Not only is exploration and mining of metal a competitive business, it is a competitive investment as well. This industry often has big rewards to go along with its huge risks. The question is this: Does BHP Billiton (BHP) offer the best alternative for your mining and exploration investment? I will discuss this below.

With production of diamonds, gold, platinum and more, BHP Billiton is a major player in mining and exploration, with operations throughout the world. This diversity is a big advantage for the company, allowing it to avoid relying on one region or one mineral for its resources. Unfortunately, BHP Billiton's expansiveness has also meant problems in many different areas.

In its home country of Australia, BHP Billiton has been fighting with labor unions on a number of issues, including pay, working conditions and opportunities for advancement. RepRisk included the company among its "10 Most Controversial Mining Companies of 2011," citing it for having "links with corruption, bribery, extortion and money laundering throughout the year."

While news like that can be damaging, performance has an even bigger effect. After stating that demand for iron ore in China was flat, Ian Ashby, president of BHP Billiton's iron ore division, resigned his position with the company. While the statement was a PR black eye for the company, it is just another blip, as BHP Billiton attempts to bolster a share price that has declined more than 30% over the past year, and a recent dividend reduction (from 3.2% to 3.1%).

One interesting development that could help BHP Billiton's stock is the company's potential merger of diamond producing operations with Rio Tinto (RIO). The expectation is that such a move would create a new company, and the subsequent IPO could offer a boost to both BHP Billiton and Rio Tinto.

Other companies are pushing to get into the conversation, both as mining companies and as hot investments. Molycorp (MCP) has focused primarily on open-pit mining in the United States and China, an option that is especially appealing due to the country's efforts aimed at controlling the world supply of rare earth metals that are used to manufacture hybrid cars, mobile phones, weapons and more.

Like BHP Billiton, Molycorp had a rough 2011, with its stock price falling 50% even though its 4th quarter revenue was up more than 500%. The company does not pay a dividend, and 50% of its stock float is currently held short.

If there were no additional information available, I would be adamantly against Molycorp, however, there is an interesting twist to the story. With China's efforts to control more than 30% of the world's supply of rare earth metals, Molycorp's Mountain Pass mine is positioned to bring big profits to the company and its investors.

The Pentagon stated that domestic supplies of rare earth metals are sufficient to meet its needs, positioning Mountain Pass for a potential windfall. Molycorp recently purchased Neo Materials Technologies, a move that will help to increase its capacity in operations outside of China.

Increased demand in the United States could translate to a rising share price on Wall Street. Although it is still selling for about three times its book value, the stock has a projected upside of nearly 25%. In addition, I like that the company has a very low debt to equity ratio, and Molycorp has twice as much total cash as debt. As demand increases, it is very likely that investors will drive the stock even higher than expected.
The stock that interests me most in the sector is **Arch Coal (ACI)**. Specializing in steam and coal production throughout the central United States, the company is coming off a strong 2011, where it recorded a total profit of over $1 billion. Known for its hefty 4.3% dividend yield, Arch is poised for another excellent year on Wall Street.

With a share price that is only 60% of its book value, the stock is in a great position to climb. I am bullish on this stock and reports that it has an upside of 80%. Pushed by increasing coal demand in China, India and other countries, companies like Arch have managed to prosper even though coal is only used to generate 40% of the electricity in the US today.

While Arch Coal is making big profits and its stock is sizzling on Wall Street, the company is still facing struggles. The company has fought in court with the US government over mining plans near the historic Blair Mountain Battlefield in West Virginia. The Environmental Protection Agency attempted to block company plans to use "dredge and fill" to mine the site. A judge allowed the company to proceed, but it will be interesting to see what backlash will occur as the company moves forward with its plans for this mine.

Although it pays a nice dividend, BHP Billiton has too many problems for me to recommend it as a purchase at this time. Plunging share price, a recent dividend cut and unsettling reports about the integrity of the management team make it a very risky investment.

Molycorp, even losing 50% of its value in share price, has good potential as an investment. The company has a market advantage in the US, and its revenue soared toward the end of 2011. Should demand for rare earth metal continue to climb while China hoards its production, Molycorp stands to do very well.

That brings me to my pick, Arch Coal. This company has been able to roll with the changing coal industry to maintain a strong economic position. As demand for coal in Asia continues to climb, Arch will profit. The stock has monstrous upside, and the company offers an excellent dividend. This is a double-whammy for investors who are looking to add a mining and exploration holding to their portfolio.

**Disclosure:** I have no positions in any stocks mentioned, and no plans to initiate any positions within the next 72 hours.