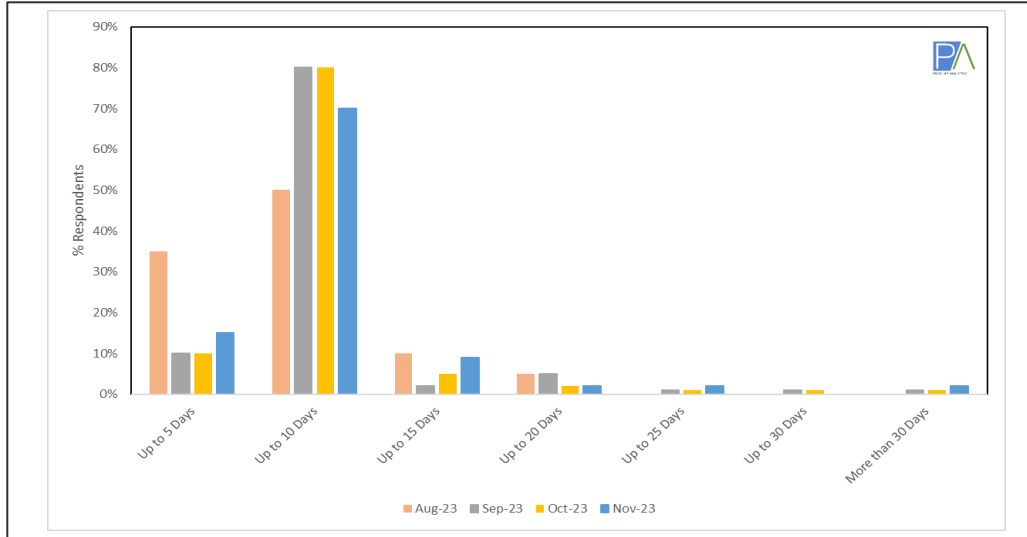
## Commentary

- US containerboard exports have grown steadily since 1Q23, reaching 275,000 tons in August. US producers are defending their global share, even though they've had to absorb steep price decreases.
- Export prices to Mexico, Central and South America, and China declined in October. Prices to Europe declined in dollars but were stable in euros. The spread between domestic and export prices remains at record levels.

# Finished box lead times average 10 days; Sheet lead-times average 2 days

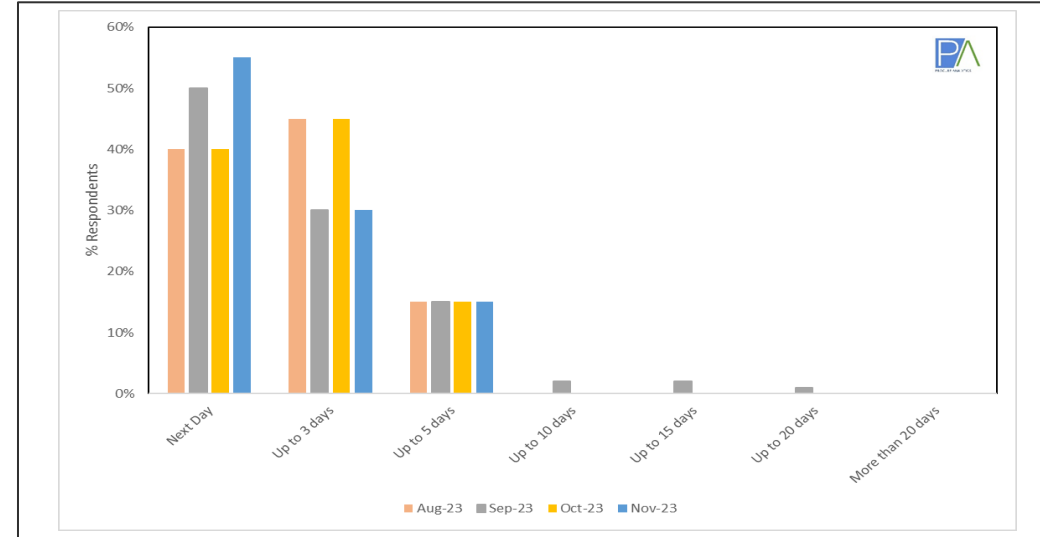


### Average Lead Time for Finished Boxes



Data sources: Green Markets Box Report, PA Internal Analysis

### Average Lead Time for Sheets



Data sources: Green Markets Box Report, PA Internal Analysis

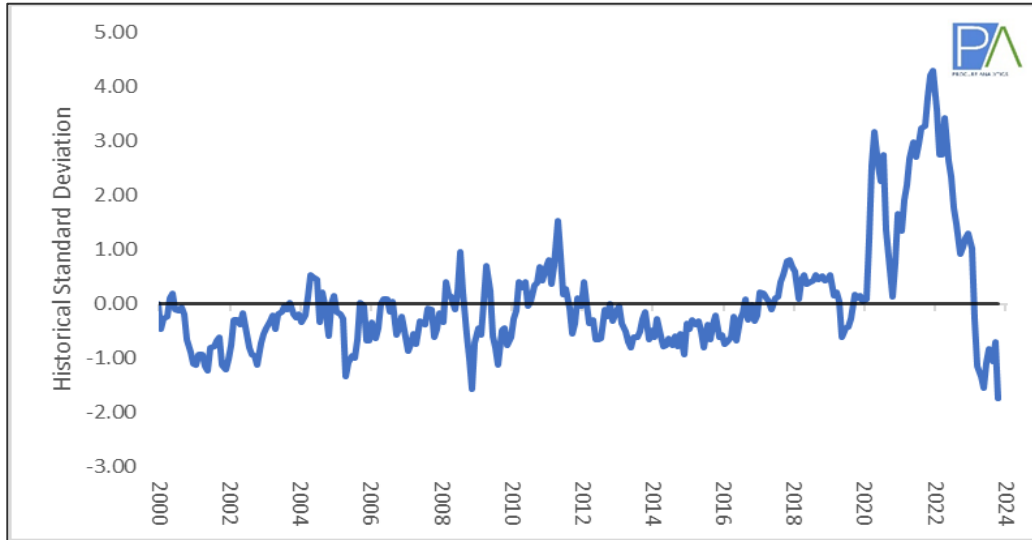
## Commentary

- Finished box lead times currently average ten (10) days. ~85% of orders are delivered in 10 days or less.
- Sheet lead-times average two (2) days across all regions. ~85% of buyers are able secure sheets in 3 days or less.

# Supply Chains pressure has eased; Transportation costs have flattened

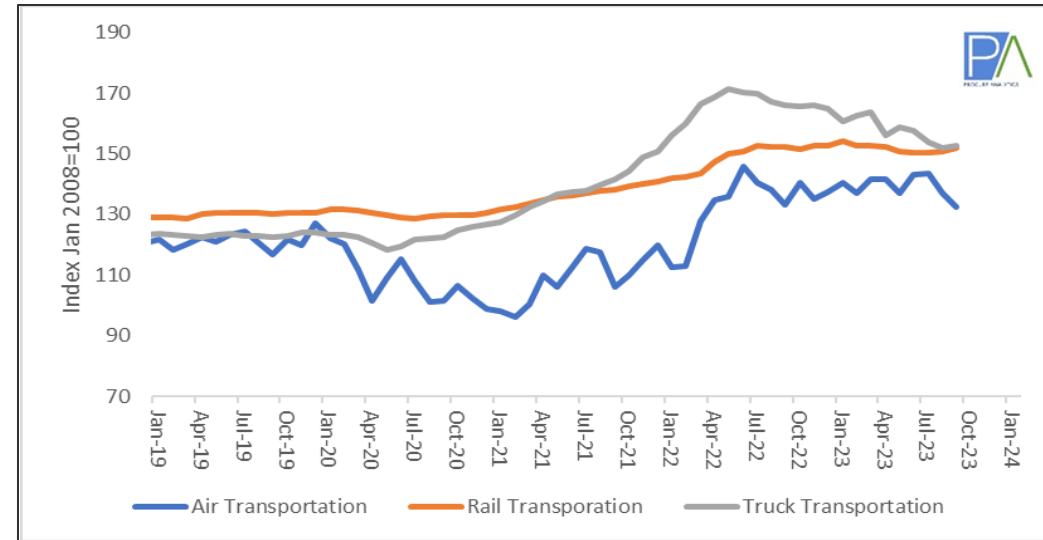


### Global Supply Chain Pressure Index



Data Sources: Federal Reserve Bank of New York, Global Supply Chain Pressure Index, PA Internal Analysis

### Producer Price Index by Industry: Transportation



Data Sources: US Bureau of Labor Statistics, Producer Price Index, Federal Reserve Bank of St. Louis, PA Internal Analysis

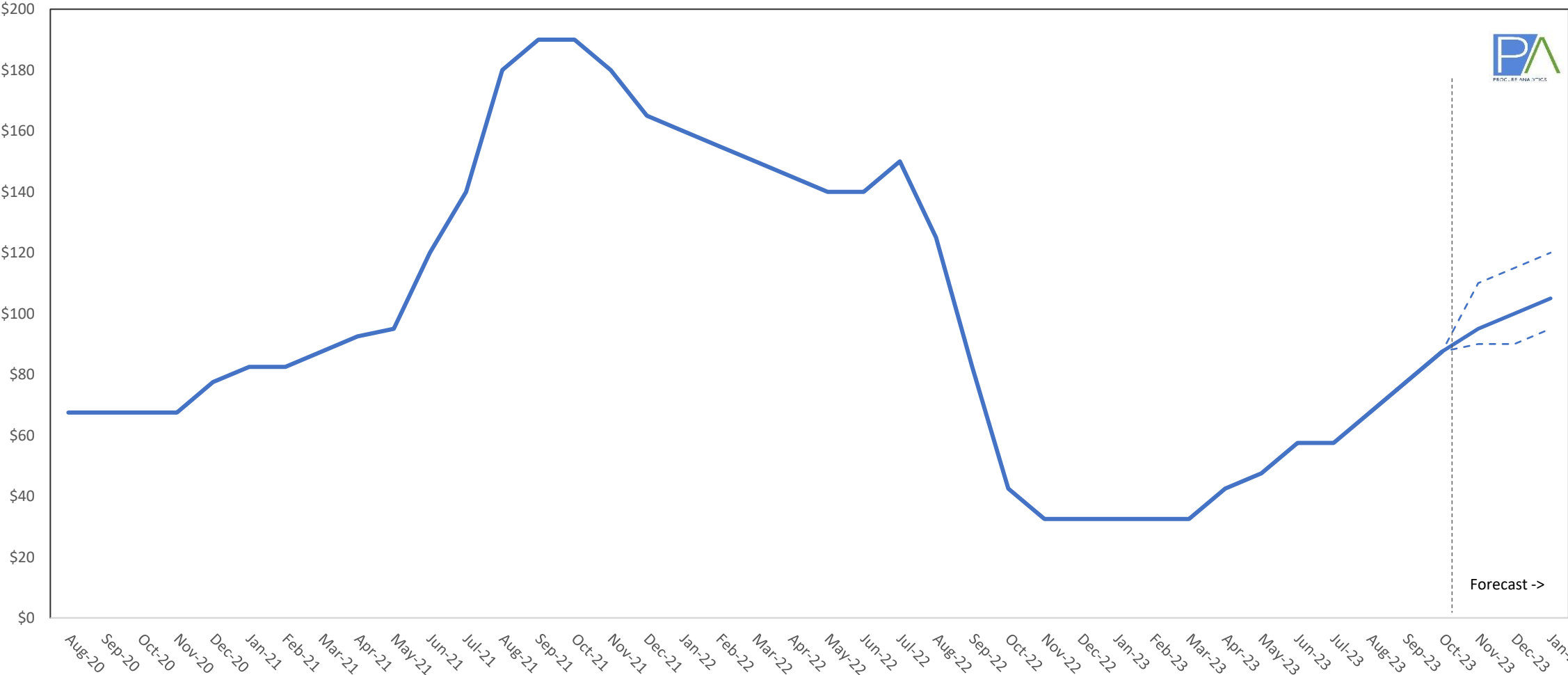
## Commentary

- The Global Supply Chain Pressure Index (GSCPI), a measure of global transportation and manufacturing indicators, was listed at -1.74 in October
- Air prices declined in September. Rail and truck prices were flat month over month.
- Global container rates currently average ~\$1,120

# OCC prices increased \$10/ton in October. Additional increases expected



Old Corrugated Containers (OCC), Domestic, FOB | Nominal Pricing | \$ per Ton

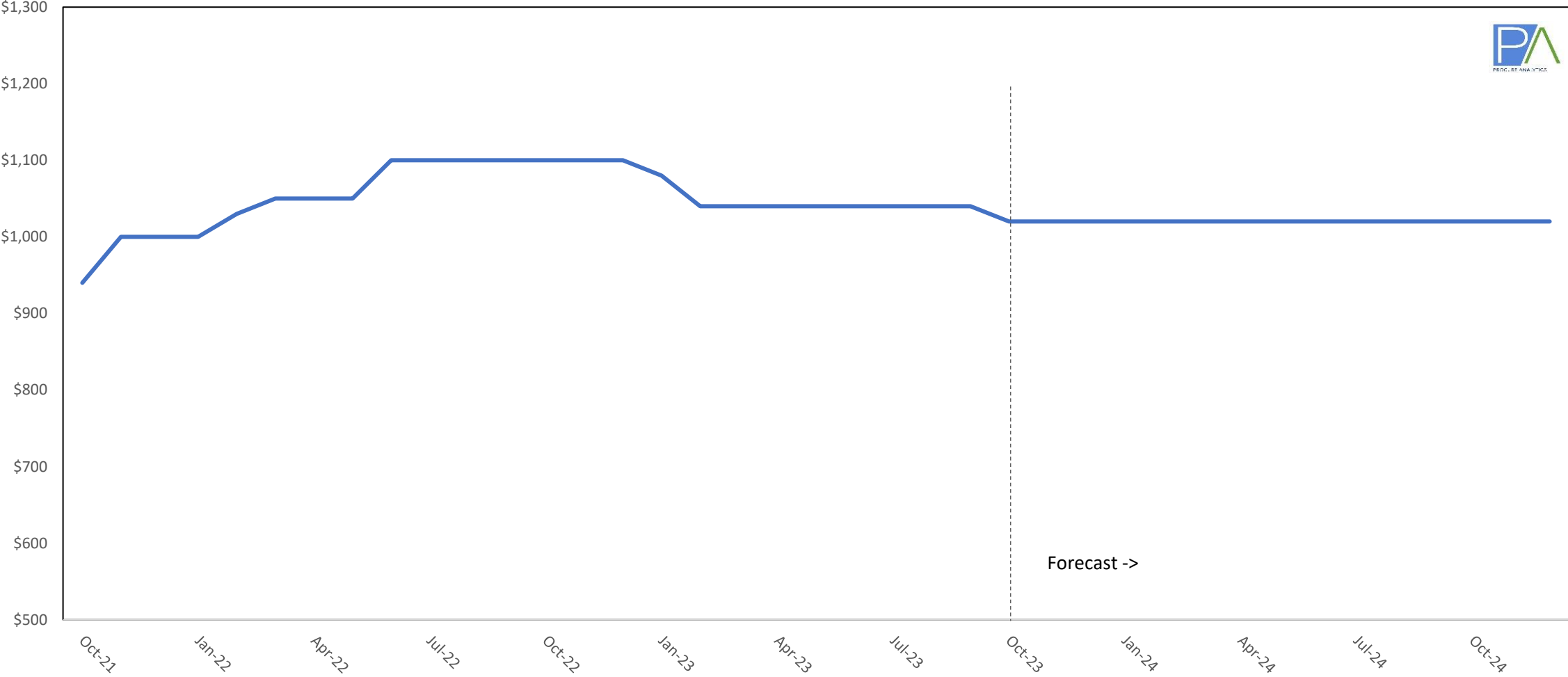


Data Source: RISI Fastmarket estimates, PA internal analysis

# Uncoated Recycled Board declined in October. Forecasts call for steady pricing through 2024



Uncoated Recycled Board (URB) | Nominal Pricing | \$ per Ton

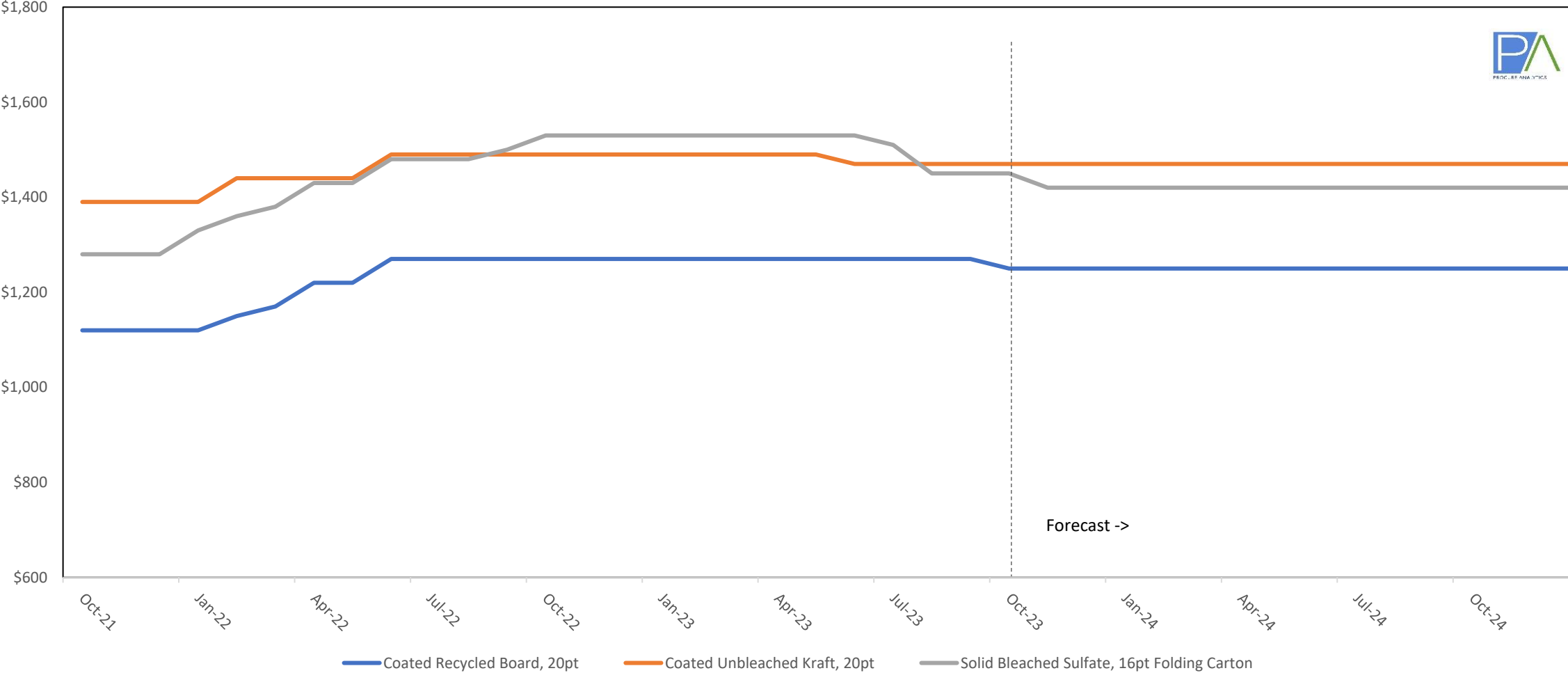


Data Source: RISI Fastmarket estimates, PA internal analysis

# Coated Recycled Board declined in October. Boxboard prices are projected to stabilize in 2024



Boxboard | Nominal Pricing | \$ per Ton

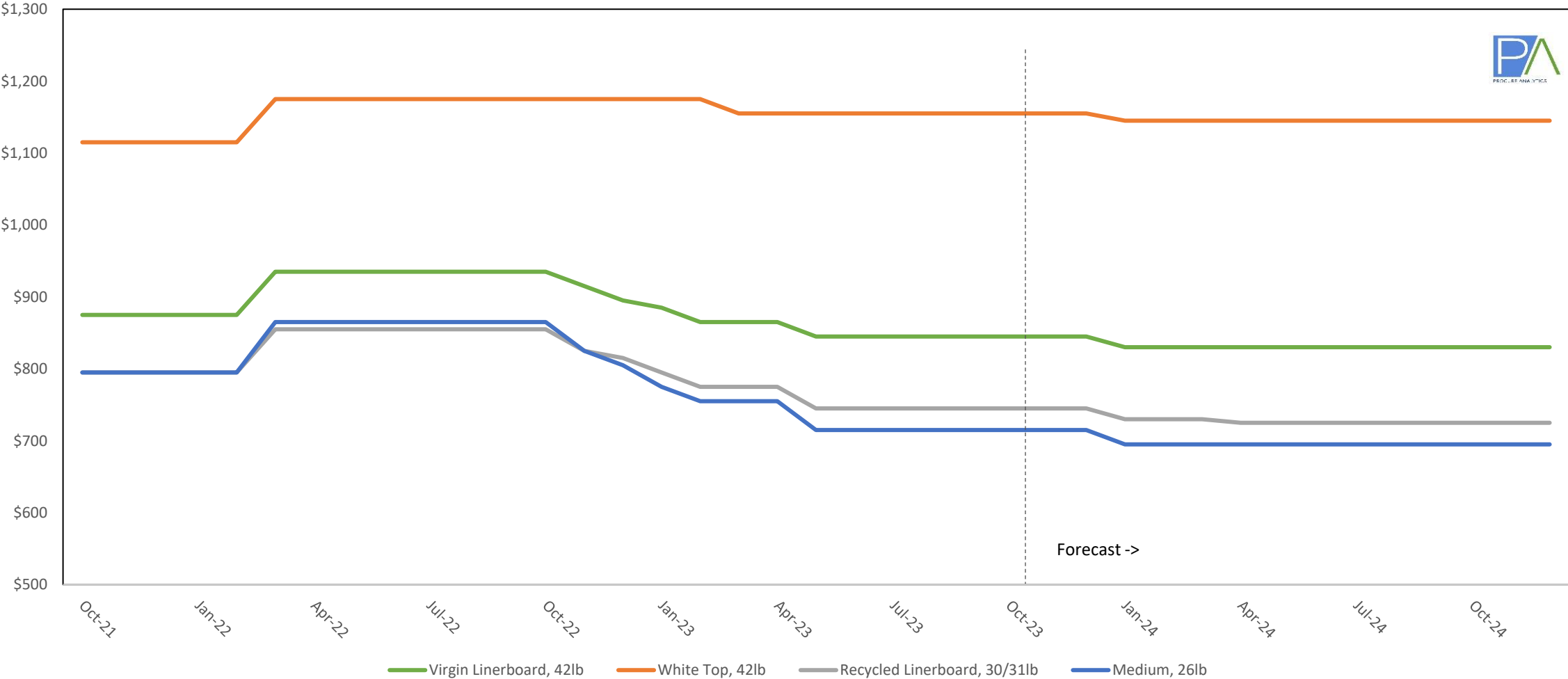


Data Source: RISI Fastmarket estimates, PA internal analysis

# Linerboard and Medium prices held firm in October. One (1) additional decrease is projected during 1Q2024



Containerboard Indices | Nominal Pricing | \$ per Ton

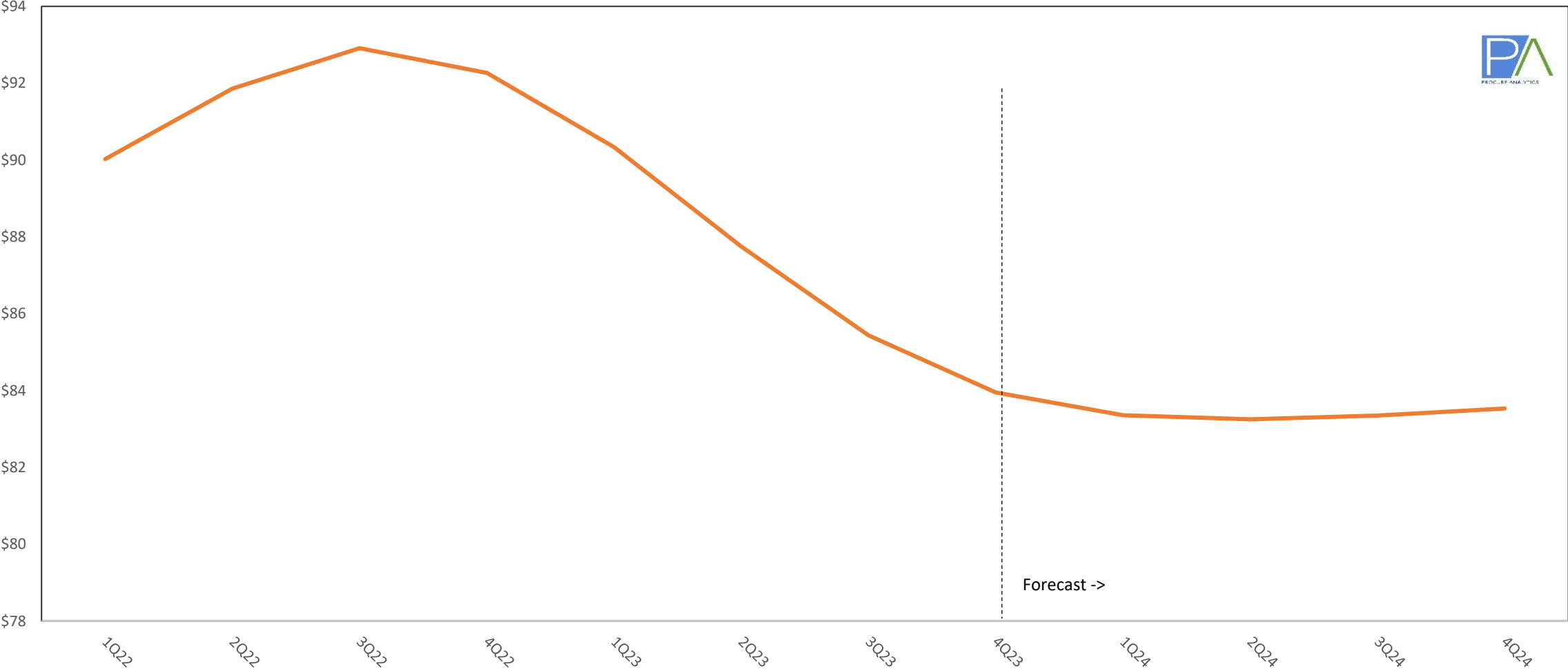


Data Source: RISI Fastmarket estimates, PA internal analysis

# Corrugated box prices are forecasted to stabilize in 2024



N.A. Corrugate Box Prices | 32 ECT | \$ per MSF



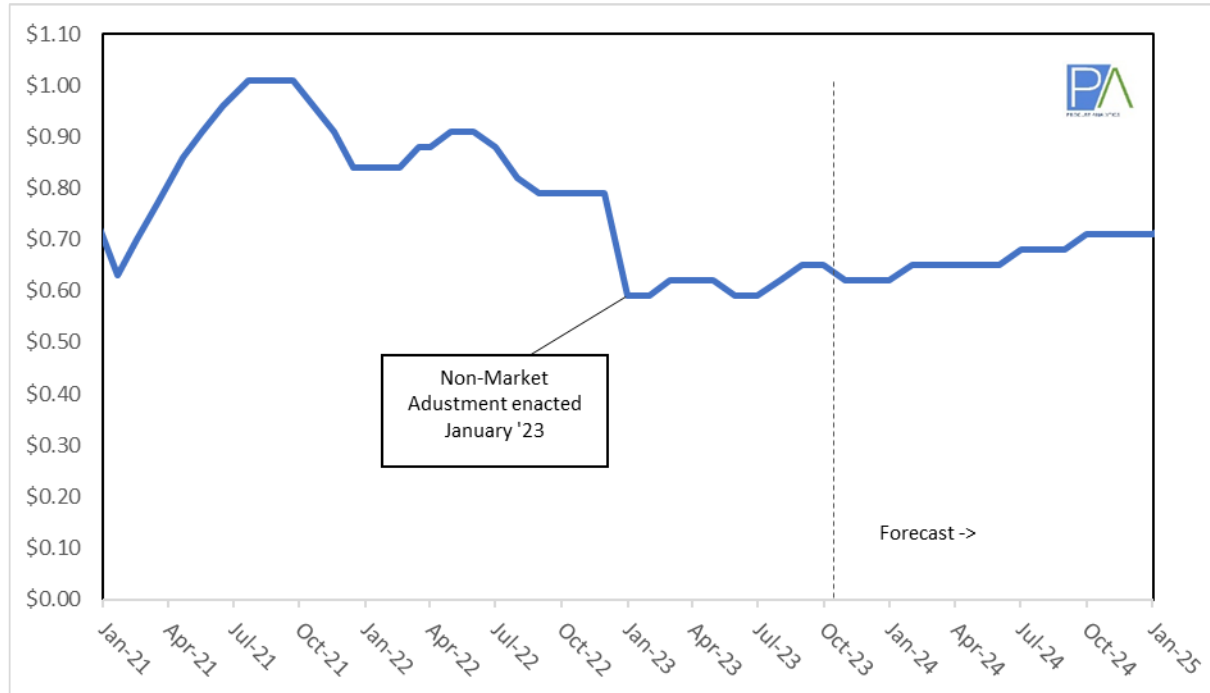
Data Source: RISI Fastmarket estimates, PA internal analysis



# LLDPE prices held firm in October. Prices are projected to flatten out through 1H2024

## Linear Low-Density Polyethylene Forecast

HOM Film Hopper Car, \$ per pound



Data Source: ICIS Estimates, PA internal analysis

\*Linear Low Density Polyetholene (LLDPE) impacts all resin-based items, including (but not limited to): stretch wrap, shrink wrap, bubble wrap, poly bags, poly mailers, etc

## Commentary

- Linear Low-Density Polyethylene (LLDPE) prices for October 2023 are estimated to be flat, following a 3-cent increase in September 2023. Current forecasts project prices to flatten out through 1H2024.
- LLDPE production and sales decreased in September, while inventories increased. Days of supply are above normal levels.
- LLDPE exports were strong in the first nine months of 2023, but may face challenges from weak global demand and lower oil prices.

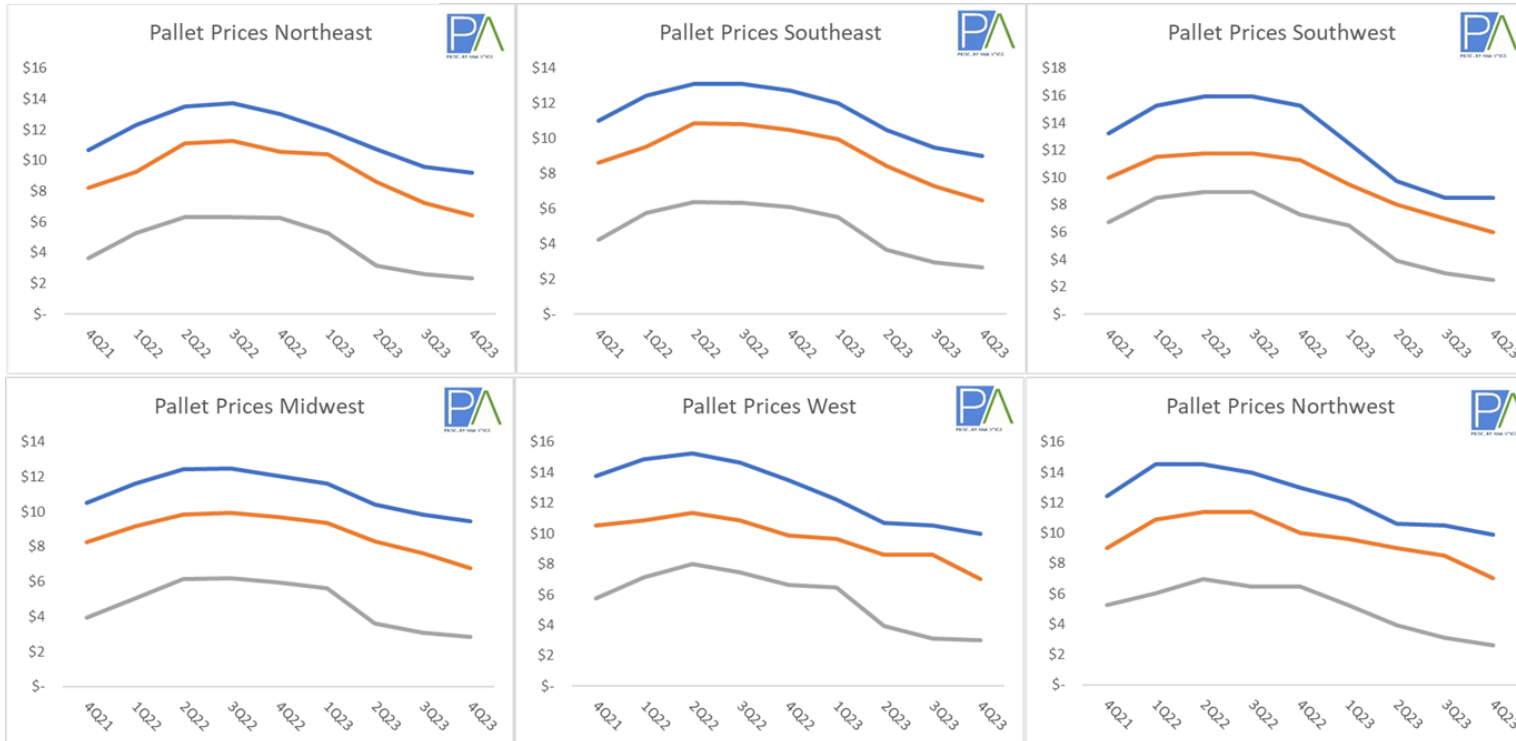
# Pallet prices continue to flatten as demand remains low



## Pallet Prices by Region

US dollars per pallet

- #1 48x40 Hardwood GMA Pallet Prices
- #2 48x40 Hardwood GMA Pallet Prices
- Typical Core Prices Delivered to the Recycler



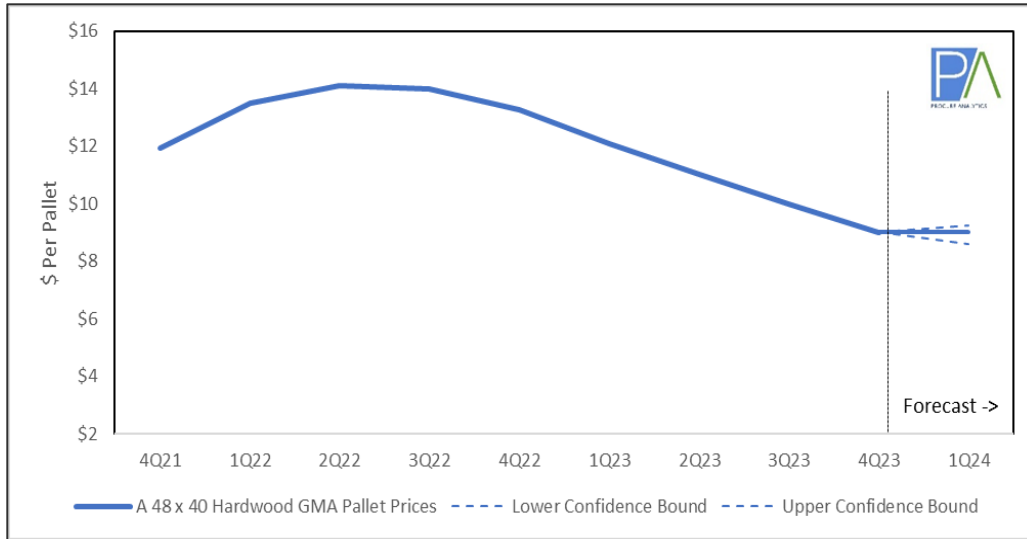
Data Source: Pallet Profile Weekly, PA Internal Analysis

## Commentary

- Pallet pricing continues to trend steady to decreasing across regions as pallet providers reduce pricing in attempt to deplete inventory.
- Demand has seen a slight increase due to late agricultural and holiday preparations. But overall, remains low overall.
- Pallet recyclers report low core prices as inventory accumulates. High-quality cores are in greater demand, while low-quality cores hold minimal value.

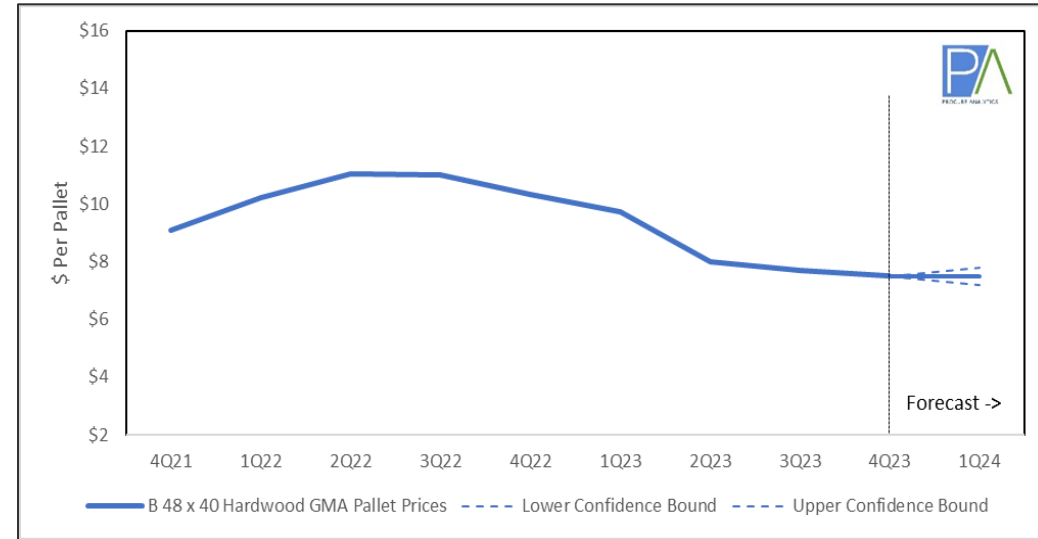
# Pallet prices are projected to stay steady through 1Q2024

### A Grade Pallet Forecast



Data Source: Pallet Profile Weekly, PA Internal Analysis

### B Grade Pallet Forecast

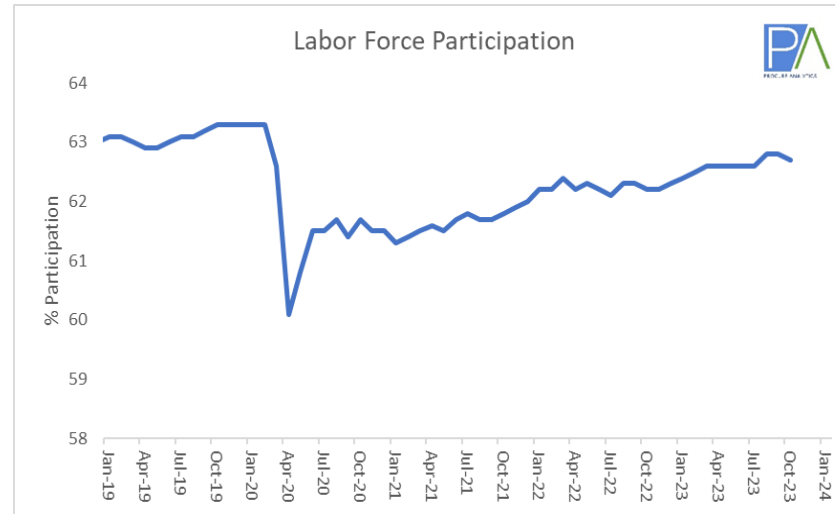
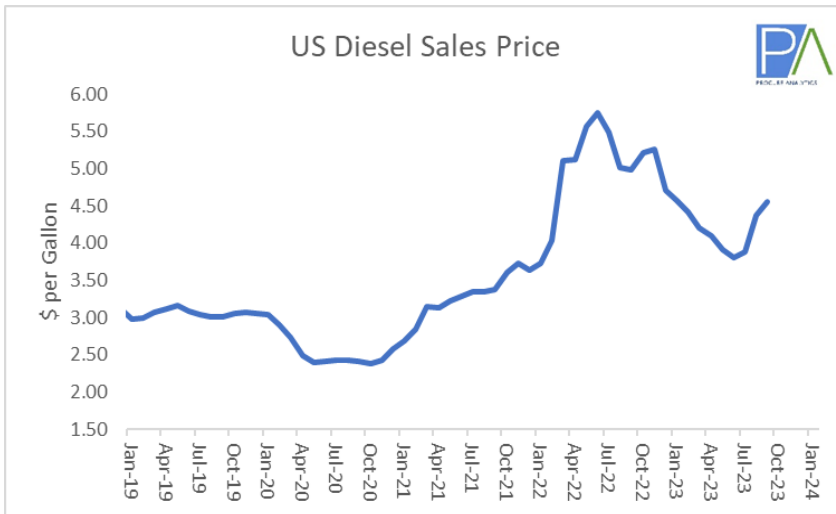
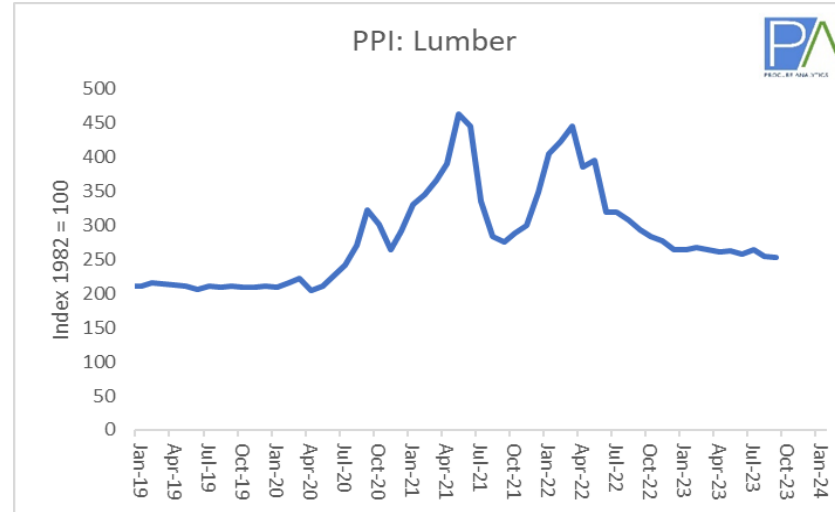
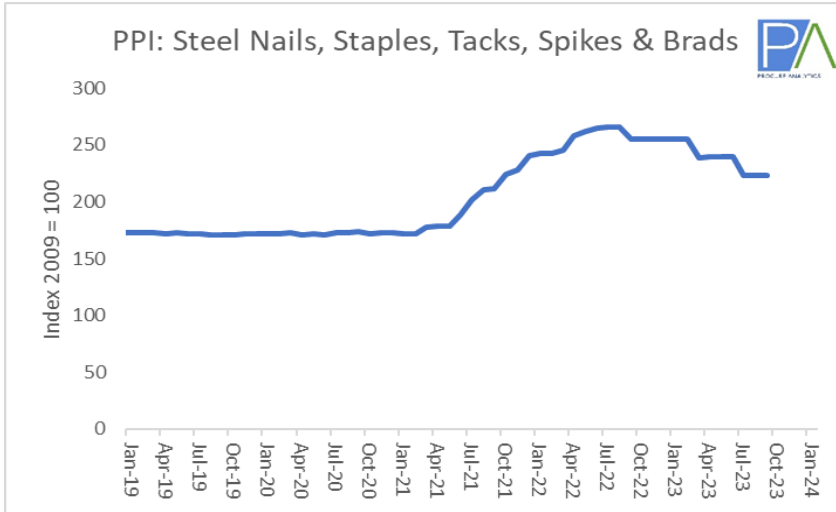


Data Source: Pallet Profile Weekly, PA Internal Analysis

## Commentary

- The baseline forecast shows pricing stabilizing through 1Q2024.
- The high side forecast shows prices increasing slightly in 1Q2024 as demand starts to recover.
- The low side forecast shows pricing continuing to fall as demand stays weak and buyers secure incremental price concessions.

# Pallet Raw Material Cost Inputs



Data Sources: US Bureau of Labor Statistics, U.S. Energy Information Administration, Federal Reserve Bank of St. Louis, PA Internal Analysis

PA

# **APPENDIX**

# Containerboard Mill Closures and Idling's Summary: 2023



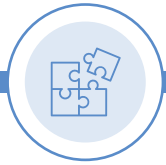
Supplier	Mill	Announcement	Capacity Impact (Tons)	Date	Details
Cascades	Niagara Falls, NY	Mill Closure	(90,000)	Apr-23	Recycled medium mill. Been down since Nov '22. Permanent closure announced in April
WestRock	North Charleston, SC	Mill Closure	(550,000)	Aug-23	Permanent closure will take place in August 2023. Produces containerboard & other packaging grades. ~1/2 of capacity is kraftliner
PCA	Wallula, WA	Mill Idling	(560,000)	May-23	Temporary shutdown, driven by "economic conditions". PM3 to restart during 4Q2023
Stora Enso	De Hoop mill, Netherlands	Mill Closure	(380,000)	Oct-23	Permanent closure. Will take place in 4Q2023. Produces containerboard, plaster board, and honeycomb packaging
Stora Enso	Ostrołęka mill, Poland	Mill Closure	(380,000)	Oct-23	Permanent closure. Will take place in 4Q2023. Produces recycled containerboard.
WestRock	North Charleston, SC	Mill Closure	(510,000)	Sept-23	Permanent closure will take place in October 2023. Produces linerboard, white top, kraft bag, and market pulp
International Paper	Orange, TX	Mill Closure	(795,000)	Dec-23	Permanent closure will take place by December 2023. Produces kraft papers
Greif	Santa Clara, CA	Mill Closure	(85,000)	Dec-23	Permanent closure will take place by December 2023. Produces corrugated medium

# Containerboard Expansion Summary: 2023



Supplier	Mill	Announcement	Capacity Impact (Tons)	Date	Details
Domtar	Kingsport, TN	Capacity Add	600,000	YE 2022	Done. Machine started up in January. Converted an UFS machine to RCB and unbleached kraft paper
Cascades	Ashland, VA	Capacity Add	465,000	1Q 2023	Done. Machine has started running in May. Conversion to lightweight board Volmet PM
Atlantic Packaging	Whitby, ON	Capacity Add	400,000	1Q 2023	Done. Machine started up in February. New PM to make high-performance lightweight containerboard
ND Poper	Biron, WI	Capacity Add	400,000	1Q 2023	In startup. Converted PM capacity expected at 240,000 tons/yr. RCB and 160,000 tons/year UBL kraft paper.
Pratt Industries	Henderson, KY	Capacity Add	540,000	Fall 2023	Grading work started for new 100% recycled-content containerboard machine

# Why Join PA? Why Now?



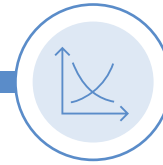
**Category Expertise**



**Engineering**



**Account Management**



**Market Intelligence**

## Why we're advantaged in today's market

- Procure Analytics partners with suppliers that provide the best savings and service to YOU.
- We are with you from data collection → implementation → category management → optimization → and beyond with our white glove GPO service model .
- The items we support for our members are tied to supply agreements and indexes.
- We leverage our market intelligence and packaging expertise to develop member-specific solutions that fit your needs.

## What can PA Packaging do for you?



**Category Expertise:** Detailed analysis, optimized spend solutions, and improved payment terms



**Engineering:** Support for all implementation/optimization projects, and on-site services at your request



**Account Management:** Superior customer service through price/supplier auditing, KPI reporting, and troubleshooting services



**Market Intelligence:** Key market insights, leveraged to maximize savings for you

We are approachable experts with 150+ years of Packaging Experience - provided to YOU at NO COST!



<p><b>Data and Analytics</b></p>	Reporting	Create custom spend, savings, and other reports for members. Access to business intelligence tools that consolidate all programs' performance information in a single location with the ability to view the data in different dimensions
	AP Spend Cube analysis	Obtain member spend from ERP or financial system (vendor level information) and categorize spend into MRO and non-MRO categories and sub-categories. Identify areas of opportunity to consolidate spend with PA suppliers
	Benchmarking activity	PA tests the market price, plus negotiates pricing with the preferred suppliers
<p><b>Consulting Services</b></p>	Project Management	PA drives and monitors goals and objectives through detailed project management activities and documentation
	SKU Consolidation	SKU optimization helps members realize cost savings and achieve operational efficiencies
	Admin Cost Reduction	<p>PA Performs several activities to reduce administrative costs</p> <ul style="list-style-type: none"> <li>• Audits to verify that the price paid per SKU is correct</li> <li>• Reduce # of vendors: by consolidating spend to PA suppliers, members manage fewer vendor relationships</li> <li>• Reduce # of POs/invoices: by consolidating spend to PA suppliers, members manage fewer POs and therefore fewer invoices</li> <li>• Reduce # of packages delivered</li> </ul>
	Data Cleaning	PA takes members' vendor-level or SKU-level data, standardizes it, and adds a taxonomy to easily categorize the data
<p><b>Adoption Tracking</b></p>	Site Visits & Reports	PA conducts site visits and generates a report of existing processes, and potential improvements to gain operational efficiency and savings opportunities
	Market Information	PA provides members with market information, such as manufacturer promotions, raw materials and finished goods pricing, inflation, trends, and other macroeconomic data to help inform members' procurement strategies
	Supplier Management	<ul style="list-style-type: none"> <li>• Expedite orders to reduce lead time</li> <li>• Provide access to higher level decision-makers at suppliers</li> <li>• Contract Management</li> <li>• Incentives: how members can qualify for certain rebates based on spend patterns</li> </ul>
	Conflict & Problem Resolution	PA provides a consultative approach to problem solving. We take identified challenges, research the problem, and recommend a solution. We also design plans to prevent similar issues in the future

## Primary Types of Recycled Pallets (by quality)

- A+ Grade
- A Grade
- B Grade

## 48 x 40 GMA Recycled Pallets are a barometer of pallet market

- These are non-custom, industry standard pallets, designed to meet the guidelines of the food industry, as defined by the Grocery Manufacturers Association (GMA)
- Prices are reported at the unit price level (\$/pallet)

## Key drivers of pallet costs:

- Labor rates
- US Diesel costs
- Lumber (reported per thousand board feet (\$/MBF))
- Nails

# Types of Recycled Grade Pallets

**A+ Grade**



Resembles new pallets used 1-2 times

**A Grade**



Pallets used 2-4 times

**B Grade**



Pallets used 4-7 times