## Portfolio of Hedging Instruments

<table>
<thead>
<tr>
<th>Position</th>
<th>Quantity</th>
<th>Lbs of Aluminum</th>
<th>Initial Price of Contract per pound</th>
<th>Exercise Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Futures</td>
<td>2</td>
<td>880</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Short Futures</td>
<td>0</td>
<td>-</td>
<td>$</td>
<td>-</td>
</tr>
<tr>
<td>Long Call Option</td>
<td>0</td>
<td>-</td>
<td>$0.5456</td>
<td>62</td>
</tr>
<tr>
<td>Long Put Option</td>
<td>-2</td>
<td>(880)</td>
<td>$0.1291</td>
<td>56</td>
</tr>
</tbody>
</table>

### Assumptions
- Contract Size (lbs/Aluminum): 440
- Current 1-Year Treasury Rate: 1.15%
- Contract Expiration: 30 business days
- Valuation Date: 4/1/2004
- Desired quantity of delivery: 880

### Company Preference
- Risk Aversion Coefficient: 0.2
- Utility Function: 1.00000
- Certainty Equivalent: 0

### Simulation Results
- Total Profit on Hedging Portfolio
- Hedging Costs
- Quantity of Aluminum
- Spot Price of Aluminum
- Price Paid for Total Quantity
- Price Paid minus Hedging Profits
- Effective Price Paid for Aluminum per Pound
- Revenues
- Costs
- Protection Level
- Total Protection Level

### Description of Model:
Model allows user to simulate the costs of hedging for a particular hedging portfolio. The simulation requires the use of Crystal Ball. The assumptions of the model can be changed as well. These assumptions can be altered in the green shaded area above. Going short one of the instruments can be represented by a negative number. The forecast cells for crystal ball are highlighted in blue on the right and can be changed through Crystal Ball.
<table>
<thead>
<tr>
<th>Contract cost</th>
<th>Simulated Profit/Loss on Hedge per contract</th>
<th>Profit/Loss on Position @ Expiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>$ (1,252.08)</td>
<td>$ (2,504.16)</td>
</tr>
<tr>
<td>$</td>
<td>$ 819.80</td>
<td>$ -</td>
</tr>
<tr>
<td>$</td>
<td>$ (185.45)</td>
<td>$ -</td>
</tr>
<tr>
<td>$ 227.48</td>
<td>$ (185.45)</td>
<td>$ 598.39</td>
</tr>
</tbody>
</table>

**Simulation Results**

- **Total Profit on Hedging Portfolio**: $ (1,905.78)
- **Quantity of Aluminum Hedged**: $ 1,905.78
- **Quantity of Aluminum Purchased**: 880
- **Spot Price of Aluminum on Delivery Date**: $ 57.67
- **Price Paid for Total Quantity**: $ 50,745.50
- **Price Paid minus Hedging Profits**: $ 52,651.27
- **Effective Price Paid for Aluminum per Pound**: $ 59.83
  - **70.00 per pound**
  - **59.83**
  - **10.17**
- **Total Protection Level**: $ 8,948.73

The model allows user to simulate the costs of hedging for a particular hedging portfolio. The hedging portfolio can be chosen by altering the values represented by a negative number. These are highlighted above on the left. The assumptions of the model can be changed as well. These assumptions are highlighted above on the left. The forecast cells for Crystal Ball are highlighted in blue on the right and can be changed through Crystal Ball.