

McCLOSKEY

BY OPIS, A DOW JONES COMPANY

Iron Ore, Ferrous Scrap, and Steel Methodology

Effective November 2024

Introduction

This statement of methodology for McCloskey by OPIS, a Dow Jones company's ["McCloskey"] price assessments reflect fundamental principles that form the foundation for McCloskey's price reporting service. This statement of methodology also includes detailed information on the formation of McCloskey's price assessments and the specifications for the various products assessed.

As ferrous scrap, metal and iron ore markets change, McCloskey's methodology for assessing prices will continue to evolve.

The McCloskey price assessment services team is comprised of specialist reporters and analysts in London, Singapore, Melbourne, New Delhi, China, and the United States. The McCloskey team undertakes price discovery of the physical markets on a daily basis according to the specifications outlined in this statement of methodology.

For questions regarding price assessments, please contact Prasenjit Bhattacharya at PBhattacharya@opisnet.com, Alex Reynolds at Areynolds@opisnet.com or Marian Hookham at MHookham@opisnet.com. OPIS also has compliance staff independent of the editorial group. For more information, please contact OPIS Risk Management and Compliance Director at OPIS_Compliance_Team@opisnet.com.

McCloskey Publications

McCloskey publishes daily and weekly iron ore, ferrous scrap and steel price assessments, market commentary, news, and analysis online through its business intelligence platform and in the following publications.

Steel Raw Materials Daily

Daily intelligence and price updates focusing on the global metallurgical coal, coke and steel raw materials markets.

Methodology Overview

McCloskey produces physical price assessments, termed "markers," for the major traded global hubs. These assessments are published daily and weekly. Weekly assessments are published on Fridays in Steel Raw Materials Daily and its business intelligence platform.

All McCloskey markers share the following features and standards:

Basis of McCloskey Methodology

McCloskey assesses the ferrous scrap, steel and iron ore markets using a methodology that has been designed to reflect the way markets trade. The principal purpose of the methodology is to produce price markers that are fair, consistent, and reliable indicators of standard market values in the markets being assessed. As a result, the assessment locations, standard traded units, and other particulars of a marker are determined by industry conventions.

McCloskey uses the trading period deemed by McCloskey, in consultation with the industry, to be the most appropriate to capture market liquidity. In order to be included in the assessment process, deals must meet the minimum volume, delivery, timing and specification requirements as set forth in this Iron Ore, Steel and Ferrous Scrap Marker Price Methodology and Specifications guide (the "Methodology").

McCloskey markers are informed by data received from active market participants including physical brokers. Market reporters engage with the industry by proactively polling participants for market data. McCloskey will accept market data from all credible market sources, including electronic trading platforms. McCloskey will accept market data by telephone, instant messenger, email or other means.

McCloskey encourages parties that submit market data to submit all their market data that falls within the stated methodological criteria for the relevant marker. McCloskey encourages all sources of market data to submit transaction data from back-office functions. McCloskey will seek to ensure, so far as is able and is reasonable, that transaction data submitted are representative of all the submitter's actual physical concluded fixed priced transactions.

Throughout all markets, McCloskey is constantly seeking to increase the number of companies willing to provide market data. Market reporters are mentored and encouraged to expand their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions.

Judgment Guidelines

As part of the price reporting process, market reporters are required to use their professional judgment, to ensure the reliability of the data and marker compilation process. McCloskey has set forth guidelines throughout this Methodology to ensure that the use of judgment is consistent and fair. These guidelines can be found in the following sections of this Methodology:

- Anomalous or suspicious transactions
- Additional checks and analysis
- Comparative markets
- Transactions and survey weightings

McCloskey has developed a Price Reporting Manual that details the process for compiling each specific marker. In addition, McCloskey has developed a programme of training and oversight of market reporters that helps ensure uniformity in the application of judgment. The key elements of this programme include:

1. An initial course of training that explains and defines the parameters for the exercise of judgment
2. Suitably sourced staffing to ensure proper backup for sick days, vacations, etc.
3. Oversight of reporting teams by experienced market editors that are involved in daily mentoring and assisting in the application of judgment
4. A requirement that market editors sign-off on all markers

Market Data Application and Thresholds

The specifications defined in the methodology and data used to compile each marker is deemed to be the most representative for that market. McCloskey will utilize various types of market data in compiling its markers, including:

- Transactions
- Bids and offers
- Other market information

Transaction information is the preferred source of data for the markers. However, depending on the liquidity of the markets being assessed, other information can be and is used, such as bids and offers and other market information. This can be in combination with transactions, or can substitute transactions, depending on the market liquidity and specific market circumstances.

Consequently, in most markets there will be a relatively higher rank given to transactions over bids and offers and other market information in the compilation process.

McCloskey does not establish strict thresholds based on a count of completed transactions. McCloskey does, however, use transaction levels to determine the weighting between weighted average of price transactions and other market information (see “Transactions and Survey Weightings” below). A strict adherence to a transaction-based threshold could lead to unreliable and non-representative markers because of the varying logistics found in the ferrous scrap, steel and iron ore markets, which determine the typical size of the transaction.

Verification of Transaction Data

Market reporters carefully evaluate all data gathered before it is used in the price compilation process. These data inputs include transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of a marker. Specific to transactions and bids and offers, market reporters seek to verify and validate the price, volume, specifications, and location basis, and with regard just to transactions, the counterparties.

Market reporters examine all the reported transactions to avoid duplication.

In order to promote transparency in the ferrous scrap, steel and iron ore markets, McCloskey seeks to inform the market of any deals it identifies and significant movements of bids and offers through Steel Raw Materials Daily.

Scrutiny of Transactions

McCloskey has created guidelines that control the exercise of judgment by its market reporters. Market reporters are trained to identify anomalous or suspicious transactional data that merit further investigation to verify if they are bona fide data for inclusion in the index compilation process. If a transaction has been identified by a market reporter as anomalous or suspicious, it will be escalated to the markets editor. Further checks and analysis will be conducted by the markets editor when an anomalous or suspicious transaction is identified for further examination.

Anomalous or Suspicious Market Data

The following types of market data have been identified by McCloskey as potentially anomalous or suspicious:

- Transactions not transacted at arm's length, including deals between related parties or affiliates.
- Transaction prices that fall outside of the generally observed bids and offers that operated throughout the trading period.
- In the absence of observed bids and offers, transaction prices that deviate significantly from transactions seen for that trading period.
- Assessments of fair value that fall outside the reasonable parameters set by transactional information.
- Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown transaction.
- Transactions, bids and offers that deviate from the typical transaction volumes seen in that market.
- Any other transaction details that appear to stray from the usual trading behaviour seen in that market, including, but not limited to:
 - repeated trading activity in periods or pools of potentially low liquidity, such as the margins of the defined trading window (such as very early or very late deals),
 - counterparties not typically seen, – divergent specifications and – unusual delivery locations.
 - or specific delivery location in a port range that may have time specific issues affecting price.
- This will include transactions that are identified by other market participants as being, for any reason, potentially anomalous.
- Discrepancy in transaction details reported by counterparties.

Additional Checks and Analysis

The markets editor and market reporter(s) will undertake the following transactional and source analysis when a potentially anomalous or suspicious transaction is identified for further examination. They will assess the following transaction-based factors:

- The nature of the linkage of the perceived anomalous or suspicious transaction to other possible transactions
- The differences between counterparties on transactional details
- The impact of other factors on price and/or volume, including scheduling and logistic issues, demurrage issues and credit issues

The markets editor will also assess the following source-based factors:

- Whether the explanation provided by the source for the outlying nature of the transaction is plausible
- The credibility of the source. Sources will be deemed more credible if they (i) adhere to the reporting standards outlined in this Methodology; (ii) quickly respond to queries from market reporters; and (iii) have staff designated to respond to such queries.
- Whether the timing of the provision of information impacts the verification and validation process

Should this process determine that a transaction be excluded from the price assessment process, the markets editor will approve the exclusion and document the rationale. For markers used to settle derivatives, McCloskey has established internal

procedures that involve escalating review within McCloskey management and, if necessary, notification and escalation of inquiry within the source's company.

Comparative Markets

There exist tight price correlations between certain markets and the premiums and discounts between these markets, which are constantly assessed and compared by market participants.

By polling and entering in dialogue with the market, market reporters are able to quantify these relative values.

Accordingly, in certain assessments when no relevant or insufficient market data exists, market reporters will assess market value using some or all of the following comparative metrics.

- Comparison to another market hub for the same quality of commodity
- Comparison to a more actively traded but slightly different specification or quality in the same market hub
- Other metrics, such as demand and supply data

Corrections to Markers

If warranted by the circumstances, McCloskey may publish corrections to markers after the publication date. McCloskey will typically correct material errors that arise from the improper entry of information, the erroneous calculation of market data, misreported information, or the incorrect application of the stated methodology. However, McCloskey will not retroactively assess markets based solely on new information learned after the publication date of the relevant marker.

Corrections to markers will be conducted in accordance with the Price Assessments Correction policy.

Compliance and Ethics

McCloskey has implemented extensive compliance policies and procedures in accordance with the best practices of the price reporting industry. These include a comprehensive ethics policy that applies to all the McCloskey Price Reporting staff. The OPIS & McCloskey Compliance Manual acts as the Price Reporting Agency (PRA) editorial code of ethics and is an expression of OPIS' intent to set out ideals for the ethical conduct of PRA personnel in the performance of their price assessment activities.

Review of Methodology

To ensure that they are representative of the market being assessed, McCloskey conducts reviews of its methodologies on both an internal and external basis. McCloskey conducts a formal review of its methodologies and attendant documents on at least an annual basis. Externally, McCloskey is in regular contact with market participants as such market participants are not only well situated to know the particulars of the market but have a vested interest in the implementation of accurate and relevant methodologies. When conducting its reviews, McCloskey will consider a myriad of factors, including, but not limited to, activity in the market, visibility of market data and current and anticipated industry usage of the marker.

If the review process recommends a material change to the methodology, or termination of an existing benchmark, the markets editor will submit a proposal to McCloskey Editorial management for review.

Changes to Methodology

If either an internal or external review of a methodology results in a potential material change to the methodology or cessation of a benchmark, McCloskey will begin formal procedures for external consultation. Materiality is subject to professional judgment and considers the impact of the proposed change on the decision making of stakeholders.

The Market

Unless otherwise stated, McCloskey markers assess physical business for delivery or loading largely over a prompt two calendar month period. To merit inclusion in the McCloskey assessment process, transactional data and survey responses must meet standard specification guidelines. Unless otherwise stated all international traded prices are assessed in US dollars and US cents per metric tonne.

Transactional Data

Daily Iron Ore markers

Fixed price physical trades which meet McCloskey marker specification ranges and are within the trade window will be normalized to the marker's standard specification.

Floating price physical trades which meet McCloskey marker specifications will be converted to fixed price trades, based on the forward price curve, then normalized to the marker's standard specification.

The prices of fixed and floating physical deals for inclusion in the daily McCloskey iron ore marker are averaged over the course of the day on a tonnage weighted basis.

Bid-offer pairs, either heard from market participants or reported on electronic platforms, which meet McCloskey marker specifications will be normalized to the marker's standard specification.

In addition to tracking physical business throughout the day, the McCloskey price reporting team surveys market participants at the end of each trading day on where they see fair value based on trading activity in the two-month window that day.

Weekly Iron Ore, Ferrous Scrap and Steel markers

The McCloskey price reporting team assesses certain iron ore, ferrous scrap and steel markers on a weekly basis. The prices for physical trades for the weekly markers over the week of investigation are arithmetically averaged. Where available, bids and offers are tracked over the week and the best bids and offers for each active trading month over the week are averaged on a volume weighted basis.

In addition to tracking physical business, the McCloskey price reporting team also undertakes a weekly survey of the market. Entering a dialogue with most of the survey participants using the information it has built up in terms of deals done and bid and offer values over the week. Market participants are asked where they see the market in terms of deals done and bid/offer levels through the week and where they would assess fair value over the week.

Transaction and Survey Weightings

Daily Iron Ore marker

Under normal circumstances if there is at least one verified physical trade in the relevant trading window, then the volume weighted average of the trades will comprise 70% of the marker, bids and offers will comprise 20% and market survey comprise 10% of the marker.

If there are no bid-offer pairs then the trades will comprise 80% and market survey 20% of the marker.

If there are no trades, then bid/offer pairs will comprise 60% and survey 40% of the marker

If there are no trades and bids/offers pairs, the survey will comprise 100% of the marker.

Weekly markers

Due to typically low liquidity in the ferrous scrap, steel and some iron ore markets, deals and survey comprise 50% each of the weekly marker. If there are no trades, the survey will comprise 100% of the marker. Mid-points of indicative bids and offers, if any, will be treated as market survey inputs. Bid-offer pairs are atypical of the steel and ferrous scrap markets.

Normalization Procedure

McCloskey will use an in-house mathematical model to evaluate price differentials between the McCloskey daily iron ore marker and its standard or typical specification and different known brands of medium-grade fines based on traded fixed and floating prices and market participants' assessments.

All price input data collected by price reporters is submitted to the markets editor for evaluation. Data deemed in line with McCloskey's methodology is then normalized using brand differentials to reflect the relevant marker qualitatively. Currently, the weekly markers do not employ a normalization approach.

Material specifications such as alumina, phosphorus, moisture and silica are considered in cases where there are very significant variance in the specifications of an iron ore cargo from the base specification of that brand. Fe adjustment for iron ore cargoes are pro rated arithmetically. For example, if a cargo of 61% Fe basis fines deal is done at \$100/t, the Fe content will have to be converted to the 62% Fe fines equivalent McCloskey specification using this formula: $100/61=1.64$ which is then multiplied by 62 to yield the 62% Fe equivalent price of \$101.68/t.

Marker Timing

Daily Markers

Trades and bids/offers must be executed between 08:00 and 18:00 Singapore time. Daily markers will not be published on Singapore holidays.

Weekly Markers

The cut off point for trades and survey numbers being accepted for inclusion in the formation of the iron ore and steel markers is 18:00, Singapore time, on Friday.

The cut off point for trades and survey numbers being accepted for inclusion in the calculation of the ferrous scrap markers is 18:00 UK time on Friday.

Trades done after this time will not be included in the weekly markers compilation.

On days before major holidays the marker trade and survey deadlines may be brought forward in line with market participants working schedules. These days are usually over the Christmas/New Year period and other Singaporean holidays. Market participants will be informed of any such changes to assessment times.

Trade Window and Monthly Rollovers

For fixed-price iron ore and steel markets, the active trade window is a rolling period covering delivery in the next 14-74 days.

For ferrous scrap markets the active trade window is a rolling period covering delivery/loading in the next 3-8 weeks.

Floating iron ore deals will be considered for the two nearest contract months ahead of the current month. For example, in November 2022, if there is a deal for fines at a premium of \$2/t to the December 62% Fe futures prices, this will be considered in calculation. But a deal done at a premium of \$2/t to the February 62% Fe future prices that will not be considered for calculation.

Daily Iron Ore markers

62% Fines CFR North China

The 62% Fines CFR North China marker is a daily marker assessing the price of 62% Fe content Iron Ore fines basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following typical quality parameters:

Fe content: 62%

Silica: 4%

Alumina: 2.25%

Phosphorus: 0.09%

Sulphur: 0.02%

Moisture: 8%

The minimum cargo size is 40,000 t

65% Fines CFR North China

The 65% Fines CFR North China marker is a daily marker assessing the price of 65% Fe content Iron Ore fines basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following typical quality parameters:

Fe content: 65%

Silica: 2.5%

Alumina: 1.5%

Phosphorus: 0.08%

The minimum cargo size is 40,000 t

Weekly Iron Ore markers

China Fines (India 57%) CFR

The China Fines (India 57%) CFR marker is a weekly marker assessing the price of 57% Fe content Iron Ore fines shipped from the east coast of India to North China (basis Qingdao Port). Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following typical quality parameters:

Fe content: 57% (56%-57%)

Silica: 5% (Max 6%)

Alumina: 4.5% (Max 6%)

Phosphorus: 0.07% (Max 0.1%) Sulphur: 0.04% (Max 0.06%)

Moisture: 11% (Max 12%)

The minimum cargo size is 40,000 t

63% Pellet CFR North China

The 63% Pellets CFR North China marker is a weekly marker assessing the price of 63% Fe content Iron Ore Pellets basis Qingdao Port, North China. Prices are assessed in US dollar per dry metric tonne (dmt).

This marker reflects the following quality parameters:

Fe content: 63% (63%-65%)

Silica: 4% (Max 5%)

Alumina: 2.25% (Max 3.5%)

Phosphorus: 0.07% (Max 0.09%)

Sulphur: 0.01% (Max 0.03%)

Cold Crushing Strength: 240 daN Size: Max 5% < 5mm

The minimum cargo size is 40,000 t

62% Lump Premium CFR North China

The 62% Lump premium marker is a weekly marker assessing the Lump premium on the 62% Fe fines marker. Prices are assessed in US cent per dry metric tonne unit (¢/dmtu) and on CFR North China basis.

This marker reflects the following quality parameters:

Fe content: 62% (60%-63.5%)

Silica: 3.5% (Max 7%)

Alumina: 1.5% (Max 4%)

Phosphorus: 0.08% (Max 0.1%)

Sulphur: 0.02% (Max 0.08%)

Moisture: 4%

Size: Max 15% < 6.3mm, max 20% > 31.5mm

The minimum cargo size is 40,000 t

Weekly Steel markers

Chinese steel billet CFR Turkey

The weekly Chinese steel billet CFR Turkey marker assesses the price of delivered Chinese steel billet into the Marmara, Izmir and Iskenderun steelmakers on a USD-denominated basis.

The marker assesses steel billet with the following parameters:

Quality: 3sp

Diameter: 150x150mm

Delivery: 8-16 weeks

The minimum cargo size is 50,000 t

Southeast Asia Billet CFR Turkey

The weekly Southeast Asia billet CFR Turkey marker assesses the price of Indonesian/Malaysian-origin steel billet delivered into the Marmara, Izmir and Iskenderun steelmakers on a USD-denominated basis.

The marker assesses steel billet with the following parameters:

Quality: 5sp

Diameter: 130x130mm

Delivery: 8-16 weeks

The minimum trade size is 30,000 t

US Domestic Midwest Hot-rolled Coil Ex-works marker

The weekly US domestic Midwest hot-rolled coil marker assesses the price of hot-rolled steel coil sold by steelmakers in the mid-west region of the US. Prices are assessed in USD on an ex-works basis.

The marker assesses hot-rolled coil with the following parameters:

Quality: ASTM A 1011-06a Commercial Type B

Width: 48-72", Thickness 0.083-0.37"

Delivery: 3-10 weeks, Ex-works basis

The minimum trade size is 100 short tons

Indian Sponge Iron

The sponge iron price ex-works Durgapur (India) is a weekly marker assessing the price of sponge iron lump produced by using iron ore and thermal coal as inputs and sold to domestic consumers. The price does not include any local taxes. Prices are assessed in Indian rupees per tonne (t). The prices are converted to US dollar equivalent by referring to the official exchange rate published by the Reserve Bank of India.

This marker reflects the following quality parameters:

Fe content (metallic): 80% (78%-82%)

Fe content (total): 90% (88%-92%)

Phosphorus: 0.05%-0.10%

Sulphur: 0.03%-0.05%

Carbon: 0.1%-0.25%

Non-magnetics: 1% max

The minimum cargo size is 100 t

Vietnam HRC CFR

The hot-rolled coil (HRC) CFR Vietnam marker is a weekly marker assessing the delivered price of HRC steel product into Vietnam. Prices are assessed in US dollars per metric tonne (t).

This marker reflects the widely accepted SAE1006 quality parameter which sets the quality of cold rolling grade steel used for making automobile, equipment, and white good panels.

Specifications are as follows:

Width: up to 20mm

Thickness: 2-3mm

Minimum cargo size: 5,000 t

Steel Rebar FOB Turkey

The weekly Turkey fob steel rebar assessment assesses the price of steel rebar loaded at the Turkish ports in Marmara, Izmir and Iskenderun. Prices are assessed on a FOB basis. The market will be assessed in US dollar per metric tonne.

The marker assesses rebar with the following quality and delivery parameters:

Quality: B500C

Diameter: 12-20mm

Shipment: 2-10 weeks

Delivery: FOB basis Turkish ports

The minimum cargo size is 3,000 t

Steel Rebar Ex-works Turkey (TL) inc VAT

The weekly steel rebar ex-works Turkey (TL) including VAT marker assesses the price of steel rebar sold on an ex-works basis to traders in Marmara, Izmir and Iskenderun on a lira-denominated basis. Prices are assessed on an ex-works basis.

The marker will be assessed in Turkish lira per metric tonne.

The marker assesses rebar with the following quality parameters:

Quality: B500C

Diameter: 10-14mm

Delivery: 1-6 weeks, Ex-works basis

The minimum trade size is 100 t

Monthly Steel markers

US Domestic Midwest Steel Rebar Ex-works

The monthly US domestic Midwest steel rebar marker assesses the US dollar price of steel rebar sold by steelmakers in the mid-west region of the US. Prices will be assessed on an ex-works basis in short tons.

The marker will be assessed with the following parameters:

Quality: ASTM A615/A615M

Length: 20ft, Diameter 0.625"

Delivery: 3-10 weeks, Ex-works basis

The trade size is minimum 100 short tons

Steel Rebar Ex-works Turkey (USD) exc VAT

The weekly steel rebar ex-works Turkey (USD) excluding VAT marker assesses the price of steel rebar sold on an ex-works basis to traders in Marmara, Izmir and Iskenderun on a US dollar denominated basis. Prices are assessed on an ex-works basis. The marker will be assessed in US dollar per metric tonne. The marker may be assessed independently, using intraday exchange rates and lira-denominated market info.

The marker assesses rebar with the following quality and delivery parameters:

Quality: B500C

Diameter: 10-14mm

Delivery: 1-6 weeks, Ex-works basis

The minimum trade size is 100 t

Weekly Ferrous Scrap markers

HMS 1/2 80:20 CFR Turkey

The weekly Heavy Melt Scrap (HMS) 80:20 CFR Turkey marker assesses the price of premium quality HMS 1/2 80:20 delivered to Turkey. Prices are assessed on a CFR basis. The marker will be assessed in US dollars per metric tonne.

The marker assesses scrap with the following quality parameters:

Quality: No.1 heavy melting scrap

Diameter: Wrought iron or steel scrap 1/4 inch and over in thickness

Length: Individual pieces not more than 36x18 inches.

Delivery: CFR basis Turkey

The minimum cargo size is 10,000 t

Shredded Scrap CFR Turkey

The weekly Shredded Scrap CFR Turkey marker assesses the price of USA and Scandinavian shredded scrap delivered to Turkey. Prices are assessed on a CFR basis. The marker will be assessed in US dollars per metric tonne.

The marker assesses ferrous scrap with the following quality parameters:

Quality: Shredded iron and steel scrap, magnetically separated, unprepared No.1 and No.2 steel. Average density 50-70 pounds per cubic feet

Delivery: CFR basis Turkey

The minimum cargo size is 10,000 t

HMS 1/2 Ferrous Scrap FOB Amsterdam

The weekly HMS 1/2 Ferrous Scrap FOB Amsterdam marker assesses the price of HMS 1/2 scrap loaded at the port of Amsterdam. Prices are assessed on a FOB basis. The marker will be assessed in US dollars per metric tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness

Individual pieces no more than 36x18 inches

Delivery: FOB basis Amsterdam

The minimum cargo size is 10,000 t

HMS 1/2 Ferrous Scrap Delivered Amsterdam Dock

The weekly HMS 1/2 Ferrous Scrap Delivered Amsterdam dock marker assesses the price of HMS 1/2 scrap delivered to Amsterdam port terminals. Prices are assessed on a delivered basis. The marker will be assessed in Euros per metric tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness. Individual pieces no more than 36x18 inches

Delivery: basis Amsterdam

The minimum trade size is 200 t

HMS1 Ferrous Scrap Delivered New York Dock

The weekly HMS1 Ferrous Scrap Delivered New York dock marker assesses the price of HMS1 scrap delivered to exporters' docks in the New York region. Prices are assessed on a delivered basis. The marker will be assessed in USD per gross tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness. Individual pieces no more than 60x24 inches

Delivery: basis New York

The minimum trade size is 200 gross tonnes

HMS1 Ferrous Scrap Delivered New Jersey Dock

The weekly HMS1 Ferrous Scrap Delivered New Jersey dock marker assesses the price of HMS1 scrap delivered to exporters' docks in the New Jersey region. Prices are assessed on a delivered basis. The marker will be assessed in USD per gross tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness. Individual pieces no more than 60x24 inches

Delivery: basis New Jersey

The minimum trade size is 200 gross tonnes

HMS1 Ferrous Scrap Delivered Philadelphia Dock

The weekly HMS1 Ferrous Scrap Delivered Philadelphia dock marker assesses the price of HMS1 scrap delivered to exporters' docks in the Philadelphia region. Prices are assessed on a delivered basis. The marker will be assessed in USD per gross tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness. Individual pieces no more than 60x24 inches

Delivery: basis Philadelphia

The minimum trade size is 200 gross tonnes

HMS1 Ferrous Scrap Delivered Boston Dock

The weekly HMS1 Ferrous Scrap Delivered Boston dock marker assesses the price of HMS1 scrap delivered to exporters' docks in the Boston region. Prices are assessed on a delivered basis. The marker will be assessed in USD per gross tonne.

The marker assesses ferrous scrap with the following quality and delivery parameters:

Quality: No.1 heavy melting scrap, wrought iron ore steel scrap ¼ inch and over in thickness. Individual pieces no more than 60x24 inches

Delivery: basis Boston

The minimum trade size is 200 gross tonnes

H2 Grade Scrap FOB Japan

The weekly H2 Grade Scrap FOB Japan marker assesses the price of Japanese H2 Grade Scrap on a FOB (Tokyo Bay) Basis. The marker will be assessed in Japanese Yen per metric tonne and published as a US Dollar equivalent.

Quality: Heavy Scrap. Individual pieces not more than 500x1200 millimetres and between 3 and 6 millimetres in thickness

Delivery: basis 30-60 days

The minimum cargo size is 3,000t

Monthly Ferrous Scrap markers

The monthly ferrous scrap markers are not "assessed" numbers. For each of the scrap types below there is one specific settlement price or price range that most suppliers and steelmakers agree upon on a US dollar per gross tonne basis (\$/gt) basis, which can occur on any one day in the first half of the month depending on how prolonged negotiations are from the first few days of the month. Each price is based on a minimum trade size of 500 gross tonnes, and for delivery within 30 days of the "settlement day". Quality for HMS1 and Shredded is the same as markers above. Busheling is clean ferrous scrap, does not exceed 12 inches in any dimension, and comes from stampings and sheet clips from metal production including automotive production.

HMS1 Ferrous Scrap Delivered Cleveland

The monthly HMS1 Ferrous Scrap Delivered Cleveland domestic marker is the settled price of HMS1 scrap delivered to steelmakers in the Cleveland region in the US at the beginning of the month.

Shredded Ferrous Scrap Delivered Cleveland

The monthly Shredded Ferrous Scrap Delivered Cleveland domestic marker is the settled price of shredded scrap delivered to steelmakers in the Cleveland region in the US at the beginning of every month.

Busheling Ferrous Scrap Delivered Cleveland

The monthly Busheling Ferrous Scrap Delivered Cleveland domestic marker is the settled price of busheling scrap delivered to steelmakers in the Cleveland region in the US at the beginning of every month.

HMS1 Ferrous Scrap Delivered Detroit

The monthly HMS1 Ferrous Scrap Delivered Detroit domestic marker is the settled price of HMS1 scrap delivered to steelmakers in the Detroit region in the US at the beginning of the month.

Shredded Ferrous Scrap Delivered Detroit

The monthly Shredded Ferrous Scrap Delivered Detroit domestic marker is the settled price of shredded scrap delivered to steelmakers in the Detroit region in the US at the beginning of every month.

Busheling Ferrous Scrap Delivered Detroit

The monthly Busheling Ferrous Scrap Delivered Detroit domestic marker is the settled price of busheling scrap delivered to steelmakers in the Detroit region in the US at the beginning of every month.

HMS1 Ferrous Scrap Delivered Pittsburgh

The monthly HMS1 Ferrous Scrap Delivered Pittsburgh domestic marker is the settled price of HMS1 scrap delivered to steelmakers in the Pittsburgh region in the US at the beginning of the month.

Shredded Ferrous Scrap Delivered Pittsburgh

The monthly Shredded Ferrous Scrap Delivered Pittsburgh domestic marker is the settled price of shredded scrap delivered to steelmakers in the Pittsburgh region in the US at the beginning of every month.

Busheling Ferrous Scrap Delivered Pittsburgh

The monthly Busheling Ferrous Scrap Delivered Pittsburgh domestic marker is the settled price of busheling scrap delivered to steelmakers in the Pittsburgh region in the US at the beginning of every month.

Shredded Ferrous Scrap Delivered Chicago

The monthly Shredded Ferrous Scrap Delivered Chicago domestic marker is the settled price of shredded scrap delivered to steelmakers in the Chicago region in the US at the beginning of every month.

McCloskey Monthly European Ferrous Scrap Supply Index

The McCloskey ferrous scrap team undertakes the compilation of the scrap supply index price on a monthly basis according to the specifications outlined in this statement of methodology.

McCloskey's European Ferrous Scrap Supply Index

An Overview

McCloskey's European Ferrous Scrap Supply Index (MESSI) is an indicator closely watched by scrap and steel markets because it provides signals of future scrap price direction. MESSI is constructed similarly to the construction of a Purchasing Managers' Index (PMI) using monthly surveys of carefully selected sellers/buyers of scrap in Europe. The surveys form a key source of business intelligence for participants operating in the scrap and steel markets. Similarly to a PMI, MESSI will track variables such as output and unsold stock.

The MESSI is created to increase transparency of supply within the ferrous scrap industry. Scrap supply data is very rare and the market has been looking for a solution that provides better understanding of what is happening on the supply side of the market. Continental Europe and its surrounding European ferrous scrap markets provide the inputs because the largest volume of seaborne scrap comes from these regions. The MESSI methodology allows for rapid collection, processing, analysis and publication of data, providing a timely, accurate, reliable and consistent series of European supply changes.

Major Components of Methodology

- A questionnaire is provided to small and large scrap suppliers/exporters in continental Europe, the Baltics and Scandinavia.
- These suppliers/exporters are asked whether their scrap supply levels are higher, the same or lower than in the previous month.
- By requiring one of only three answers, subjectivity is avoided.

Data is collected from a wide range of countries and suppliers across the supply chain to ensure accurate representation of underlying supply structure. Sub-indices are weighted to further ensure accuracy.

Collection of Data

Data is collected by an in-house expert at McCloskey. Companies are asked a standard questionnaire on the ferrous scrap market on a monthly basis.

- Is the volume of supply from construction areas higher, the same, or lower than one month ago?
- Is the volume of supply from the steel industry higher, the same, or lower than one month ago?
- Is your unsold volume of ferrous scrap higher, the same, or lower than one month ago?
- Are your suppliers' delivery times shorter, the same, or longer than one month ago?
- Are your overall input costs higher, the same, or lower than one month ago?

Additionally, we will be asking companies for reasons for their responses and allow us to provide contextual information in the report to accompany the indices and to better explain the data/indices.

Data are collected at the start of each month, so companies are asked to compare the end-month market and prior end-month market.

All responses are entered into a McCloskey database for data calculation and weighting purposes.

Calculation of Data

Sub-indices are calculated using a formula which forms many global Purchasing Managers' Indexes:

$$\begin{aligned} \text{Index value} = & (\text{Percentage of total respondents reporting "higher"}) \\ & + 0.5 \times (\text{Percentage of total respondents reporting "the same"}) \\ & + 0 \times (\text{Percentage of total respondents reporting "lower"}) \end{aligned}$$

The resulting index values are therefore bounded between 0 (all companies respond "lower") and 100 (all companies respond "higher"), with a no-change mark at 50 (all companies respond "the same" or equal submissions respond up as do for down, or a combination thereof).

The resulting index is called a diffusion index, with values above 50.0 signalling expansion of supply and below 50.0 indicating contraction of supply. The distance from the 50 no-change mark signals the implied rate of change in the variable, the further from 50.0 the faster the rate of change indicated. McCloskey believes MESSI could show high levels of volatility because it is fully focused on one commodity and one industry sector, unlike typical Purchasing Managers' Indexes which cover, for example, many manufacturing sectors.

The Headline Index and Sub-Indexes

The headline European Ferrous Scrap Supply Index is a weighted average of the following sub-indices: the Residential Flows Index, the Construction Flows Index, the Manufacturing Flows Index, the Unsold Stocks Index, the Overall Input Costs Index, the Suppliers' Delivery Times Index.

The sub-indices are weighted as follows:

- Residential Flows Index – 25%
- Construction Flows Index – 25%
- Manufacturing Flows Index – 20%
- Unsold Stocks Index – 15%

- Overall Input Costs Index (Logistics, Electricity, Financing, Labor) – 10%
- Suppliers' Delivery Times Index – 5%

Market consultation showed that the sub-indexes should be weighted as above because of each category's respective influence on overall scrap flow. McCloskey will continue to consult the market to see if any changes need to be made to these weightings.

Example of Calculation

A company indicates a score of 100 for Construction Flows (higher), 50 for Manufacturing Flows (flat), 0 for Unsold Stocks (down), 50 for Suppliers' Delivery Times (flat) and 0 for Overall Input Costs (lower). It does not give an indication for Residential Flows. Based on the weightings of the sub-indexes, the headline index based on this sole company would be a score of $(100 \times 0.2) + (50 \times 0.25) + (0 \times 0.20) + (50 \times 0.05) + (0 \times 0.1) = 35$.

Example of Interpretation of Supply Change data:

If there is a movement in the Construction Flows sub-index from 60.0 in November to 57 in December - although the level of the sub-index has fallen, it has still posted above 50.0 in both months. The correct interpretation is that the volume of output expanded in both November and December, but that the rate of increase was slower in December compared to November.

Publication and Submission of Entries

McCloskey will publish the monthly index and sub-indices on the first Friday of every month. If the Friday lies on a bank holiday, the index and sub-indices will publish on the next working day.

Survey submissions will need to be made before 18:00GMT on the Thursday prior to the first Friday of every month.

McCloskey encourages parties that submit market data to submit all their market data that falls within the stated methodological criteria for the relevant marker. McCloskey encourages all sources of market data to submit transaction data from back-office functions. McCloskey will seek to ensure, so far as is able and is reasonable, that transaction data submitted are representative of all the submitter's actual physical concluded fixed priced transactions.

Throughout all markets, McCloskey is constantly seeking to increase the number of companies willing to provide market data. Market reporters are mentored and encouraged to expand their pool of contacts. The number of entities providing market data can vary significantly from month to month.

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