



Methodology and Specifications

Iron Ore Index

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Methodology and Specifications for the Iron Ore Index

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1. Introduction

The Steel Index (“TSI”) is the premier provider of independent price information for key steel and iron ore products around the world, based on actual transaction data. It is a neutral, independent organisation that forms part of the Steel Business Briefing group of companies.

TSI specialises in the compilation of industry reference price data for clearly specified products, using rigorous, transparent processes and secure web-based technology. Its objective is to compile and publish reference prices (“Indices”) that are highly representative of physical spot market transaction prices for selected products. The Indices are based only on price data submitted by companies active in the relevant product markets for completed physical transactions of clearly specified products. This approach is far more rigorous and verifiable than telephone polling.

The Indices are compiled using transparent and verifiable processes, providing market participants with confidence in their objectiveness and making them suitable for use in financial instruments. TSI has no financial interest in the prices of the products for which it compiles Indices.

All companies submitting price data (“Data Providers”) have entered into signed agreements with TSI committing them to submit accurate price and related information based on actual transactions in the utmost good faith. In return, TSI commits to keeping the identity of each Data Provider and the data they submit confidential.

This document sets out the methodology and specifications (“Guideline”) to be used by TSI in compiling its iron ore reference prices (“Iron Ore Index”).

This Guideline may be updated over time to take into account changes in the market being assessed. Changes could reflect developments in terms of the specifications of the product traded or in trading practices, based on feedback from market participants. This will allow the Iron Ore Index to evolve with the market and provide reference prices that are highly representative of physical spot market transactions at all times. Any such changes will be posted on The Steel Index website (www.thesteelindex.com) under the menu option ‘Procedures & Methodology’.

2. Iron Ore Index

Initially TSI is compiling two reference prices for iron ore.

Both iron ore reference prices are for spot price transactions of iron ore sinter fines delivered to China, from any origin. The first reference price reflects transactions of iron ore fines with 62% Fe content while the second reflects transactions of iron ore fines with 58% Fe content.

It is necessary to compile two separate reference prices because iron ore fines with a lower Fe content can exhibit different pricing movements to iron ore fines with higher Fe content. This makes it inappropriate to normalise spot prices for all iron ore fines to a single reference product.

Prices submitted for relevant transactions with an iron ore content higher than 60% Fe are normalised to the 62% Fe reference price. Prices submitted for relevant transactions with an iron ore content of 55% Fe to 60% Fe inclusive are normalised to the 58% Fe reference price.

Prices submitted are also normalised to the impurity levels, delivery port and payment terms stated in the reference price specifications below (providing the transacted products have specifications falling within the ranges defined below).

Transaction data for iron ore products with specifications outside the ranges stated below will not be included in the compilation of the respective iron ore reference prices.

2.1 Product Specifications

The full specifications for the two TSI Iron Ore Index reference products are given below:

A) Iron ore fines 62% Fe, CFR China

Sinter Fines:	granular size below 10mm for at least 90% of the cargo, with maximum of 40% below 150 micron)
Iron content:	62.00% Fe
Moisture:	8.00%
Alumina:	3.50%
Silica:	4.00%
Phosphorus:	0.070%
Sulphur:	0.05%
Minimum lot size:	20,000 metric tonnes
Pricing Point:	CFR Tianjin port (China)
Timing:	Loading within 4 weeks of transaction
Payment:	At sight
Currency and Units:	US\$ per dry metric tonne

Prices submitted for transactions with specifications in the following ranges will be normalised to the 62% Fe reference product:

Iron Content:	60.01% – 68.00% Fe (inclusive)
Moisture:	10.00% max
Alumina:	4.00% max
Silica:	6.00% max
Phosphorus:	0.125% max
Sulphur:	0.07% max
Pricing Point:	Deliveries to other major Chinese ports (listed below) will be normalised to Tianjin port
Payment:	All payment terms will be normalised to 'At sight'

B) Iron ore fines 58% Fe, CFR China

Sinter Fines:	granular size below 10mm for at least 90% of the cargo, with maximum of 40% below 150 micron)
Iron content:	58.00% Fe
Moisture:	8.50%
Alumina:	3.50%
Silica:	4.00%
Phosphorus:	0.070%
Sulphur:	0.05%
Minimum lot size:	20,000 metric tonnes
Pricing Point:	CFR Tianjin port (China)
Timing:	Loading within 4 weeks of transaction
Payment:	At sight
Currency and Units:	US\$ per dry metric tonne

Prices submitted for transactions with specifications in the following ranges will be normalised to the 58% Fe reference product:

Iron Content:	55.00% – 60.00% Fe (inclusive)
Moisture:	10.00% max
Alumina:	5.00% max
Silica:	8.00% max
Phosphorus:	0.125% max
Sulphur:	0.07% max

Pricing Point:	Deliveries to other major Chinese ports (listed below) will be normalised to Tianjin port
Payment:	All payment terms will be normalised to 'At sight'

2.2 Pricing Point

The pricing point for the Iron Ore Index is CFR Tianjin port, China. It is not origin specific.

CFR is a term provided and defined by the International Chamber of Commerce which publishes the INCOTERMS. The definition of CFR is understood to be:

Cost and Freight (named port of destination)

- Carriage of goods is to be arranged by the seller
- Risk transfers from the seller to the buyer when the goods pass the ship's rail
- Cost transfer at port of destination, buyer paying such costs as are not for the seller's account under the contract of carriage

Further definitions are available at <http://www.iccwbo.org/incoterms/>

Prices for iron ore deliveries to a range of other major Chinese ports are normalised to Tianjin port. The list of other ports includes but is not limited to: Qingdao, Rizhao, Lanshan, Xingang, Caofeidian, Jintang, Lianyungang and Beilun. Relevant deliveries to all major ports for which freight cost differentials can be determined are included in the compilation of the Iron Ore Index.

2.3 Currency and Units

The Iron Ore Index is quoted in US\$ per dry metric tonne (US\$/dmt).

2.4 Price fluctuations

The Iron Ore Index is rounded to the nearest US\$0.1 level. This will limit the Iron Ore Index price fluctuations to a minimum movement of US\$0.10/dmt.

2.5 Publication Time

From 1 June 2009 the Iron Ore Index will be published daily at 12:00 UK GMT (20:00 Singapore and 07:00 US East Coast), except on UK public holidays.

During the summer time (British Summer Time in the UK and Daylight Savings Time in the US) the publication time does not change in GMT terms. For example, in the UK, Singapore and US local publication times are as follows:

- In the UK publication is at 12:00 local time, except between the last Sunday in March and the last Sunday in October when publication time will be 13:00 local time (i.e. British Summer Time).
- In Singapore at 20:00 local time throughout the year
- In the US publication will be at 07:00 East Coast local time, except between the second Sunday in March and the first Sunday in November when publication time will be 08:00 East Coast local time (Daylight Savings Time)

Dates of UK public holidays for the following calendar year, on which the Iron Ore Index will not be compiled or published, will be clearly specified on The Steel Index website (www.thesteelindex.com).

Until 31 May 2009, the Iron Ore index was published weekly, each Friday at 12:00 UK GMT. On the rare occasions when a UK public holiday fell on a Friday, publication of the weekly Iron Ore Index was brought forward to 17:00 GMT on the last working day immediately prior to the holiday Friday.

2.6 Corrections

TSI will not change the value of the published Iron Ore Index retroactively based on new information that comes to light after publication. If a typographical human or technical error in the published Iron Ore Index is identified, however, TSI will issue a correction immediately. If a correction is required for any other reason, such as errors identified in the

data processing or calculations, TSI will issue a correction within 3 business days of publication.

3. Data Collection

3.1 Data Collection and Storage Procedures

TSI works with a broad group of companies that have agreed to submit iron ore spot price data based on actual transactions. These companies (“Data Providers”) include iron ore miners, steel mills, traders and intermediaries from all relevant regions. TSI aims to have a balance of Data Providers representing the “buy side” and “sell side” of transactions for each reference price.

Each Data Provider enters into a signed agreement (“Data Provider Agreement”) with TSI. The Data Provider Agreement commits Data Providers to submit accurate iron ore price and related information (“Data”) based on actual transactions known to the Data Provider in the utmost good faith. In return, the identity of each Data Provider and the data submitted is kept completely confidential.

Each Data Provider submits Data related to actual physical spot market transactions to TSI via secure, password-protected forms on its Internet site. Confidential communication is ensured by the use of a GlobalSign ServerSign SSL certificate using 128-bit encryption. All Data Providers are assigned a confidential identification number known only to a very limited number of senior level staff within TSI. All Data is stored against the confidential identification number.

3.2 Collection period / Time of assessment

Data Providers are able to submit Data on their transactions to TSI at any time convenient to them (i.e. 24 hours per day), 7 days per week, by using the secure online submission forms on the website.

From 1 June 2009, the daily Iron Ore Index published at 12:00 GMT is based on all data submitted in the 24 hours up to 11:00 GMT that day. The hour between 11:00-12:00 GMT each day is used to compile, verify and prepare the distribution of the Iron Ore Index to clients at 12:00 GMT. For clarity, Data submitted after 11:00 GMT each day is included in the compilation of the Iron Ore Index published the following day.

[Until 31 May 2009, the weekly Iron Ore Index published at 12:00 GMT each Friday was based on all data submitted in the 168 hours up to 10:00 GMT that Friday. The two hours between 10:00-12:00 GMT each Friday were used to compile, verify and prepare the distribution of the Iron Ore Index to clients at 12:00GMT. Data submitted after 10:00 GMT on a Friday was used in the compilation of the Iron Ore Index published the following Friday.]

3.3 Data Collected and Units

Data collected from Data Providers is for spot sales/purchases. The Iron Ore Index aims to give a transparent and unbiased view of the transacted price of the specified iron ore reference products in the spot market.

Data Providers are required to submit the following transaction information in each data submission:

Material Specifications

- Fe content – Basis (Typical, Nominal) and/or Minimum Guaranteed – up to two (‘.00) decimal places, in %
- Moisture content – up to two (‘.00) decimal places, in %
- Alumina content – up to two (‘.00) decimal places, in %
- Silica content – up to two (‘.00) decimal places, in %
- Phosphorus content – up to three (‘.000) decimal places, in %
- Sulphur content – up to two (‘.00) decimal places, in %
- Loss On Ignition (LOI) – minimum and maximum – up to two (‘.00) decimal places, in %

Transaction Date

- Date on which the transaction was concluded

Transaction Price

- Price – up to two (‘.00) decimal places, in US\$/dmt CFR China

Volume/Lot Size

- Volume associated with each transaction – no decimal places, in metric tonnes

A minimum lot size of 20,000 metric tonnes is set and only transactions larger than this will be considered in calculation of the Iron Ore Index.

Loading window

Data Providers are also required to submit information on the loading window (start date - end date) within which it is intended that each cargo will be loaded and made ready for shipping. If the cargo is already on route to China, then Data Providers record this information on the submission form.

Loading window information is necessary to determine whether the transaction is considered relevant. Only transactions with a loading window that ends within 4 weeks of

the transaction date and transactions that are already on route will be included in the compilation of the Iron Ore Index.

Given shipping times from the main origins of seaborne iron ore supply, this equates to a typical delivery lead-time of 2-12 weeks.

Delivery locations

Data Providers are also required to submit information on the agreed delivery port in China for the cargo.

All transactions are normalised to Tianjin port by taking into account the relevant freight differentials between Tianjin and the stated Chinese port. Relevant deliveries to all major ports for which normalisation criteria can be defined are included in the compilation of the Iron Ore Index. The list of other Chinese ports includes but is not limited to: Qingdao, Rizhao, Lanshan, Xingang, Caofeidian, Jintang, Lianyungang and Beilun.

Payment terms

Data Providers are also required to submit information on the payment terms agreed for the transaction. This is recorded in terms of “Number of Days” with “0 days” representing “Payment at sight”. All transactions are normalised to “Payment at Sight”.

4. Iron Ore Index Calculation Procedure

Calculation of the Iron Ore Index involves two principal steps:

- i) normalisation of all the Data submitted to the reference price specifications;
- ii) calculation of the Iron Ore Index based on the normalised data.

The calculation methodology employed by TSI to compile the Iron Ore Index is similar to that used in the formulation of other established and respected indices. The calculation procedure has been successfully employed in the calculation of TSI steel reference prices since 2006.

4.1 Normalisation Procedure

All Data submitted is initially screened to ensure the end of the loading window falls within 4 weeks of the transaction date, or that the cargo is already on route to China. Any Data for which the end of the expected loading window is more than 4 weeks after the transaction date is excluded from the data sample.

Following this, the remaining Data submissions are split into two groups. The first group containing Data for transactions with an Fe content higher than 60% Fe and the second containing Data for transactions with an Fe content of up to 60%.

For the Data submissions with an Fe content higher than 60% Fe, all the material specifications are checked against the allowable ranges specified for normalisation to the 62% Fe reference product described in the “Product Specifications” section above. Any Data submissions for which one or more attributes fall outside the allowable ranges is excluded from the data sample.

A similar process is followed for the group of Data submissions with an Fe content of up to 60% Fe, referencing instead the allowable 58% Fe reference product normalisation ranges.

Within each Fe group, for each Data submission that has not been excluded by a previous step, the price is normalised for any variations of the Iron, Phosphorus, Alumina, Silica, Sulphur and Moisture content from the index specification. Further adjustments are made for freight differentials and for differences in payment terms. The normalised price for each relevant submission is then used in the calculation of the Iron Ore Index.

4.2 Calculation of Reference Prices

Each iron ore reference price is calculated as the volume-weighted average of the relevant normalised price information submitted.

Prior to calculating the average index price, averaging techniques are used to establish outliers and remove pricing points that can cause undue influence. Furthermore, when calculating the volume-weighted price, the percentage weighting assigned to the total submissions by any single Data Provider is capped in order to ensure that the average figure remains representative.

4.3 Verification Procedures

In addition to the compilation of the Iron Ore Index, procedures include a variety of statistical analyses of all the price data and other information submitted by Data Providers. The purpose of these analyses is firstly to monitor and record the size, attributes and consistency of the data sample submitted each week to verify the statistical robustness of the Iron Ore Index and secondly to monitor individual data submissions for any signs of bias or attempts by individual Data Providers to manipulate the Iron Ore Index.

Any data submissions exhibiting unusual trends are investigated by TSI and the Data Provider concerned is contacted. If no satisfactory explanation can be found, the agreement with the Data Provider concerned is terminated and no further data collected from that company.

4.4 Fall-back Procedures

If analysis of the Data sample on any occasion reveals that it does not provide a sufficiently statistically robust basis for compiling the Iron Ore Index (for example, if an insufficient number of transactions has been submitted during the period), fall-back procedures are deployed. These fall-back procedures ensure that the Iron Ore Index can be compiled on every occasion.

As a first level of fall-back, the Data sample collected for the current period is supplemented by “rolling forward” Data submissions made during the previous period by Data Providers that have not submitted any Data during the current period. Providing this achieves a Data sample which is a sufficiently statistically robust basis for calculating the Iron Ore Index, the usual methodology is then applied, but any price Data “rolled forward” carries a reduced volume weighting in the calculation of the reference price.

If, after applying this first fall-back measure, there is still insufficient Data to meet the necessary robustness criteria for compiling the Iron Ore Index, a second fall-back measure is applied in which the Data sample is supplemented with firm bid and offer price data for the relevant period. The usual calculation methodology is then applied, but any firm bid and offer price data used also carries a reduced volume weighting relative to any transaction data submitted for the current period.

4.5 Advisory Committee

An advisory committee consisting of senior management of The Steel Index and Steel Business Briefing with extensive experience of the steel and iron ore sectors has been established to review the product definition, data collection and Iron Ore Index compilation processes.

This committee focuses on reviewing the definitions and processes used periodically with a view to ensuring that the Iron Ore Index is highly representative of physical spot market transaction prices for relevant products. It cross-references the Iron Ore Index with the opinions/reports of market commentators and industry participants to check it is representative of the relevant spot market.

If, in the opinion of the advisory committee, divergence ever occurs, it is responsible for proposing amendments to the procedures used in order to eliminate this perceived divergence. It should be noted that the committee cannot directly adjust the Iron Ore Index in any given week after it has been compiled. The advisory committee can only propose changes to the definitions and procedures used for Index compilation in the future. This ensures that the Iron Ore Index is not subject to any subjective input at any time.

If any changes are made to the product specifications or Index compilation procedures, these are posted on The Steel Index website (www.thesteelindex.com) under the menu option ‘Procedures & Methodology’.