



**BRICS Metals & Mining
Conference**
**“Beyond the Dreams of
Avarice”**

12 November 2004

- What impact will the industrialisation of Brazil, Russia, India, and China have on copper prices?
- What is Anglo American doing in response to these changes?

Beyond the dreams of avarice ?

“There will be seasons when demand will follow so closely on the heels of supply that prices will go skywards, and the fool will say in his heart that the market must forever advance.

There will also be periods when the supply will far exceed demand, and the faint of heart will say that copper mining is overdone, and never more can be profitable.

But in aggregate, the great law of averages, immutable as the law of gravitation, will give to the world the copper for its imperative requirements, at prices not prohibitive to the consumer, yet sufficiently high to provide, for the well-managed mines, profits beyond the dreams of avarice.”

Beyond the dreams of avarice ?

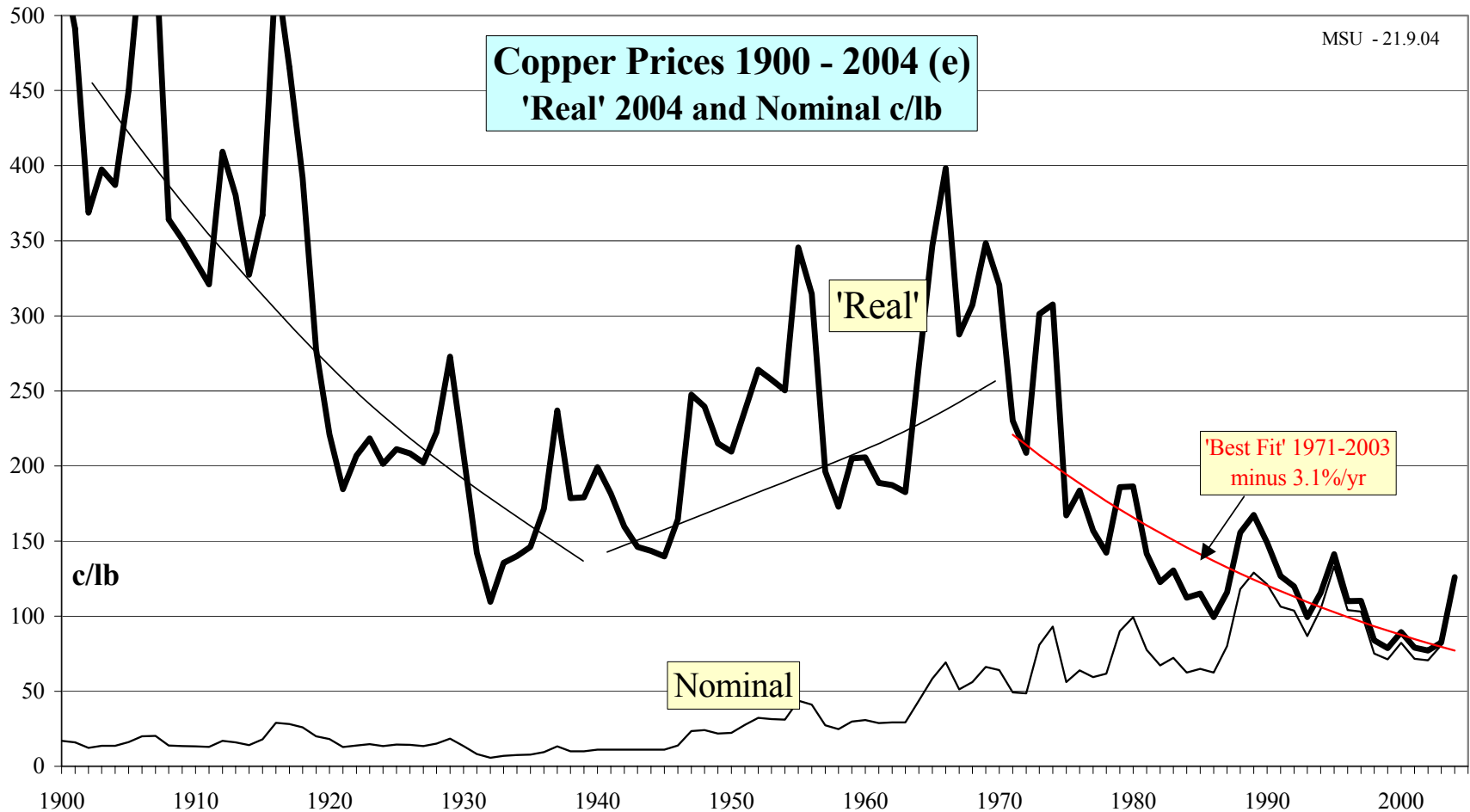
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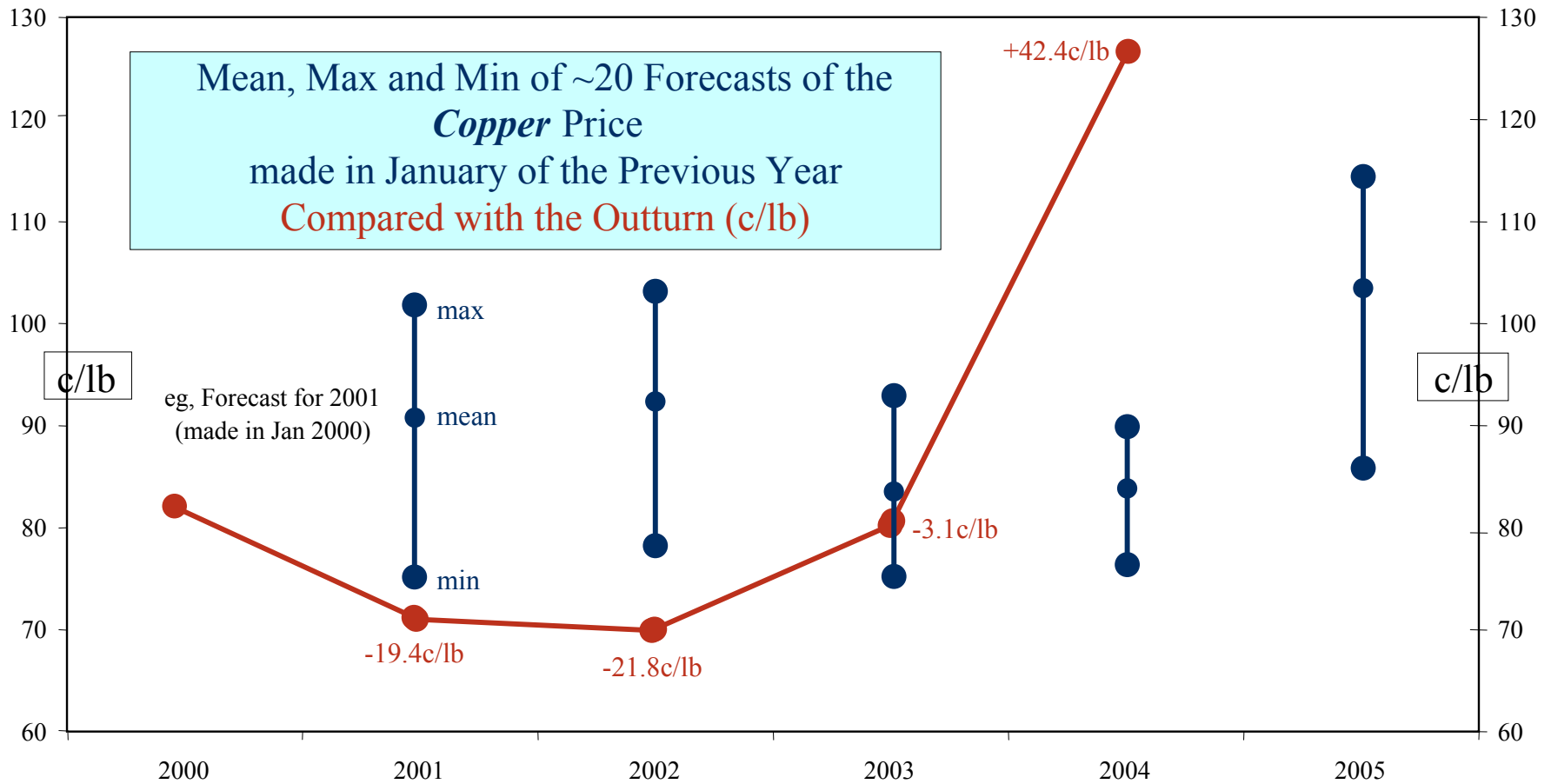
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Horace Stevens (The Copper Handbook, 1903)

A Secular Change in Metal Prices?

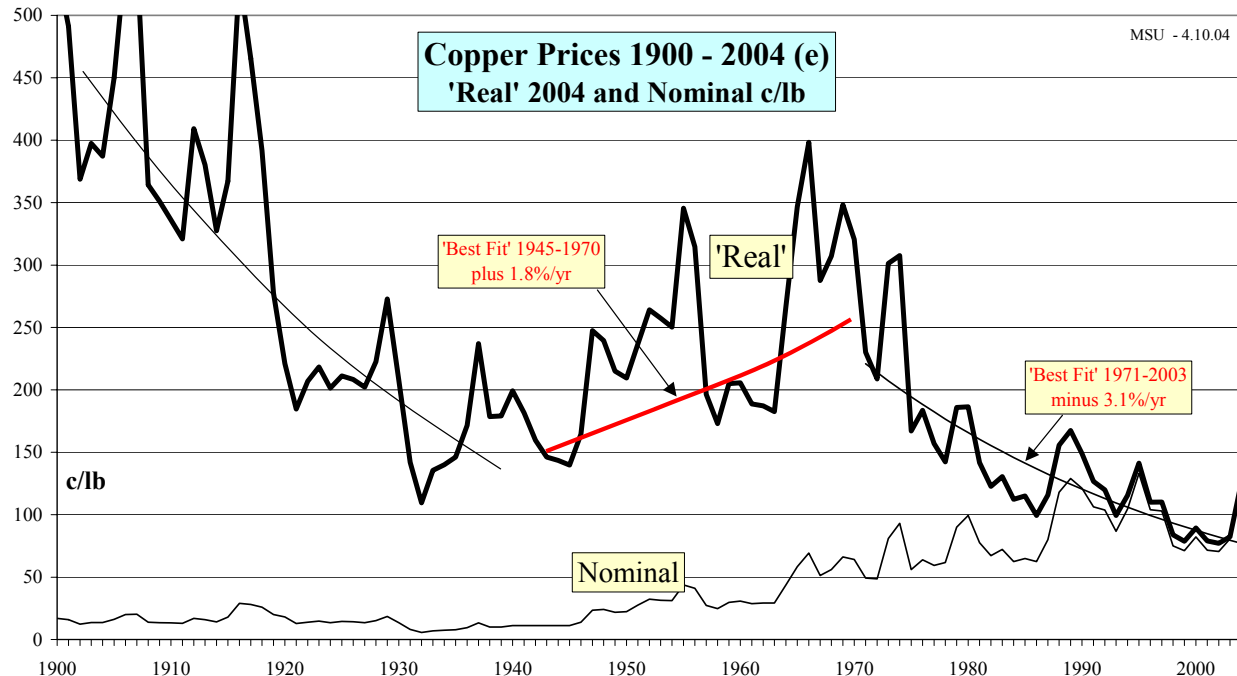


Price forecasting: An exercise in futility?



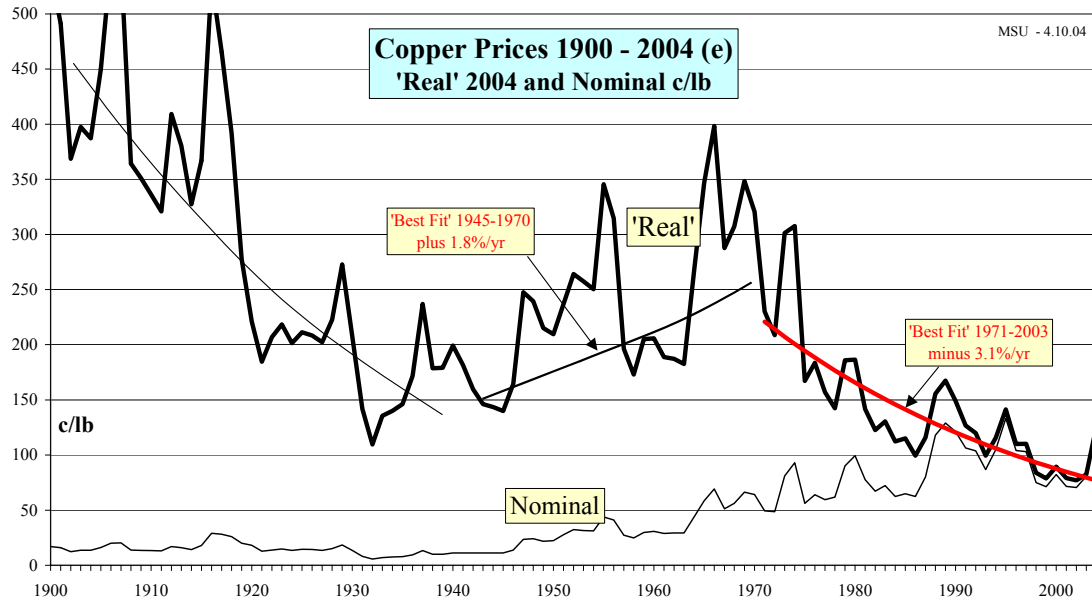
Source: Reuters, FT (MSU - 4.10.04)

1945-1970: Increasing real metal prices



- High MEC industrial production growth rates
- Industrialisation of Japan and rebuilding of Europe
- Accommodative monetary and fiscal policies
- Commodities as inflation hedge

1970-2003: Decreasing real metal prices

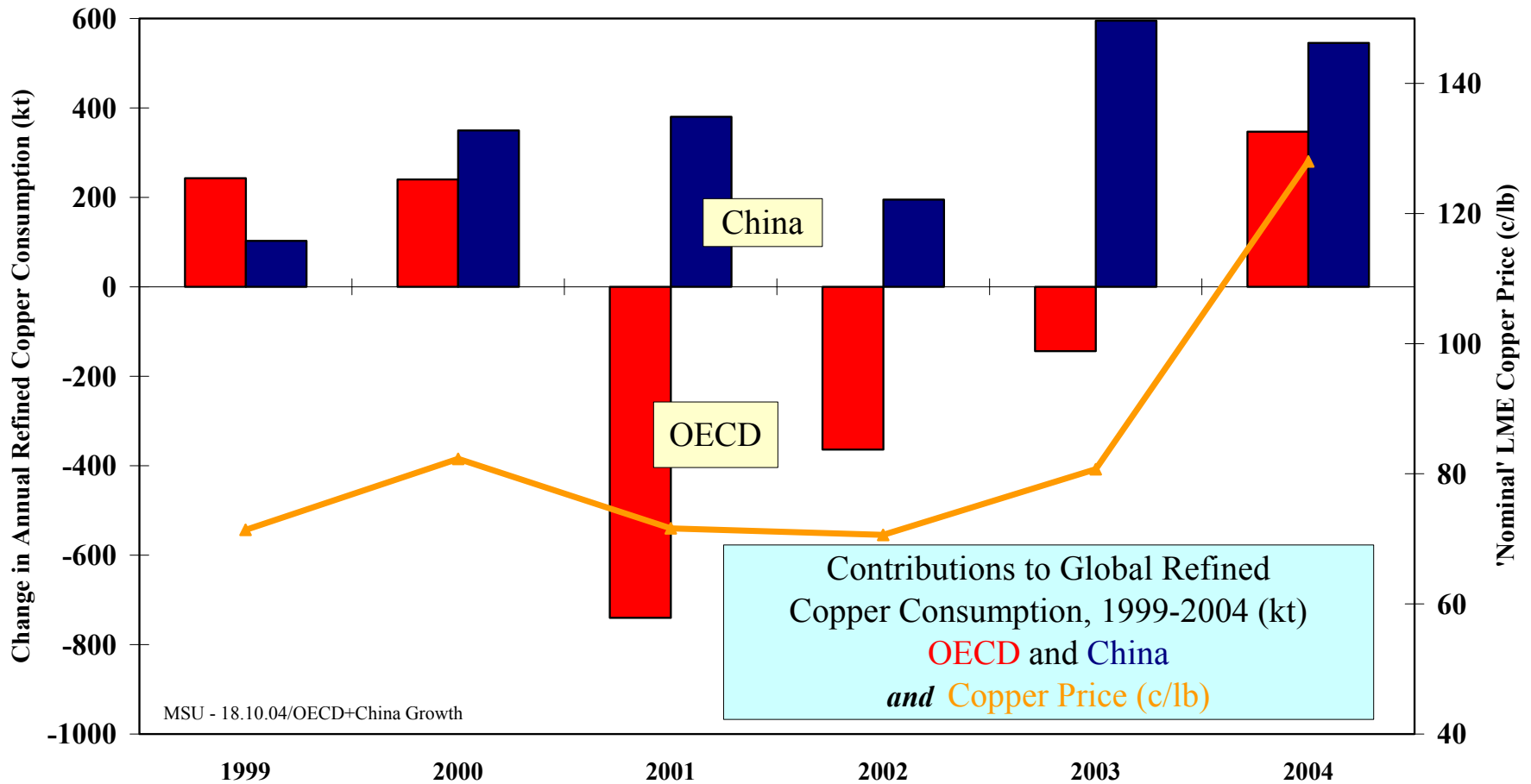


- Reduction in MEC growth rates
- Reduction in structural sources of demand from Europe and Japan
- Central banks fight inflation
- Price induced over-investment in mining industry
- Industry-wide cost reductions

- Industrialisation of China (and Russia, India, Brazil)
- Synchronised growth in OECD
- Reflationary bias of Central Banks
- Commodities as a hedge against US dollar

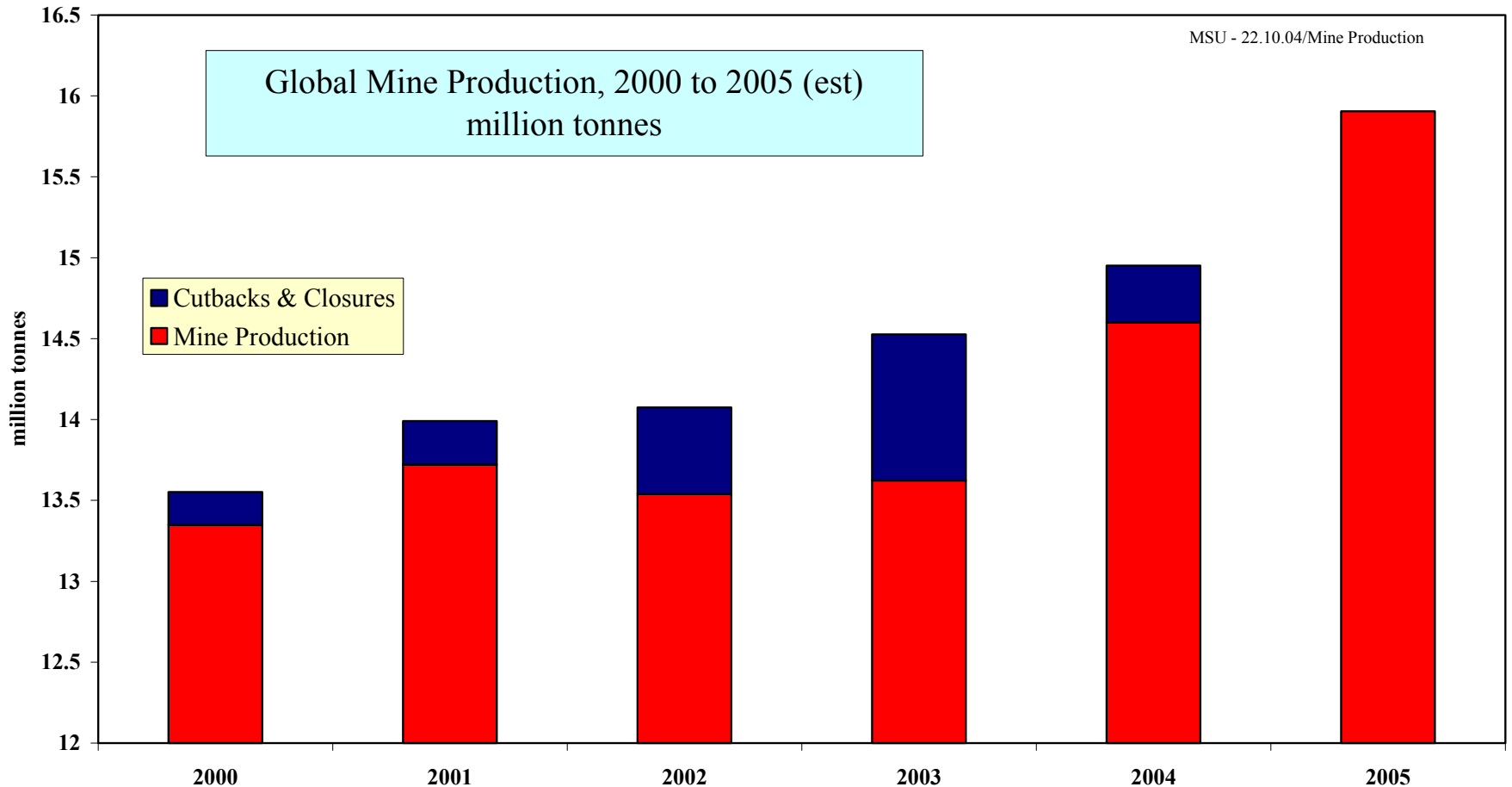
Structural or cyclical?

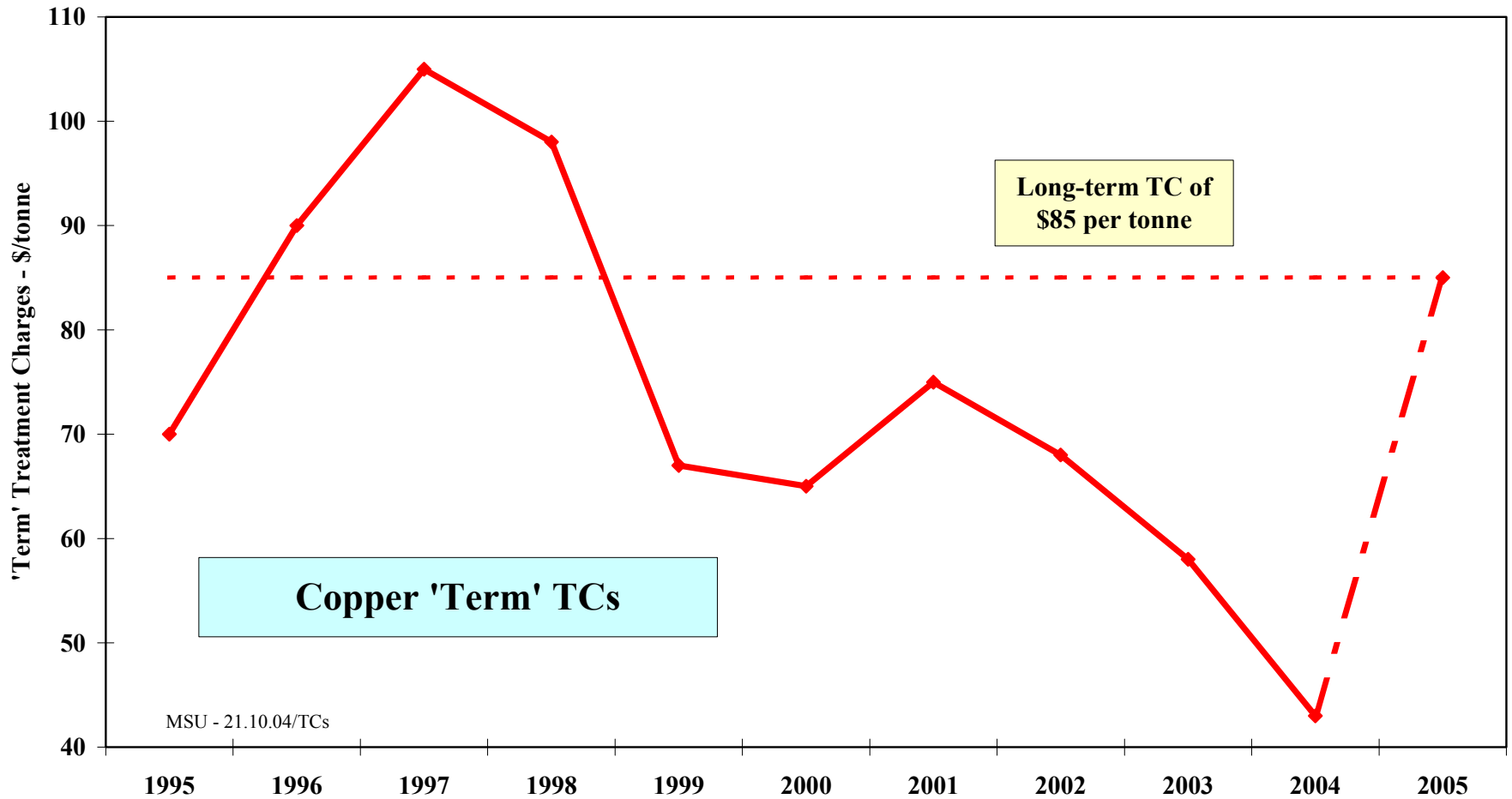
What changed: China or OECD?



- China: Hard or soft landing ?
- OECD:
 - US deficits
 - Oil price
 - “Wealth effect” of asset price decreases
 - US dollar weakness/higher interest rates
 - Geopolitical events/terrorism

- Improved capital discipline and concentration in mining industry
- Exploration expenditure cuts
- Trend increase in costs as grades decline and mines deplete





- Demand correlated to Industrial Production
- Inventory build-up during upturn/destocking during downturn
- Long lead times: New supply decisions made in anticipation of, not in response to, demand growth
- Industry fragmented: Competitor behaviour hard to forecast
- New mines lower grade and/or underground and/or remote: Need economies of scale to be viable, so supply side changes are “lumpier”
- Incentive to increase production to reduce unit costs even during times of oversupply and low prices
- Single asset companies cannot afford to reduce production; “free-riders” deter others
- Mothballing expensive
- High barriers to exit

Investing over the cycle: Ideal profile

Downturn

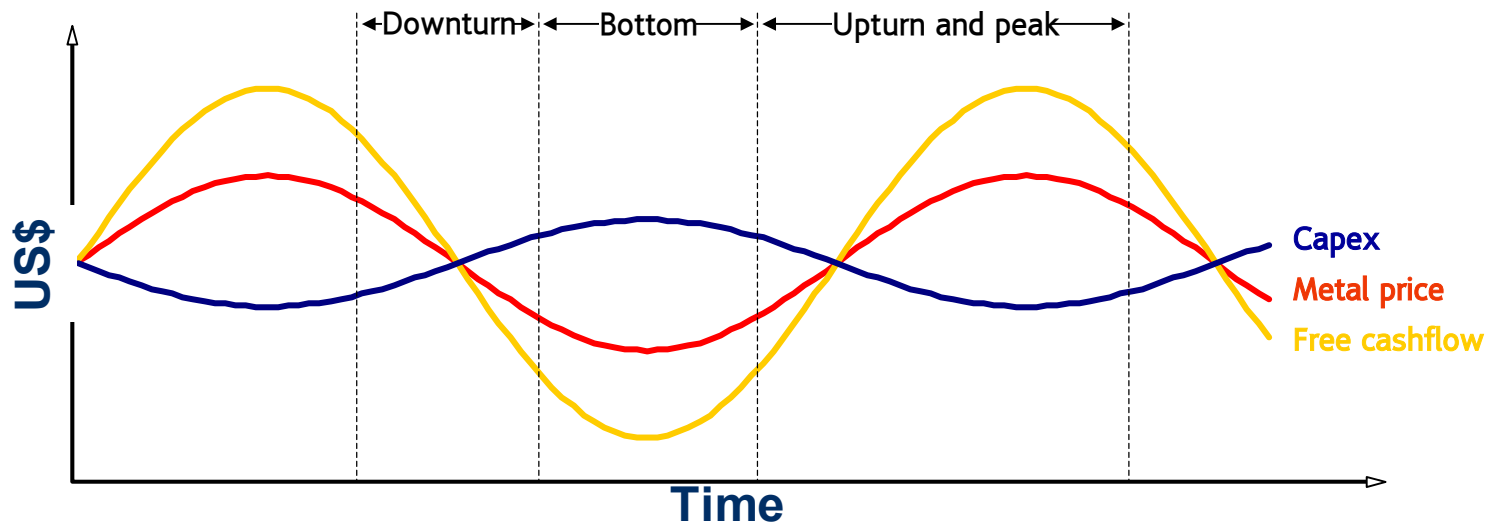
- Commence greenfield projects
- Assess acquisitions
- Increase capex

Bottom of cycle

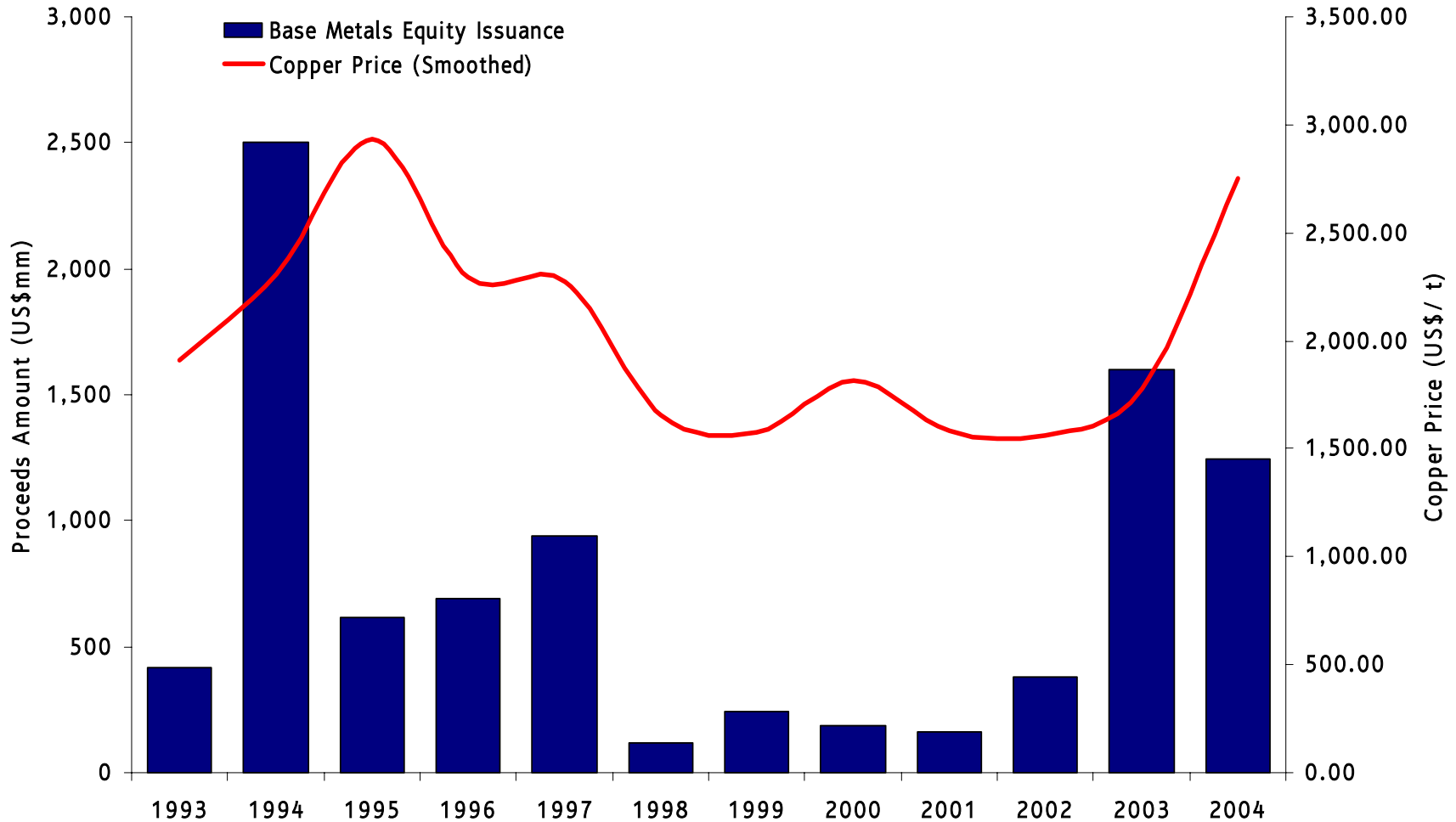
- Make acquisitions
- Commission projects
- Commence de-bottlenecking projects
- Peak capex – ‘borrow’

Upturn and peak

- Sell non core assets
- Ramp up projects to full production
- Reduce long lead time capex – ‘repay’

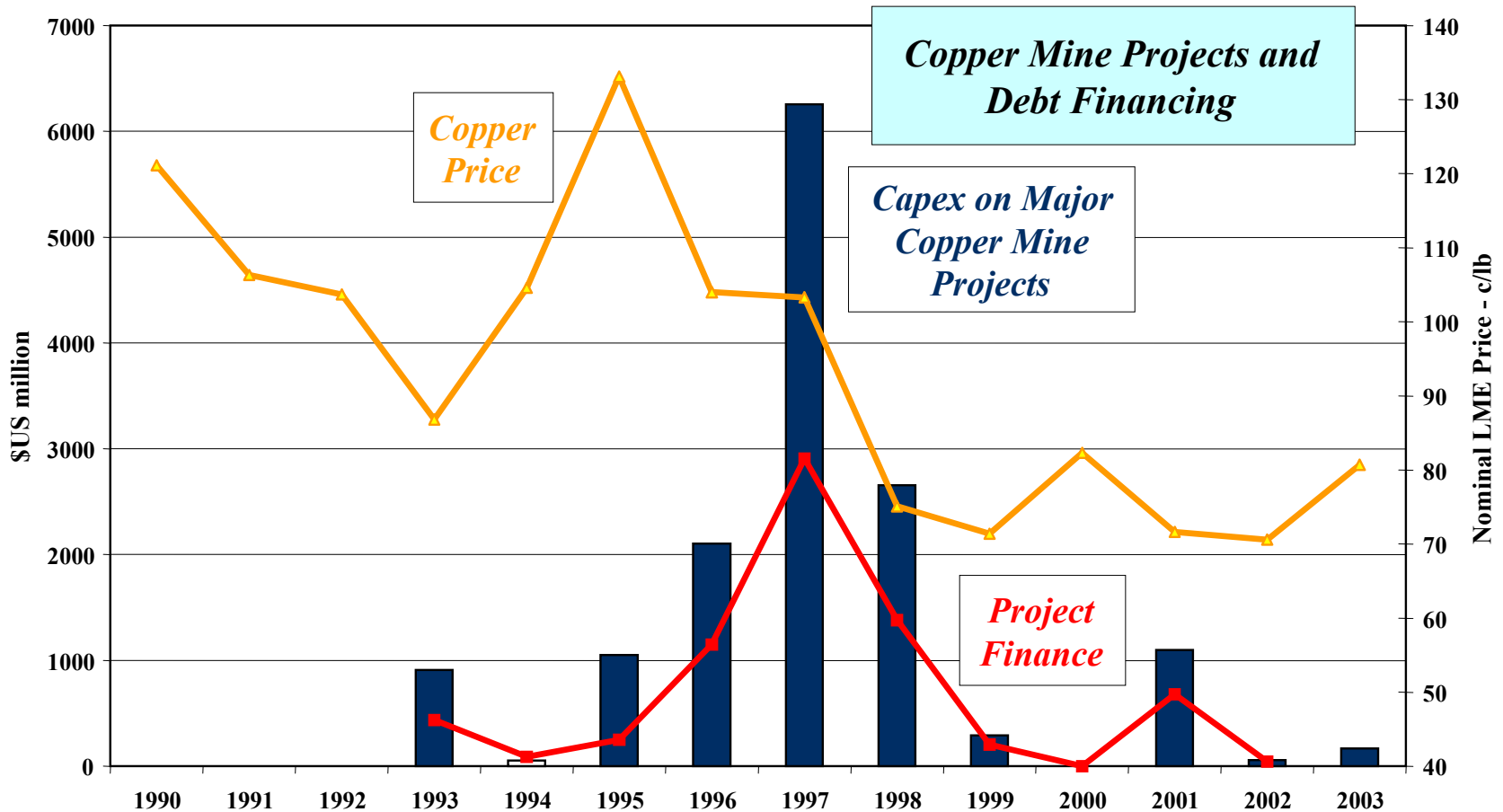


Investing over the cycle: Actual profile



Source: CIBC World Markets

Investing over the cycle: Actual profile



Source: Anglo Base Metals

A secular change in metal prices?

- A secular change is possible, but appears to be a low probability outcome
- More probable outcome is that structural increase in demand arising as a result of the industrialisation of BRIC will moderate the trend reduction in real metal prices
- Current prices reflect a strong cyclical upturn that may be expected to last until the supply-side response comes through (subject to no major demand shocks)
- Will industry capital discipline be maintained?

How is Anglo American responding?

- Maintain focus on cost reduction and operating efficiencies
- Prudently grow production to meet demand
- Maintain capital discipline

- Cost reduction and efficiency improvements:

	Base Metals	Anglo Group
2002	\$14m	\$279m
2003	\$48m	\$335m
2004 (H1)	\$39m	\$248m

- But significant upward pressure on costs:
 - TC/RCs
 - Energy
 - Steel
 - Acid
 - Labour



- **Production***
Throughput increased from 69ktpd to 110ktpd. Maintains production at over 400,000tpa Cu
- **Capital cost***
US\$654m
- **Status**
Commissioned

* 100% basis. Anglo has 44% interest.

Project pipeline: El Soldado pit expansion



- **Production**
Life extended to over 20 years. Production maintained at 63,000tpa
- **Capital cost**
US\$80m
- **Status**
In progress

Project pipeline: Chagres expansion



- **Production**
Capacity increased from 162,000 tpa to 184,000 tpa
- **Capital cost**
US\$22m
- **Status**
Approved.
Commissioning Q1 2005

Project pipeline: Los Bronces expansion



- **Production**
Doubling of throughput to 130,000tpd.
Additional ~200ktpa Cu
- **Capital cost**
~US\$800m
- **Status**
Conceptual study underway



- **Production***
Increase production to 600,000tpa ?
- **Status**
Conceptual study

* 100% basis. Anglo has 44% interest.

Project pipeline: Quellaveco project



- **Production**
200,000tpa
Cu in concentrate
- **Capital cost**
~US\$850m
- **Status**
Feasibility study completed. On hold

Beyond the dreams of avarice ?

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