Impact of the World Crisis on the Chilean Copper Industry

ICSG Statistical Committee
20th April 2009

Juan Cristobal Ciudad
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Chilean Copper Commission
Impact of the crisis on Chilean copper industry

- Exploration
- Projected investments
- Mine production
Exploration

Characteristics of base metal exploration in Chile and the world (2008)

Source: COCHILCO, based on Metals Economics Group (2008)
Exploration

Evolution of expenditures for copper exploration in Chile and the world...

...shows that Chile will be less affected by credit restrictions to exploration activities.

Source: COCHILCO, based on Metals Economics Group (several years)
Impact of the crisis on Chilean copper industry

- Exploration
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Projected Investment in Copper Mining in Chile, 2008-2013

The project portfolio has not changed significantly...

...although postponements have been announced.

Source: COCHILCO, based on public data of mining companies gathered from the periodic reports “Inversión en la Minería Chilena del Cobre y del Oro” (COCHILCO, several years).
Projected Investment
Codelco vs Private Companies:

The Codelco investment plan has undergone fewer corrections...

... providing stability, particularly in 2009 and 2010.

Source: COCHILCO, based on public information from mining companies, gathered from the periodic reports “Inversión en la Minería Chilena del Cobre y del Oro” (COCHILCO, several years).
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- Exploration
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Mine Production:

Production Costs for Operations in Chile…

Cost Curve C3 adjusted Chile 2009

Cost Curve C3 adjusted Chile 2010

… show low risk of operations closing with expected price scenario.

Source: COCHILCO, based on Brook Hunt and own data.
Mine Production:

Relative position of Chilean cost on world costs (C3 adjusted)…

… reaffirms the Chilean copper industry’s high level of competitiveness.

Source: COCHILCO, based on Brook Hunt and own data.
Mine Production:

Chile’s share of the world’s new copper production during the boom...

... came mostly from world class deposits.

Source: COCHILCO, based on own data gathered from Periodic Reports on the Copper Market (COCHILCO, several years).
Projected Mine Copper Production in Chile:

Copper production systematically corrected downwards...

Operating Problems:
- Codelco
- Collahuasi
- Escondida

Delays in Starting New Production:
- Los Bronces
- El Morro
- Codelco Norte
- El Abra
- Escondida
- Andina

... but for different reasons.

Source: COCHILCO, gathered from the periodic reports “Inversión en la Minería Chilena del Cobre y del Oro” (COCHILCO, several years).
Projected Mine Copper Production in Chile:

Would increase mainly due to new concentrates projects

Source: COCHILCO, gathered from the periodic reports “Inversión en la Minería Chilena del Cobre y del Oro” (COCHILCO, 2009).
## Projects in Pipeline

<table>
<thead>
<tr>
<th>Year</th>
<th>COMPANY</th>
<th>PROJECT</th>
<th>INVESTMENT ($ m)</th>
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</thead>
<tbody>
<tr>
<td>2008</td>
<td>ANTOFAGASTA MINERALS</td>
<td>Los Pelambres (Mauro tailing dump)</td>
<td>534</td>
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<tr>
<td></td>
<td>Codelco – Chile</td>
<td>Gabriela Mistral</td>
<td>1,269</td>
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<td></td>
<td>Xstrata</td>
<td>Lomas Bayas Expansion</td>
<td>70</td>
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<td>2009</td>
<td>Codelco Teniente</td>
<td>Pilar Norte</td>
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<td>Centenario Copper</td>
<td>Franke</td>
<td>172</td>
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<td>2010</td>
<td>ANTOFAGASTA MINERALS</td>
<td>Esperanza</td>
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<td>Codelco Andina</td>
<td>Los Pelambres ( Expansion II )</td>
<td>600</td>
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<td>Collahuasi</td>
<td>Expansion to 94 KTPD (Fase I)</td>
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<td>Teck Cominco</td>
<td>Expansion Fase I</td>
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<td>Andacollo Sulphide (sold to Royal Gold)</td>
<td>Andacollo Sulphide (sold to ROYAL GOLD)</td>
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<td>2011</td>
<td>Anglo American</td>
<td>Expansion Los Bronces</td>
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<td>Cerro Dominador</td>
<td>Diego de Almagro</td>
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<td>Xstrata</td>
<td>Lomas Bayas II</td>
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<td>2012</td>
<td>Barrick</td>
<td>Pascua</td>
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<td>Pan Pacific Copper</td>
<td>Caserones</td>
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<td>2013</td>
<td>Xstrata</td>
<td>El Morro</td>
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<td>Codelco Salvador</td>
<td>San Antonio Oxides</td>
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<td>Codelco Norte</td>
<td>Ministro Hales Mine</td>
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<td>Beyond 2013</td>
<td>Barrick</td>
<td>Cerro Casale</td>
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<td>BHP Billiton</td>
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<td>Codelco Andina</td>
<td>Expansion to 230 KTPD (Fase II)</td>
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<td>Codelco Teniente</td>
<td>New Mine Level</td>
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Source: COCHILCO, gathered from the periodic reports “Inversión en la Minería Chilena del Cobre y del Oro” (COCHILCO, 2009).
Chilean Mine Production Forecast

Current figure incorporates most of the new market conditions

Source: COCHILCO, gathered from the periodic reports “Informe Trimestral del Mercado del Cobre” (COCHILCO, several years).
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