

CRU INDICES Level 2.0 Operations Manual

CRU Steel

Price index definitions	2
Data providers	2
Raw data collection and storage	2
Error detection procedures	3
Calculation procedures for final price indices	3
Error detection resolution procedures	4
Dissemination of the final indices	4
Other information	4
Appendix: Level 2.0 price index definitions	5

Level 2.0 Operations Manual

1. Price index definitions

1.1. CRU's product definitions refer to "standardised trades" and are strictly adhered to. The Appendix illustrates "CRU's Level 2.0 Steel Price Indices" and their definitions.

2. Data providers

2.1. "CRU's Level 2.0 Steel Price Indices" are based upon data relating to actual spot market transactions. This data is submitted by steel industry participants (our "data providers"), who collectively represent the whole supply chain, and include producers, consumers and service centers.

2.2. Our data providers must have access to data relating to actual spot market transactions and are therefore typically employed in the sales/marketing (sell-side) / purchasing or finance department (buy-side) of their companies.

2.3. CRU does accept applications from physical steel market participants to become "data providers" which are reviewed on a case-by-case basis. Only those that (in the opinion of CRU) have significant steel pricing/industry knowledge, integrity and who are also trustworthy and reliable are approved for participation. Data providers are expected to adhere to the code of conduct policies set by their employer

2.4. All data providers are required to sign a "data providers' agreement". By so doing, they agree:

- to provide the required information to CRU Indices Ltd. by the specified deadline;
- to provide high-quality data relating to actual transactions;
- not to disclose to anyone outside of their company that they are contributing data to "CRU's Level 2.0 Steel Price Indices";
- not to discuss their data submissions with anyone outside of their company, and this includes CRU staff engaged in the creation of reports/news stories and related consulting activities;
- and, for the information provided to be subject to verification by CRU Indices Ltd.

2.5. Each data provider is supplied with a "data provider welcome pack", which clearly outlines the data that they are required to submit. In addition, CRU Indices Ltd. staff contact each data provider before their first submission to ensure that they are entirely clear on what is expected of them.

2.6. Each data provider is allocated with a "contributor ID". This is a randomly assigned alphanumeric string, which serves to prevent any CRU steel industry analyst, who may need to view the data submissions for quality assurance purposes (see section 6), from linking individual data points with individual companies.

2.7. Data providers submit to CRU Indices Ltd. a single price for each product, based upon CRU's strict price definitions (see Appendix 1). This price represents the weighted average price for the spot orders placed in the week (defined as Sunday through Saturday) before publication of the relevant CRU steel price Index. In addition, data providers also submit the total tonnage

volume (in short tons) of orders to which their weighted average price refers. All data submitted is used solely for the purpose of calculating the final CRU steel price Indices.

3. Raw data collection and storage

3.1. The collection of raw data is looked after by CRU Indices Ltd, a United Kingdom incorporated company tasked with managing "CRU's Level 1.5 and 2.0 Price Indices". CRU Indices Ltd. staff are not involved in other aspects of CRU's business, such as market analysis or journalistic activities.

3.2. Data providers are sent an email on the Friday before publication of the relevant CRU steel price Index. This email provides advance notice of when the "data submission window" will open and close. For each "CRU Level 2.0 Steel Price Index", the "data submission window" opens each Friday before publication and closes on the Monday before publication; in the case of public holidays this is extended to the Tuesday before publication.

3.3. As the "data submission window" opens, data providers are sent a further email. This includes a URL that allows data providers to access the front-end of the "CRU Price Collection Platform (CPCP)". Each data provider is directed to a user defined submission page, which will only allow data to be submitted for the products for which that data provider is registered. The page includes measures designed to eliminate the risk of errors in data entry. For example, all data providers are required to enter the price and volume data that they are submitting twice.

3.4. At least twelve hours before the "data submission window" closes (11.59pm EST on the Monday before publication), the "CPCP" identifies the registered data providers that have not yet submitted data. Each are then sent a further email, reminding them of when the "data submission window" is set to close. Again, this email will include a URL that allows data providers to access the front-end of the "CPCP" via www.cruindices.com.

3.5. In the event of a data provider experiencing technical difficulties in submitting data to CRU Indices Ltd., back-up procedures are in place. Data providers are, for example, permitted to submit data via fax or from a pre-defined email address, using Excel templates provided in the "data provider welcome pack". On such occasions, CRU Indices Ltd. staff will input the data into the "CRU Price Collection Platform" on behalf of the data provider. The fax or email containing the raw data is stored for whatever length of time regulatory authorities deem to be required, or at least ten years, whichever is the greater.

3.6. Data providers are permitted to adjust or correct the data submitted, provided that these are received by the time the "data submission window" is closed. The last submission that the data provider submits before the "data submission window" is closed is the only submission that is considered for inclusion in subsequent price index calculations.

3.7. All data submissions are stored to deal with queries should they arise. They are kept for whatever length of time regulatory authorities deem to be required, or at least ten years, whichever is the greater.

3.8. The database used to store data submissions is hosted in a physically separate location to CRU Indices Ltd., on servers in a “clustered array” environment. These servers synchronise in real-time, providing a fully redundant “hot” back-up of each other, giving immediate failover to the alternative server should a critical part of the infrastructure fail. In addition, a daily data backup process ensures copies of the data are kept in two separate physical locations.

3.9. Data stored that includes the identity of the provider, is only directly accessible to employees of CRU Indices Ltd. However, a “cleansed version” of the data is available to CRU’s steel industry analyst, who may need to view the data for quality assurance purposes (see section 6), through the “CPCP”.

3.10. The “cleansed version” of the data comprises the price and volume submissions, along with the associated contributor ID of each participant. At no point is data released along with the true identities of the data providers.

4. Error detection procedures - raw data

4.1. Data submissions are subject to pro-active checks in order to detect errors by CRU Indices Ltd. At any time after the “data submission window” has opened, if the CRU Indices Ltd. staff feel that a submission may have been entered incorrectly, they will contact the data provider directly to ask for reconfirmation of both price and volume.

4.2. For example, each price submitted by a data provider must fall within the acceptable price range set by CRU’s steel industry analyst. A price submission that falls significantly outside of this range will be investigated by CRU Indices Ltd.

4.3. All price submissions that have passed this initial check are then subjected to a series of automated statistical checks by the “CPCP”. All those that do not pass are excluded from the “initial price index calculation”.

4.4. First, individual price submissions are compared with the previous price submission made by that data provider. Submissions beyond a specific percentage range (+/-5%, although this is actively adjusted by CRU steel industry analyst in situations of significant market volatility) from the previous submission are flagged-up as “suspect”. At this point, CRU Indices Ltd. staff check with CRU’s steel industry analyst whether such a change is plausible.

4.5. If the answer is “yes”, those price submissions, along with the volume data to which they refer, are included in the “initial price index” calculations. If the answer is “no”, those price submissions, along with the volume data to which they refer, are removed from the subsequent calculations. At no point will CRU Indices Ltd. share the identity of the data provider with CRU’s steel industry analyst.

4.6. Second, once all of the price submissions have been received, those that fall beyond a specific percentage (for example, +/-5%) from the average of all the price submissions received are flagged-up as suspect. At this point, CRU Indices Ltd. staff check with CRU’s steel industry analyst whether such a situation is plausible.

4.7. If the answer is “yes”, those price submissions, along with the volume data to which they refer, are included in the “initial price index” calculations. If the answer is “no”, those price submissions, along with the volume data to which they refer, are removed from the subsequent calculations. Again, at no point will CRU Indices Ltd. share the identity of the data provider with the CRU’s steel industry analyst.

4.8. Meanwhile, the volume submissions are also subject to an automated statistical check by the “CPCP”. Individual volume submissions are compared with the average of all volume submissions made by the data provider. Submissions beyond a specific percentage range (for example, +/-50%) from the average of previous submissions are flagged-up as “suspect”. At this point, CRU Indices Ltd. staff check with CRU’s steel industry analyst whether such a change is plausible.

4.9. If the answer is “yes”, those volume submissions, along with the accompanying price contributions, are included in the “initial price index calculations”. If the answer is “no”, those volume submissions, along with the accompanying price submissions, are removed from the subsequent calculations. Again, at no point will CRU Indices Ltd. share the identity of the data provider with CRU’s steel industry analyst.

4.10. Beyond these specific statistical checks on individual submissions, the contract between CRU Indices Ltd. and its data providers includes a clause allowing CRU Indices Ltd. the right to verify the price and volume data submitted. This would be conducted by an independent third party.

5. Calculation procedures for final price Indices

5.1. When all of the checks have taken place and CRU Indices Ltd. have checked any individual data submissions for validity and are satisfied that all data submissions are valid, the CRU Indices Ltd. team run the “initial price indices calculation”.

5.2. At this point the CRU steel industry analyst is notified via automatic email through the “CPCP” that the “initial price index calculation” has been completed.

5.3. If the CRU steel industry analyst is satisfied with the “initial price indices calculation” then it can be passed as the “Final price index”. Alternatively, they also have the option of reviewing all of the “cleansed data” – including those submissions that failed the statistical checks – and, if they feel it is warranted, re-including any submissions.

5.4. When they are completely satisfied with the data points that will be included in the calculation, they calculate the “final price indices” via the “CPCP”. At this point they approve the “final price Indices” on the “CPCP” which automatically notified CRU Indices Ltd. staff that the “final price indices” are approved for publication.

5.5. If the “final price index” in the judgement of CRU Indices Ltd, is significantly different than the “Initial price index” then CRU Indices Ltd staff will seek confirmation from the CRU steel industry analyst.

5.6. "CRU's Level 2.0 Steel Price indices" are a weighted average of the price submissions that have been passed for inclusion in the calculation. The weightings are calculated using the accompanying volume submissions.

5.7. The maximum volume weighting given to any individual price submission is 30%.

5.8. In the absence of any data being submitted, CRU's steel industry analyst would consider using reported trades to arrive at a price index, and in so doing they would use their judgement and other market information to assess whether the trades gave a true reflection of the market price.

6. Error detection/resolution procedures - final price Indices

6.1. The "final price indices" calculated by CRU Indices Ltd. are subject to an "observation period". During this period, CRU's steel industry analyst are sent an email – typically by 12.00 p.m. (London, UK) - asking them to review the final price indices (and these only) on the "CPCP" on the Tuesday before their publication.

6.2. "Initial price indices" that appear reasonable can be accepted as "final price indices" and released for publication. If an index is flagged-up by CRU's steel analyst as being suspect (based upon their understanding of the current market), they request that CRU Indices Ltd. conduct an audit of the data collection and index calculation procedures.

6.3. In the unlikely event that a suspect submission passes the statistical tests imposed on incoming data, that submission is identified and removed from the price index calculations.

6.4. As stated in section 3.10, this "cleansed version" of the data will comprise the price and volume submissions, along with the associated contributor ID of each participant. At no point is data released along with the true identities of the participants.

6.5. Only when CRU's steel industry analyst is satisfied that the calculation has been based upon reliable data is the "final price index" calculated and approved for publication. This will be granted by 5.00pm (London, UK) on the Tuesday before publication. In the instance of a public holiday this can be delayed until 10.00am (London, UK) on the Wednesday of publication.

6.6. No adjustments will be made to the definitive CRU steel price indices after they have been published.

7. Dissemination of final price Indices

7.1. The CRU steel price indices for hot-rolled coil, cold-rolled coil, hot-dipped galvanised coil and plate in the US Midwest are published on every Wednesday of each month by 2.00pm (London, UK).

7.2. They are made available to subscribers of the "CRU Steel Monitor", "CRU Steel Sheet Products Monitor", data providers and licensees.

7.3. If, for whatever reason, it is not possible to publish a definitive price, CRU will always publish a provisional price each Wednesday by 2.00pm (London, UK), but reserves the right to change this. If this happens, it will be clearly indicated that the price published is provisional.

8. Other information

8.1. To ensure that CRU Indices Ltd. is following the procedures outlined in this "Operations Manual", it will – from time-to-time – be audited.

If you have any questions on methodology, becoming a data provider or licensing CRU steel price data, please contact:

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Appendix: Level 2.0 Price Index Definitions

US Midwest Hot-rolled (HR) coil:

- Base price, fob Midwest Mill (East of the Rockies), for spot purchases for forward delivery
- Commercial quality (prime) material, within standard tolerances
- In coils of at least 40,000 lbs, with standard packaging
- Extras for gauge and width excluded
- Delivery charges and taxes excluded
- Raw materials surcharges (where applicable) are included

US Midwest Cold-rolled (CR) coil:

- Base price, fob Midwest Mill (East of the Rockies), for spot purchases for forward delivery
- Commercial quality (prime, annealed and tempered) material, within standard tolerances
- In coils of at least 20,000 lbs, with standard packaging
- Extras for gauge and width excluded
- Delivery charges and taxes excluded
- Raw materials surcharges (where applicable) are included

US Midwest Hot-dipped galvanised (HDG) coil:

- Base price, fob Midwest Mill (East of the Rockies), for spot purchases for forward delivery
- Commercial quality hot-dipped galvanised coil within standard tolerances
- In coils of at least 20,000 lbs, with standard packaging
- Extras for gauge and width are excluded
- Delivery charges and taxes are excluded
- Raw materials surcharges (where applicable) are included
- Coating extras excluded

US Midwest Plate:

- Base price, fob Midwest Mill (East of the Rockies), for spot purchases for forward delivery
- ASTM A36 commercial quality plate, in thickness between 3/8 of an inch and 2 inches, width between 72 and 120 inches and length between approximately 240 and 720 inches
- Extras for gauge and width are excluded
- Delivery charges and taxes are excluded
- Raw material surcharges (where applicable) are included