

# Pilot Audit Report – Mopani Copper Mines Plc

International Expert Team Report to the Commissioner Domestic Taxes,  
Zambia Revenue Authorities

Re: the pilot tax audit of Mopani Copper Mines Plc

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## Executive Summary

The Pilot Audit of Mopani Copper Mines Plc saw in its first phase (February 2009) significantly delays on the hands of Mopani, but in the second phase (October 2009) the management of Mopani was much more cooperative and responded adequately to the requests from the auditing team. However, there are still issues left to be documented and still final controls to be made by the ZRA before ZRA can finalize suggested assessment.

The scope of work in the Pilot Audit Mopani has been a full review of (1) operational costs, (2) revenues, (3) transfer pricing, (4) employee expenses and (5) overheads.

In order to have maximum benefit of doing pilot audits of several mining companies, a selection of documents was audited off-site and only after initial audit actions were finished and comparative analysis partly done was on-site visits conducted for clarification purposes. Most of the clarifications were received during the audit in October-November 2009.

The comparative analysis, which has been finalized over a number of months in order to get a best possible picture of the mining industry, demonstrates in the view of the international audit team that the existence of Mopani expenses are in doubt on the following items:

- Even a significant increase in the specific index relative to the general labour index of Zambia cannot explain the increase in the labour cost when we have already taken into account the increase in the production volume (labour cost has been treated as a variable cost that varies with production). At least USD 50 million of the USD 90 million is thus unexplainable.
- Fuels have more than doubled during the period, and since increase in production volume has already been taken into account and fuel is treated as a fully variable cost, this increase is unexplainable even if we take into account higher fuel prices than the fuel index should indicate.
- Mining cost has increased over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment.
- Insurance, security and safety has increased over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment.
- Other, spares and admin has increase over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment.
- The general ledger data was provided by Mopani multiple times, as inconsistencies were found in the original and multiple follow-up datasets. No explanation could be provided by the Mopani employees interviewed during the data procurement process. Unfortunately, the general ledger and trial balance data could not be completely matched, despite the numerous attempts with multiple general ledger datasets. This introduces issues surrounding the validation of data, which complicated the audit teams' analysis and results.
- Glencore is charging freight charges (realization charges) based on fixed fees for deliveries CIF Rotterdam. This even though the actual shipments are made to other ports, often closer in geography. We do therefore assume that Mopani is overbilled with freight charges, but have not been able to calculate any monetary effects due to lack of documentation.
- In some cases the documentation of the expenses was not original invoices, we also noted that in some cases they actually did not find the supporting documentation of a transaction.
- It seems like the company may be using incorrect disposal proceeds for tax purposes. There is an inconsistent profit/loss on disposal of fixed assets. The company also seems to be using accounting net book value in calculation balancing allowances instead of using the income tax written down value.



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The completeness of Mopani's revenues is in doubt on the following items:

- We believe that the related party sales and pricing mechanisms are not in accordance with the agreement disclosed, or the arms length principle. This should have impact on the tax assessments for the period under review.
- We have identified different hedges in both gold and silver. These have not been recorded in the accounts in a consistent manner, nor on separate accounts or with distinctive identification marks. As a result we have not been able to verify the actual volume of derivative transactions, nor the monetary effects this have had on the accounts.
- Analysis on production volumes has identified significant deviations on both copper and cobalt. We believe that further investigations should be made to verify the correctness of the production figures and the consistency with what has been recorded in the accounts.

The pilot audit has shown that there is a high need for a determined effort at collecting the taxes that are assessed under the laws implemented by the Zambian parliament. The pilot audit has further shown that ZRA needs the Ministry of Mines to follow up production volumes from ore treated via produced volumes to sold metals on a more consistent and comprehensive basis in order for the calculation of royalty to be reliable. Last, but not least, the pilot audit has shown that there is a high need for implementing punitive measures against

- companies that do not pay their taxes on time
- companies that does not cooperate with the ZRA and make audits more expensive and lengthier than needed.





# 1. Mandate and purpose of assignment

The Zambia Revenue Authority (ZRA) has engaged an international tax audit team, consisting of experts from Grant Thornton and Econ Pöyry, to assist in a pilot review of selected mining companies. Mopani Mining Company Plc has been selected for a limited review in the pilot audit.

The prioritized goals for the review of Mopani are:

1. Basis for Windfall Tax (and other taxes)
  - a. Production levels
  - b. Cost levels in the industry
2. Problem areas in the industry
  - a. Completeness of revenues
  - b. Validity of costs

The focal point of the review is to audit a significant and representative part of the mining industry and to cover significant problem areas identified during the initial phase of changing the Zambia fiscal system.

In addition to the verification work on revenues and costs, it is part of the audit to confirm the validity of tax calculations for the companies, to the extent that it is possible (windfall tax to be included under all circumstances).

The ZRA was responsible for ensuring that the audit team got access to the company's accounting records and relevant supporting documentation, while the international audit team has been responsible for the majority of the meetings with the company together with the Assistant Director Peter Phiri, ZRA. In order for the agreed scope to be achieved, the audit team needed physical access to the accounting material both within and outside of office hours. Further, for the optimal use of the audit team resources, the accounting material for the different companies needed to be in the same location. The audit was performed at the ZRA office in Kitwe, combined with field visits to Mopani's offices in Kitwe.

The international audit team has been responsible for the team composition, the audit methodology applied, the audit techniques utilized and drafting the report for the pilot tax audit.

# 2. Scope of work

The following areas have been selected for control:

- production volumes
- pricing of products
- bi-products and other revenues
- derivatives and hedging
- validity of costs
- cost rebates/discounts
- transfer pricing
- overhead expenses
- depreciation
- employment costs



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### 3. Approach

#### 1) Companies selected for audit

Mopani has been selected due to (1) size of its operations and (2) the high cost level.

#### 2) Team selected for the audit and organization of team

Econ Pöyry was approached by the Government of the Republic of Zambia (GRZ) to perform a pilot audit of the mining companies, due to its former experience with the mining companies through the fiscal adjustment process. Econ Pöyry did not have enough audit capacity to perform the audits alone, and also lacked local presence and therefore partnered with the international audit firm Grant Thornton to complete the team. After the initial audit visit in February/March 2009 it was agreed to switch project leadership from Econ Pöyry to Grant Thornton.

#### 3) Audit approach

The audit approach has been to do an analytical, comparative and document-based off-site ("desk") audit, to be followed up with on-site clarifications and follow-up.

The following request was sent to the companies on 22 December 2008:

"We wish to inform you that we will be conducting a comprehensive income tax audit commencing the first week of January. The audit will cover the tax years 2006/2007 and 2007/2008.

Due to the comprehensive nature of this audit it will be done from our offices and not your premises. However, officers from the mining unit of the Domestic Taxes Division will be visiting you to collect all the relevant records and documents. As far as it is possible we would prefer to collect electronic records and documents.

Pursuant to section 48 of the Income Tax Act this serves as a notice for a request of the following information:

- general ledgers and trial balances
- accounts receivable and payable ledgers
- complete cash and bank ledgers
- shipment documentations
- all sales invoices/vouchers
- all cost invoices/vouchers including expenses and overheads
- all documentation pertaining to related party transactions, including a list of all related parties
- policies and procedures relating to intercompany and other transfer pricing transactions
- derivative transactions contracts and documentation
- any other documentation that the auditors may require to undertake their work.

As regards item 1 we also request Trial Balances for the years 2003/4, 2004/5 and 2005/6. We do not, however, need the full General Ledger for these years.

Your cooperation in availing this information will of utmost importance in ensuring a speedy and smooth audit.”

Following protests from the companies regarding the volume of documentation required, the audit team accepted that original cost invoices be reduced to one month (June) due to the bulk of these invoices.

## 4. Process and challenges

The audit start-up was postponed several times in order for the companies to deliver and ZRA to collect all the relevant items on the list. Prior to 9 February 2009 the international team received information that everything was ready to start with the audit, and the team assembled on 9 February 2009 to start the audit.

At the first meeting it became clear that the companies had not delivered the requested material, and the team moved office from Lusaka to Kitwe to proceed with the process of collecting the material from the companies. The project leaders and the assistant directors from ZRA started a series of meetings with the companies during the first week, to extract the required information.

It should be noted that the international team leaders have not experienced such a lack of compliance in any other country, and Grant Thornton Zambia confirmed that this attitude is also not typical for other industries/companies in Zambia.

On Thursday 26 February, it was decided to dissolve the entire audit team due to the lack of complete records and to have the assistant directors from the ZRA follow up with the mining companies, to secure the remaining deliveries.

October 2009, after several delays, it was once again decided to proceed with the audit. The companies had still not delivered all the required documentation, but it was decided that the ZRA, with support from the international team, should use one week to collect the remaining material. In week 2 the audit teams went out to the companies to do the remaining audit on-site. The two teams auditing Kansanshi and Mopani succeeded in finishing most of the audit during the next 3 weeks.



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## 5. Pilot audit results - Mopani

### 5.1 Legal basis

The legal basis for the audits is very clear in the Zambia Tax Act. ZRA can ask for any documentation, in copy or original, at "any place and any time" that the ZRA finds suitable. There was thus no basis for the companies to delay delivering upon the request in relation to the tax audit.

The companies have therefore been neglectful of their duties under the Zambia Tax Act and failure to comply with the request to provide full information under the audit should, in our opinion, be pursued;

- individually towards the companies to the extent that penalty mechanisms are available
- collectively by institutionalizing penalty mechanisms, if such are not available in the current legislation.

### 5.2 Introduction to Mopani

#### a. Short description of company

Mopani Copper Mines Plc is a mining company operating in the Republic of Zambia with its registered office at Nkana Central Offices in Kitwe.

It is one of the major producers of copper and cobalt and provides processing facilities to other copper and cobalt producers on the copperbelt. The company also produces Sulphuric acid.

The company operates two mine sites comprising:

**Mufulira**, which includes the Mufulira Mine, Mufulira Concentrator, Smelter, Refinery and a Solvent Extraction and Electro Winning plant; and

**Nkana**, which incorporates the South Ore Body ("SOB"), Central, Mindolo Sub-Vertical and Mindolo North Shafts, Nkana Concentrator, a Cobalt plant and a Solvent Extraction and Electro Winning Plant.

The company's metals are sold locally and worldwide through its metal off-takers in Switzerland, **Glencore International Ag**. Glencore Ag is a major share holder for the company, through Carlisa Investments Corp they own 73.1% of the shares. First Quantum Minerals Ltd owns 16.9%, while ZCCM owns 10%.

#### b. Tax assessment overview

##### 1. Revenue recognition

We tried to test the overall production volumes of Mopani against the reported production to the Ministry of mines, but the reporting to the Ministry was not captured consistently. The conclusion is that the Ministry needs to follow up production reporting on a more consistent and comprehensive basis in the future.

We then tested the inner consistency in the company's own production volumes and have found inconsistencies. The inconsistencies have not been explained by the company and needs to be pursued.

##### Minimum follow-up action after the pilot audit:

- Ministry of Mines need to keep monthly up-to-date production overviews for the ZRA's use
- Follow up on production information not received from the company.



## 2. Transfer pricing in revenues

Most of the overall production is sold to Glencore (related company), based on a "Copper Marketing and Off-take Agreement". The agreement mentioned is in fact an agent agreement, stating that Glencore is to operate as the sole sales and marketing agent for Mopani. The sales are to be made at Official LME Copper Grade settlement quotation averaged over the relevant quotational period, plus a premium/less a discount and less a realization charge for freight.

We have performed procedures to test if the goods sold to Glencore are comparable to any similar sales to third parties. The trade terms and conditions granted have been compared to those granted to third parties.

The Company has not been able to provide us with evidence that the Company sales, which mostly are related party transactions, have been entered into according to the arms length principle. ZRA should consider whether this should have impact on the tax assessment.

## 3. Derivatives and hedging

By sampling a number of invoices and testing them for different parameters, we have identified different hedges in both gold and silver. These have not been recorded in the accounts in a consistent manner, nor on separate accounts or with distinctive identification marks.

As a result of this we have not been able to verify the actual volume of derivative transactions, nor the monetary effects this have had on the accounts. The Mopani Management have been given several opportunities to revert to us with their responses to our formal letters, but have as far as we are aware not reverted in a proper or timely manner.

Based on the above consideration should be made as how to proceed to be able to conclude on whether the information that we in fact have been given is correct and any monetary effects this have had on the assessed taxable profit. The lack of cooperation should at any circumstance be given consequences for the company.

## 4. Operational Costs

In some cases the documentation of the expenses was not original invoices, we also noted that in some cases they actually did not find the supporting documentation of a transaction.

### Minimum follow-up action after the pilot audit:

- The ZRA should consider whether they find it necessary to reduce the tax deductible costs due to this.

Glencore is charging freight charges (realization charges) based on fixed fees for deliveries CIF Rotherdam. This even though the actual shipments are made to other ports, often closer in geography. We do therefore assume that Mopani is overbilled with freight charges, but have not been able to calculate any monetary effects due to lack of documentation.

It seems like the company may be using incorrect disposal proceeds for tax purposes. There is an inconsistent profit/loss on disposal of fixed assets. The company also seems to be using accounting net book value in calculation balancing allowances instead of using the income tax written down value.

### Minimum follow-up action after the pilot audit:

- ZRA should go through the gains and losses dispositions to make sure that the company uses the correct disposal proceeds.

### c. *Consequences for tax payments and tax system*

We suggest that the ZRA does a new tax assessment based on the results of the audit, the result of the findings would be that the loss carried forward would be materially lower. It will also have an impact on the royalty tax which should have been higher.

Consequences for the tax system and the tax administration from the audit:

- the pilot audit has shown that there is a great need for a determined effort at collecting the taxes that are assessed under the laws implemented by the Zambian parliament.
- the pilot audit has shown that ZRA needs the Ministry of Mines to follow up production volumes from ore treated via produced volumes to sold metals on a more consistent and comprehensive basis in order for the calculation of royalty to be reliable
- the pilot audit has shown that there is a high need for implementing punitive measures against
  - o companies that do not pay their taxes on time
  - o companies that does not cooperate with the ZRA and make audits more expensive and lengthier than needed

### 5.3 *Comparative Analysis*

The comparative analysis has shown that

- The sales revenue of Mopani is progressively deviating from the LME cross-years
- The sales revenue of Mopani is consistently lower than for the companies compared with
- The costs of Mopani is consistently higher than for the companies compared with

There are clear indications from the comparative analyses that there are major problems with both the revenues and the costs of Mopani. Revenues are adequately handled in other parts of this report.



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## Cost analysis

The mining companies in Zambia have a significantly higher cost base in 2007 than in 2005. We have analyzed the movement from 2005 to 2007 based on %-age of fixed cost, changes in volumes and indexes for different cost categories. The result for Mopani is shown in the table below:

|   | Category                       | FC   | Units    | Actual | Indexed | Actual | Difference |
|---|--------------------------------|------|----------|--------|---------|--------|------------|
|   |                                |      |          | 2005   | 2007    | 2007   | 2007       |
| Trial Balance Mine Costs Projected<br>Actual 2005, Indexed 2006, 2007 | Labour                         | 1 %  | Mil. USD | 103,93 | 118,15  | 208,50 | 90,35      |
|   | Electricity                    | 63 % | Mil. USD | 41,13  | 39,28   | 44,58  | 5,31       |
|   | Fuels                          | 0 %  | Mil. USD | 14,12  | 16,76   | 29,75  | 13,00      |
|   | Explosives                     | 0 %  | Mil. USD | 6,18   | 5,40    | 6,19   | 0,79       |
|   | Tyres                          | 0 %  | Mil. USD | 3,18   | 2,78    | 3,71   | 0,93       |
|   | Levies & Water                 | 0 %  | Mil. USD | 2,29   | 2,60    | 4,80   | 2,20       |
|   | Development Cost               | 0 %  | Mil. USD | 0,00   | 0,00    | 0,00   | 0,00       |
|   | Tech & Maintenance             | 2 %  | Mil. USD | 49,17  | 64,03   | 74,49  | 10,46      |
|   | Mining Cost                    | 12 % | Mil. USD | 18,06  | 21,07   | 30,15  | 9,08       |
|   | Insurance, Security & Safety   | 72 % | Mil. USD | 8,24   | 8,42    | 14,48  | 6,06       |
|   | Other/Spares/Admin             | 44 % | Mil. USD | 40,83  | 39,35   | 74,43  | 35,08      |
|   | Concentrating                  | 5 %  | Mil. USD | 40,68  | 53,39   | 62,51  | 9,12       |
|   | Smelting, Refining & Transport | 30 % | Mil. USD | 25,32  | 47,38   | 41,04  | -6,34      |
|   | Residual Costs                 | 0 %  | Mil. USD | 4,49   | 5,10    | 210,27 | 205,18     |
|   | Exploration                    | 0 %  | Mil. USD | 0,00   | 0,00    | 0,00   | 0,00       |
| Total   |                                |      |          | 357,62 | 423,69  | 804,91 | 381,21     |

Based on the analysis, the cost in 2007 is USD 381,21 million higher than one would expect only based on the indexes used and the changes in production volume in the Mopani mine. Mopani is a mine that has been in continued operations through the years 2005 to 2007. There are no major developments that have been commissioned during the period that should give major structural changes to the cost basis during the period 2005-2007. The production has been at approximately the same level through the entire period, except for the Mufilira mine that has increased finished production from 70 thousand tonnes in 2005 to 113 thousand tonnes in 2007, an increase of 43 million tonnes. This is equal to an increase in revenues of approximately USD 237 million at USD 2,5 per lb, mainly based on increasing purchases of copper concentrate and copper scrap since the ore treatment in the Mufilira mine has not increased during the period. Any developments to increase Mopani's own ore resources should therefore be capitalized and enter the cost base through financial amortizations and depreciations.



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Based on the audit and our understanding of the mining operation the result of the cost analysis is due to the following factors:

1. The labour index used is the general labour index for Zambia. The labour index for the Copperbelt is higher, but we do not have a specific index only for the Copperbelt. However, even a significant increase in the specific index relative to the general labour index of Zambia cannot explain the increase in the labour cost when we have already taken into account the increase in the production volume (labour cost has been treated as a variable cost that varies with production). At least USD 50 million of the USD 90 million is thus unexplainable. One explanation could be that costs that should have been capitalized have been taken as expense. → (Under- lab. cost submit??)
2. Electricity usage is within the uncertainty limits of the cost analysis and is reasonably linked to smelting and refining more copper concentrate or copper scrap.
3. Fuels have more than doubled during the period, and since increase in production volume has already been taken into account and fuel is treated as a fully variable cost, this increase is unexplainable even if we take into account higher fuel prices than the fuel index should indicate. One explanation may be that copper concentrates and copper scrap has demanded an extraordinary amount transport distance and that Mopani has used own trucks to move it. This is not consistent with the general picture in Zambia, where most of the copper produce is hauled long distance by external firms. Another explanation could be that costs that should have been capitalized have been taken as expense.
4. Explosives have been analysed almost spot on, which is expected based on that there has not been any significant changes in own ore treated during the period.
5. Tech and maintenance has increased and the difference is within the limits of the cost analysis and is also in line with developments in Tech and Maintenance in the other companies.
6. Mining cost has increased over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment. One explanation could be that costs that should have been capitalized have been taken as expense.
7. Insurance, security and safety has increased over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment. One explanation could be that costs that should have been capitalized have been taken as expense.
8. Other, spares and admin has increase over exponentially, and the difference is outside the boundaries of the cost analysis, given the steady-state ore treatment. One explanation could be that costs that should have been capitalized have been taken as expense.
9. Concentrating has increased and the difference is within the limits of the cost analysis given that final produce has increased without ore treatment having increased. This is consistent with purchasing and treating more concentrate.
10. Smelting, refining and transport had increased less than the analysis indicates, but the difference is within the limits of the cost analysis.
11. Residual cost has increased by USD 205 million from 2005 to 2007. This change is almost entirely a combination of a net increase in metal stock of approximately USD 51 million and an increase in purchase of copper scrap of approximately USD 266 million, a net increase of USD 215 million. It is not economical to have as expense scrap metal of USD 266 when the net value at USD 2.5 per lb of the increased production at USD 237 million (given that there are no increases in purchases of concentrate, which is inconsistent with the rest of the cost analysis). One explanation could be that a significant portion of the copper scrap should have been capitalized as prepaid but has been taken to expense.

The other costs have only relatively minor changes or are minor in their nature. To the best of the analysis teams knowledge, we believe that the Mopani cost structure cannot be trusted to represent the true nature of the costs of the Mopani mining operation, and there is reason to follow up the uncovered inconsistencies in a more determined manner.



### General Ledger analysis

The general ledger data was provided by Mopani multiple times, as inconsistencies were found in the original and multiple follow-up datasets. Primarily, errors were encountered when developing a compressive database using the first data provided. It should be noted that the general ledger summaries based on the first version of data differed from that provided in the second version and later versions versus the second version, even when accounting for the errors. No explanation could be provided by the Mopani employees interviewed during the data procurement process.

The Mopani general ledger data was analyzed with a focus on matching financial statements and trial balance summaries. However, this summary is a mere formality and is usually only the first step in understanding the cost picture. Unfortunately, the general ledger and trial balance data could not be completely matched, despite the numerous attempts with multiple general ledger datasets. This introduces issues surrounding the validation of data, which complicated the audit teams' analysis and results. On-site consultation with Mopani staff produced more questions than answers with respect to the general ledger. The most interesting of these instances involved the Mopani on-site system being unable to replicate items in the financial systems during general testing of general ledger data validity. It should be noted that staff turnover may have played some role in the lack of information surrounding some of these issues. That being said, it remains a serious issue that the audit team has been unable to link the general ledger with the trial balance, which suggests that there may be items outside of the general ledger that may have to be taken into account in order to arrive at the trial balance. Mopani staff has not voluntarily promoted such items as explanations for the discrepancies. Additional general ledger checks supported the hypothesis of high variance costs, the cause of which was not easily discernable, particularly with respect to that the audit team does not seem to have the full data population building up to the trial balance.

The general ledger data was further analyzed using both a macro- and micro-level process, whereby discrepancies were isolated within the context of total costs, categorized costs and individual line items. Such analysis is computational intensive, and requires significant input throughout the process. These types of analyses were utilized because initial summary showed either variance in major cost categories that could not be generally explained by either exogenous price levels or production volume(s).

The main technique employed was a standard deviation outlier calculation, whereby the general ledger was summarized at a monthly level. Observations were then exposed to various filters to account for price levels and production volumes. Observations that were two standard deviations or more from the sample mean were flagged for review by ZRA and Grant Thornton staff. Month level accounts included: labour costs, such as employee terminal pay provisions and general contractor payments; processing inputs, such as sulphuric acid; fuel costs, including heavy fuel oil, diesel and petrol; and realization charges which were likely linked to hedging operations.

Rebate analyses were also utilized, where the general ledger rebate observations were matched with creditors to ascertain the extent of such activity on costs. This analysis isolated some labour, maintenance, and utility charges that were further investigated by the various audit teams. It should again be noted that such analysis is computational intensive, and additional time and resources may yield general ledger observations requiring follow-up.

Further general ledger analysis was provided on an ad-hoc basis to assist the audit team, including the investigation of hedging practices, smelting and refining practices, and setting-up template calculations to aggregate data for the audit team.

### *Trial Balance analysis*

The Mopani trial balance data was utilized to assess mining cost categories primarily in the context of the Econ Pöyry mining model, a customized and highly evolved mining model. The trial balance data was classified using automated techniques, and then each item was reviewed by hand to ensure consistency, both for the model calculation and cost category classification. The resulting 15 cost categories were then split into fixed and variable costs and exposed to various cost indices, specific to Zambia's mining industry, to obtain estimated mining costs by category. The mining model calculation engine contains many idiosyncratic elements to ensure accuracy with the complicated mining cost picture, including tolling, exploration, development, and smelting/refining specific customizations.

The completion of the mining model inputs necessitated a very deep investigation of production amounts, including tolling agreements, which further aided the audit team by standardizing and collection of relevant data. Additional areas of cooperation yielded exchange rate projections, electricity indices and other outputs of Zambia macro-econometric model useful to the audit staff. This outside information was incorporated within the mining model to produce very nuanced cost estimates based on trial balance cost data. This analysis is more thoroughly explored in the cost analysis above.

### *Financial Modelling*

Various financial modelling exercises was performed that yielded insight into specific data, including interest rate calculations and foreign exchange. Some of this analysis was grounded in general ledger observations, and the resulting invoices procured to assess outlier observations. This support was primarily aimed at understanding hedging practices.

### *Suppliers Data*

Additional support was provided to the ZRA audit staff via the compilation of a suppliers database, comprised of data provided by the mining company. The specific original file characteristics made the analysis problematic, and it was necessary to provide the data in a more user-friendly format for both the ZRA and Grant Thornton audit teams. This data was ultimately taken by the ZRA for deeper investigation into various categories of expenses that were specifically identified by analyses.



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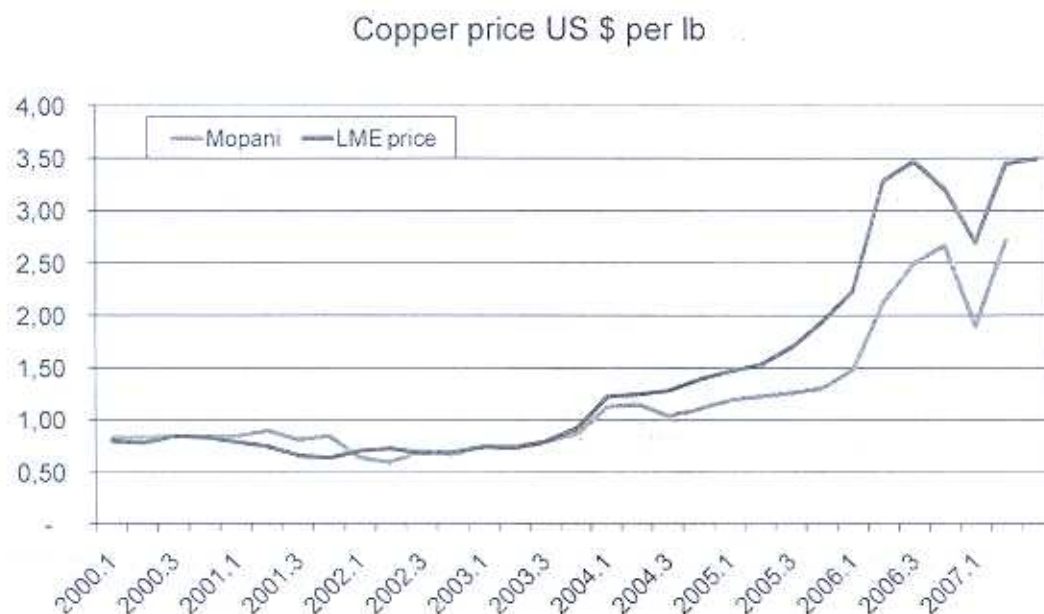
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#### 5.4 Revenue analysis

The pilot audits were organized mainly due to two different observations; (1) sharply increasing cost levels in the mining companies and (2) a widening gap in realized copper price relative to LME prices. This is the initial analysis for Mopani on copper prices:



The analysis is a comparison of realized prices relative to average LME prices in the production quarter. However, the analysis is fairly accurate since Mopani is for the most part selling cathodes (and not concentrate) which normally is sold at M+1 prices. The quarter LME prices are thus just slightly off from what we would expect Mopani prices to be.

The analysis indicates that there is a significant pricing problem for copper in Mopani. The initial audit effort in February 2009 indicated that the reason for this is long-term contracts with the mother company Glencore (via Carlisa Investments) with fixed prices. There are also indications that the hedging pattern in Mopani is not normal. The illustration below illustrates "hedging" patterns for moving taxable revenue out of a country versus true hedging. A company that only wants to move taxable revenue out of the country will want to "hedge" or enter into a long-term contract at the most favorable LOW point, such a "hedge" or long-term contract is usually established at the bottom of the price cycle. By doing it this way, a company that wants to move revenues out of a tax jurisdiction makes sure that it makes losses both when prices are rising and when they are coming down again (see 1 in the illustration). A company wanting to lock in high prices on the other hand, which is normally the case for true hedges, will normally want to capture the increasing prices on the way up, as close to the top of the price cycle as possible. Such a company will want to hedge when they feel that they are closing in on the top part of the price cycle (see 2 in the illustration). They may lose further revenue if the prices continue to climb, but they will earn money when prices start to fall and all the way down the price cycle. The hedging pattern of Mopani is more equal to moving taxable revenue out of the country than true hedging.

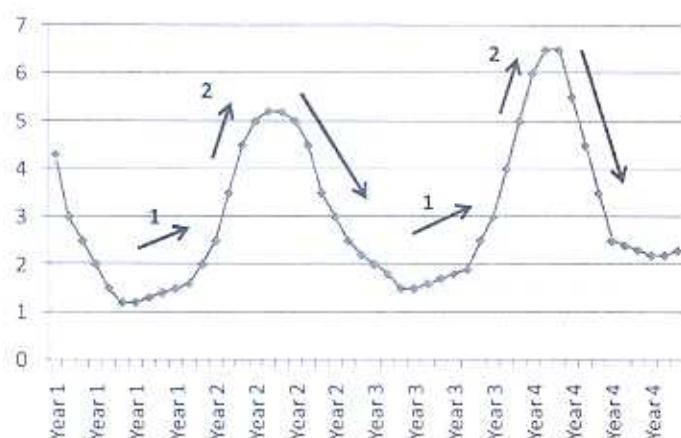


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We have run a more comprehensive analysis of the copper revenue alone using M+1 for cathode sales and M+5 for concentrate sales in the mining model.

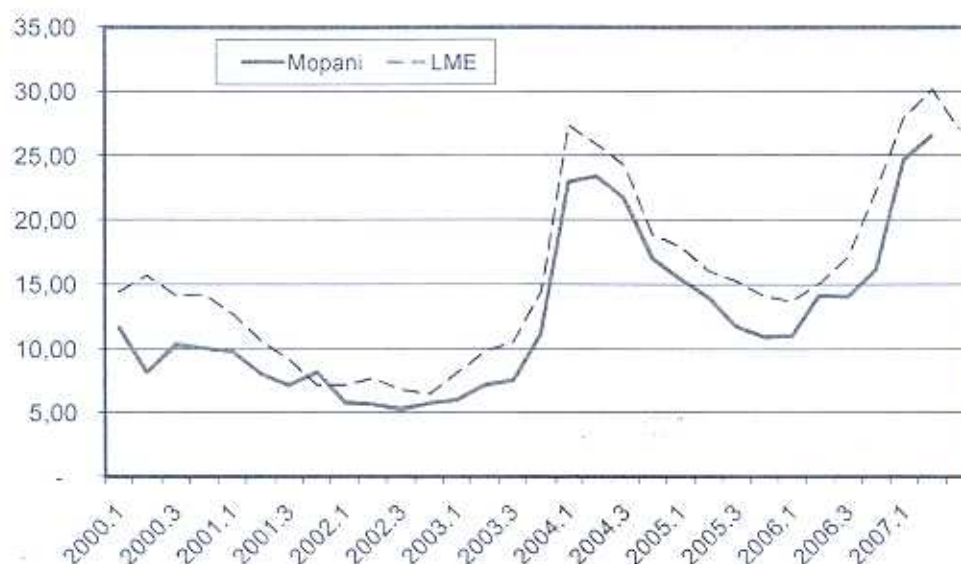
| Category                            | Units    | 2003   | 2004   | 2005    | 2006    | 2007   | 2008     |
|-------------------------------------|----------|--------|--------|---------|---------|--------|----------|
| Copper revenue in the mining model  | Mil. USD | 265,27 | 445,66 | 505,56  | 875,71  | 862,82 | 1 092,32 |
| Copper revenue in the trial balance | Mil. USD | 238,34 | 391,49 | 400,70  | 763,20  | 847,49 | 709,77   |
| Difference                          |          | -26,93 | -54,17 | -104,86 | -112,50 | -15,34 | -382,55  |

Except for the year 2007 there is a progressive problem with copper revenue in the Mopani financial statement. The problem is significant since in the years 2003-2008 there is a cumulated difference in revenues of approximately USD 700 million in copper revenues only. With almost all the copper sold internally there is reason to reassess the revenues of Mopani based on LME prices less realization charges and have the company come up with reasons for every sale that the prices should deviate (significantly) from this. This is further enhanced by the fact that Mopani has resisted the pilot audit at every stage, and has cooperated most unwillingly with the audit or not cooperated at all. This has been a significant part of why the audit has taken much longer time than needed and cost much more than necessary.

There is further reason to recognize the "hedging" of Mopani (done with an internal party or on volumes that is sold internally) as moving taxable revenue out of Zambia, and thus there is reason to disallow the "hedging"/use of derivatives as not being arm's length under the OECD transfer pricing guidelines. Hedging is treated separately below.

There is also reason to believe there are similar problems with the cobalt revenues in the company. Below illustration is the realized cobalt revenues compared with LME prices on cobalt.

Sales price cobalt - US\$ per lb



Although not a wedging pattern as for copper, cobalt prices are consistently below the LME prices and there may be reason to reassess cobalt revenues to LME prices less realization charges. However, further work needs to be done before the audit team can firmly recommend such a course of action.

We have tested the inner consistency in the company's own production volumes and have found inconsistencies in the copper production. The inconsistencies have arisen in the last phase of the audit upon finalization of the production overview due to the delays caused by the company. The inconsistencies are related to source of produced volumes – ore treated, concentrate purchased or copper scrap purchased.

As we see from the table the company is producing much more copper than there is copper in the ore treated. This can be traced back to the Mufilira mine and smelter. The audit team have at the current point not received detailed enough information on the sourcing of the metal going into the final product (copper cathodes). We know that Mopani has purchased a substantial amount of copper scrap based on information in the accounts, but we have not been able, through the analysis, to complete a comprehensive and detailed overview of full production cycle in relation to different sources of finished produce.



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When it comes to production of cobalt, the US Geological Survey 2005 Minerals Yearbook estimates a mine output of cobalt of 9300 metric in 2005 which resulted in a reported metal cobalt production of 5422 metric tonnes of finished cobalt. This equals 58,3% average extraction %-age. Mopani have, with 4704 metric tonnes cobalt in the ore, approximately 50,6% of the total cobalt production in Zambia (the other two large mines in Zambia, Kansanshi and KCM, does not produce cobalt). The cobalt production out of Mopani is reported at 1777 metric tonnes in 2005. This equals 37,8% average extraction %-age. In order for the average cobalt production to be at an average 58,3% for the country as a whole, the other producers of cobalt in Zambia must have extracted 3645 metric tonnes out of 4596 metric tonnes cobalt in the ore treated. This would have resulted in an extraction %-age of 79,3% for these mines. It is not believable that Mopani has an extraction %-age of only half of what other cobalt producers have.

|       | Finished<br>copper | Copper in<br>ore treated | Finished in<br>% of CU | Sold copper<br>production | Sold in %<br>finished CU |
|-------|--------------------|--------------------------|------------------------|---------------------------|--------------------------|
| 2005  | 132 719            | 129 893                  | 102,2 %                | 132 639                   | 99,9 %                   |
| 2006  | 140 764            | 113 331                  | 124,2 %                | 134 982                   | 95,9 %                   |
| 2007  | 165 526            | 99 596                   | 166,2 %                | 169 383                   | 102,3 %                  |
| Total | 439 009            | 342 820                  |                        | 437 004                   |                          |

|       | Finished<br>cobalt | Cobalt in<br>ore treated | Finished<br>% of CO | Sold cobalt<br>production | Sold in %<br>finished<br>CO |
|-------|--------------------|--------------------------|---------------------|---------------------------|-----------------------------|
| 2005  | 1 777              | 4 704                    | 37,8 %              | 1 766                     | 99,4 %                      |
| 2006  | 1 437              | 4 108                    | 35,0 %              | 1 466                     | 102,0 %                     |
| 2007  | 1 721              | 4 097                    | 42,0 %              | 1 689                     | 98,1 %                      |
| Total | 4 934              | 12 910                   |                     | 4 921                     |                             |

The audit team has not enough information to dissect the full production cycle of copper from Mopani with the current data. Mopani has used every opportunity available to hamper the progress of the audit, and the audit team are at the moment not able to fully conclude whether the copper production from Mopani is trustworthy or not.

The audit team believe it has enough information to estimate Mopani's production of cobalt relative to other producers, and it is not to be trusted that Mopani has an extraction %-age of cobalt that is half that of other producers. Mopani has thus either failed to provide the audit team with correct production figures or they are faking the numbers in order to have the production figures fit with the cobalt revenue in the accounts.

We believe there is enough substance in the discrepancies for cobalt that there are grounds for the Zambia authorities to evaluate further investigation into the revenue cycle of the Mopani mine.

## 5.4 Revenues

There is no controls established by the Ministry of Mines to check production leaving the plants or crossing the borders of Zambia, or (if such controls exist) these controls are not documented in such way that the international audit team has been able to access such information as an independent source of information on daily, weekly or monthly production volumes.

The audit team has not had access to reliable customs summaries for exported volumes of metals from Mopani. The impression based on interviews with various people, is that there are no reliable border controls that keep track of volumes of metal and concentrate in and out of the country.

### Revenue recognition

Revenue is recognized at contracted or market prices less realization charges when the risks and rewards of ownership pass to the customer. The copper production is sold under pricing arrangements where final revenues should be determined by quoted market prices in periods subsequent to the date of sale. The products are provisionally priced using forward contracts for the expected date of final settlement. Subsequent variations in the prices are recognized as revenue adjustments until the prices are finalized.

### Transfer pricing in revenues

#### General comments

Most of the overall production is sold to Glencore (related company), based on a "Copper Marketing and Off-take Agreement". The agreement was entered into in the year 2000 and is, according to Mopani, what legally regulates the intercompany sales. The agreement is entered into with Glencore UK Ltd, but the actual sale transactions disclosed are, as far as we have been able to verify, with Glencore International AG. The agreement mentioned is in fact an agent agreement, stating that Glencore is to operate as the sole sales and marketing agent for Mopani. The sales are to be made at Official LME Copper Grade settlement quotation averaged over the relevant quotational period, plus a premium/less a discount and less a realization charge for freight. For the sales effort Glencore should be entitled to a commission (2%) calculated on the gross value FOB, port landing.

The sale invoices are entered into with Glencore as the counterparty. The actual contracts between Glencore and its customer are not recorded or disclosed in the accounting records of Mopani. This is not in accordance with the agreement and makes it impossible to determine whether the transactions with Glencore are arms length and in accordance with what Glencore has charged their customers.

Mopani has, as far as we have been able to determine, not been charged with any sale commissions. This is, according to information from ZRA, a result of discussions between Mopani and ZRA some years ago, where ZRA did not acknowledge the commissions as tax deductible. According to Mopani management no substitute for the loss of the sales commission is being charged.



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Agreement  
w.  
Glencore  
UK Ltd  
↓  
actual  
sale

Transact. disclosed - w. Glencore Int. AG.



**Results:**

We have performed procedures to test if the goods sold to Glencore are comparable to any similar sales to third parties. The trade terms and conditions granted have been compared to those granted to third parties. Copper is being sold on terms that do not seem to be consistent with arms length transactions. The main contract with the parent company for the period reviewed indicates that copper should be sold at "M+1" prices (average LME price for the month following the month of production, due to shipping). Copper is, however, also sold under the following terms that deviate from the main contract:

- prices can be adjusted as long as 6 months after production (M+6)
- adjustments do not appear to be consistent
- some copper is sold under an "old" contract between Mopani and Glencore (in one instance only 25% of LME price)
- prices seem to be determined by the parent company, i.e. the purchaser.

As far as we have identified, no link exist between the provisional invoice and final settlement in the accounting material disclosed. This lack of audit trail means that we have not been able to determine whether:

- all provisional invoices have been closed through final settlements
- the final settlements are calculated in accordance with the actual delivery, the period's actual market prize and provisional invoice.

The Company has not been able to provide us with evidence that the Company sales, which mostly are related party transactions, have been entered into according to the arms length principle. ZRA should consider whether this should have impact on the tax assessment.

Work relating to the commodity premium and discounts have been performed by ZRA staff and any conclusions from their work is not included in this report.

Glencore is charging freight charges (realization charges) based on fixed fees for deliveries CIF Rotherdam. This even though the actual shipments are made to other ports, often closer in geography. We do therefore assume that Mopani is overbilled with freight charges, but have not been able to calculate any monetary effects due to lack of documentation.

The different issues addressed have been brought to the management attention through formal letters and discussions. They have however not reverted to us with satisfactory responses to our questions.

**Conclusion:**

The Company Management has been given sufficient time and opportunity to revert to our formal queries. The fact that they have not reverted in a timely and proper manner is taken as evidence that they have not taken the audit seriously and in fact is not very concerned of any sanctions that might come.

We believe that the related party sales and pricing mechanisms are not in accordance with the agreement disclosed, or the arms length principle. This should have impact on the tax assessments for the period under review. However, due to lack of documentation disclosed and cooperation from the Company, we have not been able to verify any monetary effects due to lack of information. Consideration should be made as to reassessing the company's taxable income for the period under review as well as not to acknowledge the realization charges as tax deductible.

**Pricing of copper, cobalt and precious metals**

We have selected the last sales transactions from the current year's sales journal and the subsequent year's and traced to shipping documents, to see if the revenues are recorded at the actual date of shipment. Further we have selected revenue source documents and traced them to the recorded transaction, and analyzed whether revenues in the first month of the next year are surprisingly high which could indicate that they are related to prior year.

Most of the copper, cobalt and precious metals are sold to a related party (Glencore A.G), see section above for further information on this.



### Derivatives and hedging

Mopani management have informed us that the historically amount of hedging activities have been very limited. As a fact they have informed us that they themselves do not enter into any positions/instruments and that any decision in this matter is taken by Glencore. Any financing costs, charges and margin requirements have supposedly been taken by Glencore.

By sampling a number of invoices and testing them for different parameters, we have identified different hedges in both gold and silver. These have not been recorded in the accounts in a consistent manner, nor on separate accounts or with distinctive identification marks. Even though we have not identified evidence that the number of contracts is large in volume or amounts, this does not add up with the comments from the management.

As a result of the above we have not been able to verify the actual volume of derivative transactions, nor the monetary effects this have had on the accounts. The Mopani Management have been given several opportunities to revert to us with their responses to our formal letters, but have as far as we are aware not reverted in a proper or timely manner.

Based on the above consideration should be made as how to proceed to be able to conclude on whether the information that we in fact have been given is correct and any monetary effects this have had on the assessed taxable profit. The lack of cooperation should at any circumstance be given consequences for the company.

### 5.5 Operational costs

We have reconciled suppliers ledger with the general ledger and traced sample items from supplier ledger to vendor's invoices or evidence of receipt. Cut-off procedures have also been performed.

In some cases the documentation of the expenses was not original invoices, we also noted that in some cases they actually did not find the supporting documentation of a transaction.

The cost ledgers provided did not agree to the financial statements so that our sample may not give a true reflection as the population is incomplete.

#### Transfer pricing

Before starting the audit we asked the company of a list of related parties, transactions and transfer-price documentation/agreements. We have compared transactions with related parties with OECD-guidelines. We did not receive a list of related parties and transactions with related parties. We have not been able to give due attention to transactions with related parties when carrying out our work.

We did though find that costs are being inflated by price participation charges. There is price participation being charged on sales to Glencore. Our review of the contracts does not show any price participation as part of the terms. See transfer-pricing under revenues for further information on this.

#### Depreciation

We have obtained a summary of the capital asset capitalization and depreciation policies and compared them with the tax-law. We have also identified significant capital asset additions and examined appropriate supporting documents. Further we have reviewed construction in progress records and other fixed assets additions for the last few business days of the year to determine whether capital additions have been recorded in the proper period. We have looked at gains and losses dispositions and investigated the supporting documentation that explains the sales price. We have also agreed gains and losses to the profit and loss account and compared this with the policies specified in the tax-law.

It seems like the company may be using incorrect disposal proceeds for tax purposes. There is an inconsistent profit/loss on disposal of fixed-assets. The company also seems to be using accounting net book value in calculation balancing allowances instead of using the income tax written down value.

#### Other operational costs

It was also the intention that ZRA should have performed the following procedures on personell costs:

- compare records from the company with public records, like immigration records, ZRA records etc.
- compare samples of employment records with salaries and wages charged to the accounts
- trace samples of personell costs charged to the accounts back to employee records
- check if costs from other parts of the group are reasonable and well documented

The purpose of these procedures is to make sure that all costs do relate to work actually performed by personell employed by the company and if they are in accordance with amounts paid. Further to see if the personell costs are relevant and proportionate to the business activities.

Mopani has an average of approx 9.000 employees each month, so to be able to perform audit procedures that will give us a reasonable assurance of the employee costs, there is a need for a special team that is 100% dedicated to this. The time frame and budget on this audit did not support such a vast job, so it is recommended that the ZRA follow up on this on their own.



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By our audit of overheads we did however sample some employee costs and found that the following should be reported or followed up on:

The company may be under declaring PAYE:

- Contract staff is entitled to one trip annually for the family from their place of recruitment. This is in addition to repatriation at the end of the contract. We found that only when the travel allocation is not used and is drawn as cash is it taxed
- Shift differential paid to contract staff was not taxed in the sample selected.
- Some employees on contract are accommodated by the company and are charged a nominal fee. The charges are not economic in some cases. There may be housing benefits that are not being taxed – this should be followed up on since we were not able to reach a conclusion.
- Long service bonuses are paid off payroll. Conditions of service provide for long service cash bonus depending on the number of years served. Need to obtain schedule of payment and proof of PAYE deduction and payment.
- PAYE on Housing Tax relief in 2007 on the samples picked seem to be under ducted, though PAYE calculated based in annual basis seems ok. Need to get the remaining payslips on the sample picked and probably broaden the sample to another month as well.

## 5.6 Tax calculation

### Windfall taxes

For the periods under audit this tax is not an issue. But from April 2008 an Income Tax (amendment) Bill was introduced.

### Royalties

ZRA to finalize royalty calculation based on the result from the audit.

### Corporate taxes

For 2006 and 2007 Mopani had losses carried forward, so that they were not subject to corporate taxes. Together with Konkola Copper Mines (KCM) and Kansanshi they have an income tax of 25% and not 30% as the tax legislation states.

Mopani's loss carried forward is for 10 years. A significant part of the loss is due to 100% allowance on mining expenditure prospecting and exploration. Which for the 2 years in question have been USD 260 million and USD 371 million. As per march 2008 the oldest loss carried forward was from 2000 which was USD 72 million.

The consequences of the above mentioned findings would be that the loss carried forward should have been materially lower. We suggest that the ZRA does a new tax assessment based on the results of the audit.