

South Africa's Mining Equipment Sector Challenged to Maintain Its Competitive Advantages

The global position of South Africa's mining equipment industry is indicated by the extent of exports. The sector dominates the export of capital equipment, constituting 8.5% of South African exports (2005–2009) and 55% of total capital equipment exports. These exports are increasing by 20% per year. South Africa has a dense network of supplier industries, raw materials, and skills; the local value addition of these specialist mining services is estimated at 90%. In 2008 and 2009, imports of capital equipment were three times larger than exports. In mining equipment, however, South Africa is a net exporter. Although South Africa is running a negative trade balance with the rest of the world, the country has a strong positive trade balance with sub-Saharan Africa fueled by the increases in exports. The fastest-growing market for South African mining equipment exports is Latin America.

South African mining supply industries and services have a global competitive advantage in four areas: mine safety, ventilation, shaft sinking, and tracked mining. Mine safety is a particularly strong and fast-growing area. Fuel cell technology and products using platinum have been applied in the tracked mining area, which includes rail-based track mining and the use of underground locomotives. South Africa is a global leader in vertical shaft sinking, and many small companies are incorporated into global value chains managed abroad by larger companies. The level of development and expertise in the ventilation area is considered to be much greater than in comparable mining countries. South Africa also leads in prospecting, geological services, and turnkey mine designs and operating services. Consultancy services are delivered by people with mining experience—an experiential factor that is difficult to replicate.

Strong Linkages to the Economy

The mining industry has a big impact on South Africa's economy. Of total industry expenditures in 2011, an estimated 89% was spent locally—on input costs (timber, steel, explosives, water, electricity, transport), salaries and wages, capital expenditures (to sustain production and for growth projects), direct corporate taxation, loan interest, and dividends to shareholders. The money generated in mining circulates throughout the rest of the economy and makes an impact on sectors as diverse as financial services and housing. Purchases of equipment not made in South Africa help to improve the total fixed capital stock of the mining sector and add to the productive base of the economy.

Positioned as a Regional Hub

A number of multinational firms (e.g., Sandvik and Atlas Copco) use South Africa as a base for their sub-Saharan Africa operations. These firms are attracted by South Africa's large domestic demand for their products, as well as the network of supplier industries. Some firms located in South Africa provide a full-scale service in mining engineering, procurement, and construction management and provide a market for other local input providers. This use of local inputs is encouraged by policy. Where South African firms get export credit finance, at least 65% must be used on local products. Although South Africa is a hub for managing operations in Africa, its importance is

declining. Furthermore, South Africa is not taking steps to encourage hub activity. As a result, some functions are being performed outside of South Africa and some firms are moving their management operations out of the country.

Advantages on the Wane

A number of factors contribute to South Africa's competitive advantage—experiential skills, well-established companies with leading-edge products and competencies, a long history of public research linked to firms, highly sophisticated customers, a well-developed and dense network of local supply industries and services, and geographical clustering of mining and supply industries. On the downside, some of these advantages are waning. Skills are in short supply, standards are perceived to be on the decline, publicly funded research is shrinking, and the capacity for scientific and technological research is diminishing. Rising competition in manufacturing (particularly from the Far East) and in knowledge and innovation (particularly from Australia) require that the challenges be dealt with urgently.

The challenge of too little publicly funded research and development in research institutions and universities has long-term implications. University-level training needs to be expanded, particularly for engineers, as does artisanal training. The government recognizes this challenge and is working with South Africa Capital Equipment Export Company to develop an artisan training program based on a model used in Sweden.

Mining equipment and specialist services have not received explicit government subsidy at any stage of development. Government is supportive, however, in that mining supply firms benefit from a number of programs in the form of cheaper loans for equipment and refurbishment, support for studies in South African Development Community countries, and export marketing and investment assistance to attend exhibitions and shows abroad.

Success linked to Capabilities

The success of mining-related capital equipment and service exports is linked to the South African capabilities in engineering and project management. This helps to meet another policy challenge of supporting the spread of technologies and companies into non-mining related products and markets. A possible direct mechanism for promoting the lateral spread of technology would be the creation of a challenge fund. Such a fund could support firms that use their existing technological capacity to adapt or develop new products and enter new markets outside of the mining industry. Creation of a challenge fund would signal the government's commitment to enhance development of new products and new markets.

Guidelines to encourage lateral spread of capabilities beyond the mining sector in South Africa should be based on diversification through promotion of linkages and spillovers between industries; a systematic approach to integrated industrial and technology policy; and policy development in collaboration with the firms, industry associations, and research organizations.

