The LME & Tin

Melbourne November 2016
Tin on the London Metal Exchange

The LME Tin contract one of the first traded contracts, launched at the inception of the LME in 1877.
LME exchange pricing

Providing confidence in both price discovery and standards relating to the underlying metal

Benefits of LME pricing

- Regulated market
- Fully transparent electronic market
- Traded and tradable real time prices
- Precision in hedging
- Multiple Broker Execution
- Clearing house guarantee in counterparty default

The LME price ensures

- Material of an LME registered brand
- Stored in an LME approved warehouse
- Duty unpaid – no taxes / VAT etc.
- Buyer to pay for delivery out of warehouse

<table>
<thead>
<tr>
<th>LME Tin contract specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Underlying metal</strong></td>
</tr>
<tr>
<td>Tin ingots of 99.85% purity (min) conforming to BS EN 610:1996</td>
</tr>
<tr>
<td><strong>Lot size</strong></td>
</tr>
<tr>
<td>5 tonnes</td>
</tr>
<tr>
<td><strong>Prompt dates</strong></td>
</tr>
<tr>
<td>Daily: to 3 months</td>
</tr>
<tr>
<td>Weekly: 3 to 6 months</td>
</tr>
<tr>
<td>Monthly: 7 to 15 months</td>
</tr>
<tr>
<td><strong>Price quotation</strong></td>
</tr>
<tr>
<td>US dollars per tonne</td>
</tr>
<tr>
<td><strong>Tick size (per tonne)</strong></td>
</tr>
<tr>
<td>Outright Carries</td>
</tr>
<tr>
<td>Ring $5.00 $0.01</td>
</tr>
<tr>
<td>LMEselect $5.00 $0.01</td>
</tr>
<tr>
<td>Inter-office $0.01 $0.01</td>
</tr>
</tbody>
</table>
LME Tin contract prompt date structure

The LME’s prompt date structure for Tin runs daily for the first 3 months, then weekly until the end of the 6th month and then monthly out to 15 months.

Illustration of the three phases of the LME’s prompt date structure

1. Daily
   Daily prompt dates: Cash to 3 Months

2. Weekly
   Weekly prompt dates: Wednesdays, 3 to 6 months

3. Monthly
   Monthly prompt dates: 3rd Wednesday, 7 to 15 months

3rd Wednesday prompt dates are available in all months.
Volumes by Client Type

Positions held by the Tin hedging community outnumber speculators by nearly 60%

**Tin 2015**
- Producer / Merchant / Processor / User: 46%
- Money Manager: 19%
- Broker Dealer / Index Trader: 25%
- Algo/Prop: 9%
- Other Reportables: 9%

**Total LME 2016**
- Producer / Merchant / Processor / User: 39%
- Money Manager: 6%
- Broker Dealer / Index Trader: 16%
- Algo/Prop: 8%
- Other Reportables: 31%

**Open Interest Ratio: Money Manager Positions / Hedging Positions**

- **CME Copper**
  - Speculators: 0.4 to 0.6
  - Hedging Risk: 1.4

- **LME Copper**
  - Speculators: 0.4 to 0.6
  - Hedging Risk: 1.4

- **LME Tin**
  - Speculators: 0.4 to 0.6
  - Hedging Risk: 1.6

Source: LME Research;
COTR Open Interest Ratio is for Long + Short + Net Producer/Consumer divided by money manager.
Displayed ratio is the average from Jan 2015- Aug 12th 2016.
Entities are classified at broker discretion according to the primary function of the entity. Entities may be involved in dual business.
Price Performance

Strong recent Tin performance, second best performer Year-To-Date
Stock levels

Stocks have dramatically shifted to Asia,
In October stocks are their lowest since 2008
Backwardations to incentivise delivery

Tom/Next spread is managed by lending rules in case of a dominant holder
Physical market positions in relation to prices

Physical positioning has been relatively stable this year. Producers and merchants forward selling yet to take full advantage of higher prices.
Money manager positioning increasing

Net bullish positioning has been rising through 2016 and mostly price correlated
Tin contracts: Volume and Open Interest

SHFE Tin contract has rapidly grown in traded volume since launch in March 2015

**Tonnes traded per month (‘000 m tonnes)**

- LME
- SHFE

**Month end open interest (‘000 m tonnes)**

- LME
- SHFE
Open interest

The SHFE Tin contract appears to be predominantly used on a day trading basis.

Open Interest in days of volume

LME tin positions averages 4.8 days of volume

Volume = 1 days positions

Day traders > position holders

SHFE  LME

Month end open interest divided by ADV
LME Volumes exclude member give up, admin trades
Forward Curve

The LME forward curve has considerable forward open interest, supporting longer term hedging.
ICDX and LME tin is correlated

2016 Jan-August 98% r squared correlation
LME initiatives to support the Tin industry
# LME Tin Brands

9 out of the world’s top 10 producers have LME deliverable brands

Lower thresholds to encourage additional listings

<table>
<thead>
<tr>
<th>Country</th>
<th>Brand</th>
<th>Producer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>MC</td>
<td>Metallo-Chimique N.V.</td>
</tr>
<tr>
<td>Bolivia</td>
<td>ENAF</td>
<td>Empresa Metalurgica Vinto</td>
</tr>
<tr>
<td>Brazil</td>
<td>MAMORE</td>
<td>Mineracao Taboca SA</td>
</tr>
<tr>
<td></td>
<td><strong>WHITE SOLDER BRASIL</strong></td>
<td>White Solder Metalurgia e Mineracao Ltd.</td>
</tr>
<tr>
<td>China</td>
<td>JH</td>
<td>Laibin China Tin Smelting Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>PGMA</td>
<td>CNMC (Guangxi) PGMA Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>YS</td>
<td>Gejiu Zili Mining and Smelting Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td>YT</td>
<td>Yunnan Tin Company Limited</td>
</tr>
<tr>
<td></td>
<td>YUNHENG</td>
<td>Yunnan Chengfeng Non-Ferrous Metals Co., Ltd.</td>
</tr>
<tr>
<td></td>
<td><strong>YINSHENG</strong></td>
<td>Gejiu Jinye Mineral Co Ltd</td>
</tr>
<tr>
<td>Indonesia</td>
<td>BANKA</td>
<td>PT. Timah (Persero) TBK</td>
</tr>
<tr>
<td></td>
<td>IMLI</td>
<td>PT. Bukit Timah</td>
</tr>
<tr>
<td></td>
<td>KUNDUR</td>
<td>PT. Timah (Persero) TBK</td>
</tr>
<tr>
<td></td>
<td>MENTOK</td>
<td>PT. Timah (Persero) TBK</td>
</tr>
<tr>
<td></td>
<td>RBT*</td>
<td>PT. Refined Bangka Tin</td>
</tr>
<tr>
<td></td>
<td>TININDO</td>
<td>PT. Tinindo Inter Nusa</td>
</tr>
<tr>
<td></td>
<td><strong>IMLI BELITUNG</strong></td>
<td>PT. Babel Inti Perkasa</td>
</tr>
<tr>
<td>Malaysia</td>
<td>MALAYSIA SMELTING CORPORATION</td>
<td>Malaysia Smelting Corporation Bhd.</td>
</tr>
<tr>
<td>Thailand</td>
<td>PHUKET</td>
<td>Thailand Smelting &amp; Refining Co Ltd</td>
</tr>
<tr>
<td></td>
<td>THAISARCO</td>
<td>Thailand Smelting &amp; Refining Co Ltd</td>
</tr>
</tbody>
</table>

Application also received and in process for MSP PT Mitra Tin brand (6.72ktpa)

**Added since 2015**
LMEshield – secure and effective commodity receipting

What is LMEshield?

- A secure global electronic register for efficient creation, management and transfer of off-warrant warehouse receipts

LMEshield background

- **2001** – LME develops electronic system for warranted-metals, ‘LMEsword’ (c. 5 m tonnes in/out per annum)
- **2014** – Post-Qingdao, leading banks request LME to extend services and expertise to off-warrant market
- **2016** – Launch of LMEshield, building on LMEsword experience and with support from the industry

Efficient processes across the market

Expanded trade finance availability

Improved global off-warrant warehousing standards

Reduced risk for fraud

Reduced risk in trading commodities held on receipt

Banks and financing institutions

Warehouses and storage facilities

Physical commodity traders and owners
How can LMEshield help you?

**Warehouses**
- Enhanced risk management, improved customer confidence, operational savings

**Banks financing institutions**
- Reduced risk of fraud and standardisation of receipt structure

**Physical commodity traders and owners**
- Transparent financing and efficient ownership transfer

Recent developments

1. Ongoing working group of up to 20 warehouses, banks and trading firms
2. MOU signed 21st March with Mercuria, Henry Bath and CMST to list LMEshield warehouses along China’s ‘The Belt and Road’ routes
3. April 2016 launch of LMEshield service
4. Fee-free usage until September 2016, with fee credit rewards for usage prior to September