



NOREXECO Rulebook

Appendix 2

The Indices

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1 General provisions

The terms of this appendix will apply to Products Listed at NOREXECO. NOREXECO cooperates with the independent Finnish Benchmark Administrator (Index provider) Fastmarkets FOEX and Shanghai Futures Exchange. In the event of any conflict between the Rulebook and the terms in this appendix, the Rulebook shall prevail.

2 Benchmark/indices from Fastmarkets FOEX

Fastmarket FOEX is a company located in Helsinki, Finland and since April 2017 owned by Euromoney Institutional Investor PLC, a London Stock Exchange listed company

Fastmarkets FOEX publishes weekly and monthly audited pulp, paper, paperboard and wood-based bioenergy indices. Publication follows the Finnish calendar and time-zone is CET+1. Fastmarkets FOEX owns the trademark rights to the PIX™ indices.

2.1 Fastmarkets FOEX standards and key principles

The PIX indices are prepared and published pursuant to certain defined standards and key principles, among them:

- The PIX price indices are calculated from price data received from buyers and sellers of the commodity/product in question
- Fastmarkets FOEX is an independent company with no ownership links to any forest product companies
- Buyers and sellers are evenly distributed as price donors
- High number of participants to each PIX index; no index is launched until statistically reliable
- Fastmarkets FOEX is engaged in developing the PIX index methodology and process to be compliant with IOSCO's Principles for Price Reporting Agencies

Index values have never been retroactively modified

2.2 Financial Products on Fastmarkets FOEX Price Indices

The price indices from Fastmarkets FOEX used by NOREXECO are;

1. PIX Pulp NBSK Europe USD/ MT
2. PIX Pulp BHKP Europe USD/ MT
3. PIX Recovered paper OCC 1.04 EUR/MT

The indices are calculated by Fastmarkets FOEX and published weekly in accordance with Fastmarkets FOEX routines as in effect from time to time.

Index Days are Tuesdays. If an Index Day falls on a Finnish holiday, the Index Day is moved to the next Finnish business day.

The indices are published at 12:00 AM Finnish time, CET+1, on every Index Day.

2.3 Procedures for calculating PIX Pulp Price Indices

Below is an extract of the full specification of the Fastmarkets FOEX Pulp Price Indices. The full specification can be found at the [Fastmarkets FOEX webpages](#).

1.1 Methodology Rationale

Fastmarkets FOEX produces independent, fair and representative price indices for global market pulp on a weekly basis. Fastmarkets FOEX's rationale is to adopt and develop the price discovery process and the methodology described in the present guide to produce indices that are a consistent and representative indicator of value of the market to which they relate for the trading period they measure, as well as for the change in prices from one week to the next.

The PIX European pulp benchmark indices are calculated and confirmed by FOEX based on confidential price information of actual, physical trades of pulp, collected on a weekly basis by telephone and email from companies trading in pulp. It represents the gross price agreed on contract business for pulp used for paper or paperboard production. The method of index calculation is fixed. The index has a large market coverage and a stable group of price providers from week to week.

The time period, or window, identified to assess a market (eg, daily, weekly, monthly) is determined by Fastmarkets FOEX after considering the number of data points that Fastmarkets FOEX can reasonably expect to collect on a consistent basis over the selected period to support the price assessment process.

1.2 Data collection criteria

Fastmarkets FOEX staff aim to canvass a broad sample of market participants specifically involved in the buying and selling of the pulp grade of interest, with a good representation of both sides of the market. Pulp producers, buyers, agents and trading houses, including buyers/sellers acting on behalf of another buyer/seller, qualify as price providers. If a trading house buys and sells on its own account, those prices are not accepted into the index calculation.

Price data is collected weekly from price providers, typically by email or by phone. Possibilities to use other alternative ways will be followed-up whenever deemed useful.

Price data reported to Fastmarkets FOEX by noon Finnish time on Monday (or the last working day preceding publication day) will be included in the index calculations for the publishing on Tuesday (or exceptional working day). Fastmarkets FOEX has the discretionary right to decide whether to include price data received after noon on Monday into the index calculation that week.

Reported price data will be stored at Fastmarkets FOEX for a maximum of five full calendar years. Price providers designate a person and a deputy for the price reporting task. Each price provider shall report their prices each week or provide a note of how long the last reported price is valid, or report “no transactions” if a provider has no eligible transactions in a given week.

Price providers agree to report their prices according to the methodology described in this document and based on all transactions meeting the specifications and to consult with Fastmarkets FOEX if they have any doubts as to the validity of a price to be reported.

Fastmarkets FOEX encourages organizations to submit all their pricing data, especially all the concluded transactions. Fastmarkets FOEX welcomes organizations to submit transaction data from authorized back office functions.

Company-specific data received from the price providers is accessible only to personnel employed by Fastmarkets FOEX. Board Members do not have access to this data.

Fastmarkets FOEX' personnel dealing with the confidential price data or other sensitive information received from the price providers for the purpose of PIX index calculations, commit not to disclose the data received, nor the source, outside Fastmarkets FOEX.

Fastmarkets FOEX commits to compile the price data, to calculate the index values and to publish the index values in accordance with the rules and specifications set forth in this document.

1.3 What price data providers submit

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

“Transaction” is defined as either of the following:

1. Final agreement on price for delivery of a specific quantity of pulp during the current month and each delivery against that agreement during the same month.
2. Final agreement on the price of pulp that has already been shipped within the current month or the month preceding the reporting date.

In order to further improve the accuracy of the index movements and to secure as many price points as possible every week, price providers are encouraged to report both the price when it is agreed and the price of every delivery from seller to buyer or an invoice against that price agreement.

However, pulp already under buyer's ownership delivered from buyer's port warehouse to the mill, should not be considered as a market transaction and should not lead to price reporting.

An “eligible transaction” is a transaction that meets the specifications outlined in the section below marked “Price Specifications”.

Providers have the option to submit prices in one of two 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.

This weighted average can be calculated based on actual weekly volumes, average weekly volume calculated from the annual contract or from an annual estimate. The method should however be consistently used from week to week to the extent possible with reasonable efforts.

Prices reflected in the index are gross prices before customer-specific discounts or rebates. These discounts and rebates are typically agreed upon in long-term agreements. Any additional temporary discounts or rebates which differ from the long-term agreements are to be deducted from the price reported.

Prices reflected only include those with a final agreement for the month, i.e. without a retroactive adjustment clause.

Some agreements specify that the price for shipments in a given month are based on the previous month's market price. This usually means that the buyer and seller agree at the beginning of the month what the previous month's price was, then apply that price to shipments in the current month. For these agreements, the price is reported to FOEX in the week when the price is agreed. In the weeks following the month in question, if a data provider has agreed new prices for the month, it should report those new prices, provided they are from eligible transactions, and stop reporting the prices based on the previous month's market price. But if data provider has no new eligible prices for the month to report and deliveries from seller to buyer continue against the previous month's price, it can report those previous month's prices of deliveries from seller to buyer.

Transactions with prices fixed in advance for a longer period than one month do not count as eligible transactions and shall not be reported to the index.

If the pricing structure includes a cap and floor, the price shall be reported only as long as it remains between the cap and floor. After the price has hit either of the limits, the price within the cap and floor should not be reported.

1.4 Price specifications and reference units

Fastmarkets FOEX 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 pulp and paper markets trading conventions. Fastmarkets FOEX specifications detail the material's characteristics or quality, location, incoterm, payment terms and the minimum volume accepted. These specifications are determined in consultation with market participants and following industry convention. Fastmarkets staff ensure that the information they receive matches these specifications.

All Fastmarkets FOEX price specifications define the minimum lot size accepted.

1.5 Criteria to discard pricing data

Transactions are against contract-based business or other recurring business with similar pricing and discounting terms, 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 whose price is typically at a level from which no further discounts, allowances or performance rebates are given.
- 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.

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 can't agree on a price. Transactions under these contracts are not considered indexed and thus shall be submitted to the index.

1.6 Data validation

Fastmarkets FOEX reviews the incoming price data in order to check its consistency with the reporting rules. If the price data looks questionable, Fastmarkets FOEX contacts the price provider.

1.7 Weighting of Data

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 market pulp in each main index grade (BSKP excl. fluff, BHKP).

Market pulp includes integrated exports but not company internal volumes within the country of production. Each price provider'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, Fastmarkets FOEX ensures that buyer and seller data each represent 50% of the index.

1.8 Aggregation of weighted average prices

If data providers submit a single weighted average price (see Section 1.3 above), that price point is included in the week's collected price points multiple times, according to the number of price points the data provider is allowed. For instance, if a seller of NBSKP is allowed 5 price points and submits a single weighted average price of \$X in a given week, then \$X is included 5 times in that week's collected price points.

1.9 Calculation procedure

The index value is the arithmetic average of the price points included. The highest and lowest 10 % of the number of price points are removed before calculating the PIX index values. This is done to eliminate clerical errors in the price reporting and to dampen any possible attempts to manipulate the PIX index value in one direction or the other.

1.10 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) Fastmarkets FOEX may use the previous price points received, but only for one additional week.

2.4 Procedures for calculating the PIX Recovered Paper Europe indices

Below is an extract of the full specification of the Fastmarkets FOEX Recovered Paper Europe Indices. The full specification can be found at the FOEX Recovered Paper Europe [specification](#).

Price discovery process and methodology

1.1 Methodology Rationale

Fastmarkets FOEX produces independent, fair and representative price indices for European recovered paper on a weekly basis. Fastmarkets FOEX's rationale is to adopt and develop the price discovery process and the methodology described in the present guide to produce indices that are a consistent and representative indicator of value of the market to which they relate for the trading period they measure, as well as for the change in prices from one week to the next.

The PIX recovered paper benchmark indices are calculated and confirmed by Fastmarkets FOEX based on confidential price information of actual, physical trades of recovered paper, collected on a weekly basis by email from companies trading in recovered paper. It represents the net price agreed on contract business for recovered paper used for paper or paperboard production. The method of index calculation is fixed. The index has a large market coverage and a stable group of price providers.

The time period, or window, identified to assess a market (e.g., daily, weekly, monthly) is determined by Fastmarkets FOEX after considering the number of data points that Fastmarkets FOEX can reasonably expect to collect on a consistent basis over the selected period to support the price assessment process.

1.2 Data collection criteria

Fastmarkets FOEX staff aim to canvas a broad sample of market participants specifically involved in the buying and selling of the recovered paper grade of interest, with a good representation of both sides of the market. Recovered Paper generators, traders and consumers qualify as price providers.

Price data is collected weekly from price providers, typically by email. Possibilities to use other alternative ways will be followed-up whenever deemed useful.

Reported price data will be stored at Fastmarkets FOEX for a maximum of five full calendar years. Fastmarkets FOEX has the discretionary right to decide whether to include price data received after noon on the working day preceding publication in the index calculation that week.

Price providers designate a person and a deputy for the price reporting task. Each price provider shall report their prices each week or provide a note of how long the last reported price is valid, or report "no transactions" if a provider has no eligible transactions in a given week.

Price providers agree to report their prices according to the methodology described in this document and based on all transactions meeting the specifications and to consult with Fastmarkets FOEX if they have any doubts as to the validity of a price to be reported.

Fastmarkets FOEX encourages organizations to submit all their pricing data, especially all the concluded transactions. Fastmarkets FOEX welcomes organizations to submit transaction data from authorized back office functions.

Company-specific data received from the price providers is accessible only to personnel employed by

Fastmarkets FOEX. Board Members do not have access to this data.

Fastmarkets FOEX' personnel dealing with the confidential price data or other sensitive information received from the price providers for the purpose of PIX index calculations, commit not to disclose the data received, nor the source, outside Fastmarkets FOEX.

Fastmarkets FOEX commits to compile the price data, to calculate the index values and to publish the index values in accordance with the rules and specifications set forth in this document.

1.3 What price data providers submit

Data providers submit prices reflecting all eligible transactions, to the extent possible with reasonable efforts, taking into account the practical tasks in the sales administrative work to collect all required transactions. "Transaction" is defined as follows:

1. Final agreement on price for delivery of a specific quantity of recovered paper during the current month. An "eligible transaction" is a transaction that meets the specifications outlined in the Price Specifications section below.

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

1. Average price per market (country)
2. Transaction price per supplier/customer
3. Single weighted average price: Providers submit a single price reflecting the weighted average price of all eligible transactions.

This weighted average can be calculated based on actual monthly volumes or from an annual estimate. The way each data submitter reports prices is mutually agreed with Fastmarkets FOEX before they become formal contributors to the PIX indices. The method should be consistently used to the extent possible with reasonable efforts.

Transactions with prices fixed in advance for a longer period than one year do not count as eligible transactions and shall not be reported to the index.

If the pricing structure includes a cap and floor, the price shall be reported only as long as it remains between the cap and floor. After the price has hit either of the limits, the price within the cap and floor should not be reported.

1.4 Price specifications and reference units

Fastmarkets FOEX 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 recovered paper markets trading conventions. Fastmarkets FOEX specifications detail the material's characteristics or quality, location, incoterm, payment terms and the minimum volume accepted. These specifications are determined in consultation with market participants and following industry convention. Fastmarkets FOEX staff ensure that the information they receive matches these specifications.

All Fastmarkets FOEX price specifications define the minimum lot size accepted.

1.5 Criteria to discard pricing data

Transactions are against contract-based business or other recurring business with similar pricing terms. Prices reflected only include those with a final agreement for the month, i.e. without a retroactive adjustment clause.

Specifically excluded are:

1. Integrated sales: deliveries between affiliated parties.
2. Indexed-price transactions: transactions whose prices are, according to the supply contract, tied to the PIX Recovered Paper Europe/Germany Price Index.

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 can't agree on a price. Transactions under these contracts are not considered indexed and thus shall be submitted to the index.

1.6 Data validation

Fastmarkets FOEX reviews the incoming price data in order to check its consistency with the reporting rules. If there are any doubts or questions about the price data, Fastmarkets FOEX contacts the price provider.

1.7 Weighting of Data

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 recovered paper in each index grade (Mixed 1.02, OCC 1.04, ONP/OMG 1.11).

Each price provider's weight is kept constant through the year, if no major changes occur in production capacity or purchasing/sales volumes. Volumes are checked in January to define the weighting for that 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, Fastmarkets FOEX ensures that buyer and seller data each represent 50% of the index.

The weighting scales for OCC 1.04, ONP/OMG 1.11 and Mixed 1.02 (separate scales for sellers and buyers for Europe and Germany), based on the total annual volumes of the previous calendar year are shown in Appendices 1 and 2.

1.8 Aggregation of weighted average prices

If data providers submit a single weighted average price (see Section 1.3 above), that price point is included in the week's collected price points multiple times, according to the number of price points the data provider is allowed. For instance, if a seller of OCC is allowed 5 price points and submits a single weighted average price of €X in a given week, then €X is included 5 times in that week's collected price points.

1.9 Calculation procedure

The index value is the arithmetic average of the price points included. The highest and lowest 10 % of the number of price points are removed before calculating the PIX index values. This is done to eliminate clerical errors in the price reporting and to dampen any possible attempts to manipulate the PIX index value in one direction or the other.

1.10 Validity time of price points

If a price provider does not report prices in a given month (e.g. a company may not have sales or purchases during that month) Fastmarkets FOEX may use the previous price received, but only for one additional month. From week to week, the monthly price(s) reported will remain unchanged in the index calculation.

2.5 Price correction policy

Fastmarkets FOEX will not retroactively change the index value based on new information or additional submission of data received after a respective pricing session has closed.

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, Fastmarkets FOEX aims to investigate each error as soon as it becomes aware of it and to publish a correction promptly on our website through a pricing notice with an explanation of the reason for the correction. Fastmarkets FOEX will publish a correction of a price only where it has established undeniably that there has been an error. Fastmarkets FOEX price assessments are produced based on the best data available at the time of the assessment.

2.6 Fall-back procedure - Lack of price information to calculate PIX Indices

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, Fastmarkets FOEX reserves the right to roll forward previous price data beyond the limits mentioned above. In such case, Fastmarkets FOEX will state that because there are an insufficient number of new price points, the previous week's index value will be republished.

2.7 Procedures for monitoring and changing the Indices

2.7.1 Operation of the Indices

NOREXECO has signed an agreement with Fastmarkets RISI, whom acts as the commercial representative for Fastmarkets FOEX, whereby Fastmarkets FOEX, among other things, is responsible for monitoring, supervising and maintenance of the Price Indices.

2.7.2 Procedures for calculating the NOREXECO Final Settlement Index (NFSI)

The monthly NFSI is calculated as the simple arithmetic mean with two decimals rounded of the weekly PIX prices for the weeks included in the calendar month. There is either four or five weekly PIX prices in a month, in general depending on number of Tuesdays in a calendar month.

2.7.3 Corrections in the NFSI

In the event of errors in computing the NFSI are discovered, the latest NFSI may be corrected pursuant to the following rules:

NOREXECO may, in the event it is discovered that a final settlement was erroneous in a material manner because of an error in the calculation of the NFSI, decide that a correction shall be effectuated among the Trading Members involved. Such correction also requires the consent of the Clearing House.

No correction may be effectuated later than on the business day after the NFSI was published.

3 NSFI - Benchmark/index based on the Final Delivery Settlement Price at Shanghai Futures Exchange

Shanghai Futures Exchange (SHFE) offers trading in monthly futures for domestic physically delivered NBSK pulp. SHFE is regulated by the China Securities Regulatory Commission (CSRC).

The NOREXECO Shanghai Pulp Futures is financially settled against the NOREXECO Shanghai Final Index (NSFI). The NSFI is based on the monthly SHFE Final Delivery Settlement Price (FDSP) as calculated and published by SHFE. The SHFE FDSP is calculated as the volume weighted average price of the trades concluded during the last five days the expiring contract was traded on SHFE. The SHFE FDSP is published at 4:30 pm CST (10:30 am CET) on the expiration day of the month contract. The expiration day is the 15th day of the month, but may be altered due to weekends and public holidays.

SHFE publish volumes, closing prices and volume weighted prices on their web-site. The SHFE Final Delivery Settlement Price is in RMB/MT and includes domestic VAT.

The NOREXECO Shanghai Final Index (NSFI) is based on the SHFE FDSP:

1. NOREXECO deducts the prevailing Chinese VAT on the expiration day from the SHFE FDSP.
2. NOREXECO calculates the USD/MT equivalent of the SHFE FDSP ex VAT based on the European Central Bank's USD/EUR and RMB/EUR rates as published on 16:00 CET on the expiration day of the SHFE month contract.
3. NOREXECO publishes the NOREXECO Shanghai Final Index at 17:00 CET on the expiration day.

NOREXECO shall register as the Benchmark Administrator of the NOREXECO Shanghai Final Index.