

Vertical Relations in the South African Steel Industry

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PRELIMINARY AND INCOMPLETE DRAFT - NOT TO BE QUOTED

CONTENTS

Presentation of Main Points and Recommendations

Introduction

The Economic Theory of Dumping

The Political Economy of Dumping

Legal and Administrative Considerations

The Imperatives of Coordination

The Structures and Dynamics of the World Steel Industry

South African Steel in Transition

Private and Public Interests in the South African Steel Industry

Conclusions and Policy Recommendations

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Presentation of Main Points and Policy Recommendations

1. The reasons why this report was commissioned are relatively simple. It is claimed that steel prices in South Africa are set for some purchasers at levels that are significantly higher than those prevailing elsewhere and especially relative to the export prices paid for South African steel. This sets South African steel-using industries at a competitive disadvantage. Indeed, however apocryphal, the story is told of a Taiwan company importing refrigerators made with South African steel at a price with which South African producers cannot compete, precisely because of the high proportion of the value of the product accounted for by steel. In addition, unnecessarily high domestic prices for steel undermine downstream activity in steel-using industries even where there is no competition from imports, as in the construction industry. During the course of preparing this report, ISCOR announced a new pricing structure which raised the price of steel to small manufacturers of window frames by 22% whilst leaving the price unchanged for large purchasers. It was claimed that this would harm small township producers and the capacity both to create jobs and to support the house-building programme.

2. In view of these concerns, it is important to make clear what this report does not attempt to do. It does not attempt to come to a judgement on whether the steel industry has been implementing discriminatory pricing, nor whether this discriminatory pricing, if it does exist, is unduly damaging to domestic steel users or the public and other interests. Nor does this report, therefore, recommend a different pricing structure or set of pricing principles. Indeed, during the course of investigation, it was often suggested that the fact of discriminatory and damaging pricing was already well-established. The main issue now, it has been claimed, is how to tackle this state of affairs and what to do.

3. Thus, the main pre-occupation of this report is primarily with process by which policy is formed. In this respect, it has a much wider brief than in forming judgements about pricing. The latter is seen as a specific part of the broader vertical relations between steel producers and steel users. Consequently, this issue is one of how they should interact with one another and, in particular, what role should be played by government agencies and government policy. However, despite setting aside direct consideration of discriminatory pricing as a matter for recommendation, it is subject to review in order in part to establish the scope of issues that need to be addressed by policymakers.

4. The report begins by considering the experience of anti-dumping legislation across other countries. This starting point requires some justification. By pricing on export markets at lower levels than on domestic markets, the South African steel industry would be opening itself to charges of dumping. A survey of the latter is useful to the purposes of this report since it necessarily addresses the issues involved in identifying and remedying dumping even if from the opposite, or mirror image, point of view as far as South African steel-users are concerned. For dumping, a foreign country is complaining that it is being damaged by imports at a price lower than is being charged on the importer's domestic market.

5. The literature on dumping falls into three overlapping approaches. The first derives from economic theory. It shows that judgements about predatory pricing are very difficult to draw since, as a result of varieties of strategic behaviour, not least the threat of filing an anti-dumping case in order to impose costs on competitors, and the variety of variables involved in pricing policy, there may be good reasons for price differentials. Furthermore these differentials are not necessarily disadvantageous to the public interest. Differential pricing may well reflect price discrimination and, hence, a degree of market power in the domestic market of the dumping exporter. Consequently, at the very least, it is necessary to consider all the factors underlying monopolistic behaviour both in a static and a dynamic context.

6. The second approach draws from political economy, and potentially incorporates the content of the first approach together with an examination of how the economic interests involved are represented politically. This can include lobbying for favourable anti-dumping policies when, for example, the domestic market is subject to recession, or even strategic behaviour to induce government response, as in the threat of plant closures and redundancies. Like the first approach, this suggests that it is particularly difficult to identify where predatory pricing is taking place and that welfare calculations of policy are liable to be inappropriate if not taking account of economic interests played out through both economic and political strategies.

7. The third approach is more descriptive in content, examining the legal and administrative practices through which anti-dumping policy is made. It shows how extraordinarily complex are the apparently simple tasks of identifying and quantifying price discrimination, of making a judgement about injury to private or public interests, and of deciding upon remedial action such as a compensating tariff. As in the other two approaches, a wide range of factors has to be taken into account.

8. One conclusion drawn from the literature in the light of the complexity of anti-dumping legislation in principle and in practice is that it has been increasingly used in the era of trade liberalisation as an alternative form of protection by well-organised domestic producers. Paradoxically, trade policy has been "privatised" in that it is made by those taking out anti-dumping actions or threatening to do so. For those wedded to free trade and reliance upon the market more generally, this leads to the conclusion that anti-dumping legislation should be abolished. A conclusion of a different type is drawn here, and is strongly reflected within the literature. This is that, because of the complexity of factors involved and the different ways in which they interact with one another, anti-dumping must be addressed on a case-by-case basis. Further, anti-dumping like trade policy more generally cannot be considered in isolation from other areas of policy, most notably competition policy but also industrial policy more widely. It follows that discriminatory pricing on domestic and export markets must be examined at the narrow and detailed level of particular sectors but on the broad level as far as policymaking is concerned.

9. These general considerations are followed by a brief overview of the world steel industry. It is argued that it is undergoing a complex transition and is subject to rapid change. Demand is highly cyclical but distributed variously across a wide range of products and markets.

Supply is in a state of transition between a competitively advantageous and dynamic technology (minimills) and a more traditional technology (large-scale integrated facilities) that incorporates high levels of sunk costs but which is itself open to some adaptation. Supply is also subject to uncertainty around new sources from the economies in transition and depends upon access to a range of raw materials and other inputs as well as a shifting system of distribution. Finally, the industry is highly politicised and has a long and continuing tradition of state intervention and cartelisation both at national and international levels.

10. The South African steel industry is also briefly reviewed. It is both subject to and reflects developments at a world level. In addition, it is undergoing transition from the structures inherited from the apartheid period. As a consequence, the industry seems to be marked by three strategic considerations. First, there is a shift towards the production of stainless steel, especially for export. Second, there is engagement in the formation of international joint ventures and associations. Third, there is rationalisation of product lines on the domestic market. Although prices are higher than for exports, the aim is to focus on fewer products to accrue economies of scale and to rely upon imports for those products not domestically sourced in sufficient volume.

11. There is no reason to believe from a priori reasoning, from the evidence of those in the steel industry and from ISCOR's own statement of its pricing policy that the restructuring of the industry is adequately responsive to the needs of the steel-using industry nor to the advantage of the South African economy more generally. Indeed, ISCOR and its joint venture trading arm, MacSteel International, have an incentive to reorganise the supply and distribution of steel in order to "cherry-pick" the most advantageous markets, whether domestic or export, on the basis of price discrimination and without due regard to broader public interest. Our review of anti-dumping and of the world and the South African steel industries suggests that ISCOR is neither best placed nor best motivated to adopt appropriate strategies for the South African economy as a whole, not least because of the complexities and conflicts of interest involved.

12. Policymaking is in part concerned with whether private corporate strategies and their effects are in the public interest and, if not, how the latter can best be promoted. If private strategies are deemed not to be in the public interest, policy is concerned with how alternative strategies can be formulated and adopted and their objectives achieved. The report then considers whether existing policymaking institutions are able to undertake these tasks.

13. In the case of the Board on Trade and Tariffs, it is found that it has limited experience in dealing with issues of discriminatory pricing. This is reflected in tariffs on demand until the most recent past and in view of the proposed review of its own anti-dumping legislation and procedures. The Competition Board has much more experience of dealing with price discrimination and restrictive trade practices. But, whilst it has examined the notions both of public and national interest, along with the BTT, it does not appear to have formulated or even reformulated these to reflect the current imperatives of economic and social reconstruction. Further, even if the Competition Board and BTT were in some sense ideally experienced and functioning agencies, they would not have the powers to induce appropriate corporate strategies for the steel industry both because of their limited powers as well as a lack of coordination with other policies.

14. Despite these reservations about the Competition Board, it has undertaken invaluable reviews of anti-competitive behaviour in the steel industry. Indeed, the sector has been under more or less continuous review throughout the 1990s for one reason or another. The Board has found evidence of anti-competitive behaviour in a number of instances and has recommended restrictions on a variety of practices as a result. However, more informal evidence suggests that its findings are merely the tip of an iceberg, and that the steel industry is marked by considerable exercise of market power, with potentially damaging consequences through higher input prices on domestic markets, lower levels of exports and export prices, lower quality and delivery standards on domestic markets, capital flight, tax evasion and avoidance, and premature steel plant closure.

15. This does not imply that simply remedying price discrimination within the domestic market or between it and export markets will be in the public interest or will address the problem sufficiently and appropriately. Of course, the private interests of the steel-users are necessarily represented, at least in the short term, by the benefits of lower prices. However, given that the substantial depreciation of the rand, equivalent to a price reduction on steel inputs relative to competing imports, has not markedly boosted the downstream steel-using industries, it is reasonable to conclude that discriminatory pricing alone is not responsible for the poor performance of such industries.

16. As established by a variety of Cluster Studies for the steel industry, the problems are more deeply rooted in terms of the vertical relations between steel producers and steel-users. There is evidence of individual and collective inefficiency as well as of lack of coordination. The Studies conclude that these deficiencies must be remedied but do not address the issues of why the failures have arisen and how they might be overcome.

17. Other research has addressed these issues and also points to the longstanding lack of vertical integration in much of South African industry both through the failure of private capital and industrial policy. The reasons for this have shifted over time but currently reflect the conglomerate character of South African corporations, their uneasy collaboration with one another from time to time, the reluctance of foreign investors to engage in joint ventures or stand-alone investments where they are constrained in vertically integrated activity (whether in production or access to local markets for sales or purchases), and the strategic interest of South African corporations in internationalising their operations.

18. In view of the above, there is an urgent need for deploying and, where necessary, creating the capacity for formulating, implementing and monitoring industrial policy. In the case of the steel industry, the weight of evidence considered in this report suggests that the existing institutions, even if working perfectly in areas of policymaking that are marked by a lack of precision and discretion, are sorely inadequate to the tasks involved. They do not have sufficient powers, they cannot function sufficiently quickly, and nor are they open to appropriate coordination. As a result, it is recommended that a permanent steel authority, the South African Steel Authority (SASA) be established which would take over the responsibilities of the Competition Board, the BTT and other relevant statutory bodies as far as steel-related issues are concerned. It should also command wider powers to regulate the industry and to make policy recommendations. However, no further detailed

recommendations are made about the composition and functioning of SASA, although there are implications that can be drawn from this report if the recommendation is accepted.

19. The case for SASA can be made in two different but closely related ways. First, by analogy with the case made against anti-dumping legislation, industrial policy in South Africa for the steel industry is currently being made by ISCOR. As a result, industrial policy has been privatised and is governed by the strategies adopted by ISCOR. Its private interests do not, cannot and are not designed to coincide with those of the public interest. That public interest is itself poorly represented both historically and currently on behalf of those most liable to benefit from the actual or potential jobs and products that derive from downstream steel-using activity.

20. Second, ISCOR is a utility that was privatised under the previous apartheid regime without the introduction of special regulations. This does not mean that ISCOR's performance has subsequently been purely market-driven, at least until the formation of the new government. For relations between ISCOR and government have remained highly politicised, as reflected in economic policies towards the corporation, including continuing measures of protection and provision of state finance through joint ventures with the IDC. In the context of the politics of steel, it may appear to be strange to describe ISCOR as a utility since this term is usually reserved for those enterprises providing consumer goods rather than intermediate inputs. However, even this is not universally the case, since electricity generation, for example, is generally recognised to require regulation although it does not serve consumers directly as this is the province of the grid or distribution companies. In any case, electricity and other such utilities serve both domestic and industrial consumers and regulation is generally required for the latter as well as for the former.

21. In short, without quibbling over semantics, ISCOR and the steel industry more generally are best understood as a utility. ISCOR itself directly employs over 40,000 workers, has a turnover of R12 billion and capital assets of R12 billion. It has direct or indirect command over important national assets such as coal and iron reserves and scrap. Its forward and backward linkages within the economy and its impact on macroeconomic performance are highly significant. In this light, the proposal for SASA is far from outlandish. As an individual company, ISCOR more than matches the contribution made by total industry in many developing countries. No second thought would be given to providing for a department of industry in such countries even though the range and scale of production and economic impact may be far less than for ISCOR, or the South African steel industry as a whole, in absolute terms. On the other hand, it is common for steel authorities to be formed, as in the longstanding European ECSC, even if within particular ministries. Further, it is recognised by the OECD, for example, that individual countries need to be represented in international negotiations in order to regulate the industry at a world level.

22. It is anticipated that there will be objections to this proposal on a number of grounds. One is that the formulation and exercise of the public interest by SASA will be against certain private interests. This, however, is precisely the rationale for the formation of SASA. On the other hand, it might be argued that SASA will create a new layer of bureaucracy, an ineffective and inefficient increase in state intervention, and command scarce public resources and skills that might be better engaged in other activities. It is, however, a central

tenet of this report that the current provisions for regulating the industry are ineffective and unnecessarily duplicate uncoordinated policymaking resources across various governmental institutions. Indeed, the industry should welcome this proposal for the scope that it provides for the effectiveness and streamlining of decisionmaking that it promises to yield.

23. Finally, it must be emphasised that the recommendation for the formation of SASA is steel-specific. It is not a general argument for similar authorities for each and every sector of the economy. In other industries, characterised by different structures and dynamics, existing regulatory provisions and institutions may well be adequate or only be open to marginal improvement. Whether industries should be regulated by a single authority covering the range of issues, or by separate authorities with generic responsibilities can only be determined on a case-by-case basis. The judgement of this report is that the evidence for a single authority is overwhelming in the case of South African steel. The recommendation has the advantage of being consistent with, and a refinement and development of, current Government thinking on competition policy as presented in its recent guidelines. It is an anomaly of the timing of the privatisation of ISCOR that it should not have been subject to stronger regulation, including the creation of a corresponding regulatory authority. Had ISCOR been restructured as a state enterprise under the current Government, there seems little doubt that it would have been more fully and specifically regulated. This anomaly must be rectified as a matter of urgency.

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Introduction

The reasons why this report was commissioned are relatively simple. It is claimed that steel prices in South Africa are set for some domestic purchasers at levels that are significantly higher than those prevailing elsewhere and especially relative to the export prices paid for South African steel. This sets South African steel-using industries at a competitive disadvantage. Indeed, however apocryphal, the story is told of a Taiwan company importing refrigerators made with South African steel at a price with which South African producers cannot compete, precisely because of the high proportion of the value of the product accounted for by steel. In addition, unnecessarily high domestic prices for steel undermine downstream activity in steel-using industries even where there is no competition from imports, as in the construction industry. During the course of preparing this report, ISCOR announced a new pricing structure which raised the price of steel to small manufacturers of window frames by 22% whilst leaving the price unchanged for large purchasers, as reported in Business Day, November 13th, 1997. It was claimed that this would harm small township producers and the capacity both to create jobs and to support the house-building programme. In August, 1996, the Cape Chamber of Commerce and Industry met with the South African Iron and Steel Institute, SAISI, to complain of prices to domestic customers at levels up to 60% higher than those on international markets, Business Bulletin (1996).

In view of these concerns, it is important to make clear what this report does not attempt to do. It does not attempt to come to a judgement on whether the steel industry has been implementing discriminatory pricing, nor whether this discriminatory pricing, if it does exist, is unduly damaging to domestic steel users or the public and other interests. Nor does this report, therefore, recommend a different pricing structure or set of pricing principles. Indeed, during the course of investigation, it was often suggested that the fact of discriminatory and damaging pricing was already well-established. The main issue now, it has been claimed, is how to tackle this state of affairs and what to do.

Thus, the main pre-occupation of this report is primarily with the process by which policy is formed. In this respect, it has a much wider brief than in forming judgements about pricing. The latter is seen as a specific part of the broader vertical relations between steel producers and steel-users. Consequently, this issue is one of how they should interact with one another and, in particular, what role should be played by government agencies and government policy. However, despite setting aside direct consideration of discriminatory pricing as a matter for recommendation, it is subject to review in order, in part, to establish the scope of issues that need to be addressed by policymakers.

The report begins by considering the experience of anti-dumping legislation across other countries. This starting point requires some justification. By pricing on export markets at lower levels than on domestic markets, the South African steel industry would be opening itself to charges of dumping. A survey of the latter is useful to the purposes of this report

since it necessarily addresses the issues involved in identifying and remedying dumping even if from the opposite, or mirror image, point of view as far as South African steel-users are concerned. For dumping, a foreign country is complaining that it is being damaged by imports at a price lower than is being charged on the importer's domestic market. Consideration of dumping on export markets raises, even if indirectly, the issues relevant to discriminatory pricing on domestic markets as each involves the overall strategic behaviour of the same firms whether in domestic or export markets.

One conclusion drawn from the literature, in the light of the complexity of anti-dumping legislation in principle and in practice, is that it has been increasingly used in the era of trade liberalisation as an alternative form of protection by well-organised domestic producers. It is observed, for example, that more than twice as many cases of dumping were brought in the United States in the 1970s than in the 1980s, Boltuck and Litan (1991), with an international comparative review provided by the contributions to Steele (ed) (1996). Paradoxically, trade policy is perceived as having been "privatised" in that it is made by those taking out anti-dumping actions or threatening to do so. For those wedded to free trade and reliance upon the market more generally, this leads to the conclusion that anti-dumping legislation should be abolished. A conclusion of a different type is drawn here, and is strongly reflected within the literature. This is that, because of the complexity of factors involved and the different ways in which they interact with one another, anti-dumping must be addressed on a case-by-case basis. Further, anti-dumping like trade policy more generally cannot be considered in isolation from other areas of policy, most notably competition policy but also industrial policy more widely. It follows that discriminatory pricing on domestic and export markets must be examined, on the one hand, at the narrow and detailed level of particular sectors but, paradoxically, on the other hand, at the broad level as far as policymaking is concerned.

These general considerations are followed by a brief overview of the world and South African steel industries and how the South African industry has been regulated to accommodate the coincidence or clash of public and private sector interests. It is found that there is scope for considerable intervention but that existing institutions are incapable, even with reform, of undertaking the task. Accordingly, it is recommended that a new authority, the South African Steel Authority (SASA) be established.

The Economic Theory of Dumping

The economic theory of dumping has its origins in the contribution of Viner (1923) and seeks to explain, in the first instance, why pricing in an export market should be lower than in the home market. A necessary condition is that the two markets be separate in some sense for, otherwise, the price discrimination would be eliminated by re-export to the country of origin. This is immediately to enter the world of imperfect competition in which, for example, a monopolist would maximise profits by exploiting the difference in demand conditions between the two markets. The classic result is that the elasticity of demand should be higher in the export market or, in other words, the home market of the exporter can more readily bear a higher price without loss of demand, Marceau (1994).

This simple tale already suffices to raise a number of germane issues. First, even

though dumping involves imperfect competition between countries, it must also be characteristic at least of the domestic market of the exporting country. Otherwise, price would be driven down there. It follows that the prevalence of dumping depends upon the competition policy of the exporting country. Second, as imperfect competition takes the form of price discrimination across international markets, this opens the way for product differentiation, or genuine quality differences, to supplement those of price alone. Third, especially if some form of protection is adopted, there is the option on the part of the exporter of foreign direct investment of a more or less token kind as a circumvention strategy, with limited assembly of otherwise imported inputs, as investigated by Azrak and Wynne (1995) in the case of Japanese FDI to the USA and by Belderbos (1997) for Japanese foreign direct investment into the US and EU. He finds that tariff-jumping is significant in both cases but doubly so for the EU as its anti-dumping and tariff measures are more stringently applied whilst the USA has more powerful countermeasures in response to tariff-jumping. It is also found that the impact of tariff-jumping in response to anti-dumping measures can increase market concentration in domestic markets as a consequence of competition from inward investment rather than imports.

These considerations are brought out sharply by Devault (1996) in his attempt to measure the welfare effects of US anti-dumping duties. The effect of such duties is to raise the domestic price level, ultimately at the expense of domestic consumers even if domestic producers gain by the protection involved. To quantify the effects, it is necessary to make some assumption about the factors listed in the previous paragraph even if to set them aside as Devault does in case of imperfect competition. On this basis, he calculates that the gain to US producers of thirty anti-dumping duties has been between \$90 and \$375 million but that the welfare loss to consumers has been between \$500 and \$800 million, with a net loss to US welfare of about \$275 million.

Such calculations clearly indicate the trade-off between public and private interest. Anti-dumping duties raise the price of imports to domestic consumers, incurring a welfare loss. This has to be set against the gains to producers in terms of higher prices and output. In effect, the imperfectly competitive conditions prevailing in the exporter's home market are being extended to the export market, forging a link there between trade and competition policy. As Trebilcock (1990, p. 239) suggests, this is a policy of equal misery in the domestic market. If foreign producers enjoy higher productivity, then why should they not sell in the domestic market at lower prices than domestic producers even if this is, in turn, associated with lower prices than in their home market, Dardoff (1990). In principle, the two effects between the markets of productivity differences and elasticity differences are being conflated with one another. Further, (the threat of) anti-dumping actions can even facilitate collusion across national boundaries, as recognised in EU legislation, Bourgeois and Demaret (1995), in the trade conflicts over automobiles between Japan and the USA, and especially in semi-conductor trade where minimum prices are set even though extremely rapid productivity increases render these non-binding, Baldwin (1994).

Significantly, Devault draws the conclusion that the particular mix of these complicating factors requires a case-by-case approach rather than a general one. This is especially so when taking dynamic factors into account for his calculations are based entirely on static welfare gains and losses, and he cites the example of Japan shifting typewriter

production to the USA to avoid duties. However, dynamic considerations are much more pervasive and, as observed by Stiglitz (1997), fall into two types as revealed in the more recent literature on dumping. On the one hand, the theory of predatory behaviour is concerned with the strategies adopted by firms in which a short-term sacrifice (temporary lower price) is made in order to accrue long-term advantage (permanently higher price and/or elimination of competitors). On the other hand, the new trade theory argues that productivity can accrue through learning-by-doing or other mechanisms which depend upon early and large market share in which protection can play a supportive role. In this respect, strategic behaviour is also involved but in the context of realising productivity gains and not just imperfectly competitive profits over time on the basis of given production conditions.

Lower pricing initially in order to gain market share later has been examined by To (1994) and Hartigan (1996) in terms of switching costs - where it is costly for a consumer to change from one supplier to another. Both Canoy (1994) and Holmes (1996) construct models in which the strategic behaviour of firms leads them to price low in an initial period in order to raise price later, having deterred other entrants and raised market power. More generally, as Stiglitz (1997, p. 404) concludes:

New developments in industrial organisation theory, however, suggest ... a variety of ways in which predators can prevent entry and thus protect the rents accruing during the second stage. The strategic entry deterrence literature, for example, presents models with irreversible investment, in which firms can deter entry by building excess capacity or investing in advertising. Such activities can be expensive, but they make predatory pricing a profitable strategy by protecting second period rents. Alternatively, predatory pricing itself can be a deterrent to entry: Such behavior may create a reputation for craziness and irrational behavior, and this reputation may dissuade potential rivals from entering in later periods.

Stiglitz argues that a domestic may be preferable to a foreign predator since the latter would accrue domestically generated consumer surplus and, in addition, the costs of domestic labour market dislocation would not be borne by the foreign producer.

From an analytical point of view, an even more important conclusion emerges. This is that there is no simple relationship between differential pricing and predatory dumping. For the predatory effects may or may not be strategically chosen and may be counterbalanced by other factors affecting differential pricing. This arises, for example, in the context of uncertain, say cyclical, movement in demand. Anam et al (1996) show that differential pricing is rational if firms wish to reduce profit variability where uncertain demand is correlated between the markets concerned. More generally, Brannlund and Lofgren (1995), in the context of the Canadian pulp and paper industry, illustrate how pricing depends upon the extent of imperfect competition, the strategic behaviour of firms, the sequencing of the availability of information about market demand, and the correlation between demand in foreign and domestic markets.

The previous discussion has been concerned with strategic (predatory) pricing primarily in the context of given production conditions. New trade theory simply adds to the complications involved by incorporating productivity effects in some way, most notably to

those who have already produced most or are "first-movers". Identification of predatory pricing remains ambiguous for, as Stiglitz (1997, p. 409) acknowledges, where competitive firms are learning-by-doing, it is legitimate to price below cost in the short run and target long-run costs.

Notably absent, however, from Stiglitz's discussion are non-horizontal forms of competition, as if strategies are confined around pricing and supply alone. In particular, an important aspect of competition both within and between countries is the role played by vertical integration since this provides the means for tied markets within firms. Baldwin (1994), for example, finds that high prices for imported Japanese semiconductors not only facilitated collusion in this sector but also created an advantage for downstream Japanese electronic products produced by the same companies, both in pricing of inputs and learning effects including spin-offs to other sectors using semiconductors. Cheng and Kreinin (1996) suggest that Japanese keiretsu have in-group supplier preferences to accrue the advantages amongst others of risk-sharing, thereby accounting for higher input prices than on the US domestic market and inducing anti-dumping cases. Bernhofen (1995) finds that dumping can occur for intermediate inputs when the receiving country has lower levels of productivity in downstream activity, with the low input prices necessary to compensate for higher costs and to sustain demand for final output. Finally, Laussel and Montet (1995, p.55) discuss more generally how vertical integration interacts with trade and other policies, not least state-ownership and domestic procurement, to favour domestic industry against (predatory) imports.

In short, the economic theory of dumping suggests that it depends upon the strategic behaviour of firms whether in a static or dynamic context. In either case, there is no simple relationship between dumping and differential pricing in home and export markets. The factors involved are sufficiently varied and complex in incidence and interaction to warrant investigation at a sufficiently disaggregated sectoral level, and there is a need to disentangle competitive malpractice from efficient business strategy. As Mullin and Mullin (1997) conclude for the monopolistic purchase of iron ore leases by the United States Steel Corporation in 1906, this can represent the successful pursuit of efficiency gains by vertical integration rather than the foreclosure of competition through denial of inputs to potential competitors. But such judgements are often impossible to draw, especially in principle. As McChesney (1996, p. 124) concludes in the context of anti-trust policy:

Many economists have tried to use structural variables (number of sellers, product homogeneity) to pick out industries where anti-competitive activity was more likely. The results heretofore have not been promising. The problems are legion, not the least of which is separating the higher prices and reduced quantities that reflect unilateral behavior in less-than-textbook-perfectly competitive markets ... Empirically, previous researchers have questioned whether government trust-busters are capable of separating anti-competitive behaviour from benign business practices.

The Political Economy of Dumping

In the previous section, the economic theory of dumping has inevitably focused upon the strategic behaviour of firms. Not surprisingly, such considerations have been extended to

incorporate decision-making around trade disputes themselves. Under what circumstances would firms or an industry bring an anti-dumping case, and how would foreign, importing firms respond to the prospect of anti-dumping? Further, the same questions can be asked of government policy to the extent that it represents the interests of the firms concerned. In other words, anti-dumping legislation and practice, and whether and how they are used, become endogenous within the political economy of dumping.

As already indicated, as anti-dumping legislation can facilitate collusion if it leads to voluntary import restrictions and higher minimum prices, domestic and foreign firms in an industry may have an incentive to collaborate in such protection. More frequently, however, the literature has addressed the issue of anti-dumping legislation being used by domestic firms to pursue their own interests at the expense of foreign imports and domestic consumers. As Stiglitz (1997, p. 420) concludes:

Statutes offering even the possibility of protection inevitably engender rent-seeking activities that are both direct (e.g. lobbying) and indirect (e.g. manipulating output in order to make a positive injury finding more likely).

These two forms of activity are dealt with in turn.

Direct activities can, in addition to persuading the decisions of authorities to be favourable, be incorporated within the strategic behaviour of firms contingent upon the form taken by anti-dumping legislation. The threat of an anti-dumping case can suffice to dissuade a foreign firm from importing at a low price or at all. As Levinsohn (1994, p. 353) puts it in the context of Japanese car imports to the USA:

An anti-dumping petition acts as a signal (and credible threat) which leads foreign firms to increase their prices. US firms then do likewise and the new equilibrium entails higher prices and profits.

Staiger and Wolak (1994) posit three different effects in studying whether anti-dumping laws restrict both trade and competition. The investigation effect follows immediately from the filing of a complaint, the suspension effect is the consequence of a voluntary deal on the part of importers during the course of investigation, and the withdrawal effect is the impact of the case if withdrawn before judgement. For the USA, they find that the prospect of a favourable judgement is an important determinant of whether a case is filed or not but that, in addition, firms file for the restrictions on trade that are generated by the investigation effect alone, concluding, "that some firms pursue the process-filing strategy and therefore initiate anti-dumping procedures for the investigation effects alone", p. 53. Stiglitz (1997, p. 411) refers to such effects as harassment cases against importers, with the punitive legal and other costs of defending a case potentially disciplining foreign firms irrespective of the merits of their intended pricing and import levels.

Other contributions to the literature are more sophisticated in the sense of examining the knock-on effects of firm behaviour in response to (anticipation of) anti-dumping actions. It is found that the prospect of voluntary export restrictions, VERs, can encourage increases in exports in order to gain higher quotas, as first suggested by Yano (1989) and Anderson

(1992). Further, Marchionatti and Usai (1997) suggest that excess capacity may result as part of such strategic behaviour. In short, anticipation of VERs can, paradoxically, lead to a worsening on domestic markets from imports of the competitive pressures that they were designed to eliminate. Strategic price behaviour can lead to similar results. Hartigan (1994), for example, suggests that, in anticipation of an anti-dumping action, a foreign firm may reduce the difference between the prices in the two markets that it serves. This increases the cost of signalling to the export market that it is a low-cost producer in order to induce domestic producers there to exit. In other words, anti-dumping laws may lead to higher prices in the import market and lower prices in the home market for the foreign firm, but this has ambiguous welfare effects in terms of the impact through the survival prospects of the domestic firms. Hartigan also constructs a model of costly demand switching which, given a one-period time-scale over which an anti-dumping investigation must take place, leads to low pricing for imports initially in order to grab demand that is not fully retrieved by a subsequently favourable dumping judgement. Paradoxically, GATT legislation against dumping may induce the behaviour of first-mover export subsidies that the legislation was intended to eliminate. Schuknecht and Stephan (1994) come to a similar conclusion in the context of the more general result that import penetration can be encouraged in anticipation of future protection. Anderson et al (1995) examine the reciprocal lobbying by firms from different countries where each can dump on the others market. The outcome can be of the prisoners' dilemma type. For each firm has an incentive to lobby for anti-dumping legislation whatever the other firm does. The result, however, is for the price in own market to be reduced relative to a legislation-free environment, with consumers emerging as net beneficiaries.

A more general synthesis and survey of relevant work in this area is provided by Leidy (1994). Given that trade policy, anti-dumping judgements for example, depend upon the movement of observed economic variables - in order to make a judgement of dumping and to assess the resulting injury - then firms and agents more generally may have an incentive to manipulate their behaviour in order to gain favourable judgements and not simply to affect the behaviour of rivals or to lobby for favourable policies. As he concludes, p. 114:

Contingent commercial policies like safeguards, unfair trade laws, government-assisted VERs, and the like, have linked the prospect of protection to observable industry characteristics (employment, import penetration, capital spending sales, etc). This linkage may thus introduce a political-influence motive to a firm's economic decisions. Alternatively, in the context of newly legislated trade-policy events, the mobilization of political sentiment for protection may depend on the economic decisions of import-competing firms and their foreign competitors. When, for example, a firm such as General Motors announces extensive plant closings and layoffs timed to highly visible pleas for relief from import competition, there may be more at stake than potentially inflated claims of distress. Plant closings and layoffs beyond what are justified on economic grounds, together with the postponement of significant capital purchasing plans might all be used at the margin to re-chart the course of trade policy.

There are two implications of Leidy's review. First, it suggests that theory of strategic

behaviour that sets aside its consequences for policy decisions is inappropriate, "the traditional practice of separating normative commercial policy analysis from positive international political economy is thus ill-advised", p. 115. Second, by the same token, welfare calculations of estimated outcomes will be inaccurate since strategic behaviour relative to other firms will be conflated with strategic behaviour relative to the policy process itself.

Despite these reservations, there is a strand within the political economy approach to dumping which sees it as a policy-determined, and hence political, response to economic circumstances. Given that the investigation and response to findings of dumping is flexible, as will be seen in the following sections, outcomes are perceived to depend upon political and not just upon economic circumstances. Tharakan and Waelbroeck (1994), for example, recognise that dumping decisions are "governed by a complex system of national and international laws", with each decision unique to some extent. They examine how decisions in the EC have responded both to technical variables such as capital-intensity, skill-intensity, and scale economies, and to political variables such as level of concentration and numbers employed (to proxy political influence). They test and support two hypotheses, previously found for the USA: that the technical variables are more significant in determining the finding of dumping or not and that the political variables play the same role in determining whether domestic industry has been injured by the dumping (which is necessary for countervailing action to be taken). Krupp (1994) finds for the US chemical industry that filing an anti-dumping petition is more likely the greater the chances of success, this in turn depending upon the higher is import penetration and the larger the number of (productive) employees.

The conclusion drawn from this study is that, from a free trade perspective antagonistic to the abuse of anti-dumping legislation as a cover for creeping protection, efforts at reform would be best directed at injury rather than dumping determination since the former is more subject to political influences. Finger (ed) (1993), amongst many others, has been prominent in arguing for the interpretation of dumping legislation as deploying the notion of unfair trade in rhetoric whilst incorporating simple protectionism in a practice which depends upon political influence. He finds, for example, Finger (1991), for US anti-dumping cases in the 1980s, that these have proved disproportionately damaging to developing countries, with three-quarters of cases brought against them leading to restrictive outcomes compared to two-thirds for developed countries. On the other hand, 36% of cases for developed countries have resulted in negotiated settlements compared to 15% for developing countries. This is presumed to be indicative of lesser economic and political countervailing power on the part of developing countries. For internal political influence, Leidy (1997) suggests that anti-dumping activity within the USA is counter-cyclical, with pressures increasing as for other forms of protection, during periods of macroeconomic weaknesses. Gallett (1997) also finds that cartel-like behaviour in the US steel industry is countercyclical, weakening when demand is strong and imports are low. As Stiglitz (1997, p. 411) concludes:

In summary, the antidumping laws no longer have very much to do with the prevention of predatory pricing. Indeed, a recent OECD study examining U.S. dumping cases between 1979 and 1989 concluded that conditions were not even

conducive to predatory pricing in over 85% of the cases that found dumping or that were terminated or suspended before a final determination. It is perhaps worth stressing that the prevention of price discrimination, which is itself a more narrow standard than the prevention of price discrimination, which is itself a more narrow concept than preventing below-cost sales. And we do not even conduct our price-to-cost comparisons in an entirely disinterested manner and thus are at least three steps away from a purely predatory pricing rule.

In principle, theoretical and empirical studies of dumping in the context of a political economy approach should include all of the variables and considerations that have marked the economic approach together with other variables and strategies drawn from political factors, in order to bridge the three steps between predatory pricing and anti-dumping policy. This can only serve to reinforce the conclusions of the previous section concerning the complexity and variability of the incidence and outcomes of dumping behaviour and its induced remedial responses.

Legal and Administrative Considerations

A third branch of literature on dumping draws upon the previously covered contributions from economics and political economy but is more concerned with the details of practice, especially in the light of legal procedures. It is also to be found that the application of analytical and empirical principles is complex and varied. As Steele (1996, p. 6) suggests, following the new dumping code of practice introduced with the Uruguay Round of GATT and the formation of the WTO:

[W]hile the overall protocol is governed by the Code, each [country] jurisdiction has its own special features in the manner in which the Code is domestically implemented and applied. Such differences involve both procedure and substance and provide fertile ground for debate as to whether they truly reflect compliance with the new Code, properly constructed ... the concept of anti-dumping at first sight is disarmingly simple, whereas in truth it is anything but that.

Such an assessment is confirmed by Vermulst (1997) in the discussion of a series of issues that he raises in examining how developing countries can broach anti-dumping laws. First, the complexity of legal procedures is such that, quoting from UNCTAD, anti-dumping measures have become "the tools of protection of the elite", p. 6. In practice, legislation has two components: that set and interpreted at an international level through the WTO, with precedents currently being established through cases, and that set and implemented at a national level. In this respect, there is a sharp contrast between developed and developing countries, with the national laws and administration of the former well-established and more sophisticated than the international. But the opposite is the case for developed countries which suffer from lack of experience, expertise and financial resources. This limits the capacity of developing countries to deliver policy. Vermulst and Komuro (1997) describe the practical problems of dealing with anti-dumping procedures and legislation as "navigating dire straits". In the context of an otherwise liberalised world trade order, this leads Ostry (1990) and Messerlin (1990) to claim that trade policy has itself been "privatised" since individually powerful firms or industries have been able to make policy by bringing actions.

And, as noted by Staiger and Wolak (1994) for the USA, the cost of filing an anti-dumping suit can easily exceed \$500,000.

Second, the GATT Code concerning dumping rests on determining that it both exists and has caused injury to domestic industry. Given the flexibility of interpretation of dumping, and the need to quantify its effects, assessing claims necessarily draws upon economics, accountancy and legal professionals as well as a political process in view of any reference to public interest. Further, the determination and quantification of injury and the posing of remedies (duties, voluntary agreements, etc) is often split between ministries, with trade and industry best placed to assess impact on domestic industry but finance legally responsible for setting and collecting any duties that arise. Vermulst (1997, p. 9) concludes:

As far as the day-to-day administration of anti-dumping duties is concerned, it seems advisable to establish a separate department within the Ministry of International Trade and Industry. Key disciplines that could be represented in the department include law, economics and accountancy. It also seems recommendable that the department is structured to be an independent technical entity as far as the conduct of investigations is concerned. However, the final decision to impose duties should probably be made at the political level.

In addition, there are requirements on the speed with which investigations are made and conclusions implemented, placing further demands upon the capacity of anti-dumping administration.

Third, the determination of dumping rests on assessing difference between import and home market price. This is far from simple since it depends upon assessing like with like as far as the goods sold are concerned. As brought out in Beseler and Williams (1986), for example, this involves assessing the quality of goods, as well as "normal" value, drawing in considerations of how costs of production and conditions of sale are to be allocated including those of advertising, brokering, transport and distribution, services and warranties, and research and development. Account must also be taken of differences in tax regimes and subsidies to domestic industries in the exporting country whether direct or indirect (as in export credits or guarantees). As Marceau (1994, p. 26) concludes:

(T)he reference to cost of production, variable and full costs, used in domestic predation tests as well as in anti-dumping laws, and the frequent construction of prices and costs of production, are deficient. They ignore legitimate national differences in accounting practices, business traditions and social and legal organization.

Such considerations are prominent and extreme in the case of non-market economies or those in transition where costing cannot necessarily be inferred from "market" pricing of inputs and outputs. This gives rise to the need for reference to a third comparator country for determination of "normal" trading conditions or for constructed "fair" values, and these are obviously open to alternative interpretations.

Account must also be taken of the impact of exchange rate movements on the prices of inputs and outputs, for which Raafat and Salehizadeh (1994) suggest there may be partial

and lagged responses by importing firms without this necessarily implying dumping. Such effects are even more difficult to disentangle when a country (of origin) is subject to hyperinflation, Parker (1995). The issue of inflation is taken up by White (1997) and is linked to depreciation costs. He finds that US investigations have used inconsistent methods that are generally prejudicial to importers. In addition, there is the problem of excess capacity and idle plant and whether the full costs of these should be reflected in imputed value. Further, the discussion so far has rested on a clear demarcation between the two countries concerned but others may be involved directly or indirectly in the production and trading of the goods under investigation, giving rise to a whole series of complex issues around rules of origin, Vermulst et al (eds) (1994) and Keizer (1997).

Fourth, it is one thing to establish differential pricing but another to find that it is associated with and causing injury to the domestic economy and to establish what is the level of that injury and by how much and in what form it should be remedied. In principle, what is required is a counterfactual model of the economy in order to assess outcomes if circumstances were made difference by anti-dumping action or alternative strategies of importers. Irrespective of the analytical and legal requirements of such an exercise, Vermulst's (1997) discussion clearly demonstrates that it gives rise to a process equivalent to an academic research project. Questionnaires must be addressed to interested parties, soliciting details of costs and pricing. The information has to be verified and may even entail site visits. Where sampling is undertaken to reduce survey costs, Vermulst (1997, p. 14) observes:

A statistician should be consulted to ensure that the sample is defensible.

Fifth, in determining dumping and consequent injury, a level and form of remedy has to be decided. This can reflect a number of different criteria - ease of administration and monitoring, to stabilize domestic prices, and to raise revenue, for example. More generally, determination and remedying of injury depends upon an assessment and evaluation of the level and incidence of costs and benefits - in other words, the definition of public interest. For the injury to domestic producers has to be set against the interests and functioning of the rest of the economy. Traditionally, as emphasised by those who see anti-dumping as a new form of protection, the interests of domestic producers have been paramount, although from the beginning of 1995, EC regulation has explicitly incorporated the interests of users and consumers, although these, somewhat illogically can figure more as an afterthought once injury has already been determined, Bourgeois and Demaret (1995, p. 80):

The new provision should give a stronger voice to consumers and industrial users ... Whether it will bring changes in the material outcome of anti-dumping proceedings is another matter ... the injury caused by dumped imports tends to loom larger, in most instances, than the loss which consumers or industrial users may suffer as a result of anti-dumping duties ... [But] the analysis of the Community interest comes after dumping and injury findings.

In addition, as emphasised by Sykes (1990), it is also necessary to take account of the interests of, and injury to, (dislocated) labour. For Creally (1992), observing that producers tend to predominate over consumers in defining the EU's interests, a whole range of criteria

can be used to establish material injury or the threat thereof - levels of production, capacity, sales, market share, prices, profits, return on capital, investment and employment. More generally, Vermulst (1997) suggests that a public interest clause be included in developing country national legislation in order that the interests of producers do not automatically prevail, as in the USA, when it suffices to trigger anti-dumping action for a determination of injury against them alone to be found. The implication, however, is that the general economic and political impact of decisions need to be subject to full assessment which, inevitably, within the space for discretion, attaches the exercise of a public interest clause to the wider strategies of economic development. As Vermulst and Waer (1991) observe, whilst EC practices conform with the GATT Code by limiting anti-dumping duties to the level required to remove injury in contrast to those of the USA and Canada, there still remains considerable discretion in coming to judgements which, in principle, ought to reflect the public interest.

Finally, even when all of these issues have been settled, there remains the problem of circumvention which can arise in response to any form of protection. Foreign direct investment to produce for the domestic market can undermine anti-dumping action, especially to the extent that only limited assembly of imported inputs is undertaken. As Messerlin (1990) reports, this led the EC to adopt "screwdriver" procedures to prevent Japanese circumvention of anti-dumping duties. Once again, this places the issue within the broader context of vertical integration and also the policy stance towards FDI, requiring further sophistication in investigation and policymaking.

Many of these points are illustrated by reference to US practice in anti-dumping action. Consider, for example, the International Trade Commission, ITC (1996a), judgement on whether material injury had resulted from import of steel pipe from Romania and South Africa. The Commission proceeds on the basis of the Department of Commerce already having determined that imports have been based on less than fair value (LTFV) but must decide on whether US producers have suffered as a consequence. In coming to a judgement, they need to take into account the following factors, "output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, and research and development". Further, "no single factor is dispositive and all relevant factors are considered 'within the context of the business cycle and conditions of competition that are distinctive to the affected industry'", the latter quote being taken from the Act governing its deliberations. In considering these issues, account has to be taken of captured sales (what proportion of output is used within companies), "Buy American" restrictions (some customers require its suppliers to have used US-manufactured products as inputs), fungibility (how closely products are substitutable for one another in use), the geographical concentration of markets for imports, the role played by distribution channels and service centres, the cumulative impact or even threat posed by imports taken as a whole from all or all potential importers, and the impact on competition and/or dumping in third markets.

Similar complexity is to be found in the ITC (1997b) consideration of imports of steel plate from China, Russia, South Africa, and Ukraine, with the need also to identify how cyclical peak to peak comparisons are to be identified. Hardly surprisingly, the Commissioners in each of these cases are unable to reach unanimous conclusions so that there are both dissenting views and minority reports. Irrespective of the fairness of the US

anti-dumping procedures, these cases illustrate the complexity of the factors that need to be taken into account, and their specificity to particular sectors, when policy is being formulated.

The Imperatives of Coordination

From the review of the experience of anti-dumping, then, a number of conclusions can be drawn and developed further. First, whether examined from the perspective of economic theory, political economy or legality and administration, outcomes are extremely complex both in principle and in practice, covering a range of factors and behaviour at a great level of detail. Second, not surprisingly, such complexity is wedded to a shifting weight of each of these considerations from case to case and how they interact with one another. Third, the strategic behaviour of firms is potentially sophisticated and uncertain in face of given legislation and practice. It also can be directed to influence such legislation and practice. Fourth, as concluded explicitly by Bourgeois and Demaret (1995), the appropriate policy mix is highly dependent on a case-by-case consideration. Fifth, policy itself needs to be directed at defining, identifying and implementing the public interest and for it not to be privatised according to the strategies of particular private interests. Sixth, agencies engaged in determining and implementing policymaking require skills in economics, accountancy and law; they can be spread across different government departments giving rise to problems of administrative capacity, inefficient duplication of function and lack of coordination and consistency in decision-making.

These issues can be approached in a different way and taken further. As dumping involves differential pricing, it concerns competition policy as is made explicit by the notion that anti-dumping actions raise domestic price levels and may facilitate collusion between domestic and foreign producers. Consequently, for some, it might be argued that anti-dumping legislation ought to be dealt with under domestic competition policy alone, especially as domestic producers can abuse anti-dumping actions for anti-competitive purposes, Ostry (1990, p. 20).

A more sophisticated position is adopted by Hoekman and Mavroidis (1996). For they recognise that domestic competition policy does not have jurisdiction over the antitrust legislation of other countries. They emphasise that equal contestability in both markets is essential for the subsumption of anti-dumping to antitrust policy. This is rarely met in practice and, in addition, antitrust legislation tends to be more longstanding, sophisticated and precise than anti-dumping which is, consequently, more open to discretionary use of variable interpretation of public interest. In the context of regional integration, in which anti-dumping becomes precluded by common prices across countries, it is transparent that competitive advantage between countries remains uneven in view of differences in antitrust legislation and practice. The same applies where anti-dumping is in place prior to integration so that its abolition is contingent upon harmonisation of antitrust policy.

By the same token, as recognised by Hoekman and Mavroidis (1996), any other factor that affects competitiveness would need to be harmonised across countries for anti-dumping to be justifiably eliminated, whether differences across the putative playing field derive from industrial policy more generally and/or from the exercise of different notions of public

interest. Essentially, a similar conclusion is drawn by the contributions to Buiges et al (eds) (1995), especially Gual (1995) and Bourgeois and Demaret (1995), which seek coordination between the separate areas of trade, industrial and competition policy within the EU.

Such a conclusion is in part driven by a practical definition of the three areas of policy, as they are applied according to EC and national laws. From an analytical point of view, however, this is unnecessarily restrictive, since policy considerations are confined to those defined by specific laws or conventions. By contrast, industrial policy, for example, can be narrowly interpreted as various supportive measures sanctioned on the supply-side but, as argued in Fine (1997), it is more appropriately understood as any concrete, and potentially shifting, set of policies that are designed to promote industrial development or adjustment. Since industry is potentially affected by finance, macroeconomic, training, research and development, regional as well as trade and competition policy, these have to be considered in conjunction with one another in the light of specific sectors. By the same token, in addressing anti-dumping policy or differential pricing between domestic and export markets, it is necessary not only for it to be coordinated with competition, industrial and other forms of trade policy. In addition, these must be incorporated within the widest context of policymaking, both in order that they can be successful on their own terms as well as in the broader goals of industrial development and in defining and meeting the public interest.

It is recognised by those, writing of the need to coordinate different areas of policy for anti-dumping policy to be eliminated, that the prospects for such coordination (of competition policy through contestability) across countries is not in prospect, Hoekman and Mavroidis (1996, p. 49):

Current antidumping enforcement procedures make no attempt to determine whether markets are uncontestable ... governments [should] put greater effort into determining whether the conditions that are alleged to give rise to "unfair trade" actually exist, before having recourse to antidumping. The proposal is an exercise in the second-best - clearly the abolition of antidumping altogether, or a return to a strict predation standard, would be preferable from an economic welfare point of view. Realism suggests that achieving this in the foreseeable future is unlikely.

Such an observation neither supports nor undermines the case for anti-dumping action in the absence of other policy coordination, but it does reinforce the case for integrating policies within a country so that the appropriate scope of considerations and interventions can be considered.

This leads to two final points. One concerns the use of policy which, in the case of anti-dumping, can depend exclusively on action taken by private interests, as is so for the EC, for example, which has not been able to investigate anti-competitive trade behaviour on its own initiative, Bourgeois and Demaret (1995, p. 112). This contrasts with competition policy and, by doing so, biases practice in favour of domestic producers who are already generally reckoned to be unduly favoured for reasons previously discussed. Second, as suggested by Bourgeois and Demaret (1995, p. 113), proceedings should be as open as possible given need for commercial confidentiality, and decisions justified, especially as much political discretion is deployed in determining damage to the public interest and remedying it in the case of

anti-dumping duties. The same point is emphasised by Tharakan and Waelbroeck (1994, p. 189) and Vermulst (1997). It is imperative, however, that openness be welcomed both for seeing that justice is done by the letter of the law and also to open the definition and scope of public interest to public scrutiny and accountability.

The Structures and Dynamics of the World Steel Industry

Prior to the collapse of the post-war boom in the early 1970s, the world steel industry seemed to be marked by a number of permanent features, as revealed for example, in a series of books by Hogan (1983, 1991 and 1994). First, production has been based on large-scale integrated plants enjoying substantial economies of scale. Second, domestic markets have been protected and have formed the basis for subsidising competition in export markets. Third, because of high fixed costs and the sensitivity of steel demand to cyclical movements in the economy, pricing and profitability have been extremely vulnerable. Fourth, this has encouraged, historically for even longer, the formation of more or less formal cartels across the industry, both within countries and at an international level with greater or lesser state support. Fifth, competitive advantage within the industry has depended upon vertical integration and has involved differential access to raw materials at one end and to markets at the other end of the steel chain. Sixth, with secure demand for standardised products, especially automobiles, shipping and construction, markets have often been served directly by producers. Seventh, the post-war boom did witness the emergence of new producers, most notably Japan, which was a negligible producer of stainless steel in the 1950s but now leads the world. Eighth, not surprisingly, with a buoyant world economy, steel was a rapidly growing sector of the economy.

From the mid-1970s, this situation has changed dramatically, and the world steel industry has been marked by new structures and dynamics although some of these, as will be seen, remain tempered by and draw upon the conditions inherited from the past. First, over the 1980s, steel production has stagnated. As Hogan (1994) reports, world production in 1982 stood at 645 million tonnes compared to 714 million tonnes in 1992. This contrasts with the growth between 1996 and 1976 from 473 to 685 million tonnes. Second, this has entailed dramatic downsizing by many of the world's major steel producers, especially the EU and the USA. Third, governments have been heavily involved in restructuring steel industries in view both of the high levels of redundancies involved and the competitive advantage of the business interests that they represent. Fourth, despite the downsizing of the "traditional" producers, the 1980s has been remarkable for the emergence of significant steel production from developing countries, especially China, South Korea and Brazil, which accounted for 102 million tonnes in 1980 but 214 million tonnes in 1992. Fifth, such capacity has been felt on export markets with developing countries accounting for a mere 9.5 million tonnes in 1980 compared to 27 million tonnes in 1991, all figures from Hogan (1994).

To a large extent, the shift in conditions reported in the previous paragraph are confined to those that reflect the changed patterns of supply and demand on the basis of continuing dependence upon large integrated steel production. However, over the two past decades, the world steel industry has been marked by the emergence to prominence of minimills. Before the 1970s, they scarcely existed at all. Following the second world war, the industry was dominated by integrated facilities, with technical change mainly confined to the

shift from open hearth to basic oxygen blast furnaces, without this holding back the increasing overall scale of operations. Minimum efficient scale on integrated plants is as much as 3 mtpa, even double that if twin furnaces are constructed to allow for disruptions, especially the relining of the furnaces every seven to eight years. The decline of the old system is indicated by the fact that the only new integrated steel plant to be built in an industrialised country over the past twenty years has been in South Korea, with a capacity of 11 mtpa, although the Ogishima (Keihin) works in Japan, which is the newest integrated steel works in a major OECD country, has been scheduled for conversion to an office park, Crandall (1996)! Between 15% and 20% of integrated facilities are expected to close over the next fifteen years, although production at the remaining units is liable to rise by more than 2%, World Steel Dynamics, July, 1997.

The emergence of the minimill has not only imparted new structures and dynamics to the industry, thereby undermining those prevailing previously, it has also stimulated new structures and dynamics around pre-existing facilities. In other words, it is not simply a clash of production systems and their attendant modus operandi, but also a complex and continuing interaction between the two. First, consider the distinct character of the minimill system, as addressed, for example, in Crandall (1996) and Sander (1996) and, especially for the United States, Smith (1995).

First, minimills depend upon scrap or directly reduced iron (DRI) ore and work with an electric furnace. As a result, they command lower fixed capital costs and minimum efficient scale. Nonetheless, by the 1990s, some of the largest minimills were operating at a capacity of 1 mtpa, or double that with twin furnaces. The capital cost per tonne of capacity for integrated steel producers is in the region of \$700 compared to \$150 for minimills. With the stagnation of the world steel industry since 1979, the production of the world's largest companies has been scaled back with closures and concentration of output on the more efficient facilities. Between 1981 and 1994, output from the ten largest companies declined from 156 to 129 million tonnes. In the meantime, minimills have become responsible for one-third of western steel production.

It is worth commenting on the relative merits of minimills and integrated facilities for, even if the former have a significant technological advantage, the pace at which and extent to which they are introduced depends on a host of moderating factors. First, as new investments and irrespective of their own intrinsic merits, minimills have been able to incorporate other technological improvements that could prove expensive or impossible in existing integrated plant. These include the continuous processing of the molten steel into products ready for rolling, computerisation and greater energy and environmental efficiency.

Second, although minimills depend upon scrap as a major raw material input, this does not put them at too much of a disadvantage relative to integrated plant. For, if scrap prices rise too high, then the minimills can use DRI ore instead, with its excess capacity available for high enough prices. The use of scrap has declined from 25% in the mid-1970s to a current level between 10% and 12%, ILO (1992). The pricing of DRI ore is itself mainly determined by the price of iron ore, any rise in the price of which would equally have an impact on integrated producers (who would also be affected, even if to a lesser extent, by the price of scrap which they can also process). Clearly, the price of electricity is also liable to be

a factor in the relative advantage of minimills. But integrated plant also depends upon coking coal, whose prices are liable to move in line with those of electricity if there is any systematic connection between the two.

Third, labour relations are generally considered to be more advantageous in minimills. This does not necessarily result from the absence or even exclusion of trade unions from greenfield sites or new production facilities. Rather, jobs appear to be more rewarding in a less hierarchical occupational structure with decentralised management. Perhaps most important though is the immanent conflict and tensions that are induced in the integrated plants by their being continuously under the threat of closure or downsizing.

Fourth, as far as marketing is concerned, minimills have been able to specialise in particular subsectors, operating at relatively high levels of capacity. In this, there is a contrast with the integrated producers who need to serve a range of product markets but, even so, still tend to be subject to excess capacity. Minimills have also been able to offer high quality products and customer service in terms of delivery times.

Fifth, the financial conditions under which minimills have operated have differed from those of integrated facilities. The latter have usually been attached to very large, well-established companies which, if not state-owned and quoted on the stock exchange, have been subject to the danger of takeover should industry or company performance be depressed. Consequently, financial policy can be induced to lean towards short-termism, favouring declaration of dividends at the expense of long-term investment. Minimills have often been new ventures, not quoted on the stock exchange, and specialising in steel alone as opposed to a portfolio of corporate activities.

The different characteristics of the minimill system have influenced how the world steel system functions, quite apart from displacement effects on integrated facilities. These in part derive from its own intrinsic competitive strategies to be more cost-effective in meeting specific markets; it is also a consequence of the competitive reaction of large-scale producers. It has, for example, been associated with a shift in the structure of marketing, with greater reliance on sales through merchants, both to accommodate the limited product range offered by each of a large number of minimill producers as well as the wider range and larger quantities offered by large-scale integrated producers. In 1968, stockholders accounted for 27.4% of steel sales; this progressively increased to 36.9% in 1978, 51.3% in 1988, and 58.1% in 1995, Key Note (1996).

To some extent, this has been a consequence of the previously remarked decline in the sale of homogeneous products to large-scale steel-using industries. Such developments have, however, been complemented by the increasing reliance of the steel industry on the sale of a wider variety of products rather than leaving its customers to process a standardised product. As Key Note (1996) observes, 70% of steel products currently sold have been developed over the past ten years.

The development of new products has also been associated with the development of new technology both for minimills and integrated facilities. Minimills have been extending their range of products, with the creation of greater capacity for long as well as for flat

products. On the other hand, technology for integrated mills has been addressing the need to cast finished products in a more cost-effective way to compete with the continuing casting of minimills.

One response to excess capacity amongst integrated producers has been the formation of international joint ventures. These have been particularly prominent in the United States, where all of the large-scale companies had entered into alliances with Japanese companies by 1990, other than Bethlehem Steel which had been exploring a joint venture with British Steel, ILO (1992). The motive for the US companies has been to gain access to the financial leverage of their partners who were also able to offer skills in technology and marketing in return for access to the huge US domestic market. But such joint ventures are not confined to the United States. As Key Note (1996) observes, they have also been prominent in and from western Europe - between companies from Sweden and the UK, Italy and Germany, France and the United States, and Spain, Germany and Mexico, for example.

In the light of these considerations, it is hardly surprising that the advice to steel enterprises from World Steel Dynamics, July, 1997, comprises the following elements. No more blast furnaces should be built; alliances must be sought; cost, volume and product mix must all be actively addressed as must product quality and delivery, continuous processing, computerisation, breakthrough technologies, and energy and the environment. Decisions must be made quickly and with a global perspective.

These developments from within the industry itself have been overlaid with external changes that have been of special significance for steel. On the one hand, the increasing liberalisation of trade, most notably, through the Uruguay Round of GATT has been particularly important to a steel industry that has traditionally taken its own domestic markets for granted. On the other hand, the collapse of centrally planned economies has given rise to a shock increase in capacity seeking sales on world markets.

Not surprisingly, in view of the conditions that have prevailed in world steel markets, anti-dumping activity has been especially prominent and reveals all of the features outlined previously. Glais (1995) provides an overview of developments in the EU, with 14% of anti-dumping proceedings initiated by the Commission between 1981 and 1991 concerning steel. Complaints seem to have been filed on the basis of imports undercutting the price of domestic producers rather than on the basis of comparison with price in domestic market of country of origin, p. 236. Imports from non-market economies have attracted particular attention, and trade agreements have been negotiated with a large range of countries, with negotiations with the USA being particularly delicate in terms of market access in both directions.

Indeed, half of the anti-dumping cases taken against EU producers have been lost but cases continue to be brought before the US International Trade Commission. The American Iron and Steel Institute continues to campaign vigorously for as much protection as possible, AISI (1997). Between 1980 and 1989, of the 451 anti-dumping cases filed, as many as 201 concerned the iron and steel industry, the next most prominent sector being chemicals with just 58 cases, followed by food and non-ferrous metals with 16 each, Boltuck and Litan (1991, p. 3). Further, of 300 countervailing duty cases, 149 were accounted for by iron and steel.

There is good reason, then, to question any presumption that the steel industry has become more competitive through being subject to free trade. It is questionable whether this is the correct way to understand developments. For, with substantial excess capacity in an industry that has been dominated by large-scale producers with strong ties to domestic markets, there will always be a strong element of making of the market, not least because of the so-called natural protection that arises out of transport costs. As Key Note (1996) reports, prices in the United States are 15% to 20% lower than in the EU. Even within the EU's single market there are continuing disputes over subsidies, British Steel planning to take the EC to court in view of its allowing the Irish industry a subsidy of £39 million which it considers will lead it to an output increase of 66% rather than the 25% projected by the Irish.

The impact of liberalising trade is not liable to be absolutely effective because of the broad boundaries between trade policy, dumping and other forms of subsidy. Thus, Fors (1991) complains bitterly over the protection that Sweden has faced against its imports into the United States. Even though, Sweden has itself offered "good international citizenship" in restructuring its industry along the lines of profitability through private ownership with limited subsidy, it has confronted "producers in the United States ... shopping around for ways to restrict imports of Swedish stainless steel products", p. 30. The threat of legally costly anti-dumping suits can be sufficient to discourage attempts at imports. Further, as Sander (1996, p. 120) reports, domestic steel industries are open to support from state or local community subsidies. In the case of the North Star-BHP project in Ohio, more than \$20 million was offered in incentives, across nine different policy measures, equivalent to financial support of almost \$70,000 per potential employee.

The issue of trade, then, is complex and not reducible to one of being closer or further away from free trade. This is because of imperfect competition, joint ventures, up- and down-stream linkages, the variety of policy measures involved, as well as the role of strategic decisions about product mix and how it dovetails with differential pricing on domestic and export markets, exactly some of the issues that have been raised in the previous discussion of anti-dumping. On the latter point, the industry is subject to two countervailing trends. On the one hand, the economies of scale in production attached to mass production by integrated facilities of basic steel has encouraged it to be sold cheaply on export markets. On the other hand, possibly taking advantage of the availability of cheap bulk steel, there is the opportunity to specialise in high value added products which also have a comparative advantage in transport costs. More generally, steel can be exported indirectly in the form of finished products as in motor cars or consumer durables, highlighting the inter-dependence between the steel and other down-stream activity.

Also important in the marketing of steel is the role of stockholders who serve as intermediaries between steel producers and users. They may also engage in a certain amount of limited processing. They have the advantage of monitoring quality and ensuring supplies by drawing upon a variety of sources. They have the disadvantage of adding an extra stage in the chain of supply to final product, and it is a moot point whether they reduce the overall stock of steel held. In the context of an oligopolistic industry, supplying a product range to both domestic and export markets, with varying degrees of protection, there is the possibility that stockholders will perform the function of remedying the deficiencies of domestic supply

at high cost rather than the associated problems being addressed directly.

Subject, then, to many complications, the situation of the steel industry is one of an older well-established large-scale technology being challenged and displaced by one based on smaller scale production but also interacting with it. In this respect, it is worth examining why some countries have adopted minimills faster than others. At one extreme is the United States which has seen its traditional industry decline and a rapid rise of minimills. Apart from the pressures arising out of cost advantages, an explanation is to be found in the decline of the powerful steel industry lobby, combining the interests both of large-scale corporations and trade unions. As Moore (1994) observes, the steel workforce declined in the US between 1974 and 1992 from 512,000 to 140,000. As already noted, the domestic market had been targeted by foreign forms in the form of imports and joint ventures. The industry's political base within Congress from which to campaign for continuing protection was also undermined by the eventual formation from 1989 onwards by a consortium of previously fragmented steel-users. Other writers, such as Lenway et al (1996) and Schuler (1996), have also emphasised how the political representations of traditional steel interests have been eroded in the USA.

In contrast to the United States, many of the other major western steel producers have adopted a policy of supporting their large-scale integrated plants through a variety of measures, although these have all involved downsizing. To some extent, an exception is provided by the UK, where the privatisation of British Steel was used to support the continuing finished steel products sectors at the expense of sustaining capacity in bulk steel, Fine and Poletti (1992). More generally, state policy has involved the goals of stabilising industrial relations whilst reducing employment and rationalising production facilities, promoting joint ventures, upgrading technology at integrated plants (for product quality and mix and for continuous casting), guarding domestic and promoting export markets, Glais (1995).

The extent, nature and impact of state intervention across different countries has varied in response to economic and political conditions. For example, as Kipping (1995) has found for the French industry, state intervention was necessary to overcome the conflicts of interest between steel producers and users. Less extensive intervention has been required in Germany because of greater corporate links between steel producers and users, emphasising the importance of vertical integration to the formation and desirability of state economic intervention.

This section has served to demonstrate how complex is the functioning of the world steel industry and how rapidly it can be subject to change. Demand is highly cyclical but distributed variously across a wide range of products and markets. Supply is in a state of transition between a competitively advantageous and dynamic technology (minimills) and a more traditional technology (integrated facilities) that incorporates high levels of sunk costs but which is itself open to some adaptation. Supply is also subject to uncertainty around new sources from the economies in transition and depends upon access to a range of raw materials and other inputs as well as a shifting system of distribution. Finally, the industry is highly politicised and has a long and continuing tradition of state intervention and cartelisation both at national and international levels, Dale (1980, p. 163/4).

South African Steel in Transition

The South African steel industry is in a state of transition for two separate reasons. First, it is subject to the conditions operating at a world level which have been described in the previous section. Second, the industry has been built up under apartheid and strongly reflects the pre-democracy economic and political conditions under which it functioned. This included labour market practices which have scarcely been remedied given the backlog of low skills and wages experienced by the black workforce. ISCOR, the key steel corporation within South Africa, has only just appointed the first black member of its management team, and its Annual Report does not include figures on the composition, grading and remuneration of its workforce in order to demonstrate how it is adjusting to economic and social reconstruction.

The inheritance of apartheid, however, goes far beyond the relative conditions experienced by different sections of the workforce. The development of the steel industry under the tutelage of the apartheid government has been highly dependent upon state support, and inevitably dependent upon motives other than economic development alone, Clark (1994). It has been associated with the key role played by state-ownership, with steel provision in part designed to ensure supplies to domestic industry and to promote industrialisation. Consequently, the industry has been marked by constraints on its international operations. On the one hand, it has developed an extremely wide product range. On the other hand, also partly as a consequence of apartheid and the impact of (the fear of) sanctions, there have been limitations on exporting products, importing technology and forming joint ventures.

The purpose here is not to provide a complete nor a detailed overview of the South African industry. This can be found in Competition Board (1995) for example, and a working knowledge of the sector will be taken for granted. Rather, the intention is to point to some salient features of the industry. For, despite the heritage of apartheid, the South African steel industry enjoys considerable advantages. First, it has an enviable access to raw materials. With the exception of coking coal and nickel, it has abundant supplies of most of the material inputs required for steel production. Indeed, it is a major exporter of iron ore and is the world's largest producer of chrome. In addition, South Africa enjoys provision of the cheapest electricity in the world, not least because of its abundant supplies of coal.

Second, the South African steel industry enjoys considerable technical expertise or the capacity to draw upon it through overseas contracting. To give a few examples, as reported in various issues of Steel Times International. ISCOR's Pretoria works have been converted to stainless steel production through the introduction of the world's first Corex plant. The Saldhana Steel project, a joint venture between ISCOR and IDC, will represent a state of the art facility for manufacturing stainless steel. Columbus, a joint venture between Samancor, the IDC and Highveld Steel, is set to be the largest single site stainless steel manufacturing plant in the world. Nor is technical expertise restricted to major projects alone. Scaw Metals has installed a third rotary kiln, ISCOR has developed capacity for tin-can manufacture, and ISCOR is engaged in contracting out technical advice to a number of projects being undertaken outside South Africa.

A third advantage, as revealed in the previous paragraph, is that the South African industry has a corporate structure that is capable of formulating, financing, implementing and monitoring large-scale projects. Apart from the role played by ISCOR, the IDC has long been and continues to be a major source of finance for mega-projects, especially those around minerals and processing. In addition, South Africa has a highly concentrated corporate structure so that large-scale investments are also feasible on the basis of initiatives taken by its own privately-owned companies, as illustrated by Highveld and Columbus. Further, even if adopted from the previous apartheid regime, state institutions do exist for undertaking sectoral industrial policy, through the DTI as well as through the nominally independent but state-owned IDC.

The combination of these advantages, the inherited structure of the sector, and broader global developments seem to have given rise to a strategy for the industry which focuses on three inter-related components. First, there is a shift towards the production of stainless steel, especially for export. This is reflected, for example, in the conversion of the Pretoria Works and the investments in Columbus and Saldhana Bay. It is also part of a more general strategy to export products with greater value-added. Second, especially through ISCOR, there is engagement in the formation of international joint ventures and associations. Third, there is rationalisation of product lines on the domestic market. Although prices are higher than for exports, the aim is to focus on fewer products to accrue economies of scale and to rely upon imports for those products not domestically sourced in sufficient volume.

ISCOR, in particular, has undergone considerable reorganisation since Hans Smith was appointed as Managing Director in September 1993. Previously, the company had been privatised in November 1989 but had been cushioned by tariffs and other subsidies. Smith has placed individual operations on a commercial footing. As he puts it in the *Steel Times International* of November, 1995, p. 39:

We became lean and mean by replacing an engineering view of the running the business with a genuine financial and commercial function. We have appointed some thirty chartered accountants in this company over the past eighteen months.

In addition, by forming MacSteel International in a joint venture with MacSteel Holdings, ISCOR has committed itself to consolidating the indirect sale of its output on both domestic and export markets through a single merchant.

These developments raise four issues as far as public policy is concerned. First, whilst it has been emphasised above that the industry has considerable capacity to formulate and implement strategy, it does not necessarily follow that it does so efficiently. Whilst the conversion of the Pretoria works to stainless steel has proved in the short-term and with hindsight to have been mistaken, with its reverting to production of pig iron. The decision to convert was a calculated risk based on the prospects of future prices for stainless steel which, in the event, proved disappointing.

Second, whilst it must not be presumed that private corporations will always formulate and implement strategies efficiently, even where they do so, a distinction must be

drawn between their own private interests and those of others affected or potentially affected by their decisions. Strategies for global profitmaking do not necessarily coincide with the policy goals of government. Such is obviously the case in the formation of cartels and restrictive pricing.

Third, even where public and private interests coincide, they are not necessarily efficiently achieved because of lack of coordination, a theme increasingly emphasised in recent developments in economic theory. This is liable to be of importance where vertical integration is involved, for example - lack of readily available and cheap steel inputs precludes the development of a corresponding downstream manufacturing facility which, in turn, leads to a lack of demand for, and supply of, the inputs concerned.

Fourth, where inefficient management, conflicts of interest and lack of coordination persist, remedial action depends upon the capability and power of government to recognise and to rectify them, unless one is wedded to an unshakeable faith in the market. In other words, the issue is one of government promoting corporate efficiency, forming a view of public interest, and coordinating industrial and other policy. Although these issues are distinct in principle, they are not readily disentangled in practice and informed judgement has to be made over all of them at once, the task to which we now turn.

Private and Public Interests in the South African Steel Industry

Although the concern that inspired this investigation does not concern dumping of steel on the South African domestic market, in fact quite the reverse, it is worth reviewing the measures that are in place to deal with dumping. Fortunately, this has recently been reviewed by Blumberg (1996). Prior to 1992, there was anti-dumping legislation in place, but it had never been used since other protectionist measures rendered it unnecessary. Indeed, protection of South African industry had been more or less upon request, as reviewed in Fine and Rustomjee (1997, Chapter 8) - so much so that the Minister of Trade and Industry felt able to pronounce new GATT-friendly measures in terms of, "protection on demand is now dead", Blumberg p. 226. Consequently, Blumberg points to the limited experience of case law, the variable times required to complete investigations, the increasing involvement of lawyers, the mixed responsibility across the Ministries of Finance and Trade and Industry, the ill-defined content of normal value, injury, causation and compensating tariff, and, not least, that the Board on Trade and Tariffs, which has investigative responsibility, is on a learning curve.

It is enabled to go on foreign visits and to undertake its task through questionnaires to relevant enterprises. Moreover, in principles laid out in a Guide rather than in legislation, material injury can include "actual and potential declines in sales, profit, market share, productivity, return on investments or utilization of capacity, prices, margin of dumping, cash flow, inventories, employment, growth, and the ability to raise capital investments", p. 222. Causation can take account of volume of imports, existing tariffs and rebates, the impact of imports and their prices on domestic markets, political influences, the state of the economy, labour matters, boycotts, product quality and range, delivery periods, the technology employed, the utilization of production factors, and the policies of the industry concerning production, marketing and finance, p. 225.

To a large extent, as suggested by Blumberg, these considerations ape those laid down by the GATT Code on anti-dumping. Indeed, she reports that the legislation and procedures involved are to be overhauled, and she has been appointed by the Minister of Trade and Industry to lead the task! However, as has already been suggested in the more general discussion of anti-dumping, whilst this may bring South Africa upto best practice within this area, best is not good enough or, more exactly, appropriate. For, even where anti-dumping is not subject to abuse as a form of protection by other means, its provision is inadequate as policy unless coordinated with other aspects of industrial policy such as competition policy.

For the current investigation, other than in raising relevant causal factors, such considerations may appear to be irrelevant, since current complaints centre on the opposite of the charge of dumping and the need for anti-dumping action. Prices on domestic markets are too high relative to export prices. This might be due, if unlikely, to the fear of anti-dumping cases being filed or to monopolisation on the domestic market. If so, appropriate investigation falls under the auspices of the Competition Board, within the Department of Trade and Industry, which is empowered to investigate price-fixing and other restraints on trade.

The Competition Board, in part through its previous incarnation within the Board of Trade and Industry, is much more longstanding and experienced in practice than the Board on Trade and Tariffs in its dealing with dumping, as is evidenced by its own review of competition policy in 1985, Competition Board (1985). This Report, along with others such as Competition Board (1989 and 1991) dealing with specific industries, makes clear that the Board is able to distinguish between public and private interests across a variety of competitive practices, and it has reviewed the experience and criteria of a range of other countries. It has also incorporated the notion of national, as distinct from private or public, interest, although this almost certainly signifies the economic and political imperatives of apartheid.

This leads to two conclusions despite the breadth of experience of the Competition Board. First, whatever its judgements and practices in the past, these will not have incorporated the substance of public and national interest as required by the needs and goals of an economy and society in reconstruction. Second, even if this were so, there is no guarantee that the powers of the Competition Board would be adequate to deal with the broader policy issues raised by its terms of reference which are concerned with pricing and restraint of trade alone.

This is especially so for the steel industry which has been investigated by the Competition Board on a number of occasions. For example, the Board of Trade and Industry (1974) reported on scrap collection and ruled against the monopsony that disadvantaged collectors by fixing prices below international levels, thereby discouraging supply and leading to its leaking abroad. There can, however, be economies of scale in the processing of scrap and benefits from the greater certainty of fixed prices. In current conditions, policy towards scrap is complicated by its being used in different proportions in different production processes and, hence, for example, in leading to greater or lesser advantage to different

products and, hence, domestic as opposed to export markets. Further, scrap is a national resource whose international price may not reflect its social value in terms of the domestic capacity to generate employment or even greater foreign exchange if processed prior to export. As will be seen, such issues around scrap have continued to be contested.

More recently, the Competition Board (1995) delivered a report on restrictive practices in the distribution of metal products and scrap. It came to the following conclusions, p. 31/2:

(T)he Board found that the following practices constituted restrictive practices ... which could not be justified in the public interest:

- (a) price leadership in the oligopolistic steel (stainless and other) merchanting market;
- (b) a refusal to supply by persons in an oligopolistic market;
- (c) a refusal by Columbus to deal with scrap merchants other than Tillmor; and
- (d) the collusive purchasing of non-ferrous scrap.

The associated practices were, then, naming specific companies, declared unlawful by the Minister on 10th March, 1995, although one declaration was withdrawn on 11th August, 1995, following corresponding assurances from Columbus.

Significantly, these decisions were reached on a Notice of Investigation by the Competition Board given as long ago as 28th February, 1992. Essentially, as far as iron and steel are concerned, the complaints concern the squeezing out of small users or dealers and/or their disadvantage in pricing as a result of the collusive or cartel-like behaviour of the companies named. Paradoxically, ISCOR does not appear as subject to complaint since it is only indirectly involved through the dealers concerned. This reflects the structure of the industry in which ISCOR might only sell in large quantities to customers directly or to merchants who can charge at high prices to small-scale consumers - and, more recently, ISCOR has opened a large discount for bulk for some of its products.

However, no sooner had the judgement referenced above been delivered - it bears repeating after three years of deliberations - than it was superseded altogether by the decision of ISCOR to pursue a joint venture with MacSteel Holdings to form MacSteel International which would have total responsibility for all of ISCOR's export trade and for a large share of its indirect sales on the domestic market. Not surprisingly, the proposal met with considerable opposition from other steel merchants. On 14th June, 1996, the Minister allowed the venture to go ahead for a two year period on condition that the Competition Board monitor its practices through provision to it of the necessary information, and that the venture did not engage in anti-competitive behaviour. In other words, the judgements requires the Competition Board to be continuously vigilant over the pricing policies of ISCOR and MacSteel International.

During the course of the earlier investigation, it was alleged that some potential

witnesses were unwilling to testify for fear of being victimised by the colluding parties. The proposed formation of MacSteel International also gave rise to a series of allegations that have yet to be made public about malpractice or inefficiencies that will arise as a result of the venture or which characterise the functioning of the steel industry more generally. These include the following:

- (a) ISCOR threatening not to supply from domestic production (for exports) if merchants engaged in supplying imports for the domestic markets.
- (b) ISCOR losing export business and opportunities by excluding other merchants from handling its business.
- (c) ISCOR paying unduly high commissions on its merchanting.
- (d) ISCOR exposing the South African steel industry to the risks attached to MacSteel's more general trading activity.
- (e) The creation of conflict of interest between MacSteel serving ISCOR and serving other steel producers, with the potential loss of ISCOR's export markets to other producers.
- (f) The knock-on effects of high commissions and loss of markets can be to render domestic steel capacity unprofitable and subject to closure.
- (g) The joint venture will allow ISCOR to transfer profits abroad through transfer pricing in the form of high discounts and reduce its tax obligations and the restrictions imposed by controls on export of capital.
- (h) More generally, the venture represents a cartelisation of the steel industry in domestic and export markets, with the capacity to discipline, exploit or eliminate others engaged in the steel business.

Against this background, it is worth assessing ISCOR's own presentation of its pricing strategy, as delivered to the South African Department of Trade and Industry, Robertson (1997). It begins by drawing a sharp distinction between domestic and export markets. The first is taken as prior ("why do South African primary steel manufacturers produce more than the local market requires?", p. 1) and the second as the outlet for a surplus ("can this excess primary steel be sold profitably into other markets?", p. 1"). Such a situation, of capacity surplus to domestic requirements, is explained in terms of historically incorrect anticipation of domestic needs and excessive investment in the past. On this basis, it is argued that exports can make a contribution to profits even if sold at a price lower than in domestic markets.

It must be observed, first of all, that the undue privileging of the domestic market as the target for capacity is entirely arbitrary. Indeed, it is perverse in so far as its perceived priority leads to a justification for the charging of higher prices on domestic markets. With exports commanding more than a third of supply, it makes little sense to see them as a release of excess capacity, and it is irrelevant how capacity levels may have arisen in the past. More

important, there are differences in the demand for steel in domestic and export markets, and differences in costs of delivery, but these do not justify labelling the export markets as the ones which should be deemed as benefiting from surplus capacity. It would be equally possible for steel to be sold at between variable and average cost in the domestic market and still contribute to profits. In other words, the pricing strategy and structure does not simply arise out of the need to sell excess capacity on export markets. It is a matter of how much is sold, by whom, to whom, at what prices and with what subsidies or other policies (should government choose to intervene).

Without the lower prices on export markets, it is argued that there will be closures of capacity with detriment through lost investment, jobs and skills, retrenchment costs, supply problems to steel-users, loss of foreign exchange, increased share of fixed costs on continuing production, and multiplier effects on suppliers to the steel industry, p. 8. These are genuine considerations and lead to the suggestion that they have been taken into account by subsidising steel-users who export their products - through the Committee on Secondary Manufacture (COSM) administered by the South African Iron and Steel Institute (SAISI). Over the past four and a half years, this amounts to assistance of R327,671 million which needs to be set against a total of foreign currency earned through export of secondary manufactured steel products of R12, 929 billion, Annexure 3. The subsidy of approximately 2.5% compares with claims of 60% higher prices being paid domestically for some products. In addition, ISCOR has also offered rebates to exporters adding value to steel-based products. This has amounted to a further R1 billion over the past five years, Annexure 4. In short, something around a 10% discount has, on average, been offered in "assistance" to steel-using exporter over the past five years.

It is worth quoting the presentation's final paragraph in full, p. 13, para 5.3 (sentence numbers added):

1. There is no such thing as a two-tier or dual pricing policy for steel in South Africa.
2. Iscor's local price of steel is based on the cost of production, a responsible profit margin policy and local market conditions.
3. This is no different from any other overseas Steel producer or listed public manufacturing company in South Africa, with a responsibility to its shareholders.
4. Excess steel, produced because of current (and future) surplus capacity, will be sold at the best price obtainable in other markets from time to time.
5. If this price proves not to be viable, plant will be shut down, workers retrenched, fixed costs reduced and export sales stopped.
6. Then only one steel price in South Africa will exist -that which the market can stand in the face of international competition and substitute products.
7. However, if the local economy grows which results in a better local market for steel (it has been shown over the last 20 years that GDP growth and local steel sales growth match each other closely), then exports of steel by South African producers will reduce accordingly and the high costs of exporting be eliminated.
8. In time, these cost reductions can be passed on to the consumer by way of lower price increases.

The first sentence is false by own admission and is contradicted by the fourth sentence. The second sentence, together with the third, provides four different criteria for pricing steel locally - cost of production, profit margin, local market conditions, and

responsibility to shareholders. These are not mutually compatible in all or even most circumstances. Nor does it take account of the export assistance offered. The third sentence is also false in so far as steel and other manufacturing companies can be and have been subject to government regulation and policy. The fifth and sixth sentence are erroneous in their understanding of the steel market. For whatever happens to South African steel capacity, the domestic market will inevitably be subject to imperfect competition and price discrimination between markets. The seventh and eighth sentences presume that general demand must grow in order for fixed costs to be spread and for prices to be lowered. However, were prices to the domestic market to be lowered, this might increase demand and downstream economic activity even if at the expense of ISCOR profitability. Further, the explicit posing of the problem in terms of only meeting exports with excess capacity is in complete contradiction with investments currently under way to serve export markets.

Although the ISCOR presentation is confused, inconsistent and self-serving, it usefully, if often inadvertently, raises a number of crucial issues. First, and foremost, what are to be the objectives of pricing policy? However well-defined they might be for ISCOR itself, there is clearly the potential for divergence between its own private interests and those of others. This is true of the public interest as represented, for example, by employment provision and the earning of foreign exchange. It also holds for the difference of interest between ISCOR and domestic steel-users who clearly prefer lower prices.

Further, second, even where there is no conflict of interest, there can be problems of coordinating and even enforcing those interests in practice. This is apparent in the case of the symbiotic relation between steel supply and use, where the scale of market demand depends upon price, and price depends upon costs in the context of scale economies. It cannot be presumed that ISCOR pricing and supply strategies are the ones that are most beneficial to the economy as a whole even if they are most beneficial to ISCOR itself.

Third, to some extent, this is recognised by ISCOR in principle in terms of its wider responsibilities for employment, etc, and it is also recognised in practice through the export assistance offered to steel-users. However, is such assistance offered at the appropriate level and is it appropriately distributed across the different steel-using sectors? As already implied, there can be no presumption that ISCOR is appropriately suited to make such decisions by virtue of its own private interests and its ability to coordinate such decision-making with wider economic considerations. Nor is there any reason why assistance should only be offered to exporters of steel-using products.

In this context, it is worth observing that the use of such export assistance is, in principle, consistent with private profit-making on the part of ISCOR. Indeed, it can be understood as part and parcel of the dual price strategy used in the direct export of steel. Further, it has the advantage of exporting steel indirectly through the products in which it is incorporated. On the one hand, this may reflect ISCOR's price discrimination in both domestic and export markets for steel as an input for those products which are traded more readily or with more commercial viability (for what ISCOR does, so can other producers on the world market, so that competition is more fierce and prices have to be lower). On the other hand, exporting steel indirectly in made-up products has the potential advantage of avoiding anti-dumping actions. However, as demonstrated previously, given the complexity

of anti-dumping legislation and practice, it is far from clear that ISCOR is either best placed or most suited to making such policy, even if implicitly. What is certain is that the pricing strategy revealed by the ISCOR document would be interpreted by the United States, for example, as an explicit dumping policy, open to counter-measures. In addition, to avoid such action requires targeting of subsidies to steel-using exports that are not readily traceable to specific products. This, however, places the matter even further beyond the strategic boundaries occupied by ISCOR itself.

Fourth, the ISCOR presentation raises issues of adjustment within the steel industry but only from a very partial perspective. Essentially, it is seen as adjusting to excess capacity, although some reference is made to modernising plant, increasing productivity, reducing costs and rationalising plant and product range. Once again, the emphasis is on the role of domestic supply and demand, with exports easing adjustment. But it is the international orientation of ISCOR that is at least as important as domestic restructuring, as is apparent in the new investments that are being made to expand capacity. These do not figure in the ISCOR presentation.

In addition, careful consideration must be given to the prospective role to be played by MacSteel International which, paradoxically, given the focus on pricing, is also notable for its absence from the ISCOR presentation. It is as if it is implicitly assumed to be a neutral conduit for the transmission of pricing policy. But the joint venture with ISCOR implies that domestic production of steel, whether for domestic or export markets, will be set strategically against the international trading activities undertaken by MacSteel International. In principle, it is possible to speculate that the arrangement could be entirely to the advantage of the South African economy. Domestic production of product range can be rationalised and, otherwise, steel purchased and sold on international markets at the best available prices and terms. However, in practice, as already considered, ISCOR's monopolistic position as domestic producer is complemented by that of MacSteel International as trader. To maximise profitability, the two companies would be expected to discriminate between both sources of supply and demand in order to exploit market power.

There is no reason why such a strategy would coincide with the most advantageous development of either the domestic steel or domestic steel-using industries. On the one hand, there could be a strategy of cherry-picking - merely engaging in, or skewing activity to, the most profitable markets whether as direct producer or trader - on the basis of monopolistic position rather than productive efficiency and broader economic potential. Thus, domestic production might be sacrificed in order to allow for trading profits by MacSteel International on imports. On the other hand, MacSteel International would not necessarily facilitate access of domestic steel-users to the cheapest available steel on world markets in order to boost profitability on domestic supply. In short, the current restructuring of the South African steel industry will inevitably reflect and consolidate its monopolistic structure in ways that do not best represent the development either of the industry itself or the other industries to which it is attached.

Conclusions and Policy Recommendations

As already observed, it is not the intention of this report to investigate these issues in

detail and to adjudicate on the veracity of charges of price discrimination and its quantitative significance. What such charges do indicate is a wide range of potential deficiencies in the functioning of the South African steel industry for which remedial action goes far beyond the limited scope for intervention falling under the auspices of the Competition Board and BTT.

Such conclusions are confirmed by the Cluster Studies, IDC (1997a-d), for the steel and steel-using industries conducted on behalf of the IDC. Interestingly, in view of its "diamond" approach, such studies focus in part on vertical integration. It is found, for example, that downstream integration in the use of steel is inadequate as reflected in poor quality and regularity of supply and a need to rationalise product range. Nor do domestic appear to follow international prices in response to movements in the value of the rand.

Whilst the Cluster Studies point to the need for such deficiencies to be remedied and for the industries concerned to move to best international practice, they do not explain why the failures have arisen and how they might be overcome. Other research has also addressed these issues and points to the longstanding lack of vertical integration in much of South African industry both through the failure of private capital and industrial policy, Fine and Rustomjee (1997) and Fine (1997a and b). The reasons for this have shifted over time but currently reflect the conglomerate character of South African corporations, their uneasy collaboration with one another from time to time on a piecemeal basis, the reluctance of foreign investors to engage in joint ventures or stand-alone investments where they are constrained in vertically integrated activity (whether in production or access to local markets for sales or purchases) by domestic conglomerates, and the strategic interest of South African corporations in internationalising their operations. In addition, Fine (1997b) surveys the goals that can inform industrial policy, the measures that might be used to address them, and some of the economic, political and administrative constraints on the pursuit of the public interest, or economic and social reconstruction, through industrial policy.

In the case of the steel industry, the weight of evidence considered in this report suggests that the existing institutions, even if working perfectly in areas of policymaking that are inevitably marked by a lack of precision and discretion, are sorely inadequate to the tasks involved. They do not have sufficient powers, they cannot function sufficiently quickly, and nor are they open to appropriate coordination. As a result, it is recommended that a permanent steel authority, the South African Steel Authority (SASA) be established which would take over the responsibilities of the Competition Board, the BTT and other relevant statutory bodies. It should also command wider powers to regulate the industry and to make policy recommendations. However, no further detailed recommendations are made about the composition and functioning of SASA, although there are implications that can be drawn from this report if the recommendation is accepted.

The case for SASA can be made in two different but closely related ways. First, by analogy with the case made against anti-dumping legislation, industrial policy in South Africa for the steel industry is currently being made by ISCOR. As a result, industrial policy has been privatised and is governed by the strategies adopted by ISCOR. Its private interests do not, cannot and are not designed to coincide with those of the public interest. That public interest is itself poorly represented both historically and currently in the actual or potential jobs and products that derive from downstream steel-using activity.

Second, ISCOR is a utility that was privatised under the previous apartheid regime without the introduction of special regulations. This does not mean that ISCOR's performance has subsequently been purely market-driven, at least until the formation of the new government. For relations between ISCOR and government have remained highly politicised, as reflected in economic policies towards the corporation, including continuing measures of protection and provision of state finance through joint ventures with the IDC. In the context of the politics of steel, it may appear to be strange to describe ISCOR as a utility since this term is usually reserved for those enterprises providing consumer goods rather than intermediate inputs. However, even this is not universally the case, since electricity generation, for example, is generally recognised to require regulation although it does not serve consumers directly as this is the province of the grid or distribution companies. In any case, electricity and other such utilities serve both domestic and industrial consumers and regulation is generally required for the latter as well as for the former.

In short, without quibbling over semantics, ISCOR and the steel industry more generally are best understood as a utility. ISCOR itself directly employs over 40,000 workers, has a turnover of R12 billion and capital assets of R12 billion. It has direct or indirect command over important national assets such as coal and iron reserves and scrap. Its forward and backward linkages within the economy and its impact on macroeconomic performance are highly significant. In this light, the proposal for SASA is far from outlandish. As an individual company, ISCOR more than matches the contribution made by total industry in many developing countries. No second thought would be given to providing for a department of industry in such countries even though the range and scale of production and economic impact may be far less than for ISCOR, or the South African steel industry as a whole, in absolute terms. On the other hand, it is common for steel authorities to be formed, as in the longstanding European ECSC, even if within particular ministries. Further, it is recognised by the OECD, for example, that individual countries need to be represented in international negotiations in order to regulate the industry at a world level.

It is anticipated that there will be objections to this proposal on a number of grounds. One is that the formulation and exercise of the public interest by SASA will be against certain private interests. This, however, is precisely the rationale for the formation of SASA. On the other hand, it might be argued that SASA will create a new layer of bureaucracy, an ineffective and inefficient increase in state intervention, and command scarce public resources and skills that might be better engaged in other activities. It is, however, a central tenet of this report that the current provisions for regulating the industry are ineffective and unnecessarily duplicate uncoordinated policymaking resources across various governmental institutions. Indeed, the industry should welcome this proposal for the scope that it provides for the effectiveness and streamlining of decisionmaking that it promises to yield.

Finally, it must be emphasised that the recommendation for the formation of SASA is steel-specific. It is not a general argument for similar authorities for each and every sector of the economy. In other industries, characterised by different structures and dynamics, existing regulatory provisions and institutions may well be adequate or only be open to marginal improvement. Whether industries should be regulated by a single authority covering the range of issues, or by separate authorities with generic responsibilities can only be

determined on a case-by-case basis. The judgement of this report is that the evidence for a single authority is overwhelming in the case of South African steel.

In this respect, the proposal is both consistent with and a refinement of the recent DTI (1997) policy guidelines for competition policy. It is highly critical of past policy and institutions, it widens the compass of public interest to include developmental goals, in part to remedy the inequities of the past, it acknowledges the need to set competition policy within the broader framework of industrial and trade policies, it addresses the problems of both vertical and horizontal integration, it seeks structural remedies where necessary, and it warns against the drawbacks of weak powers and the duplication of procedures across different authorities. Whilst the proposed guidelines do address the issue of competition policy where there are strong links between public and private enterprise, there is no explicit consideration of privatised utilities. Nonetheless, it does advise in case of each public enterprise that, "a thorough review of the situation is undertaken and the necessary legislative changes prepared", p. 25. It is clearly an anomaly that ISCOR was privatised under circumstances in which appropriate legislation and institutions for regulation and development were not even considered let alone established. This should now be remedied as a matter of urgency both in developing the steel industry to meet South Africa's new leads and in contributing to the development of competition policy more generally through this specific case.

It is one thing, however, to recommend the establishment of a steel authority in principle and another to put it in place with detailed recommendations on how it should operate. It would be fortunate if the model for such an institution could be picked off the shelf from experience elsewhere, whether drawing upon steel authorities in other countries or on authorities for other sectors whether from South Africa or other countries. If this were possible, however, it is almost certain that the need for the authority would not have arisen in the first place. The specific needs of South African steel need to be addressed, and it is important to understand why an ideal model does not exist, although lessons can be learned from the experience of other countries.

The case for the steel authority rests on the need to coordinate policy across a variety of issues, not least pricing and vertical integration. The overall performance of the sector, however, also depends upon levels, location and composition of investment, availability of finance, technological performance, R&D, skills of the workforce and management, etc, and the institutions devoted to them. Abe and Fitzgerald (eds) (1995) covers the range of institutions involved in Japan's industrial success. If account is taken of just one of these, such as productivity performance, it is apparent that the determinants of outcomes are complex and various. The impact of a single institution devoted to productivity change depends upon what goes on around it. This is the conclusion from the literature on national systems of innovation, for which Fine (1995) provides an overview, an approach that has been influential in South African technology policy. As Shin (1996) shows in his comparative institutional study of catch-up and technology transfer in Germany, Japan and South Korea, p. 146:

The efficiency of institutions cannot be assessed separately from contexts ... It can be assessed only by analysing concrete contexts in which these institutions function.

More generally, when addressing industrial policy, it has been recognised that the character of the institutions formulating and implementing policy depends crucially upon the strategy and ethos with which they are imbued, as well as their flexibility, as is demonstrated by the study of Pierre and Park (1997) for Japan's MITI. Similar conclusions are drawn for Norwegian industrial policy in the context of financial provision by Knutsen (1997, p. 126):

The government gradually built up a network of agencies, organisations and ad hoc committees within the framework of an indicative system of planning, which utilised the financial system to reach major targets in industrial policy ... the specific configuration of national systems for industrial finance contribute to the differing capacities of governments to intervene in the industrial economy.

According to Chang (1997), price regulation is more advanced in the United States than elsewhere because of the relative absence of public sector enterprises. In addition, the functioning of regulation depends upon whether competition is seen as market-based or dynamic and developmental, on the extent of distributional considerations, on the role of the state in creating and not just in regulating markets, and on the politics of regulation. From the experience of India, Majumdar (1996) suggests that the negative impact of regulatory institutions is closely associated with the high levels of x-inefficiency or excess capacity generated. Further, much of the literature points to the need for correspondence between institutions and levels of development. Those institutions that are appropriate at one stage of development may become inappropriate at a later state.

This has been sharply revealed over the last two decades with the greater emphasis on market-led policy, although the policy pendulum is now swinging back to greater intervention. Stern et al (1995) question not only whether the institutions, that engineered the heavy and chemical industry drive in South Korea, were necessary but whether they proved capable of sustaining successful policy. Kap-Young (1997) suggests not in the light of the collapse of Hanbo Steel, with 5 trillion won of debts, arguing for transparency if not withdrawal of government involvement. Cho (1996) finds the need for new institutions in the light of the privatisation of the South Korean power industry. Similar conclusions are drawn for Amin and Thomas (1996) for Denmark. Nembhard (1996) examines the shifting impact of capital controls, in conjunction with financial regulation and industrial policy, in the industrialisations of Brazil and South Korea.

In short, the institutions for making policy are best seen as conduits. They are the product of country- and sector-specific economic and political factors as well as an influence upon them and outcomes. This is most notable in the work of Douglass North, as deployed by Knutsen (1997) for example, who distinguishes between institutions and organisations, with the former "broadly defined as ranging from organisations and networks of organisations to professions and cultures", p. 107. Similarly, Andreff and Frensch (1997) examine institutions for policy making in the terms in which the developmental state has been understood, revolving around issues of governance, accountability, meritocracy, democracy, embeddedness, etc.

Against this background, the proposal to establish a steel authority in South Africa

can be examined in a number of different, if overlapping, ways. First, it can be set in the context of strategic principles. What are the goals that should be set for such an authority? These must clearly conform to those of government, most notably in its economic policies. In view of the earlier analysis, priority must be given not only to the traditional goals of macroeconomic policy - such as balance of trade and employment generation - but also to the pricing of output, vertical integration, product composition, and the provision and coordination of finance for investment.

Second, the authority can be viewed in terms of its functions. As already argued, it should take over the functions that would otherwise accrue to more general statutory bodies - those concerned with competition and trade, for example. In addition, it will need to monitor and coordinate the horizontal and vertical restructuring and growth of the industry.

Third, and most controversial, there is the question of the powers of the authority. Will its role be purely indicative with no powers of enforcement, or will it have the statutory authority to impose targets and/or punitive measures? Short of public ownership, there is a potential conflict between the rights of private corporations and government policy. How should this be resolved? For a number of reasons, there is a strong case for heavy powers of intervention. These include the extent of restructuring required within the industry, the imperative to develop downstream activity, the conflict of interest between the private goals of ISCOR and those of domestic manufacturing development, and the need to establish an ethos of strategic policy making, especially in this sector where privatisation occurred under the apartheid regime without accompanying regulation. Further, it is to be anticipated that obstacles will be placed in the way of strategic intervention through the courts or otherwise unless backed up by the strongest legislation and powers.

The simplest way for these powers to be exercised is through SASA serving as a licensing authority for steel producers. The granting of a licence will depend upon the submission of operational plans. These can be coordinated by the authority and licences granted contingent upon performance (as in exports, employment, investment, etc). The authority will also be able to undertake or promote initiatives of its own.

In effect, this grants the authority almost limitless powers. These must be counterbalanced by a broader political authority. Accordingly, the renewal of licences should be subject to review by the Minister for Trade and Industry, although it is anticipated that this is liable to be a formality in the normal course of events. However, as previously argued, the functioning of the system will be highly dependent upon the strategies and ethos with which industrial policy is made and the responses of the private sector. The exercise of the authority's powers in practice cannot be pre-determined but, as indicated, it is wise in the first instance to err on the side of excessive powers in order to ensure that its functions can be carried out. If these powers are excessive, they need not be used and they may be denied by ministerial intervention.

Finally, there is the issue of the composition of, or participation in, the authority. Here, a delicate balance has to be struck between competence and independence. The authority should be governed by a commission that has a majority of those with no direct connection with the industry. It should gather together existing expertise and functions from government.

It should include representatives from other government departments and be housed within the Department of Trade and Industry. There should also be representatives from the steel industry itself, from trade unions, corporate finance, and the IDC.

References

Abe, E. and R. Fitzgerald (eds) (1995) The Origins of Japanese Industrial Power: Strategy, Institutions and the Development of Organisational Capability, London: Frank Cass.

AISI (1997) Public Policy Statements: On Behalf of Its US Producer Members, Washington: American Iron and Steel Institute.

Amin, A. and D. Thomas (1996) "The Negotiated Economy: State and Civic Institutions in Denmark", Economy and Society, vol 25, no 2, pp. 255-81.

Anam, M. et al (1996) "Dumping with Correlated Demand", Southern Economic Journal, vol 62, no 4, pp. 1072-78.

Anderson, S. et al (1995) "Who Benefits from Antidumping Legislation?", Journal of International Economics, vol 38, no 3-4, pp. 311-37.

Anderson, J. (1992) "Domino Dumping, I: Competitive Exporters", American Economic Review, vol 82, no 1, pp. 65-83.

Andreff, W. et al (1997) "Institutional Changes and Problems of Economic Adjustment", Economic Systems, vol 21, no 4, pp. 347-82.

Azrak, P. and K. Wynne (1995) "Protectionism and Japanese Direct Investment in the United States", Journal of Policy Modeling, vol 17, no 3, pp. 293-305.

Baldwin, R. (1994) "The Impact of the 1986 US-Japan Semiconductor Agreement", Japan and the World Economy, vol 6, no 2, pp. 171-93.

Belderbos, R. (1997) "Anti-Dumping and Tariff Jumping: Japanese Firms DFI in the European Union and the United States", Weltwirtschaftliches Archiv, vol 133, no 3, pp. 419-57.

Beseler, J. and A. Williams (1986) Anti-Dumping and Anti-Subsidy Law: The European Communities, London: Sweet and Maxwell.

Blumberg, L. (1996) "South Africa", in Steele (ed) (1996).

Board of Trade and Industries (1974) Inquiry into the Collection, Marketing and Supply of Ferrous Scrap in the Republic of South Africa, Report No 1974, Pretoria: Government Printer.

Boltuck, R. and R. Litan (eds) (1991) Down in the Dumps: Administration of the US Unfair

Trade Laws, Washington: Brookings Institute.

Boltuck, R. and R. Litan (1991) "America's 'Unfair' Trade Laws", in Boltuck and Litan (eds) (1991).

Bourgeois, J. and P. Demaret (1995) "The Working of EC Policies on Competition, Industry and Trade: A Legal Analysis", in Buiges et al (eds) (1995).

Brannlund, R. and K. Lofgren (1995) "Cyclical Dumping and Correlated Business Cycles in Imperfect Markets: Empirical Applications to the Canadian Pulp and Paper Industry", Applied Economics, vol 27, no 11, pp. 1081-91.

Buiges, P. et al (eds) (1995) European Policies on Competition, Trade and Industry, Aldershot: Edward Elgar.

Business Bulletin (1996) "Steel Prices", Cape Chamber of Commerce and Industry, Issue no 30, 28th August.

Canoy, M. (1994) "Natural Monopoly and Differential Pricing", Journal of Economics, vol 59, no 3, pp. 287-309.

Chang, H. (1997) "The Economics and Political of Regulation", Cambridge Journal of Economics, vol 21, no 6, pp. 703-28.

Cheng, L. and M. Kreinin (1996) "Supplier Preferences and Dumping: An Analysis of Japanese Corporate Groups", Southern Economic Journal, vol 63, no 1, pp. 51-59.

Cho, S. (1996) "The Power Industry in Korea: The Business Environment for the Participation of the Private Sector", Energy Policy, vol 24, no 5, pp. 471-76.

Clark, N. (1994) Manufacturing Apartheid: State Corporations in South Africa, New Haven: Yale University Press.

Competition Board (1985) Investigation into Collusion on Prices and Conditions, Market Sharing and Tender Practices, Report No 15, Pretoria: Government Printer.

Competition Board (1989) Investigation into Restrictive Practices and Monopoly Situations in the Gypsum Industry, Report No 22, Pretoria: Government Printer.

Competition Board (1991) Investigation into Allegations of Restrictive Practices by or Involving Pharmaceutical Wholesalers and Retail Pharmacies, Report No 27, Pretoria: Government Printer.

Competition Board (1995) Investigation into Restrictive Practices that Exist or May Come into Existence in the Distribution of One or More of the Following Products: Iron, Steel, Stainless Steel, Non-Ferrous Metals, Ferrous and Non-Ferrous Scrap Metals, Report No 37, Pretoria: Government Printer.

Crandall, R. (1996) "From Competitiveness to Competition: The Threat of Minimills to Large National Steel Companies", Resources Policy, vol 22, nos 1/2, pp. 107-18.

Creally, E. (1992) Judicial Review of Anti-Dumping and Other Safeguard Measures in the European Community, London: Butterworth.

Dale, R. (1980) Anti-Dumping Law in a Liberal Trade Order, London: MacMillan.

Deardoff, A. (1990) "Economic Perspectives on Anti-Dumping Law", in Jackson and Vermulst (eds) (1990).

Devault, J. (1996) "The Welfare Effects of US Antidumping Duties", Open Economies Review, vol 7, no 1, pp.19-33.

DTI (1997) "Proposed Guidelines for Competition Policy: A Framework for Competition, Competitiveness and Development", Pretoria: Department of Trade and Industry, 27th November.

Fine, B. (1997a) "Industrial and Energy Policy", in Michie and Padayachee (eds) (1997).

Fine, B. and C. Poletti (1992) "Industrial Policy in the Light of Privatisation", in Michie (ed) (1992).

Fine, B. (1997b) "Industrial Policy and South Africa: A Strategic View", NIEP Occasional Paper Series, no 5, pp. 1-71, Johannesburg, National Institute for Economic Policy.

Fine, B. and Z. Rustomjee (1997) South Africa's Political Economy: From Minerals-Energy Complex to Industrialisation, Johannesburg: Wits University Press.

Fine, B. (1993) "Economic Development and Technological Change: From Linkage to Agency" in Liodakis (ed) (1993), an amended version of SOAS Discussion Paper, no 14, March 1992.

Finger, J. (1991) "The Meaning of 'Unfair' in US Import Policy", Trade Policy Working Paper, No 745, World Bank.

Finger, J. (1993) (ed) Antidumping: How It Works and Who Gets Hurt, Ann Arbor: University of Michigan Press.

Fors, G. (1991) "Stainless Steel in Sweden: Antidumping Attacks Good International Citizenship", World Bank, Policy, Research, and External Affairs Working Papers, no 744, reproduced in Finger (ed) (1993).

Gallett, C. (1997) "Cyclical Fluctuations and Coordination in the US Steel Industry", Applied Economics, vol 29, no 3, pp. 279-86.

- Glais, M. (1995) "Steel Industry", in Buiges et al (eds) (1995).
- Gual, J. (1995) "The Three Common Policies: An Economic Analysis", in Buiges et al (eds) (1995).
- Hartigan, J. (1996) "Perverse Consequences of the GATT: Export Subsidies and Switching Costs", Economica, vol 63, no 249, pp. 153-61.
- Hartigan, J. (1994) "Dumping and Signaling", Journal of Economic Behavior and Organization, vol 23, no 1, pp. 69-81.
- Hoekman, B. and P. Mavroidis (1996) "Dumping, Antidumping and Antitrust", Journal of World Trade, vol 30, no 1, pp. 27-52.
- Hogan, W. (1991) Global Steel in the 1990s: Growth or Decline, Lexington: Lexington Books.
- Hogan, W. (1994) Steel in the 21st Century: Competition Forges a New World Order New York: Lexington Books.
- Hogan, W. (1983) World Steel in the 1980s: A Case of Survival, Lexington: Lexington Books.
- Holmes, T. (1996) "Can Consumers Benefit from a Policy Limiting the Market Share of a Dominant Firm?", International Journal of Industrial Organisation, vol 14, no 3, pp. 365-87.
- IDC (1997d) "Wire and Wire Products Mini-Cluster Study", Cluster Paper Series, CS4/97, Sandton: IDC.
- IDC (1997c) "Structural Steel Mini-Cluster - Volume II: Benchmarking Results", Cluster Paper Series, CS3/97, Sandton: IDC.
- IDC (1997b) "Structural Steel Mini-Cluster - Volume I: Industry Analysis", Cluster Paper Series, CS2/97, Sandton: IDC.
- IDC (1997a) "Automotive Body Pressing Mini-Cluster", Cluster Paper Series, CS1/97, Sandton: IDC.
- ILO (1992) Recent Developments in the Iron and Steel Industry, Geneva: ILO.
- ITC (1997a) "Circular Welded Non-Alloy Steel Pipe from Romania and South Africa", Report of United States International Trade Commission, Investigations Nos 731-TA-732 and 733 (Final), Report for hearings held in Washington, 14th May.
- ITC (1997b) "Cut-to-Length Carbon Steel Plate from China, Russia, South Africa, and Ukraine", Report of United States International Trade Commission, Investigations Nos 731-TA-753 (Preliminary), Report for hearings held in Washington, 26th November.

Jackson, J. and E. Vermulst (eds) (1990) Anti-Dumping Law and Practice, Ann Arbor: University of Michigan.

Kap-Young, J. (1997) "A Product of Political-Business Nexus", Korea Focus, vol 5, no 1, pp. 117-19.

Keizer, W. (1997) "Negotiations on Harmonized Non-Preferential Rules of Origin - A Useless Task from a Trade Policy Perspective?", Journal of World Trade, vol 31, no 4, pp. 145-51.

Key Note (1996) The Steel Industry: 1996 Market Report, London: Key Note Publications.

Kipper, M. (1995) "Industrial Policy and Inter-Firm Relations: The French Steel Producers and Users in Historical and Comparative Perspective", University of Reading Discussion Paper, no 312, Series A, Vol VIII (1995/96).

Knutsen, S. (1997) "Post-War Strategic Capitalism in Norway: A Theoretical and Analytical Framework", Business History, vol 39, no 4, pp. 106-27.

Laussel, D. and C. Montet (1995) "The Three Common Policies: An Economic Analysis, Discussion", in Buiges et al (eds) (1995).

Leidy, M. (1994) "Trade Policy and Indirect Rent Seeking: A Synthesis of Recent Work", Economics and Politics, vol 6, no 2, pp. 97-118.

Leidy, M. (1997) "Macroeconomic Conditions and Pressures for Protection under Antidumping and Countervailing Duty Laws: Evidence from the United States", IMF Staff Papers, vol 44, no 1, pp. 132-44.

Lenway, S. et al (1996) "Rent-Seeking, Protectionism and Innovation in the American Steel Industry", Economic Journal, vol 106, no 435, pp. 410-21.

Levinsohn, J. (1994) "International Trade and the US Automobile Industry - Current Research, Issues and Questions", Japan and the World Economy, vol 6, no 4, pp. 335-57.

Liodakis, G. (ed) (1993) Society, Technology and Restructuring of Production, Athens: V. Papazissis.

Majumdar, S. (1996) "Government Policies and Industrial Performance: An Institutional Analysis of the Indian Experience", Journal of Institutional and Theoretical Economics, vol 152, no 2, pp. 380-411.

Marceau, G. (1994) Anti-Dumping and Anti-Trust Issues in Free-Trade Areas, Oxford: Clarendon Press.

Marchionatti, R. and S. Usai (1997) "Voluntary Export Restraints, Dumping and Excess

Capacity", Manchester School of Economic and Social Studies, vol LXV, no 5, pp. 499-512.

McChesney, F. (1997) "The Role of Economists in Modern Anti-Trust: An Overview and Summary", Managerial and Decision Economics, vol 17, no 2, pp. 119-26.

Messerlin, P. (1990) "The Antidumping Regulations of the European Community: The 'Privatisation' of Administered Protection", in Trebilcock and York (eds) (1990).

Michie, J. (ed) (1992) The Economic Legacy, 1979-1992, London: Academic Press

Michie, J. and V. Padayachee (eds) (1997) The Political Economy of South Africa's Transition - Policy Perspectives in the Late 1990s, London: Dryden Press.

Moore, M. (1994) "Steel Protection in the 1980s: The Waning Influence of Big Steel", NBER Working Paper, no 4760.

Mullin, J. and W. Mullin (1997) "United States Steel's Acquisition of the Great Northern Ore Properties: Vertical Foreclosure or Efficient Contractual Governance?", Journal of Law, Economics, and Organization, vol 13, no 1, pp. 74-100.

Nembhard, J. (1996) Capital Control, Financial Regulation, and Industrial Policy in South Korea and Brazil, Westport: Praeger.

OECD (1996) The Steel Market in 1995 and the Outlook for 1996 and 1997, Paris: OECD.

Ostry, S. (1990) "Antidumping: The Tip of the Iceberg", in Trebilcock and York (eds) (1990).

Parker, M. (1995) "The Impact of a Hyperinflationary Economy on the Determination of Dumping", Journal of World Trade, vol 29, no 4, pp. 193-205.

Pierre, J. and S. Park (1997) "The Dynamics of Abstract and Manifest Institutional Change: MITI and the Japanese 'Economic Miracle' Reconsidered", Governance, vol 10, no 4, pp. 351-76.

Raafat, F. and M. Salehizadeh (1994) "Dumping - The Influence of Currency Movements", Journal of World Trade, vol 28, no 3, pp. 181-94.

Robertson, K. (1997) "The Pricing of Steel in South Africa", A Presentation to the Department of Trade and Industry, 23rd October.

Sander, A. (1996) "'From Competitiveness to Competition: The Threat of Minimills to Large National Steel Companies' - Comment", Resources Policy, vol 22, nos 1/2, pp. 119-21.

Schuler, D. (1996) "Corporate Political Strategy and Foreign Competition - The Case of the Steel Industry", Academy of Management Journal, vol 39, no 3, pp. 720-37.

Shin, J. (1996) The Economics of Latecomers: Catching-Up, Technology Transfer and Institutions in Germany, Japan and South Korea, London: Routledge.

Smith, S. (1995) "Internal Cooperation and Competitive Success: The Case of the US Steel Minimill Sector", Cambridge Journal of Economics, vol 19, no 2, pp. 277-304.

Staiger, R. and F. Wolak (1994) "Measuring Industry-Specific Protection: Antidumping in the United States", Brookings Papers on Economic Activity: Microeconomics, pp. 51-118.

Steele, K. (1996) "An Introductory Overview", in Steele (ed) (1996).

Steele, K. (eds) (1996) Anti-Dumping under the WTO: A Comparative Review, London: Kluwer Law International.

Stern, J. et al (eds) (1995) Industrialisation and the State: The Korean Heavy and Chemical Industry Drive, Cambridge: Harvard University Press.

Stiglitz, J. (1997) "Dumping on Free Trade: The U.S. Import Trade Laws", Southern Economic Journal, vol 64, no 2, pp. 402-24.

Sykes, A. (1990) "GATT Safeguards Reform: The Injury Test", in Trebilcock and York (eds) (1990).

Tharakan, P. and J. Waelbroeck (1994) "Antidumping and Countervailing Duty Decisions in the EC and in the US", European Economic Review, vol 38, no 1, pp. 171-93.

To, T. (1994) "Export Subsidies and Oligopoly with Switching Costs", Journal of International Economics, vol 37, no 1-2, pp. 97-110.

Trebilcock, M. (1990) "Throwing Deep: Trade Remedy Laws in a First-Best World", in Trebilcock and York (eds) (1990).

Trebilcock, M and R. York (eds) (1990) Fair Exchange: Reforming Trade Remedy Laws, Ottawa: Howe Institute.

Vermulst, E. et al (eds) (1994) Rules of Origin in International Trade: A Comparative Study, Ann Arbor: University of Michigan Press.

Vermulst, E. and P. Waer (1991) "The Calculation of Injury Margins and EC Anti-Dumping Proceedings", Journal of World Trade, vol 25, no 6, pp. 5-42.

Vermulst, E. (1997) "Adopting and Implementing Anti-Dumping Laws", Journal of World Trade, vol 31, no 2, pp. 5-23.

Vermulst, E. and N. Komuro (1997) "Anti-Dumping Disputes in the GATT/WTO - Navigating Dire Straits", Journal of World Trade, vol 31, no 2, pp. 5-44.

Viner, J. (1923) Dumping: A Problem in International Trade, Chicago: University of Chicago Press.

White, J. (1997) "A Test of Consistency in the Administration of US Anti-Dumping Law", Journal of World Trade, vol 31, no 4, pp. 117-28.

Yano, M. (1989) "Voluntary Export Restraints and Exportations: An Analysis of Export Quotas in Oligopolistic Markets", International Economic Review, vol 30, no 4, pp. 707-24.