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THE PURPOSE OF INDUSTRIAL POLICIES IN DEVELOPING ECONOMIES: LESSONS FOR BRAZIL

By Rene de Oliveira e Sousa Junior

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I. INTRODUCTION

The world economy has experienced remarkable changes since the First Industrial Revolution, in Britain, by the end of the eighteenth century. It was when industrialization first occurred on the basis of invention. The Second Industrial Revolution led by the United States and Germany occurred 100 years later on the basis of innovation. The twentieth century has seen the late industrialization occurring among underdeveloped countries, but in all cases industrialization has come about as a process of learning rather than from the generation of inventions or innovations. Japan, South Korea, Taiwan, Brazil, India, Mexico, Turkey, Singapore, Hong Kong, and earlier Indonesia, Malaysia and Thailand are in the latter case. (Amsden, 1989)

Growth rates differ among late-industrializing countries and we can observe that some of them had strong and developed economies. However, in spite of industrialization and growth, some countries, like Brazil, remain undeveloped and show a high degree of inequality.

In all kinds of industrialization process, one can find evidences of state interference. There is a consensus among economists that industrialization is necessary for economical growth and they all agree that no economical development can avoid some kind of state intervention.

The state interventions on industrialization process are called industrial policies that can broadly be defined as the combined effect of government policies designed to affect the allocation of resources among economic activities and produce an outcome different from what otherwise would have occurred in the market. (Frischtak & Others, 1996)

Industrial policies are directed at developing and encouraging certain sectors for instance, automobile industry and steel industry. They are adopted to prevent market failures associated with externalities, missing markets and competition. Countries pursue these policies to foment economical growth by promoting exports, building the domestic capacity to manufacture goods, creating jobs, and developing technological capabilities. Such policies could include tax exemptions or reductions for specific industries, selective credit schemes, concessional loans or administered trade protection measures for example, anti-dumping measures and countervailing duties.

Nowadays it is stressed studied the economic development in East Asia. These studies focus the "High-performing Asian economies (HPEs)", led by Japan, and they have several common characteristics, to name one, a very rapid export growth. The HPEs are subclassified according to the duration of their successful record of economic growth as "The Four Tigers"(Hong Kong, South Korea, Singapore, and Taiwan, which have been growing rapidly for decades and have joined or approached the ranks of high-income economies) and "The newly industrializing economies"(NIEs - Indonesia, Malaysia, and Thailand, which have joined the group of HPEs more recently, within the last two decades). (World Bank,1993).

There are three views to explain the developing of HPEs: the neoclassical view, the revisionist view, and the friendly-market view. In the new classical interpretation, the market always takes the main role in economic life and governments must be absent as much as possible. East Asia's can be explained in this way.

The so called "revisionists", also and better called "alternatives", have systematically documented that governments in these economies extensively and selectively promoted individual sectors, and this protection has been greater than recognized in the neoclassical interpretations.

The World Bank, in the "World Development Report 1991", assumed the middle ground between the neoclassical and the alternative view, calling it "the market-friendly view", concluding that rapid growth is associated with effective but carefully delimited government activism.

In 1993, the World Bank published a policy research report entitled "The East Asian Miracle - Economic Growth and Public Policy". In this volume it presents a comparative study of economic growth and public policy

in these countries. It defines industrial policies as government efforts to alter industrial structure to promote productivity-based growth. In its view industrial policy was generally not successful and promotion of specific industries had little apparent impact.

This paper does not intend to enter into the discussion whether the state must or must not intervene in economy, and it does not intend to prove if industrial policies adopted around the world were or were not successful. This paper is a text's collection describing evidences of industrial policies adopted by HPAEs and Brazil. It extracted from a selected bibliography what industrial policies are, what they contributed to the East Asian development, and those policies adopted by Brazil.

This paper is comprised of five parts. The first one is a short introduction, its objectives and how they are developed. The second one chooses an industrial policies' definition and discusses why they are adopted, based on Pack & Westphal, 1989, World Bank, 1993, Frischtak & Others, 1996, and Stiglitz, 1996.

The third part shows, briefly, industrial policies in the development of East Asia. It is illustrated with the South Korea's case, based on Stiglitz, 1996, and Amsden, 1989. The fourth part describes today's industrial policies in Brazil, based on an up-to-date description by Frischtak & Others, 1996. In conclusion, the paper criticizes industrial policies adopted by Brazil, comparing them with industrial policies adopted by HPAEs, and trying to extract some lessons for Brazil.

I. INDUSTRIAL POLICIES

DEFINITION

Discussions about industrial policies generally presume some form of intervention by the state. Several elements relate to aspects of industrialization can point out to understand industrial policies. All of them are important to industrial development and to its contribution to social welfare (Pack & Westphal, 1986).

One element of the industrial policies, is the part played by the state giving rise to such labels as market-directed and centrally-planned. Another element is the role of international trade, giving rise to outward-looking and import-substituting strategies. A third element is the priority for investment, giving rise to light-industry and heavy-industry strategies. There are also some general characterizations, such as capital-intensive or basic-needs focused, and so on. In all there is the possibilities of state intervention. (Pack & Westphal, 1986)

The World Bank defines industrial policies, as distinct from trade policies, with the governments' efforts to alter the industrial structure in order to promote productivity-based growth (World Bank, 1993). It is very difficult to understand how trade policies cannot extend its effects beyond the industrial sector.

In this paper it can be assumed that, broadly defined, industrial policies encompass any state acts or policies designed to affect the allocation of resources among economic activities and alter what would otherwise have been the market outcome. This definition is quite broad and can include sector specific interventions or those applicable to all industries. The use of such policies worldwide can be found to support a variety of economic and political objectives. (Frischtak & Others, 1996)

Regardless of countries particularities, industrial policy instruments can be grouped under the rubric of trade, tax and credit policies. Specific examples of each include:

Trade policies

- selective duty rebates and non-uniform tariffs;
- non-tariff barriers ranging from outright quantitative restrictions to more subtle protection such as product labeling and packaging requirements, and safety standards;

- administered protection such as anti-dumping measures and countervailing duties;
- differential rules of origin or domestic content requirements;

Tax policies

- tax credits, allowances, exemptions or deferral for particular firms, sector, or regions;

Credit policies

- below-market interest rate loans;
- government-backed loan guarantees;
- equity participation by the government;
- direct grants from the state budget. (Frischtak & Others, 1996)

WHY ARE INDUSTRIAL POLICIES ADOPTED?

The Neoclassical view. Neoclassical practitioners argue that the government's proper role is simply to establish an economic environment in which market forces will realize the efficient allocation of resources. The appropriate instruments to create this environment is prices and price-denominated policies (e.g., taxes and subsidies). The neoclassicals advocate a neutral policy regime, "neutral" meaning that policies should not selectively discriminate - that is, for tradeables, vis-à-vis world prices, and for non-tradeables, vis-à-vis relative scarcities - among industries except as necessary to overcome market failures. The neoclassicals allege that there are few inherent market failures and that existing market imperfections are by-and-large due to policy failures. These failures include errors of commission, licensing restrictions on production or interference in wage setting, for example; and errors of omission, which take the form of inaction to resolve institutional deficiencies, the absence of adequate capital market institutions, for example. With regard to the latter, the practitioners argue that the government's proper role is to facilitate the establishment of institutions that can and should function as market agents. (Pack & Westphal, 1986)

The core of the neoclassical prescription for a neutral policy regime is free trade. Correspondingly, under this regime, the domestic prices of traded products equal their border prices with the border price being either the import price or the export price. Many neoclassicals nonetheless, recognize that inherent market failures involving dynamic considerations may warrant generalized encouragement to industrialization. The prescribed, first-best means of infant-industry encouragement is a uniform and temporary

subsidy to value added. But, as a practical matter, some neoclassicals prescribe a modest degree of uniform (and temporary) effective protection as the second-best means of

generalized encouragement. Even so, all neoclassicals adamantly insist on the importance of uniform infant-industries incentives, that is, incentives that are granted equally, in overall effective terms, across industries and that are given automatically, without administrative discretion. (Pack & Westphal, 1986)

Some neoclassicals would also advise public provision of social overheads too large or expensive to be undertaken privately, but not with the objective of promoting specific industrial activities. Both forms of intervention are seen as having broad developmental objectives that extend beyond the industrial sector. In this respect, they cannot be considered elements of an industrial strategy. In turn, other ostensibly separable elements of industrial strategy are seen simply as aspects of a neutral policy regime. For example, if neutral policy regime is considered another element, the appropriate trade orientation ("outward-looking") is not a separate element because it is implicit in the meaning of a neutral policy regime. (Pack & Westphal, 1986)

The alternative view. There are many other analysts, call them "industrial strategist", or "revisionists" like the World Bank, or "alternatives", who argue that there are significant choices among industrial strategies and that

these choices are to some degree separable from choices among policies to achieve given strategies. For the alternatives, reliance on market forces operating in a neutral policy regime is but one of a number of possibly viable strategies. They actively pursue questions about how the government should identify strategically important industries and how it should promote them through selectively targeted price-denominated policies and more direct forms of intervention. (Pack & Westphal, 1986)

Alternatives' views appeared when a number of economists began to study the policies that have created the East Asian economic miracle. Most of the "alternatives" matured in an environment in which planning was a dominant issue; they thus evinced a greater concern with allocative and distributive issues with policies per se. They are convinced that market forces alone are not responsible for the purported "market success" of economies like Japan or South Korea, and that a neutral policy regime is not a necessary condition for successful industrialization.

The major "alternative views" are presented by Pack and Westphal (1986), Amsden (1989), and Wade (1989, 1990). They have systematically documented that governments of Japan, South Korea, and Taiwan extensively and selectively promoted individual sectors in these economies. Those economists have convincingly shown that level of protection and the variation of protection across sectors has been greater than recognized in the neoclassical interpretations. They have seen market failures as pervasive and a justification for governments to lead the market in critical ways. In their view, the experiences of Japan, South Korea, and Taiwan, provide evidence that governments can foster growth by "governing markets" and "getting prices wrong" and by systematically distorting incentives in order to accelerate catching up - that is, to facilitate the establishment and growth of industrial sectors that would not have thrived under the working of comparative advantage. Amsden (1989, p. 14), for example, asserts that all "economic expansion depends on state intervention. State intervention is necessary even in the most plausible cases of comparative advantage, because the chief asset of backwardness - low wages - is counterbalanced by heavy liabilities." (World Bank, 1993)

MARKET FAILURES AND INDUSTRIAL POLICIES USUALLY ADOPTED

Market failures are likely to be particularly significant in developing countries for several reasons. Understanding these market failures helps explain the policies that were adopted and the reasons they were so effective. The discussion of this section focuses on standard market failures associated with externalities, missing markets, and competition. (Stiglitz, 1996)

Weak and nonexistent markets. In the early stages of development, markets often did not exist or work well, so prices may not have provided good signals for resource allocation. In East Asia, capital markets were particularly weak, leading government to create institutions to promote savings and to extend long-term credit (the development banks). Governments also tried to develop the financial infrastructure by helping to establish bond and equity markets. (Stiglitz, 1996)

Having promoted savings, governments had to decide how to allocate these funds to specific sectors. If there had been well-established market institutions for allocating long-term capital, governments could have made use of those institutions. But because the governments had to decide how to allocate resources, it was natural to direct the funds to projects that would yield the highest level of social welfare. (Stiglitz, 1996)

Technological spillovers. Private markets have inadequate incentives for investing in the production and acquisition of technology, largely because it is difficult to measure the return of the knowledge gained. Developing countries typically operate at a level of technology far below that of industrial countries; development is, to a large extent, the process of acquiring and adapting existing technologies. Patent protection ensures that the seller can command some payment for new technology, but it does not provide much protection for a firm that transfers and adapts an existing technology. Adopting and adapting new technologies involves a risk. If successes are quickly imitated, then firms face a "heads I lose, tails you win" situation: when they succeed, there is little profit because of the force of competition; when they fail, they lose money. (Stiglitz, 1996)

Marketing spillovers. Still another kind of valuable information concerns marketing. Knowing where there is a market for a product is not information that can be kept secret. If a firm spends money to discover that

Americans like madras shirts, then any manufacturer of madras shirts can take advantage of that information. The converse is that the products of a country establish a reputation. Thus, Japan's reputation for high quality benefits all Japanese producers. (Stiglitz, 1996)

Such marketing spillovers have led governments to adopt programs aimed at promoting the country's products. In Hong Kong these programs are financed by a special tax. In Singapore they are directed by the powerful Economic Development Board. Spillovers have also resulted in an array of programs to improve the countries' reputation. Most notable in this respect is the recent effort by Taiwan to encourage its domestic firms to obtain brand recognition. (Stiglitz, 1996)

Returns to scale. Not all of the arguments advanced as rationales for industrial policies are persuasive, however. One that seemed particularly influential in Japan, held that government intervention was required to rationalize industry. It was argued that without government support, firms continue to remain too small, and an increased number of such firms would reduce the profitability of all firms in a sector. For example, the Japanese government not only condoned the increased concentration in the steel industry in the late 1960s but, in one of its most famous mistakes, tried to discourage Honda from entering the automobile market. At this time, Honda was a successful manufacturer of motorcycles. This argument is not persuadable because if there were increasing returns to scale, then a single firm would benefit by increasing its production; in time, its costs would be lowered, and it would then be able to undercut its rivals. Natural economic forces lead to the rationalization of industries without government intervention. (Stiglitz, 1996)

A slight variant of the argument about returns to scale does have validity. Increasing returns combined with a shortage of capital may stunt the growth of small firms. They cannot expand to take advantage of increasing returns either because they cannot get access to capital or because the only form of capital to which they have access is credit, which imposes too high a risk. In this case, government intervention can lower the costs for obtaining capital and increasing economic efficiency. (Stiglitz, 1996)

Increasing returns, especially when combined with capital market imperfections, provide the foundation for strategic trade policy. Historically, arguments for government trade interventions focused on industries with learning by doing. If today's production lowers future marginal costs, it creates a form of increasing returns akin to the more familiar static increasing returns. A firm that expands production lowers its future production costs and undercuts its rivals. The infant industry argument holds that protection is important so that the young firm can gain the experience required to lower its production costs and allow it to become viable. Critics of this argument claim that if the firm is to be profitable in the long run, it should incur any necessary losses today. But this assumption is based on the premise that capital markets are perfect. With imperfect capital markets, a firm may not be able to sustain the losses that would enable it to produce at a level at which it would eventually become profitable. Moreover, if the firm is not able to retain all returns to its learning, then social returns to production will exceed private returns. In addition, dominant firms in industrial countries are likely to take advantage of the lack of competition that prevails when learning is important by raising prices and increasing their profits. Government policies may be directed at trying to appropriate some of these rents, which the excess profits that result from a dominant competitive position. (Stiglitz, 1996)

Coordination failures. The widespread absence of markets in developing countries means that prices cannot perform their coordination role. Government may thus have to assume a more active role in performing this function. The traditional examples relate to the development of downstream and upstream industries are: developing a steel-manufacturing industry does not pay unless there is a steel-using industry, and developing a steel-using industry does not pay if there is no steel-manufacturing industry. If both wait, nothing happens. According to this view, the government has an important function in coordinating the two activities. Such coordination failures, it is argued, are likely to be most important when the returns to scale are large. For instance, if manufacturing steel is deemed to be desirable, it is necessary to build a large steel plant and a large steel-using industry. Other market failures, such as the absence of risk markets, interact with this failure: large risks are likely to accompany such large-scale investments, and the market provides no mechanism by which these risks can be divested. Moreover, no single entrepreneur could amass the capital required, and the imperfections of the capital market mean that it cannot supply the funds required. Developing countries are less likely than industrial countries to have the organizations capable of undertaking these large investments in a

single sector, let alone the capacity to undertake the investments in both the upstream and downstream firms. Thus coordination problems may be larger in developing countries, and the capacity to deal with them may be smaller. (Stiglitz, 1996)

The earlier arguments for coordination failures were rightly criticized as not being sufficiently persuadable. Such a problem could easily be addressed through trade, one of the solutions that has been devised by the East Asian countries. It is possible to develop a steel-using industry simply by importing steel and to develop steel producers without steel users simply by exporting steel. (Stiglitz, 1996)

In the early stages of rapid growth, the subsectors responsible for the takeoff in many, if not most, of the East Asian countries, textiles, footwear, sporting goods, and toys, were not those in which economies of scale or coordination problems seemed important. But there was a more subtle form of returns to scale in which government intervention did matter and which affected growth even in these areas such as the availability of a wide range of intermediate goods, often fairly complex, tailored for the producers of final goods. The sellers of these intermediate goods do not capture all of the benefits that their greater availability provides. The improved two-way flow of information between the producer and the user, which permits better coordination in the development of the intermediate goods, does not serve as a perfect substitute for domestic production and also provides a rationale for government intervention. In Malaysia, it is claimed that local auto manufacturer has provided important spillovers to the intermediate goods firms that produce parts and that these firms, in turn, have benefited producers of final goods. (Stiglitz, 1996)

Strategic negotiations. In negotiations with other countries or companies, the governments of East Asia have often recognized and taken advantage of the nature of the market environment. The outcome of any bargaining depends on the strength of competition on both sides. By reducing competition among buyers of technology and trying to increase competition among sellers, the governments succeeded in appropriating more of the surplus associated with the transfer of technology than otherwise could have been accomplished. In Japan, for instance, a single firm was sometimes given the right to negotiate a licensing agreement and it might then be compelled to share the technology with other firms in the industry. (Stiglitz, 1996)

I. INDUSTRIAL POLICIES IN THE DEVELOPMENT OF EAST ASIA

These are the major influences of industrial policies that impacted in the development of East Asia.

- Governments in East Asia used industrial policies to affect the allocation of resources in ways that would stimulate economic growth. They took an entrepreneurial role in identifying industries in which research and development would have high payoffs. Support for industry, such as the establishment of research and science centers and quality control standards, was important both in attracting foreign investments and in encouraging domestic investors. Emphasizing industries with strong backward and forward links and large externalities may have helped long-term growth. In the short term, the lack of profitability does not provide a good measure of the potential long-run contribution to growth, precisely because it is the discrepancy between private and social returns that motivates government intervention. (Stiglitz, 1996)
- Governments actively encouraged firms to export. Exports provided a performance-based criterion for allocating credit, encouraging the adoption of international standards, and accelerating the diffusion of technology. Contests among exporters were used widely as incentive devices. The essential ingredients of contests are rewards, the allocation of credit, rules, the measures of performance, and referees those who evaluate performance. In a world short of perfect competition, contests can provide strong incentives with limited risks, and, if the rules are well specified, reduce bureaucratic abuses. (Stiglitz, 1996)
- Governments promoted accumulation of physical and human capital. The introduction of postal savings institutions and funds to provide the future, resulted in higher domestic savings. At the same time, measures that established prudential regulations (and in some cases, entry restrictions) enhanced the safety

and soundness of financial institutions and promoted financial deepening. A variety of programs increased the returns to private investments and facilitated the development and transfer of technology. These included policies that promoted education and training, provided infrastructure, and, in most countries, established a receptivity to foreign investment. (Stiglitz, 1996)

- Government policies supported investment. The use of mild financial repression had a positive effect on economic growth. The effects on national savings and on the efficiency with which scarce capital was allocated were likely positive; positive incentive effects may have been associated with the contest for scarce credit, and the increased equity of firms and banks, because of lower interest rates, enhanced their ability to bear risks. Equally important were other government programs that led to more effective risk-sharing within the economy. Risk-sharing reduced the effective cost of capital, thus stimulating investments. Government intervention in international economic relations for instance, in bargaining for foreign technology, in impeding certain capital movements, and in insisting on certain transfers of technology as part of foreign investment, may have enhanced the national interest, promoted economic stability, and thereby enhanced savings. (Stiglitz, 1996)

The following section will show, briefly, the case of South Korea to illustrate the development in East Asia.

THE CASE OF SOUTH KOREA

"Asia's Next Giant - South Korea and Late Industrialization", by Alice H. Amsden, 1989, is a book that brought an alternative view to explain the East Asian economic success. The "alternatives" have successfully shown that East Asian economic success did not conform to the neoclassical model.

This book is about South Korea and how it came to be a major factor in the world economy. But, in Amsden's words, it is also a book about the industrialization process that South Korea followed. This process, which will be referred to as "late industrialization", has profound implications for a range of other countries that are also struggling to compete in the world of international business. South Korea's success in this struggle can thus be seen both as a fascinating story in itself and as an example of a new way of industrializing that challenges long-held assumptions of generations of economic thinkers. (Amsden, 1989)

In late-industrializing countries, the state intervenes with subsidies deliberately to distort relative prices in order to stimulate economic growth. This has been as true in South Korea, Japan, and Taiwan as it has been in Brazil, India, and Turkey. In South Korea, Japan, and Taiwan, however, the state has exercised discipline over subsidy recipients. In exchange for subsidies, the state has imposed performance standards on private firms. Subsidies have not been giveaways, but instead have been dispensed on the principle of reciprocity. With more disciplined firms, subsidies and protection have been lower and more effective than in others. (Amsden, 1989)

Below the level of the state, the agent of expansion in all late-industrializing countries is the modern industrial enterprise, a type of enterprise that can be described as large in scale, multidivisional in scope, and administered by hierarchies of salaried managers. In South Korea, the modern industrial enterprise takes the form of diversified business groups, or "chaebol". Diversified business groups are common to all late-industrializing countries, but those in Korea are especially large. The Fortune list of 500 international private non-oil-producing firms in 1986 included ten firms from South Korea and only seven firms from all other developing countries combined. The size of the "chaebol" and their broad diversification into diversified products have been allowed to survive the hardships of late industrialization, to penetrate the lower end of numerous foreign markets, and to supplant the need for multinational firms to undertake major investments in targeted industries. (Amsden, 1989)

Salaried engineers are a key figure in late industrialization process because they are the gatekeepers of foreign technology. Salaried engineers have performed especially in South Korea because society has invested heavily in education, from the primary level on up. In terms of sheer quantity, enough engineers have been trained to ensure that sufficient numbers pursue the career intended by their education. A large number of engineers has meant competition among them for the best jobs and the fastest promotions, thereby driving up productivity. (Amsden, 1989)

Late industrializations have exceptionally well-educated work forces by comparison with earlier industrializations. South Korea has set a number of world records in the area of labor, which has made its work force unusually productive. It appears to have the largest work week in the world but, otherwise, South Korea's real-wage growth rate may exceed that of any previous industrial revolution and that of any contemporary one. High average real-wage increases have acted as an inducement to workers to produce, and to managers to acquire more technological capability. (Amsden, 1989)

In South Korea, the government systematically intervened in the industrialization process. The government intervened to protect local industry from Japanese competition, and those interventions taking the form of tariffs, quotas, export subsidies, subsidized credit. Subsidization showed a further rise in the heavy industries. (Amsden, 1989)

South Korea, therefore, provides supporting evidence for the proposition that economic expansion depends on state intervention to create price distortions that will direct economic activity towards greater investment. Where South Korea differs from most other late industrializing countries is in the discipline its state exercises over private firms. (Amsden, 1989)

Discipline by the state over private enterprise was part and parcel of the vision that drove the state to industrialize. The discipline exerted by the state, and the rise of big business, were interactive. Big business consolidated its power in response to the government's performance-based incentives. In the exchange for stunning performance in the areas of exports, research and development, or new product introduction, leading firms were rewarded with further licenses to expand, thus enlarging the scale of big business in general. In exchange for entering especially risky industries, the government rewarded entrants with other industrial licenses in more lucrative sectors, thus furthering the development of the diversified business group in particular. (Amsden, 1989)

Discipline may be thought of as comprising two interrelated dimensions: (a) penalizing poor performers; and (b) rewarding only good ones. Evidence of the former has taken two guises in South Korea. First, in industries weakened at various times by over-expansion, some heavy industries, construction, and shipping, firms have been subject to rationalization. Second, discipline has taken the form of refusal on the part of the government to bail out relatively large scale, badly managed, bankrupt firms in otherwise healthy industries. The bail-out process has been highly politicized insofar as the government has typically chosen close friends to do the taking over of troubled enterprises. This corruption notwithstanding, when the victim of bankruptcy has appeared to be poorly managed, than the government has deserted it. (Amsden, 1989)

Of greater importance to the credibility of the disciplinary process in South Korea than punishing poor performers, however, has been insuring that the government's, most of whom have undoubtedly been bailed out on at least one occasion, have generally performed well. This dimension of discipline has been critical because so much of South Korean industrialization has involved rewarding the same small set of government friends with favors for expansion. There is evidence that repeated support by the government to a small set of big business groups was exchanged, de facto, for good performance. Good performance is evaluated in terms of production and operations management rather than financial indicators. Evidence of this comes from fairly detailed case studies of approximately thirty-five enterprises in the textile, cement, paper, steel, shipbuilding, general machinery, automobile, and construction industries. Several subsidiaries within a business group were studied (five in the case of Hyundai, three in the case of Samsung) to analyze, among other issues, whether repeated patronage by the government was justified on efficiency grounds. (Amsden, 1989)

The most stern discipline imposed by the South Korean government on virtually all large size firms, no matter how politically well connected, were related to export targets. There was a constant pressure from government bureaucrats on corporate leaders to sell more abroad, with obvious implications for efficiency. Pressure to meet ambitious export targets gave the Big Push into heavy industry its frenetic character. Additionally, firms have been subject to five general controls in exchange for government support. (Amsden, 1989)

First, the government has owned and controlled all commercial banks. One of the first acts of the government of Park Chung Hee was to nationalize the banking system. (The government of Syngman Rhee had denationalized

it a decade earlier to appease American pressures.) Although pressures to liberalize in the 1980s led the government to privatize commercial banks, thereby strengthening aggregate economic concentration and income inequality, the government still maintained its control over commercial banking. Government control of the purse has helped orient the chaebol accumulating capital rather than toward seeking rents. (Amsden, 1989)

Second, in luring firms to enter new industries with the plums of protection and subsidies, the government has imposed discipline by limiting the number it has allowed to enter. This has ensured the realization of scale economies and the rise of the mammoth business groups that the government foresaw as necessary to build basic industry. In the 1960s and 1970s, the government became premier entrepreneur by using its industrial licensing policies to determine what, when, and how much to produce in milestone investment decisions. (Amsden, 1989)

Third, discipline has been imposed on "market-dominating enterprises" through yearly negotiated price controls, in the name of curbing of monopoly power. At the end of 1986, as many as 110 commodities were controlled, including flour, sugar, coffee, red pepper, electricity, gas, steel, chemical, synthetic fibers, paper, drugs, nylon stockings, automobiles, and televisions. (Amsden, 1989)

Fourth, investors have been subject to controls on capital flight, or the remittance of liquid capital overseas. Legislation passed in the 1960s stipulated that any illegal overseas transfer of \$1 million or more was punishable with a minimum sentence of ten years' imprisonment and a maximum sentence of death. In the 1980s, the degree of compliance with the law has fallen into doubt. Nevertheless, in the two preceding decades, its harsh terms are believed to have been a credible deterrent to private investors who might otherwise have used public subsidies to build personal fortunes abroad. (Amsden, 1989)

Fifth, the middle classes have been taxed, and the lower classes have received almost nothing in the way of social services. This has caused a persistent deficit in the government account to reflect long-term investments. (Amsden, 1989)

It is unclear whether the strong economic measures taken by the South Korean state could have been taken under political democracy, although Japan, the statist European countries, and recent events in South Korea all suggest that such measures and political democracy are compatible. What is clear is that, without a strong central authority, a necessary although not sufficient condition, little industrialization may be expected in under developed countries. (Amsden, 1989)

IV. INDUSTRIAL POLICIES IN BRAZIL

Brazil has had a long history of all policy interventions. Since the Second World War, successive governments have been concerned with building up and developing an industrial base. After an initial period, the production of steel and few other intermediates, and the build-up of an infrastructure network were targeted, there were two important periods in industrial policy formulation in the country. First, in the mid-1950s, with President Kubitschek's comprehensive Target Plan; second, a few years later, when the II National Development Plan (1974-1979) provided a coherent framework for deepening import substitution, with a major push for the capital goods and intermediates industries. (Frischtak & Others, 1996)

It is arguable that since the late 1970s, Brazil has not pursued an industrial policy, in the strict sense of a set of instruments intent on changing the sectorial allocation of resources in a systematic and purposeful way. Although during the 1980s, successive governments have made formal industrial policy announcements, the absence of effective mechanisms, and most importantly, the exhaustion of the import substitution paradigm as a model of industrial development, translated into a de facto policy vacuum. It has only been since 1990, after eleven year hiatus, that a new government has redefined a new trade and industrial strategy. (Frischtak & Others, 1996)

The transition towards a more open and competitive economy has been greatly helped by a quality and productivity-enhancing program launched in 1990, as part of the new policy regime, with the explicitly strengthening of firms in view of the new environment brought about by trade liberalization. While the latter, combined with a recessionary economy, imposed strict discipline upon firms, the Brazilian Quality and

Productivity Program, helped educate and reshape the internal organization of firms, with the introduction of new management concepts and tools. In this sense, the Program was instrumental in ensuring that Brazilian firms effectively reacted to post-1990 open economy environment. (Frischtak & Others, 1996)

The institutional responsibility for industrial policy formulation and implementation in Brazil rests with the Ministry of Industry, Commerce and Tourism. In fact, however, there is significant power fragmentation, and lack of coordination, and the Brazilian Quality and Productivity Program is the only program in the Ministry's hands. Thus, trade policy is dictated by the Ministry of Finance, with considerable influence from Planning and Foreign Affairs. Exports policies, and associated fiscal and financial incentives, come under the purview of Finance and Planning, with inputs from Industry and Commerce and Foreign Affairs. The investment promotion regime, particularly related to financial incentives, are under the Ministry of Planning, the "parent" of the National Development Bank. Technology and Research and Development policies are mostly concentrated in the Ministry of Science and Technology, although related fiscal incentives are filtered by the economic Ministries. The direction of industrial policy thus oscillates, depending which Ministry has the upper hand, and is generally characterized by excessive influence from political and short-term considerations. (Frischtak & Others, 1996)

Brazil's Industrial Policies

Trade Policy. Brazil has become in the last few years an increasingly open and competitive economy. The 1988 tariff rationalization efforts, which reduced both average tariffs and their standard deviation, were followed by a comprehensive trade reform. Starting in March of 1990, the process of trade liberalization involved the immediate removal of explicit non-tariff barriers and the announcement of a time-bound decrease in the level and dispersion of tariffs. As of January 1, 1995, Mercosur countries share a common external tariff with 11 tariffs levels, ranging from 0% to 20%, in increments of 2%. (Frischtak & Others, 1996)

Particularly striking are the tariff reductions in products which were vulnerable to import competition, namely, synthetic fibers, tools, electric machinery, vehicles and toys. These products continue to be protected by tariffs but the effective rates of protection have decreased substantially. (Frischtak & Others, 1996)

Although import response was initially slow, after a spurt in the first year of liberalization, partly due to the 1990-92 recession, import levels increased significantly thereafter, growing at an annual average rate of 27,8% in the 1992-94 period. Imports expanded from US\$20.4 billion in the base year to US\$33,3 billion in 1994. Still, the stagnation in the value of imports in 1991-92 concealed the threat they actually posed. First, immediately after 1990, the ratio of import to domestic consumption increased substantially in a number of industrial sectors, intensifying import competition. Second, firms were pressured not only by actual import penetration, but by the fact that customers could credibly invoke the threat of looking for alternative foreign suppliers in order to obtain better purchasing terms. (Frischtak & Others, 1996)

Industrial firms responded to the import threat and the immediately preceding recession by undertaking the most drastic defensive restructuring actions witnessed in Brazil since the onset of industrialization. They greatly improved productivity, and reduced costs. In the period 1990-94, industrial labor productivity grew at an average annual rate of 8.3%, compared to -0.5 in 1985-90. This allowed industrial prices to fall in tandem. Indeed, as a result of the trade reform, the pressure from import competition, combined with the 1990-92 recession, were sufficiently strong for prices in real terms to fall in the major product categories, with the exception of foodstuff and drugs. In both instances, firms benefited from removal of price controls, and used the opportunity to recover their target profit margins through the exercise of monopoly power. (Frischtak & Others, 1996)

The Brazilian Quality and Productivity Program. The ability of Brazilian firms to face the challenge of recession and liberalization of imports, in the early 1990s, is a reflection of producers' commitment to cost-reducing and quality-enhancing measures. The recession and the liberalization of imports led them (1) to the vertical disintegration of activities as firms subcontracted, (2) to the reduction of hierarchical levels in an attempt to improve intrafirm communication among employees, and between them and management, and (3) to the introduction of "kaizen" (continuous improvement), quality circles, just-in-time and other techniques of total quality management and worker involvement. These actions greatly reduce the high levels of waste and inefficiencies that have historically characterized Brazilian industry. (Frischtak & Others, 1996)

It is arguable that the adoption by firms of new standards of quality and productivity was driven fundamentally by the fact that, with liberalization of imports, they had either to become internationally competitive or exit the market. Nonetheless, it is highly unlikely that the pace of dissemination of International Standards Organization (ISO) would be the same if there was not the Government's Brazilian Program for Quality and Productivity (PBQP). The program was launched in November 1990, to exert a decisive role in the competitive restructuring of national industry. (Frischtak & Others, 1996)

Although the program has been based on voluntary public and private actions, the PBQP is considered, together with the liberalization, the driving force behind the "productive revolution" experienced by Brazilian industry since the early 1990s. (Frischtak & Others, 1996)

The commitment to total quality management is expressed by the firms' adherence to international total quality standards, as codified in the International Standards Organization (ISO) 9000 series. The diffusion of ISO-9000 has been surprisingly rapid in Brazil among industrial firms, and to a lesser degree, within service organizations. Between 1990 and 1994, the number of certified units increased from 18 to 577, an average annual growth rate of 138%. After 1991, in every single year, the number of producers adopting total quality management standards more than doubled. It is projected that by end 1995, a total of some 1,300 units will have been certified in the country, which compares favorably with all other industrializing economies. (Frischtak & Others, 1996)

Export Development. There are two key mechanisms to support the development of exports: fiscal incentives in the form of tax exemptions, and finance. Manufactured exports are exempted from Federal and State value-added sales taxes (IPI and ICMS). The 2% sales-related COFINS tax can be changed into IPI credit for purchases of domestic inputs for export-oriented production. In addition a drawback regime is available for both direct and indirect exporters, in the form of import duty exemption, restitution or suspension, the latter in the case of "temporary admission". Income derived from manufactured and services exports is taxed at a maximum of 30%, and it is exempted from the "social contribution over profits" at a 10% flat rate. Payments of interest and service charges for export financing, and for export logistics and marketing, are tax exempt from income tax and financial operations (IOF) tax. Finally, 18 tax-sheltered export-processing zones (EPZs) have been approved, but so far only four are slated to begin operations in 1996. (Frischtak & Others, 1996)

Direct finance for exports is available from the PROEX program for a restricted positive list of goods and services, basically focused on capital goods and engineering services. The program finances up to 85% of the FOB value of exports, at Libor plus rates, and for a period of 10 years. Interest rate equalization is also available for exporters to offer competitive post-shipment supplier's credit. Finally, pre- and post-shipment finance of capital goods exports is available from the National Development Bank (BNDES), with PROEX funds for up to 100% of the value of the exported goods, depending on the degree of domestic value-added. In 1995, the Government allocated US\$840 million for interest rate "equalization", and US\$ 200 million for direct finance of capital goods and services exports. In view of current excess supply of funds, the 1996 budget has been reduced to US\$500 million and US\$120 million respectively, a figure equal to about 1.2 % of total exports. (Frischtak & Others)

Brazil's export promotion policies did not seem to have been very effective. Between 1988 and 1993, the country's export-GDP ratio decreased from 10.4 % to 8.7%, a little over a third of South Korea's, and less than traditionally inward looking India's 9.6%. Brazilian exports as a percentage of world exports contracted in the same period from 1.2 to 1.0 percent. Although the effective exchange adjusted incentive rate varies considerably across product groups, the domestic market is generally more profitable than export markets. Exports remain, for the most part, a countercyclical activity. Moreover, the relatively high costs of doing domestic business in the country has become an impediment to the sustainable growth of exports. These additional costs include (1) high indirect taxes, for example, it has been estimated that steel exports are taxed at a rate of 26.9% compared with 10% in South Korea and 15% in Japan, (2) labor costs, for example, the basic nonwages costs like social security taxes, leave, holidays, and 13th salary, (3) high port charges, (4) poor transportation infrastructure, (5) high real interest rates, and (6) the poor absorption of knowledge and long-term growth in labor productivity. These impediments have exceeded competitive export financing in terms of price comparisons. (Frischtak & Others, 1996)

Investment Incentives. In the industrial sector, in particular, most progress has been attained by enhancing efficiency of current capital assets. Although a combination of strong economic expansion when GDP growth climbed from nearly to zero in 1991-92, to 4.2% in 1993 and 5.6% in 1994, and 4.7% in 1995, and high levels of capacity utilization are providing a major stimulus for the expansion of investment, government investment incentives play a subsidiary, though non-marginal role. The National Development Bank (BNDES) provides the only domestic source of long-term finance, at rates which generally do not compare favorably with those quoted internationally for projects with similar risk-return profiles. The current rates adopted by BNDES is the government's determined "long-term interest rate" which is in the order of Libor plus approximately 6%. The demand for BNDES resources have grown considerably; disbursements have gone from an average of US\$3.1 billion in 1991-93 to US\$5.5 billion in 1994, of which US\$3.2 billion to finance machinery and equipment. BNDES is thus responsible for financing approximately 8% of gross capital in the Brazilian economy. (Frischtak & Others, 1996)

Federal tax incentives are only available for investments located in the Northeast and Amazon regions. Most states and many municipalities compete, however, quite fiercely for new investments, through a mixture of explicit (sales and property) tax reductions and rebates, state banks' loans, as well as through the supply of infrastructure services on a preferential basis. The fiscal cost of state and municipalities subsidies has not yet been so far estimated with any degree of precision, although the amount of revenue foregone is a source of concern to the federal government in view of the dire fiscal health of most states. (Frischtak & Others, 1996)

Research and Development (R&D) Incentives. R&D and design activities, on the basis of product innovation and differentiation, are still incipient in Brazil. Government's R&D policy is directed to increase R&D effort, expand the involvement of the private sector where 80 to 90% of expenditures are financed and undertaken by the government, and improve the interface between the productive sector, and university and research institutions. In 1990, total science technology expenditures in Brazil were 0.72% of GDP compared unfavorably with other rapidly industrializing countries which spent 1 to 2% of GDP in these activities. (Frischtak & Others, 1996)

Current legislation, laws 8248/91 and 8661/93, and decree 949/93, allows firms to charge their R&D expenditures against a maximum of 8% of owed income tax. In addition, capital goods and instruments dedicated to R&D may be imported without federal value-added tax (IPI), and are subject to accelerated depreciation, at twice the normal rate. Finally, firms are allowed a 50% credit of income tax and financial operation tax associated with the payment of royalties, technical assistance and specialized services payments to foreign parties. These incentives are non-automatic, and are awarded after being assessed by the Ministry of Science and Technology accredited organizations. The implied fiscal cost of these incentives since they became operational, in early 1994, and until mid-1995 was amounted to US\$492.5 million, thereby generating US\$1.2 billion in R&D and technology outlays. By the end of the decade, the Government expects firms to become responsible for 30 to 40% of science and technology outlays, which would then correspond to 1.5 % of GDP. (Frischtak & Others, 1996)

Sectorial Policies and Programs

For many years, industrial policy in Brazil was characterized by a profusion of sectorial policies and incentives, with the objective of substituting imports and guaranteeing domestic production in the basic sectors of the economy: capital goods, consumer durables and intermediates. Although most trade and investment-related import-substitution policies have been phased out, and emphasis today is the attainment of international competitiveness, there remain a few sectorial policies and programs with considerable impact. There is, in addition, ad-hoc Government relief against competitive and predatory imports, as in the case of the shoes and textile industries. The programs related to the automotive and space industries are the major examples of sectorially focused government efforts. The former illustrates one of the few remaining moderately effective sectorial regimes. Its intrinsic importance is related to the economic weight of the industry, nearly 10% of GDP, and the fact that it is the object of dispute with Brazil's trading partners. The latter, though de facto the major sectorial program undertaken in Brazil in a frontier area, with high-performance computing, vaccines for tropical diseases and deep-sea oil exploration, has been overlooked, because its industrial dimension, long-term economic impact and commercial applications are only now surfacing. (Frischtak & Others, 1996)

IV. CONCLUSION

Industrial policies had an important role in the development of the East Asia. As we can see in Pack & Westphal, 1986, and Amsden, 1989, these countries would not developed at such high rates of growth without extensive and selective promotion of individual sectors in their economies. The state intervention was systematic and its policies were directed at developing and encouraging certain sectors. Market failures occur in all economies and only the state has been able to prevent these failures.

Did these policies work? Which policies ensured success? No single policy ensured success, nor did the absence of any single ingredient ensure failure. There was a nexus of policies, varying from country to country, sharing the common themes that have been emphasized. That is, governments intervened actively in the market, but used, complemented, regulated, and indeed created markets, rather than supplanting them. Governments created an environment in which markets could drive. Governments promoted exports, education, and technology. Governments encouraged cooperation between the state and industry and between firms and their workers, and at the same time encouraged competition. (Stiglitz, 1996)

The real miracle of East Asia may be political more than economic. Why did governments undertake these policies? Why did politicians or bureaucrats not subvert them for their own self-interest? Even here, the East Asian experience has many lessons, particularly the use of incentives and planned organizational design within the public sector to enhance efficiency and reduce the likelihood of corruption. The recognition of institutional and individual fallibility gave rise to a flexibility and responsiveness that, in the end, must lie at the root of sustained success. (Stiglitz, 1996)

Brazil is a country with great potential. It has abundant natural resources, a significant market, important and substantial industries and good labor force. Nowadays, the "Real" economic stabilization plan is bringing economic stability and growth. This stabilization is providing better income distribution and market growth, and is attracting new investments.

Where are the failures? The big failure is the complete absence of coordination. There is no coordination over industrial policies. Even though the Brazilian Federal System is strongly centralized at the federal level, states and municipalities confuse national coordination with interference in their self-government.

The major lesson that Brazil must learn from East Asia economies is coordination practices. Coordination is the key word.

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