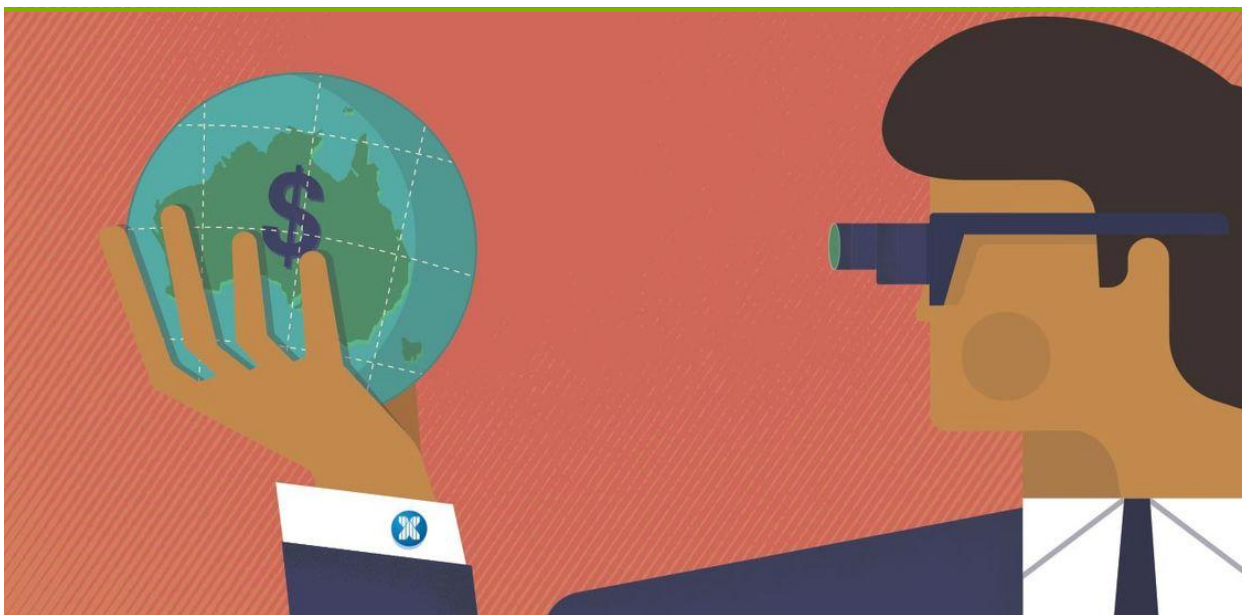


Investors caught in quicksand

A new generation of heavy mineral sands projects must overcome blemished track records, opaque markets and unusual cyclical patterns to consolidate investment support.

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Australia contributes a larger proportion of worldwide heavy mineral sands reserves than it does iron ore or gold reserves, according to the US Geological Survey. Australian companies have also been active developers of mineral sands properties in Africa and North America.

Mineral sands present some of the least challenging of mining endeavours, at least at face value. Heavy mineral sand deposits containing titanium and zircon are usually located at the surface or beneath only thin layers of sediments. They are typically large and easy to excavate. Mineral separation techniques are well established and widely used.

Against the resource abundance and apparent ease of production, Australian operators have surprisingly poor track records in meeting crucially important start-up targets.

In January 2011, Mineral Deposits foreshadowed that construction and commissioning of its Grande Cote mine in Senegal would take two years from the second quarter of 2011. The company's 2010 bankable feasible study had laid out a plan for 551,300 tonnes of saleable product by 2014 rising to 700-750,000t in the following five years.

By 2017, the mining rate was still running 20% below target for only 484,765t of product.

Base Resources has eventually met its operating targets but lost 90% of its share value as it started at a slower pace than planned.

First production at its Kwale property in Kenya, scheduled for July 2013, was to be followed by positive cash flows nearing US\$100 million in 2014. The first meaningful sales did not occur until the June quarter of 2014 and operating cash flows for the year of slightly under A\$6 million (US\$4.43 million) required a restructured debt position.



Trying to assess relative value, returns on total investment offer the best guidepost

product and zircon concentrate.

MZI Resources, the latest mineral sands miner to commence production in Western Australia, foreshadowed a late 2013 production start at the time of an October 2012 feasibility study, which proposed annual production of 91,000t of heavy mineral

In reporting for the December quarter of 2016, MZI directors said their "primary focus remained on ramping-up production ... to achieve targeted recovery and production rates" as they reported production of just 55,837t.

A legacy of disappointment is one of the investment challenges for new entrants looking to attract investors. A veil over information about pricing and market conditions is another.

Even the Australian government, which used to report quarterly export sales volumes and values for mineral sands products until mid-2017, has withdrawn that aid for investors.

Hard to predict trade-offs between prices and volumes make life tougher for investors used to dealing with price-taking companies. Companies unexpectedly reporting lost sales or large variations in prices leave investors vulnerable to a massed scramble for an exit as bad news breaks.

Pronouncements by a single consultancy about the price outlook have unusual influence on corporate decision making. MZI Resources, Image Resources, Sheffield Resources, Base Resources and Mineral Deposits have all relied on the price forecasts of industry consultancy TZ Minerals International (TZMI) in framing project valuations for their feasibility studies.

The uniquely pivotal role of a single analytical source sitting behind a paywall makes exercising independent investment judgments more difficult.

TZMI is invoked constantly in investment pitches to equity buyers without any explanation as to how its multi-year forecasts are derived or about their sensitivity to macro influences. Only those who pay will have this information or timely access to a subsequent change in view.

The next generation of Australian mineral sands producers includes three companies with disparate share-price trends even as market conditions have improved.

The Sheffield Resources share price has moved to within 16% of its highest level since 2010 after a more than tripling in the past two years amid cyclically stronger markets.

Despite a threefold rise since February 2017 and a 30% gain since April 2018, the Image Resources share price remains 70% below its end-of-2010 level.

The MZI Resources share price has hit an all-time record low in the past month.

MZI is already in production but plans to boost cash flow through lowered costs and expanded output to service an uncomfortable debt burden before building equity value. Thankfully, little additional capital is needed for this second stage.

Sheffield Resources is pushing ahead with its A\$543 million Thunderbird project in the north of Western Australia, eying a 2020 production start for its 42-year mine life.

Image has a mineral reserve sufficient for eight years of production starting in late 2018 but is optimistically foreshadowing a multi-decade run for its A\$52 million up-front expenditure based on its surrounding geology.

For ordinary portfolio investors trying to assess relative value, returns on total investment offer the best guidepost.

Investors in Image Resources are being asked to commit A\$130 million in equity and development funding in exchange for future cash flows of some A\$370 million over nine years, equivalent to an annual 20% yield on a bond, on my reckoning and based on prevailing prices.

An MZI Resources investor would be paying the equivalent of A\$180 million in equity, debt and required capital spending to recoup A\$435 million over a 15-year period, equivalent to purchasing a bond with an annual yield of 16%.

Sheffield Resources is the most expensive, perhaps not surprisingly as it has made the speediest progress toward getting its development underway. For an investment of A\$760 million, Sheffield is expected to generate A\$5.4 billion over four decades, implying a 14% yield.

Stronger product prices over the past year have greatly improved the economics of these companies, though valuations still rely critically on assumptions about how skilfully plans described in feasibility studies can be translated into action.

Whatever their longer-term value propositions, all three companies must still show they can avoid the trap for beginners encountered by Base Resources, Mineral Deposits and MZI Resources itself. A prudent investor would be justified in waiting for some results before picking a winner.

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