

COMMODITY PRODUCTS

Softwood and Hardwood Pulp Futures and Options



Based on key
industry indexes by
FOEX Indexes Ltd.

In a world of increasing volatility, CME Group is where the world comes to manage risk across all major asset classes – interest rates, equity indexes, foreign exchange, energy, agricultural commodities, metals, and alternative investments like weather and real estate. Built on the heritage of CME, CBOT and NYMEX, CME Group is the world's largest and most diverse derivatives exchange encompassing the widest range of benchmark products available. CME Group brings buyers and sellers together on the CME Globex electronic trading platform and on trading floors in Chicago and New York. We provide you with the tools you need to meet your business objectives and achieve your financial goals. And CME Clearing matches and settles all trades and guarantees the creditworthiness of every transaction that takes place in our markets.

COMMODITY PRODUCTS

MORE COMMODITY FUTURES AND OPTIONS. GREATER OPPORTUNITY.

CME Group offers the widest range of commodity derivatives of any exchange, with trading available on a range of grains, oilseeds, livestock, dairy, lumber and other products. Representing the staples of everyday life, these products offer you liquidity, transparent pricing and extraordinary opportunities in a regulated centralized marketplace with equal access for all participants.

SOFTWOOD AND HARDWOOD PULP FUTURES AND OPTIONS

Softwood and Hardwood Pulp futures and options are based on key industry indexes by FOEX Indexes Ltd. and trade exclusively on the CME Globex electronic trading platform virtually 24 hours a day. FOEX Indexes Ltd. is a private, Finland-based independent company that specializes in providing audited, trademark-registered pulp and paper price indexes. FOEX indexes are widely used in the global forest products industry as benchmarks for cash market transactions and over-the-counter (OTC) trading. The PIX NBSKP Europe Index provides the benchmark price for northern bleached softwood kraft pulp (NBSKP), the largest category of market pulp in the European region – the largest consuming region for NBSKP market pulp – supplied from either North American or European sources to their European buyers. The PIX BHKP Europe Index represents the benchmark price for bleached hardwood kraft pulp (BHKP) in the European region.

Cash-settled Softwood and Hardwood Pulp futures and options are cleared through CME Clearing. As the counterparty to every trade, CME Clearing settles accounts, clears trades, collects and

maintains performance bonds, regulates delivery and reports data. CME Clearing provides world-class risk management of the credit, operational and legal risks that customers face in OTC trading.



The PIX NBSKP Europe Index provides the benchmark price for NBSKP, the largest category of market pulp in the European region.

ABOUT THE WOOD PULP INDUSTRY

Wood pulp is the term used to describe a range of products that are derived from treatment of plant materials taken from trees. Trees are stripped of bark and then subjected to chemical or mechanical treatments that separate the cellulose fibers. The dominant method is the chemical sulfate (kraft) process. The pulp is then usually bleached, dried and baled for sale on the market.

Global wood pulp production of 175 million metric tons (MMT) is composed of several different types – bleached softwood kraft pulps (including NBSKP), bleached hardwood kraft pulps, unbleached kraft pulps, sulfite pulps as well as semi-chemical and mechanical pulps. There is a high degree of positive price correlation among these different types.

NBSK pulp is produced from coniferous trees growing in colder climates. The principal growing areas for these trees are Canada, the northern and western United States, Scandinavia, parts of Central Europe and northern Russia. The fiber in this pulp is long and narrow with a thin wall, providing excellent raw material for many paper products. NBSK pulp is the benchmark grade for pricing market pulp around the world.

BHK pulp, although it is produced from a variety of hardwoods, has become predominantly produced from eucalyptus due to lower production costs. The principal growing areas for these trees are in Latin America and Asia.

Global wood pulp production of 175 MMT is composed of several different types.

- Bleached softwood kraft pulps (including NBSKP)
- Bleached hardwood kraft pulps
- Unbleached kraft pulps
- Sulfite pulps
- Semi-chemical and mechanical pulps

About 70 percent of global pulp production is integrated with paper production; about 30 percent of pulp or about 50 MMT is sold on the market. NBSK and BHK pulps each have about 40 percent of the market share. Canada is the largest supplier and produces about 11 MMT of market pulp annually, most of it NBSKP, while U.S. market pulp production is about 9 MMT. Together,

they account for about 40 percent or 20 MMT of global market pulp production, but only about 10 MMT or 20 percent of global market pulp production is consumed within North America. At \$750 per ton, North American production is valued at \$15 billion. The United States has a largely balanced export-import trade while Canada has net exports of almost 10 MMT yearly, about 30 percent to the United States and 20 percent to Europe. Brazil is the largest supplier of BHK pulp, about 6 MMT. Europe is a major source of demand for global market pulp with about 20 MMT, or 40 percent of the world production, consumed annually.

Pulp is used to produce numerous products. Printing/writing papers (55 percent), towels/tissues (15 percent), packaging (13 percent) and sanitary goods (9 percent) are the main product areas consuming market pulp. Large consumer-goods firms are prominent participants in all four of these product areas. The specialty paper and paperboard segments are made up of mostly smaller paper mills.

CONTRACT SPECIFICATIONS

SOFTWOOD AND HARDWOOD PULP FUTURES AND OPTIONS

| SOFTWOOD PULP | FUTURES | OPTIONS |
|---------------------|--|--|
| Trade Unit | 20 metric tonnes (MT) | 1 futures contract |
| Settlement Method | Cash index PIX-NBSKP Europe | Cash index PIX-NBSKP Europe |
| Point Description | \$ per MT | \$ per MT |
| Point (Tick) Size | \$.50 per MT = \$10.00 | \$.50 per MT = \$10.00 |
| Contract Listing | 24 calendar months | 24 calendar months |
| Trading Venue | CME Globex | CME Globex |
| Product Codes | WP | WP |
| Hours | Sunday 5 p.m. CT to Friday 4 p.m. CT with daily halts from 4 p.m. to 5 p.m. CT | Sunday 5 p.m. CT to Friday 4 p.m. CT with daily halts from 4 p.m. to 5 p.m. CT |
| Strike | N/A | \$5 per MT (in \$100 range) |
| Limits | \$50 per MT above or below the previous day's settlement price. None in the spot month contract. | None |
| Minimum Fluctuation | \$.50 per MT = \$10.00 | \$.50 per MT = \$10.00 Cab .25= \$5.00 |
| HARDWOOD PULP | FUTURES | OPTIONS |
| Trade Unit | 20 metric tonnes (MT) | 1 futures contract |
| Settlement Method | Cash index PIX-BHKP Europe | Cash index PIX-BHKP Europe |
| Point Description | \$ per MT | \$ per MT |
| Point (Tick) Size | \$.50 per MT = \$10.00 | \$.50 per MT = \$10.00 |
| Contract Listing | 24 calendar months | 24 calendar months |
| Trading Venue | CME Globex | CME Globex |
| Product Codes | HWP | HWP |
| Hours | Sunday 5 p.m. CT to Friday 4 p.m. CT with daily halts from 4 p.m. to 5 p.m. CT | Sunday 5 p.m. CT to Friday 4 p.m. CT with daily halts from 4 p.m. to 5 p.m. CT |
| Strike | N/A | \$5 per MT (in \$100 range) |
| Limits | \$50 per MT above or below the previous day's settlement price. None in the spot month contract. | None |
| Minimum Fluctuation | \$.50 per MT = \$10.00 | \$.50 per MT = \$10.00 |

HEDGING WITH WOOD PULP FUTURES AND OPTIONS

Buy Hedge Example

In April, a papermaker wants to lock in a purchase price for 1,000 MT of pulp to be bought in September. It buys 50 September futures contracts at \$750 (each contract for 20 MT). In September, it will arrange shipment from the pulp market supplier and negotiate a price.

If the futures price is higher than \$750, the papermaker will close out the futures position by selling 50 contracts at the higher price, realize a gain and then apply this gain against any increase in the cash price of pulp since April. However, if the futures price is lower than \$750,

a loss will be realized when the futures position is offset and the loss will be applied against any decrease in cash pulp prices since April. In either case, a net purchase price will arrive in advance of the September shipment.

| | | | | |
|---------------------|---|----------------------|---|-----------|
| (buy \$750 futures) | - | (sell \$800 futures) | = | \$50 gain |
|---------------------|---|----------------------|---|-----------|

| | | | | |
|------------------|---|---------------------|---|--------------------------|
| (buy \$800 cash) | - | (\$50 futures gain) | = | \$750 net purchase price |
|------------------|---|---------------------|---|--------------------------|

OR

| | | | | |
|---------------------|---|----------------------|---|-----------|
| (buy \$750 futures) | - | (sell \$700 futures) | = | \$50 loss |
|---------------------|---|----------------------|---|-----------|

| | | | | |
|------------------|---|-------------|---|--------------------------|
| (buy \$700 cash) | + | (\$50 loss) | = | \$750 net purchase price |
|------------------|---|-------------|---|--------------------------|

Each contract for
20MT.

Alternatively, the papermaker could use call options to protect against a price hike. It buys 50 September 750 calls (the right to buy futures at \$750 per ton) at a premium of \$20. If the futures price has risen by September, the calls can be sold at a higher price. If the futures price is

lower, the calls would be allowed to expire. By purchasing calls, the papermaker has insured against a price hike but can gain from a price decline.

| | | | | |
|---------------------|---|----------------------|---|-----------|
| (\$800 Sep futures) | – | (\$750 strike price) | = | \$50 gain |
|---------------------|---|----------------------|---|-----------|

| | | | | |
|-------------|---|----------------|---|---------------|
| (\$50 gain) | – | (\$20 premium) | = | \$30 net gain |
|-------------|---|----------------|---|---------------|

| | | | | |
|------------------|---|-----------------|---|--------------------------|
| (buy \$800 cash) | – | (\$30 net gain) | = | \$770 net purchase price |
|------------------|---|-----------------|---|--------------------------|

OR

| | | | | |
|------------------|---|----------------|---|--------------------------|
| (buy \$700 cash) | – | (\$20 premium) | = | \$720 net purchase price |
|------------------|---|----------------|---|--------------------------|

Sell Hedge Example

In April, a pulp producer wants to lock in a sale price for 1,000 MT of pulp to be sold in September. It sells 50 September futures contracts at \$750 (each contract for 20 MT). In September, it will arrange shipment to a customer and negotiate a price. If the futures price is lower than \$750, the papermaker will close out the futures position by buying 50 contracts at the lower price, realize a gain and then apply this gain against any decrease in

In either case, a net sales price will arrive in advance of the **September** shipment.

cash prices. However, if the futures price is higher than \$750, a loss will be realized when the futures position is offset and the loss will be applied against any increase in cash pulp prices since April. In either case, a net sales price will arrive in advance of the September shipment.

| | | | | |
|----------------------|---|---------------------|---|-----------------------|
| (sell \$750 futures) | - | (buy \$700 futures) | = | \$50 gain |
| (sell \$700 cash) | + | (\$50 futures gain) | = | \$750 net sales price |
| OR | | | | |
| (sell \$750 futures) | - | (buy \$800 futures) | = | \$50 loss |
| (sell \$800 cash) | + | (\$50 loss) | = | \$750 net sales price |

Alternatively, the producer could use put options to protect against a price decline. It buys 50 September 750 puts (the right to sell futures at \$750 per ton) at a premium of \$20. If the futures price has fallen by September, the puts can be sold at a higher price. If the futures price is higher, the puts would be allowed to expire. By purchasing puts, the producer has insured against a price fall but can gain from a price rise.

By purchasing puts, the producer has insured against a price fall but can gain from a price rise.

| | | | | |
|----------------------|---|---------------|---|-----------|
| (\$750 strike price) | - | (700 futures) | = | \$50 gain |
|----------------------|---|---------------|---|-----------|

| | | | | |
|-------------|---|----------------|---|---------------|
| (\$50 gain) | - | (\$20 premium) | = | \$30 net gain |
|-------------|---|----------------|---|---------------|

| | | | | |
|-------------------|---|-----------------|---|-----------------------|
| (sell \$700 cash) | + | (\$30 net gain) | = | \$730 net sales price |
|-------------------|---|-----------------|---|-----------------------|

OR

| | | | | |
|-------------------|---|----------------|---|-----------------------|
| (sell \$800 cash) | - | (\$20 premium) | = | \$780 net sales price |
|-------------------|---|----------------|---|-----------------------|

FOEX INDEXES

What is FOEX?

FOEX Indexes Ltd. is a private, independent Finnish company specializing in operating as a provider of audited, trademark-registered pulp, paper and recovered paper price indexes. FOEX Indexes Ltd. is continuing the index publishing activity started by Finnish Options Exchange in 1996.

How do I contact FOEX?

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Phone: 358 9 439 1030
Fax: 358 9 439 10340

Does FOEX provide price time series and paper market data?

Yes, FOEX provides historical price time series and other pulp and paper market data; however, it does not project future price development. For further

information and to order historical price time series, visit the FOEX Web site or contact FOEX directly.

When and where is the PIX NBSKP Europe Index published?

The PIX NBSKP Europe Index prices are published on Tuesdays at 12 p.m. Helsinki time (4 a.m. CT). They are available on the FOEX Web site and from various news services such as Reuters and Bloomberg.

How are the PIX Indexes calculated?

FOEX receives real trade information from parties in the pulp and paper industry, from buyers, sellers and agents. The highest 10 percent and the lowest 10 percent of the prices are eliminated, and the PIX value is calculated as an average from the remaining prices.

Which time period do the weekly PIX Indexes represent?

The PIX Index is calculated from prices for real sales traded during the reporting week, published the following Tuesday.

The prices are reported for regular business for delivery during the current, or at the latest, the following month.

How is the monthly average of any PIX Index calculated?

The monthly average of any of the PIX Indexes is calculated by FOEX as a straight arithmetic average from the weekly PIX Index values of the month in question. The average value is published together with the last weekly index value (included in the monthly average).

What are the main uses for the PIX Indexes?

The main uses for PIX Indexes are:

- Cash-settled futures and options
- Swap contracts (OTC market)
- Basis for price formation for a physical trade in a customer/supplier relationship
- Market research and market information needs
- As a reference tool

10%

The highest 10% and the lowest 10% of the prices are eliminated.

What are the PIX benchmark specifications for NBSKP – Europe?

- The price is for a minimum amount of 100 Metric Tons of prime quality market pulp NBSK in USD
- Terms of delivery: CIF North Atlantic or North Sea port (European port)
- Terms of payment: 30 days net or the most frequent
- Price before any customer-specific rebates
- Price for a regular customer for pulp intended to be delivered within the

current month or at the latest, during the month following the trade

- Price against free market pulp trades only – no prices against integrated shipments nor prices tied to PIX or any other index
- Standard dryness (e.g. 90 percent air dry)
- Standard strength characteristics
- Brightness 88 or higher (for standard ECF/TCF)

How reliable is PIX?

The high reliability of PIX is achieved through a large number of contributors, and by the fact that FOEX is an independent organization with no self interest in the price level.

The method of index calculation is fixed. The rules for index calculation and method have been approved by FOEX regulators and by the European Commission DG IV (antitrust). The index calculation method is audited by PriceWaterhouse, and five well-known industry experts are available

as troubleshooters. There is a balance between contributing buyers and sellers. All prices in the index carry equal weight, and 10 percent of the lowest priced transactions and 10 percent of the highest priced transactions are eliminated from the data prior to calculation of the index value to avoid possible misprints and to create a very credible and reliable cash index.

Who are the contributors to PIX?

The contributors are pulp, paper, paperboard and recovered paper suppliers and buyers, as well as agents and trading houses. In order to guarantee anonymity, the identities of the contributing parties are not disclosed.

BLOCK TRADING, EFR AND EFP

A block trade is a strictly regulated privately negotiated futures transaction executed apart from the public auction market, either on or off the Exchange trading floor.

Traders interested in engaging in block trades in Softwood and Hardwood Pulp futures and options, should follow these five steps:

1. Become an Eligible Contract Participant (ECP) as detailed in CME Group Rule 526.B and as defined by the Commodity Futures Trading Commission (CFTC).
2. Trade a minimum number of Softwood and Hardwood Pulp futures and options on futures contracts according to the block trade thresholds shown below.
3. Come to a clear agreement with your counterparty on a fair and reasonable price for the pulp contract and the number of those contracts.
4. Ensure both counterparties to the trade call their clearing firm to let them know they have engaged in a block trade. Include all relevant details so that the trade will be able to clear quickly.

5. The seller’s clearing firm must then contact the CME Globex Control Center (GCC) within 15 minutes of the agreement to provide specific details of the trade. Additional information on block trading is available at www.cme.com/blocks.

Exchange for Risk (EFR)

An EFR is a transaction in which a futures position is coupled with a swap trade. Swap contracts are customized agreements in the OTC market.

An example of a swap is an agreement in which the parties make periodic payments

to each other. The actual physical commodity is not actually exchanged in the EFR transaction.

Exchange for Physical (EFP)

An EFP is a transaction which couples a futures trade with a cash market trade. The quantity in the cash market must be equivalent to the quantity covered by the futures trade. The buyer of the futures position must be the seller of the cash position and vice versa. Prices of the cash market and futures market positions can be arranged by the parties.

SOFTWOOD AND HARDWOOD PULP BLOCK MINIMUMS

| Contract | Hours | Block Minimum |
|----------|---|---------------|
| Futures | 5 p.m. to 4 p.m. CT next day. Expiring contract closes at 2 a.m. CT on last trading day. | 25 contracts |
| Options | 5 p.m. to 4 p.m. CT next day. Expiring contract closes at 2 a.m. CT on last trading day. | 25 contracts |

GETTING STARTED ON CME GLOBEX

There are a variety of ways to trade electronically on the CME Globex platform. Execute orders electronically via a broker, who will place the CME Globex orders on your behalf. Or, place orders and receive market data directly through a proprietary trading system or a variety of third-party software applications available from participating Futures Commission Merchants (FCMs), Introducing Brokers (IBs) and Independent Software Vendors (ISVs).

Direct Connectivity

To connect direct to CME Group, contact CME Globex Account Management (GAM) to be assigned a personal GAM account manager and begin the connectivity process. You will then review and complete the CME Globex Connection Agreement, select a network connectivity option, schedule your connectivity date and complete pre-production testing.

CME Globex Account Management

U.S.: 1 312 634 8700

Europe: 44 20 7796 7100

E-mail: globexaccountmanagement@cmegroup.com

For additional information regarding CME Globex, please visit www.cmegroup.com/globex.

To access CME Globex, you must:

- Identify a CME Group Class A clearing firm that will be guaranteeing your orders
 - Have your clearing firm approve your trading application
 - Choose to connect directly to CME Globex or indirectly via an FCM, IB or data center
-

CME GROUP COMMODITY PRODUCTS

CME Group offers the widest range of commodity futures and options of any U.S. exchange, with trading available on a range of grains, livestock, oilseeds, dairy, lumber and other products.

Prices of these primary products are subject to factors that are difficult or impossible to control, such as weather, disease and political decisions. In addition, they are also short-term fixed supply products offered in a context of growing worldwide demand and global economic expansion. As such, CME Group Commodity products serve commodity producers and users seeking risk management and hedging tools, alongside funds and other traders looking to capitalize on the extraordinary opportunities these markets offer.

Commodity Indexes

- Dow Jones-AIG Commodity Index Excess Return futures
- S&P® Goldman Sachs Commodity Index (GSCI) futures and options
- S&P GSCI Excess Return Index futures

Dairy Products

- Butter futures and options
- Cash-settled Butter futures and options
- Milk Class III futures and options
- Milk Class IV futures and options
- Nonfat Dry Milk futures and options
- Dry Whey futures and options

Grains and Oilseeds

- Corn futures and options
- Mini-sized Corn futures
- Ethanol futures, options and swaps
- Oat futures and options
- Rough Rice futures and options
- Soybean futures and options
- Mini-sized Soybean futures
- Soybean Meal futures and options
- Soybean Oil futures and options
- South American Soybean futures
- Wheat futures and options
- Mini-sized Wheat futures

Livestock

- Feeder Cattle futures and options
- Live Cattle futures and options
- Lean Hogs futures and options
- Frozen Pork Bellies futures and options

Lumber and Wood Pulp

- Random Length Lumber futures and options
- Softwood Pulp futures and options
- Hardwood Pulp futures and options

For more information, visit www.cmegroup.com/pulp
or call Customer Service at 1 312 930 2316.

Futures trading is not suitable for all investors, and involves the risk of loss. Futures are a leveraged investment, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for a futures position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles. And only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade.

All references to options refer to options on futures.

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