



FOEX/PIX price index system and the multiple uses of the indexes for pulp, paper and board sellers, buyers, converters and other stakeholders

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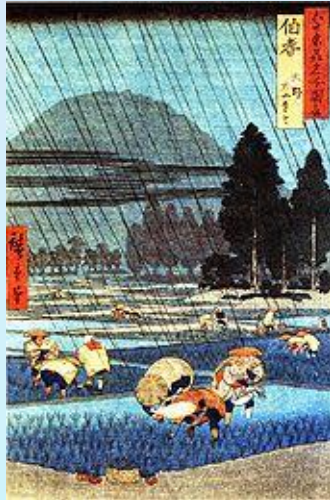
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The Start of the Price Risk Management

Hedging price risks started with so-called rice tickets in Japan in 1600's





Price Risk Management Development

- **Rice tickets in Japan in 1600's**
- **Corn 1851, cotton 1870, coffee 1885**
- **Various metals from 1860's onwards**
- **First pulp hedging attempts in 1980's (Montreal Exchange)**
- **Later attempts (FOEX, OMLX/PULPEX, NYBOT, CME)**
- **Earlier based on physical delivery settlement, nowadays mainly cash-settlement, based on indexes**
- **Exchange – driven trading complemented by price risk management products from banks and other financial institutions (OTC- [over-the-counter] swaps being the most common in pulp and paper business)**

- **Private, independent company, located in Helsinki, Finland**
- **Owned by private individuals and investment companies**
- **Compiles and distributes audited pulp, paper, packaging and bioenergy price indexes**
- **Has contracts with financial community for the use, against commission, of PIX indexes as benchmarks for financial products used in hedging price risks**
- **Has contracts with individual companies for the use of PIX indexes as a basis for their supply contracts with their clients or for internal invoicing**
- **Owns the rights to the PIX index logo and trademark**
- **Provides subscribers with up-to-date pulp & paper market information**



PIX Price Indexes - Key Principles

- **FOEX is totally independent: no ownership links to any forest product companies**
- **FOEX is not allowed to do price forecasting**
- **Buyers and sellers evenly represented as price donors**
- **Participation to the index formation process must be voluntary and free of charge**
- **Participants must be allowed to remain anonymous (FOEX never mentions names of those who participate or those who do not)**
- **Index values are never retroactively modified; index system audited by Ernst & Young and approved by competition authorities (DG IV)**

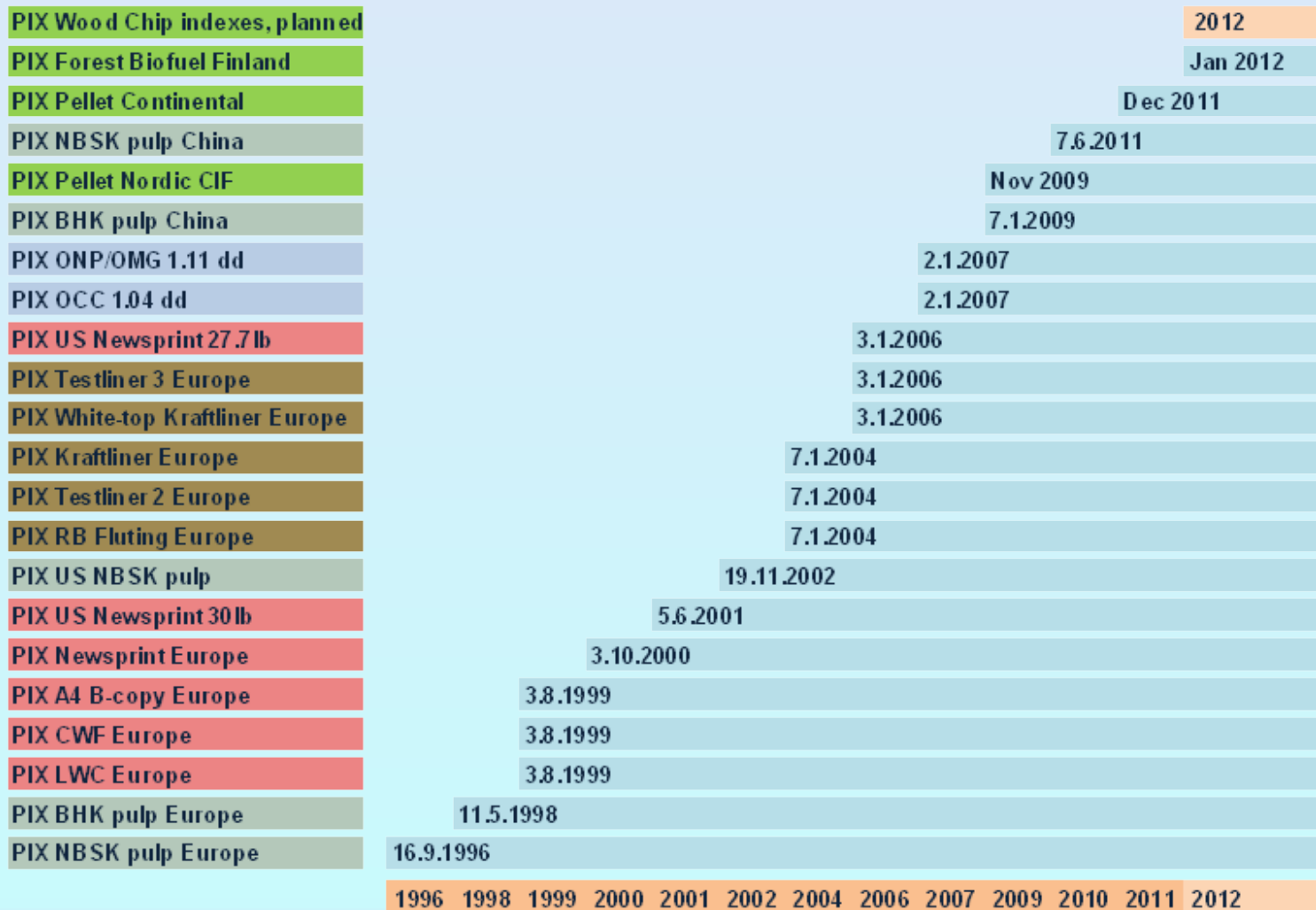


PIX market areas





FOEX Indexes Ltd – Current and planned PIX Indexes



Pulp
Paper
Packaging
Recycled
Biomass

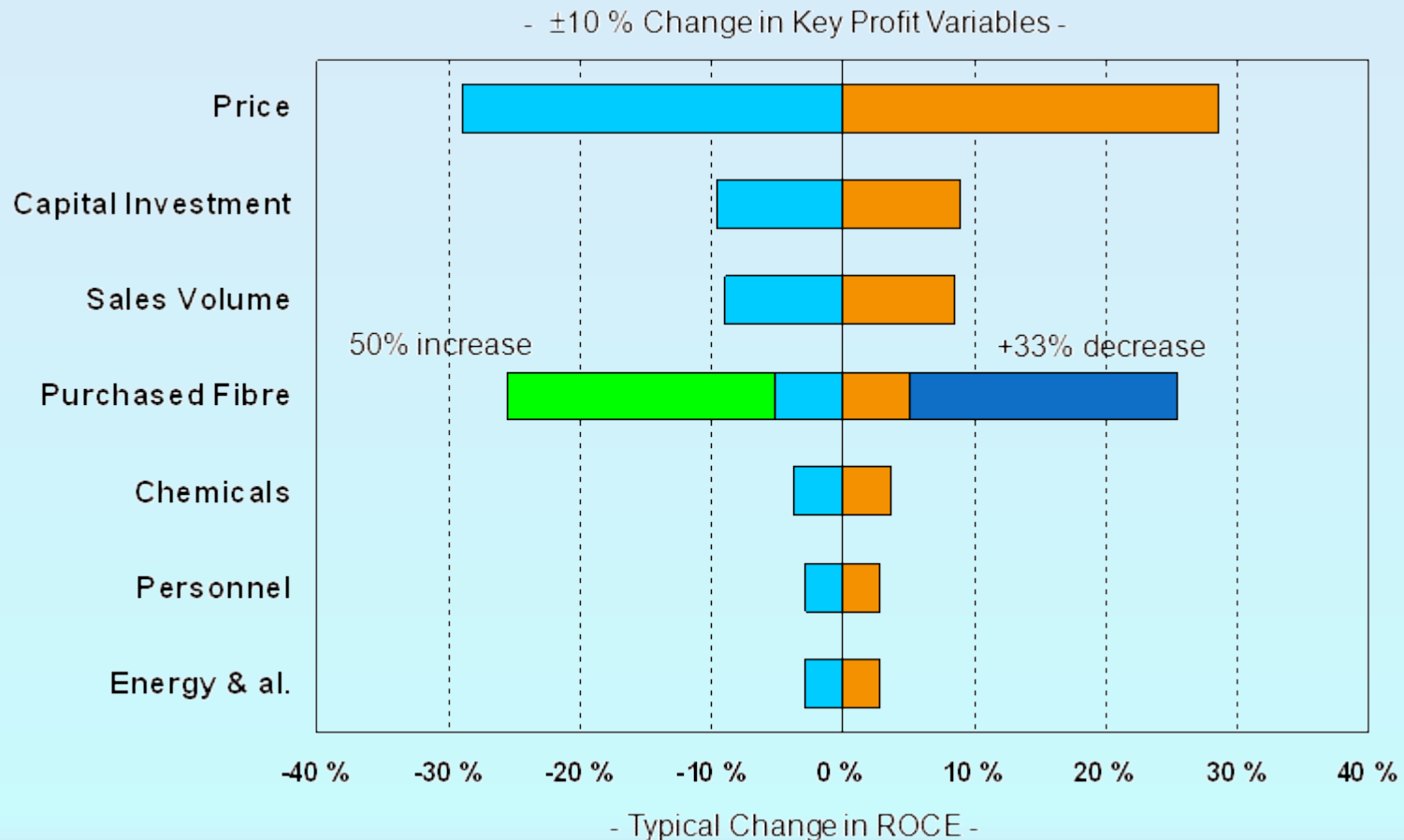


Index Requirements

- **Closeness with the underlying market/represents a large part of the physical trade**
- **Reflecting normal trade of prime quality product**
- **Represented quality measurable in technical terms**
- **Both sellers and buyers views represented/full regional coverage; Big and small companies represented**
- **Defined shipment time and other sales terms for the underlying product**
- **Impossible to manipulate**
- **Possible to audit and audited**
- **Acceptance of regulatory and anti-trust authorities**
- **Totally transparent with maximum exposure**
- **Anonymity of price donors guaranteed**
- **Index provider is independent**

Key variables affecting costs and benefits*

The effect of product price changes on returns is three times bigger than the effect of changes in the cost of an investment or changes in sales volumes; the risk of 50% change, or even higher, in purchased fibre costs magnifies the impact of raw material cost changes to a company with relatively stable end-product prices



* of a paper producer



Main Uses of the PIX (and other) Indexes

- Possibility to hedge - through an exchange or bank/other financial institution - product or raw material price risk against a reliable index
- Basis for a price formation directly with a customer/supplier
- Basis for internal pricing/invoicing between profit centers (pulp mill to paper mill, liner mill to box plant, wood procurement to energy island)
- Market research needs
- Useful reference tool, based on industry information, yet transparent and objective
- Source of up-to-date market information, on-line and free of charge for those providing prices for index calculations
- *The use of the PIX-indexes requires formal permission from FOEX Indexes Ltd., the owner of the trade-marked PIX-index system*



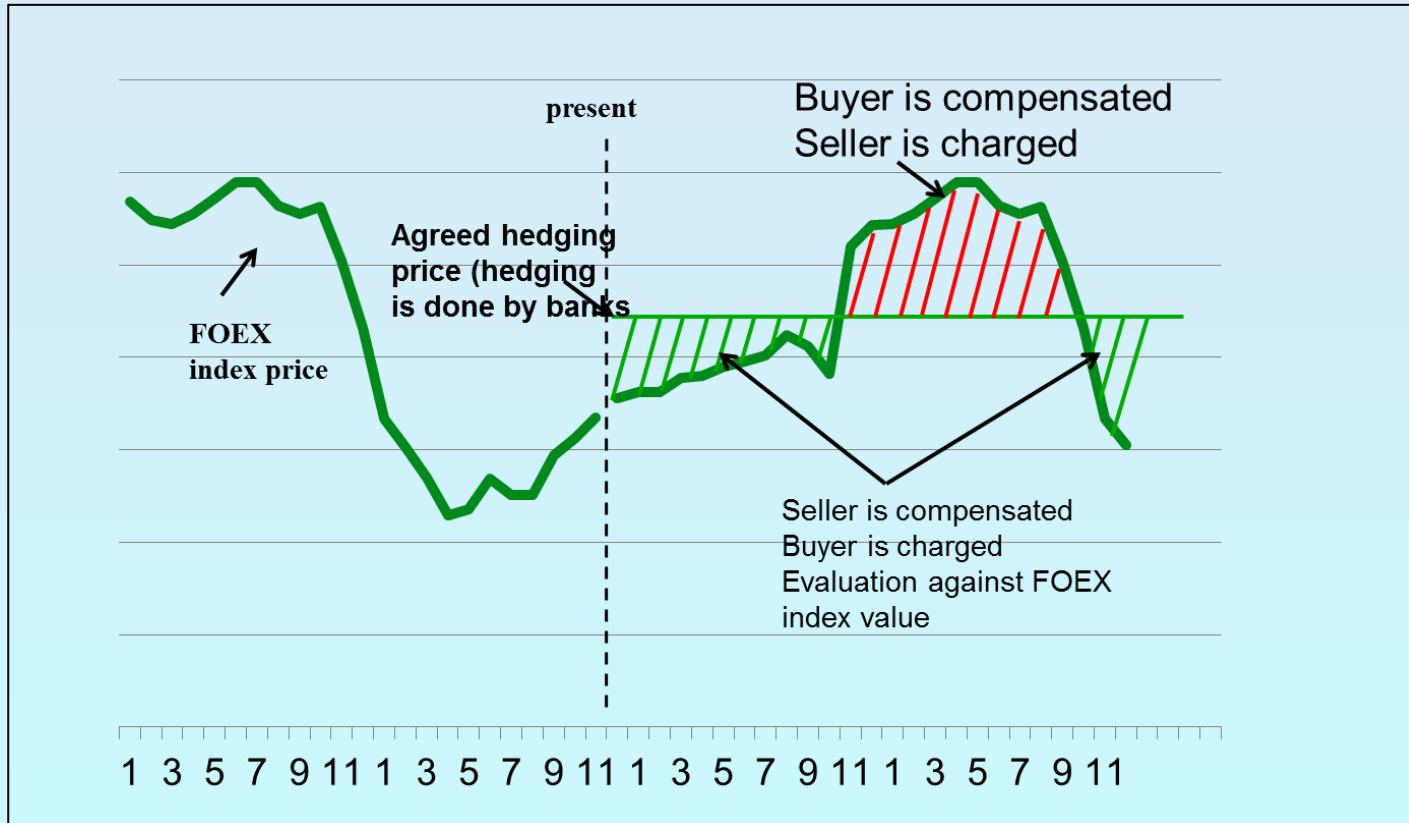
Risk Management

For most of the risks, there is a way to manage them.





Use of index in hedging





PIX Pulp Indexes - Challenges

- **Retroactive decisions on pricing (Baisse/Hausse Clause / invoiced or targeted price)**
- **Pricing based on last month's market price**
- **Most representative prices (weighting by tons) vs. most suitable prices**
- **Varying share of spot vs. contract business; also: only new deals spot**
- **Changing size and varying use of price discounts (in China net vs. gross)**
- **Reporting prices of late deliveries (in absence of new sales); spread**
- **Announced new price vs. invoice to consignment stock vs. invoice to buyer**
- **Weighing or not**
- **Auditing price quotes at price provider's end**



Indexes are only as correct and accurate as the price quotes received!!



PIX Pulp and Paper Indexes - Opportunities

Existing

- **Use as direct reference value in normal physical trade (growing rapidly)**
- **Use as a primary or secondary reference in financial price risk management products (banks, exchanges)**
- **Group internal pricing**
- **Other internal use (market research, valuations)**
- **Authorities, press and other external needs**

Potential new

- **Need for a net price index for pulp and paper and possibilities to collect the data**
- **Clearing a swap through an Exchange replacing credit risk insurance or letter of credit**
- **Risk management products on the price gap between fibre and paper/board or between linerboard and boxes (requires a price box index)**



PIX in Supply Contracts

- **Growing use as market reference price when linking physical supply contract prices to benchmarks**
- **License Agreements between FOEX and companies for the commercial use of PIX indexes**
- **Commission to FOEX based on the tonnage volumes in the supply contract**
- **Factors supporting the use of PIX as benchmark (PIX Survey, Oct 2006)**
 - o **simplifies negotiations**
 - o **cost and time saving**
 - o **no arguments about the market price level**
 - o **stability long term**
 - o **focus more on value added topics**



Summary

- **Price volatility is likely to increase**
- **Price risk management products need good price discovery systems**
- **Price indices have multiple uses also outside price risk management**
- **Good price indices have high quality requirements**
- **The use of price indices and other price discovery systems is very common in exchange rates, interest rates, energy and other price/cost risks involving forest product companies. There is no reason not to manage the two biggest risks = product price itself and raw material costs**
- **Good indexes for hedging and other uses are increasingly needed, appreciated and used**
- **FOEX is the key provider of reliable forest and bioenergy price indices**
- **For the use of PIX-indexes in business transactions (with banks or with other companies, including internal use) or any other commercial use, FOEX needs to be contacted**



PIX Indexes – working like a clock

Thank you for your
kind attention!





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