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Industrial Policy in the Field of Informatics in Brazil

Walter Douglas Stuber *

Informatics is a rapidly developing industry in Brazil as it is in the rest of the world. In Brazil, the informatics industry is regulated by legislation which came into effect in late December, 1984.¹ This legislation ratifies the policy pursued by the Secretaria Especial de Informatica (Special Secretary for Informatics) (SEI) which, since its creation in 1979, has charted an informatics policy for Brazil unlike previous Brazilian models of industrial development. This policy greatly restricts opportunities in the field of informatics for multinational corporations (MNCs) and foreign exporters in favor of national companies. It is intended to reduce Brazil's dependence on foreign-controlled informatics equipment and technology. It is likely, however, to prove detrimental to other sectors of the Brazilian economy.

This article first presents a brief overview of Brazilian industrial development. This overview provides a basis for understanding how the Brazilian Government's informatics policy differs from past Brazilian industrial models. The article then describes the Brazilian Government’s policy in the field of informatics. It concludes that a policy which is less protectionist than the government's current program would, through allowing greater foreign participation in the market, better encourage the development of Brazilian informatic companies.

I. BRAZILIAN INDUSTRIAL DEVELOPMENT

A. The Formative Years

The industrial development of Brazil occurred in an uneven manner.² Following independence from Portugal in 1822, Brazil maintained a traditional agrarian economy. It exported coffee, cotton, and cocoa, and imported manufactured

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¹ Lei No. 7.232, 1984 Coleção das Leis [Coleção], Vol. (outubro)—Leg. (Brazil).

² The information in this article concerning the history of Brazilian industrial policy is from a symposium given by Olavo Setubal on informatics.
Although Brazil had liberal legislation regulating industry, commerce, and foreign investments, the laws proved insufficient to stimulate industrial development during this period.

The world depression of 1930 altered the post-independence path of Brazilian economic development. It created an acute shortage of manufactured products. However, the greatest private economic force in Brazil, the agrarian sector, lacked the resources and know-how to initiate the industrialization of Brazil. In response, the Brazilian Government abandoned its \textit{laissez-faire} economic philosophy and adopted a policy of state participation in the industrial sector. Participation increased during and immediately following World War II, when Brazil again suffered a shortage of manufactured products.

After World War II, multinational and Brazilian corporations began investing heavily in industrial projects, often in joint ventures. These two groups, together with the Brazilian Government, have shaped the modern industrial development of Brazil.

\textit{1. The Automobile Industry}

After World War II, intensive efforts were made to develop the Brazilian automobile industry. The Brazilian Government took the initiative in this venture by creating the Executive Group of the Automobile Industry (GEIA)\(^3\) to regulate and stimulate the development of the automobile industry in Brazil. GEIA provided foreign automobile manufacturers incentives to establish subsidiary auto assembly plants in Brazil.\(^4\) At the same time, GEIA encouraged the development

\footnotesize{
4. For example, soon after World War II the metalworks plant at Volta Redonda was established by the Brazilian Government. This investment received the endorsement of the President of the United States, Franklin D. Roosevelt, who authorized the necessary financial backing for the plant. The North American American steel industry openly opposed President Roosevelt's support.
5. Decreto No. 39.412, 1956 Coleção, Vol. IV (junho)—Exec. (establishing guidelines for the creation of the Automobile Industry and instituting the \textit{Grupo Executivo da Industria Automobilistica} (Executive Group of the Automobile Industry) (GEIA)).
6. Decreto No. 39.412, supra note 5. Under this decree, GEIA reduced or eliminated the duty on parts imported for vehicle manufacture. This incentive was only granted for a limited period, \textit{id.} at art. 5, since GEIA's objective was to create an independent industry that could supply all automotive parts. GEIA could also permit the immigration of technicians and specialized workers. \textit{id.} at art. 13.

The first plans approved by GEIA concerned trucks. See Decreto No. 39.568, 1956 Coleção, Vol. VI (julho)—Exec. In 1957, plans for passenger cars were also approved. GEIA intended that Brazilian manufactured cars would contain 95 percent locally made parts by 1960. Decreto No. 41.018, art. 4, 1957 Coleção, Vol. II (fevereiro)—Exec. The GEIA required that proposals submitted to it indicate the manner in which this percentage was to be attained. \textit{id.} at art. 6. By 1959, the engine had to be locally manufactured and contain at least 60 percent Brazilian parts by weight. \textit{id.} at art. 7, \textit{§} 2. Similar plans concerning vehicles with four-wheel drive ("jipes") (Decreto No. 39.569, 1956 Coleção, Vol. VI (julho)—Exec.), light trucks (Decreto No. 39.676-A, 1956 Coleção, Vol. VI (julho)—Exec.), and farm tractors (Decreto No. 47.473, 1959 Coleção, Vol. III (dezembro)—Exec.) were also adopted. In addition, a law exempting plant equipment required for the local manufacture of automotive parts and engines from import duties and consumer taxes was passed. Lei No. 2.993, 1956 Coleção, Vol. VII (dezembro)—Leg. The federal government also allowed companies with approved plans to import disassembled vehicles that could be completed with locally obtained parts. Decreto No. 42.820, art. 91, 1957 Coleção, Vol. VIII (dezembro)—Exec. Import duties were
of national corporations to supply auto parts. The foreign automobile manufacturers that participated in this program enjoyed substantial profits during this period, primarily because these companies were able to import finished cars and components not yet manufactured by national industries. Thus, in practice, the exclusive market benefited the MNCs that were located in Brazil.

2. The Petroleum Industry

The experience of the petroleum industry in Brazil differed from the automobile industry. The MNCs were interested in distributing petroleum in Brazil, but not in exploring or refining petroleum there. This situation sparked a strong nationalist movement to expel the MNCs. During World War II when an oil shortage threatened the country’s survival, Brazil formed a state enterprise to explore, transport, and refine petroleum reserves.

The Brazilian Government proposed a law in 1953, which created Petroleo Brasileiro S.A. (PETROBRAS), a state-owned company. Given the combination of scarce domestic deposits and low oil prices in the international market, PETROBRAS concentrated on refining and commercialization. In the early 1970s the threat of a diminishing supply of high priced crude oil forced the country to modify its model of development. Brazil entered into service contracts with MNCs that involved these corporations in prospecting and exploring for oil.

Shortly thereafter, Brazil began to develop its industrial petrochemical sector. It adopted a tripartite model based on joint ventures between state companies, MNCs, and private Brazilian companies. It also created an exclusive market and provided various incentives for attracting these companies.

Reduced in proportion to the percentage of parts obtained locally. Id. at art. 91, para. 3. The government also granted companies access to government financing at a lower than normal interest rate. Decreto No. 39.412, supra note 5, at art. 11. See also Pinheiro Neto & Dias da Silva, Incentives for Investment in Brazil, 13 CASE W. RES. J. INT’L L. 123, 124 (1981).

7. Lei No. 2.004, 1953 Coleção, Vol. VII (outubro)—Leg., established the National Petroleum Policy, defined the responsibilities of the National Petroleum Council, and authorized the formation of Petróleo Brasileiro S.A. (PETROBRAS). Article 1 of this law exclusively authorized PETROBRAS to: (1) search for and drill wells for oil and other liquid hydrocarbons and rare gases, existing within national boundaries; (2) refine national or foreign oil; and (3) engage in the transport of Brazilian crude oil or petroleum derivatives. Article 2 of the law stipulated that the PETROBRAS monopoly was to be exercised through the National Petroleum Council, as the directing and financial organ of PETROBRAS and its subsidiaries.

8. Numerous sectors of Brazilian society, suspecting that PETROBRAS lacked technological capability, applauded the involvement of the MNCs in oil exploration. Despite contracts with more than fifty MNCs and one São Paulo corporation, and investment of US $1.5 billion, no oil was discovered.

9. Decreto No. 56.571, 1965 Coleção, Vol. VI (julho)—Exec., expanded the petrochemical industry and the branch of the chemical industry that had its origin in exploiting natural gas, and the products and by-products of petroleum and shale. The Decreto did not include the production of combustibles and lubricating oil from petroleum and asphalt.

3. Recent Models

Currently, Brazil is working to develop the aerospace, communications, atomic energy, and informatics industries. The Brazilian Government has created a different model for each of these sectors.

In the case of the aerospace industry, the government adopted a model similar to that utilized in the petroleum industry. It created a state owned company, Empresa Brasileira de Aeronautica S.A. (EMBRAER), which envisioned the integration and support of the best engineering schools in the country.

The communications industry presented a different challenge. Following the model of most European countries, the Brazilian Government nationalized the private communications companies, and stimulated joint ventures between private Brazilian communications equipment suppliers and MNCs. As the only buyer of communications equipment, the government retains control over technological development and can specify and standardize the technology that it judges most convenient for the country. In the atomic industry Brazil adopted a State monopoly model over all uranium processing. This industry is being developed through an accord signed by the Brazilian and West German Governments.

II. THE FIELD OF INFORMATICS

In the early seventies the Brazilian Government recognized the vital role of informatics in the development of the industrial, military, financial, and agricultural sectors of its economy. Informatics policy has thus become a strategic instrument in the economic development of Brazil. Through it, the Brazilian Government hopes to develop technological capacity that will benefit all sectors of the economy.

11. Decreto-Lei No. 770, 1969 Coleção, Vol. V (agosto)—Leg., authorized the formation of Empresa Brasileira de Aeronautica S.A. (EMBRAER), to promote the development of the aeronautical industry and related activities, including the construction of seaplanes and related equipment, and promotion of new or existing technical activities linked to the production and maintenance of aeronautical material in accordance with programs and projects approved by the Chief Executive.

12. Lei No. 5.792, 1972 Coleção Vol. V (julho)—Leg. (authorizing government involvement in telecommunications services and authorizing the Chief Executive to form the firm Telecomunicações Brasileiras S.A. (TELEBRÁS)). By the terms of Article I of this law, telecommunication services are controlled by the Union, either directly or by its authorization. The Union also guarantees the functioning of such services.

13. Lei No. 4.118, 1962 Coleção, Vol. V (agosto)—Leg. This law established the National Policy of Nuclear Energy and created the Comissão Nacional de Energia Nuclear (National Nuclear Energy Commission) (CNEN), granting the Union the exclusive right to: (1) explore the creation of uranium mines in Brazil; (2) market nuclear elements and their composites, fission and enriched materials, artificial radioisotopes and radioactive substances, nuclear byproducts; and (3) produce nuclear materials. Lei No. 5.740, 1971 Coleção, Vol. VII (dezembro)—Leg., authorized CNEN to form the Companhia Brasileira de Tecnologia Nuclear (Brazilian Company of Nuclear Technology) (CBTN), whose name was later changed to Empresas Nucleares Brasileiras Sociedade Anônima (Brazilian Nuclear Companies S.A.) (NUCLEBRÁS), by Lei. No. 6.189, 1974 Coleção, Vol. VII (dezembro)—Leg. Article 1 of this law states that the federal monopoly that Article 1 of Lei No. 4.118, supra, established will be exercised through CNEIN, as the primary body of planning, supervision, fiscalization, and scientific research, and by NUCLEBRÁS and its subsidiaries.
A. Informatics Legislation and Policy

The Brazilian Government first began to outline an informatics policy in 1972. In 1972 the government created a commission to promote informatics, the Comissao de Coordinacao das Actividados de Processamento Eletronico (Commission for the Coordination of Electronic Processing Activities) (CAPRE). CAPRE concentrated informatics services and equipment in government companies and adopted measures to channel government investments into informatics in order to increase utilization and installation of data processing equipment. In 1979 CAPRE was replaced by the Secretaria Especial de Informatica (Special Secretary for Informatics) (SEI). Endowed with greater powers than its predecessor, SEI created and implemented a national informatics policy.

The most recent formulation of the principles, purposes and guidelines governing the informatics industry was set forth in a 1984 law. This law created the National Informatics and Automation Council (CONIN) which reports to the President of the Republic. CONIN does not replace the SEI. Under the Colegao das Leis the SEI reports to CONIN. The SEI must issue, disclose, and comply with the resolutions of CONIN. CONIN assists the President in the formulation of Brazilian informatics policy by establishing rules that control the cross-border flow of data and by granting channels and means for data transmission to data banks. Under the Colegao das Leis the SEI reports networks abroad to CONIN. CONIN hears appeals from decisions of the SEI and gives its opinion on acts or contracts involving activities related to informatics.

The SEI must now issue, disclose, and comply with the resolutions of CONIN. In addition, the SEI controls the domestic development and production of informatics goods and gives its opinion on the importation of informatic goods and services. SEI will continue to regulate the importation, manufacture and marketing of hardware and software, as well as technical services related to informatics.

16. In 1976 CAPRE was totally restructured, Decreto No. 77.118, supra note 15, and in 1977 it began to regulate private firms in the area of informatics. CAPRE established guidelines to control which private firms could import parts for the manufacture of computers and provided selected firms with fiscal benefits. The following are the factors CAPRE considered in giving fiscal benefits and authorizing imports: (1) the index of national content of the equipment; (2) export potential of the firm; (3) the amount of technology open to the national firm in "joint ventures"; (4) the degree of participation of other firms in the market; and (5) the degree of control of the firm's capital by Brazilian residents. J. PINHEIRO NETO, supra note 14, at § 22.101 (discussing CAPRE Resolution No. 01 of June 1, 1977, art. 2). After promulgating these guidelines, CAPRE received 16 proposals for manufacturing personal computers in Brazil. It selected only three projects and rejected the rest—among them IBM, Hewlett-Packard, Olivetti, Burroughs, TRW—because their Brazilian subsidiaries did not have any Brazilian capital. Id. at n.7.
17. See Decreto No. 84.067, 1979 Colegao, Vol. VIII (outubro)—Exec. See also Decreto No. 84.266, 1979 Colegao, Vol. VIII (dezembro)—Exec.
19. Lei No. 7.232, supra note 1.
20. See id.
in Brazil. 21 Although some regulations may have to be revised to comply with the new law, informatics policy continues to favor Brazilian owned companies by severely restricting access to the Brazilian market.

SEI restricts access to the Brazilian informatics market by requiring domestic importers to obtain its approval before receiving a license to bring electronic data processing equipment into the country. 22 SEI will not approve a license to import equipment if a viable source exists in the domestic market. 23 Thus, the licensing requirement effectively eliminates foreign imports of informatics equipment into Brazil when domestic producers have the ability to manufacture the same or similar products.

SEI has also limited access to the Brazilian informatics market for multinational corporations with plants in Brazil. SEI has promulgated normative acts that reserve the Brazilian market for certain types of small hardware, such as electronic mini- and micro-computers and video terminals, to Brazilian companies in which the power for decision-making and management of the company's business and capital are permanently and exclusively in the hands of individuals residing and domiciled in Brazil. 24 Hence an MNC that is not a "national com-

21. See id.
22. J. PINHEIRO NETO, supra note 14, at § 22.103 (discussing Resolution No. 121 of December 17, 1979, of the National Council on Foreign Trade).
23. Id. (discussing SEI Normative Acts No. 001 of March 27, 1980).
24. Id. at § 22.106, n.2. Applications for the production plans for the manufacture of hardware are regulated by SEI Normative Acts No. 016 of June 10, 1981; No. 017 of June 10, 1981; No. 018 of August 6, 1981; and a number of SEI Communiqués. These regulations prohibit SEI from approving plans from Brazilian companies controlled by foreign capital (Brazilian subsidiaries of foreign MNCs or companies controlled by foreign MNCs), for the manufacture of the following equipment: (1) electronic mini- and micro-computers and their accessories, as well as all hook-up equipment; (2) electronic cash registers; (3) electronic word processing machinery, except electronic typewriters having a memory capacity of up to 256 characters of text and without editing facility; (4) electronic machinery for accounting use; (5) financial terminals and their control units; (6) electronic ticket authenticating and issuing equipment; (7) modulator/demodulator (MODEM) and units of analog and digital derivation; (8) video terminals and their control units; (9) terminals for remote access to data bases; (10) equipment for data input; (11) electronic communication processors; (12) multiple digital signal units for data communication; (13) digital signal concentrator units for data communication; (14) teleprinters having a transmission and reception speed in excess of 75 Bauds; (15) equipment for remote reproduction of documents; (16) process control instrumentation, programmable control units, remote supervision and control stations, registers of events and similar equipment for use in process control; (17) numerical command equipment; (18) secrecy equipment, or equipment which uses codes; (19) "daisy wheel" technology text processors; (20) "super-mini" personal computers and their accessories; (21) equipment for processing information in connection with measuring and testing equipment. Id.

Pinheiro Neto notes: "Furthermore, to obtain SEI approval, interested Brazilian companies must prove that their capital is compatible with the undertaking and that they will use technology developed in Brazil, to the extent possible." Id. at § 22.106. The SEI may waive this requirement, however, if a certain technology is not available in Brazil and if the products that are to be manufactured in Brazil are of national interest. Id. at § 22.106, n.4 (discussing SEI Normative Act No. 16 of June 10, 1981, art. 1(c)).

When analyzing the production plans submitted by Brazilian companies, SEI will take several factors into account, including: (1) the potential of exporting the product, with a view to expanding the scale of the undertaking; (2) the technological profile and industrial experience of the proposing company; (3) the software already developed in Brazil; (4) the suitability of the technical and operational characteristics of the product to the needs of the domestic market; (5) the development of
pany with operations in Brazil is precluded from participating in the smaller hardware market in Brazil, regardless of the price or quality of its products.

The concept of a national company, as used by the SEI, has been refined in the 1984 law. National companies are now defined as legal entities with a head office in Brazil, controlled by individuals residing and domiciled in Brazil, or by domestic public entities. The term "control" includes: (1) decision-making control—the legal or de facto exercise of the power to elect the officers of the company and to direct the functioning of the company’s bodies; (2) technological control—the legal or de facto exercise of the power to develop, generate, acquire, transfer, or change the product’s technology and production process; and (3) capital control—direct or indirect holding of all capital with actual or potential voting rights, and at least 70 percent of the company’s capital stock.

The production of other kinds of hardware, such as large computers, is not restricted solely to Brazilian companies. These goods may be produced by companies controlled by foreign capital if SEI approves the project. However, SEI may deny approval if it determines that the project can be implemented by Brazilian technology and capital.

local suppliers; and (6) the plans for absorbing and generating technology. Id. at § 22.106 (discussing SEI Normative Act No. 16 of June 10, 1981, art. 2).

In the case of "super-mini" personal computers, which may only be produced by companies controlled by Brazilian capital, SEI permits the production plan to be submitted in the name of a single company or of a consortium or group of companies or of any kind of association permitted by law, provided that they are held by Brazilians. Id. at § 22.107 (discussing SEI Communiqué No. 007 of December 23, 1982).

25. Lei No. 7.232, supra note 1.

26. J. PINHEIRO NETO, supra note 14, at § 22.108, n.1 and accompanying text (discussing SEI Normative Act No. 017 of July 10, 1981). Upon analyzing and evaluating plans for the production of equipment that may be manufactured by companies controlled by foreign capital, SEI will consider the following: (1) the compatibility of the formation and structure of the share capital with the size of the project; (2) evidence that the product does not interfere with the market segment reserved for Brazilian companies; (3) guidance available to stimulate the execution of the project, where the decision-making power is permanently located in Brazil; (4) capacity for the generation and absorption of design technology for hardware and software; (5) the technological profile and industrial experience of the company which will head the project; (6) the software developed in Brazil; (7) the growing index of nationalization of the production equipment and the goods produced; (8) the development of local suppliers; (9) the degree of utilization of components produced in Brazil; (10) the evaluation of the participation of various companies in the market; (11) the potential for exporting the product; (12) examination of the plan for providing service to the product users; (13) when the project involves foreign technology, the availability of the technology to Brazilian manufacturers; (14) in enterprises that are associated with foreign capital, besides the conditions calling for open technology for the products indicated in the plan, similar access in the field of basic components and consumption materials. Id. at § 22.108 (discussing SEI Normative Act No. 017 of July 10, 1981, art. 1.).

The issuance of import licenses by CACEX for electronic computers, their peripheral equipment, components, or accessories for electronic data processing systems is also subject to express authorization by SEI. When deciding whether to authorize an importation, SEI examines the following factors: (1) the utilization of a domestic alternative, including the use of distributed computation; (2) the stock of software already developed in Brazil, by the requesting entity, which, because of the terms it uses, makes the use of incompatible domestic equipment inviable; and (3) the utilization of software that is specific and indispensable to the activities of the user, which software is not appropriate to develop within Brazil, and which is added to the equipment to be imported. Id. at § 22.103.
SEI is moving in the same direction in the area of software and technical services. With regard to foreign companies, SEI will only approve government contracts for technical services if a viable domestic alternative does not exist.\footnote{Pursuant to SEI Normative Act No. 23 of January 17, 1983, art. 1, para. 1, I., technical informatics services are defined as follows: (1) data processing, including data gathering and preparation, processing of information on automatic data processing equipment, storage and retrieval of information, and the issuance of results and reports; (2) the conceptualization, development, setting-up, marketing, operation, and maintenance of software; (3) consulting services in informatics, including auditing and management activities for informatics; and (4) personnel training in informatics techniques. Id. at § 22.111.}

Furthermore, SEI now requires the separation of transactions relating to informatics hardware, equipment, and devices from transactions relating to software and technical informatics services.\footnote{Id. at § 22.104 (discussing SEI Normative Act No. 25 of September 13, 1983).} This requirement is viewed as a prelude to further restrictions in favor of Brazilian national companies. SEI will, however, permit the purchase of foreign technology used in the manufacture of informatics equipment, provided that a contract assures the Brazilian company autonomous use of the technology upon the contract's termination. These technology transfer agreements also require prior approval of the National Institute of Industrial Property (INPI).\footnote{See J. PINHEIRO NETo, supra note 14, at § 22.110, n.3. A Normative Act issued jointly by SEI and INPI under Nos. 13 and 53 of February 18, 1982 deals with the procedures for the examination of agreements for the transfer of technology in the field of informatics. Although licensing and transfer of technology in Brazil is under the authority of INPI, when the subject matter of those agreements is software or hardware, SEI becomes involved in the approval of the respective agreements. The Act orders a joint committee made up of personnel from SEI and INPI to meet periodically to examine and recommend the approval of transfer of technology agreements. In order to obtain approval, the interested party must submit the draft agreement to INPI for prior consultation. INPI, in turn, will forward it to SEI for later examination by the joint committee. The agreement must then be resubmitted to INPI for final approval. Once the agreement has been approved by INPI, and if it involves remittances abroad, the agreement must also be submitted for registration at the Central Bank of Brazil so that the licensee or recipient may make remittances abroad to the supplier or licensor. Approval of the agreement by INPI is also required in order for the licensee or the recipient to deduct the fees paid the licensor or supplier as business expenses for income tax purposes.}

The avowed purpose behind SEI's policy is to limit Brazil's dependence on foreign informatics companies by developing a Brazilian domestic industry composed of national companies.\footnote{Decreto 84.067, supra note 17.} SEI authorities believe that, given sufficient breathing room, the Brazilian informatics industry can quickly acquire the technological know-how and the manufacturing capability to adequately supply the Brazilian market. Perhaps SEI authorities envision that after that point the Brazilian informatics industry will become a major competitor in the world market.

\section*{B. Specific Fiscal Incentives to National Companies}

The 1984 law on informatics contemplates a variety of fiscal incentives for national companies in the informatics industry.\footnote{Lei No. 7.232, supra note 1. Any company either directly or indirectly controlled by the} National companies undertak-
ing research projects and the production of informatics goods and services may be granted:

(1) exemption or reduction to zero of import duties in cases of importation with no domestic equivalent for (a) equipment, machinery, devices and instruments, and respective accessories, parts, and tools; and (b) components, intermediary products, raw materials, parts and pieces, and other inputs;

(2) exemption from export tax, in cases of exportation of goods that have been ratified by CONIN;

(3) exemption or reduction to zero of the tax on manufactured products for (a) the goods referred to in item (1) above, whether imported or produced in Brazil, with the suppliers being assured of maintenance of the tax credit in connection with raw materials, intermediary products, parts, pieces and other inputs used in the manufacturing process; and (b) for final products that have been ratified by CONIN;

(4) exemption or reduction to zero of the tax on credit, exchange, and insurance transactions and on transactions with regard to securities, to be levied on exchange transactions linked to payment of the price of the goods and of agreements for transfer of technology;

(5) up to a double deduction from taxable corporate income for expenditures made in their own or third party programs previously approved by CONIN, that are intended for research and development of goods and services or for the formation, training, and improvement of human resources in the informatics sector;

(6) accelerated depreciation of goods intended for the fixed assets;

(7) priority in direct financing granted by federal financial institutions or in direct financing through on-lending of administrative funds by such institutions, for defrayal of investments in fixed assets, including goods of foreign origin that have no domestic equivalent.\textsuperscript{32}

National companies carrying out physical-chemical processing for the manufacture of semi-conductor electronic components and optical electronics may also be granted a reduction of taxable profit. The reduction, authorized by a decision of the President of the Republic, is a percentage equal to the proportion between the gross income from such goods and the total income of the company. In addition, companies using such inputs may, as an incentive, be granted the right to deduct twice the purchase price from the taxable profit.\textsuperscript{33}

Furthermore, where a software development project is of interest to Brazil's Government, the project may be granted a reduction in taxable profit in a percentage equal to the proportion between the gross income from sales of such software and the company's total income.\textsuperscript{34}

For fiscal years 1986 through 1995, Brazilian companies may deduct one percent of their corporate income tax provided they invest a like sum in new shares of national private companies that have as their sole or principal activity

\textsuperscript{32} Id.
\textsuperscript{33} Id.
\textsuperscript{34} Id.
the production of goods and services for the informatics sector. However, Brazilian companies are prohibited from investing in companies of the same multinational conglomerate or in companies not approved by CONIN.

In the case of informatics goods and services judged useful for domestic, scientific, and productive activities, but for which there are no national companies qualified to meet domestic market needs, production may be by non-national companies. These companies must: (1) receive CONIN approval for the training of technical staff in product and production process technologies; (2) invest a sum fixed by CONIN in the National Informatics and Automation Plan in research and development activities, either directly or through an agreement with a technological research and development center or a Brazilian university; (3) submit an export plan; and (4) establish development programs for local suppliers. This provision does not apply to the products and services of companies that already produce and market in Brazil in accordance with projects approved by the SEI. CONIN will only authorize acquisition of technology abroad when there is a recognized market interest, and there is no Brazilian company technically qualified to meet the demand. 35

The use of foreign technology by non-national companies is conditioned upon production exclusively for the foreign market and production units located in an informatics export district. Informatics export districts include municipalities located in the areas of the Development Authority for Amazonia (SUDAM) and Development Authority for the Northeast (SUDENE) that have been indicated by the Executive Branch and named by the National Congress. 36

C. Other Incentives and Environmental Concerns

Several other types of fiscal incentives are available in Brazil to foster economic growth. These incentives were implemented for a variety of reasons ranging from the desire to protect the environment to the need to develop certain regions of the country. 37

1. Regional and Sectoral Incentives

The most important regional agencies, the Development Authority for Amazonia (SUDAM) and the Development Authority for the Northeast (SUDENE), grant incentives for agricultural, livestock, industrial, and basic services projects. The SUDAM area is formed by the states of Acre, Amazonas, and Para; the federal territories of Amapa and Roraima; the state of Mato Grosso do Norte; and parts of the states of Goias and Maranhao. The SUDENE area is formed by the states of Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernanbuco, Alagoas, Sergipe, Bahia, part of Minas Gerais and Maranhao; and the Federal Territory of Fernando do Noronha. 38

35. Id.
36. Id.
37. See generally Pinheiro Neto & Dias da Silva, supra note 6; Mendes, Brazilian Legislation on Industrial Development (pts. 1 & 2), 33 BULL. FOR INT'L FISCAL DOCUMENTATION 198, 266 (1979).
38. See Decreto-Lei No. 756, 1969 Coleção, Vol. V (agosto)—Leg. (SUDAM); and Lei No. 3.692, 1959 Coleção, Vol. VIII (dezembro)—Leg. (SUDENE). SUDAM and SUDENE grant three
Brazilian companies are allowed to deduct 25 percent of their corporate income tax for approved projects in the SUDAM and SUDENE areas. Companies with their own projects may invest their tax incentive allowance in these projects.

Another important regional agency is the Free Zone of Manaus Authority (SUFRAMA). The manufacture and sale of domestic and foreign products in this zone are exempt from the tax on manufactured products (IPI) and the tax on the distribution of goods (ICM). Imported goods are exempt from import duty. Furthermore, the sale of products manufactured in this area to places outside the zone of Manaus is also exempt from ICM and IPI taxes.

The sectoral incentives consist of tax reduction or exemption, and the contribution of funds as non-voting equity capital. These incentives will only be granted to a company if its project has been duly approved by the appropriate governmental authority. If a project is carried out in more than one area, all the tax incentives granted to the program are available to the project.

2. Additional Tax Incentives

Tax incentives are also granted by the Industrial Development Council (CDI) in favor of industrial development projects. CDI uses several different methods to encourage development: (1) import duties and IPI tax reductions or exemptions for equipment, machinery, instruments, accessories, and tools not produced in types of incentives. First, they may grant equity investment in the Investment Fund for Amazônia (FINAM), the Private Investment Fund in the Development of Amazonia (FIDAM), the Northeast Investment Fund (FINOR), and the Northeast Research and Natural Resources Fund (FURENE). This equity investment is made with funds deducted from corporate income tax. Second, they may grant exemption from income tax and non-refundable additional charges for a period of ten years to industrial and agricultural undertakings in the SUDAM and SUDENE areas. The undertakings must be set up, modernized, expanded, or diversified. Third, they may grant exemption or reduction from import duty, from the tax on industrialized products (IPI), and from other federal duties for the importation of machinery and equipment not produced in Brazil, if the undertaking intends to implement projects approved by these agencies. See infra note 40.

39. Manaus is the capital of the State of Amazonas.

40. See Lei No. 4.502, 1964 Coleção, Vol. VII (novembro)—Leg.; Decreto No. 83.263, 1979 Coleção, Vol. II (março)—Exec. amended by Decreto No. 84.113 Coleção, Vol. VIII (outubro)—Exec. The tax on manufactured products (IPI) is assessed on a value-added basis. Generally the IPI tax becomes due when the product leaves the plant where it was subject to some stage of industrialization or a separate establishment maintained by the industry which manufactured the same, and, in some cases, when the product leaves a wholesale warehouse. The IPI tax on imported products is due at the time of the clearance.

41. See Decreto-Lei No. 406, 1968 Coleção, Vol. VII (dezembro)—Leg., amended by Decreto-Lei No. 834, 1968 Coleção, Vol. V (setembro)—Leg. The tax on the circulation of goods (ICM) accounts for a substantial part of the revenue of the various states. Similar to the IPI tax, the ICM tax is also assessed on a value-added basis. The ICM tax, however, is due on all stages of the commercialization process and is assessed on the price of the product.

42. For example, the Fishing Development Authority (SUDEPE) is responsible for directing and implementing the fishing development policy; the Brazilian Institute of Forest Development (IBDF) is in charge of the forestation and reforestation policy; the Brazilian Tourism Company (EMBRATUR) is responsible for formulating, coordinating and directing the Brazilian tourism policy; the Brazilian Aviation Company (EMBRAER) is responsible for furthering the development of the aviation industry by investing the funds at its disposal for designing and building its own aircraft; and the Executive Group of the Mining Industry (GEIMI) furthers the exploitation of the country's mineral resources, provides for the substitution of mineral imports, and encourages the exportation of mineral products.
the country, and for parts which supplement national production; (2) credit to the
IPI tax amount for the purchase of domestically manufactured equipment; (3)
accelerated depreciation on nationally produced goods, for tax purposes; and (4)
preferred financial support from official credit entities. 43

The import duty and IPI tax exemptions are reserved for projects approved by
the President which are relevant to the national interest. For other projects CDI is
only authorized to grant reduction of import duties and the IPI tax. Rates of
reduction may vary from 50 to 80 percent. 44

An additional incentive, the ICM tax exemption, may exempt imports from
duties. In the event of mere reduction of import duties, however, the ICM tax will
be fully assessed. 45 Benefits may also be granted to imported supplementary
parts which comply with pre-established nationalization indices.

3. Export Incentives

While regional and sectoral incentives remain available, the emphasis of the
Brazilian Government has been on fostering export programs. The agencies
responsible for granting incentives for export of manufactured products are the
Commission for the Concession of Tax Benefits to Special Export Programs
(BEFIEX) 46 and the Commission of Export Incentives (CIEX). 47 The benefits
granted by BEFIEX may not be enjoyed cumulatively with other tax incentives
provided for in current law. 48 Full import duty and IPI tax exemption may be
granted for export programs deemed to be of relevant economic interest to the
country and approved by the President of the Republic.

In order to obtain tax incentives from BEFIEX, a Brazilian company must
maintain a positive balance in its foreign currency transactions. In other words,
the total amount of all inflows of foreign currency, including investments, loans,
and payments for exports, must exceed the total amount of outflows of foreign
currency, including payment of interest, dividends, royalties, and price of im-
ports, by an amount agreed to by BEFIEX. In order to obtain these tax incentives
from BEFIEX, the company must agree to an export program expressly estab-
lishing the commitments to be assumed by the company regarding minimum

46. See Decreto-Lei No. 1,219, 1972 Coleção, Vol. III (maio)—Leg. The incentives granted by
BEFIEX include: (1) a 70 to 90 percent reduction of import duties and IPI tax on the importation of
machinery, equipment, devices, instruments, accessories, and tools required to implement the export
program; (2) a 50 percent reduction of import duties and IPI tax on the importation of raw materials,
components, and intermediary products relating to the export program; and (3) the deduction from
taxable profits of the portion of profit represented by exports of manufactured products.
47. See Decreto-Lei No. 491, art. 13, 1969 Coleção, Vol. I (março)—Leg.; amended by Decreto-
Lei No. 1,428, art. 9, 1975 Coleção, Vol. VII (dezembro)—Leg. The benefits granted to medium-
sized companies with export programs approved by CIEX include: (1) reduction of up to 90 percent of
the IPI tax and import duties on machinery and equipment destined for installation, expansion, or
modernization; and (2) reduction or exemption from income tax due on operations. Since March 31,
1980, CIEX's duties have been performed by BEFIEX.
exports and a minimum positive balance in foreign currency transactions and the benefits to be received in exchange.\(^4\)

Exports which are not part of government approved programs may also receive tax benefits. Exported products are not subject to IPI and ICM taxes. In addition, the manufacturer will receive a credit for IPI and ICM taxes paid for the purchase of raw materials needed to manufacture exported products. Income derived from exports is exempt from corporate income tax. Calculation of this benefit is effected on a proportional basis with respect to total sales. A drawback system, which consists of the exemption, refund, or suspension of import duties, IPI, ICM, and other taxes assessed at the time of importation on items subsequently industrialized and exported, also protects exports.

4. Financial Incentives: the FINEX Program

Financial incentives are also available for Brazilian exporters. The Export Financing Fund (FINEX) was created to supply funds for Banco de Brasil S.A., through its Foreign Trade Department (CACEX), to finance the export and production of industrial companies that want to begin or increase foreign sales of their products.

Under current regulations, CACEX can use FINEX funds to (1) extend financing to Brazilian exporters; (2) extend financing in the amount of the payments made by a Brazilian exporter to foreign importers (directly or indirectly through foreign financing institutions); (3) extend financing for local expenses to companies or institutions abroad that order jobs and services from Brazilian companies; or (4) refinance financing extended by authorized banks.\(^5\)

The Central Bank of Brazil authorizes the use of FINEX funds to equalize the rates of export financing extended by accredited Brazilian banks with their own funds or with foreign lines of credit. The purpose of this equalization is to adjust Brazilian rates to the rates for equivalent operations in the international market.

5. Environmental Factors

An important consideration for an informatics company contemplating the establishment of a factory in Brazil is the geographical location. Brazil has enacted legislation for industrial zoning to protect the environment from the consequences of indiscriminate installation of industrial establishments.\(^5\) The critical geographic areas in terms of pollution are the metropolitan areas of São Paulo, Rio de Janeiro, Belo Horizonte, Recife, Salvador, Porto Alegre, Curitiba, the areas around Cubatao and Volta Redonda, the middle and lower zones of the

\(^4\) Id. at art. 4. Export programs have been signed for ten year periods. The total value is normally around US $400 million, although it may be as large as US $1.5 billion. There are also export programs for small and medium industries which establish export commitments for substantially smaller amounts. Experience has shown that only major companies, nearly always large international companies, have assumed the risk involved in signing special export commitments with BEFIEX. The ruling may be broadened to permit export commitments for only five years and thus allow smaller national companies to have access to these incentives.

\(^5\) Lei No. 5.025, art. 60, 1966 Coleção, Vol. III (julho)—Leg.

\(^5\) See Decreto No. 76. 389, art. 8, 1975 Coleção, Vol. VIII (outubro)—Exec.
Tiete river basin, the Paraiba do Sul basin, the Jacui river, the Guaiba estuary, and all the hydrographic basins in the state of Pernambuco.52

The government licensing of factories whose activities are considered to be polluting, or even potentially polluting, is one step that has been taken to prevent environmental deterioration. Legislation adopted in 198053 sets basic guidelines for industrial zoning in the critical pollution areas, grants exclusive authority to the state pollution control agencies to license the construction, operation and expansion of industrial establishments in such areas.54

D. Labor

Except for a few restrictions imposed on industrial sectors not relevant to the informatics industry, there are no specific rules on labor, management, or trade which adversely affect the local subsidiaries of MNCs engaged in the informatics activities in Brazil. Like many other countries, Brazil has taken steps to preserve the job opportunities of its nationals. In view of the shortage of technicians and the competition from foreign labor, Brazil introduced the principle of proportionality by which all industrial and commercial companies with more than three employees are required to ensure that at least two-thirds of their personnel are Brazilians.55 This proportion may only be reduced by governmental decree. To obtain a reduction, the shortage of Brazilian workers for the jobs in question must be verified by the National Department of Labor and the Statistical Department of the Social Security Service. The two-thirds ratio must also be observed in the firm's payroll. For the purpose of the two-thirds rule, foreigners who have been residents of Brazil for more than ten years and who have a Brazilian wife or child are considered Brazilians.

III. Conclusion

The new informatics policy in Brazil may have serious adverse effects on other sectors of the Brazilian economy. The policy precludes or severely limits investment of foreign capital in the informatics industry in Brazil. This investment, were it allowed, could provide Brazil with an influx of foreign currency that would help alleviate its current exchange crisis. Similarly, Brazil may lose the foreign currency earnings that would result from the export of informatics equipment abroad by MNCs. It appears unlikely that in the near future Brazilian companies could mount a significant export program to compete with MNCs abroad. If they had this capability, then obviously there would be no need to restrict the home market.

52. Id.
54. If, for instance, a company plans to set up a factory in greater São Paulo it must be authorized by the appropriate state agency which, in this case, would be the State Basic Sanitation Company (CETESB). See, e.g., Decreto-Lei No. 1.431, art. 4, 1975 Coleção, Vol. VII (agosto)—Leg.; Decreto No. 76.389, supra note 51.
Aside from the economics of attracting foreign capital through foreign investment in the Brazilian informatics industry and through the subsequent potential export earnings of these investments, the informatics policy may have a direct effect on other Brazilian industries. Without competition from abroad, the domestic informatics companies will be the sole suppliers of most of the Brazilian informatics market. Since these informatics companies lack the experience of some of the global leaders in informatics, their costs, and consequently their prices for producing similar products, will inevitably run higher. Their lack of experience in the field may also affect the quality of their products. Consequently, Brazilian companies will most likely pay a higher cost for lower quality equipment than if they had the option of purchasing from foreign competitors.

Because of the pervasive use of informatics in all industries today, these two factors—higher cost and lower quality—will directly affect the price of other Brazilian manufactured products. The higher cost of informatics technology must necessarily be passed on to the purchaser in the form of a higher-priced product. Furthermore, lower quality informatics technology will decrease efficiency in production. With less efficiency, the cost of manufacturing a product rises, likewise resulting in a higher-priced product. This reasoning applies whether the informatics equipment and technology is used in production or for subsidiary support, such as taking inventory or computing the payroll.

Higher-priced products result in higher prices for the consumer in Brazil, and also higher prices for Brazilian exports. With higher-priced exports, Brazil's competitiveness against other countries decreases. For example, if the Republic of Korea (South Korea) produces steel using more advanced and inexpensive technology from the United States and Japan, its competitive position in the world steel market vis-a-vis Brazil will be enhanced.

The new informatics policy in Brazil may have political repercussions as well. The present Brazilian Government's position on informatics may make it harder for Brazil to bargain for export concessions from some of the high-tech countries in areas in which it may have a true comparative advantage. The Brazilian Government's erection of trade barriers in the informatics area will only fuel protectionist arguments in these countries. Congressional representatives in the United States may point to Brazil's informatics policy as a means to justify protectionist legislation for constituents who compete directly with Brazilian exporters. For instance, a congressman from California or Florida might use the Brazilian informatics policy as leverage to obtain higher tariffs on citrus fruit.

These arguments strongly suggest that the Brazilian Government must begin to reformulate its informatics policy to permit the participation of foreign companies in the Brazilian market. The new informatics policy of the Brazilian Government does not do this. Instead, it reserves the market for the next eight years for the domestic informatics industry. This policy, even if minor changes are adopted, cannot attract the participation of foreign companies in the field of informatics in Brazil.

The Brazilian Government's objective in the informatics industry should be to foster a policy that accommodates the interests of both domestic and foreign producers. It should allow foreign participation in the market and encourage the development of Brazilian national informatics companies.
In exchange for allowing foreign companies to participate in the Brazilian market the government should exact concessions. These could include requiring companies to: make contributions to Brazilian research and development programs; make commitments for a minimum level of capital investment in Brazil and a minimum level of exports from Brazil; agree to share technology with Brazilian national companies; and develop training programs in informatics for Brazilians. With such requirements imposed upon these companies, Brazilians could learn informatics technology on a larger scale and in a shorter time than if the foreign companies were excluded from competing in the Brazilian market. In addition, this more advanced informatics technology would permit Brazilians to improve existing national companies or to start new ventures. As demonstrated by the experience of United States companies in the Silicon Valley, competitive new ventures are feasible in the informatics industry, unlike in some more capital-intensive industries. At the same time, the Brazilian Government could assist the development of the national informatics industry by sponsoring tax and fiscal benefits for national companies.

Adopting this approach appears to be the best solution for resolving the conflict between creating a truly national informatics industry and damaging other sectors of the economy. Although this policy does not give Brazilian companies exclusive access to the Brazilian market, it in no way forecloses their participation. More importantly, the policy increases the availability of more advanced informatics equipment and technology in the Brazilian market, which in turn ensures greater Brazilian competitiveness in the world market.