

TEXTO PARA DISCUSSÃO Nº 551

**INDUSTRIAL POLICY IN BRAZIL:
A FRAMEWORK***

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SUMMARY

1 - OBJECTIVES AND CONSTRAINTS.....	1
1.1 – Objectives.....	1
1.2 - Constraints.....	1
1.3 - The Scope of Industrial Policy.....	2
2 - GENERAL INDUSTRIAL POLICIES	3
2.1 - Competition Policies and Regulation.....	3
2.2 - Information	5
2.3 - Consumer Protection and Certification.....	7
2.4 - Externalities in Research and Development	7
2.5 - Financial Markets.....	8
2.6 - Entrepreneurs and Managerial Capacity.....	10
3 - SECTORAL OR VERTICAL POLICIES	11
3.1 - Industrial Adjustment and Restructuring	11
3.2 - Infant Industries.....	14
4 - CONCLUSIONS.....	15
BIBLIOGRAPHY.....	16

1 - OBJECTIVES AND CONSTRAINTS

1.1 - Objectives

We presume that the objectives of industrial policy in Brazil are determined in the current context by the general philosophy of the Plano Real.¹ That is, the creation of an efficient and progressive economy, based on free markets and an economy open to international trade. Such a vision for the economy might be adopted solely for ideological reasons, but might also be thought to be the best way to achieve long term growth and social objectives. Alternative objectives might be the growth of the economy in itself without concern for efficiency, as in the economic plans of the Geisel era, or a desire to protect and create employment. The latter objective is certainly of continuing importance for policy, especially where rapid adjustment of a sector in response to trade or technology shocks generates major losses of employment which are regionally or sectorally concentrated. The question of sectoral adjustment will be discussed below. The general question of employment does not fall within the ambit of industrial policy within the vision of the Plano Real, though it can be argued that the best way to create employment is to ensure that the economy is efficient and can compete internationally. Rather, the key to employment lies in labour market policies, and policies for training, education and health. These areas are not generally recognized as part of industrial policy and will not be considered in this paper, though they are clearly very important. Similarly, questions of infrastructure will not be considered here, though their importance in Brazil is well known.

1.2 - Constraints

Before turning to industrial policies in detail, it is important to recognize some of the constraints on the formulation and implementation of policy. Some of these constraints arise in terms of the capacity of the government policy making and administrative machinery [see Krueger (1990)] for an extremely sceptical view of what governments can achieve, in comparison with the World Development Report 1997, which assigns a key role to good government in development. First, the government can seldom have the same access to detailed information about a sector that is available to the firms and entrepreneurs which work in that sector. This fact is an argument for policies which are general and open to all the firms and potential firms in a sector: the authorities should avoid policies which require them to identify particular firms or groups of firms to benefit from the policies. Such policies are quite likely to benefit firms which are prominent or well known, while excluding some potentially more efficient firms. Second, the government should recognize the scarcity of good administrators in the government service, especially administrators with experience in industry. Detailed industrial policies,

¹ The need for a fundamental rethink of industrial policy has been emphasized by Guimarães (1996) and Bonelli(1996). Bonelli presents an excellent analysis of the development of industrial policy in Brazil in the post War period. For an analysis of the arguments for and against industrial policies in developing economies, [see Rodrik (1993)]; and in advanced industrial economies, [see Grossman (1990)]. Schmidt (1996) documents the shift in French industrial policy from a statist policy in the 1970s to a market oriented policy during the Mitterand Presidency, 1981/95, a shift which corresponds to that being sought in Brazilian industrial policy currently.

especially those which are sector specific, require excellent administrators.² Third, all industrial policy has to operate within the fiscal constraints of the government sector: in the current fiscal situation in Brazil, any policy initiatives which involve substantial additional expenditures are to be excluded, a priori. Fourth, the political pressures on the government need to be recognized. Industrial lobbies are often very vocal and have considerable political support, whereas the interests of consumers and taxpayers are not so well represented politically. Any sectoral industrial policy immediately creates a strong lobby for its indefinite continuation; and if the government concedes privileges to one industrial group it can be certain that there will be others asking for equal treatment which may be politically difficult to deny. It may therefore be best to rule out any industrial policy that gives particular benefits to a single sector. Fifth, there may be a commitment problem for policies that are in principle reversible, such as subsidies and protection, weakening incentives for firms to invest in the targetted sectors [Karp and Perloff (1995)].

The other major constraint on industrial policy in Brazil is that the government has signed up to international agreements such as the GATT and Mercosul, which severely restrict the freedom of action of the government in the area of industrial policies. Specifically, Brazil no longer has the unfettered right to fix tariffs, create non tariff barriers for imports, or give subsidies to particular sectors. Short of a complete withdrawal of Brazil from the framework of international trade agreements, there is simply no way in which the economy can avoid these international obligations. Within these agreements there are procedures for dealing with trade difficulties that the economy might encounter, but they are quite limited. We will look at these in more detail below.

1.3 - The Scope of Industrial Policy

Given that the context of policy in Brazil is the Plano Real with its emphasis on markets and an open economy, the priority for policy is to identify those areas where markets are failing to promote efficiency in the short run, and in the longer term. The role of policy then is to correct those failures with policies which operate to facilitate the functioning of markets, rather than to substitute non-market methods of allocating resources. Unfortunately the list of possible market failures is rather large — a modern industrial economy is very far from the textbook version of perfectly competitive markets. Inevitably policy will have to be selective in what it seeks to do, and should concentrate on the most serious failures. Any policy will also have to weigh the costs of that policy against the likely benefits, and only pursue those policies where there is a possibility of reasonable net gains.

Two other aspects of the functioning of markets have traditionally been included in the scope of industrial policy. The first is problems arising from industrial adjustment and the need to restructure a sector. The typical example is a sector

² Jenkins (1991) compares industrial performance in Asian and Latin American industrializing economies, and concludes that the effectiveness of state interventions was a key variable in explaining successes and failures.

which is experiencing a sudden and large scale loss of markets, employment and profitability, due perhaps to a trade liberalization or technological change. In some ways the market is functioning well in weeding out inefficient producers, but the social costs of rapid adjustment may be thought to be too high, or there may be concerns that it may lead to the loss of physical capital or human capital which could be preserved and used to regenerate the sector in the longer run. The objective of policy, which is naturally a sectoral or vertical policy in these circumstances, is to put a brake on the adjustment which the market would induce, to allow time for a more ordered transition to a new equilibrium in the market.

Another traditional area for industrial policy has been the development of new industries. The argument is that an industry may have good prospects in the long run, but needs help to get started and to survive the initial phase of competition in the market. We will see below that this argument only has substance if there are market failures of particular kinds, associated with information or problems in capital markets. Obviously any policy will necessarily be sector specific.

In the next sections of this paper we will explore these policy areas in more detail, with brief references to the policies that are already in place in Brazil.³

2 - GENERAL INDUSTRIAL POLICIES

In this part of the paper we will consider policies which are not sector specific, but address market failures which might emerge in any industrial market. Such policies are sometimes called 'horizontal' policies.

2.1 - Competition Policies and Regulation

2.1.1 - Competition policy and antitrust

The traditional textbook model of competition emphasized the effect of competition in lowering prices in relation to costs. The more recent emphasis of industrial organization theory and empirical work has been on the role of competition in stimulating growth in efficiency through the adoption of better techniques of production, and in promoting innovation. Without competition firms are unlikely to exert themselves to improve their performance. Indeed, the suspicion is that firms are not enthusiastic about competition, given their propensity to monopolize markets, to form cartels and to erect barriers to potential competitors. There is plenty of anecdotal evidence that this mentality characterized the Brazilian industrial sector in the period before the trade liberalization.

³ Given the dispersion of responsibilities for different areas of industrial policy across a range of Ministries and other policy bureaux in Brazil, it is very important that there exists a single group of analysts who accompany the development of diverse policies, and are active in assessing the impact of various policies, and in identifying policy gaps or conflicts. **The Boletim de Política Industrial** produced by IPEA/DIPPP is an excellent first step in this direction, and it deserves wider circulation.

All this calls for a strong competition policy, in terms of both the legal framework and the institutional structure.⁴ Brazil already has such a policy [Salgado (1995)], and an appropriate instrument for the implementation of that policy in the Conselho Administrativo de Defesa Econômica (Cade). The legislative framework (Lei 8.884/94) permits Cade to act in cases of abuses of market power and anticompetitive practices, including cartels (“infração de ordem econômica”, Articles 20 and 21), and in cases of mergers and joint ventures (“atos de concentração”, Article 54). Market dominance is defined in the legislation as a 20% market share, and this basically acts as a trigger for opening an administrative process (in the case of mergers there is an additional alternative trigger based on firm revenues). Processes are opened by the Secretaria de Direito Econômico (SDE) of the Ministério de Justiça, usually on the basis of an economic analysis supplied by the Secretaria de Acompanhamento Econômico (Seae) of the Ministério da Fazenda. The process is then passed to Cade for judgment on a rule of reason basis within the provisions of the legislation. The powers of Cade are appropriately wide ranging. They can fine firms for anticompetitive behaviour, they can order firms to desist from an anticompetitive practice, and they can undo a merger or joint venture. They can accept undertakings from firms to desist from anticompetitive behaviours (“compromisso de cessação”), and they can impose performance conditions (“compromisso de desempenho”) in merger cases, including for examples, commitments to productivity gains or employment, or to continue supplying particular customers or technologies. Cade is also open to consultation by firms before they embark on some merger or behaviour which might be contrary to the policy.

This is a relatively new policy area for economic policy in Brazil, though the framework for the policy has been in existence for some years (though relatively inactive). It is therefore very important that the development of policy practice should be monitored carefully over the next few years to identify strengths and weaknesses in the policy, and to provide a constructive critique of the work of Cade. However it is not too early to detect some emerging problems. In terms of institutional design, it is arguable that Seae and SDE should be merged, to form an agency. The merger would improve the coordination of economic and legal analysis of processes, though much is already achieved by good relationships between these bodies, and with Cade. An agency would, in principle, be less subject to political processes, and could develop its own agenda (within the legislation of course) for promoting competitive behaviour. There is also a danger within the present institutional arrangements, that Cade will become overloaded. A sensible reform would be to make SDE/Seae responsible for resolving routine cases, including those involving undertakings from firms, and only referring to Cade for judgment cases where, for examples, firms are unwilling to negotiate undertakings or performance conditions, firm behaviour warrants the imposition of a fine, or the process presents particular complexities.

Mattos (1997) has also indicated some possible criticisms of the policy since 1994. First, more than 50% of the processes of anticompetitive conduct evaluated

⁴ Amsden and Singh (1994) underline the role of competition policy in stimulating economic efficiency and growth in Japan and Korea.

by Cade in 1996 concerned so called abusive price increases, mainly originating from the Ministério da Fazenda. Cade ordered the archiving of the processes: quite rightly, since it should not allow itself to become a surrogate price control agency. Second, it is arguable that some of the performance conditions imposed by Cade in merger cases effectively involved detailed behavioural regulation of the companies. Third, Cade's evaluation of market shares, especially in merger cases, has focused too much on the domestic market, and has not taken into account the increasing openness of the Brazilian market to international competition. The links between competition policy and commercial policy need to be made much more explicit.

2.1.2 - The regulation of natural monopolies

Some industries are characterised by increasing returns so that efficiency in production requires a monopoly producer. This occurs particularly in sectors where distribution is via a network, such as water, gas and electricity. Traditionally these sectors have been organized as public industries, but programmes of privatization have transferred many of them to the private sector. Such “natural monopolies” generate special problems for competition policies. The policy which has been developed in the UK in the last 10 years is to institute a regime of regulation for these industries to prevent them exploiting their potential market power [Armstrong *et alii* (1995)]. Structural regulation seeks to break up the industries into segments which are truly natural monopolies, and segments which are at least potentially competitive. For example in the electricity industry, generation is potentially competitive, as is retailing of electricity, but transmission clearly is not, either at the level of a national or regional grid, or at the level of local distribution. Regulation of behaviour seeks to restrain the profit seeking behaviour of the monopoly segments by restricting their prices or rates of return according to predetermined formulae. It seems that there has been little systematic thinking in Brazil about the precise form of regulation to be applied, despite a major programme of privatization in recent years [IPEA/DIPPP (1997) section III.2]. Furthermore such policies of regulation as have been put in place have been piecemeal, instituted by diverse bodies within government at both Federal and State levels, and not coordinated in any way. Nor is it clear how the activity of the new regulatory bodies such as Anatel (telecommunications), Aneel (electricity supply) and ANP (oil industry) will relate to the interests of Cade in promoting competition, even where a role for Cade is admitted in the legislation. There is a clear need to develop relevant expertise in this area and to monitor developments critically.

2.2 - Information

It is obvious that markets cannot function properly without information. Yet firms frequently lack information on potential markets, especially export markets, and on available technologies. The costs of researching a large number of possibilities are impossibly high for all but the largest firms, and in any case duplication of information gathering is inefficient given that once information has been collected

it can be transferred at very low marginal cost. Various policies have been developed to address this problem:

2.2.1 - Information networks

In the case of information about market opportunities, in most advanced economies the problem has been addressed by the development of industrial associations and by the publication on a subscription basis of magazines and reports relating to particular industries (the “trade press”). For overseas markets a lead in this activity has often been taken by Ministries of Industry and Trade, which have made it part of their responsibility to research and disseminate information relating to export opportunities. This work has often been shared by diplomatic missions which have developed much more activity in the area of trade, often linked to monitoring the compliance of overseas competitors with international agreements (GATT). Certainly a country like Brazil, which is seeking to expand its exports, should be thinking in terms of maintaining a network of bureaux in major overseas markets to report on market opportunities and competitions for contracts.

2.2.2 - Technological information

Of all the information gathering tasks facing the firm none is as complex and as costly as finding out about new processes and products. The solutions in the advanced economies have emphasized collaborative efforts, while leaving development of new products and processes to individual firms [Jorde and Teece (1990)]. For example the machine tools industry in Germany has for many years supported an industry institute for research and training at Aachen. The Eureka programme of the European Community [Peterson (1991)] has encouraged collaboration between university scientists and technologists, firms and their customers to work on key technologies. And many universities have set up specialist scientific offices to provide research services to industrial clients. The problems of obtaining and applying new technologies are certainly greater for small firms, and for this reason many governments provide technical support to small and medium sized businesses to enable them to make use of new developments in manufacturing techniques and design. There are initiatives of these kinds in Brazil [Matesco (1994)], but their scope is quite limited in terms of the resources made available. For example, the Fapesp programme in São Paulo has been involved in some projects linking firms to the Institute of Chemistry in Campinas.⁵ Recently, the State of Rio de Janeiro has announced a series of programmes designed to stimulate scientific and technological development in the state, including links between firms and universities or research institutes [IPEA/DIPPP (1997) Section II.5].

⁵ See for example, the reports in **Gazeta Mercantil**, 9 April 1997.

2.3 - Consumer Protection and Certification

Consumers also have problems of lack of information in markets arising from the difficulties of evaluating the quality of products on offer.⁶ Various solutions to these problems have evolved over time in market economies. One solution is for the government to introduce legislation relating to consumer protection, providing the consumer with rights in respect of the quality of goods and services. Procon has already achieved a high profile in Brazil, and has done much to alert firms to the need to deal fairly and efficiently with their customers [Salgado (1994)]. An evaluation of the work of the Procons would be valuable.

A further assurance of quality for buyers of industrial products is afforded by the certification of products according to recognized standards. The Iso system provides such certification, including the internationally recognized ISO9001 standards which are particularly important for exporters. The Ministério de Ciências e Tecnologia has been active in this area with the Programa Brasileiro de Qualidade e de Produtividade (PBQP), and the Instituto Nacional de Metrologia, Normalização e Qualidade Industrial (Inmetro) has provided the institutional framework for the Iso system in Brazil [Matesco (1994)]. But the number of Brazilian firms adhering to the system is still relatively small.

Major producers can provide quality assurance by developing a trade mark that distinguishes their products from those of competitors [Economides (1987)]: the firm has an incentive to maintain the quality of its product or services so as not to prejudice its future sales. In Brazil the trade marks Ford and Brahma are obvious examples of this phenomenon. But small producers are not well placed to emulate their larger rivals in this respect, given that creating a trade mark may involve high expenditures on advertising. This problem can in some cases be overcome by groups of small producers joining together to create a trade mark, often including the name of a region where the producers are located. French wines are the most well known examples, but Italy has successfully created trade marks for fashion shoes and clothes. Brazil might try to create similar trade marks for regional products e.g. fruits from the São Francisco region.

2.4 - Externalities in Research and Development

As noted by Arrow (1962), the allocation of resources to research and development in a market economy is likely to be socially suboptimal. The fact that the use by one firm of a particular piece of information does not preclude its use by another implies that it should be made available at a zero price (assuming that the marginal cost of transmission is zero). But then there would be no private incentive to do R&D. To give incentives it is necessary to protect intellectual property rights, so that a charge can be made for transferring information. But in practice it is difficult to assure effective protection e.g. through patents: other firms may be able to benefit without paying royalties or licence fees. The firm undertaking the R&D does not take into account the externality it is creating.

⁶ For a discussion of market failures arising from consumers imperfect information about quality, [see Grossman (1990, Section V)].

Empirical studies in advanced economies have suggested that these externalities are quantitatively important [Griliches (1992)]. For example, a study by Jaffe (1986) of US firms suggested that if all the firms in a sector simultaneously increased their R&D expenditures by 10%, the number of patents would increase in the industry by 20% with more than half of this increase due to spillovers. However there is also evidence to suggest that a firm cannot avail itself costlessly of the R&D output of its competitors: to benefit it has to be doing its own R&D so that it can fully appreciate the advances achieved by its rivals. These questions have not been researched in Brazil, but it is likely that the same general points apply.

What policy responses would be appropriate.⁷ One solution, already touched on above, is public support for research by scientists and technologists in universities and institutes, with the results made available freely to industrial firms. The problem with this is the reluctance of academic scientists to allow their research programmes to be determined, even in part, by the needs of industry. An alternative solution is to encourage joint ventures in research by all the firms in a sector, leaving development to individual firms. The formulation of the legal framework for intellectual property rights will also be very important. A law which gives too much protection will effectively reduce beneficial spillovers; too little protection will harm private incentives. A new Patent Law was implemented in Brazil in May 1997, but there are doubts about the capacity of the Instituto Nacional de Propriedade Intelectual to process within a reasonable time scale all the applications for patents that are likely to be submitted for approval. Finally, subsidies to R&D expenditures of firms may be able to close some of the gap between private and social returns. We consider incentives in more detail in the next section.

2.5 - Financial Markets

The long term activity of firms has two important linked characteristics: **a)** the returns — to investment, export activity, research and development — are not immediate, but only appear with a delay; **b)** the returns are not certain, so the activities are inherently risky. In an “ideal” market economy these activities would be at least in part financed by the capital market. The interest rate would incorporate an element for time preference and a margin in relation to the risks of the activity being financed. Obviously the financing cannot be complete since that would imply that all the risks were transferred to the financing institutions and the firm would lack incentives to ensure a good outcome by working hard to make the project successful.⁸ But at least some of the risks can be shared between the firm

⁷ See Teubal (1996) for an interesting analysis which suggests that government support for R&D may be particularly important at the “infant” phase of implanting R&D capability in an industrializing country, but that the scale and type of support needs to change over time as R&D activity is established. Holm-Nielsen et al (1996) provide some useful background information and evaluation of policies already in place in Brazil.

⁸ There is in principle a further problem identified by Stiglitz and Weiss (1981) of adverse selection. Given limited liability for firms, loans made available at given interest rates are more attractive, *ceteris paribus*, to firms with more risky projects. Raising interest rates to reduce demand for credit will then increase the risk for the lender, as less risky ventures drop out.

and the capital market. Furthermore the lending institutions can reduce their own risk exposure by holding a portfolio of loans in projects where the expected returns are not correlated. Without outside participation in financing, the firm has to carry all the risks itself, and will therefore do less investment, exporting and research and development than is socially optimal. These problems are widely recognized by policy makers and two types of policy measures are employed to combat them:

2.5.1 - Fiscal incentives

The idea of fiscal incentives is to compensate the firms for the risks involved in investment, exports and research by giving them subsidies or tax reductions on realized profits. In common with the rest of its international competitors, Brazil has instituted incentives of this kind. Investment expenditures are exempt from IPI on new capital goods, and the firm is allowed accelerated depreciation in calculating its liabilities to corporate income taxes. In the area of research and development, Lei 8.661 of 1993 introduced six incentives of which the most important is a right to set expenditures against tax liabilities up to a 8% ceiling. An interesting study by Matesco and Tafner (1996) showed the limitations of this incentive scheme in practice. It mainly benefits the larger firms, and those that are already profitable. The benefits are not large in comparison with those conceded by governments in other economies. For exports, there are exemptions from ICMS and IPI, as well as the system of “drawback”. There have also been recent initiatives in the provision of export insurance.⁹ The effectiveness of all these incentives requires careful analysis.¹⁰ The study of Matesco and Tafner has shown how important is the precise design of the incentive if it is to be effective in countering the market failures arising from the inability of firms to shed some of the risks involved in long term activities.

2.5.2 - Sources of finance

The alternative policy strategy is to address directly the problems of imperfect capital markets, by providing alternative sources of finance.¹¹ Long term finance of investment projects in Brazil is provided only by BNDES (usually only up to five years) and by some international banks. Not surprisingly much of this financing goes to the largest firms, and does little to provide for the needs of small and medium sized companies. The lending policies of the major private banks are characterised by “short-termism”; that is they are unwilling to make loans for periods of more than a year, and do not get involved in the financing of long term investment programmes. (It should perhaps be noted that this is not a problem

⁹ Specifically the Bank of Brazil, and a group of insurance brokers linked to private Brazilian banks, set up a new company to provide insurance for export commercial risks in March 1997.

¹⁰ See Mamuneas and Nadiri (1996) for a recent study of the effectiveness of R&D incentives in the United States.

¹¹ Stiglitz (1991) explains the importance of capital markets, but also their limitations, in allocating scarce investment resources, and focuses on the role governments might have in correcting market failures. Greenwald and Stiglitz (1991) analyse the role of financial institutions and legal frameworks. Stiglitz and Uy (1996) review policies pursued in a number of East Asian “miracle” economies, from which Brazil may be able to learn something useful.

which is unique to Brazil: similar criticisms have been levelled at the banking sector in the UK for example.) None of this is surprising given the relatively recent change from an environment of high inflation. But the private banking sector does need to be urged to begin to think longer term, and to recognize the potential gains from lending long term to firms with high quality investment programmes.

When it comes to the provision of risk capital, the Serviço de Apoio às Micro e Pequenas Empresas (Sebrae) has access to some finance from BNDES, Cef and Finep. But it seems that the conditions for the application of this finance are inflexible and not all the available funds are taken up. Fapesp has made use of this system of finance, but has not found it easy to identify good projects to support.

The Proex programme (Programa de Financiamento às Exportações) was set up in 1991 to assist large firms in the export of capital goods. Since then the list of products qualifying for assistance with export finance has been expanded to include many products exported (or which could potentially be exported) by smaller firms. Finance is made available at the Libor rate, thus putting Brazilian exporters on equal terms with international competitors. Even so it seems that not all the financing made available under the scheme is utilized.¹²

These problems of financing are a key area for policy development — beginning with an evaluation of the effectiveness of the Brazilian programmes and comparative study of similar schemes in other economies. One particularly interesting example is the market for venture capital in the United States.

2.6 - Entrepreneurs and Managerial Capacity

For a market economy to function effectively there must be a supply of entrepreneurs and managers. Without these key personnel investment opportunities may not be taken up, and resources will not be used effectively within firms.¹³

Entrepreneurs are people who are able to identify profitable new market opportunities, who know how to set up and develop an enterprise capable of realizing these markets, and are prepared to assume at least some of the risks involved (loss of personal capital committed to the new venture). Such characteristics are probably absorbed from the culture rather than taught, and not everybody will share them. In a situation where such people are in short supply development will be held back. The example of South Korea is interesting in this respect: lacking many experienced entrepreneurs, the authorities effectively concentrated them in the chaebol and fed new projects into these groups. Lack of entrepreneurial ability is not evidently a problem for Brazil. However, the government does have an important role in making it easy for new enterprises to be started up. Simple legal and fiscal procedures are very important here:

¹² According to a report in the *Gazeta Mercantil*, 10 April 1997.

¹³ See Berry (1996) for a discussion of the role of government in creating an environment to stimulate the creation and development of small businesses.

entrepreneurs are often not good administrators, and their effectiveness can easily be reduced if they have to spend a lot of time attending to bureaucratic matters. Obviously the availability of premises to rent at reasonable rates, and some sources of start-up capital will also help. It would be interesting to research how easy it is to establish new firms in Brazil. The other important element in the development of new firms is a relatively stable macroeconomic environment in which to operate.

Managerial capacity differs from entrepreneurship in that it requires knowledge of techniques of organization and administration which can in principle be taught. While there may be debates about the appropriate weights to be given to formal management courses such as the MBA and in service training provided by the firm, there is little doubt that Brazilian industry needs to emphasize management techniques more if it is to confront international competition successfully. From the point of view of policy the questions are whether management training needs to be given some incentives, and whether capital markets provide adequate financing for people who wish to finance their own training, **e.g.** by taking an MBA course.

3 - SECTORAL OR VERTICAL POLICIES

3.1 - Industrial Adjustment and Restructuring

The typical case is a sector which is losing employment and profitability due to trade liberalization or technological change. The argument is that the sector needs time and space to restructure, to reduce costs, and to introduce new techniques and products. The aim of policy is to avoid an abrupt adjustment with loss of capital assets and employment. However it is important to note that the case for industrial policies in these cases involves two rather different arguments. The first is an argument based on the distributive effects of sudden adjustment. If the impact is very concentrated regionally for example, the social costs may be high and not acceptable politically. Note that this has nothing to do with market failure: indeed the problem is the opposite — the market is working all too well in its role of weeding out inefficient producers. The aim is to put a brake on the process, to give the people involved, and especially the workers who will lose their jobs, time to adjust and to look for alternatives, perhaps outside the region where the effects are most evident. The question for policy is how best to help in the short run.¹⁴ Some advocate subsidies to the declining industry to slow the inevitable long term decline: others argue that the subsidy should be paid directly to the workers to help them through a difficult period while they look for work elsewhere and perhaps take time to retrain. Current thinking tends to favour the latter on the grounds that it assists directly those who suffer the most dislocation of their lives, and that it is less likely to create a lobby for the continuation of assistance in the long run. The second argument is that the industry does have long term prospects once it has been successfully restructured, but is in danger of being wiped out

¹⁴ Brainard and Verdier (1994) describe how policies to protect declining industries are likely to generate powerful lobbies.

before it can make the necessary adjustments. This argument has to rely on the existence of market failures. If the long term prospects are good, why cannot the private sector respond appropriately with the required investments and rationalization of production facilities? One reason might be that the sector lacks information about potential markets and available technologies; in which case there may be a case for policies which seek to provide the expertise which is lacking, along the lines discussed previously. Alternatively the problem may be in the capital market: the sector lacks funds from its current earnings to finance the needed investments, and financial markets are not able to provide them either. If these are the market failures preventing adjustment, then presumably they reflect general market failures in the economy and are not restricted to the declining sector. The appropriate policies are therefore general policies in these areas and not sector specific policies.

Unfortunately the circumstances of an industry in rapid decline as a result of trade liberalization do not usually permit of a reasoned appreciation of the processes at work, and the political instinct is always to enter with subsidies or increases in tariff or non-tariff barriers to provide some relief to the industry. In the case of Brazil, such responses should have been ruled out by the fact that the economy has signed up to the GATT and Mercosul, which prohibit actions to protect particular sectors. However, in spite of these international obligations, Brazil has unilaterally introduced a series of measures protecting the automobile sector since March 1995 [see IPEA/DIPPP (1996) for a succinct summary]. This has generated a series of disputes with other trading nations including Argentina, the United States and the European Union. It is transparently obvious that Brazil has broken the rules, and while it may be able to escape retaliation for a while by making piecemeal concessions to complainants, it will certainly face a much tougher negotiating stance on other issues with these same trading partners, and will probably lose out in the longer run.

In fact there do exist procedures within the rules of the World Trade Organization Gatt to deal with situations where a sector is affected extremely adversely by trade. These are for antidumping measures and countervailing duties in cases where the imports are underpriced or are benefitting from subsidies conceded by the exporting economy, and for safeguards in cases where a sector is affected by imports to a degree that was not anticipated when the trade agreements were signed [Piani (1994, 1997)].

The concept of countervailing duties is simple. If it can be shown that the imports are benefitting from specific subsidies in the exporting country, and that there is substantial damage to the competing domestic sector, then an additional tariff can be imposed (or the domestic sector can be given an equivalent subsidy). Antidumping is much less well defined even in principle, let alone in practice. It is defined as the case where the product is being imported at a price which is less than the price charged for the equivalent product in the exporter's domestic market. If it can also be shown that this is causing serious damage to the import competing sector, then additional tariffs can be imposed or subsidies given to the affected sector. The difficulty about this case is that it fails to note that it is

entirely logical behaviour to charge different prices in different geographical markets where the elasticity of demand is perceived to be different. An exporting firm may well think that competition is greater in the export market, and therefore charge a lower price than in its relatively less open domestic market. (In practice it is often difficult to identify the price differential accurately, and the allegation of dumping is based on an estimate of the costs of production including a conventional margin.) In cases of both dumping and overseas subsidies, the countervailing measures are supposed to be temporary and to be less quantitatively than the alleged subsidy or margin of dumping. Brazil has made quite extensive use of these provisions in recent years: the relevant legislation is Lei 9.019/95 and Decreto 1.602/95. Cases are evaluated by the Departamento Técnico de Tarifas da Secretaria do Comércio Exterior (Secex), which probably has insufficient resources for the task. Up to 1996, 34 cases relating to industrial markets had been processed, and 12 cases had been confirmed and action taken. The concern is that the procedure may come to be used by domestic firms as an anticompetitive device in confronting international competition, especially if it is noted that a substantial proportion of requests for protection are conceded.¹⁵ An analysis of the cases already processed could indicate if this is happening to any degree.

Safeguards are very different in their conception and implementation, and conform more closely to the example of adjustment to trade given at the beginning of this section. They relate to cases where the growth of imports in a sector as a result of accepting the GATT is much greater than anticipated, and there is a substantial adverse effect on the domestic producers. The permitted remedies are tariffs or quotas which must be applied on a non discriminatory basis. At the same time the government has to negotiate some other concession with the exporting economies. The tariffs or quotas have to be progressively reduced and removed according to an announced timetable with a maximum period of four years, extendable for another six years in the case of an economy like Brazil. A plan for restructuring the sector has to be drawn up, with a timetable for implementation. The procedure for evaluating the case must involve an institution which is completely independent of the government, and any measures have to be authorised by the Safeguards Committee of the World Trade Organization. The only case in Brazil to date concerned the import of toys in 1996 [Piani (1997)]: the domestic toy industry has had considerable success since trade liberalization in obtaining special protection. 1996 was no exception with tariffs rising from 20% to 70% in the middle of the year. Additional protection was renewed for a further three years at the end of 1996, though the intention is that the level of protection should diminish over the period. The evaluation of the case for protection certainly did not meet the rigorous criteria laid down by the WTO, but did not have to be scrutinized by the WTO as the measures were clearly discriminatory against China which is not yet a member. Despite this inauspicious precedent, there is probably scope for Brazil to use the Safeguards mechanism to ease adjustment in hard pressed sectors, and it would be useful to look more carefully at how it might be used in future, within the accepted rules of the WTO.

¹⁵ See Messerlin (1990) for a study which suggests that the antidumping procedures were used as an anticompetitive device in the European chemical industry.

Leaving aside these special procedures, there remain questions about the optimal use of protection within the rules. For example, in the automobile sector and in telecommunications (Banda B), the Brazilian authorities have arranged tariffs so that they are much higher on final products than on components.¹⁶ The objective is to encourage assembly in Brazil even if components have to be imported. The potential losses are in vertical integration of the sectors, and in particular the loss of technology transfer which is certainly higher in components than in final assembly. This issue deserves further investigation.

3.2 - Infant Industries

An infant industry is one which does not yet exist in an economy, but has good prospects in the longer term if only it can get sufficiently established.¹⁷ The successful experience of South Korea since the early 1960s in developing such industries has been much analysed and debated, to decide whether it might form the basis of industrial policies for other industrializing countries including Brazil. The South Korean government was active in targetting sectors for development and then actually managing their development in collaboration with the private sector, seeking to create industries that would be able to compete in international markets after a period of time. The instruments of the policy, apart from the identification of a number of suitable sectors for development in each period, were long term finance on favourable terms and fiscal incentives (tax breaks), protection of the internal market, and a strong emphasis on export achievements by linking continuing financial assistance to export performance. As already noted, the authorities worked mainly with the chaebol, to make the best use of the limited entrepreneurial talent available, which was concentrated in these industry groups. There was also an emphasis on vertical integration, with an especial effort to develop capital goods industries to supply the investment needs of the developing sectors. There is general agreement that this development programme, though not uniformly successful, was extremely successful overall.¹⁸ Might it therefore provide a model for industrial policy in Brazil?

The answer is that it cannot serve as a model for Brazil, for a number of reasons. First, the mixture of protection and subsidies which secured the policy is not

¹⁶ For Banda B the Government has announced zero tariffs on imported components, see **Gazeta Mercantil**, 9 April 1997.

¹⁷ Note that our discussion will not include ideas of strategic trade policy based on the analysis of Krugman [see Dixit (1993) p. 178-183, for a lucid exposition]. Very roughly, Krugman's idea is that where an economy is potentially a major producer of a good which is traded in imperfectly competitive world markets, protection or subsidies can enable it to increase its share of the market, thus realizing economies of scale or learning by doing. These cost advantages then translate into permanent competitive advantages in the long run, without the need for continuing protection. Baldwin and Krugman (1988) illustrated the argument with an analysis of the Japanese semiconductor chip industry, showing that protection did enable the industry to increase its market share, but only with modest gains. Grossman (1990), reviewing a range of studies of such policies, suggested that gains were generally very modest. In the case of Brazil, it seems very unlikely that there exist industries with the potential for gains from strategic trade policy. The infant industry argument in the text is much more relevant to the current stage of Brazilian industrial development.

¹⁸ For a more sceptical empirical assessment see Lee (1995).

possible within the rules of the WTO and Mercosul: these international agreements would have to be abandoned, and an economy the size of Brazil would certainly suffer retaliation. The route of export led growth which characterized the Korean case would not be open to Brazil outside the Gatt. Second, the situation in Brazil now is very different from that of Korea in the 60s and 70s. Unlike Korea then, Brazil already has a large and increasingly efficient private industrial sector. There is no need for active intervention by the government to create an industrial sector and to stimulate entrepreneurial behaviour.¹⁹ And there is no evidence to suggest that the government would be better at developing infant industries than existing private sector firms. There may be problems of information and the lack of capital markets for risk and for the long term, but these are general problems for industrial policy and not ones which should be resolved on a sectoral basis. Third, it is worth noting that for much of the relevant period, the South Korean government was a dictatorship. It could order the chaebol to do things and it did not have to worry about the political impact of removing industry subsidies and protection when it judged the time had come for the infant to grow up. Even so there was a serious problem of corruption related to benefits conceded to particular sectors, which is only now being fully revealed. It seems highly probable that similar policies in Brazil would generate powerful industry lobbies, and a similar problem of corruption.²⁰

4 - CONCLUSIONS

The arguments of this paper suggest that Brazil should emphasize general or horizontal policies rather than vertical or sectorial policies in the current stage of economic development. Horizontal policies are more consistent with the general perspective on the economy of the Plano Real, with its emphasis on a market economy and the role of the authorities being to create the institutional framework and necessary physical infrastructure. They are also more consistent with Brazil's international obligations under the GATT and Mercosul. The key horizontal policies, apart from the pressing need to address problems of infrastructure (especially transport), are in the areas of competition and regulation, information and financial markets. Well thought out and executed policies in these areas could bring great advantages for the whole economy and not just industry, given that the objective is to promote efficiency throughout the economy. The paper has also suggested that the case for vertical policies is not demonstrated, and has noted the dangers of such policies in the creation of industry lobbies and the possibilities of corruption. Despite the enthusiasm of industry ministers for vertical policies, they should be resisted!

¹⁹ It should also be noted that Brazil's record with infant industry protection in the microcomputer industry does not encourage a repetition of such policies in other sectors. [See Luzio and Greenstein (1995)].

²⁰ For a general discussion of corruption see Schleifer and Vishny (1993): the concerns expressed in their paper are amply vindicated in the empirical work of Ades and Di Tella (1997).

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