

The Minerals-Energy Complex as a framework for understanding industrial development in southern Africa? A study of South Africa and Mozambique

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1. Introduction

The intertwined nature of industries in Mozambique and South Africa mean that their patterns of development cannot be understood in isolation. The development of minerals in the region by large South African firms (or those with South African origins such as BHP-Billiton) has largely determined the flows of labour, capital and profits, and the development trajectories of individual countries. This is one of two papers produced as part of a collaborative research project funded by the SANTED programme. The second paper examines the development of economic linkages between Mozambique and South Africa and their implications for Mozambique's industrial development.

The 'Minerals-Energy Complex' (MEC) refers to Fine and Rustomjee's (1996) analysis of South Africa's industrial development and political economy. Their identification of the MEC as at the heart of South Africa's industrialisation reflects both the importance of linkages between mining and industry, and the significance of mining capital through the major conglomerate groupings in the system of accumulation.

This paper has two main objectives. First, it re-appraises the MEC in the context of developments in South Africa in the past decade. These developments include both the changing patterns of industrial development including the restructuring of the major conglomerates, and the evolution of industrial policy including the role of the Industrial Development Corporation. Second, it extends and evaluates the MEC in terms of Mozambique's industrial development, particularly in the past decade.

2. The MEC and patterns of industrial development in South Africa

The MEC analysis was based on a careful historical analysis of industrial development in South Africa, linkages between the major sectors, and the behaviour of major firms and interests. Typically manufacturing is separated from mining, as well as from agriculture and services. The share of manufacturing in the economy is often used as an indication of industrialisation and the country's development. Fine and Rustomjee argue that separating the sectors according to standard definitions misses the important linkages and leads to fundamental misunderstandings with regard to the nature and causal factors in economic development.

In the specific case of South Africa, the typical analysis in the early 1990s highlighted the declining share of mining, and the increased share of manufacturing.² This then leads into

¹ Research assistance in South Africa was provided by Neo Chabane and Marion Walker.

² See, for example, Joffe et al. (1995) and Fallon and Pereira (1994).

analysis of manufacturing competitiveness (including productivity, technological capabilities etc.). But, while smelting and other related processes are classified under manufacturing, they are very closely related to the mineral extraction itself. Based on input-output linkages of manufacturing sub-sectors with minerals extraction and energy (itself based almost entirely on locally mined coal), Fine and Rustomjee identified the MEC as composed of certain manufacturing sub-sectors, mining and electricity generation.³ In addition to the reliance on coal for electricity generation, it is important to note that more than 40 per cent of electricity in the early 1990s was consumed in mining, smelting and refining.

Using this approach Fine and Rustomjee found that, while the share of mining in total production has been declining, its significance when the industries which are closely linked to it are taken into account, has not. For example, while the share of manufacturing in GDP had been increasing, to a peak of 26 per cent of GDP in 1989, if the sectors of manufacturing closely related to mining and energy are omitted, then the non-MEC manufacturing share of GDP remained below its 1980 level of 18 per cent.

Fine and Rustomjee's MEC has been critiqued in terms of the statistical evidence on the MEC sectors and the development of these sectors relative to more diversified manufacturing, meaning that they overstated the MEC's importance and performance (Bell and Farrell, 1997; Bell, 1998). The MEC also did not address international dimensions nor did it explore the importance of linkages in the development of production capabilities in different industries (see Roberts, 2000). These critiques are not fundamental if the MEC is taken to be an evolving system of relationships and interests. For example, Bell and Farrell do not dispute the importance of the mining based conglomerates in the development of much of manufacturing. And, Fine and Rustomjee explicitly acknowledge the need to extend the analysis to address international relationships.

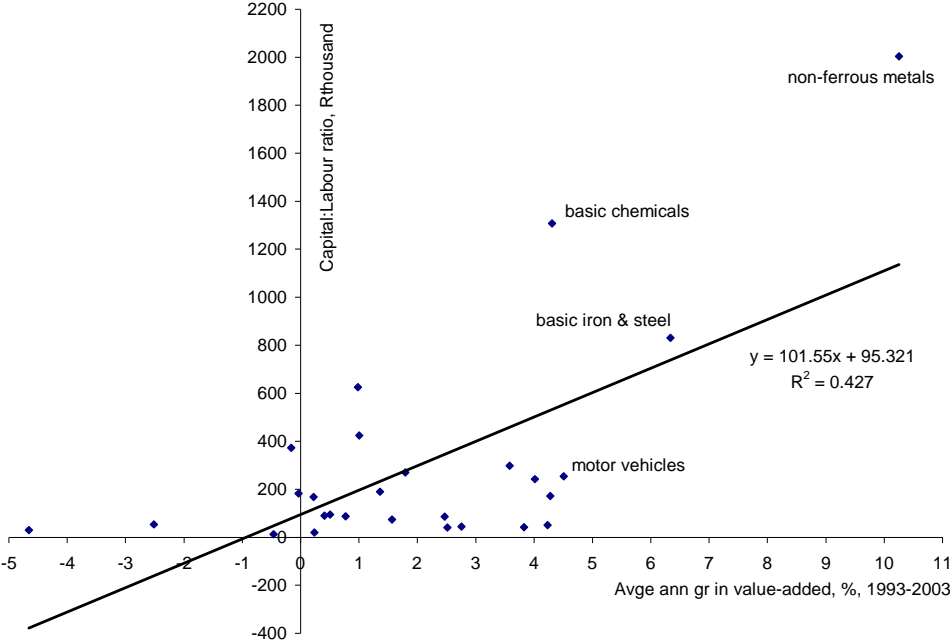
We therefore assess industrial development in South Africa and Mozambique in the past decade in terms of the MEC framework, and at the same time re-appraise the framework itself. In particular, to what extent has the liberalisation of the South African economy and policies to encourage export oriented growth brought a change in the trajectory? And, to what extent have the dynamics associated with industrial development in South Africa also underpinned industrialisation in Mozambique? We argue that developments in the past decade reinforce the MEC, especially when it is understood in its dynamic terms as a system of accumulation rather than in the static arithmetic of input-output tables.

Despite trade liberalisation and sharply higher real interest rates, the main feature of developments in the 1990s is the continued better performance of capital-intensive industries. In addition, South Africa remains a large net exporter of minerals and metals and an importer of most other products. Minerals and metals exports (in basic unbeneficiated form) accounted for 30 per cent of merchandise exports in 2003, with platinum and gold being the largest components. If basic metals (ferrous and non-ferrous) are included this increases to over 35 per cent. Liberalisation of both trade and capital flows cannot change this, and indeed tend to reinforce the pattern as the currency tends to overvaluation and volatility. For manufacturers producing traded goods the volatility

³ The manufacturing sub-sectors which are considered part of the MEC are: fertilisers and pesticides; synthetic resins, plastics; other chemical products; other basic chemicals; other plastic products; bricks, tiles, refractories; cement; other non-metallic minerals; iron and steel; non-ferrous metals. The categorisations vary slightly depending on different systems of classification.

means it is very difficult to predict earnings from any given investment decision, increasing uncertainty and risk and working against new investments in expanded capacity. In addition, government and state-owned enterprise investment levels have been very low in the past decade. This has also had severe negative effects on industrial development (see Roberts, 2004b; Perkins et al, 2005).

Figure 1. Value-added growth and factor intensity in manufacturing, 1993-2003



Source: Calculated from Quantec data

Notes: Capital:labour ratio is measured in thousands of Rand of capital stock per employee in 2003. Coke & refineries is excluded as it had a capital:labour ratio of more than R6mn in 2003, average value-added growth was 0.9 per cent.

The performance patterns within manufacturing, with a strong bias towards capital-intensive sectors, suggest the importance of previous government policies, and ‘path dependent’ factors meaning that firms which have developed productive strengths are able to re-invest and continue to grow their businesses. Perhaps the best example of this is Sasol, which leads local industry in ongoing R&D spending to continuously improve its capabilities. The result, however, has been that capital-intensive sectors have continued to grow output, while many labour-intensive sectors have contracted or have recorded low growth. Such patterns have been reinforced by IDC lending in the mid 1990s which went predominantly to large-scale capital-intensive operations such as the Saldanha steel plant and Alusaf aluminium smelter. Indeed, there is a correlation of capital-intensity and output performance (measured by growth in value-added) over the ten years from 1993 to 2003 (Figure 1).

The importance of a small number of very large-scale industries in the aggregate manufacturing trends is emphasised by the disaggregated investment record. If one excludes coke & refineries, basic chemicals, basic iron & steel, basic non-ferrous metals and motor vehicles (which together accounted for more than half of manufacturing GDFI in 2003) then manufacturing investment has hardly changed since 1995 (Figure 2). Aside from motor vehicles, these very capital-intensive sectors are dominated by one or two firms, and have strong links with minerals processing. In the case of basic chemicals and

coke & refineries the major firm is Sasol, while Iscor (now Mittal SA) dominates basic iron & steel, and a small number of firms dominate non-ferrous metals production. Furthermore, there are good reasons to believe that this pattern will continue. Sasol maintains a very high rate of expansion, with huge investment projects underway.

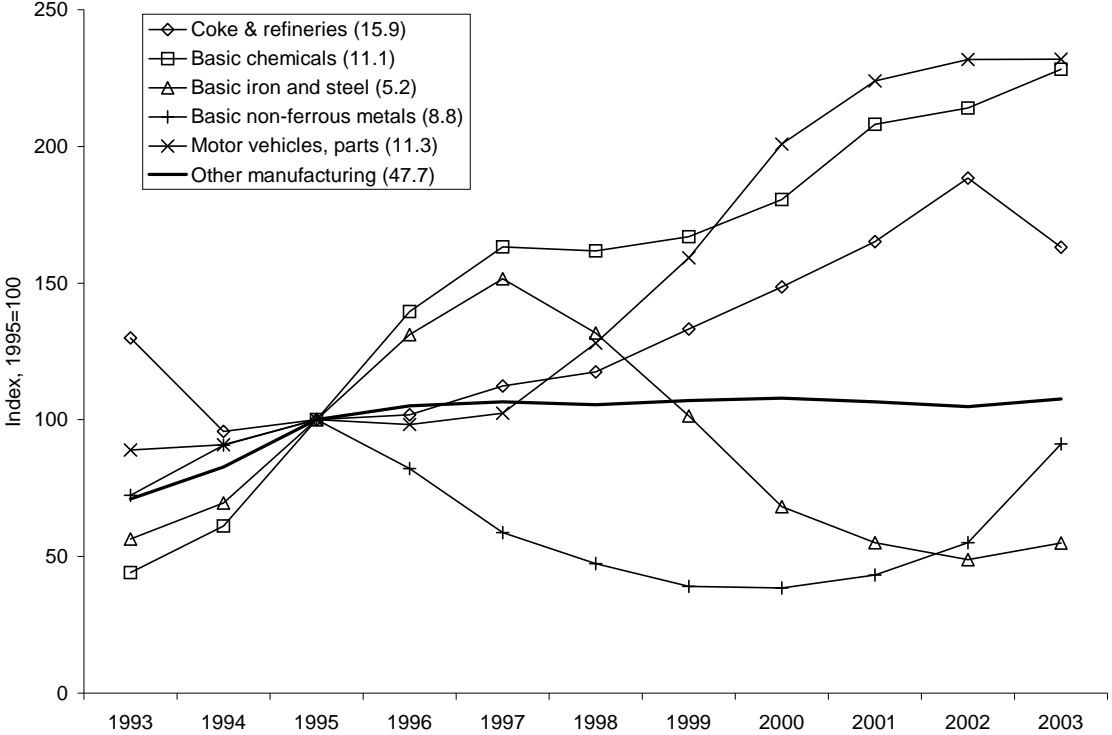


Figure 2. Manufacturing GDFI by selected sectors and remainder of manufacturing

Source: Calculated from Quantec data

Note: The numbers in parentheses indicate the share in manufacturing GDFI in 2003

While investment levels in non-ferrous metals have fallen, the levels in 1993-1995 were extremely high (representing gross domestic fixed investment in excess of 75 per cent of value-added). In 1996 to 1998 investment in basic iron & steel averaged around 50 per cent of the sector’s value-added. In addition, there are indications that iron & steel production will increase significantly in the next two to three years, and non-ferrous capacity is also set to increase given the smelters currently under consideration (although the largest expansion in the past decade has occurred in Mozambique). The new investment being planned in aluminium is despite the rationale having largely fallen away. South Africa now faces the need to invest in new electricity capacity, and the cost of such capacity needs to be taken into account in planning future smelters along with the long-term benefits to the local economy. The planned smelter at Coega in the Eastern Cape is reported to only generate just over 1000 direct jobs after the construction phase.

The motor vehicles and parts sector stands out as having recorded high rates of output growth and investment and yet is not particularly capital-intensive. The developments of this sector have been heavily influenced by the Motor Industry Development Programme, which is discussed below.

Sub-sectoral patterns and trade liberalisation

So, how has industry performed under trade liberalisation and an industrial policy ostensibly aimed at encouraging export-led growth?

The South African trade policy reform involved a move towards neutrality through a mix of rationalisation and liberalisation. In addition to lowering the average tariff level by approximately one third over five years, more than 10,000 tariff lines have been rationalised to less than 6,000 and the differentiated tariff rates standardised to just six rates ranging between 0 per cent and 30 per cent. The steepest reductions were in those sectors previously most heavily protected. Quantitative and formula duties have also been converted to *ad valorem* tariffs. The reform also included ending various support programs, such as for clothing. It is important to note also that South African average tariffs were not, in fact, particularly high compared with other developing countries. Rather, the lobbying by firms for protection had meant a highly dispersed structure of protection, with very high tariffs on closely specified products.

This reform built on the previous government's moves to liberalise quantitative restrictions and to attempt to stimulate exports. For example, the reduction of import surcharges from 1990 implied significant liberalisation, especially in view of the differential rates being charged. It is therefore possible to see the liberalisation programme as a continuation of measures, pursued as a clear policy decision by government, and going beyond that required by the WTO.

As has been seen, performance has remained strongly biased in favour of capital-intensive heavy industries. Analyses of the performance under liberalisation tend to two different broad perspectives. The first is one which remains grounded in a two factor Heckscher-Ohlin framework, where capital-intensity (absent factor intensity reversals) must be due to: labour regulation and strong unions making it unattractive to hire workers and disadvantaging labour-intensive sectors; poor education outcomes, which mean that wages need to be even lower; liberalisation not going far enough; deterrents to investment in the form of political uncertainty meaning that potential growth in response to export opportunities is inhibited.⁴

The second broad perspective encompasses those who emphasise the importance of structural features such as value chain linkages, the effects of South Africa's mineral resource base and the 'resource-curse', the ongoing support provided by the State to mega projects, such as through cheap power and tax incentives,⁵ and the effects of monopoly power.⁶

At the outset it is evident that there is no straight-forward relationship between better trade performance and output and employment growth. The most export-oriented sectors are other transport equipment, professional equipment, basic iron & steel, machinery & equipment, and basic chemicals, all of which export more than half of their output (Table 1). In terms of the increase in export orientation the best performers are TV radio &

⁴ See Edwards (2001 and 2004), Fedderke and Vaze (2001), Fedderke (2004).

⁵ The Strategic Investment Programme tax breaks which have gone mainly to large scale investments by established firms.

⁶ These include Barnes (2001), Barnes et al. (2004), Roberts (2000b), Roberts and Thoburn (2003 and 2004).

communications equipment, other transport, machinery & equipment, professional equipment, and other chemicals for each of which the proportion of output exported has more than quadrupled. And, in terms of the net export ratio which takes into account imports to indicate in which sectors the largest positive net trade balances are recorded, the best performers are basic iron & steel, tobacco products, paper & paper products, basic non-ferrous metals and furniture.

Table 1. Summary statistics on manufacturing performance, 1993-2003

Sector	Avg ann VA gr, % (1993 – 2003)	Avg ann empl gr, % (1993-2003)	X:Q ratio 2003, %	X:Q ratio 1993, %	M:Cons, 2003, %	M:Cons, 1993	% semi & unskilled labour	K:L Rth/em pl	Net export ratio 2003	Nom tariff 1993, %	Nom tariff 1999, %	Nom tariff 2001, %
Food	0.2	-3.1	7	6	10	5	53	167	-0.23	13.4	14.5	8.2
Beverages	1.0	-3.6	12	4	6	3	52	626	0.32	14.3	10	18.1
Tobacco	-0.2	-5.0	4	3	1	2	52	372	0.61	27.8	31.3	42
Textiles	0.4	-1.9	21	13	33	22	79	89	-0.29	49.1	25.7	15.7
Wearing apparel	-0.5	0.5	22	14	23	8	82	12	-0.02	81	50.2	20.2
Leather & leather prods	4.2	-3.9	38	28	24	28	79	51	0.32	24	28.3	15.4
Footwear	-4.7	-7.9	5	4	50	18	90	30	-0.90	38	28.9	27.5
Wood & wood prods	3.8	2.0	27	14	15	11	62	42	0.36	10.9	3.3	3.3
Paper & paper prods	1.8	-1.3	24	17	9	12	62	270	0.52	5.6	5.9	7.4
Printing, publishing	-2.5	1.6	4	2	19	17	24	54	-0.73	9.8	2.1	1.0
Coke & refineries	0.9	-2.4	5	15	27	16	41	6089	-0.75	9.3	7.2	3.7
Basic chemicals	4.3	-1.5	58	34	55	40	54	1308	0.07	1.9	1.4	2.2
Other chemicals	4.3	0.4	15	3	31	20	43	172	-0.44	17.1	6.9	2.9
Rubber products	0.0	-2.5	32	9	38	20	67	182	-0.14	20.0	12.4	16.2
Plastic products	2.8	2.0	13	4	16	9	67	45	-0.12	17.9	12.4	9.5
Glass & glass products	3.6	-3.6	22	12	32	19	73	298	-0.25	11.2	6.2	8.1
Non-metallic minerals	1.0	-7.2	13	7	19	10	73	423	-0.21	10.9	6.8	5.2
Basic iron & steel	6.3	-4.9	65	42	18	9	55	830	0.79	7.2	2.6	4.4
Basic non-ferrous	10.3	-4.7	45	47	25	17	55	2004	0.43	7.6	1.8	0.8
Metal products	1.6	-0.7	22	10	18	10	64	74	0.11	14.0	7.2	7.3
Machinery & equipmt	2.5	0.8	61	15	80	49	47	86	-0.45	6.3	1.1	2.1
Electrical machinery	2.5	-2.1	14	7	40	21	59	41	-0.60	13.7	4.3	6.1
TV, radio & comm.	0.8	-2.3	49	7	86	42	59	87	-0.72	14.3	3.6	2.9
Professional equipmt	0.5	0.0	72	18	92	64	59	95	-0.65	14.2	0.4	0.5
Motor vehicles, parts	4.5	0.6	46	15	58	29	51	254	-0.24	37.0	32.9	10.1
Other transport	4.0	-2.7	80	16	95	49	51	243	-0.63	11.6	1.9	0.1
Furniture	0.2	0.1	43	11	25	5	70	20	0.39	22.5	19.5	15.7
Other manufacturing	1.4	-1.6	33	26	29	23	47	189	0.08	14.2	0.4	4.7

Source: *Quantec*

Notes: The % of semi- & unskilled labour in employment is for 2002 due to data availability.

The net export ratio is calculated as (exports-imports)/(exports+imports)

By comparison the best performing sectors in terms of value-added growth from 1993 to 2003 are basic non-ferrous metals, basic iron & steel, motor vehicles, basic chemicals, other chemicals and leather products. For all but other chemicals, exports account for a large proportion of output. And, for all except basic non-ferrous metals the proportion of exports has increased, with trade surpluses also being recorded in 2003. This would appear to reflect growth as a result of liberalisation reducing the anti-export bias, encouraging increased specialisation according to comparative advantages.

Closer examination reveals that in each of steel and basic chemicals the performance is down to the decisions of a single company. While it could still be argued that these outcomes reflect decisions to invest in expanded capacity as opposed to in alternative sectors, each of these firms was historically state-owned, developed capabilities under state support, and continued to receive finance (both loan and equity finance) from the IDC. State support also resulted in beneficial input pricing for local production in the form of coal, iron ore and electricity, and support for marketing of product in the case of Sasol's

sales of fuel. Non-ferrous metals represent essentially the export of electricity (generated from coal), and the very cheap electricity reflecting over-investment in capacity more than a decade earlier. The other sectors are somewhat different, however. The leather sector's performance is due entirely to auto seat leather, and needs to be understood in the context of the Motor Industry Development Programme (MIDP). Other chemicals consists of a multitude of products, mainly supplied to the domestic market, and the trade deficit in absolute terms has in fact widened suggesting that domestic demand growth largely accounts for its performance.

The argument for trade liberalisation to bring increased specialisation, and gains from improved productivity, largely ignores path dependency effects and the implications of resource endowments. The fact that resource and energy-intensive industries are also capital-intensive does not mean that the relative factor prices of capital and labour underpin the pattern of specialisation. Rather, to an important extent it is the previous state decisions that continue to be played out.

For some sectors, there are indications that increased international integration, of which a large proportion of output being exported is one dimension, has coincided with improved performance. These sectors include motor vehicles, machinery & equipment, other transport equipment and other chemicals. Other export-oriented sectors have however performed poorly, such as TV, radio & communications equipment, furniture, and professional & scientific equipment.

Minerals endowment

There are two quite distinct issues related to the importance of South Africa's minerals endowment for industrial development. The first is the impact of resource earnings on the economy. The increasing discoveries of platinum, in particular, in the past decade together with higher world prices of precious metals and other minerals such as iron ore mean that South Africa is again increasingly an exporter of natural resources and an importer of manufactured products. The implication of holding relatively low levels of foreign exchange reserves and having a freely floating exchange rate means that the cost of South African labour measured in international currency reflects the platinum windfall and not the local skills and education base of the country. Together with large portfolio capital flows, this also implies that the currency will continue to be volatile, reacting sharply to movements in international prices of metals and minerals.

The second issue is the linkages from mining and minerals to particular industries. The sectors with most rapid expansion of productive capacity in the last decade are closely related to minerals beneficiation. But, closer examination reveals that it is the combination of government decisions together with the endowment which is important. While, for example, aluminium is based on cheap power ultimately derived from South Africa's endowments of coal, the low energy prices are also due to Eskom's massive over-investment in the 1970s. Cheap energy is also important for production of steel. The largest iron & steel company Iscor was state owned until the beginning of the 1990s, and the state through the IDC provided massive support for the establishment of Saldanha Steel in the mid 1990s. In addition, government support through infrastructure provision has also aided these industries.

Similarly, while the largest basic chemicals plant and one of the biggest refiners, Sasol, has historically derived its inputs from coal, its competitive capabilities derive from the huge

state financing of its synthetic fuels operations for strategic reasons. After more than a decade as a privatised company, continuing to engage in high levels of R&D, it is somewhat ironically a case of an infant industry which has successfully grown-up. The point is that it was the government action rather than simply the minerals-link which underpinned the development of the industry. This legacy lives on in that it is one of the firms making the most of the opportunities from trade and increased international integration (including through outward acquisitions and foreign stock market listings).

At the same time, the lack of linkages from basic metals and basic chemicals due to the behaviour of the major firms is one the key reasons for the poor performance of more labour-intensive and diversified manufacturing. Indeed, monopoly pricing actively inhibits manufacturing growth.

In concentrated upstream sectors such as basic iron & steel, non-ferrous metals and basic chemicals, it is common for firms in South Africa to charge import-parity prices to local buyers for products in which there is a large trade surplus. In such cases competition would be expected to yield a price close to the export price received, as an exporting firm would be willing to sell the product at any price above the price currently being received for the exported product. Instead, pricing at import parity (often some 30 to 50 per cent higher than the export prices received) reflects the exertion of firms' market power to act as price setters rather than price takers.

Table 2. Import-parity price calculation for steel, July 2002

	<u>HRC, 1.5mm<2.00mm thick</u>
Import price (fob)	\$210 (R2373)
+Shipping cost	\$25 (R282.5)
+5% duty	\$11.75 (R132.78)
+offloading & admin (+1%)	\$2.35 (R26.56)
+transport inland	R100
Import price to customer	<u>R2914.83</u>
Local price	R3 214.91
Nett local price (after discounts of 2.5% and 4.5%) ¹	R2 993.49
Recommended IPP (Import parity price adjustment) ²	R90.00

Notes: All prices exclude VAT

¹ For prompt payment and large volume purchasers

² Prices are varied from the list price by using adjustments changed on a monthly basis

Often transport and related costs are more important in the difference between import parity and export prices. For example, in the case of steel the import parity price is calculated by Iscor by taking the cheapest import source and adding on the various costs associated with transport to South Africa (Table 2). These calculated import-parity levels include transport costs from the coast to the inland market. The price differential of the net local price (after IPP adjustment) over the international (fob import) price is 23%. The price differential over that which would be received by the South African producer for their exported product (the international price less the transport and other costs to the international destination) would evidently be much higher than this. Iscor itself puts the export-parity price it

receives at approximately 30% less than the import-parity price it receives for sale to the local market.⁷ In other words, the import-parity price is 43% above the export-parity price.

Such pricing means effectively a transfer from those local buyers (generally downstream industries) to the upstream industries. This can be very costly especially for relatively basic downstream products for which the material inputs are a very large part of costs and are very large in relation to the selling price of the finished good. By comparison, for more technologically sophisticated products, utilising higher skill levels, one would expect the cost of material inputs to be less significant.

Data from input-output tables demonstrate the importance of products such as basic iron & steel for downstream metal fabrication, and also for the more sophisticated machinery & equipment manufacture. Basic iron & steel comprises 37 per cent of direct inputs to fabricated metal products and 42 per cent taking into account indirect effects. The proportion of basic iron & steel including indirect effects (i.e. through intermediate products) in inputs to general machinery is 25 per cent. Non-ferrous metals account for 14 per cent of the direct inputs to fabricated metal products and 18 per cent of the direct inputs to electrical machinery. The labour-intensive plastics sector is even more dependent on inputs of polymer chemicals, which account for 51 per cent of direct inputs to plastic products, and are also import-parity priced.

Pricing is evidently going to be important for the competitiveness of downstream industries, and import parity pricing means there is no advantage to downstream industries from the internationally competitive, low production-cost upstream industries. This is evident in the trade performance. South Africa has large trade surplus in many upstream product areas such as basic metals (iron & steel and non ferrous metals) as well as in important polymer chemicals. Downstream industries record trade deficits in most cases. And, the growth of sectors such as basic iron & steel and non-ferrous metals has far exceeded that of metal products and machinery and equipment. There are further direct implications for employment as the basic metals activities are highly capital-intensive, and tend to reduce labour as they improve the efficiency of their operations. Higher growth of more labour-intensive downstream sectors would generate employment. The constriction of downstream industrial growth through the pricing behaviour of upstream firms also means higher levels of exports of products such as basic iron & steel, given the large fixed and sunk costs implying production at minimum efficient scale as long as returns in the export market cover marginal costs.

These dynamics are consistent with Fine and Rustomjee's characterisation of the 'minerals-energy complex' (MEC) as being at the heart of South Africa's industrial development – both in descriptive terms and, more importantly, as a system of accumulation while at the same time meaning that South Africa's industrial development remains limited outside the areas of its direct interest (notwithstanding the motor industry's development).

It is important, however, to recognise that the MEC characterisation is not necessarily determinist. Different competing interests influence government policy, and changing industrial realities mean big business groupings have to adapt. Some of the changes in the major conglomerate groupings are discussed in a separate section below, here we briefly

⁷ First and Second Respondent's answering affidavit (14 June 2002) in the matter between Stemcor (Pty) Ltd (applicant) and Saldanha Steel (Pty) Ltd, Iscor Ltd, MacSteel Holdings (Pty) Ltd, MacSteel International BV and The Competition Commission of South Africa, para 72.1.

reflect on three recent developments, being (a) continuity in terms of government incentives and support; (b) black economic empowerment; and (c) internationalisation and the attraction of FDI.

The process of government's industrial policy formulation and implementation is obviously a messy one of competing ideas and interests. However, two aspects of continuity stand out. First, large incentives have continued to be given to MEC type activities, and especially basic metals and chemicals. One of the largest incentive programmes has provided tax relief equivalent to R7.7bn since 2002.⁸ The Strategic Investment Projects (SIP) incentive is targeted at large investments which the government considers to be important for future competitiveness of South Africa. Of the 33 projects approved up to the end of 2004, 13 are in chemicals and eight are in metal production (mainly upstream basic metals). Sasol alone accounts for four projects, and 24 per cent of the total tax allowances granted, by value. Other firms to be awarded an incentive include Iscor, BHP Billiton, Anglo-American's subsidiary Hulett Aluminium, Nampak (two), Trident Steel, Kimberley-Clark and Nestle. This scheme clearly appears to be reinforcing the heavy industry orientation of the South African economy and demonstrating the ability of very large companies to take advantage of industrial policies. Based on DTI estimates of direct job creation, the SIP incentive projects approved have an average capital:labour ratio of R3.7mn per employee, making them amongst the most capital intensive activities in manufacturing.

Second, IDC financing for much of the past decade has continued in its orientation to the MEC. Indeed, from 1994 to 1999 over half its investments by value were in basic metals, and the IDC has continued to maintain shareholdings in MEC firms. The IDC's role and recent developments are discussed below in more detail.

Emphasis on black economic empowerment (BEE) in business (as opposed to a broader transformation programme) has been growing, although not necessarily clearly defined. While government's reference is now to 'broad based' black economic empowerment which encompasses skills development, management participation and the growth of small and medium enterprises, the single biggest BEE development has been the Mining Charter and related legislation. This makes the state's granting of mineral rights conditional on a certain minimum black ownership.⁹ While this may appear to weaken the influence of the MEC by subjecting it to intervention by the state, the disproportionate interests held by black ANC-aligned business interests in mining compared to other areas of the economy suggests that the interests of mining and resource-related activities will be strengthened not weakened in government policy formulation. The political influence of MEC type groupings therefore continues, albeit in an ongoing evolving and contested manner.

Another important evolution is linked to the internationalisation of activities. This encompasses both internationalisation of South African minerals-oriented conglomerates such as Anglo-American and Gencor, and foreign interests. The attraction of FDI into minerals-processing in terms of South Africa's 'competitive advantage' has been one strand of government's policy. This has been particularly linked with the importance of cheap

⁸ Details of the projects are given in *Engineering News*, 21-27 January 2005. The proposed Pechiney projects (four in total related to the proposed aluminium smelter) have been omitted following the review of this project.

⁹ It has, in fact, become progressively more complex, as provision has been made through a points system for procurement from black suppliers and for local beneficiation of minerals, which can be traded off against the equity target.

energy in patterns of industrial development. Major current projects under consideration include a ferrochrome plant and an aluminium smelter (proposed for Richards Bay and Coega, respectively). Neither of these will use significant South African minerals inputs apart from energy. The two firms involved are Tata and Alcan (having acquired Pechiney). The acquisition of Iscor by Mittal Steel (now the world's largest steel company) also represents the entry of a conglomerate into South African industry with no previous South African connections.

Big business, competition and concentration

The orientation of big business and the ways in which they interact or compete are a central part of a country's development trajectory (Chandler, 1990; Chandler et al. 1997 and 1998). Inter-relationships between firms within large corporate groupings in Japan and South Korea have enabled the necessary support and co-operation to build dynamic competitive capabilities (Amsden 1989 and 1997). There is little doubt that large firms dominate the South African economy, but their orientation does not appear to contribute to developing production capabilities.

Corporate ownership and control in the South African economy is highly concentrated. The five largest conglomerate groupings, led by Anglo-American, still accounted for 44.6 per cent of the capitalisation of the Johannesburg Stock Exchange in 2003. The conglomerate structures are similar to Chandler's characterisation of 'personal capitalism', with a relatively low level of evolution of managerial structures and with relationships between the groups characterised by co-operation and some contestation for position, but only a relatively low level of competition (Chandler et al., 1997). This has, however, been changing primarily driven by the pressure of foreign shareholders with the move of primary listings of firms such as Anglo-American to the London Stock Exchange. But, these changes do not extend across all conglomerates. Rembrandt stands out as having increased its diversified activities while remaining controlled by the Rupert family.

The extent of control over economic activity exercised by such a small number of organisations in South Africa was one of the main reasons for the prominence of competition policy in the ANC's economic programme as set out in the Reconstruction and Development Programme of 1994.

In the last decade there has been a process of corporate restructuring, reflected in a significant increase in merger activity in the late 1990s. A number of trends can be identified underlying this increase in activity.

First, there has been the unbundling of conglomerate ownership structures to separate operations which were in unrelated sectors. These have led to an apparent de-concentration of ownership in the South African economy, and a reduction in the proportion of the capitalisation of the Johannesburg Stock Exchange (JSE) identified as controlled by the large established white-owned conglomerates (Table 3). However, concentration of control still remains high, and although the companies spun-off are run independently of the original conglomerate pyramid structures the main shareholders often remain the same.

Table 3. Summary of control of JSE market capitalisation (% of total)¹

	1985	1990	1991-95	1996-2000	2003
Anglo American Corp	53.6	44.2	38.9	22.7	22.3
Sanlam	12.2	13.2	12.7	11.2	3.1
Liberty Life	2.0	2.6	5.8	9.0	4.3
Rembrandt/Remgro	3.8	13.6	13.2	10.2	8.1
SA Mutual/Old Mutual	10.6	10.2	11.2	10.4	6.9
Anglovaal ²	2.1	2.5	3.1	1.2	0
RMB/First Rand ³	-	-	-	3.0	4.4
Top 5 gps collectively	82.3	83.9	85.9	70.6	44.6

Source: *McGregors (1999, 2000, 2004), Who Owns Whom.*

Notes: ¹ Control is assessed by taking into account the various cross-holdings of shares that exist and may be associated with a relatively small direct shareholding in any given company.

² In 1998 the Anglovaal shareholding was split equally between the Hersov and Menell families.

³ Note that although only identified as an independent entity in 1994, RMB/First Rand represents the main bank originally within the Anglo-American stable and the banking interests of Rembrandt, which continued to hold a 23.1% stake in 2003. Rembrandt also holds a 9.4% stake in another of South Africa's big four banks, Absa, in which Sanlam holds the largest stake of 19.7%. Old Mutual holds the largest stake in the other two banks, Nedcor (at 32.1%), and Standard Bank (12.4%).

Second, alongside unbundling has been a series of mergers to consolidate the operations of conglomerates within sectors. For example, Anglo-American has bought various interests in packaging to vertically integrate with its paper manufacturing arm. In minerals it has sought to consolidate its gold and platinum interests and extend into iron ore through the acquisition of Kumba. Similar patterns can be observed in Rembrandt's acquisitions in food, beverages and healthcare, and at a smaller scale across South African industry.¹⁰ These processes of consolidation of control have involved both vertical and horizontal mergers.

Third, there has been a process of internationalisation of South African business. This includes the creation of the Billiton group by Gencor (now merged to become BHP-Billiton), restructuring of Anglo-American/De Beers and Minorco holdings and the move to London by Anglo-American, and the overseas listings of Liberty Life, Old Mutual, South African Breweries and Sappi. Locally listed companies such as Harmony and Sasol have secondary overseas listings and very significant shareholdings held by US shareholders in particular.

These developments imply that, while there has been a lessening in the concentration of ownership in the economy as a whole, there has been increasing concentration within many sectors. This is consistent with consolidation to improve companies' strategic positioning and market power, as well as factors such as achieving greater scale economies. In either case, the behaviour of large firms in concentrated markets evidently continues to be very important for South Africa's industrial development.

On the surface, these developments may appear to represent a break with the past. But, many of the underlying reasons for the changes are strong threads of continuity. The conglomerate restructuring to focus on core operations is part of the ongoing internationalisation of South African business and, to an extent, a lessening of identification

¹⁰ See Chabane et al. (2004) for a detailed account of the changes in conglomerates' holdings in the past ten years.

of ownership and managerial control with family groupings. While it has been stimulated by the increasing openness of the South African economy, these changes are consistent with the evolving interests of the conglomerates and have been achieved largely on their own terms, notwithstanding the increasing pressure from government for significant black shareholdings.

3. The evolution of South African industrial policy

Historically, industrial and technology policies both focused on strategic concerns of the apartheid government such as defence and liquid fuels, and the needs of resource extraction and processing industries. Since 1994 industrial policy in South Africa has consisted of four main dimensions.

First, there is a range of '*supply-side*' *incentive* programmes: These followed a functional approach. As exporting, technology and innovation, and small, medium and micro enterprises (SMMEs) had all been identified as important for a competitive economy, a range of incentive programmes was set up for each. The incentives have been criticised (see FRIDGE, 2003) for the low awareness and low take-up. It also appears that the firms better able to make use of them are larger firms with the management capacity (or use of consultants) to access them for decisions they would have made anyway. One incentive stands out (the Small and Medium Enterprise Development Programme) where firm use is associated with higher levels of investment and employment creation (Machaka and Roberts, 2004). As noted above, more recently a Strategic Investment Programme and Critical Infrastructure Facility have provided tax breaks and funds respectively for large industrial projects. These programmes have been largely used by big resource-based companies.

Second, are the *Spatial Development Initiatives/Industrial Development Zones*. These are corridors and zones designated for the improvement of infrastructure based on the expectation of increased industrial activity. These zones were linked to tax incentives for investments located within them, in addition to the provision of infrastructure itself. Two initiatives stand out. The first is the Maputo Development Corridor SDI. Through upgrading of infrastructure, especially on the Mozambique side (port and road) it was envisaged that increased volumes of freight would use the Maputo harbour, and hence travel along the Johannesburg-Maputo route. It was envisaged that better infrastructure together with incentives would induce investment in the Mpumalanga Province at locations along the corridor such as Witbank and Nelspruit, so spreading economic activity in South Africa. The corridor was also meant to increase activity on the Mozambique side. While there has been increased shipping through the Maputo harbour, there has not been a notable increase in investments along the South African side of the corridor. The second initiative of note is the Coega IDZ adjacent to Port Elizabeth and within the Nelson Mandela Metropolitan Municipality. The construction of a major new deep water port is viewed as the catalyst for a new coastal industrial concentration, with an export orientation. While the port is nearing completion the attraction of investments has been slow, with a lot of attention on attracting a major 'anchor' investment in the form of an aluminium smelter or similar plant. There is, however, already an important cluster of auto manufacturing activities in the area.

Third, is the programme of *trade liberalisation*, which changed the relative market prices faced by firms and encouraged them to export.

Fourth, is the *Motor Industry Development Programme*. This is the only sector specific industrial strategy. We now examine it in more detail.

The Motor Industry Development Programme

The Motor Industry Development Programme (MIDP) introduced in 1995 stands out as an industrial policy strategy developed on the basis of understanding the dynamics of a specific industry and the levers that would change the decision of large firms. The MIDP, however, largely came into being because government had committed to a tariff liberalisation programme which saw tariffs on completely built up cars being reduced from over 100 per cent at the beginning of the 1990s to 35 per cent in 2004. The industry was faced with a direct and immediate threat which motivated the development of a concrete industrial policy framework and their engagement with government for its adoption.

The MIDP is essentially an import-export complementation programme which works because the tariff protection on built-up vehicles, while being reduced, is still significant. To encourage local manufacturers to reduce the number of models produced locally and to increase the scale of production to reap economies, the programme allows for the duty free importation of built-up vehicles for the equivalent export of locally manufactured vehicles and components. There is a sliding scale in operation where in order to import a built-up vehicle a progressively larger amount of exports are required.¹¹

As a result, most assemblers focus on one model, and import the others. In addition, effort went in to identifying components which could be competitively manufactured in South Africa. Indeed, some firms only focused on components exports in order to earn credits for imports of the built-up models.

The second notable element of the MIDP is that it has been adapted to evaluations of its impact. The components exported have been dominated by three product groupings – catalytic converters, seat leather and aluminium wheels (although engine parts overtook wheels in 2003) (Table 4). These are very capital-intensive products, and the catalytic converters value derives from their platinum content. It thus amounted to an additional reward to exporters of platinum. The MIDP was revised to place a cap on the credits that could be earned from the export of catalytic converters.

Table 4. Exports of auto components and motor vehicles, fob, Rmn

	2001	2002	2003	% of total components, 2003
Catalytic converters	8 989	9 204	8 104	38.1
Silencers/exhaust pipes	282	340	327	1.5
Engine parts	520	771	843	4.0
Road wheels/parts	725	955	809	3.8
Seat parts/leather covers	2 391	3 184	2 899	13.6
Total components	18 586	22 883	21 269	
Vehicles	11 416	17 227	19 463	

Source: NAACAM, from TISA and NAAMSA

Note: The 2003 values are influenced by the Rand's appreciation.

¹¹ See Barnes (2000), Barnes et al. (2004) and Black (2001).

An additional step was the introduction of a Productive Asset Allowance. This allowance provides duty free import credits against major investments made in local capacity. It recognises the major upfront investments often required in establishing production facilities for a new motor vehicle model, especially with large local content, and directly provides an incentive for such investment.

The effects of changing the behaviour of large buyers has been seen on both the foundry and plastic products industries. As the motor vehicle assemblers examine opportunities for increased local sourcing of inputs they have provided both a local demand stimulus to these industries and considerable pressure on firms to improve capabilities. For example, the foundry industry as a whole has undergone major restructuring and contraction due to liberalisation and weak domestic demand but the foundries supplying auto have recorded growth in output and employment, and ongoing improvements in skills and technological capabilities (Phele et al., 2005). Demand from the motor industry also explains the performance of leather products, with demand for high quality seat leather enabling the industry to grow despite the collapse of the local footwear sector. The auto industry is also taking the lead role in the *South African Tooling Industry Support Initiative* due to its needs for better input capabilities of plastics manufacturers (Dobrevva et al., 2005). One of the main competitive weaknesses of local manufacturers is the poor quality of tooling.

The MIDP has been strongly criticised in South Africa from two positions. Trade unions have criticised the fact that the motor industry has not created employment. However, given the tariff liberalisation planned, the broad maintenance of employment levels should be seen as a success. It is also important to examine the weaknesses in the plan in order to motivate for its adaptation, rather than providing ammunition to those who would like to see it being abandoned entirely.

The second set of critics have highlighted the price differences between cars in South Africa and other countries. This is just a criticism of the tariffs still being levied and misses the point completely. The MIDP works because of protection levels which are still significant. It then builds in incentives to change firms' decisions in ways viewed as in line with government's objectives. In other words, it is an example of getting prices strategically 'wrong' (to paraphrase Amsden, 1989).

Importantly for our analysis, the MIDP was largely developed by industry researchers supported by the South African motor vehicle assemblers themselves and not by government in a leadership role. Other industries have lobbied unsuccessfully for the kind of support provided in the MIDP, but government has stood firmly against them, even in times of crisis such as when the clothing industry faced imports from China and the government had failed to implement safeguard measures. The motor industry, however, is represented by very large multinationals, whose managing directors sit on the South African President's Investment Council, and have direct access at ministerial level.

The role of the Industrial Development Corporation

The orientation of the Industrial Development Corporation as a major source of finance for industrial investment. The IDC provides both loan and equity finance, mainly for new projects, at low interest rates. Its advances directly accounted for around 12 per cent of gross domestic fixed investment in manufacturing from 1998 to 2000 (IDC, 2001a). Its impact is much greater than this as it invests alongside private-sector agents meaning that projects with significant IDC participation account for a very large proportion of

manufacturing investment. The projects in the non-ferrous metals and basic iron & steel sectors with major IDC participation alone accounted for approximately 25 per cent of total manufacturing investment from 1992 to 1997 (IDC, 1997).¹²

This means that the IDC's decision-making is certainly one of the largest determinants of manufacturing investment. It has historically been oriented to the development of extremely large-scale minerals beneficiation projects and has close links with previously state-owned industrial enterprises such as Iscor and Sasol, as well as the major conglomerates. A greater focus on tourism and agriculture projects in the last two years has shifted the project mix to some extent in favour of employment creation. And, during 2005 there has been an important shift to focus on employment creation as one of the primary objectives of the IDC, although this is yet to be clearly reflected in the pattern of financing

Recent developments – the Integrated Manufacturing Strategy

The latest evolution of industrial policy outlined in a document released by the Department of Trade and Industry (DTI) in May 2002 places the main emphasis on competitiveness to be achieved through the application of value-matrices and, in particular, the increase in the 'knowledge-intensity' of production. It is situated in the context of government's microeconomic reform strategy, which also has competitiveness as a major goal (although without a clear articulation of what competitiveness means). Under implementation, the IMS states that the DTI will champion competitiveness, provide customised services (being developed in relation to eight specified areas), and provide broad-based programmes. Much of the focus is on the increasingly knowledge-intensive nature of goods and services. This depends on skills, research and development, and the application of information and communication technologies (ICTs).

While it is difficult to disagree with the aims of human resource development and better (and cheaper) telecommunications, this begs several questions as to how these factors will come about. More fundamentally, it is unclear what exactly is meant by knowledge-intensity and what will induce firms to invest in it. A large part of skills and knowledge are developed on-the-job rather than externally, as an integrated part of developing capabilities. But, firms tend to under-invest in formal training because they only consider the narrow returns to themselves from a better skilled workforce rather than the wider returns to the economy.

Technical knowledge is also partly developed through ongoing adoption and adaptation of machinery. In other words, it is partly determined by investment in physical machinery (Fagerberg, 1994), and is complementary to skills development. The experience of late-industrialising countries demonstrates that, rather than the production of knowledge, it is technology management which is more important (Best, 2001). The complex and interdependent nature of physical investment, education and skill-development, and firms' organisation of production require appropriate co-ordination and planning.

The IMS has largely remained a policy outline of the DTI with little concrete substance and has not been formally adopted by the South African cabinet.¹³ While it aspires to a co-

¹² The IDC provided R14.1bn out of the R25.4bn of investment in these projects which, given the sub-market interest rates, implies a very significant level of support.

¹³ Mandisi Mpahlwa, the new Minister of Trade and Industry (since 2004), is expected to develop an industrial policy, but it is not clear to what extent this will differ from the approach in the IMS.

ordinated policy approach there is no detailing of the roles of different institutions, such as the IDC, in meeting the IMS objectives, nor of the levers to be utilised by different agencies. The IMS also largely ignores demand patterns.

These issues are being addressed in recent developments. The customised services envisaged in the IMS are being realised in the form of Customised Sector Programmes (CSPs) for the designated groupings.

The completed CSPs for the designated groupings have yet to be publicly released. While the programmes allow for interventions to be targeted to the nature of the development challenges in each industry grouping, the approach of the programmes is that they must be guided and implemented through partnerships with the ‘social partners’, that is with organised business and labour. This means that it will be difficult to adopt more interventionist measures to address the power of entrenched upstream and capital-intensive segments of industries in, for example, chemicals and metals, as these are the best organised and most influential groupings in the industry associations.

In principle, the recent industrial policy addresses the poor performance of diversified manufacturing outside of the heavy industry core. In practice, there has been little concrete action to back up the objectives set out in the IMS.

4. Industrial development in Mozambique and the Minerals Energy Complex?

The Mozambican economy has been closely integrated with that of South Africa for more than century. And, much of the economic ties in the 20th century were underpinned by mining. One of the most important links with South African mining was the utilisation of Mozambican migrant labour. South African mining production and exports were a major basis for the development of the Port of Maputo and linked railway line. The earnings of the Port of Maputo was the largest source of Mozambique’s foreign exchange in the early 1970s, and the railways and port were the country’s second largest employer. In the 1960s and early 1970s there was also huge foreign direct investment by South African companies in the Cahora Bassa Dam, fertilizer, smelting and oil refining. With this, the role of South African business rapidly caught up with that of Portugal. As with the colonial power governing Mozambique, the relationships with South African business were clearly ones weighted hugely in favour of the apartheid regime and its major corporations.

The issues we explore here are whether post-apartheid relationships with Mozambique are ones of greater integration through freer trade and capital flows, or whether the structural relationships around the major mining and resource interests continue to drive highly unbalanced growth and development.

In terms of the evolving structure of manufacturing industry, it is dominated by major concerns in aluminium, beer, soft drinks and cereal milling, which collectively represent more than 80 per cent of total output (Castel-Branco, 2004). Aluminium alone accounts for 48 per cent manufacturing output and 28 per cent of manufacturing value added. Agro-industrial activities, which one might expect to be very important, account for less than 15 per cent of total industrial output with the major activities being in sugar (for the local and export markets), tobacco, wood and cotton (all for export). As will be discussed in more detail below, the changing structure of industry reflects FDI rather than local investment, mostly from South Africa and including the participation of the IDC.

Analysis of trade data suggests that economic integration has not increased. Indeed, the trade flows reflect surprisingly little growth in the movement of goods between the two countries, especially given the high growth of GDP in recent years recorded by Mozambique and the programme of tariff liberalisation planned under SADC. This may be partly due to un- and under-recorded trade, and to the slowness of steps to liberalise trade.

We argue that it is also due to the unusual nature of industrial development in Mozambique, and specifically the dominance of a very small number of mega projects. These projects are driven by South African minerals and basic chemicals companies, and have been principally supported by the IDC.

We start by briefly assessing the trade data, before reviewing the role of South African corporations in Mozambique and the role of the IDC. We then specifically take the case of Mozal, which in magnitude of investment and trade is by far the largest development in Mozambique.

International trade

Trade flows are heavily biased in South Africa's favour (Table 5). And, while South Africa's exports to Mozambique have continued to increase over the last decade, Mozambique exports to South Africa have not increased, yielding a widening trade deficit. The increased South African exports are not surprising given the growth in the Mozambique economy in sectors such as construction and the increased role of South African companies. If anything, exports might have been expected to increase at a more rapid rate.

Table 5. South Africa – Mozambique trade flows

	SA Exports to Mozambique (US\$, mn)	SA Imports from Mozambique (US\$mn)	Trade surplus in SA's favour (US\$mn)
1994	476.69	27.90	448.79
1995	486.99	33.87	453.12
1996	568.53	18.41	550.12
1997	583.45	37.14	546.31
1998	479.04	38.75	440.29
1999	641.50	52.63	588.87
2000	681.49	52.78	628.71
2001	654.34	35.87	618.47
2002	591.61	38.20	553.41
2003	724.10	37.47	686.63
2004	767.91	31.73	736.18

The poor performance of Mozambique's exports to South Africa is disappointing but reflects the overall skewed nature of Mozambique's trade flows due to Mozal, and the impact on Mozambique's currency and economy more broadly. The stronger aggregate demand growth expected in South Africa, and increased capital spending may mean potential markets for Mozambican industries in engineering, but the recent trade performance does not suggest grounds for optimism.

A breakdown of the main groupings of South African exports reveals them to be dominated by mineral products (Table 6). Further dis-aggregation reveals this to be almost entirely

composed of fuels, oils and other distillation product. This is followed by machinery & equipment, food products and basic metals (mainly iron & steel).

Table 6. Exports from South Africa to Mozambique, main categories (US\$m)

	1999	2000	2001	2002	2003	2004
Live animals, animal products	27.27	25.88	20.11	24.34	22.27	22.31
Vegetable products	22.16	29.61	27.56	23.86	42.09	39.70
Prepared foodstuffs; beverages, tobacco	63.98	80.86	80.06	82.29	100.92	87.03
Mineral products, fuels	108.27	160.83	208.44	122.21	154.00	210.57
Products of the chemical or allied industries	48.50	50.45	51.65	38.69	50.67	58.31
Plastics & articles thereof; rubber & articles thereof	18.31	20.50	17.51	18.88	24.69	26.37
Pulp, wood, paper & articles thereof	20.18	15.95	13.52	15.49	24.22	34.28
Base metals & articles of base metal	102.42	100.00	54.45	90.53	73.17	81.42
Machinery & electrical equipment	107.05	83.06	68.97	79.69	110.80	98.88
Miscellaneous manufactured articles	11.77	11.56	10.14	10.67	15.28	12.91
Other exports	39.01	36.69	40.03	29.45	36.24	35.58

The imports from Mozambique to South Africa are spread across a range of categories, led by animals & animal products and textiles, but none of any real magnitude.

Investment flows and South African companies in Mozambique¹⁴

South African firms dominate the major private investments that have been made in recent years (Castel-Branco, 2004). These investments have tended to be closely linked with minerals and energy, epitomised by the Mozal aluminium smelter, or in agro-processing and beverages (sugar, soft drinks, beer and cereal milling). There have also been significant investments by South African firms in other sectors such as financial services, tourism and retail.

The large capital inflows from foreign direct investment have supported a continued trade deficit, given the declines in aid inflows. The questions we discuss here is the relationship between investment inflows from South Africa and the development of the local economy in Mozambique. Understanding this requires an assessment of the strategies of large South African companies.

While the major projects in which the South African FDI has been concentrated are quite different, the impact on the Mozambican economy depends on the effect on local production capabilities and local linkages. In the new investments (as opposed to acquisitions of existing factories, such as in beer), these linkages are not strong. Indeed, the package of incentives and tax breaks mean that local returns from Mozal, in particular, are very low compared with the size of the project as a whole. There is a strong relationship between the investments and increased exports from South Africa, and little investment in related activities in Mozambique.

The investments have, therefore, narrowed rather than broadened the industrial base, and have been part of an industrial development trajectory which is increasingly dependent on large South African firms. The firms have essentially determined the agenda, which has been one of extending monopoly influence and the extraction of rents. This has not been to

¹⁴ This whole section draws heavily from Castel-Branco (2004).

the advantage of South Africa also. The Mozal smelter uses South African electricity at very low prices, while South Africa now has to invest in electricity capacity.

Assuming that the integration of the South African and Mozambican industrial economies continues, the important question is what strategies are possible to alter the balance of returns and influence the decision-making of the companies? This requires recognition that a negotiated approach is appropriate and an exploration of the levers that can be applied and how these levers can be developed and strengthened.

In the context of the existing investments, these are largely irreversible commitments. The plants once constructed cannot be readily moved. The Mozambican government is thus in a relatively strong position to renegotiate on performance and behaviour of existing plants around, for example, the use of local firms for the ongoing inputs. Incremental expansions also typically require much lower investments than the initial plant, meaning that concessions (such as on taxation) are not required.

A negotiated framework more broadly could determine principles of conditionality for multinationals, South African and otherwise. These conditions could include local sourcing and training of employees.

Role of the Industrial Development Corporation

An important link is the role of the Industrial Development Corporation. The IDC's mandate was extended to cover financing of projects in SADC countries and then to the whole of Africa. The first cross-border funding approval was for Mozal. The IDC's financing activities across the continent have increased rapidly and, by the end of June 2004, the IDC had 89 financing deals under consideration or implementation in other African countries than South Africa. In addition, the IDC provides finance to African buyers of South African capital goods and related services.

Mozambique accounts for the largest share of IDC financing (in terms of number and value). There are projects (including those under consideration) in the following areas:

- Aluminium
- Mining (3)
- Agriculture and agro-processing (4)
- Tourism (2)
- Wood, timber and processing (2)
- Natural gas
- Petroleum
- Rail
- Industrial Park

The major projects include

- Mozal aluminium smelter, in which the IDC holds a 25 per cent share. The construction started on Mozal I in May 1998 and the first metal was produced in June 2000. Mozal II was completed in late 2003.
- Corridor Sands Project: Minerals sands mining and processing operation in southern Mozambique involving an investment of US\$700mn, for the production of an estimated 375000 tonnes of titanium dioxide slag. It is expected to come into production in the first quarter of 2007.

- Titanium Minerals Project (Kenmare Moma Heavy Sands): mining and processing of dune sands over 170km of coastal dunes in Nampula. Production is expected to begin in late 2006 and it is projected that 600 000 tpa of ilmenite will be produced. The processing will happen at a plant in Western Australia.
- Temane natural gas processing facility and pipeline: The exploitation of natural gas reserves in the Pande-Temane region by Sasol required investment in initial processing/refining in Mozambique and in the pipeline to transport the gas over 900km to Sasol's plants at Secunda and Sasolburg where it replaces the original feedstock, coal. The gas came on line in mid 2004. The IDC was an important backer and provided finance for the project.
- Moatize Coal Mining and Sena Rail Rehabilitation: The exploitation of the Moatize coal field in Zambeze depends on the rehabilitation of the rail line and the port at Beira. There will also be a 50:50 joint venture between Eskom and Edm for the power station. The main product will be coking coal for export. The project is hoped to lead to additional investments taking advantage of the upgraded rail line and port. The project is in the development phase.

The IDC is thus already a major actor in industrial development in the region, and particularly in Mozambique. As well as financing the IDC plays a central role in links with the South African government and with Eskom. The projects financed, however, mirror the orientation to minerals and basic metal processing which characterises its activities in South Africa. It is also important to note that the financing of Mozal has been very profitable for the IDC.

In addition to their financing role, the IDC has also undertaken research on industrial policy for various African governments, including Tanzania, Ghana, Ethiopia and Uganda in conjunction with UNIDO. An industrial policy for Mozambique therefore needs to set out an engagement strategy with the IDC. The changing orientation of the IDC in South Africa, to a more explicitly developmental finance role which seeks to identify projects in terms of their development impact including employment creation and local value-added, needs to be reflected in their role in other African countries. It is important that the government of Mozambique clearly sets out an industrial policy agenda against which the IDC's role can be set out.

Mozal

Mozal is a large aluminium smelter built in the late 1990s in Beloluane, outskirts of Maputo City. It has the capacity to produce 512,000 tons of aluminum ingots per year. The total cost of the project was approximately US\$ 2.4 billion. Current shareholders are BHP-Billiton (66%), IDC (20%), Mitsubishi (12%) and the Mozambican government (2%).¹⁵ In addition to FDI, the financing of the project has been guaranteed by South African agencies (IDC and South African financial system), the financial system in the UK and other European agencies (including the shares of the Mozambican government which were financed by a loan from the European Investment Bank); by Japanese corporations and financial system, by IFC and even by Mozambique. Production started in 2000, and its main markets are the European Union and the automobile industry in Asia.

¹⁵ BHP-Billiton, included in the FTSE 100 index, has recently become the largest aluminium producer in the world, controlling mining of alumina and smelters. Its business is focused on minerals and non-precious metals.

Mozal has been attributed Free Industrial Zone (FIZ) status. This means that it is exempted from paying duties on imports of material inputs, equipment, parts and any other imports that are required for the activity of the company. It is also exempted from paying value-added tax, and corporate taxes are limited to 1% of sales. The project can import and export capital freely after registering with the central bank.¹⁶

With initial capital cost per direct job equivalent to 26 direct jobs elsewhere in the manufacturing sector, each worker in Mozal produces as much as 30 workers and exports as much as 200 workers from the average manufacturing firm.¹⁷ In absolute terms, Mozal is far more productive than any other firm in Mozambique. Relative to its initial capital costs Mozal main advantage relies on its huge export capability and demand pressures that may provide a basis for linkages, provided that the Mozambican economy develops the capacity to absorb and respond to such demand pressures.

Aluminium represents 48% of total manufacturing output and 28% of total MVA, and the huge difference between the two is due to Mozal's heavy reliance on acquisition of intermediate materials and services, mostly imported. It is interesting to mention that aluminium production by BHP-Billiton is vertically integrated, as this corporation owns and controls alumina mines and aluminium smelters, and has interests in electricity and final consumption of aluminium. BHP-Billiton aluminium production is vertically integrated at world level, not necessarily in any one country. This also means that no single company of the BHP-Billiton aluminium group is necessarily vertically integrated, although all of them may individually benefit from the industrial linkages that BHP-Billiton provides. Hence Mozal is exclusively focused on direct production and export of aluminium with very little vertical integration as it subcontracts the provision of almost all services and goods that are required. However, Mozal benefits from vertical integration provided through the BHP-Billiton group that owns smelter and the alumina mines that supply the raw material.¹⁸

Mozal's total contribution to GDP fluctuates around 3.3%, which, for a single firm, is a huge value. Its contribution to exports is even more impressive: 75% of manufacturing exports, 60% of exports of goods and 42% of total export revenue of Mozambique.¹⁹ Net trade gains of Mozal, estimated at about US\$ 400 million per year at full capacity and steady state, are very large if compared with the scale of the Mozambican economy. However, when profit repatriation, payments of investment services and transfers of wages of foreign workers are accounted for, Mozal's net balance of payment gains are reduced to US\$ 100 million per year. Of these, only about US\$ 45 million are actually retained by the Mozambican economy in the form of wages of Mozambican workers (US\$ 17 million), purchases in the domestic economy (net contribution of about US\$ 14 million), social programs (approximately US\$ 4 million) and fiscal linkages (expected to be about US\$ 10 million in 2004).²⁰

¹⁶ See GOM 1999 for the Mozambican legislation on FIZ.

¹⁷ Castel-Branco 2002a and Castel-Branco and Golding 2003. It is argued that Mozal can generate as many as 2,500-3,000 indirect jobs through linkages. This estimate is not taken into consideration in the above analysis because it depends on linkages that have not yet materialised and also because each one of the predicted, indirect jobs requires more investment for the said linkages to materialize.

¹⁸ Castel-Branco and Goldin 2003.

¹⁹ Castel-Branco 2003 and Castel-Branco and Goldin 2003.

²⁰ Castel-Branco and Goldin 2003.

Thus, Mozal is a huge and very efficient project, but its actual net contribution to the Mozambican economy as a whole, although still quite important, is not as impressive as it could be expected from such a mega project. This has led many analysts to consider that the main contribution of Mozal to the Mozambican economy is to be a showroom: to demonstrate that high profile and highly demanding and competitive mega projects can work efficiently and profitably in Mozambique and compete with the best in the world. Of course, the next question that comes to mind is why would someone wish to demonstrate that mega projects, from which the economy as a whole does not profit a huge deal, can work in Mozambique?

According to state officials, the Mozambican government became closely involved with the Mozal project after the investors demonstrated the potential developmental benefits from the expected demand-related linkages that Mozal could generate, as well as from employment creation and the opportunity to change the structure of the economy and improve the balance of trade.²¹ The success of Mozal is expected to improve business confidence in the Mozambican economy and attract more FDI. The government also sees mega projects like Mozal as desirable because they accelerate the pace of industrialization and the development of the domestic private sector through linkages.

From previous discussions and data, it is obvious that expected linkages are not happening at a significant rate, and that high tech mega projects are not the way to address unemployment. The slow development of domestic business and productive capacities, including the pool of entrepreneurship and qualified workers, is one of the reasons why linkages are difficult to emerge. This suggests that mega projects are not perfect substitutes for strategies and policies that promote the development of domestic capabilities. Instead, these projects may be significantly more efficient if they are part of such strategies and policies with broader development goals in mind.²² Fiscal linkages have been prevented from happening because of the package of incentives that Mozal enjoys.²³ Mozambican officials claim that for public finances to benefit from Mozal, the government needs to own shares in the project. However, the government, a very minor shareholder, has to pay back the foreign loan that was used to buy its shares, which attaches risks to public financial returns on a project like Mozal.

Amongst Mozambican officials, it is believed that survival pressures will force Mozambican firms to become efficient, and that these pressures are what Mozambican firms need in order to become efficient. “Intelligent partnerships”, meaning joint ventures with foreign firms with expertise in the area, are seen as the only available way to promote domestic firms because of two reasons: no other forms of investment are available on a systematic basis, and joint ventures are seen as the most adequate way for transfer of technology, skills and experience.

As discussed earlier, although linkages with the domestic economy tend to grow, even if not very fast, no significant investment in upgrading of industrial capabilities has taken place in the vast majority of cases. This is partly due to strong deficiencies related to business strategies, access to capital, understanding of industrial upgrading demands and

²¹ Interviews with Luís Siteo, Manuel Mbeve and Sérgio Macamo (Ministry of Industry and Trade, MIC, in Portuguese), and António Macamo (CPI, linkages division).

²² See, for example, Borensztein, Gregório and Lee 1995, Eayon and Kortum 1995, Hirschman 1981 and 1958, Lall 1997, 1992a and 1992b, Mello 1999 and Nelson and Pack 1999.

²³ See Helleiner 1989, Hirschman 1981 and Weiss 1980, for a more general discussion of this problem.

other problems related to business and productive capacities. Moreover, most firms see Mozal as only a fraction of their market, and not one with long-term ties because of the nature of contracts and cycles of activity. Thus, no firm, domestic or foreign, is willing to commit significant effort, capacities and resources in substantial industrial upgrading only to compete for occasional contracts with Mozal. Most firms seek such contracts but improve only what is strictly necessary to win a contract, mainly for reputation and financial gains.

Thus, little real technology transfer has taken place because the contracts have been almost always short-lived.²⁴ If other mega projects or other dynamic development poles emerge, which have demands consistent and complementary with those of Mozal, potential supplier firms may become more committed to true industrial upgrading and development.

Mozal does not seem to be changing the structure of the economy. On the contrary, it is reinforcing the economy's dependence upon a smaller bundle of primary products, only this time it is the transformation of alumina and electricity into aluminium that dominates manufacturing output and exports of goods, rather than sugar, tea, cotton or cashew nuts. Similarly, whereas the project's net contribution to the balance of trade is significant (abstracting from who retains the real resources, as discussed earlier), the export structure of the economy is becoming more concentrated and narrow, and therefore more vulnerable to volatile booms and busts of primary commodity markets.²⁵

Mozambican officials also argue that Mozal was established in Maputo because of Mozambique's comparative advantage in power supply (associated with the large Cahora Bassa dam on the Zambezi River, in Tete), cheap labour and the package of incentives. However, a closer examination shows that cheap labour (meaning low wage labour) was relevant for Mozal only during the construction phase. The vast majority of Mozambican workers in the plant are either skilled or semi-skilled, and company is reported to be recruiting skilled workers from many other firms because they can pay higher wages.²⁶ Mozal is capital-intensive and the wage bill is a small proportion of the company's cost structure.

Motraco, a joint venture of three electricity corporations, namely EDM (Mozambique), ESCOM (South Africa) and SEB (Swaziland), which supplies Mozal's energy requirements, is linked with the South African power grid. Therefore, while it is obvious that Mozal has strong links with the energy sector,²⁷ such links are with the South African

²⁴ Castel-Branco and Goldin 2003.

²⁵ See, for example, Edström and Singer 1992 for an analysis of the booms and slumps of primary commodity markets and their de-stabilising impact on the economy and business confidence. According to Castel-Branco and Goldin 2003, between 2000 and 2003 the world aluminium price fell by 15%.

²⁶ Interview with Manuel Mbeve (MIC), and Ian Reid and Peter Cowie (Mozal). See also "Metical", various issues in January and February 2001. Ian Reid and Peter Cowie also argued that one of the major constraints faced by Mozal and any other future mega project in Mozambique is the acute shortage of skilled and experienced workers. Reid and Cowie also emphasised that the current labour law does not help industrialisation because the domestic supply of skilled workers is very limited and the new law makes recruitment of foreign workers very difficult. They suggest that the government should concentrate on training large numbers of professionals of required quality and improving the quality of the education system. They argue that Mozal is not only recruiting skilled workers but also providing training and scholarships to increase the supply of skills.

²⁷ Motraco, built primarily to supply energy to Mozal, is proof of this link. The fact that Mozal consumes twice as much energy as the remaining of Mozambique, and that Motraco could be upgraded to supply the entire manufacturing sector in the South, is proof of the strong and increasing role of the South African

energy sector, not the Mozambican. Thus, whether or not Mozambique has comparative advantages with respect to power supply is irrelevant for Mozal.²⁸

Mozal's officials argue that the project was located in Mozambique for three main reasons: energy, incentives and Mozambique's fast economic growth in recent years.²⁹ Their analysis of energy and incentive issues differs from that of Mozambican officials.

The link with energy is through Eskom's expansion strategy in the region. This corporation controls most of the energy generated in South Africa and also by Cahora Bassa, and is involved in new projects to expand energy production (Mepanda Uncua in Mozambique, and potential projects elsewhere in the Continent). Mozal was also conceived as part of the energy strategy because of its energy intensity, which radically improves the viability and profitability of private investment in the Mozambican energy sector and of integrating the energy grid of Mozambique with Eskom's. Thus, the motivation to establish Mozal in Mozambique, particularly in the South, can only be properly understood within this more general, strategic framework that combines the capabilities, interests and strategies of Eskom, BHP-Billiton, the South African financial system and minerals-energy complex.

In addition to the package of incentives received from the government of Mozambique, Mozal enjoys incentives provided by the South African government, more importantly in the form of cheap energy tariffs as part of export and globalization incentives. Given that energy is the single largest cost in aluminium production, energy subsidies may play a far more important role in Mozal's profitability than some of the other incentives that are provided by the Mozambican investment incentive legislation.

There are other factors that should be taken into consideration in this analysis. First, Mozambican officials said that Mozal was developed not from government initiatives but fundamentally because of the insistence of the investors, even before the revised and more generous version of the FIZ legislation had been approved. Therefore, incentives at the level of FIZ status were not the fundamental issue in the decision to invest.³⁰

Second, when Mozal was still developing as an idea, Kaiser, a USA-based multinational, was trying to convince the Mozambican government to build a large aluminium smelter in the outskirts of Maputo. Kaiser failed in large part because Mozal came along. According to Mozal's officials, Kaiser did not have the financial structure or the influence upon the world market to be able to succeed.³¹ Mozal's aggressive business strategy seems to have been motivated also by the need to eliminate Kaiser as a competitor as part of a strategy to protect and expand the economic might of the South African MEC.

energy sector in the Mozambican economy.

²⁸ Costs and unreliability of supply of electricity are the main infrastructure related problems faced by the manufacturing sector in Mozambique, as identified by Biggs, Nasir and Fisman 1999. Thus, even if Cahora Bassa is capable of producing large quantities of energy, the Mozambican economy is not capable of using it. Therefore, arguing that Mozambique has comparative advantages in power supply requires a strong qualification: in relation to whom? Definitely, it is not relative to South Africa.

²⁹ Interviews with Ian Reid and Peter Cowie (Mozal).

³⁰ Interviews with António Macamo, Luís Siteo and Manuel Mbeve. This information is confirmed by Ian Reid and Peter Cowie (Mozal), who said that it was only after several visits by members and officials of the Mozambican government to Mozal's twin project in Richard's Bay, where they could see the linkage potential of a large aluminium smelter, that the Mozambican government finally decided to go ahead with Mozal.

³¹ Interviews with Ian Reid and Peter Cowie.

Third, Mozal's officials also claim that no mega project can succeed in Southern Africa without going through the South African financial system and operating together with some large South African corporation.³² The argument is that South Africa has the capability and the experience of the region, and also the integration strategy that links the economies of the region. For example, in Mozal (1999) it is argued:

Since the project will import a substantial proportion of its inputs from South Africa, it will stimulate regional trade between the two countries. This trade will also enhance the viability of the road and rail system that is being implemented as part of the Maputo corridor. (...) The new transmission line will contribute to regional integration and enhance the Southern Africa power pool. (...) (pp. 61-2).

Fourth, Mozal creates important dynamic linkages with other South African firms that are the main suppliers of parts, equipment, services and assistance. Fifth, Mozal's location in Mozambique also opens the access to the Indian Ocean directly through the Port of Maputo, where investors initially wanted Mozal to be built.³³

Sixth, large South African corporations, associated or not with the MEC, are globalizing instead of integrating vertically and horizontally within the South African economy. Apart from the market power they acquire by expanding worldwide, globalization helps these corporations to become less sensitive to government policy and to increase the influence of their strategies upon public policy.³⁴

Therefore, although the FIZ status helped Mozal to be established in Mozambique, it may have done so only in conjunction with the other factors. In other words, Mozal may have happened in Mozambique even if the incentive package made available by the Mozambican government was far less generous.

This analysis points to four fundamental issues. First, massive investment incentive packages increase the social costs of FDI, reduce its social benefit, and are often superfluous. Second, incentives should not be used without thorough consideration of the corporate strategies and motivations behind investment decisions because it may almost always be possible to minimise the social costs of incentives and increase the social benefits of the project. For example, Mozambique could have used the competition between Mozal and Kaiser, or the strategic locational advantages of Mozambique, to reduce the magnitude of tax exemptions awarded to Mozal.³⁵ Third, the analysis of investment projects should only incorporate externalities (indirect employment, linkages, etc.) if the costs and possibilities of making such externalities happen are thoroughly estimated and evaluated; otherwise, projects may be approved on the basis of benefits that will not occur. Fourth, no matter how much FDI flows into the Mozambican economy,³⁶ there is no

³² Ian Reid.

³³ Manuel Mbeve.

³⁴ See Fine 1997b, Fine and Rustomjee 1996 and Roberts 2000.

³⁵ See, for example, Chang 1998 for a more general discussion of the bargaining process between LDCs and multinational firms, and Blomström, Kokko and Zejan 2000, and Weiss 1998 for a more general analysis of the relationships between the state and multinational firms.

³⁶ Large inflows of FDI, such as the case of Mozal, are likely to be highly concentrated in a few areas because of corporate strategies and Mozambique's limited capabilities. This does not offer very good prospects for vertical integration and diversification of the Mozambican economy. Furthermore, FDI inflows into the economy are unstable and the current boom seems to be running out of steam (UNCTAD 2000a and 20001). The current capabilities of the Mozambican economy – infrastructures, skills, entrepreneurial, institutional and financial – would easily be exhausted by a couple of projects of the scale of Mozal. Therefore, it should

substitute for strategies and policies that effectively create domestic business and productive capabilities, including entrepreneurial capacities and a qualified and motivated working force. These strategies cannot be general and abstract, and should take into account the various forces that influence the development of the Mozambican economy, including the processes of restructuring and expansion of South African capitalism.

*Natural Gas*³⁷

Sasol's Pande-Temane (Inhambane) natural gas project consists of a small refinery that extracts natural gas, purifies it and pumps it through a pipeline that is almost 900 kilometres long, crosses three Provinces in Mozambique (Inhambane, Gaza and Maputo), and takes the gas to Sasol's plants in South Africa, where it will be transformed into liquid fuels. Sasol (70% of the shares) and IDC are the main partners of this project. The project falls within Sasol's strategy of diversification away from coal, of controlling regional energy reserves and of sharing, in a monopolistic manner, the world market for gas-to-liquid fuels. Thus, in the early 2000s, Sasol signed an agreement with Chevron (USA) to form a worldwide gas-to-liquid fuels joint venture, and Mozambique's natural gas reserves are part of such a project.

The cost of the project is estimated at US\$ 1.5 billion. The project will employ less than 200 workers during operation. Gas will start to be pumped to South Africa in 2004. When the operation starts, exports of Mozambique to South Africa are expected to increase very sharply, such that Mozambique's trade deficit vis-à-vis South Africa will be much reduced. However, the real balance of payments impact of the project will depend on the same factors as described for Mozal: net current and capital account effects, as well as the actual retention of resources by the Mozambican economy which, in turn, depends on wages, taxes, domestic purchases, social programmes and so on.

It is too early to attempt any quantitative projections of the economic impact of the natural gas project, but such an impact is expected to have the same profile as Mozal's. GDP and industrial output will jump to a higher level, or platform, of activity from which further growth will depend on the growth dynamics elsewhere in the economy. Exports will also jump to a higher platform, but actual balance of payments gains (including actual resource retention by the host economy) will be significantly less impressive than export growth. An added twist to export dynamics: two primary, energy and mineral based products, aluminium and natural gas, will account to about two thirds of total export revenue of the country, increasing export concentration to dangerous levels of vulnerability to shocks related to commodity market volatility. If industrial domestic linkages are not created and other development poles do not emerge, production and export concentration will tend to constrain productive capacities to a narrow range of basic operations, sectors and technologies.

Downstream linkages from natural gas, associated with the development of energy intensive industries, like the dormant Maputo Iron and Steel Project (MISP), are still only a theoretical hypothesis (similar to the probability of developing downstream industries that may utilise Mozal's aluminium as an input). If such energy-intensive, downstream linkages develop while the remaining industrial sectors do not, then the Mozambican system of

not be taken for granted that Mozambique will continue to receive massive inflows of FDI and that it has the capacity to absorb more mega projects.

³⁷ Section based on interviews with CPI and the mega project advisory group, and on media articles.

accumulation, reflected through the agencies, linkages and productive and export basis, will become fundamentally dominated by the core MEC.

Thus, strategically it is at least as important to diversify the social, sectoral and regional sources of economic growth and dynamics, as it is to maximise the linkage potential generated by the existing dynamics of the MEC in Mozambique.³⁸

There is, however, another dimension of the natural gas project that is very important looking at: the implications of fierce oligopolistic competition for strategies, costs and benefits for the economy.

The monopoly of the Pande-Temane natural gas reserves were allocated to Enron (USA) by the Mozambican government in the mid-1990s, as a condition of the continuation of USA government food aid programme to Mozambique. Enron expected to export the gas to South Africa, but negotiations with Sasol and the South African government did not make any progress for years. Then, Enron conceptualised the development of the iron and steel project (MISP) to diversify the market for natural gas by increasing domestic demand, and a consortium with IDC and a Swedish corporation was created for this purpose.

After the general outline of the MISP was approved by the Mozambican government, IDC withdrew from the project and, as far as available information is concerned, no convincing formal explanation was ever given for that move. The closest to an explanation that IDC gave was to argue that it was its corporate strategy to move away from capital-intensive projects. However, this explanation is not consistent with IDC's further investment in the expansion of Mozal, two years later, and with IDC partnership with Sasol in the natural gas project. IDC's position might have been influenced by the desire to block Enron's way and get Sasol's goals through; or it might have been motivated by the monopoly power of another South African large corporation, Iscor (steel), which might have been not interested in the opening of a mega steel and iron project in the region outside its control. Whatever the official reason might be for IDC's decision concerning MISP, the consortium broke up soon after and Enron was left alone to try, and fail, to mobilise finance for a US\$ 1.2 billion project that had been abandoned by two of the three main partners.

Enron's position became unsustainable. They had the monopoly of the gas reserves but no market for it. Then, it was a matter of time for Sasol to launch the final offensive to acquire from Enron the monopoly rights of the gas reserves. Sasol had an agreement signed with Chevron for a worldwide joint venture on gas-to-liquid fuels, and claimed to have found enough gas reserves in Sofala to build a petrochemical refinery without Enron's involvement. Further, it is claimed by some Mozambican experts that at the time worked for Enron that Mozambican government institutions and public utility enterprises blocked any attempt by Enron to develop the gas and the iron and steel projects. Whether this claim is true or not, Enron had no sustainable negotiation position. At the end they left and Sasol acquired the monopoly over the natural gas project.

Thus, Enron, the original bully, was thrown out by a bigger and more capable player. The alliance between the South African and the Mozambican government in pursuing and helping Sasol's cause was stronger than the USA threat of cutting food aid. Also, at the end of the process, Mozambique was not as dependent on food aid for food security and public revenue as it was in 1994-1995, and the troubles that later led to the bankruptcy of Enron,

³⁸ Castel-Branco 2004, 2003 and 2002a; Castel-Branco and Goldin 2003.

and to criminal charges against its top managers, had already started to shake this corporation that was once one of the largest energy companies in the world.

The oligopolistic war delayed the starting of the gas project by more than eight years, and prevented the iron and steel project from starting. (One could even ask if MISP could ever be developed without the “approval” and involvement of Iscor, and what the market for MISP’s output could be). The final outcome was simply that one monopolist was replaced by another, and the new one forms part of the regional and global dynamics and strategies of expansion of the South African core MEC.

What was the role of the Mozambican government in this process? Did the government formulate a strategy to maximise social and economic benefits for Mozambique by negotiating on the basis of the war between Sasol and Enron, and of the strategic interest that Sasol has on the project? There is no definite evidence for a “yes” or “no” answer to these questions.

However, the case of the natural gas project shows four important points. First, the development of large projects tends to be determined by corporate strategy rather than by the simple availability of resources. As the Sasol chief executive said when the monopoly rights agreement was signed with the Mozambican government, Sasol had waited three decades for the right time to make the (predatory) move, and the agreement was the accomplishment of right corporate and business strategy. Second, strategy gives competitive advantages to corporations but also reveals their strategic interests that could be used by governments to bargaining for better social and economic deals. Governments need to understand the strategies and moves of the corporations, and need to have a strategy on their own.

Third, the South African government actively pursues regional and globalization strategies and helps the construction of market dominance by large South African corporations: IDC, for example, has been a key player in the natural gas project (and also in Mozal), not only by providing finance but also by participating in oligopolistic wars. And the Mozambican government, what strategies does it exactly pursue? Or does it believe that the market forces at play in the region are correctly described by any orthodox textbook about the economics of perfect competition?

Fourth, whether one likes it or not, the fact is that the processes and systems of accumulation, investment and business development in the region are closely related with some key dynamics. Hence, public and corporate strategies alike have to incorporate the regional and international dimension of economic and business development, or be irrelevant. Taking again the example of the MISP, does it really make any sense to develop such a large project with the main purpose of diversifying the market for natural gas? What is the knowledge that the government, investment promotion institutions and businesses in Mozambique have about the dynamics of the iron and steel industry in the region (demand, supply, technology, competitiveness, finance, adjustment strategies, incentive mechanisms in place, agents involved and the linkages developed, etc.)? Industrial strategies and policies cannot only be based upon linkages that are technologically possible. They have to be focused on the actual social and economic linkages and agents, and on the way they relate to each other to form capacities, pressures and interests that determine which strategies are adopted and implemented and what their outcome is likely to be.

5. Conclusions

Our paper covers a lot of ground in order to explore broad questions as the industrial development paths of South Africa and Mozambique, their inter-relationships, the role of minerals and energy, and the implications for each country.

We conclude that the liberalisation and greater economic stability in each country has not led to a shift to radically different industrial development dynamic. This may seem surprising given the huge political changes that have occurred. What we mean by this, however, is that the same path in being walked in terms of the continuity of major mining interests and their ability to influence the states in each country to support their objectives. This is not the same as arguing that the path has continued in a straight line.

In the case of South Africa, the exploitation of platinum and the large industrial investments in basic metals and basic chemicals reinforce the significance of the MEC in industrialisation, and can only be understood in terms of continuity with past government policies and the decisions of major corporations such as Sasol and Iscor. It is the entrenched advantages of these firms based on historical state support, continuing finance from the IDC, and the intrinsic cost advantages in the availability of minerals inputs and cheap energy which have underpinned their growth. In a further continuity, this has not been the foundation for more diversified development. Rather, monopoly behaviour of the now privatised corporations has inhibited the competitiveness of more labour-intensive industries which rely on basic metals and basic chemicals as their main material inputs.

There have been major shifts in the internationalisation of the corporations engaged in MEC activities. This has been both in terms of outward (re)internationalisation of firms such as Anglo-American and Gencor, as well as the acquisition by global companies of Iscor and Columbus Stainless Steel. Planned new investments by firms such as Tata and Alcan take this pattern even further.

In the case of Mozambique, the over-riding industrial impetus in terms of sheer size (and its distorting effects on the rest of the economy) is the investment in Mozal, followed by other major investments in gas, mineral sands, sugar, beer and cement. All but one of which has been driven by South African capital, and with linkages to South African production of energy and chemicals in the cases of aluminium and gas. Excluding aluminium it must be remembered that manufacturing output fell from 2000 to 2003.

To understand the causal factors in industrial performance it is therefore necessary to examine the corporate strategies of these firms, which make large and long-term investments, characterised by huge scale economies and negotiate specific provisions directly with government. For government's industrial policy to ensure broad-based and sustainable growth it is similarly necessary to understand the strategies of these firms and the importance of different factors in their decision-making in order to negotiate effectively with them. It is suggested that the research agenda should encompass more detailed information gathering and analysis of the flows of foreign capital, the linkages within countries and across borders, trade flows and their causes and the behaviour of major firms, local and foreign in the context of decision-making by multinational enterprises. This is a rich and potential very rewarding area for economic analysis in coming years with much to contribute to the industrial development debate.

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