

PRICE ASSESSMENT METHODOLOGY AND SPECIFICATIONS

Packaging Paper and Board – Latin America

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KEY CONCEPTS

Each price assessment is...

RISI's assessment of the **open market reference price** for **recurring business** based on **actual transaction prices** and supporting data gathered from a **systematic survey of buyers and sellers** that has been **rigorously evaluated**.

Open market prices are those arrived at through negotiation, so exclude:

- Transfers between an integrated producer and its own converting plants
- "Indexed" transactions, i.e. transactions whose price is determined by a formula based on published prices (whether from RISI or other source)

(See "Grade detail and specifications" below)

A **reference price** assessment represents the price negotiated each month that may serve as a basis from which customer-specific discounts are given based on the customer's volume or long-term relationship with a supplier. (See "Grade detail and specifications" below)

Recurring business: Reflects transactions in ongoing supply relationships (See "Grade detail and specifications" below)

Actual transaction prices form the bulk of data in each assessment; supporting data like price offers made or received is used to support transaction data. (See "Types of data considered" below)

Systematic survey of buyers and sellers: Survey has thorough representation of the market and includes both buyers and sellers, and a range of players from small to large. (See "Data collection process" below)

Rigorous evaluation: Assessment procedures include evaluation, verification, weighting and aggregation, plus confirmation of the assessment by a supervising editor. (See "How prices are assessed" below)

About this methodology

This document describes the procedures RISI uses to determine its Latin American packaging price assessments. As of mid-2015, this methodology has been strengthened by application of the Principles for Oil Price Reporting Agencies published by IOSCO, the International Organization of Securities Commissions (www.iosco.org).

RISI has *voluntarily* chosen to adapt these principles to the markets we cover even though our markets fall outside of the governance of IOSCO and the Principles. That's because these guidelines represent the internationally recognized gold standard in price assessment. By adapting and implementing these principles, RISI demonstrates its commitment to providing the highest degree of reliability in price reporting.

For more on the Principles and how RISI has applied them, see "Implementation of IOSCO's Principles for Oil Price Reporting Agencies" at www.risi.com/iosco.

HOW PRICES ARE ASSESSED

RISI indices creates price assessments in accordance with this methodology document and the internal RISI Indices Price Assessment Procedures Manual.

Who assesses prices

Prices are assessed by a Latin American team of packaging paper/board editors who are part of the RISI Indices group, which is separate from the RISI Analytics group that is involved in price forecasting. Standards for training, experience and skills required for editors involved in price assessment, as well as supervision of editors, are described in the RISI Indices Price Assessment Procedures Manual.

Data collection process

RISI makes price assessments based on a systematic survey of active market participants to find out agreed transaction prices and volumes as well as price offers made or received, and other supporting information such as supply and demand conditions.

The amount and type of information that a respondent provides each month varies across individuals and companies. Data from respondents providing more complete information is weighted more heavily in the final assessment. Price data are also weighted roughly according to tonnage.

Data providers

The survey includes both buyers and sellers, ensuring that the survey pool is balanced and representative of the overall market. Specifics are indicated in the "Grade Detail and Specifications" section below for each grade.

All market participants are encouraged to submit price data and supporting market information for inclusion in the assessment.

How data are provided

Each price period, the price assessor contacts data providers and collects data via phone interviews and emails.

Types of data considered

The following types of data may be included in an assessment, from most to least important. Each successive type of data is only considered if the volume of previous types is deemed insufficient to yield a reliable and representative market price assessment.

1. **Transaction prices**
 - a. Price levels
 - b. Change of price levels from previous period
2. **Price offers** made or received. A single offer price in itself cannot be considered a market price because it represents only one party's desire to

trade. The midpoint between a seller's offer to sell and buyer's comparable offer to buy is considered the market price level. As such, offers to sell are considered upper boundaries of the market price and offers to buy are considered lower boundaries.

3. **Trigger prices:** In absence of actual transactions or price offers, the price at which a seller would sell or a buyer would buy based on their assessment of the market.

Transaction prices are weighted most heavily. Data on price offers and estimates of market levels are considered when transaction price data is unavailable from a given source, but are given less weight in the calculation of the assessment.

Assessment calculation

Criteria for exclusion of data

Data are excluded from the assessment in the following cases:

- The price of a transaction is indexed to published prices from RISI or another source. A transaction price is considered to be "indexed" when it is entirely determined according to a formula based on a published price assessment.
- The transactions don't meet the assessment specifications. (See "Grade Detail and Specifications" section below.)
- The transaction has special circumstances that, in the price assessor's judgment, render it unrepresentative of the broader market and/or not repeatable. (This type of exclusion is rarely used.)

Weighting of data

- Higher-quality data are weighted more heavily than lower-quality data. Higher-quality data includes:
 - Data with more detail, e.g. prices reported as separate transactions with accompanying volume rather than an overall average price.
 - Data whose credibility is supported by answers to the assessor's follow-up questions.
 - Data from contacts with a history of reliability. Contacts are deemed more reliable if they:
 - Provide information that is corroborated by other sources
 - Provide complete and detailed information
 - Provide information regularly and consistently over time

- Report price information that goes against their natural interests (e.g. a buyer reporting higher prices or a producer reporting lower prices)

- Data are weighted according to the type of information (see "Types of data considered" above).
- Larger transactions are given more weight than smaller ones. However, the weighting of any single data provider's data is limited so that it doesn't dominate the assessment.

Controls and compliance

Ensuring consistency and quality of assessments

RISI has in place a number of procedures to ensure the consistency and quality of price assessments, including:

- **Sign-off:** Prior to publication, each price assessment is reviewed by a senior price assessor other than the assessor primarily responsible for the assessment to ensure the assessment is accurate and has followed proper procedures.
- **Quality assurance audit:** A supervising editor is responsible for overseeing containerboard, boxboard and kraft paper price assessments. The supervisor will periodically do a detailed review of decision-making for a given price assessment, reviewing price assessments in relation to assessments from similar markets, ensuring that the methodology has been followed consistently and that judgment has been applied appropriately.
- **Market review:** On a regular basis (i.e. annually for the main grades), Indices staff reviews markets and methodologies to ensure that assessment methodologies and the assessments they produce are appropriate for the market.

Independence and freedom from conflicts of interest

Please see RISI Indices' Conflicts of Interest Policy (www.risi.com/conflicts). Key points include:

Independence of RISI

RISI has no affiliation with buyers or sellers of forest products and therefore no vested interest in either higher or lower prices.

Absence of financial interest

RISI is free of ownership or other ties that would give it a financial interest in the movement of prices we report. RISI prohibits its employees who conduct price assessments from having a financial interest (excluding passive investments like mutual funds) in companies whose values are directly and substantially affected by prices on which they report.

Separation from forecasting

RISI Indices is a separate business unit from RISI Analytics, which carries out RISI's forecasting activities, ensuring that forecasting of future prices doesn't influence assessment of actual prices.

Confidentiality

Our data providers are essential to our work, so RISI Indices goes to great lengths to keep price survey data confidential. Confidential data include both the data collected and the names of individuals and companies who provide data. RISI's policy is to neither confirm nor deny the participation of any individual or company in our price surveys at any time, either directly or indirectly.

This confidentiality is essential to ensure the highest number of data contributors as well to ensure that contributing data to RISI cannot be used as a means for market players to unfairly communicate to each other.

RISI Indices' Confidentiality and Data Protection policy (www.risi.com/confidentiality) explains full details around how price assessors protect the confidentiality of their contacts and data. Each year, price assessors are trained in data protection procedures and must sign a compliance agreement.

Antitrust compliance

All price assessment methodologies from RISI Indices are explicitly designed to comply with antitrust rules. See RISI Indices' Antitrust Compliance Policy (www.risi.com/antitrust) for further details.

Disclaimer of warranty

Although RISI collects information from sources who are believed to be reliable, RISI does not warrant or guarantee the accuracy or completeness of its price assessments. Actual transaction prices will often vary from the assessed level.

Changes and feedback

Changes to methodology and specifications

RISI periodically reviews the markets it covers to ensure that our methodology and specifications are still appropriate for that market.

Understanding that some RISI price assessments are used in long-term contracts, RISI seeks to minimize changes that will affect the continuity of its price assessment over time.

Prior to implementing any material changes to the methodology and specifications, these changes will be announced in draft form and open for comment from all stakeholders. RISI will review all comments and seek to balance the views of all players as much as possible while ensuring the reliability of price assessments.

Based on comments received, RISI will finalize the changes and announce them to the market, specifying exactly what will change and when.

Feedback and complaints

RISI Indices welcomes feedback on its price assessment methodology as well as on specific price assessments published. We greatly value such feedback and the dialog that it generates.

In general, such feedback is most effectively dealt with by the editor directly in charge of the price assessment in question. We invite you to speak with or email any of your existing contacts within the editorial team, or view a list of contacts at www.risi.com/EditorialContacts.

If working with the editor does not adequately address your issue, please view our procedures for submitting complaints at www.risi.com/complaints.

GRADE DETAIL AND SPECIFICATIONS

General specifications

These are specifications that apply to all Latin American packaging paper and board prices. Specifications unique to each grade are detailed below.

Where published	PPI Latin America <ul style="list-style-type: none"> • Newsletter (pdf) • Online (interactive database)
Frequency	Mexico: containerboard – every 2 months Brazil: containerboard – monthly; boxboard – quarterly
Schedule	Last week of the month or first week of following month
Assessment window	Orders taken in the month to date for shipment in the current or following month
Transaction types reflected	Open market transactions in ongoing supply relationships. Excludes transactions whose price is indexed to published prices (whether from RISI or other source).
Units	Tonne
Arms-length transactions	Only transactions between unaffiliated parties are reflected. Transfers by mills to their own converting plants are excluded.
Normal terms of payment	Price estimates assume normal and customary payment terms.
IOSCO categories	All prices: Category 2 <i>See implementation of IOSCO's Principles for Price Reporting Agencies (www.risi.com/iosco) for definition of categories.</i>

Assessment	RISI Assessment ID	Currency	Location	Delivery	Physical specifications
Containerboard					
Corrugating medium					
Corrugating medium, 120-180 g/m ²	1124	USD	Mexico	Delivered to Mexico DF, Monterrey and nearby regions	Domestic grade Recovered-paper based
Fluting, 120 g/m ²	1082	BRL	Brazil	FOB mill	Includes both primarily recovered paper-based and primarily virgin fiber-based product
Linerboard					
Recycled linerboard, 130-180 g/m ²	1125	USD	Mexico	Delivered to Mexico DF, Monterrey and nearby regions	Domestic grade Recovered-paper based
Imported kraft linerboard, 42 lb/205 g/m ²	1148	USD	Mexico	FOB Mexico's Laredo border	US kraft linerboard
Kraftliner, 120-150 g/m ²	1080	BRL	Brazil	FOB mill	Mostly made of virgin fiber
White top liner, 130-200 g/m ²	1249	BRL	Brazil	FOB mill	Includes both primarily recovered paper-based and primarily virgin fiber-based product
Testliner, 120-130 g/m ²	1084	BRL	Brazil	FOB mill	Includes both recovered paper-based and virgin-based product, although most is primarily recovered paper-based
Packaging Paper					
Unbleached extensible sack kraft, 75-85 g/m ²	1092	BRL	Brazil	FOB mill	
Boxboard					
Duplex, 190-375 g/m²					
100% Recycled	1239	BRL	Brazil	Delivered in Sao Paulo	Uncoated/unbleached boxboard and is compared to RB in Europe and (URB) uncoated recycled board in North America
Recycled	1240	BRL	Brazil	Delivered in Sao Paulo	One side coated boxboard with mechanical/unbleached chemical pulp layer. Comparable to GD2/3 and WLC (White

Assessment	RISI Assessment ID	Currency	Location	Delivery	Physical specifications
					Lined Chipboard) in Europe and North America
Virgin-based	1241	BRL	Brazil	Delivered in Sao Paulo	Coated and premium boxboard with mechanical/unbleached chemical pulp layer. Comparable to FBB/GC2 in Europe and FBB (folding boxboard) in North America.
Triplex, 210-370 g/m ²	1242	BRL	Brazil	Delivered in Sao Paulo	Both sides coated boxboard with mechanical/unbleached chemical pulp layer. Comparable to GC1 and WLC (if recycled) in Europe and CFBB/FBB (coated folding boxboard) in North America.
Solid kraft board, 210-370 g/m ²	1243	BRL	Brazil	Delivered in Sao Paulo	Coated boxboard with bleached pulp inner layers. Comparable to GZ (coated solid bleached board (SBB)) in Europe and CUK (coated unbleached kraft)/SBB in North America.

Assessments are presented as a range in which the bulk of transactions take place.

Point in supply chain: Seller is a producer or a producer's agent. Buyer is a small or medium-size independent converter or sheeter.

All prices for Brazil are net, excluding PIS/COFINS of 9.25% and other taxes and freight.

REVISION HISTORY

Changes to methodology and specifications will be tracked here.