

PRICE ASSESSMENT METHODOLOGY AND SPECIFICATIONS

Market Pulp – Global

Last updated: February 2018

UNDERSTANDING RISI PRICE ASSESSMENTS	2	Disclaimer of warranty.....	7
ABOUT THIS METHODOLOGY	3	Changes and feedback.....	7
DEFINITIONS	3	REGIONAL DETAIL AND SPECIFICATIONS	8
HOW PRICES ARE ASSESSED	4	General specifications.....	8
Who assesses prices.....	4	North America.....	9
Data collection process.....	4	Europe.....	10
Assessment calculation.....	4	Asia.....	11
CONTROLS AND COMPLIANCE	6	Latin America.....	12
Ensuring consistency and quality of assessments.....	6	REVISION HISTORY	13
Independence and freedom from conflicts of interest.....	6		
Confidentiality.....	6		
Antitrust compliance.....	6		

UNDERSTANDING RISI PRICE ASSESSMENTS

Each price assessment is...

RISI's assessment of the **open market price** of pulp based on **actual market data** and supporting data gathered from a **broad, systematic survey** of market participants that has been **rigorously evaluated** to produce an assessment.

Open market price: Price for regular business excluding one-off, internal transfers and transactions whose price is not negotiated, i.e. prices determined by a formula based on published prices from RISI or other sources. (See "Grade detail and specifications" below)

RISI price assessors consider a range of market data, including actual transaction prices, bids and offers, trigger prices and supporting data. (See "Assessment Calculation" below)

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)

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 market pulp 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.

DEFINITIONS

RISI uses the following definitions:

What is the nature of the transaction?

Contract

Transactions between suppliers and buyers who have a written contract or an ongoing unwritten relationship that involves regular transactions over time.

Spot

Transactions without a long-term contract or commitment.

What is being measured by the price?



List Price

In a contract transaction, the list price is the producer's initial asking price, as announced publicly or communicated to the buyer as the starting point for negotiations. RISI's Pulp & Paper News Service reports list prices as they are announced by producers or as they are initially communicated to buyers.

Effective List Price

In a contract transaction, buyers and sellers must agree to a price each month and then apply a discount that has been agreed upon earlier. The "effective list price for contract transactions" is the price on which buyers and sellers agree to be the baseline price off of which pre-agreed discounts are taken. The effective list price is net of competitive allowances or any other temporary market-wide discounts that are not captured in the standard contract discount that was previously agreed to between the buyer and the seller.

Spot Price

Spot prices are for transactions without a long-term contract and reflect the net transaction price - i.e. a level from which no further discounts, allowances or performance rebates are given

HOW PRICES ARE ASSESSED

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

Who assesses prices

Prices are assessed by a global team of pulp editors, who are part of RISI Indices group, separate from RISI Analytics group involved in forecasting. Standards for training, experience and skills required for editors involved in price assessment, as well as supervision of editors, are described in the Price Assessment Procedures Manual.

The role of World Pulp Monthly: Because RISI's World Pulp Monthly – a source of market analysis produced by RISI economists – has long published leading price assessments for the North American market, RISI economists have played a key role in the price assessment process. With the implementation of this revised methodology in 2015, responsibility for determining all price assessments resides with RISI Indices editors. However, RISI pulp economists still gather market information to support price assessments.

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, and includes players of all sizes, ensuring that the survey pool is balanced and representative of the overall market. Sellers include both market pulp producers and agents acting on behalf of producers. Buyers are producers of paper, paperboard, tissue/toweling, and nonwovens/absorbent products.

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

RISI encourages organizations to submit all their pricing data, especially all the concluded transactions. Depending on market liquidity, RISI reserves the right to also base its prices on bids, offers, deals heard, trigger prices and market participants' assessment or indication of prevailing values.

RISI welcomes organizations to submit transaction data from authorized back office functions. RISI may sign Non-Disclosure Agreements (NDA) with any data provider, if requested to do so, in order to maximize the number of data points collected for inclusion in the assessment or index calculation.

For more on RISI's Data Submitter Policy, please see [here](#).

How data are provided

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

Assessment calculation

Types of data considered

The following types of data are considered when producing price assessments.

- Transaction prices
- Bids and/or offers made or received
- Trigger prices
- Participants estimates of market levels
- The change in price levels from previous periods
- Other market information such as prices in related markets, supply and demand fundamentals etc.

RISI has clear specifications for all the price points that it covers. All the reference units, such as currency and volume, are in line with recognized conventions in the pulp and paper markets.

Guidelines on the use of judgement

When assessing market prices, greater weighting is generally given to actual concluded transaction data. Next in terms of importance come bids and offers made or received. RISI does not set a minimum threshold for the amount of transaction data needed to produce assessments.

In the absence of sufficient transaction data, bids and offers or other actual price information, RISI reserves the right to use other factors to determine the assessment. These include:

- market participants' trigger prices;
- market participants' reports of the change in prices from previously assessed periods;
- market fundamentals such as changes in inventory levels, shipments, operating rates and export volumes;
- relative values of similar commodities in the same region;
- relative values of the same commodity in different regions;
- changes in the value of the commodity's primary feedstock or primary derived product(s).

In very opaque markets, where little actual market data is available, price developments may at times not be immediately apparent. If RISI price assessors detect this, their market assessments in the next reporting period would generally reflect the price change. This is in line with RISI's policy of acting on new information as it becomes available.

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 other source.
Defining "indexed" transaction prices: A transaction price is considered "indexed" when it is entirely determined according to a formula based on a published price assessment. However, even when parties have a long-term index-priced contract (i.e. stipulation that each month's price will be determined based on a published price assessment), they may sometimes supersede the contract terms by choosing to determine a given month's price by negotiation. For instance, this can happen if parties negotiate and agree on the price for a given month before that month's RISI price assessment has been published. In a case like this, even

though the overall contract is indexed, the given month's price is not considered indexed and would thus be included in that month's price assessment.

- The transactions don't meet the assessment specifications. (See "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 surveyor'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
- Agreed transaction prices are given more weight than price offers made or received
- 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. For Category 1 prices (e.g. US NBSK – see specifications below), this cap is more formal: no single data provider's data will be weighted so that it contributes more than 25% of the final assessment.

After applying these criteria, data are compiled into a final assessment. Assessments are defined as either:

- A point assessment, representing the weighted average price
- A range assessment, reported as a high and low price which represent the range in which the bulk of transactions have taken place. Range assessments are sometimes reported as a single price if the bulk of transactions have taken place at a single price.

CONTROLS AND COMPLIANCE

Ensuring consistency and quality of assessments

RISI has in place a number of procedures to ensure the consistency and quality of pulp 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 pulp price assessments. The supervisor will periodically perform 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 pulp grades), Indices staff reviews markets and methodologies to ensure that assessment methodologies and the assessments they produce are appropriate for the market.
- **External audit:** One of RISI's Category 1 price assessments (benchmark grades, e.g. US NBSK – see specifications below) are audited annually to ensure that assessments comply with this methodology and with IOSCO's PRA Principles.

Independence and freedom from conflicts of interest

Please see RISI Indices' Conflicts of Interest Policy posted on its website. 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. Because RISI's World Pulp Monthly has historically been used as a key source of price assessments, particularly for the North American market, RISI's pulp economists (who are in the RISI Analytics unit) retain a role in gathering market data that informs price assessments. However, as of April 2015, final determination of assessments is done exclusively by RISI Indices staff.

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 Protocol 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 of the price assessment methodologies from RISI Indices are explicitly designed to comply with antitrust rules. See RISI Indices' Antitrust Compliance Policy 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. Under no circumstances shall RISI nor any of its subsidiaries, parent corporations and affiliates, and all of their respective officers, directors, owners, employees, agents, licensors, representatives, licensors and suppliers (collectively, the “RISI Parties”), be liable for any loss or damage caused by your reliance on information obtained through the RISI services. It is your responsibility to evaluate the information, opinion, advice, or other content available through the RISI services.

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.

Corrections and non-market adjustments

Publication of price errors can occasionally happen for reasons that may include technical, input errors or incorrect application of the methodology. To minimize the

inconvenience to our subscribers, RISI aims to investigate each error as soon as it becomes aware of it and to publish a correction promptly. If the correction is substantial, a Coverage Note will be published on the RISI website and an email will be sent to subscribers with an explanation of the reason for the correction.

RISI will publish a correction of a price only where it has established undeniably that there has been an error. RISI price assessments are produced based on the best data available at the time of the assessment. It will not retroactively change a price based on new information or additional submission of data received after a respective pricing session has closed.

Occasionally, in very opaque markets, price developments may not become apparent for some time. If this happens, RISI reserves the right to adjust a price series upwards or downwards to bring it back in-line with market values. Such cases should not be considered corrections but rather non-market price adjustments. A retroactive correction of the price history would not normally be made. RISI has a very structured process for such non-market adjustments, similar to that for changes to methodologies and specifications. They would only be implemented after industry consultation. Ample notice would be given of the proposed adjustment and stakeholders would have the chance to send their feedback.

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.

REGIONAL DETAIL AND SPECIFICATIONS

General specifications

The following specifications apply to price assessments in all regions unless otherwise specified.

Arms-length transactions	Only transactions between unaffiliated parties are reflected.
Point in supply chain	Seller: pulp producer or a producer's agent Buyer: producer of paper, paperboard, tissue/toweling, or nonwovens/absorbent products
Quality	Prices are for prime-quality tonnage.
Normal terms of payment	Price estimates assume normal and customary payment terms.
Indexed tonnage excluded	Transactions whose price is indexed to published pulp prices (whether from RISI or other source) are excluded from our price survey. (See more above under "How prices are assessed – Exclusion of data ".)
Wet-lap excluded	Wet-lap pulp is excluded, except for DIP.
Currency/units	US dollars per metric tonne, which is the standard unit of pricing in the pulp market.

North America

Specifications

	Contract	Spot
Where published	PPI Pulp & Paper Week - Price Watch <ul style="list-style-type: none"> • newsletter (pdf) • online (interactive database) World Pulp Monthly (“Table 5”)	
Frequency	Monthly	Twice-monthly
Schedule	<ul style="list-style-type: none"> • Preliminary price: 2nd or 3rd Friday of the month • Final price: 2nd-to-last business day of the month 	<ul style="list-style-type: none"> • Mid-month price: 2nd or 3rd Friday of the month • End-month price: 2nd-to-last business day of the month
Assessment window	Orders in the month to date. Shipment may occur no later than the following month.	Orders in the two weeks prior to publication. Shipment may occur no later than the following month.
Price type See “Definitions” above	Effective list	Net
Range/point	<ul style="list-style-type: none"> • Preliminary price: range • Final price: point 	<ul style="list-style-type: none"> • PPI Pulp & Paper Week - Price Watch: range • World Pulp Monthly (“Table 5”): point
Delivery terms	Prices include delivery to customer.	
IOSCO categories	See Implementation of IOSCO’s Principles for Price Reporting Agencies for definition of categories. NBSK delivered to US, contract price: Category 1 All others: Category 2	

Europe

Specifications

	Contract	Spot
Where published	PPI Europe - Price Watch <ul style="list-style-type: none"> • newsletter (pdf) • online (interactive database) World Pulp Monthly (“Table 5”)	PPI Europe - Price Watch <ul style="list-style-type: none"> • newsletter (pdf) • online (interactive database)
Frequency	Monthly	Twice-monthly
Schedule	Usually the first full week of the following month.	Mid-month and usually the first full week of the following month.
Assessment window	Shipments in the previous month. In Europe, the custom is to ship pulp before a final price has been negotiated, then to finalize prices just before or after the end of the month. So, prices represent transactions agreed in the indicated period, including shipments that have already occurred. For instance, the February price, published in early March, is for February shipments, with the final prices often agreed upon at the very end of February or in early March.	Orders in the two weeks prior to publication. Shipment may occur no later than the following month.
Price type See “Definitions” above	Effective list	Net
Delivery terms	CIF to main European port	
IOSCO categories	See Implementation of IOSCO’s Principles for Price Reporting Agencies for definition of categories. All prices: Category 2	

Asia

Specifications

	East Asia	China – imports	China – domestic
Where published	PPI Asia - Price Watch <ul style="list-style-type: none"> • newsletter (pdf) • online (interactive database) World Pulp Monthly (“Table 5”) (China import prices only)		
Frequency	Monthly	Twice monthly	Weekly
Schedule	Last Friday of the month	2 nd and last Friday of the month	Each Friday
Assessment window	Shipments in the month to date	Orders in the two weeks prior to the assessment date	Orders in the week prior to the assessment date
Price type See “Definitions” above	Net contract price	Net price In China there isn’t a meaningful distinction between spot and contract transactions, so both types are reflected	
Location	South Korea, Japan, Taiwan, Southeast Asia	China	East China, including Zhejiang, Jiangsu, Anhui, Jiangxi and Shandong provinces, and Shanghai municipality
Currency	USD		RMB
Delivery terms	CIF or CFR to main port		At trader’s warehouse
Point in the supply chain	Seller: pulp producer or a producer’s agent Buyer: paper producer*	Seller: pulp producer or a producer’s agent Buyer: China-based trading company or major paper producer*	Resale price, i.e.: Seller: China-based trader or pulp producer Buyer: paper producer*
	* “Paper producer” includes producer of paper, paperboard, tissue/toweling or nonwovens/absorbent products		
Other terms			Includes 17% VAT
IOSCO categories	See Implementation of IOSCO’s Principles for Price Reporting Agencies for definition of categories. All prices: Category 2.		

Latin America

Specifications

Where published	PPI Latin America <ul style="list-style-type: none"> • Price Watch in the newsletter • Price Watch online
Frequency	Monthly
Schedule	Fourth Tuesday of the month
Assessment window	Orders in the month to date
Price type See "Definitions" above	In Latin America, lowest prices reflects trades from Brazilian suppliers to distant markets in the Pacific. In Brazil, the lower end of the price range is the average net price and the higher end of the range is the list price.
Delivery terms	Latin American prices are CIF/CFR to main ports in Argentina, Colombia, Chile and Mexico. Brazilian prices are CIF/delivered in southern and southeastern regions and include Pis/Cofins taxes paid by producers.
IOSCO categories	See Implementation of IOSCO's Principles for Price Reporting Agencies for definition of categories. All prices: Category 2

REVISION HISTORY

Changes to methodology and specifications will be tracked here.

February 2018 – Adds reference to Data Submitter Policy

Adds reference to Data Submitter Policy.

January 2018 – Adds information on corrections and non-market adjustments

Adds paragraphs on corrections and non-market adjustments.

October 2017 – Comment added on compliance regime

Comment added on page 5 regarding RISI's current transition to a new compliance regime in the light of its purchase by Euromoney.

June 2017

US spot prices: RISI will add the spot price ranges to the main PPI Pulp & Paper Week PriceWatch table and begin publishing point-prices for spot pulp in the World Pulp Monthly Table 5 on the second-to-last business day of every month.

October 2015

European spot prices: Methodology was clarified to show that due to the low volume of transactions that typically take place in the European spot market, our European spot price assessments are based primarily on trigger price data from market participants, with transaction data typically providing supporting information.