Delivery Against Cocoa Futures
ICE and NYSE Liffe

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Abidjan
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Delivery Against Futures Position – Not Usual

• Positions held on Futures contracts involving delivery may be satisfied by either;
  – Trading out of position before delivery required, or
  – Delivery

• Delivery is unusual...
  but the “2%” keeps the price of the “98%” relevant

Cocoa Delivered v Futures on ICE and NYSE Liffe (tonnes)
2013

Delivery against Futures
The Use of the Futures Market in Pricing Physical Market Cocoa

Factors Affecting Price of Cocoa quoted on Exchanges

- Location; must be at
  - ICE – Certain ports on Eastern Seaboard of USA
  - NYSE LIFFE – Certain ports in Northern Europe
- Storage conditions;
  - with certain Warehousekeepers;
  - in certain Warehouses; and
  - subject to certain storage and administrative requirements
- Weight of what is to be delivered
  - subject to tolerances
- Origin
  - Some are valued higher than others
- Quality
  - Must meet certain minimum requirements
- Supply and Demand...

- Note that these affect the price quoted on the Exchanges
**Exchange Deliverable Cocoa Beans**

- Must be cocoa beans which are:
  1. Stored in specified Ports, and are:
     - With nominated/licensed warehousekeepers;
     - In their nominated/licensed warehouses;
     - Stored according to the Exchanges’ criteria;
  and
  2. Of a minimum quality standard, specified by the relevant exchange;
  and
  3. Comply with the relevant Exchange’s delivery mechanism
     - ICE – eCOPS
     - NYSE Liffe – NYSE Liffe Guardian

**Delivery Locations**

<table>
<thead>
<tr>
<th>The ICE Exchange</th>
<th>Warehousekeepers</th>
<th>Warehouses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of New York District</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Delaware River Port District</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Port of Hampton Roads</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Port of Albany</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Port of Baltimore</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
<td><strong>29</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NYSE Liffe</th>
<th>Warehousekeepers</th>
<th>Warehouses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>7</td>
<td>49</td>
</tr>
<tr>
<td>Antwerp</td>
<td>11</td>
<td>69</td>
</tr>
<tr>
<td>Bremen</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Felixstowe</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hamburg</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Humberside</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Le Havre</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Liverpool</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>London</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>Teesside</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>194</strong></td>
</tr>
</tbody>
</table>
Weight Requirements

- The ICE Exchange
  - 10 tonne Lots of cocoa beans in
    - In bags, ±1.0% weight tolerance
  - To be weighed before delivery

- NYSE Liffe
  - 10 tonne Standard Delivery Units (“SDU”) 
    - In bags, ±1.5% weight tolerance
  - 100 tonne Large Delivery Units (“LDU”) 
    - In bags, +1.5%, -1.0% weight tolerance
  - 1,000 tonne Bulk Delivery Units (“BDU”) 
    - Bulk, +1.5%, -0.5% weight tolerance

  - SDUs and LDUs
    - Increasing discounts after 6 months from date of weighing, up to 3 years
  - BDUs
    - Weight valid for 6 months

Delivery against Futures

Origin Discounts and Premiums

**ICE Cocoa Contract**

- **Group A (+$160/mt)**
  Main Crop for: Ghana, Ivory Coast, Lome, Nigeria and Sierra Leone

- **Group B (+$80/mt)**
  * from July 2015

- **Group C (Par)**
  Bolivia, Haiti, Sulawesi, Malaysia, Para and all other origins

**NYSE Liffe Cocoa Contract**

- **Origin Group 1 (Par)**
  Côte d'Ivoire, DR of Congo, Equatorial Guinea, Ghana, Grenada fine estates, Jamaica, Sierra Leone, Côte d'Ivoire

- **Origin Group 2 (-£25/mt)**
  São Tomé & Principe and Sri Lanka

- **Origin Group 3 (-£50/mt)**
  Bahia Superior, Vitoria Superior, Ecuador and Papua New Guinea

- **Origin Group 4 (-£75/mt)**
  Malaysia

- **Origin Group 5 (-£100/mt)**
  All other origins

Note all origins are allowed; **premiums on (ICE)**, NYSE Liffe apply **discounts**
So is ICE Cocoa higher priced than NYSE Liffe’s?

- Not usually...

E.g. Friday 14th February the cocoa markets settled for May 2014 position at:

<table>
<thead>
<tr>
<th></th>
<th>NYSE Liffe</th>
<th>ICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>£/mt</td>
<td>£1,855</td>
<td>$2,967</td>
</tr>
</tbody>
</table>

£/$ rate 1.6718

so NYSE Liffe $ price $3,101/mt

Difference to ICE is $134/mt

Known as the arbitrage and is keenly followed by market participants

Note that supply and demand for cocoa in the US market may be different to those in Europe

Delivery against Futures

Typical Broker Report Format

COCOA MARKET REPORT

NYSE Liffe  ICE  Arbitrage

Cable & Delivery against Futures
Overview of Quality Assessment

• Purpose of quality assessment is to ascertain two main factors;
  – Yield;
    • how much useable material is there?
  – Flavour and ‘wholesomeness’

Factors affecting Yield

• Similar sized big single whole beans are worth more than small ones, and beans of significant variable size
• Less ‘non-cocoa yielding’ material is better
  – Foreign matter
  – Sievings
  – Flat beans
• Less ‘limited-cocoa yielding’ material is better
  – Residue
  – Clusters
Factors affecting Yield – Sievings

Sievings is the material that passes through the screen.

NYSE Liffe refers to this being ‘Residue’, and use 6mm square holed wire screens rather than the physical market’s use of 5mm round-holed plate screen.

Examples of Residue, Flat Beans, Bean Clusters and Foreign Matter

Residue (Physical market definition - FCC)
any cocoa element other than whole cocoa beans and flat beans

Bean Clusters
two or more beans joined together which cannot be separated by finger and thumb

Flat Beans
cocoa beans too thin to cut to give a complete surface of the cotyledons

Foreign Matter
any substance other than cocoa beans and residue
**Yield Assessment – NYSE Liffe**

- Amount of sievings, residue (FCC) and foreign matter is weighed and compared to the weight of the sample
- Number of single whole beans per given weight assessed (the bean count)
  - a proxy for the average size of the beans; and
  - usually expressed as the number of beans per 100g
- Distribution of bean sizes in the sample, the homogeneity

**Sieves – To Measure the Homogeneity of Bean Size**
Yield Assessment – NYSE Liffe

- **Sievings** (called Residue by NYSE Liffe) and **Foreign Matter** – 25g to 75g/2kg allowed, at an allowance
- **Clusters** – up to 150g/2kg allowed at half the discount for Sievings and Foreign Matter
- **Bean Count** – premium for beans larger than 100beans/100g, discount if smaller than 100beans/100g to a maximum of 120beans/100g
- **Homogeneity** of bean size – dependent on set number of beans passing through 13mm, 11.5mm and 10.5mm screens and subject to the standard deviation on their size, discounts from 26 to 40 standard deviations

**Delivery against Futures**

Flavour and ‘Wholesomeness’ Assessment – NYSE Liffe

- Flavour is subjective. Therefore the measurement assesses the factors that develop or spoil the flavour and, in extreme cases affect ‘wholesomeness’
- Assessed by the ‘cut-test’. 300 beans are cut in half to expose both cotyledons and a visual inspection occurs to find;
  - Mould or infestation (factors affecting flavour and ‘wholesomeness’)
  - Slaty beans (measures the development of chocolate flavour)

**Delivery against Futures**
Mould, Infestation and Slate

100 beans cut – Ready for Analysis

Note the good light conditions and the matt black background for inspection.

Note also that a further 200-beans will need to be analysed – an easier task with the Revelator™ and the use of the black Work Area grid.

While the use of a knife to cut cocoa is possible, please note that the Work Areas will be damaged if used for this purpose.
Thank You!

Delivery against Futures