



price
How good are metal \wedge forecasts
anyway?

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SAMREC/SAMVAL COMPANION CONFERENCE,
17-18 MAY 2016

Au

Pt

Cu

R:US\$

How Good are metal price forecasts anyway?

Whenever a financial cash flow model is constructed to evaluate a project, forecast metal prices and exchange rate(s) are needed.

These can come from:

- market analysts;
- economic research departments of banks and financial institutions;
- company economic / corporate finance departments;
- Consensus market forecasts (e.g. Reuters and Bloomberg);
- Specialist subscriber-based websites.

10 Year Platinum London Fix PM Daily with 60 and 200-day moving averages



Au

Pt

Cu

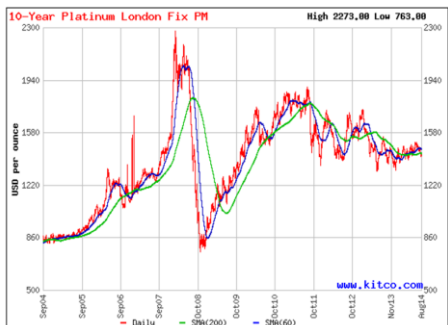
R:US\$

How Good are metal price forecasts anyway?

Let us look at the metal price forecasts for a number of different commodities over the past 15 years.

The presentation compares the forecast metal prices for Fe ore, Au, Pt and Cu against the actual metal prices from financial cash flow models for projects from 2000 to 2011.

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Au

Pt

C

R:US

How Good are metal price forecasts anyway?

Consider the scenario in 2000:

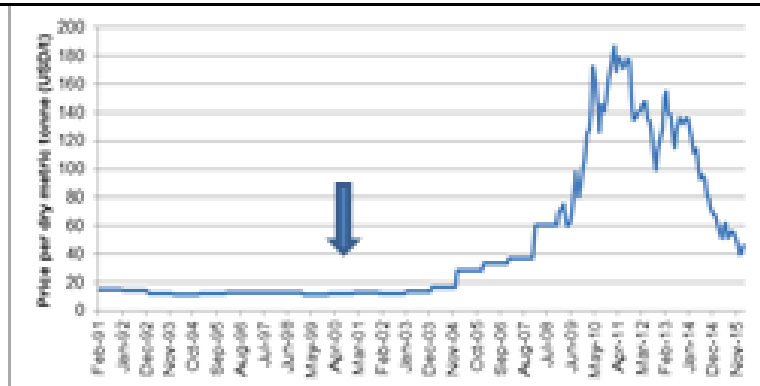


Figure 1. Historical Fe ore price [↑]
(source: www.indexmundi.com) [□]

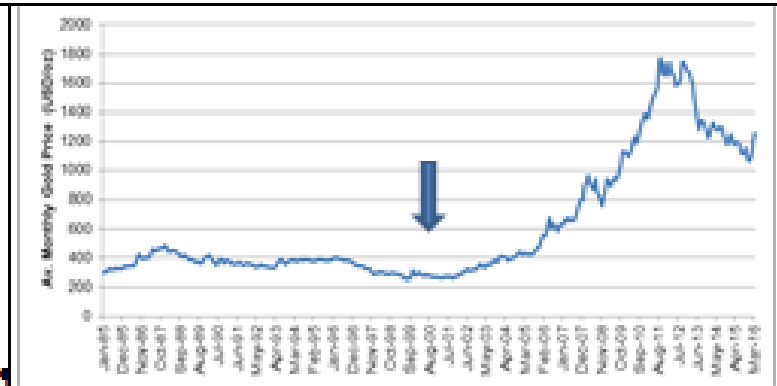


Figure 2. Historical Au Price [↑]
(source: www.kitco.com) [□]



Figure 3. Historical Pt Price [↑]
(source: www.kitco.com) [□]

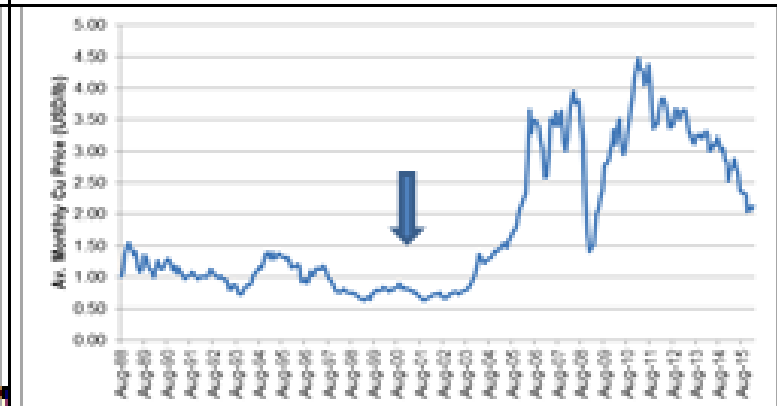
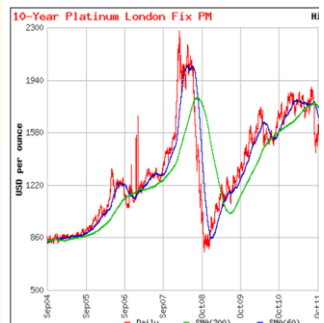


Figure 4. Historical Cu Price [↑]
(source: www.investing.com) [□]

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Au

Pt

C

R:US

How Good are metal price forecasts anyway?

2000 - Following years of stable prices, forecasts perpetuate the past.

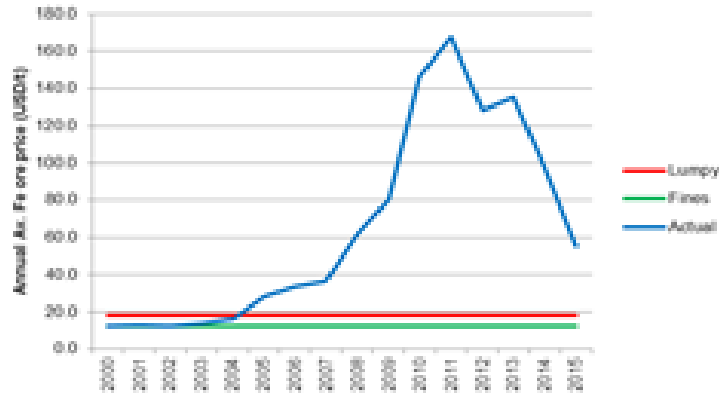


Figure 5. Comparison of actual and forecast Fe ore price at 2000

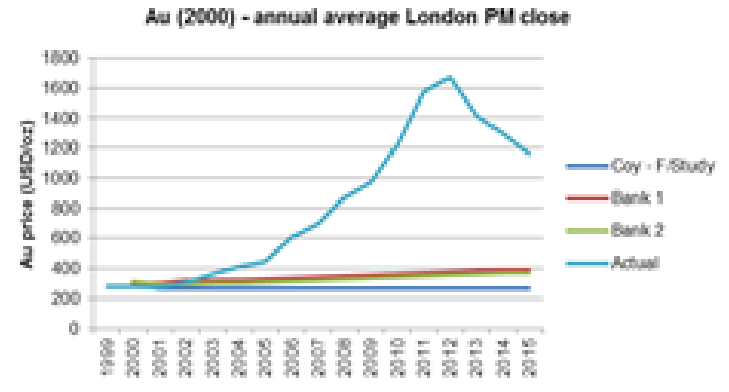


Figure 6. Comparison of actual and forecast Au price at 2000

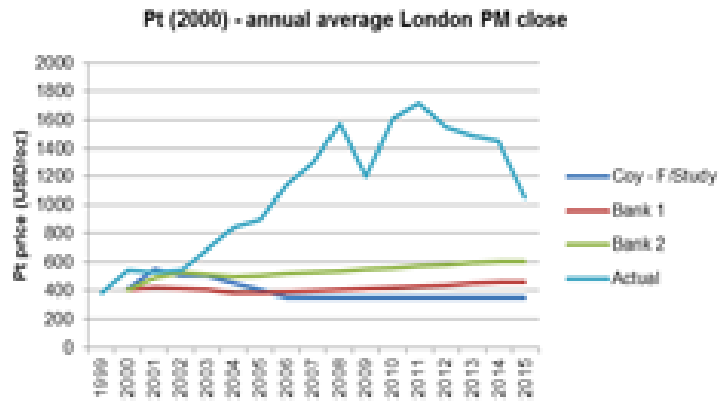


Figure 7. Comparison of actual and forecast Pt price at 2000

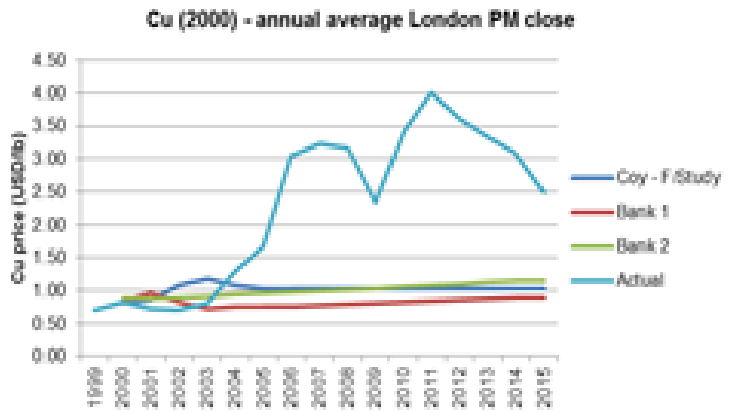
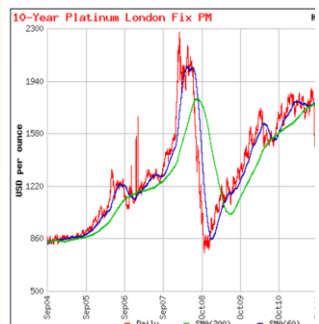


Figure 8. Comparison of actual and forecast Cu price at 2000

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Au

How Good are metal price forecasts anyway?

2004 – no major changes in long-term trend of prices, forecasts follow similar philosophy.

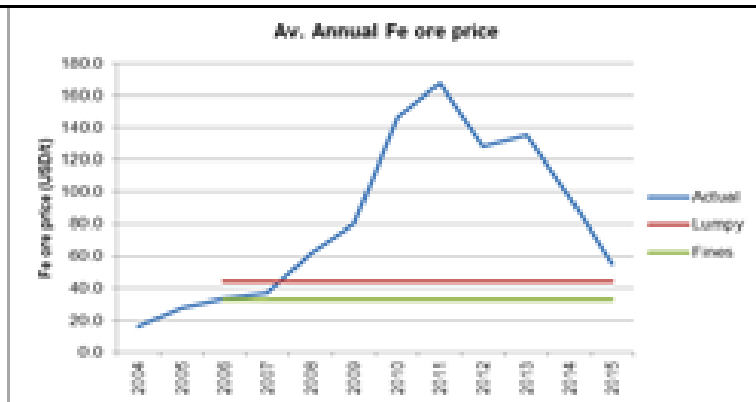


Figure 9. Comparison of actual and forecast Fe ore price at 2006

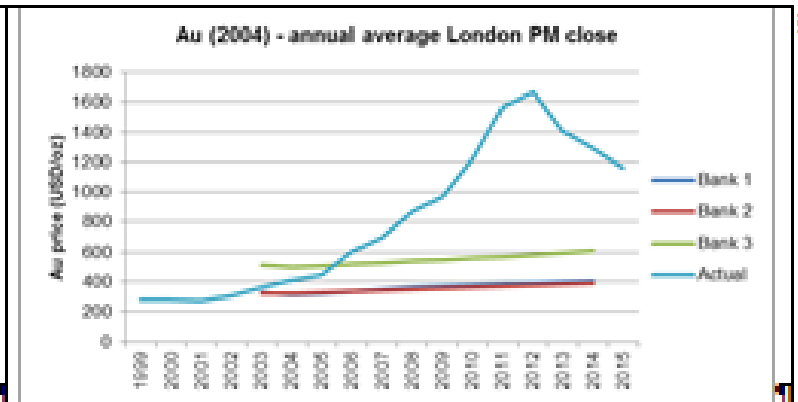


Figure 10. Comparison of actual and forecast Au price at 2004

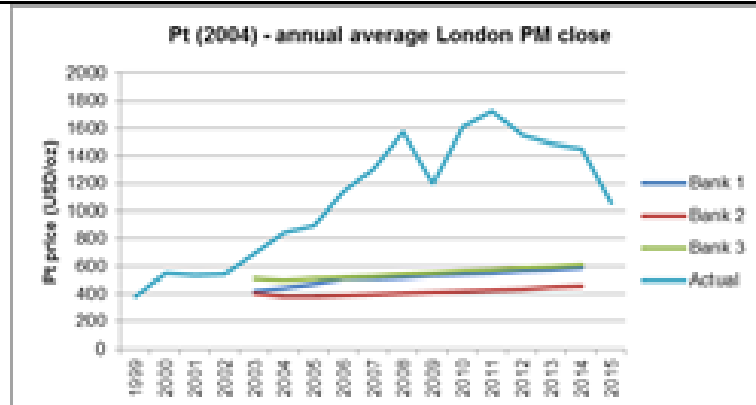


Figure 11. Comparison of actual and forecast Pt price at 2004

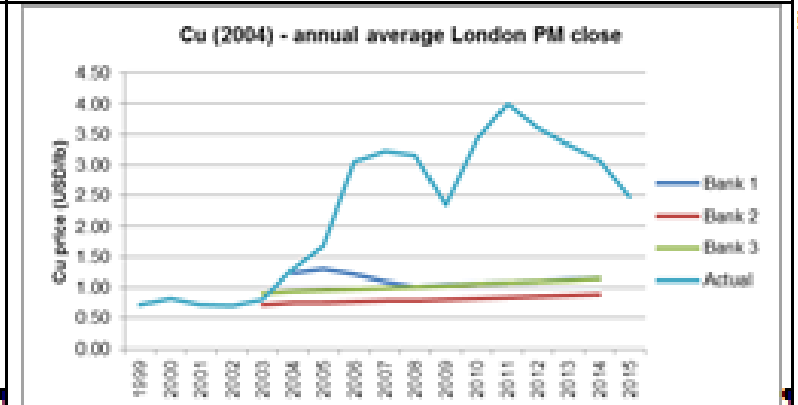


Figure 12. Comparison of actual and forecast Cu price at 2004

How Good are metal price forecasts anyway?

2008 – middle of global crisis, markets in turmoil, JSE had shed 40% of its value in 6 months:

Au

Pt

Cu

R:US\$



Figure 13. Comparison of actual and forecast Fe ore prices at 2008

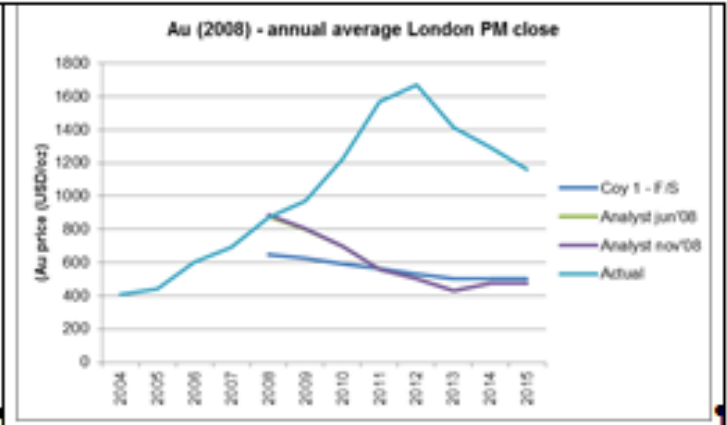


Figure 14. Comparison of actual and forecast Au price at 2008

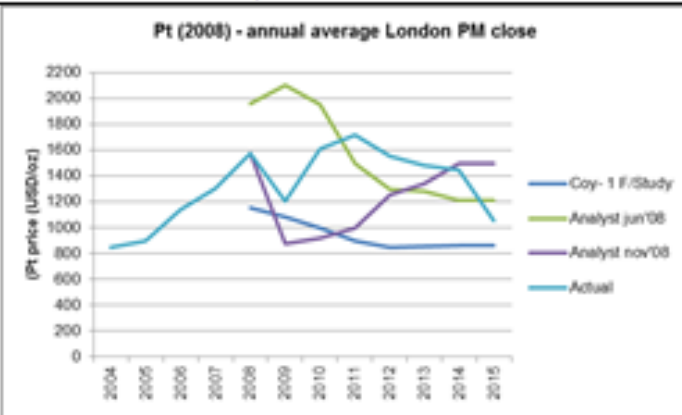


Figure 15. Comparison of actual and forecast Pt price at 2008

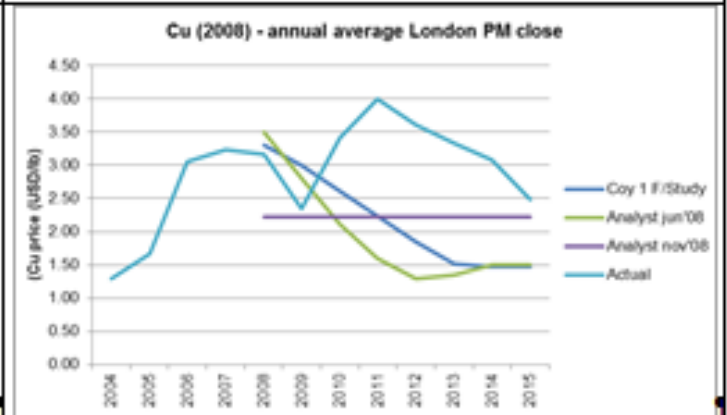
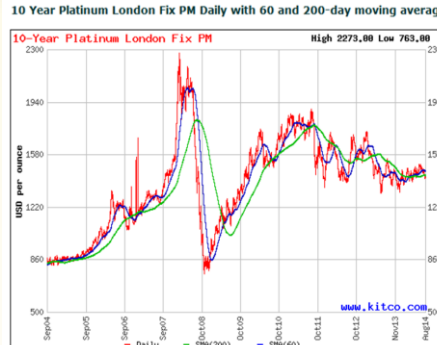


Figure 16. Comparison of actual and forecast Cu price at 2008



How Good are metal price forecasts anyway?

2011 – commodity prices responded to central bank interventions; volatility still present due to conflicting messages.

Au

Pt

Cu

R:US\$

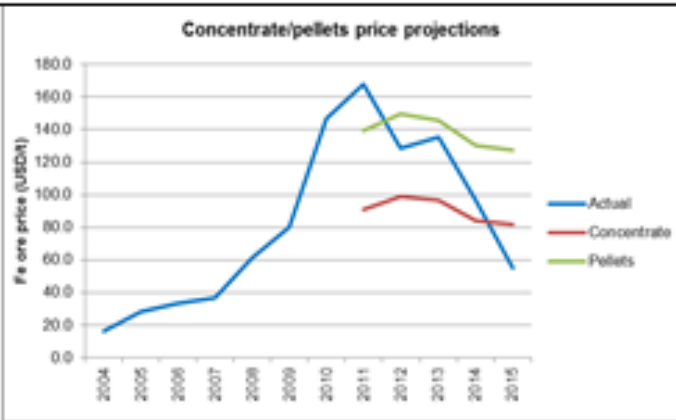


Figure 17. Comparison of actual and forecast Fe ore price at 2011



Figure 18. Comparison of actual and forecast Au price at 2011

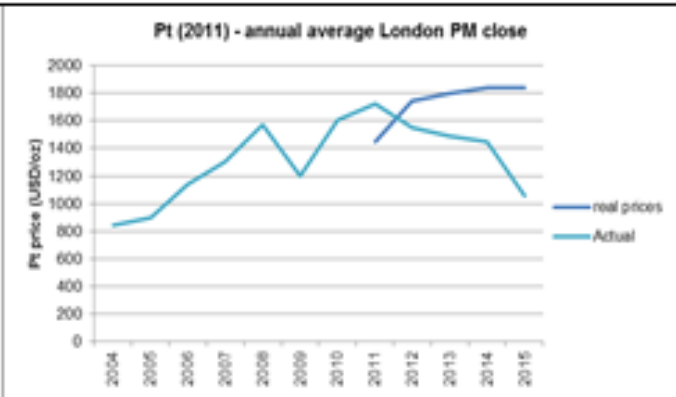


Figure 19. Comparison of actual and forecast Pt price at 2011

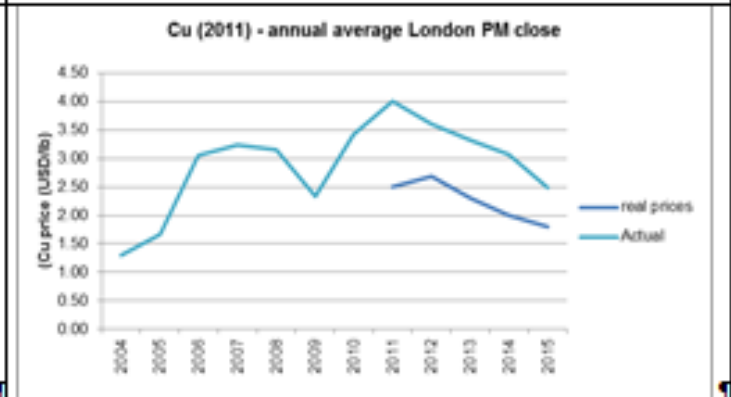
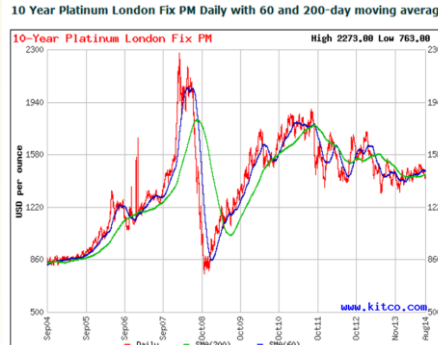


Figure 20. Comparison of actual and forecast Cu price at 2011



Au

Pt

Ni

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How Good are metal price forecasts anyway?

So what changed?

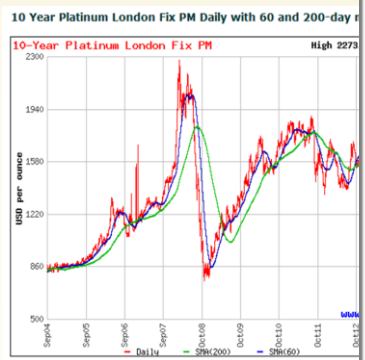
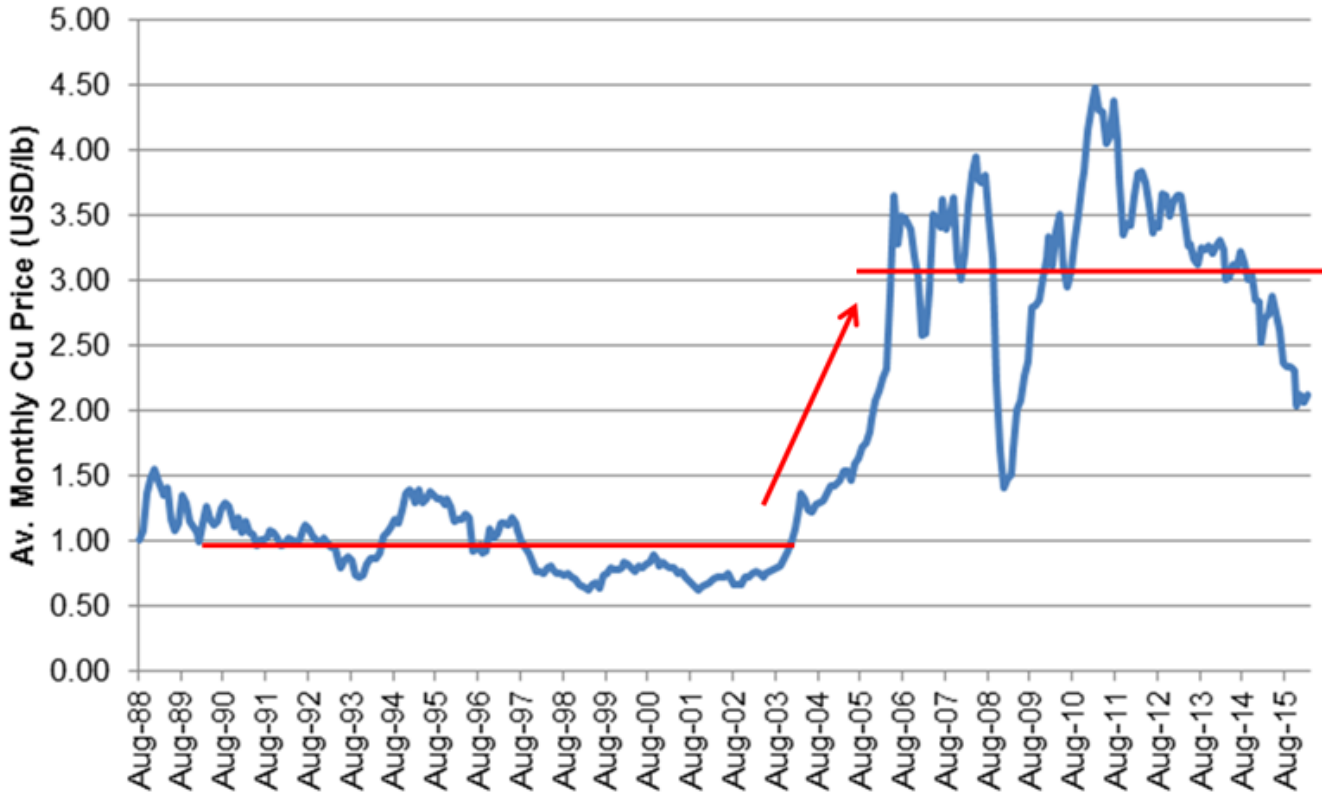
- Projections were generally okay until 2002/2003;
- Prices deviated significantly from long term trend lines;
- Producers had not foreseen the pent-up demand from the East, in particular China, which outstripped supply;
- New mining projects had been put on hold;
- Supply-demand dynamics changed after 2004.

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How Good are metal price forecasts anyway?

Structural shift in the market?



Au
Pt
Cu
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Other considerations with price forecasts:

- Confirm if price forecasts are real or nominal.
- Effective Date
- Price forecast linked to ZAR:USD exchange rate, e.g. Cr ore, FeCr, PGMs.

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Au
Pt
Cu

How Good are metal price forecasts anyway?

Volatility in Rand:USD exchange rate:



Cu Au
Pt

R:US\$

How Good are metal price forecasts anyway?

Use of 3-year trailing average – more conservative in a rising market

Manganese Price
1.75 USD/kg
31 Aug '15



InfoMine.com

Au

Pt

Cu

R:US\$

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Conclusions:

- Conflicting views late-2015 early-2016 regarding where commodity prices are headed.
- Feasibility study typically claims $\pm 10\%$ accuracy in capex/opex estimates – Accuracy in price and exchange rate forecasts potentially nowhere close to this.
- Critical to evaluate sensitivity of project to price and exchange rate fluctuations.
- Necessary to evaluate the impact of price and exchange rate fluctuations on mineral reserves and cut-off grades.

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Questions?

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