

8 December 2017

PIX Pulp China Net Price Indices Methodology and Specification

1. Introduction

FOEX Indexes Ltd in Helsinki, Finland, operating under the Finnish law, produces trade-marked PIX price indices for selected pulp, paper, recovered paper and packaging grades as well as for wood based biomass and bioenergy products like pellets and wood chips. The first PIX pulp index was launched in September 1996. FOEX owns the trademark rights to PIX Index.

PIX indexes are used as market reference prices for:

- price risk management services
- supply contracts for physical transactions between companies
- internal transactions between corporate divisions
- market research and miscellaneous uses

This Methodology and Specifications for the PIX Pulp China net price indices are valid starting on April 1, 2017.

2. Overview

The general guidelines to ensure the reliability of the PIX indexes:

1. The main goal for PIX indexes is to show the market price changes between two points of time in a reliable way. However, when a price value is published, it aims to pinpoint the average level of the market price as accurately as possible
2. The index calculation aims to include the prices of all eligible transactions over the current month to the extent possible with reasonable efforts.
3. The target is that the index calculations include every week as many price points as possible in order to maintain the accuracy of the index movements.
4. The index values seek to optimize the balance of prices between buyers and sellers and between small, medium-size and large price providers.

The PIX pulp benchmark index is calculated and confirmed by FOEX based on confidential price information of actual, physical trades of pulp, collected on a weekly basis from companies trading in pulp for paper or paperboard production.

The method of PIX index calculation is fixed. The index has a large market coverage and a stable group of price providers from week to week. The rules for the FOEX' methodology and the index calculation practices have been approved by European financial regulatory

bodies and by the European Commission DG IV (anti-trust). Index calculation method is audited, most recently by Ernst &Young.

2.1 Index currency

PIX China NBSKP net and PIX China BHKP net: USD/metric ton.

Prices reported to the index calculation in other currencies than USD are converted to the index currency with the average exchange rate of the previous week.

2.2 Publication frequency and time

Indexes are published weekly, on Tuesdays at 9 am Helsinki time. If Tuesday falls on a public holiday in Finland, the index will be published on the first working day thereafter.

2.3 Retroactive changes

FOEX will not retroactively change the index values, e.g. based on additional or revised price data received after the index publication.

3. Specifications

3.1 Product specifications

PIX China NBSKP net index: Prime quality, commodity grade Northern bleached softwood kraft pulp from North American, Nordic and Central European countries.

PIX China BHKP net index: Prime quality bleached single species hardwood kraft pulp, eucalyptus or acacia. Note: acacia pulp or BEKP made of less common eucalyptus species will be adjusted to the average price level of prime quality BEKP. Thereafter only the changes reported impact the index - not the potentially different starting level.

Technical quality criteria for both NBSKP and BHKP: standard dryness 90% air dry, standard strength characteristics, baled, fully bleached, prime grade pulp.

3.2 Types of transactions included

Transactions are against contract-based business or other recurring business, complying with the General Trade Rules for physical pulp business for paper or paperboard production purposes between companies regularly buying or selling pulp.

Specifically excluded are:

- Spot transactions: One-off transactions of pulp in special situations without any commitment or intention with parties to do similar business in future months. Typically, no further discounts, allowances or performance rebates are given on such special situation spot transactions.
- Integrated shipments: shipments between affiliated parties.

- Indexed-price transactions: transactions whose prices are, according to the supply contract, tied to PIX or any other pulp price index.

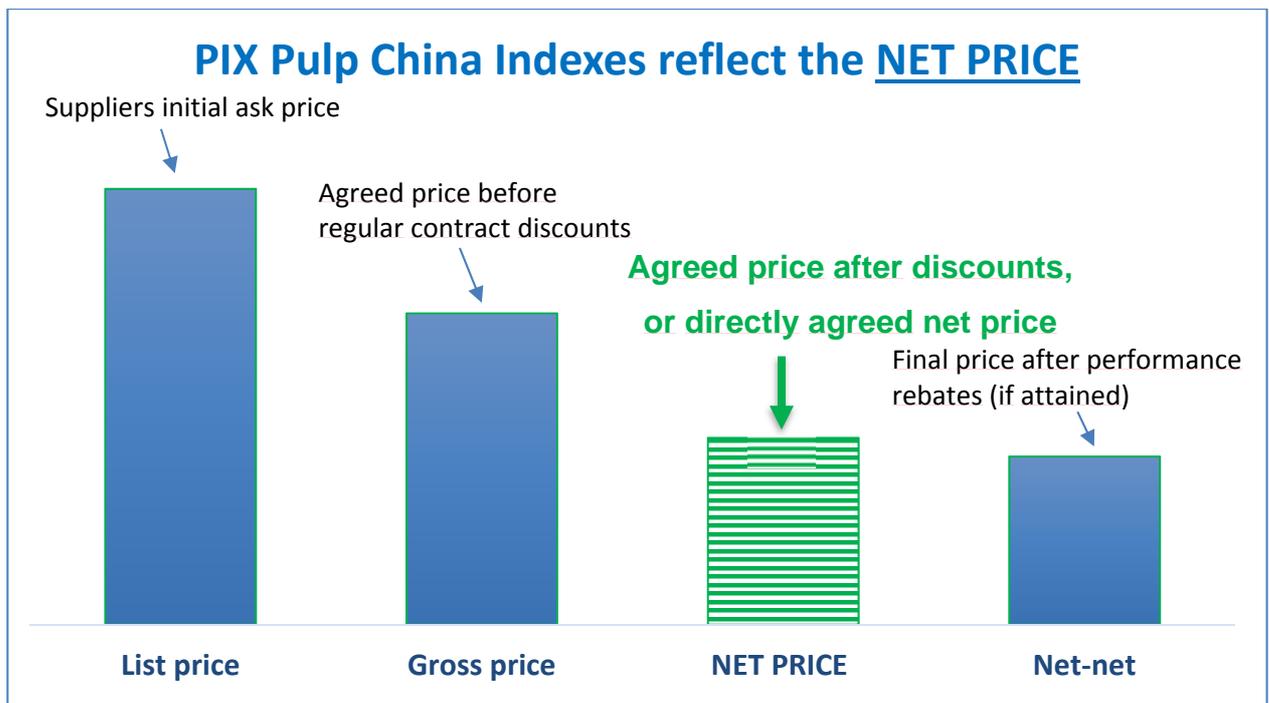
Note: Index as fall-back mechanism:

Some contracts stipulate that prices are negotiated between buyer and seller but that PIX or another index can be used to settle prices if the buyer and seller cannot agree on a price. Transactions under these contracts are not considered indexed and thus shall be submitted to the index.

3.3 Which prices and data should be reported

Contract Price Types

Contract prices reflect transactions between sellers and buyers who have a written contract or an ongoing unwritten relationship that involves regular transactions over time.



The indexes shall reflect the average net price in USD per metric ton for regular contract based business. Net price is the agreed price after regular monthly discounts, but before the quarterly or annual performance based rebates (granted at the end of quarter or year).

The discounts and rebates are typically agreed upon in long-term agreements. Any temporary discounts or rebates, which differ from long-term contract, should also be deducted.

Price reporting company shall report the net prices in USD or RMB, based on transactions for each week.

If the company cannot regularly report the net USD prices, it is separately agreed on that the company reports the gross USD price and, in addition, the typical/average discount of all/major customers/suppliers at that time.

Thereafter, the company reports the gross USD prices and FOEX deducts the same typical/average discount from the gross prices and uses those calculated net USD prices in the index calculations. When there is a meaningful change in the typical/average discount, the company agrees on to inform FOEX and report the new discount amount and FOEX will adjust its calculations accordingly.

Providers have the option to submit prices in one of the following ways:

1. Separate transaction prices: Providers submit prices reflecting all eligible transactions and additionally submit the share (either tonnage or %) of each of these transactions of the total volume of eligible transactions of that week.
2. Single weighted average price: Providers submit a single price reflecting the weighted average price of all eligible transactions over the previous week.

3.4 Who can report the prices

Pulp producers: Report prices for sales to final consumers of pulp. *

Pulp traders: Report prices for sales to final consumers of pulp.

Pulp consumers: Report prices for purchases from both traders and pulp producers.

* If producer's regular business is selling to traders, prices can be reported as 'trader prices' and FOEX will adjust them to the average price level of BEKP sold to end-users.

3.5 When to report the prices

Each week, data providers submit prices reflecting all eligible transactions, to the extent possible with reasonable efforts, taking into account the practical challenges in the weekly administrative work to collect all required transactions.

The price of actual transaction shall be reported when the order is confirmed or when the price is otherwise finally agreed. This applies for pulp which is e.g.:

- at the port of loading (e.g. in North or South America or Europe) and
- in transport and
- in a warehouse at a Chinese port.

3.6 Final prices vs. prices to be adjusted at the end of the month

Reported prices shall only include those with a final agreement for the month, i.e. without a retroactive adjustment clause.

3.7 Fixed price transactions

Confirmed orders with prices fixed in advance for shipments in several future months i.e. in a longer period than the regular monthly cycle, do not count as eligible transactions and should not be reported.

3.8 Minimum volume

The total amount of the transaction is a minimum of 100 metric tons of NBSKP or 200 metric tons of BHKP.

3.9 Delivery and payment terms

The price is a net transaction price on standard delivery and payment terms between buyer and seller. However, prices with delivery terms ex works at the producing mill shall not be reported to the index.

4. Data Collection

4.1 Collection and storage of price data

Price data is collected weekly from price provider.
Reported price data will be stored at FOEX for a maximum of five full calendar years.

4.2 Access to confidential price data

Only operative personnel employed by FOEX in charge of producing PIX price indices or FOEX operative management have access to the company-specific confidential data reported to FOEX. The auditors, however, will be able to see the price data but they are bound by a confidentiality agreement of their own.

5. Index Calculation Procedure

5.1 Data validation

FOEX reviews the incoming price data in order to check its consistency with the reporting rules. If the price data looks suspicious, FOEX contacts the price provider for further verification.

5.2 Weighting

Weighting between price providers is achieved by assigning more price points to larger buyers/sellers than to smaller ones. The number of price points assigned to each provider is scaled by the annual volume of sales or purchases of bleached chemical market pulp in China. Market pulp includes integrated exports but not company internal volumes within the country of production. Each price reporter's weight is kept constant through the year, if no major changes occur in production capacity or purchasing volumes. Volumes are checked at the turn of the year for defining the weighting for the following year.

While input to the index is generally evenly split between buyers and sellers, the share can vary from week to week. To eliminate any volatility caused by a shift in the share of the buyer/seller data, FOEX ensures that buyer and seller data each represent 50% of the index. This balancing is done to the price data by adding a sufficient number of price points using the average of sellers' or buyers' prices, whichever needs to be added.

Balancing is done after assigning the number of price points to each price provider according to the valid weighting scales.

5.3 Calculation procedure

The index value is the arithmetic average of the price points included. After balancing the number of price points between sellers and buyers, 10% of the highest and lowest price points are removed before calculating the PIX index values. This is done to eliminate clerical errors in the price reporting and potential attempts to manipulate the index value. All reported prices are adjusted to exclude the local VAT.

5.4 Validity time of price points

If a price provider does not report prices in a given week (e.g. a company may not have sales or purchases during that week) FOEX may use the previous price points received, but only for one additional week.

5.5 Fall-back procedure

In the unlikely event that there are not enough eligible price points in a given week, and the lack of price points is threatening to distort the index development, FOEX reserves the right to roll forward previous price data beyond the limits mentioned above in Section 5.4. In case there is an insufficient number of price points, FOEX reserves the right to republish the previous week's index value and makes a public note of that.

6. Expert panel

A group of well-known industry experts form an advisory panel, which can be used if an unforeseen problem renders normal price discovery process difficult.

7. Revisions to the specifications

In the event that significant changes are noticed in the general trading habits or terms and conditions of the international pulp business carried out in the Chinese markets which are seen to reduce the index reliability, the presently valid index specifications will be modified and revised.

7.1. Coverage Notes

COVERAGE NOTE HELSINKI, Dec. 8th, 2017

This coverage note confirms that FOEX will cease publishing the old PIX Pulp China indices from January 2018 onwards and continue only with the PIX Pulp China Net Indexes for NBSKP and BHKP.

8. Commercial Use

The PIX Indexes are trademark registered by FOEX Indexes Ltd. Use of PIX Indexes commercially (e.g. as a reference for pricing in physical supply agreements or financial derivatives contracts) requires a commercial use license.