

ABSTRACT

Since its existence, the South African mining industry has contributed significantly to the economic development of the country either directly or through the creation of linkages. In 2010 the sector accounted directly for 8.6% of Gross Domestic Product (GDP), 50% of South Africa's total merchandise exports, 13% of direct corporate tax receipts and employed 498,141 employees. The country is home to some of the world's largest mining companies and is host to several minerals that are of strategic importance to the global and national economy but unless those minerals are mined profitably then no benefit can be derived from their existence. It holds the world's largest known reserves of gold (13%), Platinum Group Metals (PGMs) (88%), chrome ore (72%), manganese ore (80%) and diamonds (12%). In 2010 it was a significant gold producer, the world's largest producer of (PGMs) (59%), manganese, chrome and vanadium. Platinum, gold, coal are the major economic contributors in the mining industry in terms of sales revenue, export earnings, job creation and remuneration earnings. Diamonds are also a key mineral commodity in the country because of their high unit value. However, the South African mining sector is faced with several challenges that threaten its productivity and hence profitability. The sector's significance and threats necessitate analysing its cost performance, and assess its profitability and sustainability as a key national economic sector.

To do this analysis, industry cost curves were used for the country's gold, platinum, coal and diamond mining sectors from 2007 to 2011. The cost curves were developed in Microsoft Excel using an algorithm that is based on error bars. The cost curves relate the unit cost of production against cumulative production from which low and high cost operations can be clearly distinguished. Important information can be derived and concluded from the industry cost curves that is useful to various industry stakeholders including shareholders, investors, management and industry analysts.

It was noted from the analysis that the mining sector's performance has been severely affected by several global and local activities during the period under review. The 2008 global financial crisis and several local challenges impacted on the sector's productivity and hence profitability and sustainability. These include industrial strikes, the Department of Mineral Resources' Section 54 safety stoppages, technical challenges associated with deep-level mining and the depletion of easily accessible mineral resources. All these challenges led to operating cost escalation resulting in profit margin squeezes. As a result, several operations were placed under care and maintenance while some capital projects were suspended. Notably due to these economic and technical challenges South Africa has dropped from being the world leader in gold production in the 1970s to fifth position in 2010.