



**LEADING TREASURY
PROFESSIONALS**

The Association of Corporate Treasurers

Examination Paper, Solutions and Examiners Report

MCT ADVANCED DIPLOMA CASE STUDY

Based on Geologic plc

October 2013

QUESTION 1

Considering the company's operations, strategy and business environment, identify and discuss the main non-financial value drivers for the business. From your list identify the six most important and give your reasons.

(10 marks)

QUESTION 2

Identify the key strategic financial management issues and opportunities from your analysis of the Financial Profile and the Cash Flow Summary, given in Section 5 of the case study background information.

(10 marks)

QUESTION 3

Required:

- a) Given your above analysis of the company's financials and non-financials, what in your opinion are the five most important treasury/finance issues confronting Geologic plc at Group level in the medium term? Briefly justify your choice.

(5 marks)

"Working in this sector has taught me that it's important to consider the things you don't expect to happen – 'black swan events'. You need to consider that if this were to happen, what would I do?" (Geologic Senior Executive).

Reverse stress testing is the accepted technique for formalising Black Swan thinking.

Conventional stress testing lists possible shock events (often ones previously experienced, eg big fx movements), identifies the consequences and determines the mitigants to be put in place.

Reverse stress testing starts at a different place by listing fatal consequences for the company (eg for a passenger airline, the planes cannot fly), identifying what could cause this (eg volcanic dust clouds – the Black Swan event) and then considering mitigants.

Required:

- b) List 3 possible Black Swan events which could have fatal consequences for Geologic plc and speculate briefly about possible mitigants.

(5 marks)

(Total 10 marks)

QUESTION 4

Capital investment is an important aspect of Geologic's business model. The company sees itself as capital constrained, with more possible projects than it could undertake. External representatives of the capital markets have expressed concern that the level of capital expenditure is too high, although they acknowledge that the projects that are approved via the company's rigorous capital appraisal procedures are largely NPV-positive. The company expects capex to reduce to below USD 10 billion by 2014.

Finance theory says that companies should accept all positive NPV projects and that capital rationing should not exist.

Major capital projects can require investment of several billion US Dollars. As an example of a typical major project with its associated issues and considerations, the NPV analysis for Sarkand mine in Kazakhstan, is given in Table 1 on page 3. You should not concern yourself with the DCF calculations in answering this question, but use the project to illustrate your answers as appropriate.

! Note: Table 1 is also produced in A3 format at the end of the exam paper and can be detached.

Required:

- a) **Why might the company see itself as capital constrained? Explain why it cannot undertake all positive-NPV projects?**
(3 marks)
- b) **Why is it a major concern for equity analysts and rating agencies respectively that total capital spending might continue at the current high level?**
(8 marks)

(Total 11 marks)

Table 1. Simplified NPV Model of Sarkand Project For use with Question 4 & 5

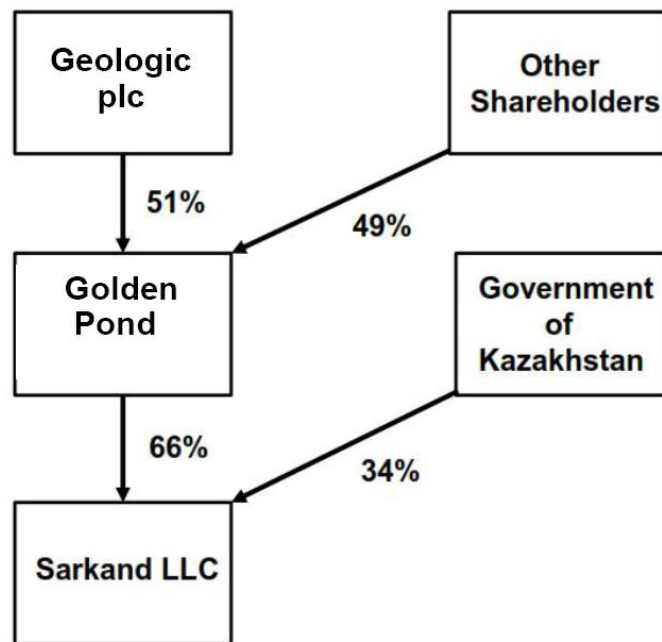
| | year project yr | 2010 0 | 2011 1 | 2012 2 | 2013 3 | 2014 4 | 2015 5 | 2016 6 | 2017 7 | 2018 8 | 2019 9 | 2020 10 | 2021 11 | 2022 12 | 2023 13 | 2024 14 | 2025 15 | 2026 16 | 2027 17 | 2028 18 | 2029 19 | 2030 20 |
|---|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| PROFIT & LOSS | | | | | | | | | | | | | | | | | | | | | | |
| Prices | | | | | | | | | | | | | | | | | | | | | | |
| Copper | USD/lb | 3.43 | 4.00 | 3.61 | 3.40 | 2.65 | 2.85 | 2.85 | 2.88 | 2.95 | 3.02 | 3.10 | 3.17 | 3.25 | 3.34 | 3.42 | 3.50 | 3.59 | 3.68 | 3.77 | 3.87 | 3.96 |
| Gold | USD/oz | 1227 | 1571 | 1700 | 1900 | 1700 | 1500 | 1250 | 1241 | 1272 | 1304 | 1336 | 1370 | 1404 | 1439 | 1475 | 1512 | 1550 | 1588 | 1628 | 1669 | 1710 |
| Silver | USD/oz | 20 | 35 | 32 | 37 | 31 | 20 | 19 | 25 | 25 | 26 | 27 | 27 | 28 | 29 | 29 | 30 | 31 | 32 | 33 | 33 | 34 |
| Cost inflator | | 1.00 | 1.00 | 1.00 | 1.03 | 1.05 | 1.08 | 1.10 | 1.13 | 1.16 | 1.19 | 1.22 | 1.25 | 1.28 | 1.31 | 1.34 | 1.38 | 1.41 | 1.45 | 1.48 | 1.52 | 1.56 |
| Copper Treatment/Refining charges | USD/lb | 0.12 | 0.14 | 0.16 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.17 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.21 | 0.21 |
| Concentrator throughput | ktpa | | | | 12,000 | 34,000 | 32,000 | 34,000 | 34,000 | 35,000 | 49,000 | 53,000 | 52,000 | 60,000 | 61,000 | 62,000 | 65,000 | 68,000 | 61,000 | 59,000 | 57,000 | 55,000 |
| Grades | | | | | | | | | | | | | | | | | | | | | | |
| Copper | % | | | | 0.50 | 0.61 | 0.48 | 0.51 | 0.82 | 1.01 | 1.08 | 1.26 | 1.48 | 1.50 | 1.31 | 1.26 | 1.31 | 1.29 | 1.15 | 1.01 | 0.94 | 0.96 |
| Gold | g/t | | | | 0.38 | 0.95 | 0.58 | 0.25 | 0.83 | 0.31 | 0.31 | 0.44 | 0.75 | 0.41 | 0.31 | 0.31 | 0.33 | 0.35 | 0.33 | 0.27 | 0.22 | 0.23 |
| Silver | g/t | | | | 1.26 | 1.47 | 1.34 | 1.41 | 1.94 | 2.41 | 2.56 | 2.79 | 3.18 | 2.98 | 2.75 | 2.66 | 2.72 | 2.64 | 2.54 | 2.35 | 2.24 | 2.21 |
| Recoveries | | | | | | | | | | | | | | | | | | | | | | |
| Copper | % | | | | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% | 86% |
| Gold | % | | | | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% | 72% |
| Silver | % | | | | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% | 75% |
| Mine production | Mt | | | | 12 | 34 | 34 | 34 | 34 | 35 | 49 | 53 | 52 | 60 | 61 | 62 | 65 | 68 | 61 | 59 | 57 | 55 |
| Concentrate produced | | | | | | | | | | | | | | | | | | | | | | |
| Copper | kt | | | | 52 | 178 | 140 | 149 | 240 | 304 | 455 | 574 | 662 | 774 | 687 | 672 | 732 | 754 | 603 | 512 | 461 | 454 |
| Copper | mlbs | | | | 114 | 393 | 309 | 329 | 529 | 670 | 1003 | 1266 | 1459 | 1706 | 1515 | 1481 | 1614 | 1663 | 1330 | 1130 | 1016 | 1001 |
| Gold | koz | | | | 116 | 820 | 501 | 216 | 717 | 276 | 386 | 592 | 990 | 625 | 480 | 488 | 545 | 604 | 511 | 405 | 318 | 321 |
| Silver | koz | | | | 400 | 1322 | 1205 | 1268 | 1745 | 2232 | 3319 | 3912 | 4375 | 4730 | 4438 | 4363 | 4677 | 4749 | 4099 | 3668 | 3378 | 3216 |
| Revenue | | | | | | | | | | | | | | | | | | | | | | |
| Copper | \$US m | | | | 371 | 1042 | 882 | 937 | 1520 | 1976 | 3032 | 3922 | 4633 | 5553 | 5054 | 5064 | 5658 | 5974 | 4897 | 4264 | 3930 | 3969 |
| Gold | \$US m | | | | 198 | 1255 | 676 | 243 | 800 | 315 | 453 | 712 | 1221 | 789 | 622 | 648 | 741 | 834 | 731 | 593 | 478 | 495 |
| Silver | \$US m | | | | 13 | 37 | 22 | 22 | 39 | 51 | 76 | 94 | 108 | 120 | 115 | 116 | 127 | 132 | 117 | 107 | 101 | 99 |
| TC/RCs | \$US m | | | | (14) | (49) | (38) | (41) | (79) | (100) | (149) | (188) | (217) | (253) | (253) | (257) | (280) | (288) | (230) | (198) | (201) | (198) |
| Total Revenue | \$US m | | | | 569 | 2,285 | 1,541 | 1,161 | 2,281 | 2,243 | 3,413 | 4,540 | 5,745 | 6,208 | 5,537 | 5,571 | 6,246 | 6,661 | 5,514 | 4,768 | 4,308 | 4,365 |
| Operating Costs | | | | | | | | | | | | | | | | | | | | | | |
| Cash costs per lb | \$US/lb | | | | 3.50 | 1.80 | 2.20 | 2.10 | 1.30 | 1.10 | 0.95 | 0.75 | 0.65 | 0.55 | 0.65 | 0.65 | 0.60 | 0.60 | 0.75 | 0.85 | 0.95 | 0.95 |
| REAL COSTS | \$US m | | | | (398) | (708) | (681) | (690) | (687) | (737) | (953) | (950) | (948) | (938) | (985) | (963) | (969) | (998) | (998) | (960) | (965) | (951) |
| NOMINAL COSTS | \$US m | | | | (408) | (744) | (733) | (762) | (777) | (855) | (1,133) | (1,157) | (1,184) | (1,201) | (1,292) | (1,295) | (1,335) | (1,410) | (1,445) | (1,426) | (1,468) | (1,483) |
| Royalty | 5% | | | | (28) | (114) | (77) | (58) | (114) | (112) | (171) | (227) | (287) | (310) | (277) | (279) | (312) | (333) | (276) | (238) | (215) | (218) |
| Total | \$US m | | | | (437) | (858) | (810) | (820) | (892) | (967) | (1,304) | (1,384) | (1,474) | (1,512) | (1,569) | (1,573) | (1,648) | (1,743) | (1,720) | (1,664) | (1,684) | (1,702) |
| Total - real | \$US m | 5 yr ave | 10 yr ave | LOM ave | (426) | (817) | (752) | (743) | (788) | (834) | (1,097) | (1,136) | (1,178) | (1,181) | (1,196) | (1,170) | (1,195) | (1,234) | (1,188) | (1,121) | (1,107) | (1,091) |
| Unit costs before credits | \$US m | 2.11 | 1.15 | 1.13 | 3.74 | 2.08 | 2.43 | 2.26 | 1.49 | 1.24 | 1.09 | 0.90 | 0.81 | 0.69 | 0.79 | 0.79 | 0.74 | 0.74 | 0.89 | 0.99 | 1.09 | 1.09 |
| Unit costs after credits | \$US m | 0.13 | 0.22 | 0.32 | 2.05 | (0.96) | 0.40 | 1.59 | 0.15 | 0.84 | 0.71 | 0.44 | 0.14 | 0.33 | 0.48 | 0.46 | 0.41 | 0.38 | 0.51 | 0.64 | 0.78 | 0.77 |
| EBITDA | | | | | | | | | | | | | | | | | | | | | | |
| EBITDA | \$US m | | | | 132 | 1,428 | 731 | 341 | 1,390 | 1,276 | 2,110 | 3,156 | 4,273 | 4,697 | 3,968 | 3,998 | 4,598 | 4,919 | 3,794 | 3,105 | 2,624 | 2,663 |
| Depreciation | \$US m | | | | (69) | (239) | (188) | (200) | (321) | (407) | (610) | (770) | (887) | (1,037) | (921) | (901) | (982) | (1,011) | (809) | (687) | (618) | (609) |
| EBIT | \$US m | | | | 63 | 1,188 | 543 | 141 | 1,068 | 868 | 1,500 | 2,386 | 3,386 | 3,659 | 3,047 | 3,097 | 3,617 | 3,907 | 2,985 | 2,417 | 2,007 | 2,054 |
| Tax | 25% | | | | (16) | (297) | (136) | (35) | (267) | (217) | (375) | (597) | (846) | (915) | (762) | (774) | (904) | (977) | (746) | (604) | (502) | (514) |
| NPAT | \$US m | | | | 47 | 891 | 407 | 106 | 801 | 651 | 1,125 | 1,790 | 2,539 | 2,744 | 2,285 | 2,323 | 2,713 | 2,930 | 2,239 | 1,813 | 1,505 | 1,541 |
| PROJECT NPV | | | | | | | | | | | | | | | | | | | | | | |
| Cash from operations (EBITDA) | | | | | 132 | 1,428 | 731 | 341 | 1,390 | 1,276 | 2,110 | 3,156 | 4,273 | 4,697 | 3,968 | 3,998 | 4,598 | 4,919 | 3,794 | 3,105 | 2,624 | 2,663 |
| Growth capex | | | (3,965) | (1,847) | (401) | (1,344) | (1,377) | (1,412) | (1,447) | | | | | | | | | | | | | |
| Sustaining capex | | | | | | | | | | (203) | (208) | (213) | (219) | (224) | (164) | (168) | (172) | (177) | (181) | (186) | (190) | (195) |
| Free Cash Flow | | | (3,965) | (1,847) | (269) | 84 | (646) | (1,071) | (57) | 1,073 | 1,902 | 2,943 | 4,054 | 4,473 | 3,804 | 3,830 | 4,426 | 4,742 | 3,613 | 2,919 | 2,434 | 2,468 |
| NPV @ 10% | 10.0% | 6,824 | | | | | | | | | | | | | | | | | | | | |
| IRR | | 16.9% | | | | | | | | (18.82) | 1.77 | 1.55 | 1.38 | 1.10 | 0.85 | 1.01 | 1.16 | 1.07 | 0.76 | 0.81 | 0.83 | 1.01 |
| Cumulative FCF | | | (3,965) | (5,812) | (6,081) | (5,997) | (6,643) | (7,714) | (7,771) | (6,698) | (4,796) | (1,853) | 2,201 | 6,674 | 10,478 | 14,308 | 18,734 | 23,476 | 27,089 | 30,008 | 32,442 | 34,910 |
| N.B. projections extend to project year 45, but print-out truncated at year 20. | | | | | | | | | | | | | | | | | | | | | | |

QUESTION 5

The company has an effective 34% stake in an USD 11 billion project-financed copper and gold mine in Sarkand, Kazakhstan, near the border with China, the destination for shipping the copper. The simplified NPV model for the project is given in Table 1 in Question 4. The expected productive life of the mine is 45 years.

Sarkand LLC, which owns the mining rights to the deposits, is 34% owned by the Kazakh government and 66% by Golden Pond, an Australian quoted company and original 100% owner of the rights to the Sarkand deposits. Geologic plc has a 51% holding in Golden Pond, with external shareholders holding the remaining 49%. Geologic plc will jointly engineer, construct and operate Sarkand in conjunction with Golden Pond, with Geologic plc as project manager. The legal structure is given in Figure 1.

Figure 1. Project Legal Structure



Geologic plc's 51% stake in Golden Pond originally cost USD 4.5 billion of which USD 3.6 billion was invested directly in Golden Pond at prices ranging from USD 8 to USD 14 per share between 2006 and 2010 (average price paid was USD 10). Geologic also purchased USD 0.9 billion of Golden Pond shares from other shareholders at prices up to USD 25. In addition Geologic plc provided a loan of USD 1.8 billion to Golden Pond.

Geologic has also agreed to provide a bridge facility of USD 1.5 billion in consideration for which it will receive 55 million warrants, which are convertible within three years, into Golden Pond shares at USD 13. Geologic plc has also recently subscribed for its share of a recent 2 for 7 rights issue by Golden Pond at a price of USD 8 per share, total issue value USD 1.8 billion.

The European Bank for Reconstruction and Development and the International Finance Corporation will provide USD 600 million as primary lenders to Sarkand and will help mobilise a USD 2.1 billion loan from commercial lenders. In addition export credit agencies are expected to provide USD 500 million in direct project debt financing. USD 2.2 billion will be subscribed by Golden Pond, 50% being from finance provided by Geologic.

In 2011 the Government sought but failed to increase its stake in Sarkand to 50%. There is a power supply agreement with China but at a price that is not clear. Concerns have been expressed that the Chinese smelters of the ore might levy extra charges, although Geologic plc has signed sales contracts at market prices with them, duration 12-18 months. Concerns have also been expressed about the likely adverse impact of the project on water supply, pollution and on the traditional livelihood of local herding communities. The mine will employ several thousand local workers and will eventually contribute over 30% of Kazakhstan's GDP. It is also estimated that about 70% of the total economic benefits of the mine, both direct and indirect, will effectively go to the Kazakh government.

Required:

- a) **What are the pros and cons for Geologic plc of using project finance for such a development instead of funding the project directly?**
(5 marks)
 - b) **Do you see any problems arising from Geologic's indirect holding via Golden Pond?**
(2 marks)
 - c) **Calculate the total cost and the number of Golden Pond shares which will be held by Geologic plc after the rights issue and after the exercise of the warrants. What do you think is the value of the shareholding, given what you know about the various prices paid for shares?**
(7 marks)
 - d) **From the DCF analysis is any additional funding required and, if so, how much? Where could it be sourced?**
(4 marks)
 - e) **Calculate the Profitability Index and comment on its size. Profitability Index here is defined as project NPV divided by NPV of front-end capex.**
(3 marks)
- (Total 21 marks)**

QUESTION 6

Required:

- a) **Currently Geologic plc has a very substantial cash amount on its balance sheet.**

Why might this be so?

(5 marks)

- b) **Geologic plc's year end 2012 cash balance was USD 7bn. This gives rise to potentially very significant counterparty risk.**

How would you propose to manage this risk?

(3 marks)

About 75% of Geologic plc's non-current assets are invested in developed economies like Australia, Canada, US and Western Europe. The remaining 25% are in developing economies, ie primarily Mongolia, Chile, Indonesia and Africa.

About 50% of sales are to China and other Asian countries, ie to developing economies.

Both percentages, for ore extraction investment and for sales to developing economies, are likely to increase as hitherto inaccessible or undiscovered sites are developed and as less developed countries industrialise and urbanise.

Required:

- c) **What are the implications for cash management?**

(5 marks)

- d) **If the trend to increased engagement with less developed countries materialises, what are the implications for political risk exposure and how might this impact on Geologic plc in treasury/finance terms?**

(5 marks)

(Total 18 marks)

QUESTION 7

Geologic plc's approach to commodity price, exchange rate and interest rate risk is summarised thus:

"The Group has a diverse portfolio of commodities and operates in a number of markets, which have varying responses to the economic cycle. The relationship between commodity prices and the currencies of most of the countries in which the Group operates provides further natural protection in the long term.

Production of minerals, aluminium and alumina is an important contributor to the Gross Domestic Products of Australia and Canada, countries in which the Group has a large presence. As a consequence, the Australian and Canadian currencies have historically tended to strengthen when commodity prices are high. In addition, US dollar floating interest rates have historically also tended to be high when commodity prices are high, and vice-versa, and hence the Group's interest rate policy is to generally borrow and invest, after the impact of hedging, at floating interest rates. These natural hedges significantly reduce the necessity for using derivatives or other forms of synthetic hedging."

Required:

- a) In the light of the current economic climate and what you know of Geologic plc's future development, review the appropriateness of the above general approach of relying on structural hedges.

(7 marks)

The mix of fixed and floating interest rates at year end 2012 and 2011 is summarised below:

| Interest Rates: Fixed & Floating | 2012 | | 2011 | |
|----------------------------------|--------|-----|---------|------|
| | US bn | % | US bn | % |
| Adjusted Total Borrowing | 26,343 | 100 | 18,121 | 100 |
| Fixed Rate Borrowings | 17,700 | 67 | 10,800 | 60 |
| Floating Rate | 8,643 | 33 | 7,321 | 40 |
| Cash & Equivalents | 7,082 | | 9,670 | |
| Consolidated Net Debt | 19,261 | 100 | 8,451 | 100 |
| Fixed Rate | 17,700 | 92 | 10,800 | 128 |
| Floating | 1,561 | 8 | (2,349) | (28) |

The weighted average effective interest rate on adjusted total borrowings at year end 2012 was 4% (2011:5%).

Required:

- b) Comment critically on the mix of fixed and floating rate debt in the above table.

(5 marks)

(Total 12 marks)

...please turn over

QUESTION 8

Global commodity markets generally trade in US Dollars. Recently Geologic plc has been subject to market pressure, particularly from China, to invoice in Renminbi.

Required:

What would be the implications of such a change for Geologic plc?

(8 marks)

MCT ADVANCED DIPLOMA CASE STUDY BACKGROUND INFORMATION

Based on Geologic plc

October 2013

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1.0 INTRODUCTION

1.1 Group Overview

Geologic plc is a leading international mining group that focuses on finding, mining and processing mineral resources in order to maximise shareholder value. It has a diverse portfolio and a global presence, with 71,000 people working in more than 40 countries. The company reports in US dollars.

| Summary Financials | 2011 USDm | 2012 USDm |
|-----------------------------|--------------|--------------|
| Turnover | 60,537 | 50,967 |
| EBIT | 14,062 | (2,576) |
| PAT (after extraordinaries) | 6,765 | (3,004) |
| Gross Debt | 21,804 | 26,819 |
| Net Debt | 12,134 | 19,737 |
| Shareholders' Funds | 59,208 | 58,021 |
| Average Market Cap. 2012 | 113,391 | 96,865 |

The company was formed in 1962 by the merger of X Limited and Y Corporation, mining companies based respectively in the UK and Australia.

1.2 Strategy

To deliver superior returns to shareholders over time, the company takes a long-term and responsible approach to its activities. This means concentrating on developing first-class orebodies into large, long-life and efficient low-cost operations, capable of providing competitive returns through business cycles.

The type of asset - large, long-life with low-cost operations including the cost of getting the ore to the despatch point – is the strategic focus, rather than the type of ore. Low-cost, low leverage operations survive a down-turn better than high-cost, high leverage ones.

Sustainable development is an integral part of the company's operations. These operations provide the opportunity to bring long-lasting positive change to the communities, regions and countries in which the company works. The metals and minerals produced are transformed into end-products that contribute to higher living standards.

This responsible approach to mineral development ensures that the company wins and retains licences to operate. It provides confidence to stakeholders and improves access to the mineral resources, people and capital needed.

1.3 Impairments in 2012

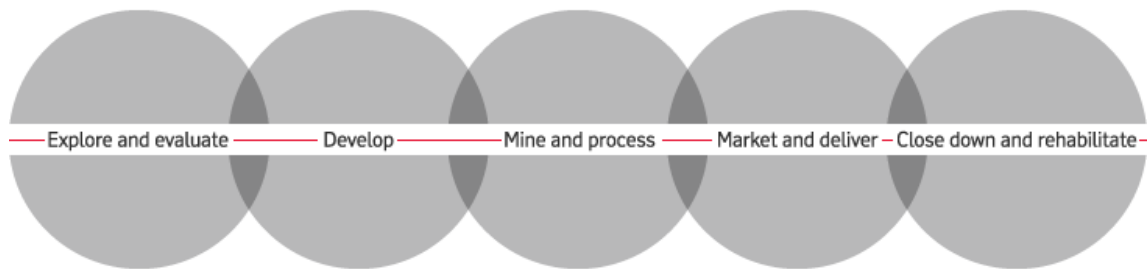
The company reported impairments of \$14.4bn in 2012 relating to coal and aluminium sector acquisitions in 2008, resulting in the resignation of the CEO who was replaced by an internal appointment.

2.0 BUSINESS PROFILE & ANALYSIS

2.1 Business Model

The company describes its business model as follows:

“We create and preserve value through investing in and operating large-scale, long-term, low-cost mines and businesses. The nature of our business means that the life of an orebody may span many decades. Throughout the life of a business, from initial exploration to final closure and restoration, we commit to the highest standards of sustainable development.



Explore and evaluate

Our experienced, in-house exploration team has a proven track record of discovering large, long-life orebodies. The team creates further value from its identification of opportunities for the brownfield expansion of our existing assets. Our orebody knowledge allows us to innovate value-enhancing approaches to developing, operating and expanding our resources and positioning our products in the market.

Develop

We develop orebodies with long-term value delivery in mind. We allocate investment only to assets that, after prudent assessment, offer attractive returns that are well above our cost of capital. During this phase, we plan the optimal configuration for developing the orebody and for getting our products to market. We work closely with our customers to create demand in the market for the grade of product that enables us to maximise the value of the orebody over its lifecycle. Once the value of the resource is confirmed, and internal and external approvals are received, the project moves into implementation and construction.

Mine and process

We create value by safely and efficiently operating assets that fit with our Group strategy. Our global presence and management structure allow us to implement standard operating and maintenance practices across the Group. This reduces our use of consumables, increases the life of our equipment and optimises the extraction of ore. In turn, we enjoy higher production, reduced costs and value maximisation. We use world-class technologies during mining and processing to increase our efficiency and productivity, and to produce material that is tailored to our customers' needs.

Market and deliver

The majority of our customers are industrial companies that further process our products to supply numerous industries – construction and infrastructure, automotive, industrial machinery and equipment, energy and consumer goods markets. We invest in long-term partnerships and innovate and improve our products and services to maximise product value to customers. We are constantly adding to our significant knowledge of our markets and value chain, allowing us to improve our investment decision-making process. In many cases, we are responsible for delivering product to our customers. We do this in a variety of ways, but always efficiently, reliably and cost-effectively.

Close down and rehabilitate

We integrate closure planning throughout an asset's lifecycle, from the earliest stages of project development. When a resource reaches the end of its life, we are committed to high standards of close-down and reclamation. This helps us to maintain a positive reputation for sustainable development and ensures we meet the expectations of our current and future stakeholders."

2.2 Group Overview – Product Market

ALUMINIUM PRODUCT GROUP

"Building on more than a century of experience and expertise, Geologic-Alu is a global leader in the aluminium industry. Our fully-integrated facilities include high-quality bauxite mines, large-scale alumina refineries, and some of the world's lowest-cost, most technologically advanced primary aluminium smelters.

Bauxite production (2012 vs 2011): +11%

Products

Bauxite

Bauxite is the natural ore used to make aluminium. It is refined into alumina which is smelted into aluminium metal. Our wholly-owned and joint venture bauxite mines are located in Australia, Brazil and Guinea.

Alumina

Alumina (aluminium oxide) is extracted from bauxite via a refining process. Approximately four tonnes of bauxite are required to produce two tonnes of alumina, which in turn makes one tonne of aluminium metal. Our wholly-owned and joint venture alumina refineries are located in Australia, Brazil and Canada.

Aluminium

Aluminium is a unique and versatile modern metal. Light, strong, flexible, non-corrosive and infinitely recyclable, aluminium is one of the most widely-used metals. Its largest markets are transportation, machinery and construction. Our smelters are mainly concentrated in Canada. We also have plants in France, Cameroon, Iceland, Norway, the UK and the Middle East.

Key strengths

- Access to the largest and best-quality bauxite reserves in the industry.
- Industry-benchmark smelting technology.
- Enviable hydropower position, which delivers significant cost and other advantages in today's carbon-constrained world.
- Industry-leading cost position for aluminium smelting, and moving into the second quartile of the cost curve for alumina refining.
- Lowest-cost quartile for bauxite production.

Key production locations

- Canada
- Europe
- Australia

Key sales destinations

- Asia
- Americas
- Europe

COPPER PRODUCT GROUP

Geologic's Copper group has a global presence and holdings in some of the world's largest copper mines. We are among the world's largest producers of copper, gold and molybdenum, and are uniquely positioned to deliver exceptional long-term value due to our high-quality assets, leading technology and a keen focus on managing costs and improving efficiency.

Mined copper production (2012 vs 2011): + 6%

Products

Copper

The world uses more than 19 million tonnes of copper every year. Copper's malleability, strength and conductivity make it useful in a broad range of building, construction and electrical applications. Copper is found in nearly every home and vehicle and is a critical element of today's industrialised world.

Gold

Gold's conductivity and non-corrosive properties make it a vital fabrication material in technology, electronics, jewellery, space exploration and dentistry. Geologic is currently one of the top 15 gold producers in the world, and the largest among the diversified miners. Gold is regarded as a precious metal used as an investment and to make jewellery.

We have interests in two of the largest gold resources, at Sarkand and Eismont. The latter contains the largest gold reserves in the world.

Silver

Silver has very good electrical and thermal properties. It is used in many electrical and electronic applications, such as photovoltaic cells, and is the principal ingredient of x-ray film. Silver is also regarded as a precious metal used as an investment and to make jewellery.

Molybdenum

Molybdenum is a metallic element frequently used to produce stainless steel and other metal alloys. It enhances the metal's toughness, high temperature strength and corrosion resistance.

Key strengths

- Participation in and ownership of high-quality, low-cost assets with meaningful opportunities for expansion and efficiencies.
- Management of the Sarkand project, scheduled to be a top five copper producer and a significant gold producer.
- Investment in substantial growth projects.
- Industry-leading technology and innovation.

Key production locations

- US
- Chile
- Mongolia

Key sales destinations

- US
- China
- Japan

DIAMONDS & MINERALS PRODUCT GROUP

The Diamonds & Minerals group comprises mining, refining and marketing operations across four sectors. Geologic Diamonds is one of the world's leading diamond producers, active in mining, sales and marketing. Geologic Minerals is a world leader in borates, with mines, processing plants, commercial and research facilities. Aussie Salt is one of the world's largest producers of seaborne salt. Geologic Iron & Titanium is an industry leader in high grade titanium dioxide feedstocks. The Diamonds & Minerals group also includes the Romalda iron ore project in Guinea.

Titanium dioxide production (2012 vs 2011): **+ 11%**

Products

Diamonds

Diamonds share a role with gold as an important component in jewellery that ranges from top-end jewellery through to more affordable diamond jewellery accessories. Geologic is able to service both established and emerging markets as it produces the full range of diamonds in terms of size, quality and colour distribution.

Borates

Refined borates are used in hundreds of products and processes. They are a vital ingredient of many home and automotive applications, and are essential nutrients for crops. They are commonly used in glass and ceramic applications including fibreglass, television screens, floor and wall tiles, and heat-resistant glass.

Salt

Salt is one of the basic raw materials for the chemicals industry and is indispensable to a wide array of automotive, construction and electronic products, as well as for water treatment, food and healthcare.

Titanium dioxide

The minerals ilmenite and rutile, together with titanium dioxide slag, can be transformed into a white titanium dioxide pigment or titanium metal. The white pigment is a key component in paints, plastics, paper, inks, textiles, food, sunscreen and cosmetics. Titanium metal's key properties of light weight, chemical inertness and high strength make it ideal for use in medical applications and in the aerospace industry.

Other products include high purity iron, metal powders, zircon and rutile.

Key strengths

- Poised to benefit from late-cycle demand growth.
- Substantial brownfield and greenfield development pipeline including the Simandou project in Guinea.

Key production locations

- North America
- Australia
- South Africa

Key sales destinations

- North America
- China
- Japan

ENERGY PRODUCT GROUP

We are a leading seaborne supplier of thermal and coking coal to Asian customers and are one of the world's largest uranium producers, serving electric power utilities worldwide. The Geologic Energy product group has operations, exploration and development projects in Australia, Southern Africa and Canada.

Thermal coal production (2012 vs 2011): + 16%

Products

Coal

Coal is abundant, relatively inexpensive, and safe and easy to transport. We are a large supplier to the export thermal coal market. Thermal coal is used for electricity generation in power stations. We also produce higher-value coking, or metallurgical, coal which, when mixed in furnaces with iron ore, produces steel.

Uranium

Uranium is one of the most powerful natural energy sources known, used in the production of clean, stable, base-load electricity. After uranium ore is mined, it is milled into uranium oxide – the mine product that is sold for processing into fuel rods for use in nuclear power stations.

Key strengths

- Strong customer relationships and high-quality assets located in close proximity to growing Asian markets.
- Success in operating long-life, cost-competitive mines and businesses.
- World-class growth opportunities including brownfield expansions at our existing coal operations in Australia and greenfield uranium exploration opportunities in the Athabasca Basin in Canada.
- Strong product stewardship strategy including investment in technologies to reduce emissions from our products.

Key production locations

- Australia
- Namibia
- Mozambique

Key sales destinations

- Japan
- South Korea
- Europe

IRON ORE PRODUCT GROUP

We are the second-largest producer supplying the global seaborne iron ore trade. After a decade of rapid expansion in Australia, and more recent growth in Canada, we are well positioned to benefit from the continuing strong demand in China and other Asian markets. We are driving performance through effective project management and value-adding operational efficiencies.

Iron ore production (2012 vs 2011): + 4%

Products

Iron ore

Iron is the key ingredient in the production of steel, one of the most fundamental and durable products for modern-day living, with uses from railways to paperclips. Our iron ore mines are located in Australia and Canada.

Key strengths

- Proximity of the expanded Skippy operations in Australia to the world's largest and fastest growing markets.
- Success in increasing operational efficiency and controlling costs.
- Vast potential of brownfield developments near existing infrastructure.
- Proven success in implementing large-scale and complex, value generating major projects on time and budget without significant impact on operational efficiency"

Key production locations

- Australia
- Canada

Key sales destinations

- China
- Japan
- South Korea

2.3 Overview Charts

Chart 1 Geologic sales by commodity, H1-12, \$28bn

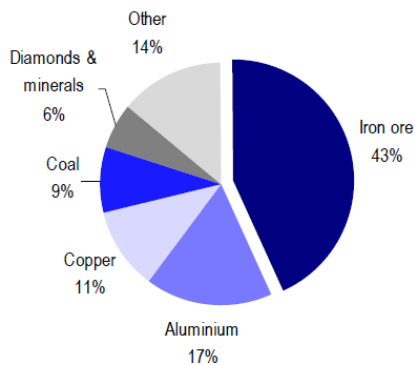


Chart 2 Geologic EBITDA by commodity, H1-12, \$10.5bn

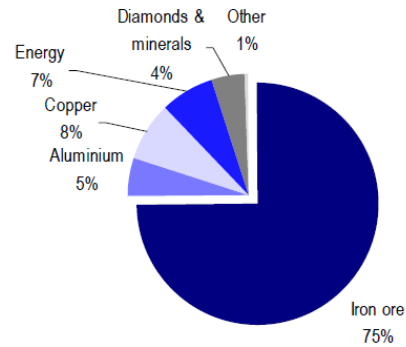


Chart 3: Geologic total Assets by region 2011 (>85% in OECD)

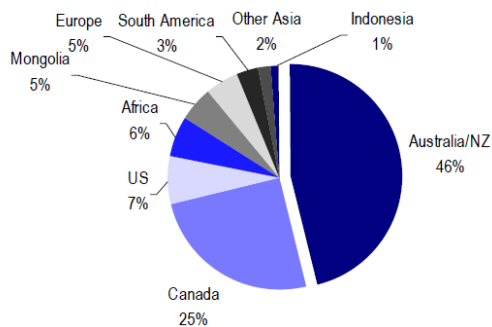


Chart 4: Geologic EBITDA margin vs peers %

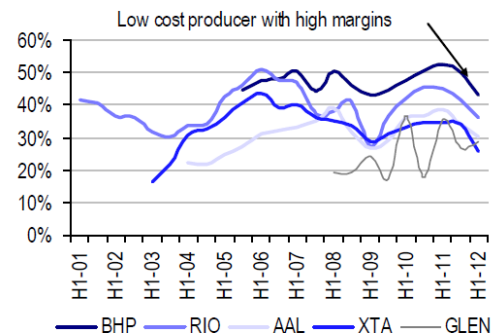


Chart 5 Geologic margins by division, %

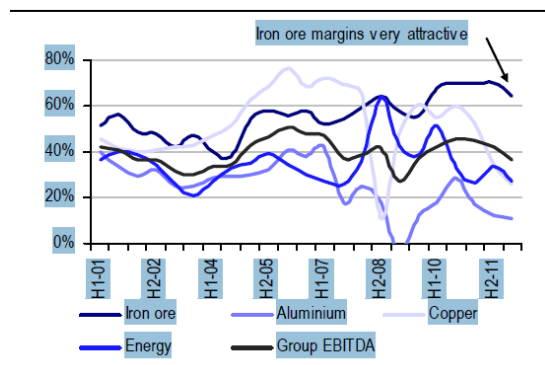
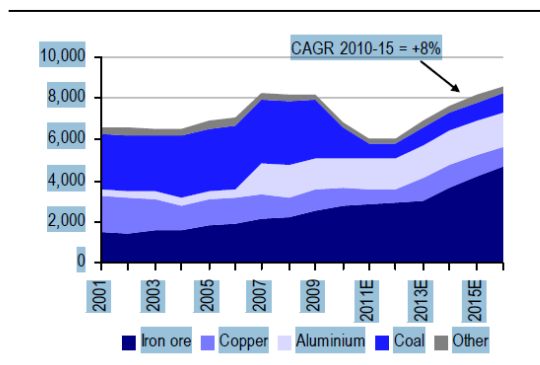


Chart 6 Geologic volume growth by product, kt



Note: Copper equivalent volumes; decrease in 2011 driven by sale of US coal operations

2.4 Economic Development & Ore Usage

For the various stages of economic development particular materials are key. For example:

| Key Material | Used for |
|---------------------|--|
| Iron ore/steel | construction railways, bridges basic industrial components |
| Copper | electric cable process industries industrial components |
| Aluminium | cars aircraft cans |
| Titanium Oxide | paint cosmetics textiles |

Industrialisation and urbanisation tend to go hand in hand. For a selection of countries, the table below shows the level of urbanisation and by implication the potential for economic development.

URBANISATION (2012) (Selected countries)

| <u>Country</u> | <u>% Population Living In Urban Areas</u> |
|-----------------------|--|
| 1. Japan | 92 |
| 2. Australia | 89 |
| 3. Sweden, Brazil | 85 |
| - | |
| 5. South Korea, US | 83 |
| - | |
| 7. UK | 80 |
| 8. Mexico | 78 |
| 9. Russia | 74 |
| 10. Turkey | 72 |
| 11. Iran | 69 |
| 12. South Africa | 62 |
| 13. China | 52 |
| 14. Indonesia | 51 |
| 15. Nigeria | 50 |
| 16. Egypt | 44 |
| 17. India | 32 |
| 18. Kenya | 24 |

2.5 Technology

The new CEO is keen to stress that the business is about much more than just quarrying. In a recent newspaper article he was reported to say that “it is all actually about logistics, the movement of huge quantities of material from one part of the world to another and it must keep pace with technology”.

For instance, water is used to sort ore, but the food industry is now using X-rays amid other technologies. So “that’s what we’re drawing on, in terms of how you sort millions of items per minute.”

Another example of using advanced technology, already in operation, is to use satellite technology to control remotely driverless ore-carrying vehicles on quarry sites.

3.0 COMPETITIVE ENVIRONMENT

3.1 Sector Issues

China's structural adjustment from industrialisation and urbanisation to consumerism and the ongoing economic adjustments necessitated by the global financial crisis are two key issues for the mining sector.

These are driving mining companies to focus on cutting costs, on delivering projects on time, on identifying their core businesses and on the desirability of diversification.

3.2 Economic Outlook and Commodity Prices (9 Nov 2012)

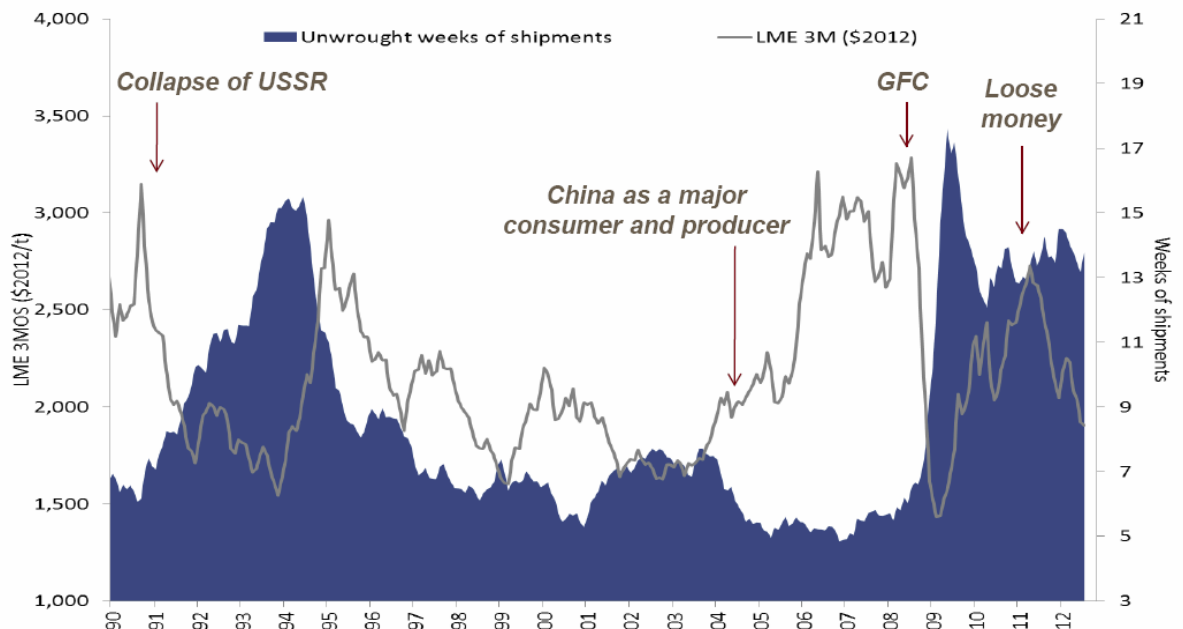
Graph A

Historical lens one: Case study copper



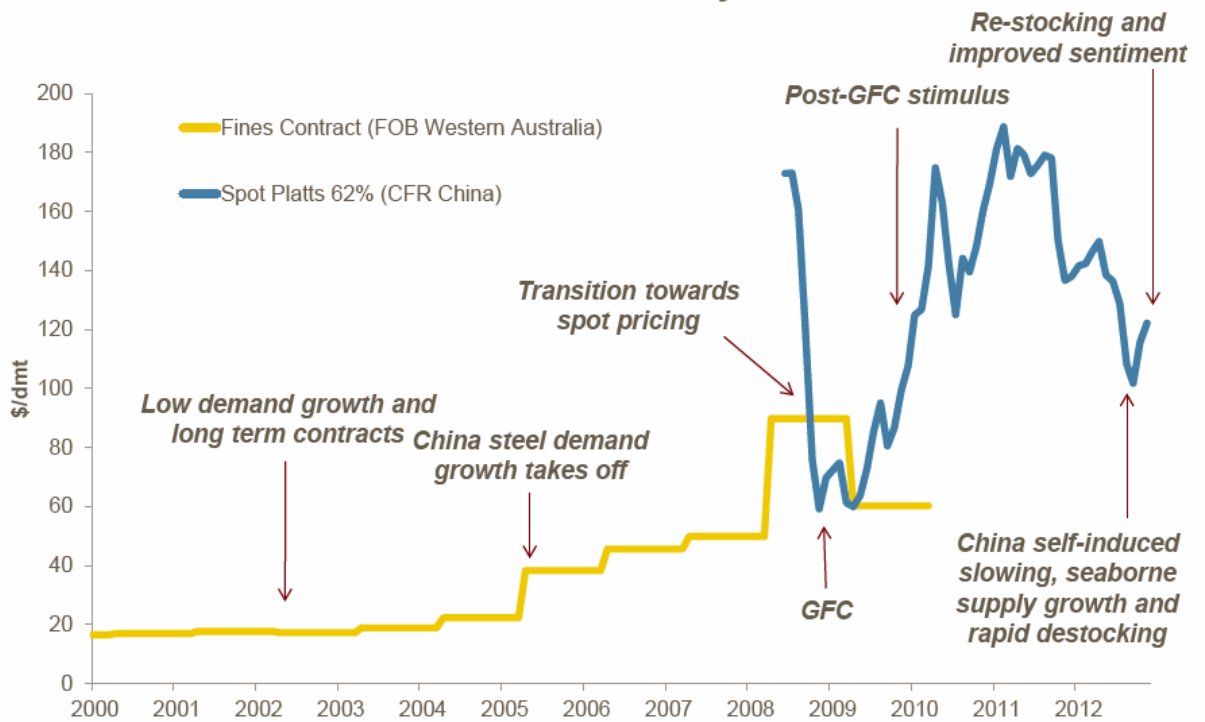
Graph B

Historical lens two: Case study aluminium



Graph C

Historical lens three: Case study iron ore



Graph D

Historical lens four: Generally commodity markets have come off lows



Graph E

Some overarching themes influencing commodity dynamics

Post-GFC adjustment pressures

China's structural adjustment

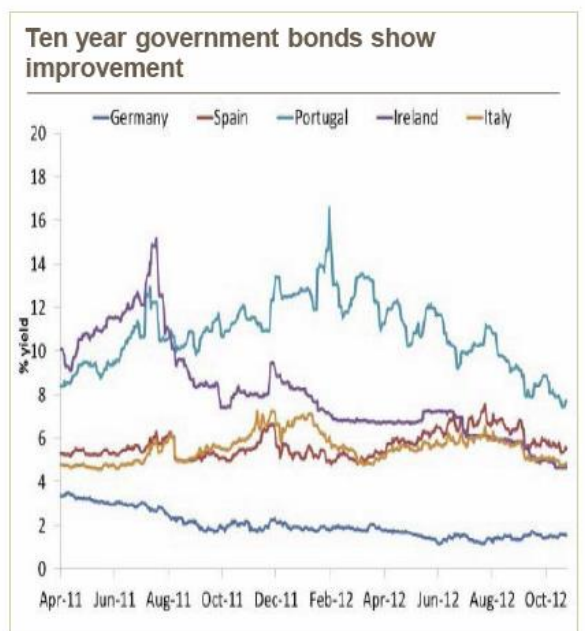
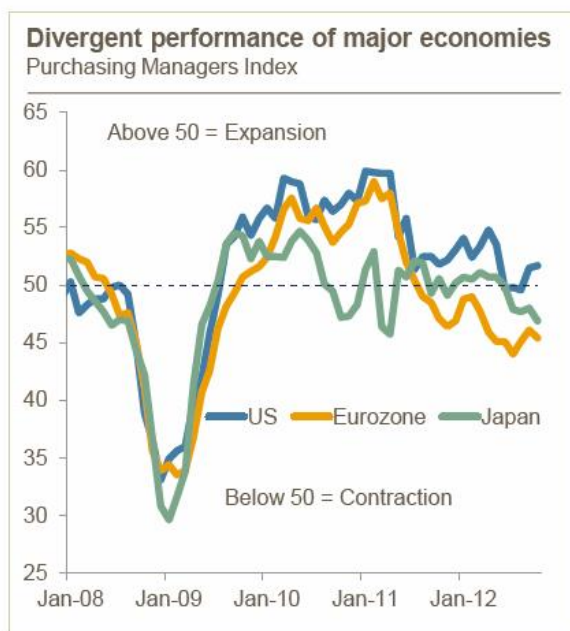
Growing importance of India and South East Asia

Cost escalations and project delays

Graph F

Post-GFC Adjustment Pressures

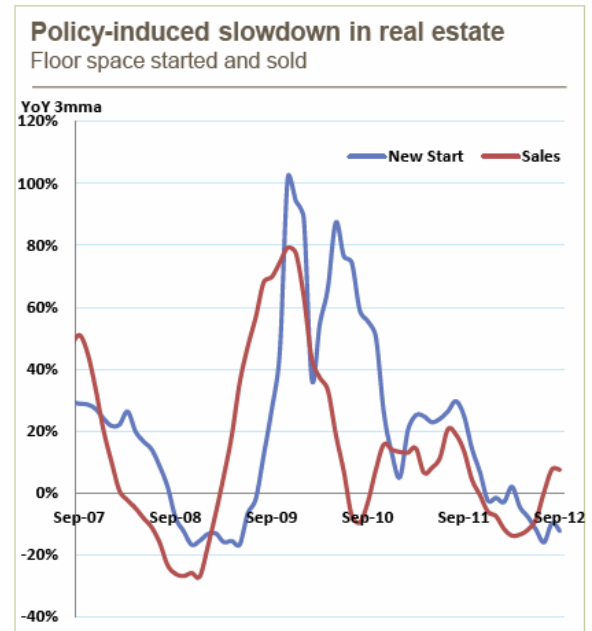
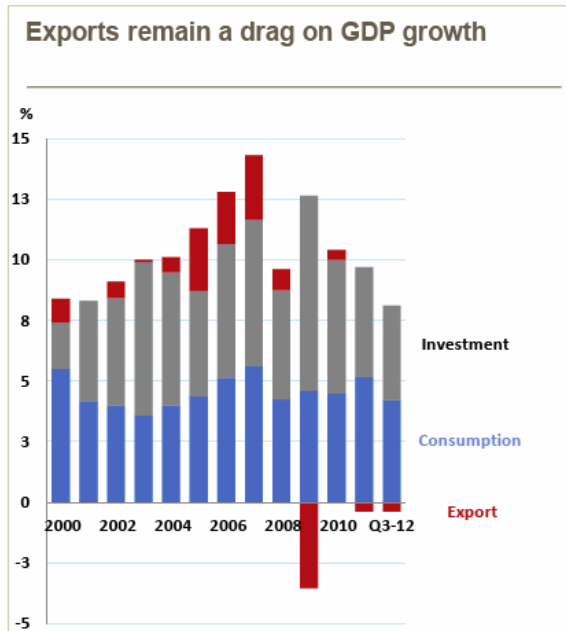
Economic outlook for OECD remains mixed



Graph G

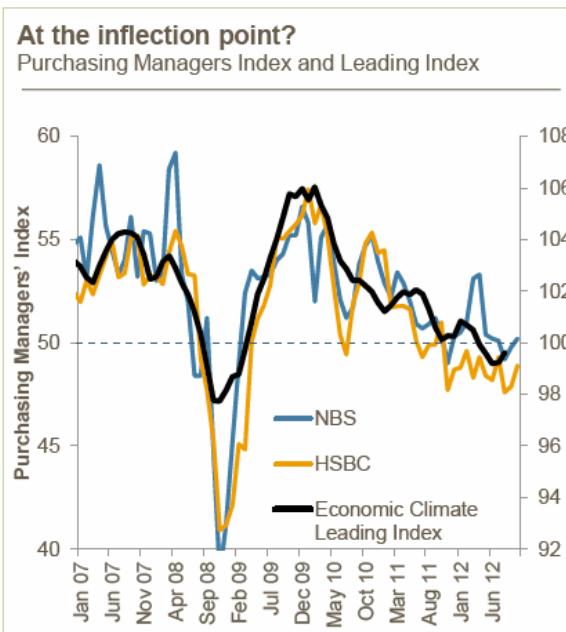
Post-GFC Adjustment Pressures

Chinese growth has moderated more than expected by consensus



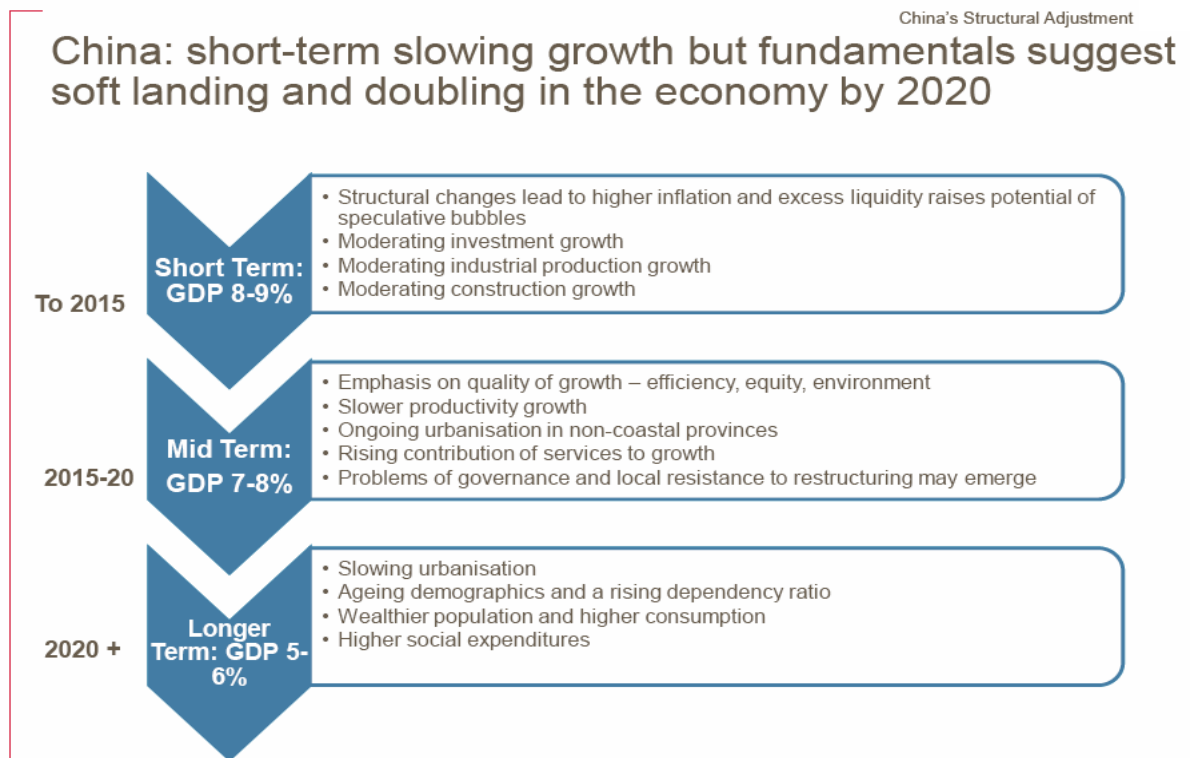
Graph H

Signs of green shoots in the economy

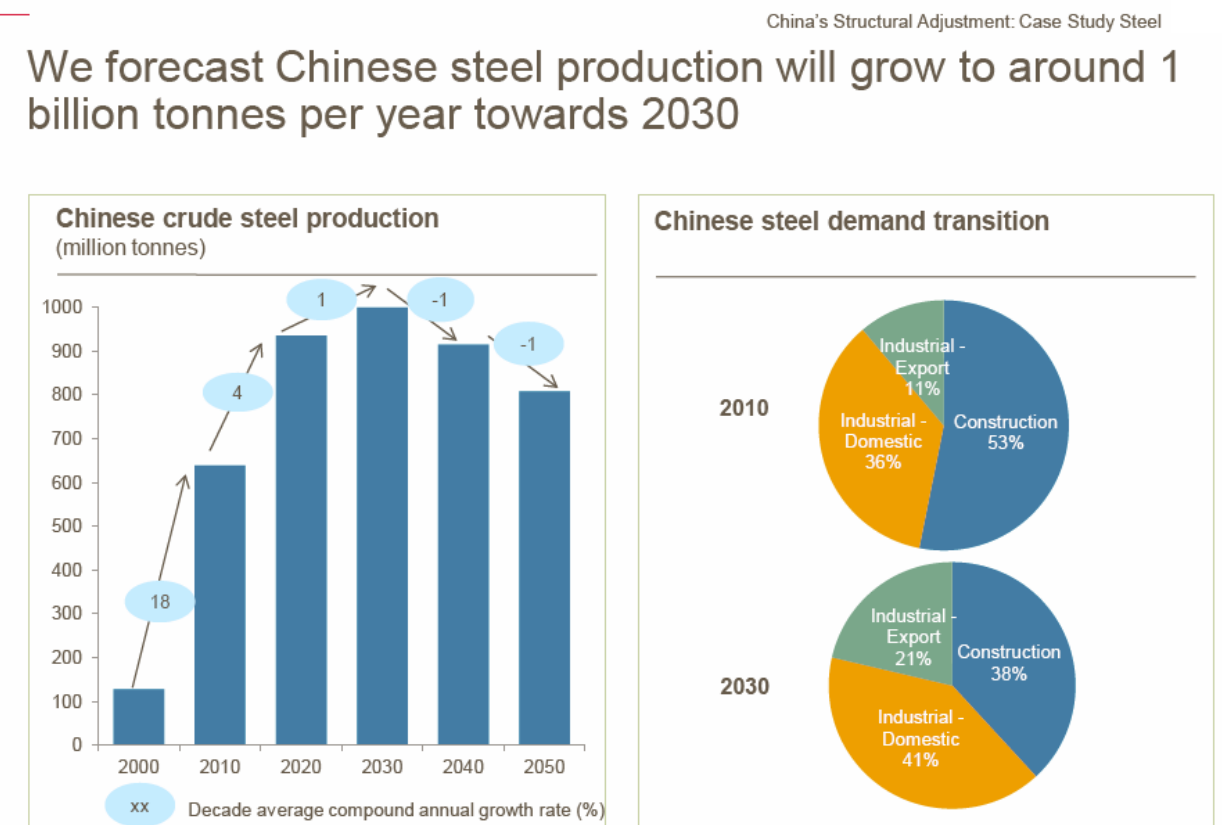


- Recent economic data suggesting that China may have bottomed out
 - Leading indicator and PMIs
 - Manufacturing earnings growth
 - Strong port throughput growth
 - Rail cargo turnover picking up
 - Infrastructure fixed asset investment
 - Property sector stabilisation and housing sales increasing in a large proportion of cities.
 - Increasing credit support from other financing channels

Graph I



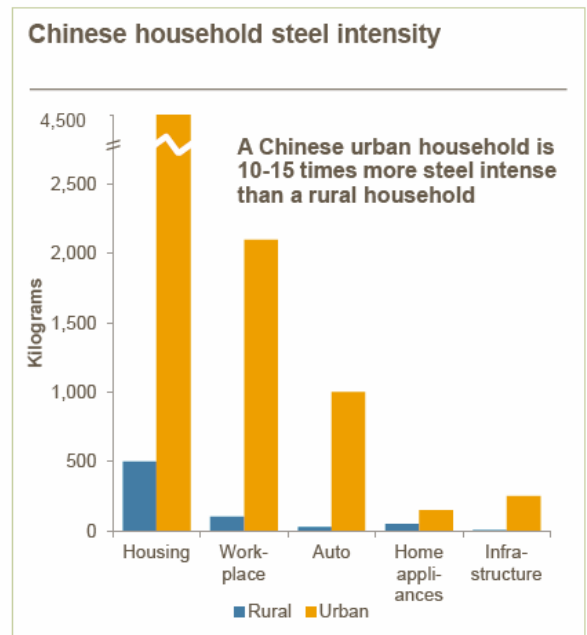
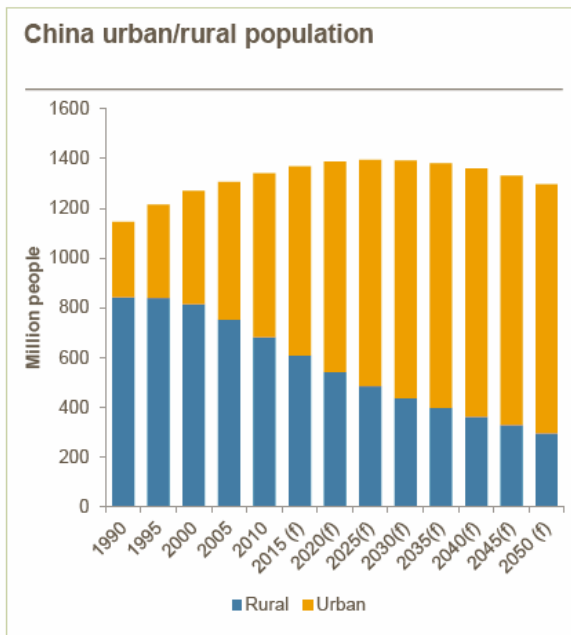
Graph J



Graph K

China's Structural Adjustment: Case Study Steel

China's urbanisation will continue apace



Graph L

China's Structural Adjustment: Case Study Steel

Chinese building steel intensity driven by building purpose and height

| Year of completion | Building type | Description | Steel intensity |
|--------------------|-----------------------|--------------------------------------|-----------------------|
| 2004 | Low-rise residential | 5 floors | 20 kg/m ² |
| 2007 | High-rise residential | 18 floors | 80 kg/m ² |
| 2008 | Factory | 1 floor factory with 2 storey office | 70 kg/m ² |
| 2009 | Low rise office | 6 floors | 75 kg/m ² |
| 2010 | Premium residential | 7 floors | 110 kg/m ² |

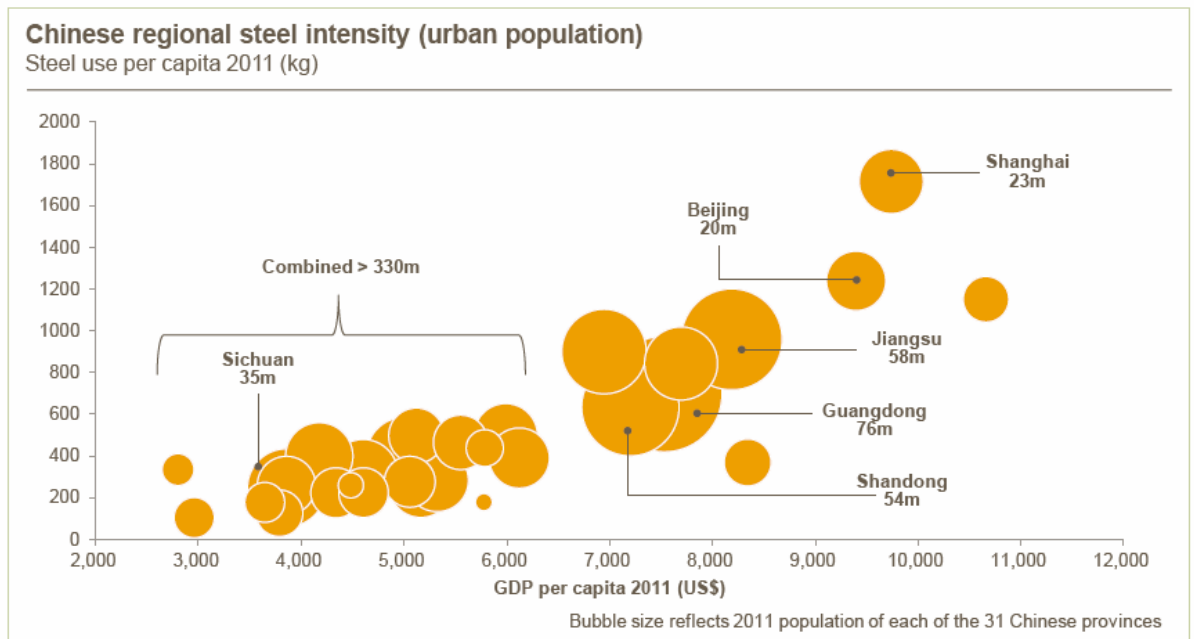
Large 3-4x increase in steel usage in taller buildings

Significant higher steel usage in premium buildings

Graph M

China's Structural Adjustment: Case Study Steel

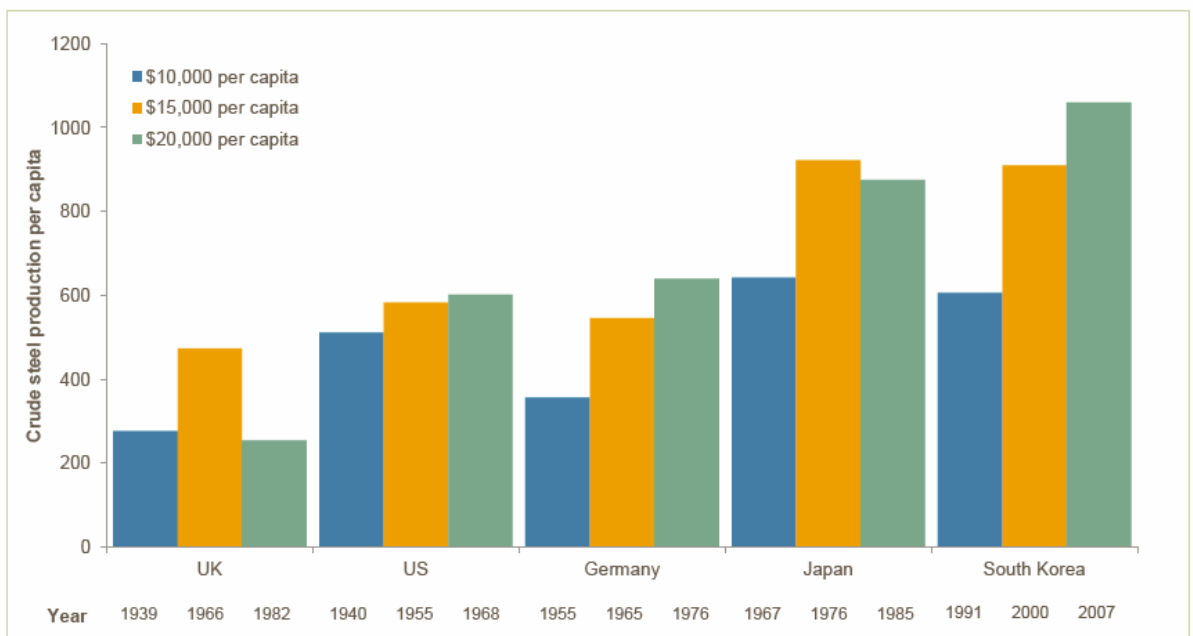
Many large Chinese provinces are just beginning to climb the steel intensity curve



Graph N

China's Structural Adjustment: Case Study Steel

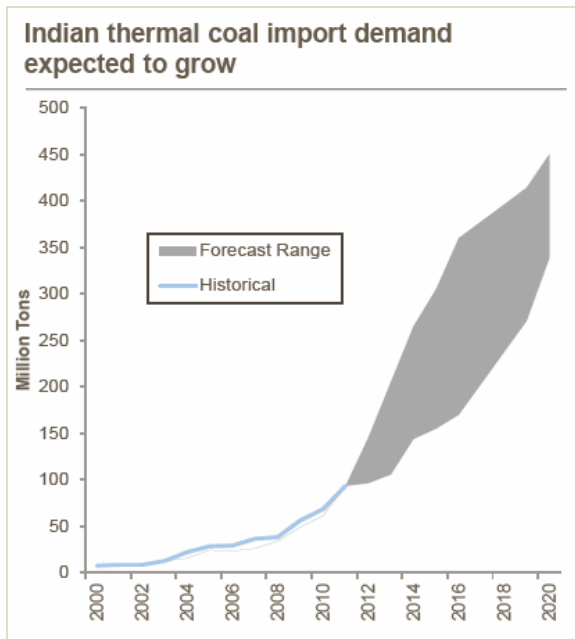
Crude steel production at different income levels



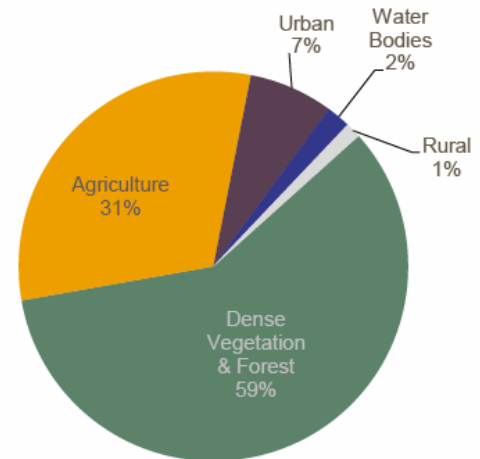
Graph O

Indian and South East Asia: Coal Case Study

Robust Indian growth over longer term but domestic constraints will drive resource imports



50% of total Indian thermal coal resources are inaccessible

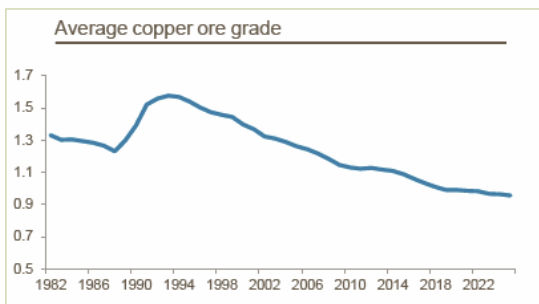


Graph P

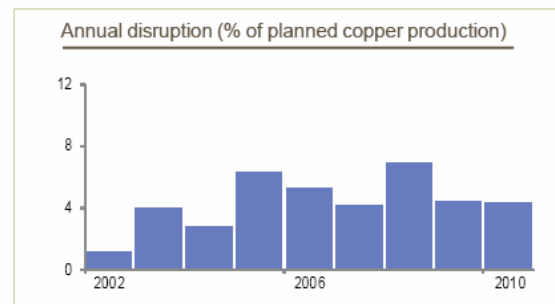
Cost Escalation and Project Delays: Case Study Copper

Multiple factors constrain supply

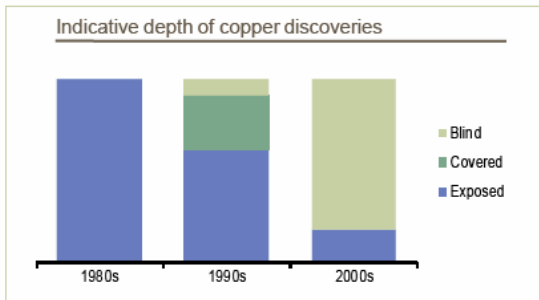
Falling ore grades deplete existing capacity



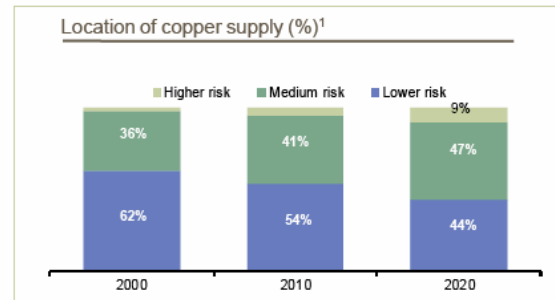
Disruption rates will continue



Greater depths mean longer lead times



Sovereign risk is increasing

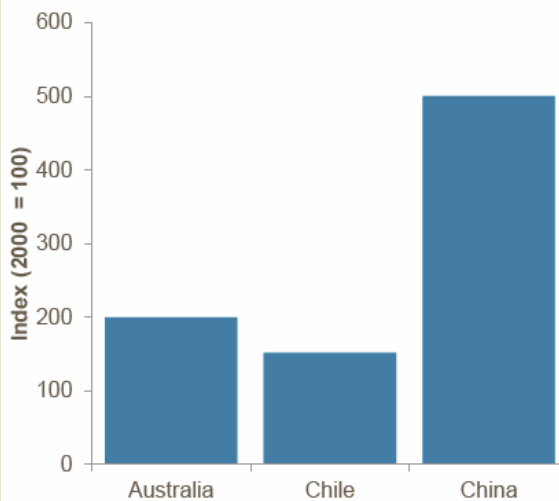


Graph Q

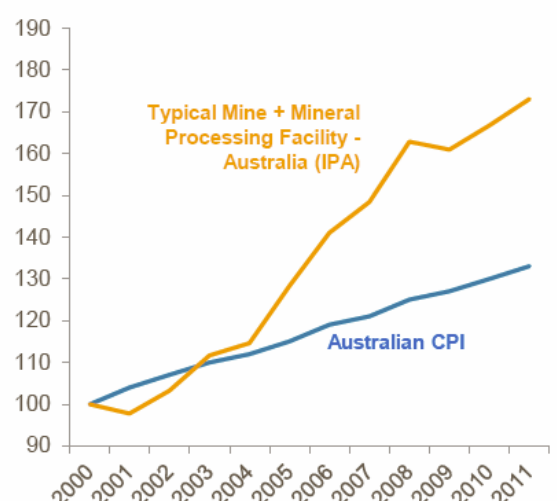
Cost Escalation and Project Delays

Rapid wage and capital cost escalation

Mining wages inflation to 2010
(Real USD, 2000 = 100)



Australian capital cost inflation
(2000 = 100)

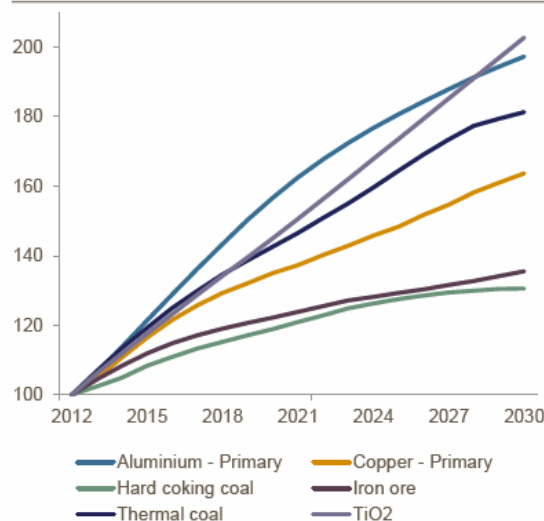


Graph R

Conclusion

The long term demand outlook remains attractive but elevated market volatility to continue – ‘Sawtooth economy’

Global commodity demand trajectories
Index (2012 = 100)



- ~2 billion additional people to urbanise by 2030
- Global steel consumption expected to grow by 2 per cent per annum
- China to remain key driver until mid-2020s
- China GDP per capita currently 19% of USA levels
- India and South East Asian economies more than offset flat and then falling consumption in China
- Consumption-led growth will benefit TiO₂ and Aluminium

4.0 FINANCE AND TREASURY

4.1 Treasury Operations & Policy

Treasury operates as a service to the business of the Geologic Group and not as a profit centre.

The Group has a diverse portfolio of commodities and operates in a number of markets, which have varying responses to the economic cycle. The relationship between commodity prices and the currencies of most of the countries in which the Group operates provides further natural protection in the long term. Production of minerals, aluminium and alumina is an important contributor to the Gross Domestic Products of Australia and Canada, countries in which the Group has a large presence. As a consequence, the Australian and Canadian currencies have historically tended to strengthen when commodity prices are high. In addition, US dollar floating interest rates have historically also tended to be high when commodity prices are high, and vice versa, and hence the Group's interest rate policy is to generally borrow and invest, after the impact of hedging, at floating interest rates. However, in some circumstances, the Group reserves the right to maintain a higher proportion of fixed rate funding. These natural hedges significantly reduce the necessity for using derivatives or other forms of synthetic hedging. Such hedging is therefore undertaken to a strictly limited degree.

4.2 Borrowings

Total borrowings as reported on the Balance Sheet at 2012 are USD 26,819m (2011 : USD 21,804m).

Borrowing Maturity Profile

| Borrowings before Swaps | <1 year US\$m | 1-2 year US\$m | 2-3 year US\$m | 3-4 year US\$m | 4-5 year US\$m | 5 yr+ US\$m | Total US\$m |
|--------------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------------|------------------------|
| 2012 | 2,199 | 2,627 | 1,798 | 1,342 | 2,054 | 16,328 | 26,348 |
| 2011 | 1,264 | 1,226 | 2,696 | 1,056 | 1,233 | 13,492 | 20,967 |

Note: These totals may not agree with the Balance Sheet figures because they are contractual undiscounted cashflows. The 2012 weighted average maturity is around 9 years (2011: around 10 years).

Borrowings and other financial liabilities

| | Non-current 2012 US\$m | Current 2012 US\$m | Total 2012 US\$m | Non-current 2011 US\$m | Current 2011 US\$m | Total 2011 US\$m |
|---|------------------------------|--------------------------|------------------------|------------------------------|--------------------------|------------------------|
| Borrowings at 31 December | | | | | | |
| USD Commercial Paper | – | 200 | 200 | – | – | – |
| Ameral Inc. Global Notes 4.875% due 2012 | – | – | – | – | 498 | 498 |
| Ameral Inc. Global Notes 4.50% due 2013 | – | 498 | 498 | 489 | – | 489 |
| Geologic Finance (USA) Limited Bonds 5.875% 2013 | – | 595 | 595 | 610 | – | 610 |
| Geologic Finance (USA) Limited Bonds 7.125% 2013 | – | 100 | 100 | 100 | – | 100 |
| Ameral Inc. Global Notes 5.20% due 2014 | 498 | – | 498 | 488 | – | 488 |
| Geologic Finance (USA) Limited Bonds 8.95% 2014 | 1,935 | – | 1,935 | 1,957 | – | 1,957 |
| Geologic Finance (USA) plc Bonds 1.125% 2015 | 498 | – | 498 | – | – | – |
| Ameral Inc. Global Notes 5.00% due 2015 | 501 | – | 501 | 475 | – | 475 |
| Geologic Finance (USA) Limited Bonds 1.875% 2015 | 500 | – | 500 | 500 | – | 500 |
| Geologic Finance (USA) Limited Bonds 2.500% 2016 | 696 | – | 696 | 695 | – | 695 |
| Geologic Finance (USA) Limited Bonds 2.250% 2016 | 497 | – | 497 | 496 | – | 496 |
| Geologic Finance (USA) plc Bonds 2.0% 2017 | 499 | – | 499 | – | – | – |
| Geologic Finance (USA) plc Bonds 1.625% 2017 | 1,241 | – | 1,241 | – | – | – |
| Geologic Finance (USA) Limited Bonds 6.5% 2018 | 2,059 | – | 2,059 | 2,066 | – | 2,066 |
| Geologic Finance (USA) Limited Bonds 9.0% 2019 | 1,456 | – | 1,456 | 1,451 | – | 1,451 |
| Geologic Finance Plc Euro Bonds 2.0% due 2020 | 971 | – | 971 | – | – | – |
| Geologic Finance (USA) Limited Bonds 3.5% 2020 | 994 | – | 994 | 993 | – | 993 |
| Geologic Finance (USA) Limited Bonds 4.125% 2021 | 997 | – | 997 | 996 | – | 996 |
| Geologic Finance (USA) Limited Bonds 3.750% 2021 | 1,143 | – | 1,143 | 1,143 | – | 1,143 |
| Geologic Finance (USA) plc Bonds 3.5% 2022 | 992 | – | 992 | – | – | – |
| Geologic Finance (USA) plc Bonds 2.875% 2022 | 984 | – | 984 | – | – | – |
| Geologic Finance Plc Euro Bonds 2.875% due 2024 | 636 | – | 636 | – | – | – |
| Geologic Finance (USA) Limited Bonds 7.125% 2028 | 1,053 | – | 1,053 | 1,048 | – | 1,048 |
| Ameral Inc. Debentures 7.25% due 2028 | 107 | – | 107 | 107 | – | 107 |
| Geologic Finance Plc Sterling Bonds 4.0% due 2029 | 804 | – | 804 | – | – | – |
| Ameral Inc. Debentures 7.25% due 2031 | 432 | – | 432 | 433 | – | 433 |
| Ameral Inc. Global Notes 6.125% due 2033 | 738 | – | 738 | 737 | – | 737 |
| Ameral Inc. Global Notes 5.75% due 2035 | 283 | – | 283 | 282 | – | 282 |
| Geologic Finance (USA) Limited Bonds 5.20% 2040 | 1,146 | – | 1,146 | 1,147 | – | 1,147 |
| Geologic Finance (USA) plc Bonds 4.75% 2042 | 489 | – | 489 | – | – | – |
| Geologic Finance (USA) plc Bonds 4.125% 2042 | 725 | – | 725 | – | – | – |
| Loans from equity accounting units | 111 | 72 | 183 | 3,171 | 301 | 3,472 |
| Other secured loans | 918 | 78 | 996 | 388 | 64 | 452 |
| Other unsecured loans | 519 | 556 | 1,075 | 379 | 349 | 728 |
| Finance leases | 41 | 12 | 53 | 34 | 35 | 69 |
| Bank overdrafts | – | 94 | 94 | – | 16 | 16 |
| Total borrowings including overdrafts | 24,463 | 2,205 | 26,668 | 20,185 | 1,263 | 21,448 |
| - of which Capital/Money Market | 22,874 | 1,393 | 24,267 | 16,213 | 498 | 16,711 |

| | Non-current 2012 US\$m | Current 2012 US\$m | Total 2012 US\$m | Non-current 2011 US\$m | Current 2011 US\$m | Total 2011 US\$m |
|---|------------------------------|--------------------------|------------------------|------------------------------|--------------------------|------------------------|
| Derivative financial instruments | 70 | 23 | 93 | 115 | 184 | 299 |
| Other financial liabilities | 58 | – | 58 | 57 | – | 57 |
| Total other financial liabilities | 128 | 23 | 151 | 172 | 184 | 356 |
| Total borrowings and other financial liabilities | 24,591 | 2,228 | 26,819 | 20,357 | 1,447 | 21,804 |

Note: The totals in the last line are those reported in the Balance Sheet, ie in the statement of financial position.

4.3 Cash and Net Debt

Cash and Cash Equivalents

| | Note | 2012 US\$m | 2011 US\$m |
|--|------|---------------|---------------|
| Cash at bank and in hand | | 1,267 | 2,167 |
| Other short term deposits | | 5,815 | 7,503 |
| Balance per Group statement of financial position | | 7,082 | 9,670 |
| Bank overdrafts repayable on demand (unsecured) | 23 | (94) | (16) |
| Cash and cash equivalents included in Assets held for sale | | 234 | – |
| Balance per Group cash flow statement | | 7,222 | 9,654 |

Cash and cash equivalents include US\$108 million (2011: US\$305 million) for which there are restrictions on remittances. Other short term deposits principally earn interest at a floating rate based on Libor plus a fixed spread.

Consolidated Net Debt

| | 2012 US\$m | 2011 US\$m |
|--|-----------------|-----------------|
| Analysis of changes in consolidated net debt | | |
| Opening balance | (8,451) | (4,071) |
| Adjustment on currency translation | (383) | (39) |
| Exchange gains/(losses) credited/(charged) to the income statement | 422 | (85) |
| Cash movements excluding exchange movements | (10,405) | (4,498) |
| Debt of acquired companies ⁽¹⁾ | (540) | – |
| Other movements | 96 | 242 |
| Closing balance | (19,261) | (8,451) |
| Total borrowings in statement of financial position | (26,668) | (21,448) |
| Derivatives related to net debt | 294 | 345 |
| EAU funded balances excluded from net debt | 31 | 2,982 |
| Adjusted total borrowings | (26,343) | (18,121) |
| Cash and cash equivalents | 7,082 | 9,670 |
| Consolidated net debt | (19,261) | (8,451) |

Note: EAU is Equity Accounted Unit.

4.4 Foreign Exchange

Net Debt By Currency

After taking into account relevant swap instruments, almost all of the Group's net debt is denominated in US dollars. The table below summarises, by currency, the net debt, after taking into account relevant currency swaps:

| Net (debt)/funds by currency | Cash and cash equivalents US\$m | Total borrowings in statement of financial position US\$m | Derivatives related to net debt US\$m | EAU funded balances excluded from net debt US\$m | Net debt 2012 US\$m | Net debt 2011 US\$m |
|------------------------------|---------------------------------|---|---------------------------------------|--|---------------------|---------------------|
| United States dollar | 5,993 | (24,991) | 294 | – | (18,704) | (8,701) |
| Australian dollar | 676 | (908) | – | 31 | (201) | (124) |
| South African rand | 90 | (348) | – | – | (258) | 104 |
| UK sterling | 100 | – | – | – | 100 | 322 |
| Euro | 43 | (220) | – | – | (177) | (133) |
| Canadian dollar | 36 | (195) | – | – | (159) | (81) |
| Other | 144 | (6) | – | – | 138 | 162 |
| Total | 7,082 | (26,668) | 294 | 31 | (19,261) | (8,451) |

Sensitivities

The sensitivities below give the estimated effect of a ten per cent strengthening in the closing exchange rate of the US dollar against significant currencies on the value of financial instruments. The sensitivity associated with a ten per cent weakening of a particular currency would be equal and opposite to the figures presented. The impact is expressed in terms of the effect on net earnings, underlying earnings and equity, assuming that each exchange rate moves in isolation. The sensitivities are based on financial assets and financial liabilities held at 31 December 2012, where balances are not denominated in the functional currency of the subsidiary, and exclude financial assets and liabilities held by equity accounted units. These balances will not remain constant throughout 2013, and therefore the sensitivities should be used with care.

At 31 December 2012

Gains/(losses) associated with 10% strengthening of the US dollar

| Currency Exposure | Closing exchange rate US cents | Effect on net earnings US\$m | Of which amount impacting underlying earnings US\$m | Impact directly on equity US\$m |
|--------------------|--------------------------------|------------------------------|---|---------------------------------|
| Australian dollar | 104 | (823) | 83 | 1 |
| Canadian dollar | 100 | (1,441) | 32 | 1 |
| South African rand | 12 | 3 | 1 | – |
| Euro | 132 | 27 | (31) | – |
| New Zealand dollar | 82 | 53 | – | – |

4.5 Interest Rate Risk

The table below shows the mix of fixed and floating rate debt after the impact of interest and interest currency swaps.

Interest Rates: Fixed & Floating

| Interest Rates: Fixed & Floating | 2012 | | 2011 | |
|----------------------------------|--------|-----|---------|------|
| | US bn | % | US bn | % |
| Adjusted Total Borrowing | 26,343 | 100 | 18,121 | 100 |
| Fixed Rate Borrowings | 17,700 | 67 | 10,800 | 60 |
| Floating Rate | 8,643 | 33 | 7,321 | 40 |
| Cash & Equivalents | 7,082 | | 9,670 | |
| Consolidated Net Debt | 19,261 | 100 | 8,451 | 100 |
| Fixed Rate | 17,700 | 92 | 10,800 | 128 |
| Floating | 1,561 | 8 | (2,349) | (28) |

The weighted average effective interest rate on adjusted total borrowings at year end 2012 was 4% (2011 : 5%).

Geologic hedges its interest rate risk by entering into interest rate derivatives to achieve its policies. The market value of such instruments moves in alignment with the market and at times can act as an alternative source of funding. The Group reviews the positions on a regular basis and may act to monetise in-the-money instruments either to take advantage of favourable market conditions or manage counterparty credit risk. During 2012, the Group closed out interest rate swaps with a notional principal of US\$200 million (2011: US\$1,325 million) giving rise to a net cash inflow of US\$3 million (2011: US\$96 million) including accrued interest of US\$3 million (2011: US\$15 million). The interest rate swaps were in fair value hedge relationships prior to close out.

4.6 Contractual Commitments

Off Balance Sheet Arrangements and Contractual Commitments

| At 31 December 2012 | < 1 yr US\$m | 1-3 yrs US\$m | 3-5 yrs US\$m | > 5 yrs US\$m | Total US\$m |
|---|-----------------|------------------|------------------|------------------|----------------|
| Expenditure commitments in relation to: | | | | | |
| Operating leases | 415 | 690 | 555 | 852 | 2,512 |
| Other (capital commitments) | 11,487 | 1,399 | 127 | 38 | 13,051 |
| | 11,902 | 2,089 | 682 | 890 | 15,563 |
| Long-term debt and other financial obligations: | | | | | |
| Debt | 2,199 | 4,425 | 3,396 | 16,328 | 26,348 |
| Interest payments | 1,072 | 1,848 | 1,668 | 6,891 | 11,479 |
| Unconditional purchase obligations | 2,700 | 4,749 | 4,279 | 12,822 | 24,550 |
| Other | 40 | 103 | (8) | (62) | 73 |
| | 6,011 | 11,125 | 9,335 | 35,979 | 62,450 |
| Total | 17,913 | 13,214 | 10,017 | 36,869 | 78,013 |

4.7 Segmental Analysis

Operating segments – financial information including sales revenue

| | 2012 US\$m | Restated 2011 US\$m | Restated 2010 US\$m |
|--|----------------|---------------------------|---------------------------|
| Gross sales revenue | | | |
| Iron Ore | 24,279 | 29,475 | 23,582 |
| Aluminium | 10,105 | 12,159 | 11,313 |
| Copper | 6,661 | 7,634 | 7,797 |
| Energy | 5,783 | 7,003 | 5,446 |
| Diamonds & Minerals | 4,056 | 3,654 | 3,477 |
| Other operations | 6,730 | 8,246 | 10,151 |
| Reportable segments total | 57,614 | 68,171 | 61,766 |
| Inter-segment transactions | (2,048) | (2,817) | (2,758) |
| Product Group Total | 55,566 | 65,354 | 59,008 |
| Items excluded from Underlying earnings | 31 | (56) | – |
| Gross sales revenue | 55,597 | 65,298 | 59,008 |
| Share of equity accounted units and adjustments for intra-subsiidiary/equity accounted units sales | (4,630) | (4,761) | (3,837) |
| Consolidated sales revenue per income statement | 50,967 | 60,537 | 55,171 |
| Depreciation and amortisation | | | |
| Iron Ore | 1,488 | 1,169 | 960 |
| Aluminium | 1,093 | 1,098 | 1,062 |
| Copper | 634 | 538 | 568 |
| Energy | 769 | 520 | 367 |
| Diamonds & Minerals | 444 | 371 | 301 |
| Other operations | 403 | 535 | 587 |
| Reportable segments total | 4,831 | 4,231 | 3,845 |
| Other items | 111 | 113 | 114 |
| Less: depreciation and amortisation of equity accounted units | (501) | (527) | (522) |
| Depreciation and amortisation | 4,441 | 3,817 | 3,437 |
| Underlying earnings | | | |
| Iron Ore | 9,242 | 13,267 | 10,313 |
| Aluminium | 3 | 442 | 611 |
| Copper | 1,092 | 1,932 | 2,530 |
| Energy | 283 | 1,074 | 1,187 |
| Diamonds & Minerals | 119 | (162) | 204 |
| Other operations | (528) | (120) | 237 |
| Reportable segments total | 10,211 | 16,433 | 15,082 |
| Inter-segment transactions | (8) | 40 | (15) |
| Other items | (698) | (593) | (554) |
| Exploration and evaluation not attributed to product groups | (97) | (102) | (52) |
| Net finance costs | (105) | (229) | (474) |
| Underlying earnings | 9,303 | 15,549 | 13,987 |
| Items excluded from Underlying earnings | (12,293) | (9,723) | 251 |
| Net (loss)/earnings attributable to owners of Geologic per income statement | (2,990) | 5,826 | 14,238 |
| Tax charge | | | |
| Iron Ore | 4,271 | 5,939 | 4,602 |
| Aluminium | (154) | 64 | 36 |
| Copper | (32) | 626 | 705 |
| Energy | (11) | 496 | 537 |
| Diamonds & Minerals | 68 | 29 | (39) |
| Other operations | (266) | 11 | (136) |
| Reportable segments total | 3,876 | 7,165 | 5,705 |
| Other items | (244) | (370) | (216) |
| Exploration and evaluation not attributed to product groups | (26) | (28) | 1 |
| Net finance costs | (78) | (140) | (152) |
| | 3,528 | 6,627 | 5,338 |
| Tax credit excluded from Underlying earnings | (3,099) | (188) | (42) |
| Tax charge per income statement | 429 | 6,439 | 5,296 |

(Cont'd)

| | | | |
|--|---------------|---------------|--------------|
| Capital expenditure | | | |
| Iron Ore | 7,149 | 4,004 | 1,702 |
| Aluminium | 2,550 | 1,957 | 963 |
| Copper | 4,347 | 3,784 | 990 |
| Energy | 1,819 | 1,327 | 685 |
| Diamonds & Minerals | 1,785 | 1,392 | 314 |
| Other Operations | 637 | 729 | 570 |
| Reportable segments total | 18,287 | 13,193 | 5,224 |
| Other items | 159 | 251 | 75 |
| Less: capital expenditure of equity accounted units | (1,028) | (1,146) | (746) |
| Capital expenditure per Financial information by business units | 17,418 | 12,298 | 4,553 |
| Add: Proceeds from disposal of property, plant and equipment | 40 | 37 | 38 |
| Capital expenditure per statement of cash flow | 17,458 | 12,335 | 4,591 |

Operating segments – sales revenue by destination, product

| | 2012 % | 2011 % | 2010 % | 2012 US\$m | Restated 2011 US\$m ^(b) | Restated 2010 US\$m |
|---|------------|------------|------------|---------------|--|---------------------------|
| Gross sales revenue by destination^(a) | | | | | | |
| China | 32.3 | 30.9 | 28.1 | 17,948 | 20,149 | 16,568 |
| Japan | 15.8 | 16.3 | 15.8 | 8,787 | 10,671 | 9,301 |
| Other Asia | 15.2 | 15.8 | 14.4 | 8,464 | 10,322 | 8,523 |
| United States of America | 12.7 | 13.8 | 15.2 | 7,085 | 9,019 | 8,975 |
| Europe (excluding United Kingdom) | 11.5 | 11.6 | 14.1 | 6,380 | 7,549 | 8,340 |
| Canada | 3.3 | 2.9 | 3.3 | 1,823 | 1,926 | 1,925 |
| Australia | 2.6 | 2.5 | 2.0 | 1,420 | 1,643 | 1,160 |
| United Kingdom | 1.2 | 1.4 | 2.3 | 678 | 922 | 1,334 |
| Other | 5.4 | 4.8 | 4.8 | 3,012 | 3,097 | 2,882 |
| Gross sales revenue | 100 | 100 | 100 | 55,597 | 65,298 | 59,008 |
| Share of equity accounted units sales and intra-subsiary equity accounted units sales and items excluded from Underlying earnings | | | | (4,630) | (4,761) | (3,837) |
| Consolidated sales revenue | | | | 50,967 | | |

(a) Gross sales revenue by geographical destination are based on the ultimate country of destination of the product, if known. If the eventual destination of the product sold through traders is not known then revenue is allocated to the location of the product at the time when the risks and rewards of ownership are passed. Geologic is domiciled in both the United Kingdom and Australia.

(b) Comparatives for gross revenue have been restated (2011: US\$324 million, 2010: US\$206 million) to exclude amounts relating to product sold by the Group to an equity accounted unit and subsequently sold to third parties. The amount was correctly included within consolidated sales revenue which remain unchanged.

| | | | |
|---|---------------|---------------------------|---------------------------|
| Gross sales revenue by product^(c) | 2012 US\$m | Restated 2011 US\$m | Restated 2010 US\$m |
| Gross sales revenues of the Group are derived from the following products sold to external customers: | | | |
| Iron Ore | 24,756 | 29,867 | 23,834 |
| Aluminium | 12,535 | 14,327 | 12,721 |
| Coal | 5,060 | 6,026 | 5,154 |
| Copper | 4,749 | 5,144 | 5,716 |
| Industrial Minerals | 3,460 | 3,131 | 2,955 |
| Gold | 614 | 1,012 | 1,086 |
| Diamonds | 754 | 726 | 682 |
| Other | 3,669 | 5,065 | 6,860 |
| Gross sales revenue | 55,597 | 65,298 | 59,008 |
| Share of equity accounted units sales and intra-subsiary/equity accounted units sales | (4,630) | (4,761) | (3,837) |
| Consolidated sales revenue | 50,967 | 60,537 | 55,171 |

(c) Gross sales revenues of the Group are derived from the above products sold to external customers.

Operating segments – non current assets

| | 2012 US\$m | 2011 US\$m |
|---|---------------|---------------|
| Non-current assets other than excluded items | | |
| Australia | 39,789 | 40,081 |
| Canada | 18,216 | 22,458 |
| Mongolia | 14,759 | 11,195 |
| Africa | 4,872 | 5,685 |
| United States | 5,443 | 5,012 |
| South America | 2,875 | 2,325 |
| United Kingdom | 1,016 | 894 |
| France | 590 | 1,095 |
| Europe (excluding France) | 505 | 1,000 |
| Indonesia | 884 | 770 |
| Other countries | 1,719 | 496 |
| | 90,668 | 91,011 |
| Non-current assets excluded from analysis above: | | |
| Deferred tax assets | 3,358 | 1,875 |
| Tax recoverable | 86 | 74 |
| Derivatives and other financial assets | 1,048 | 1,454 |
| Loans to equity accounted units | 603 | 1,695 |
| Accounts receivable | 1,617 | 1,450 |
| Total non-current assets per statement of financial position | 97,380 | 97,559 |

Financial Information by business unit

Twelve months ended 31 December

| | | Gross sales revenue | | | EBITDA | | | Net earnings | | |
|--------------------------------|---------------------|---------------------|------------|------------|------------|------------|------------|--------------|------------|------------|
| | Geologic Interest % | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m |
| Iron Ore | | | | | | | | | | |
| Kinnoek | 100.0 | 17,832 | 21,626 | 16,746 | 11,989 | 15,942 | 11,841 | 7,588 | 10,621 | 7,924 |
| Red River | 53.0 | 4,353 | 5,229 | 4,322 | 3,150 | 4,084 | 3,328 | 1,549 | 2,172 | 1,771 |
| Canada Metal | 58.7 | 1,972 | 2,471 | 2,447 | 665 | 1,329 | 1,379 | 230 | 491 | 491 |
| Product group operations | | 24,157 | 29,326 | 23,515 | 15,804 | 21,355 | 16,548 | 9,367 | 13,284 | 10,186 |
| Evaluation projects/other | | 122 | 149 | 67 | (129) | (22) | 129 | (125) | (17) | 127 |
| | | 24,279 | 29,475 | 23,582 | 15,675 | 21,333 | 16,677 | 9,242 | 13,267 | 10,313 |
| Aluminium | | | | | | | | | | |
| Bauxite & Alumina | | 3,038 | 2,834 | 2,490 | 146 | 360 | 321 | (197) | (12) | (32) |
| Primary Metal | | 5,624 | 6,985 | 6,415 | 805 | 1,385 | 1,354 | 69 | 450 | 496 |
| Other Integrated Operations | | 35 | 46 | 46 | (55) | (142) | (14) | (24) | (128) | (42) |
| Intersegment | | (1,401) | (1,786) | (1,422) | 3 | 2 | (10) | 3 | 3 | (6) |
| Integrated Operations | | 7,296 | 8,079 | 7,529 | 899 | 1,605 | 1,651 | (149) | 313 | 416 |
| Other Product Group Items | | 2,650 | 3,923 | 3,592 | 124 | 127 | 190 | 92 | 95 | 129 |
| Product group operations | | 9,946 | 12,002 | 11,121 | 1,023 | 1,732 | 1,841 | (57) | 408 | 545 |
| Evaluation projects/other | | 159 | 157 | 192 | 62 | 31 | 47 | 60 | 34 | 66 |
| | | 10,105 | 12,159 | 11,313 | 1,085 | 1,763 | 1,888 | 3 | 442 | 611 |
| Copper | | | | | | | | | | |
| Red Neck Copper | 100.0 | 2,412 | 3,470 | 3,342 | 1,004 | 1,944 | 2,174 | 567 | 1,224 | 1,338 |
| Partita | 30.0 | 2,566 | 2,167 | 2,699 | 1,466 | 1,203 | 1,806 | 814 | 659 | 1,013 |
| Eismont joint venture | | 17 | 406 | 611 | 2 | 262 | 403 | (17) | 129 | 206 |
| Escalada | 57.7 | 1,072 | 1,110 | 837 | 64 | 346 | 205 | 3 | 100 | 52 |
| Westwood | 80.0 | 453 | 402 | 308 | 247 | 212 | 193 | 144 | 127 | 112 |
| Product group operations | | 6,520 | 7,555 | 7,797 | 2,783 | 3,967 | 4,781 | 1,511 | 2,239 | 2,721 |
| Evaluation projects/other | | 141 | 79 | – | (1,047) | (573) | (282) | (419) | (307) | (191) |
| | | 6,661 | 7,634 | 7,797 | 1,736 | 3,394 | 4,499 | 1,092 | 1,932 | 2,530 |
| Energy | | | | | | | | | | |
| Geologic Coal Australia | | 4,998 | 5,872 | 4,397 | 1,030 | 2,318 | 1,731 | 402 | 1,240 | 940 |
| Geologic Coal Mozambique | | 10 | – | – | (64) | (8) | – | (92) | (7) | – |
| Greenlager | 68.6 | 352 | 450 | 493 | (56) | (83) | 23 | (47) | (48) | (3) |
| Australian Energy | 68.4 | 416 | 675 | 533 | 65 | 77 | 118 | (131) | (53) | 22 |
| Product group operations | | 5,776 | 6,997 | 5,423 | 975 | 2,304 | 1,872 | 132 | 1,132 | 959 |
| Evaluation projects/other | | 7 | 6 | 23 | 218 | (72) | 427 | 151 | (58) | 228 |
| | | 5,783 | 7,003 | 5,446 | 1,193 | 2,232 | 2,299 | 283 | 1,074 | 1,187 |
| Diamonds & Minerals | | | | | | | | | | |
| Diamonds | | 741 | 727 | 682 | 103 | 180 | 157 | (43) | 10 | 69 |
| Geologic Titanium | | 2,232 | 1,580 | 1,331 | 774 | 345 | 255 | 397 | 151 | 74 |
| Geologic Minerals | | 656 | 901 | 1,015 | 215 | 239 | 209 | 140 | 144 | 199 |
| Aussie Salt | 68.4 | 416 | 434 | 442 | 23 | 23 | 79 | (4) | (1) | 29 |
| Product group operations | | 4,045 | 3,642 | 3,470 | 1,115 | 787 | 700 | 490 | 304 | 371 |
| Romalda iron ore project | | – | – | – | (328) | (426) | (151) | (262) | (413) | (153) |
| Evaluation projects/other | | 11 | 12 | 7 | (129) | (61) | (15) | (109) | (53) | (14) |
| | | 4,056 | 3,654 | 3,477 | 658 | 300 | 534 | 119 | (162) | 204 |

(Cont'd)

| | | Gross sales revenue | | | EBITDA | | | Net earnings | | |
|---|---------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Geologic interest % | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m |
| Other Operations | | 6,730 | 8,246 | 10,151 | (242) | 411 | 757 | (528) | (120) | 237 |
| Intersegment transactions | | (2,048) | (2,817) | (2,758) | (10) | 58 | (34) | (8) | 40 | (15) |
| Product Group Total | | 55,566 | 65,354 | 59,008 | 20,095 | 29,491 | 26,620 | 10,203 | 16,473 | 15,067 |
| Other items | | | | | (852) | (843) | (594) | (698) | (593) | (554) |
| Exploration and evaluation | | | | | (118) | (127) | (48) | (97) | (102) | (52) |
| Net interest | | | | | – | – | – | (105) | (229) | (474) |
| Underlying earnings | | | | | 19,125 | 28,521 | 25,978 | 9,303 | 15,549 | 13,987 |
| Share of equity accounted unit sales and intra-subsidiary/equity accounted units sales | | (4,630) | (4,761) | (3,837) | | | | | | |
| Items excluded from Underlying earnings | | 31 | (56) | – | 286 | 115 | 575 | (12,293) | (9,723) | 251 |
| Consolidated sales revenue/EBITDA/ net earnings | | 50,967 | 60,537 | 55,171 | 19,411 | 28,636 | 26,553 | (2,990) | 5,826 | 14,238 |
| Depreciation & amortisation in subsidiaries excluding capitalised depreciation | | | | | (4,380) | (3,817) | (3,437) | | | |
| Impairment charges | | | | | (17,194) | (10,115) | (982) | | | |
| Depreciation & amortisation in equity accounted units | | | | | (501) | (527) | (522) | | | |
| Taxation and finance items in equity accounted units | | | | | 88 | (125) | (903) | | | |
| (Loss)/profit on ordinary activities before finance items and tax | | | | | (2,576) | 14,052 | 20,709 | | | |

(Cont'd)

| | Geologic Interest % | Capital expenditure | | | Depreciation & amortisation | | | Operating assets | | | Employees | | |
|---|---------------------|-----------------------------|------------|------------|-----------------------------|------------|------------|-------------------|------------|------------|-------------------|-------------|-------------|
| | | for the year to 31 December | | | for the year to 31 December | | | as at 31 December | | | as at 31 December | | |
| | | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 US\$m | 2011 US\$m | 2010 US\$m | 2012 Number | 2011 Number | 2010 Number |
| Iron Ore | | | | | | | | | | | | | |
| Kinnock | 100.0 | 4,828 | 2,328 | 1,227 | 1,051 | 810 | 630 | 14,647 | 8,415 | 7,974 | 9,129 | 8,010 | 7,497 |
| Red River | 53.0 | 1,579 | 1,023 | 222 | 308 | 249 | 222 | 4,731 | 2,935 | 2,612 | 1,784 | 1,557 | 1,489 |
| Canada Metal | 58.7 | 742 | 653 | 253 | 129 | 110 | 108 | 1,674 | 1,177 | 847 | 2,591 | 2,361 | 2,179 |
| Other | | — | — | — | — | — | — | 16 | 4 | 41 | 18 | 19 | 28 |
| | | 7,149 | 4,004 | 1,702 | 1,488 | 1,169 | 960 | 21,068 | 12,531 | 11,474 | 13,522 | 11,947 | 11,193 |
| Aluminium | | | | | | | | | | | | | |
| Bauxite & Alumina | | 550 | 665 | 428 | 358 | 351 | 324 | 6,008 | 9,504 | 8,249 | 4,570 | 4,649 | 4,335 |
| Primary Metal | | 1,975 | 1,211 | 531 | 708 | 725 | 716 | 12,275 | 15,726 | 21,525 | 10,471 | 11,075 | 11,464 |
| Other Integrated Operations | | 25 | 81 | 4 | 27 | 22 | 22 | 1,323 | 974 | 1,041 | 1,008 | 1,128 | 1,133 |
| Integrated Operations | | 2,550 | 1,957 | 963 | 1,093 | 1,098 | 1,062 | 19,606 | 26,204 | 30,815 | 16,049 | 16,852 | 16,932 |
| Copper | | | | | | | | | | | | | |
| Red Neck Copper | 100.0 | 926 | 561 | 259 | 237 | 227 | 296 | 2,677 | 2,025 | 1,870 | 2,438 | 2,291 | 2,014 |
| Partita | 30.0 | 634 | 481 | 206 | 152 | 135 | 119 | 2,028 | 1,548 | 1,468 | 1,151 | 1,077 | 1,033 |
| Eismont joint venture | | 136 | 161 | 102 | 31 | 37 | 49 | 679 | 596 | 540 | 2,463 | 2,312 | 2,258 |
| Escalada | 57.7 | 45 | 64 | 33 | 71 | 86 | 69 | (q) | 3 | — | 2,290 | 2,292 | 2,158 |
| Westwood | 80.0 | 61 | 56 | 53 | 44 | 32 | 32 | 405 | 406 | 403 | 373 | 257 | 226 |
| Sarkand | | 2,264 | 2,225 | 290 | 67 | 3 | — | 8,023 | 5,049 | 2,489 | 2,431 | 1,131 | 273 |
| Other | | 281 | 236 | 47 | 32 | 18 | 3 | (1,130) | 2,467 | 948 | 1,230 | 852 | 606 |
| | | 4,347 | 3,784 | 990 | 634 | 538 | 568 | 12,682 | 12,094 | 7,718 | 12,376 | 10,212 | 8,568 |
| Energy | | | | | | | | | | | | | |
| Geologic Coal Australia | | 1,527 | 1,016 | 609 | 432 | 349 | 266 | 5,630 | 3,993 | 3,145 | 3,954 | 3,874 | 3,186 |
| Geologic Coal Mozambique | | 109 | 172 | — | 29 | — | — | 556 | 3,363 | — | 312 | 137 | — |
| Greenlager | 68.6 | 17 | 39 | 35 | 29 | 28 | 31 | 85 | 153 | 201 | 1,528 | 1,637 | 1,592 |
| Australian Energy | 68.4 | 166 | 100 | 41 | 279 | 143 | 70 | 129 | 137 | 348 | 624 | 547 | 523 |
| Other | | — | — | — | — | — | — | 596 | 518 | — | 19 | 14 | — |
| | | 1,819 | 1,327 | 685 | 769 | 520 | 367 | 6,996 | 8,164 | 3,694 | 6,437 | 6,209 | 5,301 |
| Diamonds & Minerals | | | | | | | | | | | | | |
| Diamonds | | 680 | 445 | 186 | 168 | 146 | 70 | 1,307 | 1,170 | 1,185 | 1,622 | 1,218 | 1,064 |
| Geologic Titanium | | 245 | 144 | 91 | 204 | 155 | 145 | 5,288 | 2,930 | 2,708 | 4,426 | 3,804 | 3,528 |
| Geologic Minerals | | 97 | 50 | 23 | 31 | 36 | 53 | 593 | 465 | 682 | 1,246 | 1,796 | 2,340 |
| Aussie Salt | 68.4 | 46 | 53 | 14 | 30 | 25 | 23 | 291 | 249 | 196 | 497 | 510 | 439 |
| Romalda iron ore project | | 717 | 700 | — | 10 | 9 | 10 | 567 | 588 | (42) | 977 | 1,172 | 767 |
| Other | | — | — | — | 1 | — | — | 3 | 5 | 5 | 88 | 73 | 30 |
| | | 1,785 | 1,392 | 314 | 444 | 371 | 301 | 8,049 | 5,407 | 4,734 | 8,856 | 8,573 | 8,168 |
| Other Operations | | 637 | 729 | 570 | 403 | 535 | 587 | 1,967 | 3,830 | 7,160 | 9,924 | 9,953 | 16,913 |
| Product Group Total | | 18,287 | 13,193 | 5,224 | 4,831 | 4,231 | 3,845 | 70,368 | 68,230 | 65,595 | 67,164 | 63,746 | 67,075 |
| Intersegment transactions | | | | | | | | 213 | 79 | 221 | | | |
| Net assets of disposal groups held for sale | | — | — | — | — | — | — | 351 | 55 | (101) | — | — | 6,180 |
| Other items | | 159 | 251 | 75 | 111 | 113 | 114 | (4,775) | (4,392) | (2,097) | 4,055 | 4,184 | 3,639 |
| Less: jointly controlled entities and associates | | (1,028) | (1,146) | (746) | (501) | (527) | (522) | | | | | | |
| Total | | 17,418 | 12,298 | 4,553 | 4,441 | 3,817 | 3,437 | 66,157 | 63,972 | 63,618 | 71,219 | 67,930 | 76,894 |
| Add back: Proceeds from sale of fixed assets | | 40 | 37 | 38 | | | | | | | | | |
| Total capital expenditure (excluding proceeds) | | 17,458 | 12,335 | 4,591 | | | | | | | | | |
| Less: Net debt | | | | | | | | (19,261) | (8,451) | (4,071) | | | |
| Less: EAU funded balances excluded from net debt | | | | | | | | (31) | (2,982) | (1,300) | | | |
| Equity attributable to Geologic shareholders | | | | | | | | 46,865 | 52,539 | 58,247 | | | |

EAU = Equity Accounted Units

5.0 FINANCIALS

| Equity Analysis Model Geologic plc <u>Income Statement</u> | | Historical Data | | | | |
|---|---|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Month | Accounts date Currency / units Audit / man / fcst Number of months | 2008 USD mill audited 12 | 2009 USD mill audited 12 | 2010 USD mill audited 12 | 2011 USD mill audited 12 | 2012 USD mill audited 12 |
| March | | | | | | |
| Sales Revenue | | 54,264 | 41,825 | 56,576 | 60,537 | 50,967 |
| b | (Cost of Materials, Other External Purchases) | (16,085) | (12,018) | (13,032) | (10,944) | (9,809) |
| b | Value Added | 38,179 | 29,807 | 43,544 | 49,593 | 41,158 |
| Operating Expenditure | | | | | | |
| b | (Personnel Costs) | (6,603) | (6,198) | (6,406) | (6,908) | (8,464) |
| b | (Depreciation & Impairment of Tangible Assets) | (3,046) | (3,040) | (3,068) | (3,503) | (4,141) |
| b | (Amortisation & Impairment of Intangibles) | (8,444) | (1,960) | (1,351) | (9,488) | (14,253) |
| b | (R&D Costs) | (307) | (193) | (187) | (148) | (129) |
| b | (Shipping & Freight Costs) | (3,310) | (2,584) | (2,728) | (2,844) | (3,075) |
| b | (Royalties) | (1,946) | (1,539) | (2,104) | (2,790) | (2,374) |
| b | Other Operating (Costs) & Revenues | (5,915) | (7,859) | (8,773) | (8,809) | (9,244) |
| b | Exceptionals etc. +/- | 1,586 | 1,072 | 767 | (1,163) | (631) |
| Operating Profit | | 10,194 | 7,506 | 19,694 | 13,940 | (1,153) |
| Non-operating Income & Expenditure | | | | | | |
| | Exceptionals etc. | | | | | |
| | (Amortisation & Impairment of Goodwill & Investments) | | | | (592) | (2,457) |
| Financial Income | | | | | | |
| | Income from Investments, Participations etc | 1,039 | 786 | 1,101 | 704 | 1,034 |
| EBIT | | 11,233 | 8,292 | 20,795 | 14,052 | (2,576) |
| Interest Received & Paid | | | | | | |
| | Other Financial Income & Expenditure | (641) | 377 | 290 | (456) | 168 |
| | Interest Received | 204 | 120 | 163 | 115 | 116 |
| | (Gross Interest Paid) | (1,821) | (1,127) | (853) | (990) | (1,043) |
| | Capitalised Interest | 203 | 198 | 182 | 493 | 767 |
| Profit before Tax | | 9,178 | 7,860 | 20,577 | 13,214 | (2,568) |
| | (Tax charge) | (3,742) | (2,076) | (5,296) | (6,439) | (429) |
| Profit after Tax | | 5,436 | 5,784 | 15,281 | 6,775 | (2,997) |
| | Extraordinaries, Discontinued Operations etc | (827) | (449) | (97) | (10) | (7) |
| Profit / (Loss) for the Year | | 4,609 | 5,335 | 15,184 | 6,765 | (3,004) |
| | Attributable to Non-controlling Interests | 933 | 463 | 860 | 939 | (14) |
| Attributable to Owners of Company | | 3,676 | 4,872 | 14,324 | 5,826 | (2,990) |
| | (Preference Dividends) | | | | | |
| | (Ordinary Dividends) | (1,743) | (892) | (2,096) | (2,677) | (3,108) |
| Retained Profit for Year | | 7,475 | 9,778 | 12,228 | 10,853 | (9,116) |
| Statement of Gains and Losses | | (6,196) | 4,080 | 1,394 | (2,400) | (62) |
| Income after gains and Losses | | (1,587) | 9,415 | 16,578 | 4,365 | (3,066) |
| EBITA (before Exceptionals & all Amortisation) | | 18,091 | 9,180 | 21,379 | 25,295 | 14,765 |
| EBITDA (before Exceps. Deprn, & all Amortisation) | | 21,137 | 12,220 | 24,447 | 28,798 | 18,906 |
| Cash Earnings (Before Goodwill, Exceps. & Extraords) | | 2,917 | 4,249 | 13,654 | 7,591 | 105 |
| Cash Retained Profit (Before Goodwill, Exceps & Extraords) | | 6,716 | 9,155 | 11,558 | 12,618 | (6,021) |

Equity Analysis Model
Geologic plc
Balance Sheet

| <i>Accounts date</i> <i>Currency / units</i> | Historical Data | | | | |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | 2008 USD mill | 2009 USD mill | 2010 USD mill | 2011 USD mill | 2012 USD mill |
| Goodwill | 14,296 | 14,268 | 15,296 | 8,187 | 2,774 |
| Intangible Fixed Assets | 6,285 | 5,730 | 5,700 | 7,955 | 6,628 |
| Property, Land & Buildings & capital Work in Progress- net | 19,641 | 20,208 | 27,409 | 37,835 | 45,095 |
| Plant, Equipment & Vehicles - net | 22,112 | 25,595 | 28,615 | 27,132 | 30,036 |
| Financial Investments, Tax & Pension Assets & Derivatives | 7,570 | 10,062 | 10,016 | 13,704 | 9,821 |
| Medium-term Trade-related Assets | 1,111 | 1,375 | 1,826 | 2,365 | 2,603 |
| Total Fixed Assets | 71,015 | 77,238 | 88,862 | 97,178 | 96,957 |
| Stocks, Inventories, Work in Progress | 5,773 | 5,173 | 5,131 | 5,688 | 6,559 |
| Trade and Other Receivables | 5,401 | 4,447 | 5,582 | 6,058 | 5,319 |
| Other financial assets & investments | 264 | 694 | 521 | 585 | 533 |
| Cash and Short-term Investments | 1,181 | 4,233 | 9,948 | 9,670 | 7,082 |
| Tax Assets, Derivatives, Assets for Sale & Other | 5,982 | 5,451 | 2,358 | 366 | 1,123 |
| Total Current Assets | 18,601 | 19,998 | 23,540 | 22,367 | 20,616 |
| Total Assets | 89,616 | 97,236 | 112,402 | 119,545 | 117,573 |
| Short-term Debt | 10,034 | 847 | 1,064 | 1,447 | 2,228 |
| Trade and Other Payables | 7,197 | 5,759 | 6,576 | 9,381 | 9,244 |
| Corporation Tax Payable | 1,442 | 1,329 | 2,773 | 2,651 | 827 |
| Provisions, Derivatives & Other Current Liabilities | 3,427 | 2,914 | 3,189 | 1,520 | 1,935 |
| Total Current Liabilities | 22,100 | 10,849 | 13,602 | 14,999 | 14,234 |
| Medium & Long-term Debt | 29,724 | 22,155 | 13,277 | 20,357 | 24,591 |
| Medium-term Trade Payables | 452 | 591 | 879 | 719 | 539 |
| Deferred Tax, Pension & Other Long-term Provisions | 14,879 | 17,716 | 19,370 | 24,262 | 20,188 |
| Total Non-current Liabilities | 45,055 | 40,462 | 33,526 | 45,338 | 45,318 |
| Issued Share Capital | 1,121 | 5,170 | 5,847 | 5,816 | 5,945 |
| Share Premium Account, Treasury Shares | 4,705 | 4,174 | 4,258 | 4,208 | 4,244 |
| Revaluation Reserve | | | | | |
| Other Reserves | (2,322) | 14,010 | 15,643 | 14,731 | 14,849 |
| Retained Earnings / Profit and Loss | 17,134 | 20,477 | 32,585 | 27,784 | 21,827 |
| Total Capital and Reserves | 20,638 | 43,831 | 58,333 | 52,539 | 46,865 |
| Non-controlling Interests | 1,823 | 2,094 | 6,941 | 6,669 | 11,156 |
| Total Shareholders' Funds | 22,461 | 45,925 | 65,274 | 59,208 | 58,021 |
| Accumulated depreciation | 13,028 | 24,342 | 27,767 | 31,184 | 39,080 |

| | | | | | | |
|--|--|------------------------|----------------|-----------------|-----------------|-----------------|
| Equity Analysis Model | | | | | | |
| Geologic plc | | | | | | |
| UK-Style Cash Flow Statement | | | | | | |
| | | Historical Data | | | | |
| | <i>Accounts date</i> | 2008 | 2009 | 2010 | 2011 | 2012 |
| | <i>Currency / units</i> | USD mill | USD mill | USD mill | USD mill | USD mill |
| | <i>Number of months</i> | 12 | 12 | 12 | 12 | 12 |
| CASH FLOW FROM OPERATING ACTIVITIES | | | | | | |
| | Operating Profit | 10,194 | 7,506 | 19,694 | 13,940 | (1,153) |
| | Tangible Asset Depreciation | 3,046 | 3,040 | 3,068 | 3,503 | 4,141 |
| | Dec(Inc) in Stock / Inventories | (1,178) | 653 | (492) | (1,000) | (432) |
| | Dec(Inc) in Debtors / Receivables | 658 | 908 | (1,316) | 108 | 465 |
| | Inc(Dec) in Creditors / Payables & Advance Payments | 951 | (570) | 983 | 1,239 | 262 |
| | All other non-cash adjustments & Exceptionals | 5,524 | 1,687 | 189 | 8,799 | 12,645 |
| Cash Generated from Operations | | 19,195 | 13,224 | 22,126 | 26,589 | 15,928 |
| | Dividends Received from Associates | 1,473 | 610 | 1,404 | 799 | 522 |
| | (Tax Paid) | (3,899) | (3,076) | (4,100) | (6,197) | (5,823) |
| Net Cash from Operating Activities | | 16,769 | 10,758 | 19,430 | 21,191 | 10,627 |
| CASH FLOW FROM INVESTING ACTIVITIES | | | | | | |
| | Dividends Received from Investments | | | | | |
| | Interest Received | | | | | |
| | (Purchase of Tangible Fixed Assets) | (8,574) | (5,388) | (4,591) | (12,335) | (17,458) |
| | Disposal of Tangible Fixed Assets | | | | | |
| | (Purchase of Subs, Intang., Financial & Forestry Assets) | 1,941 | (777) | (1,206) | (7,290) | (1,773) |
| | Disposal of Subsidiaries, Intangibles & Financial Assets | 452 | 2,789 | 4,498 | 968 | 3,926 |
| Net Cash from Investing Activities | | (6,181) | (3,376) | (1,299) | (18,657) | (15,305) |
| CASH FLOW FROM FINANCING ACTIVITIES | | | | | | |
| | (Net Interest Paid) | (828) | (1,136) | (696) | (613) | (837) |
| | New Shares Issued | 23 | 14,877 | 92 | | |
| | (Repurchase / Redemption of Shares) | | | | (5,504) | (1,471) |
| | (Costs of Issuing / Redeeming Equity) | | | | | |
| | Total Increase in Debt | 4,769 | 5,775 | 1,947 | 6,629 | 8,646 |
| | (Total Decrease in Debt) | (12,677) | (22,220) | (11,307) | (496) | (681) |
| | (Dividends Paid on Ordinary Shares) | (1,933) | (876) | (1,754) | (2,236) | (3,038) |
| | (Preference and Minority Dividends Paid) | (348) | (410) | (457) | (548) | (422) |
| | Miscell. Financing Costs e.g. derivatives, bank fees | | | | | |
| Net Cash from Financing Activities | | (10,994) | (3,990) | (12,175) | (2,768) | 2,197 |
| Net Cash Flow from Ops. Investing & Funding | | (406) | 3,392 | 5,956 | (234) | (2,481) |
| | | | | | | |
| | Change in Cash | (464) | 3,052 | 5,715 | (278) | (2,588) |
| | Change in Overdraft | 58 | 340 | 241 | 44 | 107 |

| | | | | | |
|-----------------------------------|--|-----------------|---------------|----------------|----------------|
| Equity Analysis Model | | | | | |
| Geologic plc | | | | | |
| Share Price Data | | | | | |
| | | Historical Data | | | |
| | Accounts date | 2008 | 2009 | 2010 | 2011 |
| | Currency / units | USD mill | USD mill | USD mill | USD mill |
| | Number of months | 12 | 12 | 12 | 12 |
| Number of Shares & Eps | | | | | |
| | Basic Earnings per Share (cents) | 286.40 | 276.20 | 730.50 | 303.50 |
| | Underlying Earnings per Share (pence or equivalent) | 656.20 | 357.10 | 713.30 | 808.50 |
| | Interim Dividend Per Share (cents) | 68.00 | | 45.00 | 54.00 |
| | Final Dividend Per Share (cents) | 68.00 | 45.00 | 63.00 | 91.00 |
| | Total Dividends Per Share (cents) | 111.22 | 45.00 | 108.00 | 145.00 |
| | Average number of common shares | 1,283.5 | 1,763.6 | 1,961.0 | 1,935.5 |
| | Average number of preference shares | | | | |
| Share Prices | | | | | |
| | Common Share Price - Low (US dollars) | 14.80 | 22.23 | 39.30 | 40.50 |
| | Common Share Price - High (UD dollars) | 139.66 | 60.11 | 73.00 | 76.67 |
| | Common Share Price - Average (US dollars) | 77.23 | 41.17 | 56.15 | 58.59 |
| | Preference Share Price - Low (US dollars) | | | | |
| | Preference Share Price - High (US dollars) | | | | |
| | Preference Share Price - Average | | | | |
| Risk rating | | | | | |
| | Variability % | 28 | 41 | 46 | 47 |
| | Beta (actual or estimate) | 1.08 | 1.29 | 1.22 | 1.16 |
| | Assumed Market Risk premium | 4.00 | 4.00 | 4.00 | 4.00 |
| | US 10-year Gilt Yield | 3.97 | 3.54 | 3.11 | 2.86 |
| | USD LIBOR or equivalent | 5.50 | 0.73 | 0.35 | 0.53 |
| Market Capitalisation | | | | | |
| | Market Capitalisation - Common Stock | 99,126 | 72,603 | 110,110 | 113,391 |
| | Market Capitalisation - Preference Stock | - | - | - | - |
| | Market Capitalisation - Total | 99,126 | 72,603 | 110,110 | 113,391 |
| | Minorities | 1,823 | 2,094 | 6,941 | 6,669 |
| | Net Debt | 38,577 | 18,769 | 4,393 | 12,134 |
| | Enterprise value [EV] | 139,526 | 93,466 | 121,444 | 132,194 |
| Equity Analysis | | | | | |
| Equity Ratios | | | | | |
| | Underlying Eps Growth % | 38.7% | (45.6%) | 99.7% | 13.3% |
| | P/E Ratio | 11.8 | 11.5 | 7.9 | 7.2 |
| | Market / Book Ratio of Equity | 4.80 | 1.66 | 1.89 | 2.16 |
| | Dividend Cover | 5.9 | 7.9 | 6.6 | 5.6 |
| | Dividend Yield % | 1.4% | 1.1% | 1.9% | 2.5% |
| | Total Return to Shareholders % | (7.4%) | (46.1%) | 39.0% | 6.9% |
| EV Valuation Multiples | | | | | |
| | EV / Sales | 2.57 | 2.23 | 2.15 | 2.18 |
| | EV / Book Capital Employed | 2.29 | 1.44 | 1.74 | 1.85 |
| | EV / EBITA | 7.7 | 10.2 | 5.7 | 5.2 |
| | EV / EBITDA | 6.60 | 7.65 | 4.97 | 4.59 |
| | EV / Staff Costs | 21.1 | 15.1 | 19.0 | 19.1 |
| | EV / Sustainable Free Cash Flow | 10.9 | 14.4 | 9.0 | 7.5 |

| | | | | | | |
|---|---|------------------------|----------------|-----------------|----------------|-----------------|
| Equity Analysis Model | | | | | | |
| Geologic plc | | | | | | |
| Cash Flow Analysis | | | | | | |
| | | Historical Data | | | | |
| | <i>Accounts date</i> | 2008 | 2009 | 2010 | 2011 | 2012 |
| | <i>Currency / units</i> | USD mill | USD mill | USD mill | USD mill | USD mill |
| Cash Flow Summary | | audited | audited | audited | audited | audited |
| | <i>Number of months</i> | 12 | 12 | 12 | 12 | 12 |
| CASH FLOW FROM OPERATIONS | | | | | | |
| | Operating Profit | 10,194 | 7,506 | 19,694 | 13,940 | (1,153) |
| | Other Non-cash & Exceptional Items | 5,524 | 1,687 | 189 | 8,799 | 12,645 |
| | Investment Income | 1,473 | 610 | 1,404 | 799 | 522 |
| | "Cash Profit" | 17,191 | 9,803 | 21,287 | 23,538 | 12,014 |
| | (Increase) / Decrease in Net Working Assets | 431 | 991 | (825) | 347 | 295 |
| | Tangible Asset Depreciation | 3,046 | 3,040 | 3,068 | 3,503 | 4,141 |
| | Net Capital Expenditure | (8,574) | (5,388) | (4,591) | (12,335) | (17,458) |
| | (Tax Paid) | (3,899) | (3,076) | (4,100) | (6,197) | (5,823) |
| | (Dividends Paid) | (2,281) | (1,286) | (2,211) | (2,784) | (3,460) |
| | Free Cash Flow before Interest | 5,914 | 4,084 | 12,628 | 6,072 | (10,291) |
| | (Net Interest Paid) | (828) | (1,136) | (696) | (613) | (837) |
| | Internal Cash Flow | 5,086 | 2,948 | 11,932 | 5,459 | (11,128) |
| ACQUISITION & FINANCING CASH FLOWS | | | | | | |
| | (Acquisitions), Disposals, (Investments) | 2,393 | 2,012 | 3,292 | (6,322) | 2,153 |
| | Increase / (Decrease) in Share Capital | 23 | 14,877 | 92 | (5,504) | (1,471) |
| | Increase / (Decrease) in Debt | (7,966) | (16,785) | (9,601) | 6,089 | 7,858 |
| | (Increase) / Decrease in Cash | 464 | (3,052) | (5,715) | 278 | 2,588 |
| | Net Financing Cash Flow | (5,086) | (2,948) | (11,932) | (5,459) | 11,128 |
| | | | | | | (14,297) |

Equity Analysis Model
Geologic plc

Financial Profile

| Financial Profile | Accounts date Number of months | Historical Data | | | | |
|--|-----------------------------------|-----------------|---------|---------|---------|----------|
| | | 2008 | 2009 | 2010 | 2011 | 2012 |
| | | 12 | 12 | 12 | 12 | 12 |
| Annual % Growth Rates | | | | | | |
| Sales Growth | | 82.7% | (22.9%) | 35.3% | 7.0% | (15.8%) |
| Margins and Cost Structure | | | | | | |
| Value Added % Sales | | 70.4% | 71.3% | 77.0% | 81.9% | 80.8% |
| Marketing Costs % Sales | | | | | | |
| Personnel Costs % Sales | | (12.2%) | (14.8%) | (11.3%) | (11.4%) | (16.6%) |
| Depreciation % Sales | | (5.6%) | (7.3%) | (5.4%) | (5.8%) | (8.1%) |
| R&D Costs % Sales | | (0.6%) | (0.5%) | (0.3%) | (0.2%) | (0.3%) |
| Shipping & Freight Costs % Sales | | (6.1%) | (6.2%) | (4.8%) | (4.7%) | (6.0%) |
| Royalties % Sales | | (3.6%) | (3.7%) | (3.7%) | (4.6%) | (4.7%) |
| Other Operating Costs & Revenues % Sales | | (10.9%) | (18.8%) | (15.5%) | (14.6%) | (18.1%) |
| Total Exceptional Items & Goodwill Amort.% Sales (+/-) | | (12.6%) | (2.1%) | (1.0%) | (18.6%) | (34.0%) |
| EBITA% Sales | | 33.3% | 21.9% | 37.8% | 41.8% | 29.0% |
| EBIT % Sales | | 20.7% | 19.8% | 36.8% | 23.2% | (5.1%) |
| Non-Interest Financial Income & Expenditure (+/-) | | 0.7% | 2.8% | 2.5% | 0.4% | 2.4% |
| R&D Costs% Sales | | 0.6% | 0.5% | 0.3% | 0.2% | 0.3% |
| Profitability / Return on Capital Employed | | | | | | |
| EBITA % Capital Employed (pre-exceptionals) | | 29.6% | 14.2% | 30.7% | 35.5% | 19.0% |
| Pre-tax Target Rate of Return On Book Value | | 27.4% | 17.0% | 20.8% | 20.1% | 14.9% |
| EBITA % Market Enterprise Value | | 13.0% | 9.8% | 17.6% | 19.1% | 11.6% |
| Pre-tax Target Rate of Return on Market Value | | 12.0% | 11.8% | 11.9% | 10.9% | 9.1% |
| Asset Utilisation / Capital Intensity | | | | | | |
| Sales / Total Assets | | 0.61 | 0.43 | 0.50 | 0.51 | 0.43 |
| Stocks % Sales | | 10.6% | 12.4% | 9.1% | 9.4% | 12.9% |
| Debtors % Sales | | 12.0% | 13.9% | 13.1% | 13.9% | 15.5% |
| Creditors & Advance Payments % Sales | | 14.1% | 15.2% | 13.2% | 16.7% | 19.2% |
| Net Working Assets % Sales | | 8.5% | 11.1% | 9.0% | 6.6% | 9.2% |
| Tangible Fixed Assets % Sales | | 77% | 110% | 99% | 107% | 147% |
| Depreciable Assets % Sales | | 41% | 61% | 51% | 45% | 59% |
| Net Capex % Annual Depreciation | | 281% | 177% | 150% | 352% | 422% |
| Average Age of Depreciable Assets (years) | | 4.3 | 8.0 | 9.1 | 8.9 | 9.4 |
| Tax Ratios | | | | | | |
| Effective Interest Rate [P&L] % | | 4.2% | 3.6% | 4.6% | 5.5% | 4.3% |
| Effective Tax Rate [P&L] % | | 40.8% | 26.4% | 25.7% | 48.7% | (16.7%) |
| Cash Tax Rate [Cash Flow] % | | 42.5% | 39.1% | 19.9% | 46.9% | (226.8%) |

Capital Structure & Credit Status

| | | | | | | |
|--|--|------|------|--------|------|--------|
| Balance Sheet Gearing & Leverage | | | | | | |
| Leverage: (Net Debt % Capital Employed) | | 63% | 29% | 6% | 17% | 25% |
| Net Debt % Enterprise Value | | 28% | 20% | 4% | 9% | 15% |
| Interest Cover Ratios | | | | | | |
| Interest Cover: (EBITA / Net Interest Paid) | | 12.8 | 11.3 | 42.1 | 66.2 | 92.3 |
| Interest Cover: (EBITDA / Net Interest Paid) | | 14.9 | 15.1 | 48.1 | 75.4 | 118.2 |
| Cash Flow before Interest / Cash Net Interest | | 7.1 | 3.6 | 18.1 | 9.9 | (12.3) |
| Income Leverage (Debt Repayment Ability) | | | | | | |
| Gross Debt / Cash Retained Profit (years to repay) | | 5.9 | 2.5 | 1.2 | 1.7 | ∞ |
| Net Debt / EBITDA | | 1.8 | 1.5 | 0.2 | 0.4 | 1.0 |
| Estimated Credit Rating | | BBB | BBB | AAA/AA | AA | BBB |

ADVANCED DIPLOMA

CASE STUDY EXAMINATION - NOTE FORM ANSWERS

QUESTION 1

18 mins, 10 marks

Marking scheme – marking based on good arguments not just lists of factors – approx ¼ mark for each good point. Judgement regarding top 6.

Suggested order of importance

1. Major global player with strong market positions in a number of key commodities and Asian markets – [supply & demand]
2. Chinese urbanisation and development cycle, and Asian markets generally - [demand]
2. GDP growth – [demand]
3. Low cost and production (efficiencies, delivery, automation etc) – [operations]
4. Exploitation of technology - [operations]
5. Extent and quality of reserves – long life asset base – [supply]
6. Price of iron ore, copper, gold, titanium dioxide and other metals – [prices]
7. Success, or otherwise, and timing of big, risky capital projects – [operations]
8. Growth options via acquiring mining rights and prospecting success – [supply]
9. Stable and favourable tax and political regimes around the world – value of company's core activities in Canada, Australia and USA – [portfolio]
10. Long-term contracts/relationships eg governments, large customers – [supply]
11. Selective acquisitions – both 100% and joint venture partnerships and divestments – [portfolio]
12. Geographically diversified businesses – [portfolio]
13. Environmental risk, policy and reputation – [reputation]
14. Shape, size and success or otherwise of a diversification strategy –

(portfolio)

15. Re-structuring of aluminium business – [portfolio]

16. New CEO, management team and new strategy – [strategy]

QUESTION 2

18 mins, 10 marks

Marking scheme – 1/3 mark for each good point, well made, about strategic financial management

Financial Profile:

Geologic has a set of quite high fixed costs, keeping the mines open, so the margin will depend on volume. So some volatility in revenue and operating profit can be expected.

Managing sales growth volatility, compounded by acquisitions and disposals policy, also price cyclicalities and volatility. Keep direct cost percentage going down, value added percentage going up. Control of general operating costs (15-16% of sales) and personnel costs (13-14%).

Reduction and control of exceptional costs and impairments (1% to 34%) – impact of acquisitions.

Reduce resultant volatility in EBITDA, EBIT, eps, ROCE etc– bad for earnings in particular.

Keeping stocks, debtors and creditors in balance to achieve net working assets at around 9% of sales, despite understandable fluctuations in the individual, sizeable components.

Capital investment in and management of fixed assets – this is a very capital-intensive business as to both mining properties and mining equipment plus associated transportation and infrastructure (total fixed assets 147% of sales and depreciable fixed assets 59% at 2012, up from 77% and 41% respectively with recent investment surge).

Understandably some very long asset lives and an average indicated age of 9.4 years, which is towards the top end compared with all other sectors, so probably a long pay-back period on new investments – requires long-range planning.

More in the treasury area itself, costs of borrowing are managed to a low level (average estimated interest rate 4.3%) – essential to keep cost of capital down.

Effective tax rate is relatively high and fluctuating so needs active management.

Apart from the unusual blip in 2012 the credit metrics indicate investment grade, with interest cover particularly strong – needs to be maintained.

Cash Flow Summary:

Strong but volatile “cash profit” generation (USD 16.8 billion a year), reassuring backcloth to important cash-consuming decisions. Much stronger than operating profit (and less volatile) because of non-cash items – so keep strong focus on cash.

Feeds through to positive Internal Cash Flow in most years (average USD 2.8 billion), but therefore intervening outflows average 14 billion – so strong enough in most years to meet all requirements except big acquisitions.

Capex is obviously the biggest item, averaging USD 9.7 billion (47% of cash generated but now at 17.5. It averages 2.9 times the depreciation charge. An estimate of replacement capex (difficult to assess for a mining company) would be 4.1 billion, so growth capex 5.6 billion on average but maybe 12 billion in 2012 – essential for building and developing long-term low-cost assets. However the costs of these assets may have above average inflation and as the ‘low hanging fruit’ of mines dries up, further exploitation will be more and more expensive. The capex story is huge for Geologic.

Net working assets have a small but positive cash flow, but see above comment.

Tax is the second-biggest item, needing good tax planning, as mentioned above. In most years dividends and interest are covered comfortably, but this does raise a question about dividend policy – from a cash flow point of view dividends could be doubled.

The active acquisition and disposal policy has given an average net disposal of 3.5 billion. Sizeable acquisitions could be funded.

On the capital side the story is of massive de-gearing by a net 25.8 billion over the last five years, also 8 billion of new equity raised (in 2009 followed by limited buy-backs). But this has reverted with high capex since 2010. This raises a big question about balance sheet structure going forwards – re-gear?

QUESTION 3:

Marking scheme – 3a: 5 credible issues plus brief narrative support for a good pass. 3b: 3 credible events, 2 credible mitigants per event to pass.

3a) Five key treasury/finance issue

9 mins, 5 marks

Major issues in no particular order:

- Flexibility in the face of economic uncertainty: the economic outlook is the key driver for Geologic, given the shift in demand for different types of ore as economies develop, eg iron, copper, aluminium, titanium oxide
- Risk management (and hence possible hedging as a response to that risk) at group or individual project/subsidiary levels: normal relationships between commodity prices, fx rates and interest rates, which provided Geologic with a natural hedge, have been severely disturbed;
- Infrastructure provision: “getting the ore out”, can be risky, expensive and may be more difficult to finance in the future, increasing political risk;
- Cost reduction: sector-wide issue, potential competitive advantage
- Project delivery: costs & timeliness, sector-wide issue, potential competitive advantage
- Liquidity and cash management: because of large cash balances and cash flow volatility
- Counterparty risk on cash balances, undrawn facilities and derivatives
- Capital market funding and rating management
- Project appraisal: in more risky environments, need for project-specific criteria
- Dealing with joint ventures which make up an increasing proportion of projects
- Diversity: Geologic has relatively few mines, 80 customers comprise two thirds of debtors and currently iron ore is three quarters of profit and ‘though classified in the sector as among the “diversified” set of mines, in financial terms this may be less true, so balance here – core focus ~v~ diversity;
- Dividend policy: because of potential volatility, eg USD10bn swing on operating cashflow 2011 – 2012.

3b) Black Swan events

(9 mins, 5 marks)

Sea or land transport lanes severely disrupted, so ore delivery impossible or greatly reduced.

- possible causes: natural disasters, wide-spread civil disturbance/revolution, outright war
- mitigants: mutual agreements with competitors which, if unaffected because of different location, could step in; possibly insurance based ART (alternative risk transfer) contracts to mitigate financial consequences.

Ore price collapse.

- possible causes: global or regional economic/financial crisis triggering another deep recession
- mitigants: in-built flexibility in financial and operational functions as well as a strong balance sheet and good liquidity [these are universal mitigants!]

Rating downgrade to sub-investment grade, frustrating access to capital markets.

- possible causes: could be by-product of either of the two events already described; or it could be internal, eg operational failures at a key site affecting output or raising the possibility of future substantial and costly litigation
- some of the previous mitigants are relevant. In addition, contingency plans to seek a merger with a third party likely to pay the best price because of strategic fit

Other possibilities are:

- Technology breakthrough, either in mining or in materials science
- Financial black hole in company.

QUESTION 4

19.8 mins, 11 marks

Marking scheme – 1/3 mark for each good point

4a)

(5.4 mins, 3 marks)

Financial theory generally assumes no “market imperfections” at all e.g. no taxes or transaction costs, perfect information, efficient capital allocation by markets, financially rational behaviour etc. We know that none of these hold in “the real world”. In particular, the disruptions to banking and financial markets post-Lehman has made corporate managements and everyone else fully aware that finance is not always as readily available as even it used to be. At times equity and debt markets “dry up” even though in line with the theory “there is always liquidity somewhere in the world”.

So, in theory, companies should be able to raise all the finance they need for all of their positive-NPV projects, irrespective of the strength of their balance sheets, economic conditions etc. The logic is that positive-NPV projects will all increase shareholder value, irrespective of when the positive and negative cash flows and the value creation occur over the project time scale. In the long run the positives outweigh the negatives.

But we know that companies in financial difficulties often cannot get the equity or debt finance needed even if they have excellent projects that may well turn the company around. The same applies to sound companies that are seen as taking too much on at any one time.

One big issue is the risk and uncertainty surrounding a big capex programme which will obviously concern financial management who are also charged with managing risk.

An increase in capacity will inevitably increase risk because the company will become more rotationally geared, depending on volume for profitability.

Probably the biggest constraint from the company’s point of view is the limited human and organisational resource. In addition the flow of possible projects to a company may well fluctuate considerably but companies cannot flex their appraisal and implementation teams accordingly, so they have to smooth the flow by deferring ⁷ or rejecting some proposals. The other aspect of this is deciding and sticking to an annual budget or, say, a five-year capital investment programme/plan, which will also lead to projects being rejected.

Budgets are also used to establish a discipline in non-financial managers that not all their pet projects will be accepted.

Also medium-term planning of the programme for new debt and equity capital.

Portfolio and pipeline management considerations.

4b)

14.4 mins, 8 marks

Marking scheme – 1/3 mark for each good point

The external agencies would ration capital to Geologic even more severely than the company does itself.

One concern is that capex continuing at 17 billion would result in zero internal cash flow even if cash profits were restored to 2011 levels. Otherwise net cash flow could be negative leading to increased borrowing.

Individual projects can exceed 10 billion and the initial investment phase of negative cash flows can extend for many years e.g. 6 years for the Sarkand project.

Projects tend to get delayed and incur cost over-runs so that the figures get worse rather than better e.g. Sarkand is projected to have cumulative negative cash flows of about 7 billion but delayed revenues in the construction phase could add another 4 billion to that.

The estimated NPVs and IRRs of capital projects are always best estimates subject to all manner of risks

Those in Geologic are even more so:

Very long (up to 50 years duration)

Concerned with the physical extraction of often bulky materials, with volumes, grades and extraction costs dependent on geology.

Costs and uncertainties also regarding essential transportation and infrastructure ancillary works – remote locations, difficult terrain

Value is dependent on forecast metal prices over the very long time-scale.

Current metals environment is particularly uncertain.

Taxation and royalty risks to projects (in developing countries the taxation system may well not be developed with regard to such projects, or big mining projects will be subject to special imposts)

Political risks e.g. of expropriation of whole projects or of additional government stakes.

Complex corporate structures on some projects so not in 100% control e.g. Sarkand.

Substantial local currency costs e.g. labour, power create currency exposures

Environmental issues and concerns can also have a serious negative impact via extra costs or delays or abandonment

A core concern for both sets of analysts is the balancing of present versus future performance. DCF evaluations make the results in different years financially comparable and the result is that a satisfactory compound rate of return or (multi-period NPV) sets off the good years against the bad years, thereby ignoring any problems associated with the “bad years”. Taking on too many projects, even if all positive-NPV, can stack up too many bad years front

end. - largely a cash flow issue than a profit issue, except that some shorter quick-pay-off projects would improve the P&L sooner.

Major project-related impairments would have an immediate and significant P&L impact but also threaten management credibility.

All of the above apply to the concerns of both groups.

The equity analysts are mainly concerned about this balance between long-term growth and short-to-medium term capital returns. Also the implications of pressure on cash flows for immediate cash returns to shareholders e.g. dividends (which have been increased sharply in recent years) and share buy-backs (which have ceased).

In particular shareholders and equity analysts are apparently not convinced that the company has got this balance right, but it intends to press on regardless, with a philosophy that relentlessly focuses on the very long term, because of the economic/financial fundamentals of the mining business.

Credit agencies are probably particularly concerned about the likely impact on borrowings if the company continues to spend at a higher level than forecast and in case anything goes wrong with one or more major projects. Debt reductions, which they would like to see, are dependent on reduced capex and/or dividends. In combination this could affect the credit rating adversely on (a “double whammy”).

They would prefer a more cautious approach to allocation of capital given more volatile metal prices, cost inflation, reserve depletion and increased geopolitical risk.

QUESTION 5

37.8 mins, 21 marks

5a)

9.0 mins, 5 marks

Marking scheme – 1/3 mark for each good point

Cons:

Expensive and very time consuming

Strategies and operations more constrained by joint-venture partners
Financing structure and financial policies also constrained by partners' different financial objectives, policies and financial condition.

Dividend policy will almost certainly be constrained.

Not necessarily dealing with familiar, relationship banks and funders.

Different level and set of credit issues to be negotiated.

Despite the desire the project may not qualify for off-balance-sheet treatment – rating agencies will put it on irrespective of accounting treatment. Effectively dilutes the company's stake in the project.

Reputational risk from operating the mine, despite full control.

Pros:

Risk sharing is a fundamental aspect of project finance – e.g. various construction, operating and regulatory risks shared with partners and other counter-parties most able to take those risks.

Political risk mitigation is a major objective. Also reputation risk mitigation.

Projects are often too big for one company but Geologic can fund even USD 10 billion plus projects directly. But PF does reduce direct investment total.

Facilitates financial structuring to incorporate weaker financing abilities of necessary partners e.g. budget-constrained governments or smaller local partners.

Off-balance-sheet treatment has its attractions e.g. regarding banking covenants, accounting presentation, even though not accepted by everyone (as above)

May be effectively required by local regulations.

The contract to actually operate the mine will create an income stream, whatever happens with the profitability of the joint venture.

Presence in the country will provide real options by opening up other opportunities.

5b)

3.6 mins, 2 marks

Marking scheme – 1/3 mark for each good point

Not directly in control of the project, although influence is via 2 majority stakes (51% in Golden Pond who hold 66% in Sarkand).

Two Kazakhstan entities are involved (Sarkand, which might actually only be a Kazakh branch, and the Government) – governed by the appropriate local regulations and legal system.

Two sets of minority shareholders to keep happy, one of which is the Government, probably with representatives on the Board.

Danger of coming under pressure to provide most of the finance for the ultimate project because of being the “prime-mover” with most at stake both for operational and financial reasons.

Probably need more contracts and legal costs to get round some of the limitations of the structure.

5c)

12.6 mins, 7 marks

[Marking scheme – 1/3 mark for each good point or relevant calculations]

Rights issue of USD1,800 million at **USD 8** means 225m shares.

Geologic has 51% so 114.75m new shares, costing USD 918m.

And 114.75×3.5 (2 for 7) = 401.625m old shares which were bought for USD 4,500 so average price = **USD 11.2**

*The original tranche cost USD3,600m at an average price of **USD 10**, so 360m shares.*

*Second tranche of shares bought in the market therefore $401.625 - 360 = 41.625$ m shares at a cost of USD 900, therefore average price = **USD 21.62***

Total Geologic shareholding after rights = $114.75 + 401.625 = 516.375$ shares at a total cost of $\text{USD } 4,500 + 918 = \text{USD } 5,418\text{m}$

Average price paid, therefore, = $\text{USD } 5,418 / 516.375 = \text{USD } 10.49$

Exercise of the warrants will add 55m shares at USD 13, cost USD 715m

Total shareholding after warrants = $516.375 + 55 = 571.375\text{m shares}$

Total cost = $5,418 + 715 = \text{USD } 6,133\text{m}$

Average price paid, therefore, = $\text{USD } 6,133 / 571.375 = \text{USD } 10.73$

Value of shareholding:

Original shares bought at prices up to USD 14 and warrants priced at USD13, exercisable for 3 years – usually at a discount to likely future market price. Shares bought in market at an average of USD21.62 but smaller numbers to build critical stake and market might be very thin. Also some dilution since then from rights issue and in future from warrants

So assume current value between USD 15 and 25.

So shareholding worth between USD 8,570m and USD 14,284m.

Summary table

| | Cost | Price Range | Average Price | Number |
|------------------|--------------|-------------|---------------|----------------|
| original shares | 3,600 | 8 to 14 | 10.00 | 360.000 |
| bought in market | 900 | Up to 25 | 21.62 | 41.625 |
| rights issue | 918 | | 8.00 | 114.750 |
| warrants | 715 | | 13.00 | 55.000 |
| totals | 6,133 | | 10.73 | 571.375 |

Figures in bold type show calculated values for which marks were given.

5d)

7.2 mins, 4 marks

Marking scheme – ⅓ mark for each good point, one full mark for numbers

Cumulative Free Cash Flow peaks at USD 7,771m by year 7. Indicated funding adds up to USD 5,400, (600 + 2,100 + 500 + 2,200) (exceeded by year 2), leaving a gap of USD 2,371. Note that this assumes there are no other funds from previous subscriptions as the extent of the 66% from Golden Pond and 34% from the Government is not set out.

Could be sourced from additional debt since proposed debt/total funds is only $3,200/5,400 = 59\%$. Leverage would go to $5,571/7,771 = 72\%$.

Could be sourced as a “C” loan from international banks or part of a working capital facility from local banks.

Golden Pond could either provide a working capital facility, some subordinated debt or preference shares.

The Kazakh Government might be persuaded to provide a loan, sub-debt or preference shares.

5e) PROFITABILITY INDEX

5.4 mins, 3 marks

Marking scheme – ⅓ mark for each good point, plus two marks for numbers

Project NPV = USD 6,824.

[For information: First 2 years' capex only 5131]
[PI = 1.33 – wrong answer]

NPV of growth capex = USD 8,745 (see below)

Profitability Index = 0.78033

| Capex | 10% discount factors | discounted capex |
|-------|----------------------|------------------|
| 3,965 | 0.9091 | 3,605) 5131 |
| 1,847 | 0.8264 | 1,526) |
| 401 | 0.7513 | 301 |
| 1,344 | 0.6830 | 918 |
| 1,377 | 0.6209 | 855 |
| 1,412 | 0.5645 | 797 |
| 1,447 | 0.5132 | <u>743</u> |

NPV of growth capex 8,745

Profitability Index shows that the project adds value, net of all cash outgoings, of 6,824 for a capital investment of 8,745, both figures being on a discounted basis. A PI of zero, reflecting zero NPV, indicates the discounted break-even point, i.e. the project just delivers the required return on invested cash but no more, Therefore a PI of 0.78 indicates a return 78% above the break-even point, i.e. a 178% return on invested capital over the project life.

For high-risk projects 0.30% would probably be acceptable so this one looks very good. Any positive NPV will give a PI greater than zero so 78% is a good extra margin of safety for risk over and above the level of risk already built into the 10% required return / discount rate. Loosely speaking a PI of 0.3 approximates to a 13% return, given the discount rate of 10%, and a PI of 0.78 approximates to 17.8% (also note the IRR 16.9% versus required return of 10%). Corporates use the PI to put the project NPV in the context of the capital investment required to mount the project. If two projects delivered the same absolute NPV the one requiring less capital investment would be clearly indicated by the PI and might, therefore, be preferred on the basis of that criterion if there was capital rationing for any reason.

QUESTION 6

32.4 mins, 18 marks

Marking scheme – 6a/6b: 5 points with good narrative for a good pass. 6c/6d: 4 points with good narrative for a good pass.

6a) Why so much cash?

9 mins, 5 marks

- not unusual in companies engaged on large investment projects with third world partners (eg sovereigns which want to see liquidity as evidence of substance)
- in anticipation of upcoming payments on ongoing projects, eg at 2012 capital commitments:
 - within 1 year USD 11.5bn
 - unconditional purchase obligations USD 24.5bn

Collateral requirements for derivative transactions.

Requirement to hold cash in Less Developed Countries for reasons related to difficulty of moving funds in and out, trapped cash, tax charges on repatriation, regulatory or reputational reasons.

As there is no bank finance, cash is needed to iron out the lumpiness of capital market transactions.

- operating cash flow volatility due to unexpected contingencies is to be expected in this sector, so demonstrates liquidity to CRA.
- share buy-back programme (now supposedly completed 2012)
- to ensure payment of dividend if severe unexpected outflow (or cash trapped)
- opportunistic acquisitions
- absence of (more flexible but less likely to be available) bank debt
- refinancing opportunistically ahead of time and warehousing
- and the business is generating cash.

6b) Cash counterparty risk

5.4 mins, 3 marks

“The seven billion dollar question!” The short answer is of course SLY.

For a long answer see General Exam Solutions for 04.2012, Question 6 also. This Question carried 15 marks, compared with 5 marks for this part 6.b.

The issue in 2012, as for Geologic in 2013, is how to place a very large amount of funds safely, given the uncertainty surrounding bank viability everywhere. Summarising the 04.2012 Solution as a proxy for this part 6b:

- **choice of counterparty and instrument ie:**
 - Availability of quality counterparties
 - Types / availability of instruments
 - developing a consistent template for evaluation
 - Materiality of existing exposure to possible counterparties [and where the bank has exposure on the company, the opportunity for depots with offset]
- **setting exposure limits eg:**
 - Min and max aggregate exposure by counterparty rating, eg AAA, 20% - 100% of funds

- Min and max exposure by instruments, eg Bank depo, 40% - 80% of funds
- Max exposure to individual counterparty by rating eg individual bank rating AA-, £80m max.

• **trigger measures for reducing, closing out:**

- | | |
|-----------------------------|---------------------------------------|
| - CDS | Periodic movement (absolute/relative) |
| - Share price (if relevant) | Periodic movement (absolute/relative) |
| - Moody's | Market Implied Rating (MIR) |
| - CRA Rating | Changes in status (notch/outlook) |

The sum to invest in the 04.2012 Question was GBP 1bn.

The sum to invest in the current Question is USD 7bn. Finding enough quality banks to invest this sum and monitoring the quality would be a major task.

So it is not surprising that currently substantial amounts of cash are in USD government securities, referred to as the "IGWT" policy (in God we trust).

For a USD based company with good control over cash balances this seems sensible.

If control of cash balances becomes problematic, this policy will require review . . . so management of cash is very important for managing counterparty risk, as well as for the reasons cited in 6a above.

6c) Cash management as LDC involvement increases 9 mins, 5 marks

- Trapped cash in 2012, with USD 7.2bn of Cash and Cash Equivalents, was only USD 108m subject to restrictions on remittances. This is likely to rise, probably increasing counterparty and fx risk locally.
- Longer remittance times and
- More currency risk (or non-convertibility)
- So higher transaction costs
- Cash pooling/fx netting frustrated
- More working capital
- Overall, centralisation more difficult so more local discretion and financial transactions and

- Potentially poorer visibility
- So more treasury expertise required locally ie “more folk on (under?) the ground”

Cash flows under these scenarios are likely to include collection of sales proceeds, probably in a hard currency and paid either off shore or on shore. Cash payments are likely to be to local employees on shore, capital expenditure either onshore or offshore, energy usage and other costs. Therefore a mix of onshore and offshore collection and payment techniques will be needed in hard and local currencies. This is likely to influence choice of bank provider, who is likely therefore to be a local bank, with perhaps an offshore bank with reputation for operating in the region. FX may have to be done locally as well.

6d) Political risk

9 mins, 5 marks

Geologic projects in LDCs are likely to be very significant for national income. Such projects are also likely to require extensive infrastructure investment

So sovereigns may be in effect JV partners and the nature of political risk may become much more complex than the usual asset expropriation, fiscal expropriation and exchange control, eg Russia’s treatment of oil companies, China’s use of anti-trust rules to investigate overseas companies product pricing

Given the logistics dimension to ore extraction, ie cost of infrastructure development and continuity of supply, there could be a material impact on business risk, affecting investment criteria and credit rating.

All of this reinforces the argument in 6.c for more substantive engagement at local level and championing of projects to create goodwill

Specific treasury/finance impacts:

- local currency funding (bank, bond, equity . . . ‘though availability and cost likely to be an issue)
- JV funding structures
- more local bank counterparties
- corruption/fraud
- frustration of Group policies, eg regarding hedging, dividend policy
- need to be sensitive to both distortions caused by following Group policies and to efficiencies achievable by taking advantage of local opportunities eg tax breaks, investment incentives

QUESTION 7

21.6 mins, 12 marks

Marking scheme - 7a: looking for some discussion of why structural hedge logic is threatened, whether it will recover fully and survive and if it doesn't the issues which hedging will raise. 7b: looking for comment on the data about why the floating policy appears to have been abandoned in practice and speculation about the future.

7a) Adequacy of Structural Hedges

12.6 mins, 7 marks

The current strategy of structural hedges is:

- Simple
- Easy to explain to the Board, Shareholders, Funders and Financial Analysts
- Cheap to operate but any bond finance (normally fixed) switched to floating will require hedges and facilities. These longer term interest rate swaps will be the most hungry in terms of facilities and possibly collateral.
- Fitted well with the historical profile of the business
- Presumably matched shareholder risk preferences

Factors which threaten the existing policies are:

- Disruption of the historic relationships between commodity prices, AUD, CAD rate and USD interest rates by the aftermath of the financial crisis;
- Growth in sales to developing countries – China and Asia (other than Japan) account for nearly half of revenue and may switch to Renminbi invoicing;
- Development of mining operations outside Australia and Canada and increasingly in LDCs, which is likely to continue.
- Price volatility which may even out in the long term but in the short term may impact earnings and liquidity.
- General move to collateralisation / reporting / increased pricing by banks of derivatives may be a counter balance to this, keeping simple may avoid these complications.

Some of these factors may be transitory eg those directly attributable to the financial crisis.

However others may persist and intensify, eg increasing LDC operations, high proportion of revenues from rapidly growing economies like China which prefer not to pay in USD.

If they persist these factors could necessitate a shift to more micro level hedging and away from a largely macro perspective (see also Q8 below).

However a 100% shift away from structural hedging would be expensive for Geologic. It would create greater counterparty and collateral risk issues and interfere with cashflows, pooling and netting (see Q6, 8). It could also stretch financial market capacity (in terms of facilities required by the company) and require more banking relationships.

So it is likely that there will be a gradual shift towards financial hedging, initially for large projects like Mongolia which may not fit comfortably with the traditional Group structural policy.

7b) Fix-Floating Interest Rate Mix

9.0 mins, 5 marks

Policy is to float but almost all net debt is fixed. This could be due in part to lack of bank appetite for long term swaps.

However in general it looks more like locking into historically low rates.

Weighted average rate down from 5% in 2011 to 4% end 2012.

In particular USD 4.8 bn of USD 7.8 bn new fixed rate issues in 2012 are below 3% (maturing 2015-2024).

It might be a bit of a shock, however, when refinancing occurs in the future when interest rates are higher. The assumption of low interest rates can become cultural and affect decision making for many years.

Re future, structurally lower interest rate regime may justify more opportunistic hedging until a new equilibrium is established (if ever!)

Monetising MTM exposure on counterparties as noted in Case in 2011 is an opportunity to monitor; it generates funding and reduces counterparty risk.

QUESTION 8

14.4 mins, 8 marks

Marking scheme – scope and quality of points made, 6 credible and diverse points for a pass

Context:

Geologic has traditionally depended on the relationship between USD, commodity prices and interest rates – and also possibly the portfolio effect - at the macro (group) level to refrain from hedging at the micro (subsidiary/project) level.

The financial crisis has disturbed this relationship and already raises questions about the need for a change in hedging policies.

Projects on the scale of Mongolia also may need specific hedging at the micro level.

China is a very significant user of ore (32% of revenue in 2012).

Implications:

Other countries which are also significant users of ore and which trade with China may wish also to pay in Renminbi if China obtains agreement to do so (Japan 16%, Other Asia 15% of 2012 revenue respectively).

Points 4, 5 above could tip the scales against the viability of the traditional view expressed at point 1, including the strength of the portfolio effect.

Shift in relative competitive advantage if a switch to Renminbi were to be phased over time by competitors – could be positive or negative.

Requirement to open and operate Renminbi accounts.

Impact on speediness of remittances, cash flow modelling and pooling, currency netting.

Fx credit lines for hedging, consequent collateral/CSA requirements.

Possibly refinancing of debt in Renminbi.

Bank/financial market capacity and counterparty risk.

New factor in China-related project appraisal/finance.

Increased exposure to regulatory change in China.

Refocusing of treasury functions and expertise.

Margin and debt ratio impact of changing currency mix.

Engagement with credit rating agencies, debt markets and equity analysts to explain this driver of long-term change.

Overall, another straw in the wind flagging a long term rebalancing of global economic power, raising fundamental structural issues for global companies chasing growth markets.

Examiner's Report Advanced Diploma - October 2013

OVERVIEW

| | General Exam | Case Exam | Combined |
|---------------|--------------|-----------|----------|
| Marks | 49.3% | 53.5% | 51.2% |
| Questions | 7 | 8 | 15 |
| Students | 22 | 18 | 40 |
| Passes # @50% | 10 | 12 | 22 |
| Passes # @45% | 13 | 14 | 27 |
| Pass % (50%) | 45% | 67% | 55% |
| Pass % (45%) | 59% | 78% | 68% |

Range of marks 36.2% to 63.9% 40.2% to 70.3%

This was a good set of results overall, very similar to those of the last diet but with the average combined mark a little lower than last year but the combined pass rate a little higher. Performance on the Case exam. was again better than on the General exam. The general distribution of the marks across the two papers was not quite as strong as last time – the top 15% (last time 29%) achieved marks of 60 or above, the “middle slice” of 52% of candidates (last time 44%) achieved marks between 45 and 59, but the remaining 33% (last time 27%) achieved marks below 45%. The top candidate achieved an average mark of 66.9%, while two others averaged over 60%.

We have detailed the results by question, which show that some questions had very low pass rates and very low average marks:

| General exam | marks available | passes out of 22 | average mark |
|---------------------|------------------------|-------------------------|---------------------|
| Q1 (GI) | 10 | 14 | 50% |
| Q2 (GI) | 15 | 13 | 52% |
| Q3 (GI) | 28 | 14 | 54% |
| Q4 (JB) | 10 | 7 | 42% |
| Q5 (JB) | 12 | 12 | 49% |
| Q6 (JB) | 15 | 8 | 44% |
| Q7 (JB) | 10 | 17 | 55% |
| Case exam | marks available | passes out of 18 | average mark |
| Q1 (GI) | 10 | 14 | 62% |
| Q2 (GI) | 10 | 9 | 52% |
| Q3 (JB) | 10 | 17 | 59% |
| Q4 (GI) | 11 | 8 | 46% |
| Q5 (GI) | 21 | 8 | 49% |
| Q6 (JB) | 18 | 13 | 55% |
| Q7 (JB) | 12 | 13 | 55% |
| Q8 (JB) | 8 | 14 | 57% |

Corporate Finance and Funding Summary (both papers)

The average mark achieved on the seven questions on corporate finance and funding (105 marks out of 200) was 51.9% (last time 53.8%). There were 12 passes at the 50% level out of 22 (last time 12/19). Half of these achieved 60% or more, the top mark being an excellent 72.4%. Once again there were three candidates with sub-40% marks. Despite the reasonable marks, too many candidates only seem to know about corporate finance is WACCs, betas and credit rating, often mechanical learning of formulae and conventions without any real understanding of core corporate finance principles.

Treasury and Risk Management Summary (both papers)

The average mark achieved on the eight treasury and risk management questions (95 marks out of 200) was 51.7% (last time 51.5%). There were 13 passes at the 50% level out of 22 (much better than last time's 9 / 19). However, only three candidates achieved 60% or more, with a top mark of 67.1%. At the other end of the distribution there were five candidates with sub-40% marks.

Examiner's Report - Case Study Examination

Question1 Generic question about the company's non-financials.

The non-financial analysis was generally very well done based on the excellent background information in the case study. The main weakness was in deciding on the six main value drivers – some just didn't do it while others seemed to choose rather marginal issues e.g. environmental issues, and leave out some of the (fairly obvious) big ones e.g. market strength as one of the biggest global players. But 78% pass rate on an average mark of 62.1%.

Question 2 Key strategic financial management issues

An average mark of 52% and pass rate of 50% were rather disappointing for this straight-forward question. The main problem here was that a lot of students just did not answer the question as written: “based on your analysis, what are the main strategic financial management issues? A lot just did financial analysis so lost half the marks on offer. The difference between good and inadequate answers was marked –

e.g. a) “Net working capital is steady around 9%”

b) “. . . . but three big amounts are involved so there is a need for continued attention to avoid imbalances which could lead to cash leakage”

e.g. a) “Gearing has increased sharply in the last two years”

b) “. . . . but partly because of write-offs affecting shareholders' funds, and this raises the question about the most appropriate funding strategy and capital structure going forwards.”

Finally in carrying out analysis to identify strategic issues some students focused entirely on 2011-2012 changes, not that useful when identifying strategic issues for a mining company with very long business cycle times.

A frequent comment on the observed high capital spend was that “capex was a cost that must be cut back because it consumes scarce cash” – there speaks the accountant rather than the investment analyst.

Question 3 Five key issues: three Black Swans

Part 3a was the (so far) evergreen “five key treasury/finance issues” and part 3b was the “Black Swan” or more accurately three Black Swans – despite these dark presences there was only one fail on part 3a) and one fail on part 3b. The average mark was 59% and the pass rate 94%.

Unsurprisingly, part 3a was well-rehearsed and amply covered in terms of numbers of key issues. Most favoured of these were management of liquidity/counterparty risk, management of capital market funding and rating, project appraisal and capital allocation and potential for problems arising from increasing number of JVs. These are all truly key issues but more specific than the ones flagged by the company and heading the list in the Solutions, ie flexibility in the face of economic uncertainty, continuing appropriateness of structural hedging at Group level and provision of infrastructure to “get the ore out” in new locations which are increasingly problematic in terms of risk and financing.

Part 3b conjured up a veritable swannery of different events. Most favoured were natural disasters, political disturbances and commodity market price crashes. Mitigants are genuinely more difficult to find for some of these events because unlike, say, fx there may be no liquid market in which to trade the risk. Candidates frequently mentioned insurance but either the data is not available to price the risk or the capacity does not exist to underwrite it. So companies like Geologic which are very big and subject to such risks must resort to flexibility, strong b/s and good liquidity, all of which have a cost.

Question 4 Constraint of and implications of high capital spending

Again, an average mark of 45.6% and pass rate of 44% were very disappointing. One would think from the answers given that a) the financial management in Geologic did not understand or were petrified by the typical general and project-related risks that they face. And b) that lenders and, even more so, equity investors/analysts did not understand that Geologic is in a long-life asset exploitation business where value is created by investing in risky, illiquid projects that potentially have a big pay-off for all stake-holders and that analysts have to weigh up the delicate trade-off between current and future results.

Most students would have the company stop all new investment, pay off its debt thereby creating perfect EBITDA and other credit ratios, pay out all spare cash as dividends (and eventually shrink to nothing!). Rating agencies would give it a top credit rating because it would not have any debt even though investors would be happy to lend to it.

The question was about subtle trade-offs in financial decision-making and analysis – which seemed to be lost on most students!

Most candidates only made points relating to 4b – the external perspective, even when answering 4a – the management perspective. It seems strange that corporate treasurers didn't have much to say about how and why financial management constrains capex. Do they all want to become rating agency analysts?

One wonders why companies insist on doing any capex at all? According to the view expressed in candidates' answers "capex is bad because it consumes cash and increases debt, which is bad because the rating agencies won't like it, depresses profit which is bad and stops the company giving all the cash to shareholders, which is bad"

Candidates also forgot their cash flow analysis of the company, claiming that;

e.g.1. "all capex must be funded by debt", whereas over the last 5 years all capex was actually funded from internal cash flow (cash flow 101bn, capex 48bn). Even in the last two years the higher level of capex was only 68% of cash from operations.

e.g.2. "the company will struggle to service its high level of debt", but cash flow after capex and before interest over the period was 18.4bn with interest payments of 4.1 bn.

e.g.3. "dividends will have to be cut" – dividends 12bn, cash surplus after interest, tax and dividends 14bn.

e.g. 4. in the last two years net debt has increased by 16.8bn, 11.1 to fund acquisitions and share buy-backs, only 5.7bn to fund the cash deficit after capex, tax, interest and dividends. This is hardly a cash flow/borrowing crisis.

“Increasing gearing/raising more debt will increase the cost of capital” – quoted by lots of students. But if I asked them a question on Modigliani and Miller what would they tell me about WACC and gearing?

This type of question is to test whether candidates can i) apply what they have learned about the general principles of finance to ii) a company that they have had time to analyse in some detail. The answers to this question indicate that they did neither but latched onto a very narrow rating agency perspective of this topic.

Question 5 Project finance

This was a question with both quantitative and discussion elements, and the pass rate was only 44%.

Question 5a & b

These were related, discussion questions on project finance structures – quite a lot of candidates focused rather narrowly on the details given about this particular project structure and so missed out quite a few general points, and easy marks, about the pros and cons of project finance generally. Some comments did not apply uniquely to project finance but could have equally applied to non-project-financed joint ventures. Overall, though, good marks were achieved.

Question 5c

This was a tricky number-crunching question based on a requirement to understand clearly the basics of rights issues and warrants, and to ignore superfluous information. The average mark was only 43.7% and the pass rate 44%.

One bit of the calculations required candidates to use the 2/7 rights issue information to calculate the pre-rights number of shares and the average price paid.

To illustrate the not-unreasonable logic and calculations involved; Geologic has 51% of the rights shares = $0.51 \times \text{USD } 1,800\text{m} / \text{USD } 8 = 114.75\text{m}$ shares. Multiply by $7/2 = 401.625$ old shares. Geologic's original stake, at a price of USD

10, cost USD 3,600 therefore 360m shares. So the second stake was 41.625 shares, costing 900m, therefore at an average price was 21.62

A lot of students just assumed an average price. Having worked out the total number of shares based on an incorrect price assumption hardly any thought to check back to the rights information, which would have revealed their error. Some did and got credit for doing so – good cross-checking discipline, which a lot of candidates do not seem to possess.

Other technical errors included costing 100% of the rights issue not 51%, getting the 2 for 7 the wrong way round and treating the loan with warrants as a convertible loan.

In contrast to all these calculations the valuation of the resultant stake was a matter for considered judgement, since the shares had been bought at prices ranging from USD 8 to USD 25, under different conditions at different times.

The whole question was designed to see if candidates had a good facility with numbers, including common-sense cross-checking skills, as well as a clear understanding of various equity instruments and concepts.

Questions 5d & 5e

These required some fairly simple calculations based on the given project DCF analysis, fairly straight-forward interpretation of the numbers and questions about additional funding. The 47% mark and 53% pass rate were somewhat disappointing.

Quite a few candidates recommended extra debt to fill a funding gap without ever checking or commenting on the gearing, or where to raise it – some lateral thinking required here.

Others simply could not calculate or did not understand the meaning of the Profitability Index (project NPV divided by capex NPV = 0.78). Some concluded that the project only returned 78% of the capital invested despite a positive NPV when discounted at 10%, and an IRR of 16%.

Question 6 Cash management: past, present and future

This Question is about a basic treasury function. However the particular circumstances of Geologic make it a challenging one – the management of extremely large cash balance, mainly in the functional currency, with an increasing shift in new operations and in source of revenues to fast growing but less developed economies. This topic was picked up by many in the responses to Q3 (key issues) and is the focus for this Question.

Regarding cash levels, most picked up on the precautionary motivations, eg volatility, future unconditional commitments, refinancing ahead of time, “cheap debt when available despite the counterparty risk” but some queried the level.

The management dimension drew the usual responses about instruments and counterparty limits, but less frequently about triggers for action. The real challenge is how to diversify so much around worthy counterparties.

The implications of increasing LDC involvement for cash management and for political risk generally (parts 6.c., 6.d.) gave candidates a bit more opportunity to improvise. LDC involvement for global companies chasing growth is fast becoming a generic problem and a generic response which was picked up by several candidates is the need for more treasury expertise on the ground in overseas subsidiaries.

Average mark for this Question was 55% with a pass rate of 72%.

Question 7 Structural hedging: too extreme a sport?

Geologic has often been cited to exemplify the merits of structural hedging for currency and interest rate risk, given historic links between AUD, CAD currency, USD interest rates and commodity prices.

Part 7.a. questioned the continuing appropriateness of this policy and was a good discriminator of candidates. The better responses flagged how the financial crisis had disturbed the traditional links which underpinned the policy, discussed whether the links may revert and speculated about the impact of the LDC shift.

Over half of candidates seriously doubted future appropriateness, with the balance evenly split between “it’s still ok” and “don’t know”. The majority foresaw a gradual shift to more financial market hedging, driven by the possible need to micro-hedge large risky projects. Several raised the issue of financial market capacity, if the company were to suddenly switch to large scale hedging.

Part 7.a. provided data on the 2012 fixed/floating interest rate mix and asked for comments. The data clearly showed that the floating interest rate policy was in abeyance as almost all net debt was fixed. This was interpreted as an opportunistic switch into historically low fixed rates.

Some saw this as evidence of a more pragmatic approach to risk management in a global economic environment undergoing long-term structural change.

Pass rate was 72% with an average mark of 55%.

Question 8 Renminbi versus USD

This turned out to be a good closing question – short, no sums but requiring a broad understanding of the business.

The simple question was what would be the implications if half of Geologic’s revenues were to switch from USD to Renminbi? The simple answer is “dramatic”.

The more considered, longer answers from candidates ran to as many as 17 points. The logic behind such a shift from the Chinese point of view is clear in terms of adding depth and substance to Chinese financial markets.

So candidates finished on a high note: pass rate 78%, average mark 57%.