

Addressing market power in a small, isolated, resource-based economy: the case of steel in South Africa

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ABSTRACT

South Africa has long been characterised as an economy that has built a comparative advantage in a range of resource-based intermediate products. While South Africa has significant cost advantages in many of these products, they are generally also characterised by large-scale economies. This means high levels of concentration and concomitant market power, especially given high transport costs and a lack of regional competition. The paper examines issues related to how government can address the implications of these economic characteristics and points to difficulties in applying off-the-shelf competition and regulatory solutions derived from industrialised countries. It takes the steel industry as an exemplar of these issues. The paper highlights the historical role of the state and the effects of market power on the development of relatively labour-intensive downstream manufacturing. From this discussion it draws out challenges for policy, and suggests an agenda for research.

1. BACKGROUND

South African has long been characterised as an economy that has built a comparative advantage in a range of resource based intermediate products (e.g. Fine & Rustomjee: 1996, Joffe, A. *et al*: 1995). These industries are typically characterised by a small number of large, scale-intensive firms, that produce intermediate products or services based on processing the feedstocks of South Africa's primary resource endowments. They dominate substantial parts of the secondary and tertiary sectors of the economy, particularly the metals, chemicals, and electricity sectors. It is also significant that a number of the dominant firms in these sectors are, or have been, state owned enterprises (SOE's) or derive much of their competitive advantage from an SOE².

In large part because of the concentration in resource-based, upstream, intermediate industries it has also long been recognised that the South African economy is highly concentrated. Thus the need for a strong competition policy in

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² For example, the aluminium industry consumes vast amounts of electricity and hence is attracted to investment destinations where electricity is relatively cheap.

the post-apartheid economy was recognised in key policy documents such as the RDP³ (1994: 25) and GEAR⁴ (1996).

The main objectives of competition policy are to encourage competition among firms, protect consumers and downstream firms from restrictive practices, and to open up new opportunities for investment.

GEAR (1996:14)

The concern with concentration in the economy was even more explicitly reflected in the preamble to the Competition Act (1998)⁵.

The people of South Africa recognise:

That apartheid and other discriminatory laws and practices of the past resulted in excessive concentrations of ownership and control within the national economy, inadequate restraints against anti-competitive trade practices, and unjust restrictions on full and free participation in the economy by all South Africans.

Competition Act (1998:2)

This concern is often expressed in the context of the frequently stated policy objective of industrialising by using South Africa's resource base as a platform for downstream beneficiation. That is, moving from the processing to fabrication stages of manufacturing with the attendant benefits of value addition and employment creation. Dissatisfaction with progress made with beneficiation is reflected in the Department of Trade and Industry's (DTI's) Integrated Manufacturing Strategy (2002):

*South Africa's economic development is founded upon its natural resource endowments. However, we have failed to fully capitalise on these resources even though there has been significant progress made in the past eight years in value addition and beneficiation of raw materials ... Issues to be addressed include import-parity pricing. ... *Beneficiation is the core mechanism for the transformation of our economy.**

DTI (2002:34), authors' emphasis

As will be elaborated on below, the practice of import parity pricing goes to the core of the competition problem associated with attempts to promote beneficiation in the South African economy. It is widespread in upstream, resource-based industries, and effectively works as a mechanism to retain resource rents upstream as opposed to passing the advantages of South Africa's resource endowment to downstream industry.

Indeed, the trend in the past ten years has been more of continuity than change. Capital and energy intensive resource-processing upstream sectors have performed well with relatively poor performance by more labour intensive downstream manufacturing industries (Figure 1). The partial exception is the growth of production of the motor vehicle sector. However, this is related to a specific government programme⁶. Even in this sector, the single largest

³ Reconstruction and Development Programme

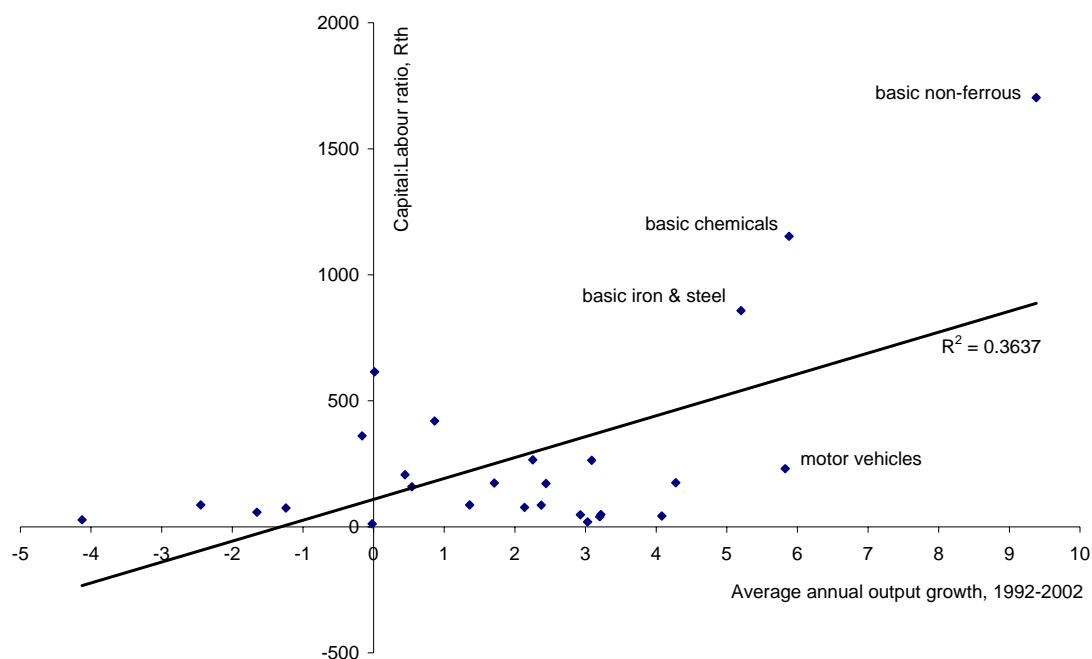
⁴ Growth, Employment and Redistribution Strategy

⁵ As amended in 2000.

⁶ The Motor Industry Development Programme (MIDP).

component export was based on natural resource processing of platinum (catalytic converters).

Figure 1. Output growth and factor intensity in manufacturing, 1992-2002



Source: Calculated from Quantec data

Notes: Capital:labour ratio is measured in thousands of Rand of capital stock per employee in 2002

The coke & refineries sector was not included in the figure as it has a capital:labour ratio of R7237 thousand.

While the DTI's policy objectives of increasing beneficiation and development of stronger local value matrices are widely agreed upon, there is not necessarily a good understanding of what are the main obstacles to this occurring. The three sectors of *Basic Iron and Steel*, non-ferrous metals and basic chemicals which have registered such high output growth rates are characterised by high levels of concentration. At the same time, their products have a relatively low value to mass ratio meaning that transport costs per Rand of product are high. This allows for the possibility of market power to be exerted in the local market.

As a result there continue to be large net exports of products such as steel, aluminium and polymer chemicals in unbeneficiated form, and net imports of more beneficiated products.

Government's ten year review indicates that competition policy has not adequately dealt with high levels of concentration in the economy and attendant pricing implications.

... there is concern that the competition authorities have not been as effective in the field of combating prohibited practices Industry concentration remains high in South Africa As a result, price markups in South Africa are high by international standards, especially in certain key intermediate products.

Towards a ten year review (2003:40).

This is a concerning evaluation, particularly in the light of the importance assigned by the IMS to downstream beneficiation as the major contributant to South Africa's industrialisation.

In order to address this question, this article reviews the standard set of off-the-shelf proposals on dealing with market power in a developing economy. It then evaluates these sets of proposals in the light of the specifics of the South African steel industry. It seeks to illustrate why achieving competition in resource-based industries in South Africa is highly complex.

2. POLICIES TO PROMOTE COMPETITION AND ADDRESS MARKET POWER

In 1998, Stiglitz critically examined the policy conclusions of the "Washington Consensus" and proposed a transition to a "Post-Washington Consensus". The key theme running through this argument was the need to move from a narrow focus on macroeconomic stabilisation towards an increasing emphasis on the role of institutions functioning at the micro-economic level of the economy.

The importance of institutions and hence much of Stiglitz's agenda seems to have been adopted. Thus in 2002, the World Bank's World Development Report entitled *Building Institutions for Markets*, recognises the importance of institutions. Indeed it is ironic that there has been an overwhelming swing towards a multiplicity of institutions deemed necessary for a successful developing country, without regard to whether particular institutional arrangements are the cause or the outcome of the economic development process (Chang: 2002).

Accordingly, it is important not see institution building in a purely technocratic sense, divorced from ultimate developmental objectives. In the context of dealing with market power, the core question relates to how to discipline large firm behaviour, to ensure that the widely recognised importance of large firms in industrial development (see Chandler et al. 1997 and 1998) is harnessed, while the potentially abusive aspects of their behaviour are checked.

Competition plays such a role, yet in the presence of common features including economies of scale and imperfect capital markets, competition is often limited and markets are shaped by their dominant firms. Returning to Stiglitz's argument, the standard set of policy prescriptions related to fostering domestic competition fall into four areas: trade liberalisation, privatisation, competition policy and regulation.

2.1. Trade Liberalisation

The orthodox static gains from trade liberalisation are from increasing specialising in products in which a country has comparative advantage and engaging in increased exchange. The gains from increased competition are an important additional impact with both static and dynamic effects, especially in the context of intra-industry trade. But, at the same time, imperfect competition in local markets may skew the response to incentives to trade. Higher than international prices for key intermediate inputs may mean downstream industries are uncompetitive regardless of factor intensities.

Studies of liberalisation find that one of the important gains is access to intermediate inputs at world prices. The presence of market power in the context

of significant transport costs and other impediments to trade limit the possible gains, and therefore “[t]rade liberalization may create competition, but it does not do so automatically.” Stiglitz (1998:19).

Moreover, dynamic considerations mean that an important dimension of comparative advantage is created as part of a process of industry learning in activities which are relatively more technologically sophisticated. Impediments to the development of such activities (for example, in *Machinery and Equipment*) because of the prices of intermediate inputs, have much more wide reaching implications.⁷

2.2. Privatisation

The theory around the economic benefits of privatisation relate more to efficiency gains *within the enterprise* that is being privatised, than with efficiency gains within *the market* in which privatisation is taking place. As Stiglitz (1998:19) puts it: “[t]he idea was that if property rights could be created, the profit-maximizing behaviour of the owners would eliminate waste and inefficiency”.

Leaving aside the issue of whether intra-firm efficiency gains occur predominantly before or after privatisation, it is becoming increasingly recognised that what is required for efficient functioning of the market in which the enterprise operates has less to do with ownership than with competition, as borne out by the divergence in performance between Russia and China (Stiglitz, 1998: 22-23). A simple transfer from public to private ownership runs the risk of transferring monopoly rents from public to private hands, without improved efficiencies for consumers.

Hence the emphasis on the need for institutions that either promote or simulate competition, in developing countries. This gives rise to the need for two sets of institutions: a competition authority and sectoral regulators; the latter typically assigned the role of regulating public utilities providing consumer goods directly to the public (Fine, 1997:40). However, there is potentially an artificial divide between industries to be subject to sector regulators and those over which the competition authorities have primacy if it is determined by whether they were historically state-owned utilities. If natural monopoly criteria are used, then the scope of regulation must be determined with reference to the size of the market – and thus will yield different outcomes when applied to different countries and at different times.

In addition, barriers to entry which entrench monopoly power may be a result of the behaviour of large firms, for example in setting up distribution networks or through their rights to key inputs. While in theory competition authorities could address these issues, in practice they are unlikely to do so unless an actual entrant had been impacted by such arrangements and had lodged a complaint. Entry is, however, very unlikely under such circumstances.

2.3. Competition policy

As noted above, competition policy was given a prominent role in post-apartheid economic policy, justified by a history of concentration and racially determined

⁷ See, for example, Roberts (2000) for a discussion of such considerations in the context of South Africa's trade liberalisation programme, Machaka et al. (2003) for a review of different analyses, and Fine and Deraniyagala(2001) for a critical assessment of trade theory.

barriers to entry to economic activity. While the position adopted in the RDP suggested policies aimed at breaking up industrial concentrations, the new Competition Act of 1998 followed the industrialised country orthodoxy, drawing from laws of jurisdictions such as Australia, Canada and the EU. As such, it is also relatively close to a template law produced by the OECD and World Bank (OECD / World Bank, 1999).

South Africa's Competition Act makes allowance for economies of scale, which characterise much intermediate resource based-production in South Africa. Such operations require highly capital-intensive investments in plant size that produce far more than the domestic economy can absorb. Thus, the Competition Act allows for economies of scale as a defence against market dominance, in the sense that market dominance *per se* is not a transgression of the act, and can be defences against both prohibited practices as well as diminishment of competition in mergers.

The policy challenge is clearly to address the behaviour of such firms rather than to seek structural remedies that would ignore the intrinsic scale economies. Disciplining firms that abuse such domestic market dominance is clearly provided for in the Act. But, it depends on credible sanctions to be applied against such firms in the event of anti-competitive behaviour. While firms can be fined in the event of being found to have transgressed the Act, this does not solve the question of remedy. Thus South African competition law can deal with *ex post* transgressions of anti-competitive acts, but is not well equipped to deal with market dominance problems *ex ante*, except inasmuch as an *ex post* sanction discourages future anti-competitive behaviour or an industry is aware that their behaviour is being scrutinised by the authorities.⁸

2.4. Regulation

As Stiglitz (1998:23) states “competition is not viable in some sectors – the so-called natural monopolies”. That is, sectors of the economy in which the economies of scale are too large for multiple producers to be economically viable. That economies of scale are present in a number of upstream, resource-based industries in South Africa, is borne out by the large trade surpluses run by such industries. Theoretically there is a strong case for the regulation of natural monopolies. Hence Fine's proposal for the establishment of a South African Steel Authority (1997: 39). One objection to such a regulator would be the capacity required for it to efficiently regulate a natural monopoly. As elaborated below, a far more serious obstacle may be related to the global political economy, under the broad banner of “investor perceptions”.

Regulation, however, can be viewed more broadly as the set of different policy measures to alter the incentives that private monopoly otherwise faces. Where this monopoly is an industrial firm producing traded products, industrial policy tools and trade policy are important components. Finance from state development finance institutions (DFIs) for large capital-intensive operations is another potential lever, which is consistent with a DFI having employment creation as a criterion for providing finance. In South Africa, beneficiation of minerals products has been included in the criteria on which firms will be evaluated in the mining charter. This

⁸ See Roberts (2004) for an evaluation of competition policy and its challenges in South Africa. The challenges facing South Africa, of addressing market power in a small industrialising economy, are similar to other developing countries (Cook, 2002).

is a potential inducement to increase local beneficiation which works counter to a monopoly's behaviour of charging high mark-ups reducing downstream production and increasing the proportion of output otherwise exported.

3. THE CASE OF THE SOUTH AFRICAN STEEL INDUSTRY

The case of South Africa's steel industry is an ideal example against which to assess the extent to which off-the-shelf institutional solutions are able to address the issue of market power in scale intensive, resource-based processing industries, in a small, isolated economy. Liberalisation and industry restructuring have led to increasing concentration of primary steel production, and at the level of steel traders. There is also vertical integration of the largest trader with the largest producer.

The behavioural challenge is starkly illustrated by the practice of import parity pricing, a widespread practice in the South African economy, particularly by upstream firms.

3.1. Structure of the South African Steel Market

At the core of the analysis is whether low production costs of resource-based products are translated into low domestic prices, to the benefit of the users of those products for downstream manufacturing. It is thus necessary to understand the steel value chain, from the nature of steel production, the linkages of steel into downstream manufacturing, and the characteristics of the downstream steel users.

3.1.1. Production and distribution of steel

3.1.1.1. Inputs and production costs

The major inputs into steel production are iron ore, energy, labour costs and coking coal. South Africa is a highly advantageous investment destination for steel production with its high quality iron ore deposits, low electricity costs and relatively low labour costs. Due to the low number of steel producing firms, monopsonistic purchasing power means that inputs such as ore and electricity are purchased at very beneficial prices. Coking coal is the only major input which is imported.

3.1.1.2. Products, technologies and economies of scale

There are two main forms in which carbon steel is produced. Flat steel products are produced in hot-rolled coils. These are sheets of steel of around 28 tonnes which are rolled up after coming out of the furnace and can only be uncoiled again by re-heating. This process also allows them to be rolled into thinner sheets (of cold-rolled coil) and/or cut into different shapes and sizes.

Long products are produced in the form of very large billets (blocks) of steel which are then formed and shaped into a range of further products including steel rods and bars.

The processing of iron ore into steel is generally characterised by large economies of scale⁹. Thus as with much processing of natural resource feedstocks into intermediate dimensional products, steel production can generally be considered a natural monopoly. That is, economies of scale are such that it would not be economically efficient for the existence of multiple steel producers, producing predominantly for and competing in all but the largest domestic steel markets. Hence, of the 3.6 million tonnes of flat steel and 2.7 million tonnes of long steel that South Africa produces each year, around 44% is exported.

In flat steel there are just two producers, Iscor and Highveld Steel & Vanadium. Iscor, which produces at Vanderbijlpark and Saldanha, is overwhelmingly the largest producer, supplying 84% of the local market.

In long products there are several producers:

- Iscor (at its Newcastle works)
- Capegate
- Scaw Metals
- CISCO

3.1.1.3. Domestic distribution and imports

There are two channels through which domestic steel is purchased: directly from the steel producers, and through steel merchants. Steel can generally be purchased directly from producers only in the case of bulk purchases. A number of steel merchants perform the task of 'breaking bulk' as well as adding value by cutting steel into dimensions required by the customer.

Increasing evidence is mounting that steel merchants and intermediate players in the long products market play a significant role in maintaining price levels at levels far above those which would prevail in competitive markets.

Imports account for a very small proportion of domestic flat product sales (between 3% and 5%), mainly grades or specifications not made locally.

3.1.1.4. Ownership

The major primary steel producer, Iscor, was established as a state-owned enterprise (SOE) in 1913¹⁰. In 1989, five years before the first democratic government, Iscor was privatised. No regulator was put in place at the time. Over the 1990's there has been substantial restructuring. A foreign investor, LNM has driven much of the restructuring process, and has progressively raised its shareholding. Finally in 2004, the competition authorities approved the merger of LNM and Iscor, with the former raising its shareholding to over 50 per cent. Thus Iscor has moved from being an SOE to becoming majority owned by a foreign direct investor.

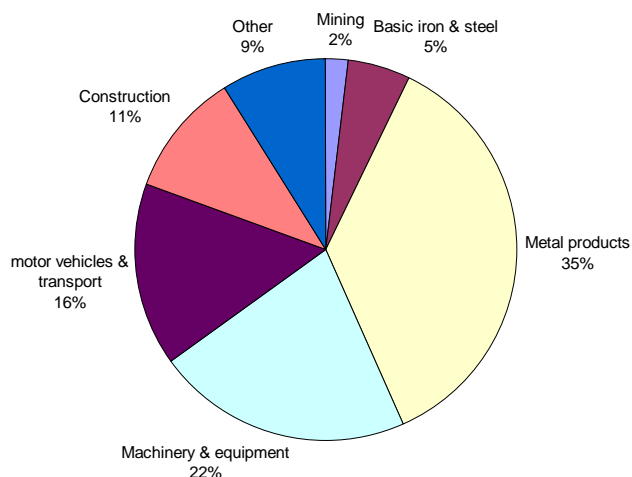
3.1.2. *Domestic consumption of steel*

The main markets for *Basic Iron and Steel* output are *Metal Products, Machinery and Equipment, Motor Vehicles* and *Construction* (Figure 2).

⁹ Although Fine (1997:24-26) makes the case that minimills provide a feasible alternative to large-scale integrated plants (the predominant technology in steel production).

¹⁰ As the Union Steel Corporation of South Africa.

Figure 2. Main domestic markets for Basic Iron and Steel



Source: Statistics South Africa, Supply and Use Tables 1998

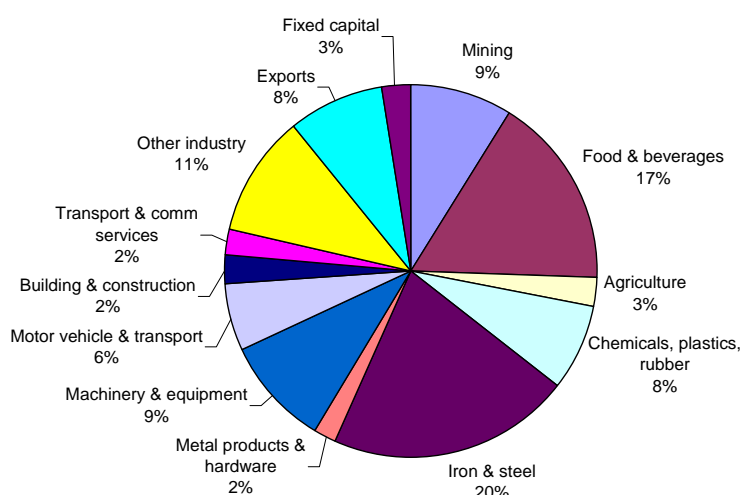
Basic Iron and Steel is a very important input for these sectors, especially *Metal Products* and *Machinery and Equipment*. Table 1 demonstrates that steel comprises between 18 and 32 per cent of direct material inputs into key downstream steel consuming sectors. Taking into account indirect inputs it ranges from 23 to 43 per cent of material input costs.

Table 1: The proportion of basic iron and steel as direct and indirect inputs into key downstream industries

Sector	Sub-sector	% Direct inputs	% Direct inputs + Indirect inputs
Metal products	Structural metal products	32.0%	42.7%
	Treated metal products	35.8%	40.9%
	Other fabricated metal products	36.6%	42.2%
Machinery and Equipment	General machinery	19.3%	24.9%
	Mining machinery	18.8%	24.4%
	Food machinery	18.4%	23.4%

Source: Statistics South Africa, Supply and Use Tables 1998

As such, steel pricing has very important competitive effects for downstream sectors. This is reinforced by the wide variety of uses for *fabricated metal products* as intermediate products themselves. While *structural metal products* are used predominantly in construction, *fabricated metal products* are inputs into many other sectors, as indicated in Figure 3.

Figure 3. Main markets for other fabricated metal products

Source: Statistics South Africa, Supply and Use Tables 1998

The high direct and indirect proportion of steel as an input into key downstream steel-consuming industries, and the multiple industries which the latter supply, mean that the pricing of steel has a pervasive effect on the competitiveness of downstream manufacturing.

3.2. Pricing

Essential to understanding the potential for price-setting is the market over which such market power can be exerted. If there are good substitute products then a price increase will induce consumers to switch to alternative products. This applies to the definition of the market in both geographic scope and product characteristics.

3.2.1. Market differentiation

While there are generally not good substitutes for steel (in that consumers cannot switch quickly and costlessly¹¹) the geographic scope of the market is not as immediately apparent.

There is a clear differentiation between the two markets into which steel is sold – the international market and the local market. The local market is quite distinct for a number of reasons:

- There is extremely limited domestic competition and no regional competition. The latter is due to the relative underdevelopment of surrounding countries.
- Primary steel is a high transport cost, low value product. The costs of importing steel, including the shipping, tariff, wharfage and related charges are significant relative to the cost of the steel. South Africa's distance from alternative steel

¹¹ Over time, other products such as aluminium or plastics may replace steel. This does not necessarily mean that they are good substitutes and depends on the functions for which the product is being used. Interestingly, in specific uses where plastics, for example, can be used instead of steel, Iscor has a different pricing structure.

suppliers exaggerates the magnitude of these notional costs which feed into the import parity price on which domestic sales are based.

- Imports take time to arrange and ship – typically around six-eight weeks from order to delivery.
- Steel using firms value guaranteed supply with the ease of redress in case of quality problems. This means a significant disadvantage in resorting to imports.
- There are increasing allegations from downstream users that steel traders are reluctant, or even refuse to import, further limiting imports as a source of competition.

All the factors listed above result in a significant price differential (around 30-40 per cent) between the price received for exported steel and steel sold in the local market¹² and significant margins above domestic prices found in comparable countries (Figure 5 below).

There is a near monopoly in flat products while there is some competition in long products.

3.2.2. The economics of import parity pricing

At the most basic level, import-parity pricing may be argued to be the result of local firms pricing based on their competition with imports. It is certainly based neither on local firms competing with each other for local sales, nor on the underlying costs of production. Indeed, it depends on geographical accident, as the margin is due largely to the distance of the local market from the sources of imports. Crucially, steel is a product in which South Africa has a large excess of domestic supply over domestic demand. This reflects historical decisions and cost advantages which have underpinned decisions to expand production for export. The trade surplus means that the cost of supplying an extra unit to the local market is the revenue foregone by exporting one unit less (the opportunity cost). A 'free' market would therefore be expected to yield an export-parity price.

In terms of textbook microeconomics import-parity pricing demonstrates market power as the firms are 'price-setters' due to their ability to dictate the price up to the ceiling provided by the import-parity price level. With competition, firms would be 'price-takers' and the market price would reflect the minimum average costs of production.

Import-parity pricing in products with a large trade surplus is therefore a signal of collusion or, if there is only one dominant producer, the exertion of monopoly power in setting price. For example, with two producers and a much lower price being received for the product being exported than for the product sold into the local market, there is a very strong incentive for each firm to try to increase its local market share and hence to have to export less of its output. This process of competing for local customers will exert downward pressure on the price, possibly down to the price received for exported products.

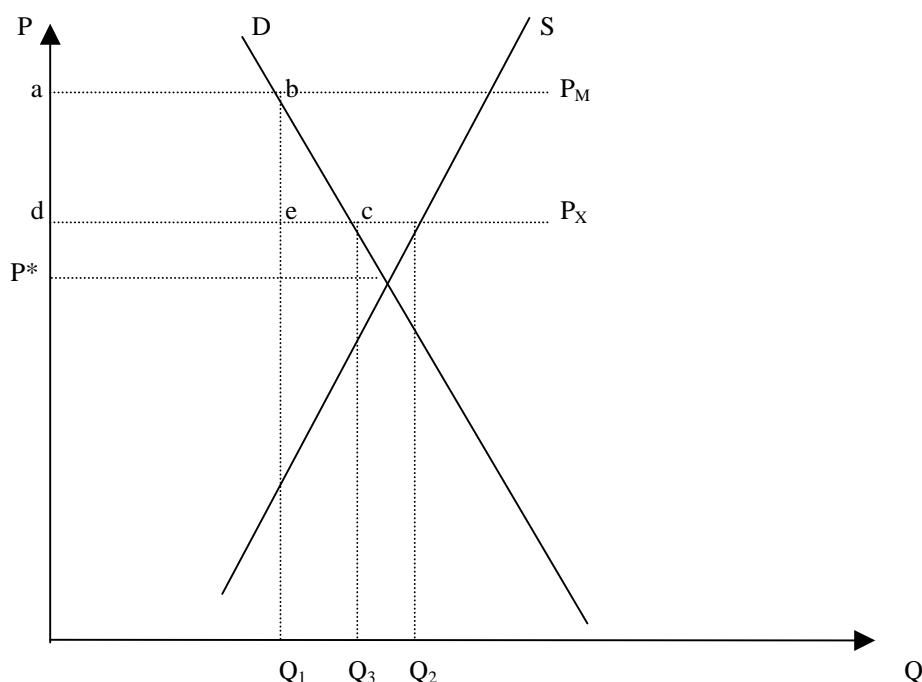
The absence of this competitive process means that producers continue to charge different prices for the same product sold into different markets (local and export).

¹² This is the order of magnitude of the price differential experienced by a domestic firm which does not receive any export or industry specific pricing arrangement.

There are major welfare losses from this, as it means under-consumption in the local market due to the demand response to the higher price (as illustrated in Figure 3¹³):

- In the absence of trade the local price would be P^* .
- If the product is exported at a price of P_X , a total of Q_2 is produced by local firms.
- Import-parity pricing to local customers mean they are charged at the higher price of P_M and consume Q_1 . The actual amount exported is equal to Q_2 minus Q_1 .
- Exports are more than they would be if all customers were charged P_X , and local demand is lower (at Q_1 instead of Q_3).

Figure 4: Illustration of the static economic effect of import-parity pricing



Producers may also argue that the point of import tariffs is to ensure that prices in the local market are higher than they are internationally. Tariffs on steel manufactured in South Africa remain at 5%. But, tariffs account for only a minor portion of the margin between the domestic and international price (30 – 40 per cent). Transport costs, wharfage and related charges increase the costs of buying imported materials. There is also a non-price disincentive to import in the form of the time required, and the greater difficulty of recourse if there are quality problems with an overseas supplier.

Lastly, while import-parity pricing is consistent with the pursuit of profit-maximising objectives, as might be expected of any privately-run firm, the nature of steel as an important input for downstream firms means that its pricing has an effect on the competitiveness and growth of downstream firms such as those manufacturing metal products. Pricing decisions to maximise returns in the short-term for the upstream steel producers may at the same time inhibit the growth of demand from local downstream industry in the longer-term.

¹³ Taken from Malikane et al. (2000)

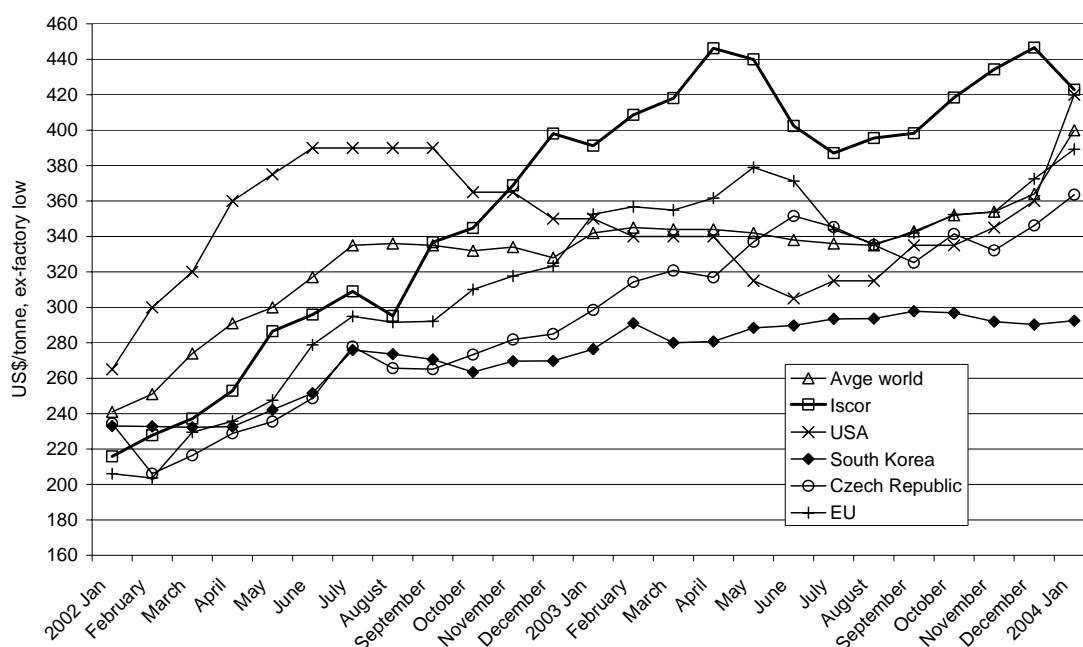
It should be emphasised that it is perfectly rational for a monopolist to exert its market power through maintaining prices above competitive levels. This does not mean that it will raise prices as high as it possibly can. Increasing prices will lower purchases, even in the absence of good substitutes as there is an 'income effect'. Consumers' incomes do not go as far given the higher prices and they adjust their purchases downwards. In addition, increasing prices mean that other, previously unattractive, substitutes become considered by purchasers. The presence of substitutes (including imports) is therefore the result of the exertion of monopoly power rather than a factor inhibiting it.

3.2.3. International comparisons

Figure 5 demonstrates some international comparisons in flat steel pricing in various domestic markets. It shows that South African flat steel prices have been above the world average since late 2002. The world average is itself not a good reflection of competitive conditions, since it has been dragged upwards during 2002 by high US prices, which in turn were driven by protectionist safeguard duties that were in place at the time.

A better comparison is with EU domestic prices in which regional competition prevails. South African prices have been consistently above EU levels: an average 17 per cent in 2003, notwithstanding higher costs of production in Europe. Price differentials are even higher relative to more comparable developing countries with lower cost structures. In 2003 the price premium of South Africa over the Czech Republic was 26 per cent and was 44 per cent above the South Korean price.

Figure 5: International comparisons: Ex-factory low prices for Hot Rolled Coil 2.0-3.0, CQ¹⁴



Source: MEPS and Iscor

¹⁴ The comparison is based on bulk purchases direct from the primary producer. It does not take into account export rebates or industry specific arrangements. In South Africa such arrangements are limited and cover a relatively small proportion of steel consumers. Nor does it take into account differences in premia added by steel traders in the various markets.

Note: Calculation for Iscor assumes import parity price discount, 2.5% settlement discount, 4.5% volume discount, excludes transport and packaging

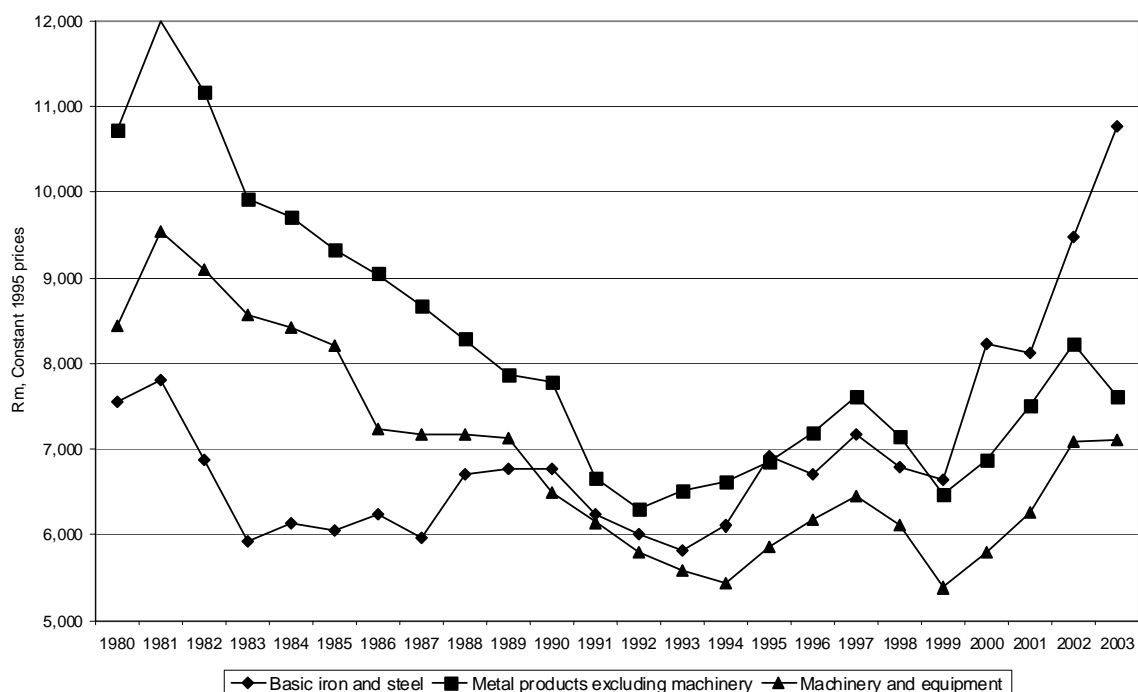
3.3. Downstream competitiveness

In this section we examine the performance of metal products in more detail. We compare the performance of the *Basic Iron and Steel* sector with the two major steel consuming sectors: *Metal Products* and *Machinery and Equipment*. By comparison with the very capital-intensive *Basic Iron and Steel* sector, *Metal Products* and *Machinery and Equipment* are relatively labour-intensive. The ratio of fixed capital stock to employment in *Basic Iron and Steel* is R858th per employee (in 2002), compared with just R77th in *Metal Products* and R86th in *Machinery and Equipment*.

The performance of the *Metal Products* industry has been very poor. Value-added has declined sharply from the early 1980s while *Basic Iron and Steel* has performed much better (Figure 6). This underlies the fact that local steel consumption remains lower at present than in the early 1980s.

While there has been some improvement in *Metal Products* output in recent years (and especially following the Rand depreciation), output volumes turned sharply downwards from the second half of 2002. The combination of Rand strength and rising rather than falling steel prices was a decline in *Metal Products* and a levelling off of *Machinery and Equipment* value-added in 2003.

Figure 6: Value Added – Basic Iron & Steel, Metal Products and Machinery and Equipment

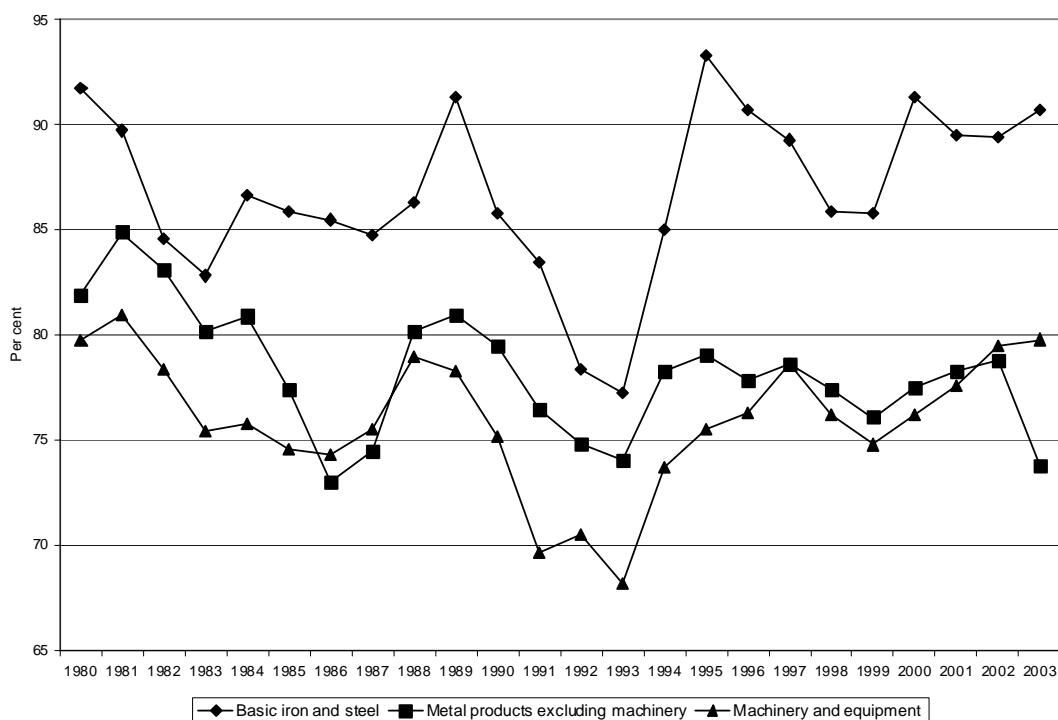


Source: Quantec

Similar patterns are observed in capacity utilisation, with much higher levels of capacity utilisation in *Basic Iron and Steel* (Figure 7). To an extent, this reflects the large-scale capital intensive nature of steel product, with sunk costs such that plant is operated at as close to full capacity as possible at all times. Conversely, the decline in *Metal Products* and the levelling off of *Machinery and Equipment* in

2003 is particularly concerning. The former is at a lower level than in any other year in the past decade.

Figure 7: Capacity Utilisation – Basic Iron & Steel, Metal Products and Machinery and Equipment

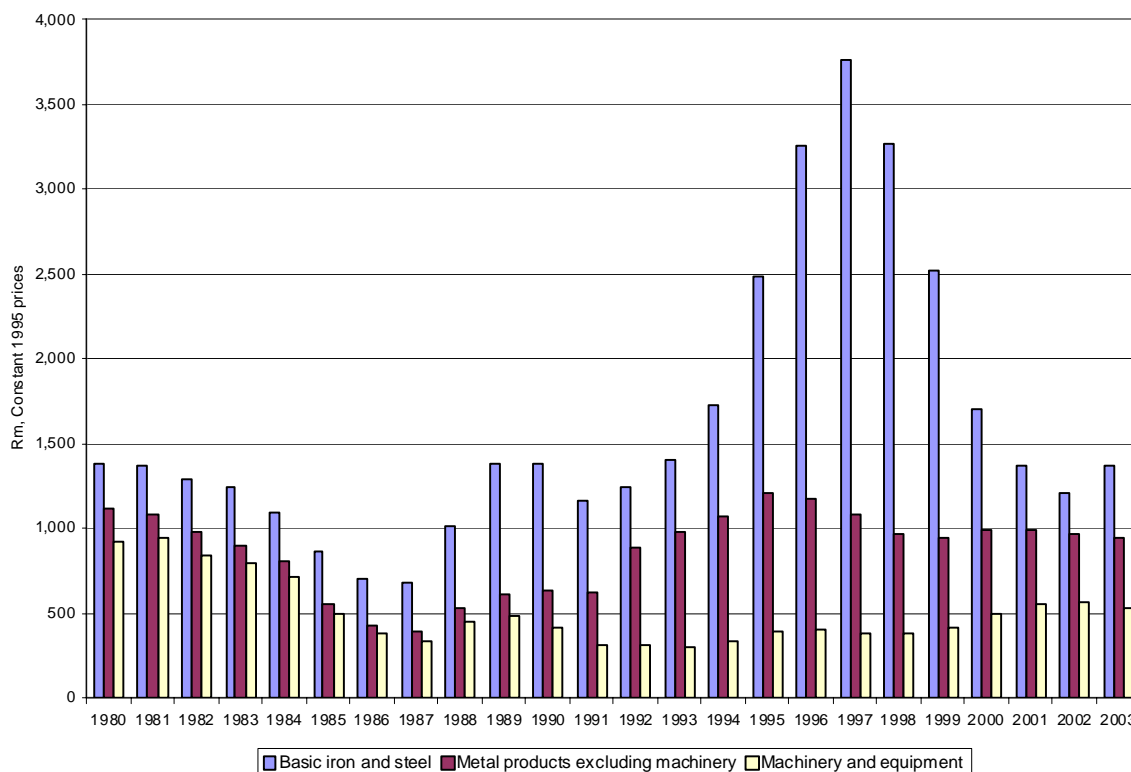


Source: Quantec

An even more divergent pattern is evident in investment (Figure 8). While major investments were made in *Basic Iron and Steel* between 1996 and 1999 which supported the output growth from 2000, investment in *Metal Products* has been very low, further indicative of low margins and weak competitiveness. It is important to note that the big investments in *Basic Iron and Steel* – in Saldanha Steel and Columbus – received a high level of support from the state in the form of IDC finance, as well as infrastructure and tax breaks.

The poorer performance of the *Metal Products* sector evidently has important implications for employment. While *Basic Iron and Steel* is capital intensive and has become more so, with large scale retrenchments during the 1990s, the *Metal Products* sector is relatively labour-intensive and has the potential to increase employment if output and investment expands.

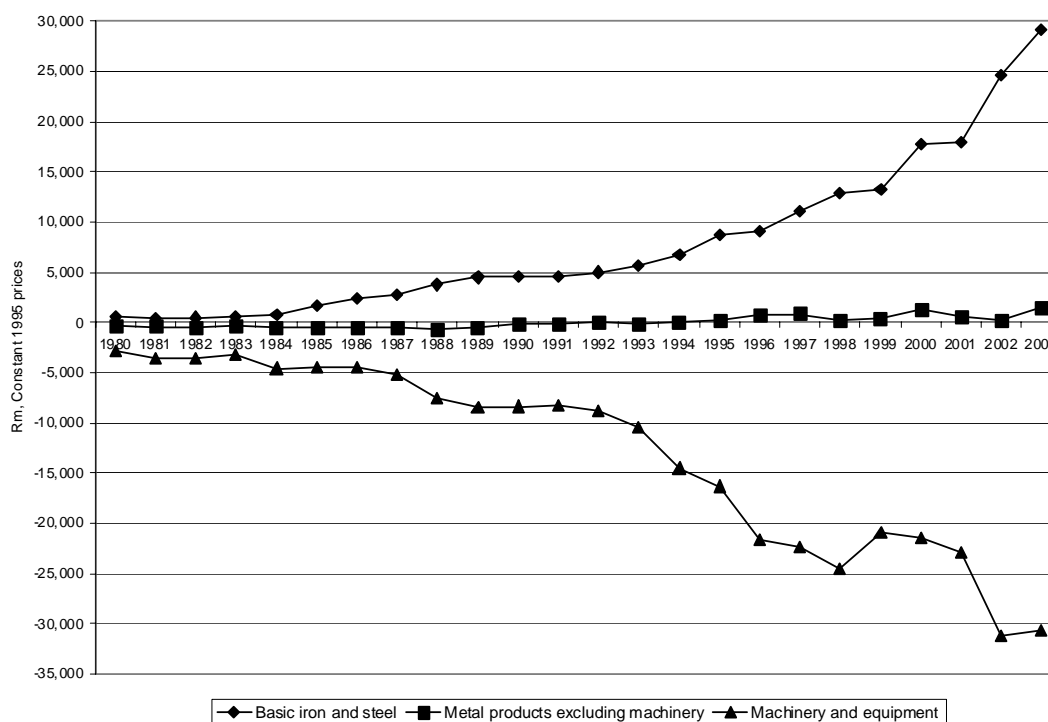
Figure 8: Investment – Basic Iron & Steel, Metal Products and Machinery and Equipment



Source: Quantec

The analysis of trade data suggests that South Africa has a strong comparative advantage in upstream production, based on the costs of materials, and historically developed capabilities. This is not, however, translated into relatively low cost downstream intermediate inputs due to the lack of competitive pricing. As a result, South Africa has remained a net exporter of unbeneficiated products.

Exports of *Metal Products* in 2002 remained lower than for most of the 1990s, and reflected a small trade deficit given increased imports (Figure 9). Exports remain a small proportion – only 12.9% – of the output of *Metal Products*. This compares with the huge trade surplus in *Basic Iron and Steel*. It should be noted that this is despite transport costs generally being more significant for upstream unbeneficiated products than for higher value-added goods.

Figure 9: Trade Balance – Basic Iron & Steel, Metal Products and Machinery and Equipment

3.4. Downstream competitiveness

International comparisons further reinforce the relative under-development of the downstream steel-consuming industry in South Africa (Table 2). By comparison with *Basic Iron and Steel*, the *Metal Products* sector is both much smaller in South Africa, and more poorly performing. In particular, with regard to Chile and South Korea average wages are significantly lower and yet the *Metal Products* grouping has performed very poorly.

Table 2: Comparative performance of iron & steel and metals, 1990-1999

	<i>Iron & steel:</i>				<i>Metal products:</i>			
	S. Africa	Chile	Korea	Malaysia	S. Africa	Chile	Korea	Malaysia
VA, US\$m, 1999	2 207	351	8 978	592	1 391	593	7 257	838
Avg ann. VA growth	-0.7	2.4	4.2	8.4	-2.2	5.5	3.9	11.4
Avg ann. empl gr.	-2.8	-5.0	-1.5	7.7	-1.2	0.7	-1.5	6.8
Avg wage, 1999 (\$th)	13.0	17.5	17.5	5.1	7.2	8.5	12.7	4.8

Source: UNIDO (sourced from Quantec)

Note: Growth in value-added is calculated from current US\$ figures for 1990 to 1999.

4. ASSESSING POLICY OPTIONS FOR FOSTERING COMPETITION IN RESOURCE BASED, SCALE INTENSIVE INDUSTRIES IN SOUTH AFRICA

4.1. Trade liberalisation

As Stiglitz observes, trade liberalisation does not automatically lead to domestic competition. In South Africa's case a number of conditions mitigate against domestic competition in upstream, scale-intensive, resource-based industries.

Large economies of scale mean that a number of such industries are natural monopolies. This is reflected in the large trade surpluses run by such industries. Unless an economy is very large, the major source of competition is *regional* not national. Due to the relative underdevelopment of the southern African region, South Africa lacks the regional competition that would put downward pressure on domestic prices. The high weight to value ratios of dimensional intermediate products mitigate against effective import competition, and may well be exacerbated by the role of the steel merchants and other intermediaries.

All these factors are exacerbated by South Africa's unique economic geography. Firstly, imports can only be sourced from distant producers by sea, typically from Europe or Asia. Secondly, South Africa's historical pattern of industrialisation means that the bulk of economic activity is located inland, with attendant freight costs from the coast. Thirdly, South Africa's transport costs are high by international standards. Finally, there are long lead times in arranging imports and there is limited redress with respect to quality or other problems. All of these factors contribute to an import parity price well above international domestic comparators.

4.2. Privatisation

As pointed out above, transfer of ownership from public to private hands is often aimed at improving inter-firm than inter-market efficiencies. This appears to have been the case with respect to the privatisation of the major steel producer: Iscor in 1989. Inter-firm efficiencies have indeed been achieved, but at a very large cost to employment. Although much of the efficiency improvement seems to have occurred fairly long after the privatisation, from the mid 1990's onwards and with the assistance of a foreign investor: LNM.

However, no attention appears to have been paid to inter-market efficiencies during the privatisation process. Ironically, pricing under state control more closely resembled competitive market outcomes, *prior* to privatisation, since pricing was based on a cost plus model. Thus privatisation appears to have diminished rather than improved competitive outcomes in the steel industry.

4.3. Competition policy

South Africa's post-apartheid competition law and authorities are far stronger than their predecessors. However, it is unlikely that competition policy alone, particularly as currently implemented, will be a complete solution to addressing market power of scale-intensive, resource-based firms.

Firstly, South Africa's competition legislation is based on dealing with ex-post anti-competitive conduct rather than ex-ante dominant market structure. As discussed earlier there are sound industrial policy reasons for this. Due to South Africa's comparative advantage in the production of a number of intermediate resource based products, disallowing market dominance *per se* would effectively prevent investment in scale intensive resource processing.

Secondly, the manner in which the competition authorities have dealt with complaints in these industries, has been on a legally driven case-by-case basis. In this regard, findings of anti-competitive behaviour, coupled with some form of sanction such as a fine, would help greatly in discouraging future anti-competitive

pricing. However, there appears to be an anomaly emerging in the application of competition law in such cases. The authorities appear to deal fairly easily with more than one firm colluding to fix a price at a particular level. However they have been less able to come to grips with the – theoretically less competitive – situation of a single firm fixing a price at a particular level, such as import parity level.

Irrespective of the effectiveness of the competition authorities, their ex-post focus on conduct means that they are unlikely to deal with the broader pricing issue from a policy perspective. Therefore a broader policy response is required.

4.4. Regulation

The regulation of a natural monopoly is a theoretically sound response to the problem of market power exerted by scale-intensive, resource-based industries. However, the ability to do so may be constrained, with the primary constraint relating to both domestic and global political economy considerations. Both relate to the somewhat elusive concept of “investor perceptions”. With respect to fixed investors, the ex-post regulation of a privatised former-SOE’s and other natural monopolies, could discourage investment in resource processing. Although much would depend on the circumstances under which such regulation takes place. For instance: the history of pricing behaviour of the firm and the responsiveness to government requests for voluntary ‘restraint’. Similarly, and with even less certainty about the nature and severity of a negative response, there could be an adverse reaction from portfolio investors.

Part of the political economy problem with introducing regulation is the lack of coherent criteria for assessing which industries should be subject to regulation and which should not. While economic theory implies that there is an in-principle case for the regulation of natural monopolies, fairly arbitrary criteria are adopted in practice. The general approach in practice seems to be to regulate current or previously state-owned enterprises that provide consumer goods directly to the public, such as electricity, telecommunications, water, gas etc.

5. POLICY IMPLICATIONS AND RESEARCH AGENDA

It is clear from the analysis above, that dealing with market power in scale-intensive, resource-based industries in a small, isolated economy is extremely complex. But, it is critical that the issue is addressed, because of its impact on growth and development. This has been recognised by government in various policy documents, including the Integrated Manufacturing Strategy as well as the Growth and Development Summit Agreement (2003).

This paper does not attempt to try and address these problems in any comprehensive manner. It does, however, attempt to point out some of the major high-level policy implications and identify a relevant research agenda.

5.1. Policy implications

The analysis outlined above indicates the incompleteness of the off-the-shelf policy recommendations for dealing with market dominance in resource-based industries as a comprehensive solution, particularly given South Africa’s unique economic geography.

Some brief policy implications can be drawn. Broadly speaking, it is critical for government to develop a coherent approach to dealing with the pricing of large resource-based manufacturing firms with market dominance. This involves coordinating a range of policies, particularly across industrial, competition and trade policy, and includes:

- Developing a clear understanding of the relative importance of particular natural monopolies in the economy, and the nature and extent of the negative externalities that are being imposed on the economy. This allows for a prioritisation of interventions.
- Reduction of the information asymmetry between the state and large, resource-based firms with market dominance, through ensuring good collection of information on prices and the market in such firms operate.
- The key industrial policy objectives, as set out in the IMS, must inform the utilisation of tools such as investment incentives and support for 'mega-projects', in such a way that they are consistent with the behavioural change required of upstream, resource-based firms.
- Trade policy needs to take into account the potentially important disciplining effect that import competition has on concentrated industries. This includes the use of instruments such as tariffs, as well as contingent protection (anti-dumping, countervailing and safeguard duties).
- The effectiveness of competition policy needs to be revisited. At present it appears as if little progress has been made in taking on prohibited practices and such cases can easily be delayed for example the Nationwide vs. SAA case. The competition authorities need to play a more active in systemically monitoring prices and in using their investigative powers to collect information and analyse industries in order to enable government to address anti-competitive behaviour in the most effective way. Competition cases are only one possible avenue to do this.

5.2. Research agenda

This analysis also gives rise to a number of fruitful research questions, including:

- The role of large, resource-based manufacturing firms in the post-apartheid economy. This is an area which has not received adequate attention in post 1994 policy discourse.
- The relationship between the state and such firms over this period, including consideration of the extent to which the ability of the state to discipline such firms has changed over this period.
- The experiences of other industrialising countries facing similar challenges.
- Implications of the internationalisation of large resource-based corporations.
- A review of the theoretical approaches that are pertinent to analysing these issues in a dynamic sense including competition and regulation theory, institutional economics, and the determinants of corporate strategy of large firms.

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