DARDEN
BUSINESS PUBLISHING
UNIVERSITY of VIRGINIA

UV5630
Rev. Jul. 14, 2016

# VALE SA

Headquartered in Brazil but with a global presence, Vale SA was the world's largest producer of iron ore and second-largest producer of nickel. The company had continued growing rapidly despite the global economic downturn that had begun in 2007 and, by April 2010, was in need of (U.S. dollars) USD1.0 billion of additional capital. This issue was intended to support organic growth, particularly with respect to investments in its fertilizer business. Historically, Vale issued bonds in U.S. dollars, but the conditions in global capital markets suggested that the firm should consider borrowing in other currencies. In particular, the company was considering an eight-year bond that could be priced close to par at a coupon rate of 4.375% in euros, 5.475% in British pounds, or 5.240% in U.S. dollars.

Early 2010 was a good time for companies to issue debt if they were able. Central banks across the globe had been keeping interest rates at record lows for an extended period to support economic recovery, and this, in turn, would lower the real cost of borrowing. Other market conditions favored Vale and suggested an issue denominated in euros or British pounds to take advantage of interest in Vale credit from investors in Europe and Great Britain, respectively. First, companies in emerging markets were viewed favorably since their economies had recovered more quickly than developed economies, and investors therefore viewed them as more financially sound. This was particularly true of Latin America. Second, the market had little interest in issues by European or British companies. In fact, investors had abandoned European assets in general due to concerns about the European economy, and this had resulted in a depreciation of the euro against major currencies. Similarly, a high level of UK debt relative to the British pound combined with political uncertainty around the parliamentary elections had depressed interest in British assets.

Given the high cost of local-currency borrowing in Brazil and the fact that many of the commodities it sold were priced in U.S. dollars, Vale had traditionally looked to U.S. dollar debt markets.[1] Certainly, going global with its financing was the right thing to do. Still, at the time, it also seemed that markets other than the United States might look attractive.

[1] The Brazilian government benchmark overnight rate had averaged close to 14% over the prior five years and, though declining recently, was still close to 11%.

This case was prepared by Associate Professor Marc Lipson with the assistance of Vahid Gholampour (MBA '12). It was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. 

## Vale SA

Vale was founded by the Brazilian government in 1974 and privatized in 1997. A focus on mining became Vale's prevailing strategy after its privatization. The firm sold its steel and wood pulp businesses between 2000 and 2007. Vale acquired several iron ore manufacturing companies during that period and gained control of 85% of Brazil's 300 million tons of annual iron ore production by 2007. The company also invested in the iron transportation infrastructure: Vale owned three major railway concessions, 800 locomotives, and more than 35,000 freight cars and either owned or operated six ports.[2]

Much of the Vale mining business was concentrated on iron and in Brazil. To mitigate the impact of iron ore price changes on its revenue and net income and to diversify globally, Vale launched a diversification program in 2001. The share of nonferrous metals, including aluminum, alumina, copper, cobalt, gold, and nickel, increased as a fraction of Vale's revenue from 7% in 2000 to 30.7% in 2009. Global acquisitions included Canico Resource Corp. (a Canadian nickel company), AMCI Holdings Inc. (an Australian coal-mining company), and Inco Limited (Canada's second-largest mining company). The acquisition of Inco for USD18.9 billion was the largest acquisition ever made by a Brazilian company. By 2009, over half of Vale's revenue (56.9%) came from Asia; Brazil, the Americas excluding Brazil, and Europe accounted for 15.3%, 8.7%, and 16.9% of the revenue, respectively.

The firm experienced strong growth from 2005 to 2009. Revenue increased at a compound annual growth rate (CAGR) of 17.5%, and earnings per share rose at a CAGR of 7%. For the same period, capital spending averaged 360% of depreciation, and dividends increased at a CAGR of 18.9%. Vale's consolidated financial results are presented in **Exhibit 1** and **Exhibit 2**.

## Global Markets

The financial crisis that sparked the global recession starting in 2007 had only slightly abated by the start of 2010. The weak global economy had forced central banks to loosen their monetary policy and governments to use stimulus plans to prevent further slowdown in major economies around the world. As a result, several European countries were dealing with huge fiscal deficits and high levels of debt relative to GDP.[3] The fiscal situation in emerging markets was exactly the opposite. Most emerging markets were running trade surpluses and had average debt-to-GDP ratios of 30%. Those markets were expected to grow faster than industrial countries' markets should the global economy recover. In particular, Latin American economies were well positioned for growth, and some sovereign debts traded at rates favorable to highly rated European corporates.[4]

---

[2] Vale SEC 20-F filings, 2000–09.

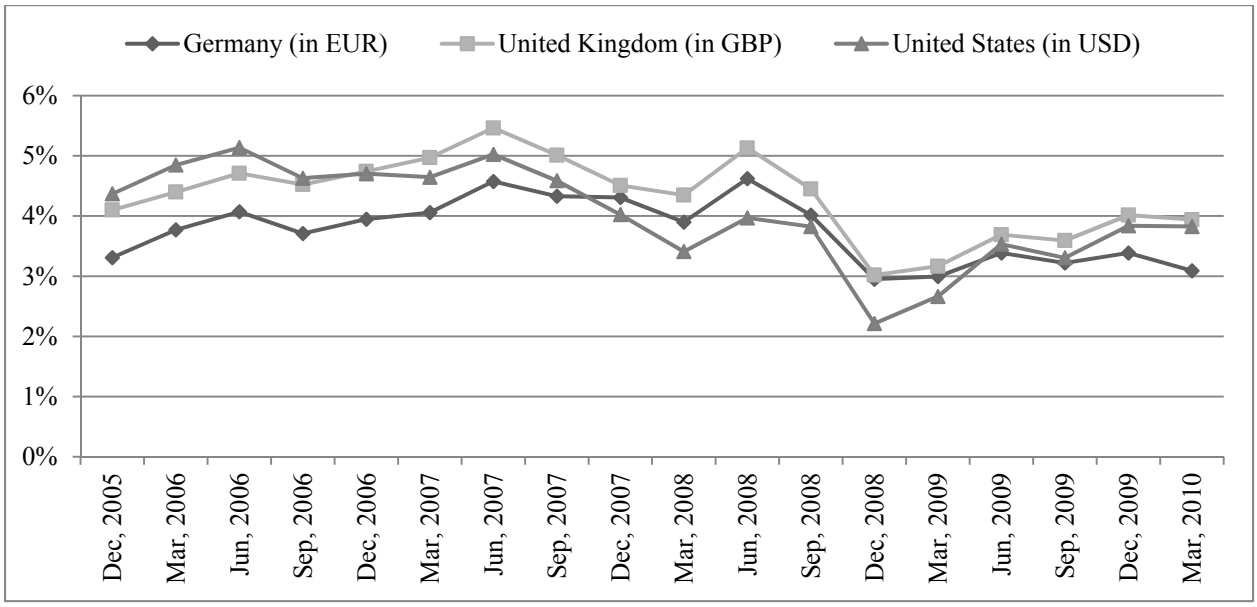
[3] Riva Froymovich, "PIMCO Embraces Emerging-Market Corporate Debt," *Wall Street Journal*, April 26, 2010.

[4] Sid Verma, "Latin American Debt: Backed by Popular Demand," *Emerging Markets*, March 23, 2010, http://www.emergingmarkets.org (accessed Oct. 26, 2010).

Emerging economies were also appealing to investors, since they provided geographic diversification and offered high return in a very low interest rate environment. In fact, investors were selling highly rated sovereign debt and buying riskier emerging-market corporate bonds.[5] The fact that emerging-market governments didn't need excessive external financing generated substantial demand for high-quality corporate debt. The overall situation created a good place for large emerging-market companies to tap global bond markets.

Major central banks had slashed short-term interest rates to near zero in response to the global recession. With treasury interest rates at historically low levels, investors looked increasingly to riskier assets for higher returns. As a result, corporate bonds looked quite attractive. In 2009, large European companies had raised substantial funds, largely to boost cash reserves. **Figure 1** shows quarterly government bond yields by government, and **Figure 2** shows credit spreads for corporate issues (BBB-rated issuers) by currency. **Exhibit 3** provides interest rates and exchange rates by maturity for the U.S. dollar, euro, and British pound, as well as data on spot exchange rates.

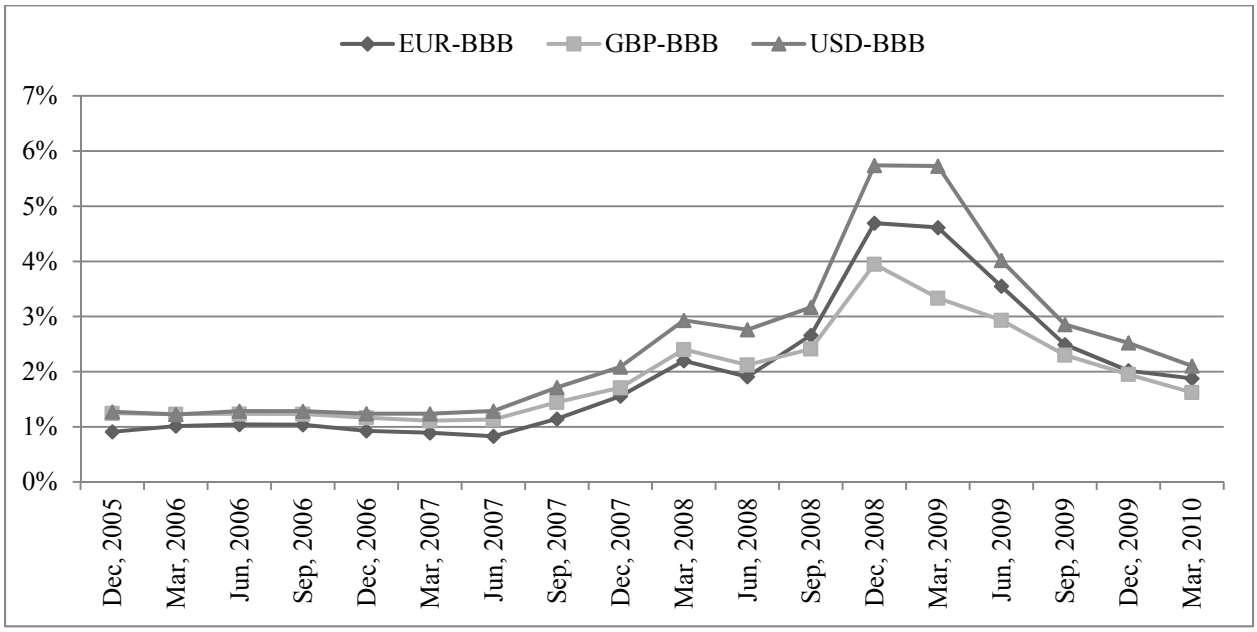
Figure 1. Quarterly government bond yields.




Data source: Bloomberg.

[5] Riva Froymovich, "In Emerging-Market Debt, the Riskier the Better," *Wall Street Journal*, January 23, 2010.

Figure 2. Quarterly credit spreads for corporate issues (BBB-rated issuers) by currency.

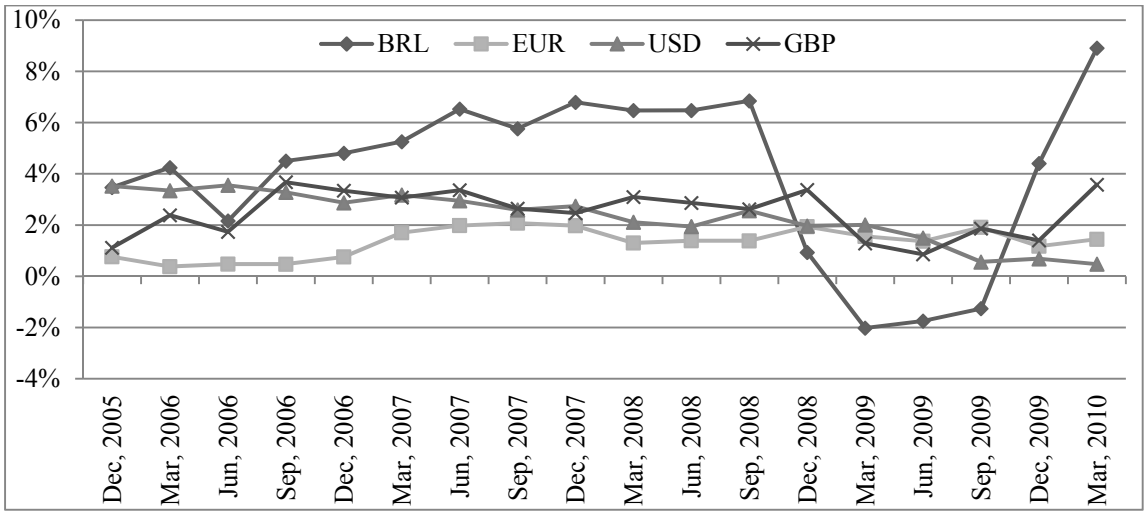



Data source: Bloomberg.

Investors across the globe were big buyers of emerging-market corporate bonds. Emerging-market issuers were glad to access these global capital flows given the high local currency borrowing rates. For example, nominal and real interest rates in Brazil were still higher than those of comparably rated countries. Even though credible fiscal and monetary policy in Brazil suggested that the gap between Brazilian interest rates and rates in developed countries would narrow, observers expected an aggressive tightening following a robust recovery and were concerned about inflation due to increases in commodity prices. **Figure 3** shows quarterly historic inflation rates for the Brazilian real, euro, U.S. dollar, and British pound. The general consensus was that over the next five years, inflation rates would remain high at about 8.0% for the Brazilian real, would drop to about 3.1% for the British pound, and would rise slightly to about 2.8% and 2.1% for the U.S. dollar and euro, respectively.

The spike in inflation for the British pound in the last quarter had raised some concerns about possible changes in the value of the pound relative to other developed countries. Further fueling concern was the low real rate or return on 10-year government securities given the recent inflation figure. While some argued that the inflation number was anomalous, others pointed to structural issues in the British economy and concerns that the Bank of England would not aggressively pursue its inflation targets.

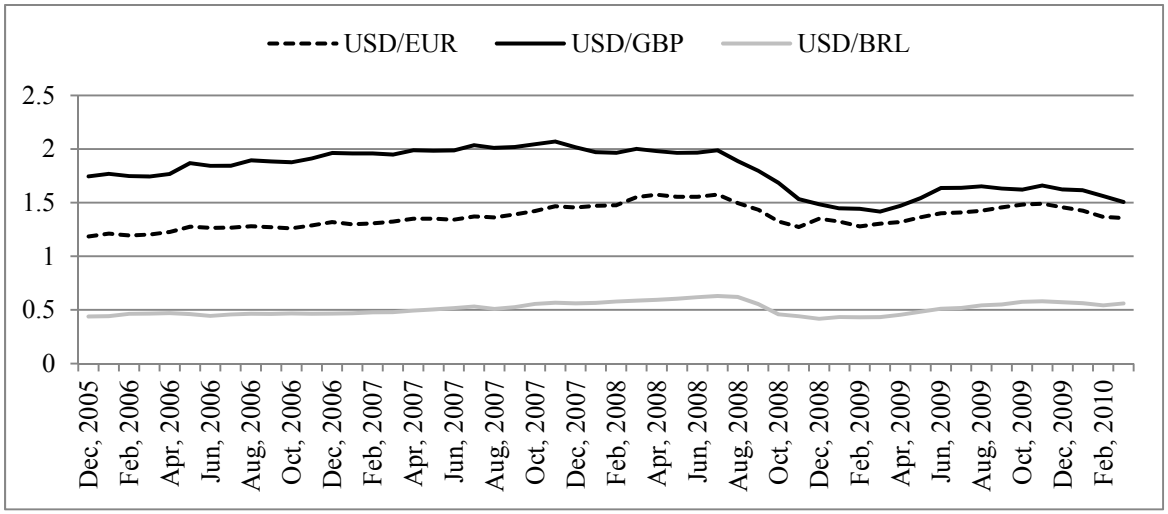
Figure 3. Quarterly inflation rates by currency.




Data source: Bloomberg.

Over the previous eight years, most major currencies had appreciated against the dollar. The financial crisis in 2008 reversed the trend as a flight to safety caused significant appreciation of the U.S. dollar. The depreciation of the U.S. dollar started over again in 2009, but the euro had recently been under pressure for sovereign debt concerns, and capital had flowed to emerging markets.[6] (**Figure 4** shows monthly exchange rates.)

Figure 4. Monthly exchange rates.




Data source: Bloomberg.

[6] Jamus Lim and Monsoor Dailami, "Two Distinct Windows on Recent Emerging Market Currency Movements," Prospects for Development (blog), http://blogs.worldbank.org/prospects/two-distinct-windows-for-recent-emerging-market-currency-movements (accessed Oct. 26, 2010).

**Vale Capital Structure**

Vale was a disciplined borrower. The firm had maintained an average debt-to-equity ratio of 47.6% from 2007 to 2009. Given that sufficient debt capital was often difficult to obtain in Brazilian reais, that the real rates on those borrowings were relatively high when the debt could be obtained, and that most of Vale's revenues were denominated in U.S. dollars, the company had traditionally issued bonds in U.S. dollars. Detailed information on Vale's outstanding debt is provided in **Exhibit 4**. Whereas the global demand for emerging-market corporate debt certainly suggested a Vale debt issue would be well received and priced at an attractive yield, the complicated state of global capital markets made the choice of currency difficult. It was clear the company should consider other alternatives along with the U.S. dollar.

At this point, the firm needed to make a choice and proceed. There was concern that many corporations would be issuing securities in the next few years to roll over debt, and Vale wanted to get its issue done before this "maturity wall" hit the markets.[7] The U.S. dollar, euro, and British pound issues identified above represented typical alternatives available to Vale and reflected the most likely conditions the firm would face in each market. It was anticipated that these issues would carry a BBB+ rating. The size of each issue would generate close to (Brazilian reais) BRL1.8 billion, equivalent to USD1.0 billion, (euros) EUR750 million, or (British pounds) GBP700 million. Of course, any loan would be evaluated relative to a U.S. dollar loan. By way of comparison, **Exhibit 5** provides current information on outstanding issues by comparable companies in each of the three currencies.

[7] Nelson D. Schwartz, "Corporate Debt Coming Due May Squeeze Credit," *New York Times,* March 15, 2010.

Exhibit 1

**VALE SA**

Income Statement
(in millions of U.S. dollars)

| | Year Ended December 31 | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Revenue | 14,581 | 21,188 | 36,373 | 30,464 | 27,814 |
| Cost of goods sold | 6,996 | 9,710 | 16,896 | 13,887 | 15,898 |
| | 7,585 | 11,478 | 19,477 | 16,577 | 11,916 |
| Selling and general | 694 | 913 | 1,431 | 1,562 | 1,359 |
| Other operating expenses | 645 | 1,167 | 1,581 | 3,181 | 2,997 |
| | 6,246 | 9,398 | 16,465 | 11,834 | 7,560 |
| Interest expense (income) | 414 | 817 | (155) | 853 | 662 |
| Other nonoperating income (Expense) | 107 | (194) | (533) | (1,317) | 1,901 |
| | 5,939 | 8,387 | 16,087 | 9,664 | 8,799 |
| Taxes | 1,015 | 1,585 | 3,979 | 287 | 2,824 |
| Minority interest | (445) | (519) | (873) | (187) | (97) |
| Net income | 4,479 | 6,283 | 11,235 | 9,190 | 5,878 |

Data source: Vale 20-F filings, 2000–09.

Exhibit 2

**VALE SA**

Balance Sheet Statement
(in millions of U.S. dollars)

| | As of December 31 | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Cash | 1,159 | 4,574 | 1,195 | 10,716 | 7,582 |
| Receivables | 1,851 | 3,720 | 4,028 | 3,438 | 3,377 |
| Inventory | 1,387 | 2,979 | 4,076 | 4,183 | 3,391 |
| Other current assets | 993 | 1,436 | 2,580 | 5,872 | 7,590 |
| | 5,390 | 12,709 | 11,879 | 24,209 | 21,940 |
| Property, plant, and equipment | 14,484 | 36,309 | 51,647 | 47,719 | 66,047 |
| Goodwill | 0 | 0 | 0 | 3,328 | 4,118 |
| Other long-term assets | 2,736 | 8,530 | 11,114 | 4,976 | 8,685 |
| | 22,610 | 57,548 | 74,640 | 80,232 | 100,790 |
| Accounts payable | 1,151 | 2,416 | 2,411 | 2,266 | 2,207 |
| Short-term debt | 0 | 0 | 0 | 469 | 370 |
| Current portion long-term debt | 1,482 | 1,712 | 1,887 | 683 | 3,042 |
| Other current liabilities | 2,370 | 3,657 | 6,565 | 4,629 | 4,369 |
| | 5,003 | 7,785 | 10,863 | 8,047 | 9,988 |
| Long-term debt | 3,888 | 21,522 | 18,222 | 18,438 | 20,719 |
| Minority interest | 1,265 | 2,807 | 2,630 | 2,626 | 3,330 |
| Other long-term liabilities | 2,137 | 7,143 | 10,895 | 9,543 | 11,846 |
| | 12,293 | 39,257 | 42,610 | 38,654 | 45,883 |
| Common equity | 10,317 | 18,291 | 32,030 | 41,578 | 54,907 |
| | 22,610 | 57,548 | 74,640 | 80,232 | 100,790 |

Data source: Vale 20-F filings, 2000–09.

Exhibit 3

**VALE SA**

Interest Rates and Exchange Rates as of April 30, 2010

| | U.S. Dollar | Euro | British Pound |
|---|---|---|---|
| **Spot rate (in U.S. dollars)** | | 1.3739 (USD/EUR) | 1.5296 (USD/GBP) |
| **Interest rates by maturity (%)*** | | | |
| 1-year | 0.492 | 1.100 | 1.154 |
| 2-year | 1.084 | 1.471 | 1.657 |
| 3-year | 1.690 | 1.825 | 2.277 |
| 4-year | 2.206 | 2.138 | 2.798 |
| 5-year | 2.636 | 2.419 | 3.177 |
| 6-year | 2.987 | 2.669 | 3.493 |
| 7-year | 3.264 | 2.885 | 3.782 |
| 8-year | 3.486 | 3.071 | 4.054 |
| **Other 10-year yields (%)** | | | |
| Government (U.S., Germany, UK) | 3.826 | 3.092 | 3.939 |
| AAA corporate | 4.588 | 3.828 | 4.753 |
| BBB corporate | 5.930 | 4.969 | 5.562 |

* Interest rates are zero-curve fixed-to-floating swap rates appropriate for pricing currency forward rates and indicative of prevailing interbank market rates for the given maturities.

Data sources: U.S. Federal Reserve Board and Datastream.

Exhibit 4

**VALE SA**

Debt Outstanding as of December 31, 2009

| Maturity Date | Coupon | Offer Date | Amount (in millions of U.S. dollars) | Currency | Offering Price | Offering YTM |
|---|---|---|---|---|---|---|
| May-15-2012 | 7.750 | May-08-2002 | 400 | U.S. dollar | 99.917 | 7.762 |
| Jun-15-2012 | 6.750 | Jul-07-2009 | 292 | U.S. dollar | 100.000 | 6.750 |
| Jun-15-2012 | 6.750 | Jul-07-2009 | 649 | U.S. dollar | 100.000 | 6.750 |
| Aug-15-2013 | 9.000 | Oct-27-2003 | 282 | U.S. dollar | 98.386 | 9.250 |
| Aug-15-2013 | 9.000 | Aug-01-2003 | 300 | U.S. dollar | 98.386 | 9.250 |
| Nov-20-2013 | Floating rate | Nov-20-2006 | 2,316 | Brazilian real | Floating rate | Floating rate |
| Mar-15-2014 | 6.125 | May-05-2004 | 150 | U.S. dollar | 100.000 | 6.125 |
| Oct-15-2015 | 5.700 | Sep-23-2003 | 300 | U.S. dollar | 99.978 | 5.702 |
| Jan-11-2016 | 6.250 | Jan-05-2006 | 1,000 | U.S. dollar | 99.970 | 6.254 |
| Jan-23-2017 | 6.250 | Nov-16-2006 | 1,250 | U.S. dollar | 99.267 | 6.347 |
| Sep-15-2019 | 5.625 | Sep-08-2009 | 1,000 | U.S. dollar | 99.232 | 5.727 |
| Mar-14-2023 | 1.000 | Apr-29-2003 | 273 | U.S. dollar | 91.381 | 1.500 |
| Sep-15-2032 | 7.200 | Sep-18-2002 | 400 | U.S. dollar | 99.552 | 7.237 |
| Jan-17-2034 | 8.250 | Jan-09-2004 | 500 | U.S. dollar | 98.904 | 8.350 |
| Nov-21-2036 | 6.875 | Nov-16-2006 | 2,500 | U.S. dollar | 98.478 | 6.997 |
| Nov-10-2039 | 6.875 | Nov-03-2009 | 1,000 | U.S. dollar | 98.564 | 6.990 |
| Mar-14-2052 | 3.500 | Apr-29-2003 | 227 | U.S. dollar | 100.000 | 3.500 |

Data source: Capital IQ.

Exhibit 5

**VALE SA**

Select Outstanding Debt Issues of Comparable Companies

| Ticker | Company Name | Currency | Headquarters | Maturity Date | YTM on Apr-30-2010 | Moody's Rating | S&P Rating | Coupon |
|---|---|---|---|---|---|---|---|---|
| XTA | Xstrata plc | U.S. dollar | Switzerland | Jun-01-2017 | 5.432 | Baa2 | BBB | 5.500 |
| AA | Alcoa Inc. | U.S. dollar | United States | Jun-01-2018 | 5.548 | Baa3 | BBB− | 6.500 |
| MT | ArcelorMittal | U.S. dollar | Luxembourg | Jun-01-2018 | 5.217 | Baa3 | BBB | 6.125 |
| VMC | Vulcan Materials Co. | U.S. dollar | United States | Jun-01-2018 | 5.353 | Baa2 | BBB | 7.000 |
| RIOLN | Rio Tinto plc | U.S. dollar | UK/Australia | Jul-01-2018 | 4.580 | Baa1 | BBB+ | 6.500 |
| ABX | Barrick Gold Corp. | U.S. dollar | United States | Sep-01-2018 | 4.702 | Baa1 | A− | 6.800 |
| AA | Alcoa Inc. | U.S. dollar | United States | Feb-01-2019 | 6.608 | Baa3 | BBB− | 5.720 |
| AAl | Anglo American | U.S. dollar | United Kingdom | Apr-01-2019 | 5.317 | Baa1 | BBB | 9.375 |
| MT | ArcelorMittal | Euro | Luxembourg | Jun-01-2016 | 4.634 | Baa3 | BBB | 9.375 |
| AAL | Anglo American | Euro | United Kingdom | Dec-01-2016 | 4.584 | Baa1 | BBB | 4.375 |
| XTA | Xstrata | Euro | Switzerland | Jun-01-2017 | 4.522 | Baa2 | BBB | 5.250 |
| GASSM | Gas Natural | Euro | Spain | Feb-01-2018 | 4.580 | Baa2 | BBB | 4.125 |
| GOGLN | Go-Ahead Group plc | British pound | United Kingdom | Sep-01-2017 | 5.385 | Baa3 | BBB− | 5.375 |
| REEDLN | Reed Elsevier | British pound | UK/Netherlands | Dec-01-2017 | 4.869 | Baa1 | BBB+ | 7.000 |
| TLM | Talisman Energy Inc. | British pound | United States | Dec-01-2017 | 5.007 | Baa2 | BBB | 6.625 |
| TITIM | Telecom Italia Group | British pound | Italy | Dec-01-2017 | 5.421 | Baa2 | BBB | 7.375 |
| AALLN | Anglo American | British pound | United Kingdom | May-01-2018 | 5.353 | Baa1 | BBB | 6.875 |
| XTA | Xstrata | British pound | Switzerland | May-01-2020 | 5.896 | Baa2 | BBB | 7.375 |

Data sources: Datastream and case writer estimates.