NOTA

O presente trabalho constitui-se numa versão preliminar do capítulo 8 do relatório da pesquisa Políticas Comerciais e Incentivos Industriais no Brasil, 1979-81, em elaboração conjunta com Wilson Suzigan. Versões preliminares dos Capítulos 3, 4, 5, 6 e 7 já foram apresentadas nos Textos para Discussão Interna nºs 18, 29, 26 e 36.

William Tyler

Julho de 1981

ipea INSTITUTO DE PLANEJAMENTO ECONÔMICO E SOCIAL

TEXTOS PARA DISCUSSÃO INTERNA

Nº 37

"Nominal Export Incentives and Effective Export Promotion Estimates for Brazil, 1980-81"

William Tyler

Julho de 1981

William Tyler
Wilson Suzigan

CONTEÚDO

POLÍTICAS COMERCIAIS E INCENTIVOS INDUSTRIAIS NO BRASIL, 1979-81

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July 1981

Chapter 8

NOMINAL EXPORT INCENTIVES AND EFFECTIVE EXPORT PROMOTION ESTIMATES

I. NOMINAL EXPORT INCENTIVES

The system of export incentives had been widely described and analyzed in the literature.[1] Our intention here is not to repeat these efforts but to present an up-dated picture of the system as it affected different tradable goods sectors during the period 1980-81. No time series analysis or involved discussion of the system's evolution over time are undertaken. Nor is any analysis provided integrating commercial policies with broader macroeconomic policies, which involve the exchange rate regime and affect exchange rate levels. After some general remarks as to the nature of the system, this chapter will discuss in turn direct export controls, export credit subsidies, and fiscal measures affecting exports.

The major policy instrument affecting the prices of all tradable goods relative to nontradable goods is the exchange rate. Beginning in August 1968 and lasting until December 1979, the government pursued a mini-devaluation policy based upon a rough purchasing power parity

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[1] See von Doellinger et al.(1973), Barata (1979), de la Cal (1981), Pastore et al.(1977), Savasini (1978), Suplicy (1977), Senna(1980), Cardoso (1980), Braga (1981), Musalem (1981), and Tyler (1976).

formula. The studies computing real exchange rate time series all demonstrate that movements of the real exchange rate during the period were relatively minor.[2] The government's policy was to devalue the cruzeiro regularly, ranging from one to four weeks, in accordance with internal inflation and that observed in the country's principal trading partners, primarily the United States. The objective was to maintain the real purchasing power equivalent of the currency and in so doing eliminate swings in the real exchange rate. Since the overall movements in the real exchange rate were minor, exchange rate policy during this period did not serve to either appreciably increase or decrease the real remuneration of Brazilian exporters.What in fact did serve to increase such remuneration in the late 1960's was the establishment of an elaborate system of fiscal incentives for the export of manufactured goods.

A major change in the exchange rate and trade regime occurred in December 1979 with the so-called package of economic policy reforms. Accompanying the 30 percent maxi-devaluation, there were simultaneously announced measures to immediately remove the fiscal credit export subsidies, eliminate the import deposit scheme, reform the tariff reducing industrial incentive system, and establish export taxes for key agricultural exports. As such, the devaluation was in fact a compensated develuation. On the export side, since the fiscal export subsidies averaged around 20 percent for the manufacturing sector as a whole, the immediate net remuneration gain for manufacturing exporters was on the order of some 10 percent. For some sectors, whose exports

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[2] In addition to the studies cited above in Footnote 1, see also Coes (1979), Fendt (1981), and IPLAN/IPEA(1980).

were heavily subsidized such as textiles and apparel, the net gains were quite small.[3]

The abandonment of the purchasing power parity basis of the country's mini-devaluation policy was further emphasized with the announcement in January 1980 that subsequently both monetary correction and nominal exchange rate depreciation were to be pre-fixed, i.e., announced in advance. These amounts were then set for 1980 at 45 percent for monetary correction and 40 percent for exchange rate depreciation. In the face of inflation then running around 80 percent annually, the difficulties and inherent dangers of such a course were clearly evident.[4] By November 1980, in the face of increasing economic uncertainty, the government decided to cut its losses and abandon this policy course. It announced that beginning in January 1981 monetary correction would be fully based upon the national consumer price index and that the purchasing power parity basis in exchange

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[3] See Kume (1981).

[4] For those who applauded the December 1979 economic policy reforms as an increased policy emphasis on market force resource allocation, the January 1980 announcements concerning pre-fixation brought bewilderment. The rationale for the decision to pre-fix monetary correction and therefore necessairly the nominal exchange rate depreciation is unclear. The most common economic explanation is that the government sought to affect inflationary explanations. Yet, when in the preceeding month — December 1979 — the money supply (M_1) had increased by an astounding, and publisized, 19 percent, it is difficult to accept the argument that inflationary expectations would somehow be substantially dampened by the government's announcement of pre-fixation. What the government did in effect was to prepare a trap for itself by putting its own credibility on the line. That it emerged from the episode 11 months later with minimal damage to its credibility is a testament to the adroitness of the economic policy authorities. In economic terms, the legacy is that sometime in the future another compensated exchange rate adjustment, along lines similar to that of December 1979, cleaning up distortionary commercial policies, will undoubtedly prove imperative.

rate policy would be restored. Yet, by this time there had been witnessed a substantial real appreciation of the currency, thus undermining Brazilian competitiveness in international markets. From December 1979, prior to the maxi-devaluation, to the end of December 1980, the real exchange rate, adjusted from the elimination of the fiscal subsidies for manufacturing exports, appreciated by 19 percent on the average for such exports.[5]

Many of the commercial policy measures implemented during 1980 and 1981 were undertaken in response to the constraints imposed on exchange rate policy by the pre-fixation directly of the nominal exchange rate depreciation and indirectly of the monetary correction indexes. The intention of these commercial policy measures has been to reduce the loss of international competitiveness concommitant with the conduct of exchange rate policy during 1980 and the accompanying, although unstated, desire of the governmental authorities to increase the price of Brazilian tradable goods vis-á-vis nontraded goods. On the import side, the extension of a financial transaction tax (the IOF) to imports has had a generalized tariff, or exchange rate depreciation, equivalent for those products covered. The proliferation of direct import controls and other nontariff barriers during 1980 and 1981 is also consistent with governmental desires to redress the effects of the real exchange rate appreciation. On the export side, both the increase of the export credit subsidies and the reinstitution of a fiscal export subsidy, to be discussed below, were designed to compensate exporters for their loss in real remuneration. To a great

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[5] See Senna (1981) and IPLAN/IPEA (1981).

degree, these commercial policy measures undertaken in 1980-81 have served as substitutes, abeit imperfect ones to be sure, for more appropriate exchange policy measures, which however were constrained in 1980 by other policy objectives.

A. Direct Export Controls

In addition to a response to exchange rate conditions and policy, commercial policies have also reflected, and served as an accompaniment, to other economic policies pursued by the government. The clearest case is the one of direct export controls necessitated by the pursuit of domestic price controls. If domestic prices, for whatever reason, are kept beneath international price levels, export taxes and/or controls will prove a necessary accompaniment. For many years the prices of domestic agricultural products have frequently been maintained beneath international prices by the government. Consequently, these products have been subjected to either periodic export prohibitions de facto or quotas. While specific export tax equivalents have involved only a few basic products such as coffee, cocoa, and minerals, export licensing, administered by CACEX, has been prevalent. Until very recently, agricultural exports have been those primarily affected by such export restrictions.

As discussed in Chapter 5, the year 1980 witnessed an extension of the industrial price control system administered through the CIP. Price controls were consciously used as a means of combatting inflation.

In addition to the resultant distortions in relative prices, a concommitant feature of the system was a greater control of exports by the CACEX. The exports of certain industrial commodities, such as wood pulp, cement, and basic steels, were subject to controls. In addition, CACEX approval of exports was increasingly accompanied by enforcement of export price minimums. Export regulations in the last few years have become more extensive.[6] Despite CACEX lip-service as to the desirability to debureacatratize export procedures, CACEX controls over exports, particularly for some products, seem to have grown. The discretionary nature of this system, especially where export quotas are concerned,[7] lends itself to abuse.

B. Export Credit Incentives

There are presently functioning in the country two basic types of export credit incentives - suppliers' credits and direct production and working capital financing for exports. The system of suppliers' credits dates back to the mid-1960s and consists primarily of long-term financing for manufactured products, particularly capital goods. This system, evolving into what is currently known as FINEX, is administered by CACEX. The loans are provided in US dollars at terms comparable to, or slightly more attractive than, those prevailing for official suppliers' credits from most industrialized countries. Depending upon the product, CACEX will finance up to 85 percent of the FOB value exports in US dollars at interest rates of 7 percent annually

[6] A recent CACEX listing of prohibited and controled exports, along with the pertinent regulation references, covered 46 tightly spaced pages. See CACEX, Normas Administrativas que Orientam as Exportaçoes, Comunicado nº79/6, pp.56-102.

[7] It should be noted that CACEX also administers a system of export quotas in the cases of products for which import quotas for Brazilian products exist in the importing countries. For example, CACEX allots different export quotas to firms exporting textile and apparel products to the European Economic Community.

for periods up to 8-10 years. Under this system CACEX extended long-term credits of US$ 345 million in 1978, of which 48 percent was for transport equipment sales.[8] This facility has since been greatly expanded. In 1979 it was supplemented by the establishment of a scheme under which CACEX interest rate subsidies for suppliers' credits are extended through the commercial banking system.

In an attempt to stimulate manufactured exports during a period of tight credit conditions, in 1971 the government initiated a system of direct financing for export production. Under this scheme, originally referred to as Resolution 71, manufacturing exporters could avail themselves of specified amounts of credit through the commercial banking system at heavily subsidized rates of interest. These loans were discounted by the Central Bank. This system has evolved since the early 1970's, but its fundamental features remain essentially in tact. The amount of the subsidy expressed as a percentage of FOB export unit values varies according to the amount of credit obtained relative to exports and the difference between the market, or shadow, interest rate and the subsidized interest rate. In 1977 these export credit subsidies were estimated to have an average value of 5.0 percent of the value of manufactured exports.[9] With the pre-fixation of the exchange rate in 1980, efforts were made to expand the system and

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[8] Information kindly furnished by CACEX. The operations in 1977 - totaling US$ 376 million - amounted to about one-fourth of Brazilian capital goods exports for that year.

[9] Savasini et al.(1979). The intesectoral differences in these estimates were substantial and were not stable over time, as is evident from a comparison between estimates for 1975 and 1977.

and increase the subsidy levels in order to compensate for the real exchange rate appreciation and the removal of the fiscal incentives for manufactured exports.

The currently prevailing system, i.e., that as of July 1981, is governed by Central Bank Resolution 674 of January 22,1981.[10] While its financial resources are channeled through the commercial banking system, the amount of credit for which an exporting firm is authorized is determined by CACEX in accordance with an involved set of regulations. CACEX issues firms a basic Certificate (Certificado de Habilitação), which subsequently allows these firms to obtain Resolution 674 resources through the commercial banks. This Certificate is awarded on the basis of the firms' export performance in the preceeding year, its trade balance, and a set of allotment rates specified in Resolution 674. If a firm shows a negative trade balance, i.e., an excess of its imports over exports, it is not eligible for Resolution 674 unless some accomodation can be reached with CACEX. After the basic Certificate is issued, a firm may qualify for an additional certificate if it shows an increase in its exports greater than 10 percent in a 6 month period. The interest rates for Resolution 674 funds are set at a nominal rate of 40 percent annually, paid semi-annually.[11] These credits, given the export

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[10] The system of direct production financing for exports has been governed by a number of different Central Bank Resolutions. The most recent have been Resolutions 398, 515, 602, and 641.

[11] The Resolution governing the system for most of 1980 was Resolution 641. While Resolution possessed some allotment rates of up to 50 percent, the effective nominal interest rate under Resolution 641 was substantially higher owing to the fact that the interest was pre-paid.

experience of the firm, are generally renewed every 6 months.

While the Resolution 674 system is not automatic as far as CACEX is concerned, some estimates of the nominal subsidy value of the program are possible. The allotment rates vary over products and are set at 0,12,20,30 or 40 percent of the previous period's exports. Since the interest rates are the same facing all firms, it is the allotment rates that determine the amount of the subsidy that different products, and industries, can receive. An approximation of the export credit subsidy rate (s_{CR}) is estimated as:

$$(8.1) \qquad s_{ECRj} = k_j \left(\frac{i - i'}{1 + i} \right)$$

where

k_j = export credit allotment rate for industry j, expressed as a ratio of observed export performance.

i = nominal market interest rate expressed annually.

i' = nominal subsidized interest rate available under Resolution 674 expressed in annual effective terms.

The Sectoral export credit allotment rates (k_j) an computed as simple means over the products comprising the sector. A nominal market interest rate of 120 percent annually is posited for 1981, given observed interest rates in the uncontrolled segment of the market.Consequently, if the allotment rate equals 30 percent, the nominal subsidy rate s_{ECRj} is equal to 10.4 percent.

Estimates for the nominal export credit subsidy rates for 72 tradable goods sectors are presented in Appendix Table A8.1 for 1980 and 1981. For 1981 they range up to 13.8 percent (for synthetic textiles and for footwear), with a large number falling in the 8-11 percent range. Table 8.1 presents averages at the 2 digit level for manufacturing industries. For manufacturing as a whole the average nominal export credit subsidy rate was calculated at 8.1 percent for 1981, as compared to 6.9 percent in 1980. While the system was not originally designed to provide financing for agricultural product exports, the relevant tables indicate that some such products have been recently included under the scheme.

Our estimates are overestimates to the extent that (1) CACEX does not in fact authorize the full amounts of credits to which firms are entitled, (2) the banking system does not provide the authorized financing at the stipulated interest rates, (3) exports are growing, and (4) exporting firms possess negative trade balances. In 1981 the complaints of firms regarding (1) and (2) were relatively minor, and the availability of additional financing with rapidly growing exports diminishes the importance of (3). Qualification (4) is harder to assess. It can be noted however that some firms have set up separate importing affiliates in order to circumvent such difficulties.

The government rationale for expanding the export production credit subsidy system has been the need to compensate for the removal of the fiscal credit export subsidies and for the real appreciation of the

Table 8.1

NOMINAL EXPORT INCENTIVES

2 DIGIT LEVEL, 1980-81

Industry	Export Credit Subsidy Rate, s_{ECR} (%)		Export Fiscal Subsidy Rates, s_{EF} (%)			Nominal Export Subsidy Rate, s_E (%)		
	1980	1981	November 1979	1981	Projected 1982	1980	1981	Projected 1982
Mining	1.8	2.3	- 6.5	- 1.0	- 3.2	- 4.7	1.3	- 1.6
Non-Metallic Minerals	7.9	10.3	12.7	12.2	7.3	7.9	22.5	13.9
Metallurgy	5.8	6.9	16.9	13.2	7.9	5.8	20.1	12.3
Machinery	8.8	10.4	17.7	15.0	9.0	8.8	25.6	15.7
Electrical Equipment	8.7	8.6	16.5	15.0	9.0	8.7	25.4	15.6
Transportation Equipment	7.4	8.7	19.4	15.0	9.0	7.4	23.7	14.5
Lumber & Wood Products	4.4	5.8	12.3	8.6	5.2	4.4	14.4	8.9
Furniture	9.4	11.2	21.0	15.0	9.0	9.4	26.2	16.2
Paper	7.6	8.8	18.8	14.3	8.6	7.6	23.2	14.3
Rubber	5.4	8.8	17.1	13.6	8.2	5.4	22.4	13.8
Leather	9.2	11.5	4.4	11.3	6.8	9.2	22.8	14.1
Chemicals	3.4	4.1	8.4	6.1	3.3	2.4	10.2	5.9
Pharmaceutical Products	6.4	7.7	11.0	14.9	8.9	6.4	22.6	13.9
Perfumary	5.3	7.5	17.4	12.5	7.5	5.3	20.0	12.3
Plastics	6.0	10.6	13.4	15.0	9.0	6.0	25.6	15.8
Textiles	10.8	11.7	26.7	13.4	8.0	10.8	25.2	15.6
Apparel	11.2	11.8	20.5	14.5	8.7	11.2	26.3	16.3
Food Products	4.3	5.1	2.4	- 0.2	- 0.9	2.4	4.9	2.4
Beverages	7.7	9.0	12.8	6.4	3.8	7.7	15.4	9.6
Tobacco	7.5	7.3	- 5.7	1.8	- 1.2	1.8	9.1	3.5
Printing & Publishing	7.4	8.9	8.7	15.0	9.0	7.4	23.9	14.7
Miscellaneous	8.4	10.2	16.8	14.8	8.9	8.4	25.0	15.4
AVERAGES[1]								
Primary Agriculture[2]	1.9	3.1	- 6.8	- 5.7	- 6.4	- 5.7	- 2.7	- 4.5
Manufacturing	6.9	8.1	14.1	11.1	6.5	6.5	19.3	11.8
Capital Goods	8.3	9.3	17.9	15.0	9.0	8.3	24.9	15.3
Intermediate Goods	5.4	6.9	12.9	11.0	6.5	5.1	17.9	10.9
Consumer Goods	7.6	8.6	13.0	8.9	5.0	6.8	17.5	10.5

Notes: 1. Value added weights of 1979 are used for aggregating from the four digit level and for computing the more aggregated means.

2. Includes Forestry and Fishing, Agriculture, and Livestock and Poultry.

Source: Appendix Table A8.1.

cruzeiro during the 1980 period of exchange rate pre-fixation. Consequently, one would expect to find a strong positive correlation between the intersectoral structure of the export credit subsidies and the pre-December 1979 fiscal subsidies. This is in fact the case. A Pearson correlation coefficient of .62 was computed between the two over the 72 sector cross-section. The comparable Spearman rank correlation coefficient was .57.

C. Fiscal Export Incentives

The fiscal system dealing with exports is involved and complex, comprising a variety of incentives and disincentives. There are fiscal measures, mentioned above, which constitute de facto export taxes for certain commodities, such as for coffee and cocoa. Similarly,there is a tax on minerals (the IUM) applied to exports. After the December 1979 maxi-devaluation, temporary export taxes were imposed in rates varying up to 30 percent on practically all agricultural products. The taxes have been gradually eliminated, and by early 1981 all had been removed.

A specific fiscal instrument that affects exports is the state valve added tax (the ICM). In the mid-1960's the payment of this indirect tax was exempted for manufactured exports. The payment of the ICM for non-manufactured product exports,however, remains. In effect this constitutes an export tax for these products, unless of course they are excluded from the ICM altogether, as is the case with most vegetables. The amount of the estimates nominal export incentives (disincentives) should include all taxes or benefits relative to the

producer FOB factory (or farm) price. In our estimates of the fiscal export subsidies we have used the 1979 estimates of Kume (1981) to derive export tax equivalent information reflecting the payment of the ICM on nonexempted exported products.

The ICM tax and tax credit system also was used prior to December 1979 to provide a subsidy element to manufactured exports. The overall system of fiscal export subsidies, frequently referred to as the IPI credit premium system, incorporated components from the ICM as well as from the IPI. These subsidies, which gradually evolved during the late 1960's, existed only for manufacturing exports. Because of the variations of the IPI tax rates across products, the export subsidy rates displayed substantial variance across manufacturing sectors. Column 3 of Appendix Table A8.1 and Table 8.1 present estimates of the fiscal subsidies as they existed in November 1979, For manufacturing as a whole, the value added weighted average was 14.1 percent. While the textile and apparel industries received high export subsidies, the capital goods industries as a group were the most benefitted, with an average of 17.9 percent. With the economic policy reforms of December 1979 the IPI and ICM based fiscal subsidies for export were eliminated. During 1980 there were no comparable fiscal export subsidies.

Reflecting a governmental concern with the net compensated real exchange rate appreciation during 1980, measures were taken in April 1981 to reintroduce a system of fiscal export subsidies on a temporary basis, consistent with Brazil's international commitments made in

conjunction with the GATT Subsidy Code.[12] For those products covered a credit, payable through the banking system, is provided for exports amounting to 15 percent of the FOB export value in 1981, 9 percent in 1982, and 3 percent in 1983 until June 30,1983. Although referred to as the IPI credit premium,owing to its basis in the previous legislation, the new system consitutes in fact an automatic, nondiscretionary,and direct fiscal subsidy for exports. A noteworthy feature of the new system is that, unlike the pre-December 1979 fiscal subsidy system, the subsidy rates are ostensibly administered across the board. From a resource allocation viewpoint it makes sense to have a uniform subsidy. Yet,as it turns out,all products are not covered,and the noninclusion of many products, especially basic primary products, means that,like the old system,there exist intersectoral differences in the fiscal export subsidy rates.

Our estimates of the 1981 fiscal export subsidy rates, presented in Appendix Table 8.1 and Table 8.1, are based upon simple averages of the covered and noncovered products comprising each sector. Any existing export tax equivalents are also included so that the figures reported are net average estimates. As observed, the manufacturing average is 11.1 percent for 1981, with the capital goods industries group receiving the full 15 percent. Since the legislation specifies a reduction for 1982, the projected 1982 estimates are also presented in the relevant tables. For 1982 a manufacturing average export fiscal subsidy rate of 6.5 percent is projected, barring any further changes in the governing legislation.

[12] Ministry of Finance Portaria Nº 78, April 1,1981.

The estimates presented and employed in this study do not reflect other fiscal measures designed to promote exports. Two such programs are worthy of special mention. First, there exists an income tax provision enacted in the mid-1960's exempting firms from income tax on that part of their profits deriving from export sales. While previous studies have found this particular incentive to be quantitatively rather small, i.e, 1-2 percent,[13] the provision increases in importance as exports grow in relation to the total sales of an individual firm. Unfortunately, there was no viable way to measure the magnitude of this incentive over the sectors in question.

A second distinct fiscal program for export promotion is the drawback. For those products destined for export, firms are allowed to import intermediate products without paying import duties. The idea is to permit export producers to obtain tradable inputs at world prices instead of at higher domestic prices brought about through protection of the intermediate goods industries. With an effectively functioning drawback system, an export producer is not penalized from having to purchase higher priced domestically produced inputs. We have not attempted to measure the magnitude of this scheme. It should be noted, however, that our estimates of the tax effect component of the effective protection rates were relatively low.[14]

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[13] Tyler (1976), Savasini et al.(1979).

[14] This does not mean, however, that the drawback is inconsequential. Some inputs have prices substantially above international prices.

D. Combined Nominal Export Incentives

The combined nominal export incentive rates (s_E) are estimated as a simple linear sum of the credit and fiscal subsidy rates. They are presented in Appendix Table A8.1 and Table 8.1 in the final columns. While there are a number of the 72 sectors with export subsidy rates greater than 25 percent, the 1981 average for manufacturing was 19.3 percent. For 1982 the comparable figures is projected to fall to 11.8 percent. As is evident from the separate credit and fiscal subsidy rates, the combined nominal subsidy rates possess a reverse cascade, similar to that observed with nominal and effective protection for domestic market sales. The capital goods industries are seen to receive the highest export subsidy rates.

Comparing the nominal export incentives with our measures of implicit nominal protection for domestic market sales, a fundamental difference must be noted. As discussed above, our implicit tariff computations were based upon actual price observations. With adjustments for domestic production subsidies these implicit tariffs served as the basis for our implicit nominal protection estimates. The export incentive measures, on the other hand, are not based on actual price comparisons. They quantify the direct magnitudes of policies themselves. The sectoral average export incentives represent the amount by which those sectors' firms can reduce their international prices in relation to their domestic FOB factory prices while maintaining their unit profitability. Alternatively, these export incentives can be viewed as the proportional increase in domestic currency export remuneration received by exporting firms if their external sales can be sold at prices equivalent to their domestic FOB factory prices.

II. THE MEASUREMENT OF EFFECTIVE EXPORT PROMOTION

A. Methodology

The rationale for making estimates of effective export promotion is analogous to that for undertaking estimates of effective, as distinct from nominal, protection for domestic market sales. The effect of protection on inputs must be accounted for, and the resultant measure is similarly a measure of the effect of commercial policies on value added. Our estimating equation can be written as

$$\sigma_{Ej} = \frac{s_{Ej} - \sum_i \bar{a}_{ij} \left(\frac{1 + t_j}{1 + t_i}\right) t_i}{1 - \sum_i \bar{a}_{ij} \left(\frac{1 + t_j}{1 + t_i}\right)} \tag{8.2}$$

where

σ_{Ej} = the effective export promotion rate for sector j

s_{Ej} = the combined nominal export incentives for sector j

The technical coefficients $\bar{a}_{ij}$ are measured in domestic prices, and adjustments must be made as before to estimate value added in inernational prices. Since exports constituted small proportions of sectoral output for the years of our input-output table, the $\bar{a}_{ij}$'s reflect domestic prices for final products rather than international prices. Accordingly, we have employed our implicit tariff measures to adjust the coefficients and to measure the effects of commercial policies on inputs.

As was the case with the effective domestic market protection estimates, the IBGE 1970 input-output transactions table, problems and all, was used to make our estimates of effective export promotion rates. As before, estimates were possible for 72 tradable goods

sectors. The Corden method was employed to make adjustments for nontraded inputs by incorporating them into value added.

B. Estimates

The estimates for the effective export promotion rates are presented in Appendix Table A8.2 and Table 8.2. The combined nominal export incentives are reproduced in both these tables for comparison purposes. Estimates were made for both 1980 and 1981, and projections were made for 1982 based upon the changes expected in the nominal export incentives. Following the pattern of the nominal incentives, the effective export promotion rates increase, in some cases substantially, from 1980 to 1981. Similarly,declines are projected for 1981.

Examining the averages in Table 8.2, it is observed that Primary Agriculture is discriminated against in the export incentives. For 1981 the weighted average estimate of the effective export promotion rate for Primary Agriculture was - 3.2 percent. For manufacturing the average was 34.9 percent. At the two digit level, rates of effective export promotion exceeding 50 percent were estimated for perfumary products, lumber and wood products, and furniture. The reverse cascade effect that was apparent in with our domestic market protection measures and with the nominal export incentives is no longer apparent. The differences in the group averages among capital goods, intermediate products, and final consumer goods are no longer appreciable.

Table 8.3 presents information on the frequency of our export incentives measures according to the magnitude of incentives provided in 1981 for our 72 tradable goods sectors. While the

Table 8.2

NOMINAL EXPORT INCENTIVES, EFFECTIVE EXPORT PROMOTION RATES, AND NET EFFECTIVE EXPORT PROMOTION RATE ESTIMATES, 2 DIGIT LEVEL, 1980-81

Industry	Nominal Export Subsidy Rate, s_E (%)		Effective Export Promotion Rate, σ_E (%)			Net Effective Export Promotion Rate, σ'_E (%)	
	1980	1981	1980	1981	Projected 1982	1980	1981
Mining	- 4.7	1.3	- 5.5	1.1	- 2.3	-20.5	-14.9
Non-Metallic Minerals	7.9	22.5	11.4	29.3	18.8	- 6.2	8.9
Metallurgy	5.8	20.1	25.7	54.1	38.7	5.8	29.7
Machinery	8.8	25.6	11.3	36.4	21.7	- 6.3	14.8
Electrical Equipment	8.7	25.4	- 0.1	28.4	11.8	-15.9	13.9
Transportation Equipment	7.4	23.7	13.1	39.1	24.6	- 4.8	17.1
Lumber & Wood Products	4.4	14.4	34.4	53.6	43.0	13.1	29.3
Furniture	9.4	26.2	20.1	52.9	33.4	1.1	28.7
Paper	7.6	23.2	17.2	40.0	26.9	- 1.4	17.8
Rubber	5.4	22.4	6.0	28.5	17.2	-10.7	8.2
Leather	9.2	22.8	5.9	22.7	12.1	-10.8	3.3
Chemicals	2.4	10.2	3.0	15.5	8.5	-13.3	- 2.8
Pharmaceutical Products	6.4	22.6	2.2	22.5	11.5	-14.0	3.1
Perfumary	5.3	20.0	23.3	57.0	39.4	3.8	32.2
Plastics	6.0	25.6	- 2.3	23.9	10.8	-17.8	4.3
Textiles	10.8	25.2	11.4	36.7	19.8	- 6.2	15.0
Apparel	11.2	26.3	6.1	37.7	16.7	-10.7	15.9
Food Products	2.4	4.9	23.6	28.9	23.7	4.0	8.5
Beverages	7.7	15.4	18.1	29.6	21.0	- 0.6	9.1
Tobacco	1.8	9.1	6.4	16.0	8.6	-10.4	- 2.4
Printing & Publishing	7.4	23.9	9.4	31.6	19.2	- 7.9	10.8
Miscellaneous	8.4	25.0	15.0	46.2	28.2	- 3.2	23.1
AVERAGES[1]							
Primary Agriculture[2]	- 5.7	- 2.7	- 6.8	- 3.2	- 5.4	-21.5	-18.6
Manufacturing	6.5	19.3	13.4	34.9	22.2	- 4.5	13.9
Capital Goods	8.3	24.9	8.6	34.9	19.7	- 8.6	15.3
Intermediate Goods	5.1	17.9	13.8	34.7	23.3	- 4.2	13.4
Consumer Goods	6.8	17.5	16.0	35.0	22.5	- 2.4	13.6

Notes: 1. Value added weights of 1979 are used for aggregating from the four digit level and for computing the more aggregated means.

2. Includes Forestry and Fishing, Agriculture, and Livestock and Poultry.

Source: Appendix Table A8.2.

Table 8.3

FREQUENCY DISTRIBUTION OF EXPORT INCENTIVE MEASURES, 72 TRADABLE GOODS SECTORS, 1981

Range of Incentives (%)	Nominal Export Subsidy Rate		Effective Export Promotion Rate		Net Effective Export Promotion Rate	
	Number of Sectors	(%)	Number of Sectors	(%)	Number of Sectors	(%)
< 0	5	7	5	7	16	23
0 - 25	41	57	16	23	44	63
25 - 50	26	36	39	56	7	10
50 - 75	0	-	7	10	1	1
75 - 100	0	-	1	1	0	-
> 100	0	-	2	3	2	3
TOTAL	72	100	70[1]	100	70	100

Note: Calculations have omitted those 2 sectors for which value added in world prices was estimated as negative.

Sources: Appendix Tables A8.2 and A8.3.

nominal export subsidies are rather tightly concentrated, it can be observed, as to be expected, that this is much less the case with the effective export promotion rates. For the latter measure the range of greatest frequency is the 35-50 percent range, but 10 sectors displayed effective rates greater than 50 percent. With both the nominal and effective rate measures 5 sectors displayed negative rates. These sectors were absolutely discriminated against by export promotion measures.

III. NET EFFECTIVE EXPORT PROMOTION ESTIMATES

Discrimination through export promotion policies is also apparent with the administration of exchange rate policy. Adjusting for exchange rate overvaluation accompanying the prevailing commercial policies, but retaining the nominal export incentives, can provide a notion of the structure of export promotion resulting from the export incentives and prevailing input protection. An aprosimation is possible as to which sectors are absolutely benefitted or discriminated by these measures. The nominal export incentives in fact serve as substitutes for exchange rate policy. The question is how appropriate are the nominal export incentives in overcoming exchange rate overvaluation. This question can be considered on an effective rate basis with the concept of net effective export promotion.

Similar to the adjustment made with the effective rate of protection for domestic market sales, the net effective rate of export promotion (σ_E^-) can be written as

$$(8.3) \qquad \sigma_{Ej}^- = \frac{r}{r^*} \ (1 + \sigma_{Ej}) - 1$$

where, as before, r and r* represent respectively the prevailing offical exchange rate and the shadow, or free trade equilibrium, exchange rate. As was the case with the g_j estimates, we have employed the Incer estimates of the shadow exchange rate premium, amounting to 18.8 percent.[15]

Appendix Table 8.2 and Table 8.2 present estimates of the net effective rates of export promotion for 1980 and 1981. As observed, most of the estimated rates were negative in 1980 indicating that the export incentives existent during that year were of insufficient magnitude to overcome the estimated exchange rate overvaluation. The Primary Agricultural sector displays a considerable amount of discrimination, with an estimated net effective rate of -21.5 percent for 1980. The manufacturing average was -4.5 percent. In 1981, while agriculture continues to be discriminated against, it can be observed that the export incentives have more than overcome the exchange rate discrimination effect for most manufacturing industries. As demonstrated in Table 8.3, 54 sectors (22 percent of the total) possessed positive rates of net effective export promotion in 1981. The manufacturing average net effective rate was calculated to be 13.9 percent.

IV. THE STRUCTURE OF EXPORT INCENTIVES

Given the nature of interindustrial relations in Brazil, it can be hypothesized that the nominal export incentives and the effective rates of export promotion are positively correlated. Such a relationship was evident between implicit nominal domestic market protection and the effective rates of protection for domestic market

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[15] Incer (1981).

sales. As observed in Table 8.4, an analogous, but much weaker, relationship exists between the nominal and effective rates of export promotion. As computed over the 72 tradable goods sector cross-section, the Spearman rank correlation coefficient was .38, significant at the 5 percent level.

A more interesting question concerns the relationship between the export incentives, both nominal and effective, on the one hand, and the various measures of domestic market protection, on the other. It is possible that the industrial interests and forces politically effective enough to obtain high domestic market protection levels are also effective in obtaining high rates of export incentives. If so, one would expect positive correlations between the domestic market protection measures and the export incentive estimates. Table 8.4 provides evidence supporting this general hypothesis. The Peasorn and Spearmen correlation coefficients between the nominal export subsidy rates and the various domestic market protection measures presented in Table 8.4 are all positive and significant, with the exception of that for 1979 realized tariffs. The highest correlation coefficients, as perhaps to be expected, are those for the implicit nominal protection rates. With the important exception of effective domestic market protection, the correlations between the effective rates of export promotion and the various measures of domestic market protection, while generally positive, are weaker. In the case of the two effective measures the Pearson and Spearman correlation coefficients are .45 and .39, respectively. This suggests similarities in the structure of domestic market protection and export promotion measures seen across sectors.

Table 8.4

CROSS-SECTION CORRELATIONS BETWEEN EXPORT INCENTIVES AND DOMESTIC MARKET PROTECTION MEASURES, 72 TRADABLE GOODS SECTORS

	Nominal Export Subsidy Rate 1981		Effective Export Promotion Rate 1981		Anti-Export Bias 1981	
	Pearson	Spearman	Pearson	Spearman	Pearson	Spearman
Nominal Export Subsidy Rate, 1981	1.00	1.00	-	-	-	-
Effective Export Promotion Rate, 1981	.11	.38**	1.00	1.00	-	-
Anti-Export Bias Rate, 1981	-.02	.19**	.43	.04	1.00	1.00
Realized Tariff Rate, 1979	.06	.30**	-.01	.14	.03	.16*
Nominal Legal Tariff Rate, 1980	.32**	.34**	.03	.21**	-.13	-.09
Implicit Tariff Rate, 1980-81	.43**	.46**	-.02	.15*	.60**	.84**
Implicit Nominal Protection Rate, 1980-81	.46*	.51**	-.02	.14	.61**	.86**
Effective Rate of Domestic Market Protection, 1980-81	.21**	.32**	.45**	.39**	.87**	.88**

Notes:

* indicates significance at the 5 percent level.

** indicates significance at the 10 percent level.

Source: Author's computations.

In the case of nominal and effective domestic market protection, we have seen that there exists evidence that the structure of such protection favors human and physical capital and disfavors more labor intensive economic activities. If the domestic market protection and export promotion measures are themselves rather tighly positively correlated, one would expect to find a similar economic structure of the export promotion measures. As it turns out, however, this expectation is not fulfilled. The evidence on the structure of the nominal and effective export incentives is ambiguous. This evidence is summarized in Appendix Table A8.4 in the form of Pearson and Spearman correlations between the export incentives measures and various economic performance and structure variables. As observed, there is little consistence in signs or significance levels. There is no clear cut or rational economic structure for export promotion incentives across sectors. There is some evidence to suggest, however, a positive relationship between the export incentives and economic growth. Similarly, it appears that those industries with the most complete import substitution tend to receive the highest effective rates of export promotion incentives.

V. ANTI-EXPORT BIASES: THE BALANCE BETWEEN DOMESTIC MARKET AND EXPORT INCENTIVES

Up to this point we have considered domestic market protection and export incentives separately. In their effect on presumed resource allocation and economic performance there is of course a connection. The question is whether the constellation of economic policies favors production for the domestic market or for the external market. If policies favor the former, it can be said that

there exists an anti-export bias in the prevailing economic policies.

Our effective rate measures of both domestic market sales and export promotion provide rankings of the resource pulls into the respective sectors resulting from policies either affecting the domestic market or export remuneration. The net effect between the two depends upon the magnitude of the two different effective rates. Accordingly, we can define the anti-export bias (B_j) as the difference between the effective rate of protection for domestic market sales and the effective rate of export promotion, i.e. $B_j = g_j - \sigma_{Ej}$. The anti-export bias represents a proportional increase in domestic value added permissable as a result of producing for the domestic market over that possible for export production. If $B_j > 0$, there exists an anti-export bias in economic policy, while if $B_j < 0$ a pro-export bias exists. In the case of $B_j = 0$ there is evident a neutrality of economic policies between domestic market and export activities. An approximation of this neutrality is normatively desirable on resource allocational and efficiency grounds. This question of the policy bias towards domestic market or export activities is a question apart from the more generalized question of the sectoral ranking according to either effective domestic market protection or effective export promotion. For example, a sector may be discriminated against by both domestic market protection measures and export policies, but the overall balance of both these types of incentives (disincentives) may be approximately even. Brazilian agriculture, for instance, finds itself in such a situation.

Appendix Table 8.3 and Table 8.5 present estimates of the anti-export biases apparent through the exercise of Brazilian economic policies. Looking first at the aggregate measures, in 1981 there was a slight pro-export bias in policies for the Primary Agricultural sector. For industry as a whole in 1981 the average anti-export bias was 11.5 percent. While considerable sectoral variance exists in the anti-export bias estimates, the reverse cascade effect, revealed in the effective domestic market protection estimates, remains. Very high anti-export biases are evident in the machinery and electrical equipment industries, resulting in the capital goods group possessing the highest average for the major manufacturing groupings. The weight of heavy domestic market protection is strong indeed, imposing high anti-export biases for many sectors. In other sectors, strong pro-export biases exist, in many instances deriving from negative domestic market effective protection.[16]

While the value added weighted means for the larger manufacturing aggregates all display anti-export biases, the variances in the estimates over sectors is great. For this reason care must be taken in interpreting the means. Moreover, a great number of sectors display pro-export biases. Table 8.6 provides the frequency distributions of our anti-export bias estimates. In 1981 40 out of the 70 sectors measured had pro-export biases. At the same time 15 sectors were seen to possess anti-export biases of greater than 75 percent.

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[16] This is evidenced by the estimated Pearson and Spearman correlation coefficients between the two variables of .89 and .88, presented in Table 8.4. The effective export incentives, also positively correlated with the anti-export biases, are frequently simply not of sufficient magnitude to offset the high rates of effective domestic market protection.

Table 8.5

ESTIMATED AND PROJECTED ANTI-EXPORT BIASES, 2 DIGIT LEVEL, 1980-83

Industry	Anti-Export Biases (%) Estimated 1980	Estimated 1981	Projected 1982	Projected June 1983
Mining	1.3	- 5.4	- 2.0	1.1
Non-Metallic Minerals	-31.0	-48.9	-38.4	-29.0
Metallurgy	8.4	-20.0	- 4.5	9.7
Machinery	81.9	56.9	71.5	84.9
Electrical Equipment	129.5	100.9	117.5	132.7
Transportation Equipment	-19.6	-45.6	-31.2	-17.9
Lumber & Wood Products	-16.7	-35.9	-25.3	-15.7
Furniture	32.6	- 0.3	19.2	36.9
Paper	-35.5	-58.4	-45.3	-33.4
Rubber	-27.4	-49.9	-38.5	-28.2
Leather	7.9	- 8.8	1.8	11.2
Chemicals	83.4	70.9	77.9	84.4
Pharmaceutical Products	114.1	93.8	104.8	114.9
Perfumary	68.2	34.5	52.1	68.3
Plastics	30.6	4.4	17.5	29.4
Textiles	25.3	0.0	16.9	31.9
Apparel	40.7	9.0	29.9	48.7
Food Products	2.6	- 2.8	2.3	6.6
Beverages	-19.2	-30.7	-22.1	-14.7
Tobacco	- 0.6	-10.3	- 2.8	3.7
Printing & Publishing	22.6	0.3	12.7	24.1
Miscellaneous	156.7	125.6	143.6	159.9
AVERAGES[1]				
Primary Agriculture[2]	- 1.2	- 4.8	- 2.6	- 0.8
Manufacturing	33.0	11.5	24.2	35.6
Capital Goods	63.4	37.0	52.1	66.0
Intermediate Goods	28.2	7.2	18.7	29.2
Consumer Goods	19.8	0.7	13.2	24.3

Notes: 1. Value added weights of 1979 are used for aggregating from the four digit to two digit level and for computing the more aggregated means.

2. Includes Forestry and Fishing, Agriculture, and Livestock and Poultry.

Source: Appendix Table A8.3.

Table 8.6

FREQUENCY DISTRIBUTION OF ESTIMATED AND PROJECTED ANTI-EXPORT BIASES, 70 TRADABLE GOODS SECTORS[1], 1980 - 83

Range (%)	Anti - Export Bias							
	1980		July 1981		Projected 1982		Projected 1983	
	Number of Sectors	(%)	Number of Sectors	(%)	Number of Sectors	(%)	Number of Sectors	(%)
< 0	34	5	40	57	34	49	32	46
0 - 25	9	13	10	14	14	20	11	16
25 - 50	8	11	5	7	3	4	6	9
50 - 75	5	7	4	6	8	11	7	10
75 - 100	3	4	3	4	1	1	3	4
> 100	11	16	8	11	10	14	11	16
TOTAL[1]	70	100	70	100	70	100	70	100

Note: 1. Two sectors with very high protection and effective export promotion have been omitted. These sectors were estimated to possess negative value added in international prices.

Source: Appendix Table A8.4.

Despite the peaks in the anti-export bias rates, the overall structure of the anti-export biases displays neither any clear rationale nor any consistent pattern. This is evidenced in Appendix Table 8.4. The lack of a well defined economic structure in the anti-export biases must in great part be attributed to the fact that frequently the effective incentives for domestic and export market sales offset one another. Privileged individual sectors are often afforded high domestic market protection and export incentives, and vice versa.

One pattern suggested by the cross-section evidence, however, is that those sectors with the highest anti-export biases tend to be those with the highest ratios of imports to total available domestic supply.[17] Where the possibilities of continued import substitution are the greatest, the impact of economic policies is seen to be heavily in favor of forced import substitution. For those sectors the high effective rates of domestic market protection, as evidenced in Chapter 7, outweigh the effect of any export incentives.

The presence of anti-export biases in economic policies possesses implications for export performance. Those sectors with the heaviest anti-export biases are those for which exports should be expected to grow the least. Given the lack of an earlier benchmark estimate of effective anti-export biases, it has proved impossible here to measure the effect of such policy biases on

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[17] The Spearman rank correlation coefficient between sectoral anti-export biases and sectoral ratios of imports to total available domestic supply was calculated to be .33, significant at the 5 percent level. (Appendix Table A8.4).

observed export behavior across industries.[18] The recent changes in Brazilian commercial policies prevent assumptions of stable anti-export biases in recent years for any time series analysis of exports. One can only conjecture what effect the recent changes in anti-export biases will have on export performance. Yet the theoretical basis for such conjecture is both straightforward and sound. Comparing the 1980 estimates with those for 1981, it is clear that the restoration of the fiscal subsidies did much to reduce the observed levels of anti-export biases apparent in 1980. Consequently, it can be expected that exports should respond favorably, as distinct from any response resulting from the management of exchange rate policy.

Since the export incentives are scheduled to change in 1982 and 1983, a useful exercise is to project the anti-export biases into the future. If events are allowed to proceed as expected, what will the level of anti-export biases be in 1982 and 1983? The assumptions made in these projections are presented in Table 8.7. For their part, the effective rates of domestic market protection are assumed to remain unchanged from the estimated 1980-81 levels. The fiscal export credit premium subsidy is reduced in accordance with the prevailing legislation. It has been further assumed that the credit subsidy mechanism remains as it is presently constituted but inflation rates and therefore nominal market interest are assumed to fall, signifying a reduction in the credit subsidy rates.

The results of the projection exercise are presented in Appendix Table A8.3, Table 8.5, and Table 8.6. In relation to 1981 the anti-export biases in the prevailing constellation of economic policies are expected to rise in 1982 and 1983, reaching by June 1983 levels exceeding those evident in 1980. The manufacturing

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[18] One cross-section study (Tyler, 1980), based upon nominal tariffs and nominal export subsidies, found that changes in the nominal sectoral anti-export biases between 1974 and 1978 partially explain sectoral differences in export performance during the period.

Table 8.7

ASSUMPTIONS UNDERLYING PROJECTIONS FOR EFFECTIVE EXPORT PROMOTION RATES AND ANTI-EXPORT BIAS

	1981	1982	1983
Export Credit Subsidy Rate:			
Market Interest Rate	120%/yr.	85%/yr.	65%/yr.
Subsidized Nominal Effective Interest Rate[1]	44%/yr.	44%/yr.	44%/yr.
Sector Credit Allocation Rates	as determined by Resolution 674	same as in 1981	same as in 1981
Export Fiscal Subsidies and Export Taxes:			
Export Credit Premium[2]	15%	9%	3%
Others Fiscal Measures Affecting Exports[3]	same as in January 1980	same as in January 1980	same as in January 1980
Effective Protection Rates for Domestic Market Sales	same as in 1980-81	same as in 1980-81	same as in 1980-81

Notes:

1. as specified by Resolution 674 and computed on an annual affective basis.
2. as stipulated by law, in the Ministry of Finance's Portaria nº 78 of April 1,1981.
3. does not include the specific export taxes of 1980, covering mostly agricultural products and imposed with the maxidevaluation of December 1979. These export taxes were eliminated on a product by product basis during 1980.

average anti-export bias in June 1983 is projected at 35.6 percent; for the second half of 1983 it is expected to be even higher. Those sectors receiving the highest present nominal export subsidies will be those most adversely affected. If this situation is allowed to come to pass, economic polcies will exercise a considerable hindrance on export activities and efforts. The government has in effect bought itself a breathing spell with the reintroduction of the fiscal export subsidies. This time could well be used to undertake some desirable, although painful, basic reforms in commercial policies.

Appendix Table A8.1

NOMINAL EXPORT INCENTIVES, 72 TRADABLE GOODS SECTORS
1980 - 81

IBGE CODE	Industry	Export Credit Subsidy Rate, s_{ECR} (%)		Export Fiscal Subsidy Rate, s_{EF} (%)				Nominal Export Subsidy Rate, s_E (%)		
		1980	1981	November 1979	1980	1981	Projected 1982	1980	1981	Projected 1982
0101	Forestry and Fishing	1.7	2.1	5.2	0.0	0.1	0.1	1.7	2.2	1.4
0201	Agriculture	1.6	2.2	-11.4	-11.4	-11.3	-11.3	- 9.8	-9.1	- 9.9
0301	Livestock and Poultry	2.8	6.6	- 1.5	- 1.5	5.8	2.9	1.3	12.4	7.1
0501	Mining	2.0	2.5	- 7.2	- 7.2	- 1.1	- 3.5	- 5.2	1.4	- 1.9
0502	Combustible Mineral Extraction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1001	Cement	5.8	6.9	12.0	0.0	0.0	0.0	5.8	6.9	4.4
1002	Glass Products	8.6	10.3	13.2	0.0	15.0	9.0	8.6	25.3	15.6
1003	Other Non-Metallic Mineral Products	8.3	11.2	12.8	0.0	15.0	9.0	8.3	26.2	16.2
1101	Pig-Iron, Iron Alloys & Primary Steel	5.1	6.1	17.5	0.0	12.1	7.3	5.1	18.2	11.2
1102	Iron & Steel Sheets	6.2	7.5	18.7	0.0	14.5	8.7	6.2	22.0	13.5
1103	Iron & Steel Castings	8.6	10.4	15.0	0.0	15.0	9.0	8.6	25.4	15.6
1104	Non-Ferrous Metals	1.0	1.2	10.6	0.0	8.2	4.9	1.0	9.4	5.7
1105	Miscellaneous Metal Products	9.0	10.1	20.1	0.0	15.0	9.0	9.0	25.1	15.5
1201	Pumps and Engines	8.6	10.4	19.0	0.0	15.0	9.0	8.6	25.4	15.6
1202	Machine Parts	9.6	10.9	18.4	0.0	15.0	9.0	9.6	25.9	16.0
1203	Industrial Equipment & Machinery	8.8	10.5	17.0	0.0	15.0	9.0	8.8	25.5	15.7
1204	Agricultural Equipment & Machinery	8.6	10.4	16.3	0.0	15.0	9.0	8.6	25.4	15.6
1205	Office & Domestic Use Equipment & Machinery	8.6	10.4	20.7	0.0	15.0	9.0	8.6	25.4	15.6
1206	Tractors	7.9	9.5	18.7	0.0	15.0	9.0	7.9	24.5	15.1
1301	Electric Energy Equipment	8.6	10.4	15.0	0.0	15.0	9.0	8.6	25.4	15.6
1302	Electric Wire & Cables	8.6	9.2	15.0	0.0	15.0	9.0	8.6	24.2	14.9
1303	Electric Equipment	8.9	10.7	16.0	0.0	15.0	9.0	8.9	25.7	15.9
1304	Electrical Machinery & Appliances	8.6	10.4	9.9	0.0	15.0	9.0	8.6	25.4	15.6
1305	Electronic Equipment	8.6	10.4	16.2	0.0	15.0	9.0	8.6	25.4	15.6
1306	Communications Equipment	8.6	10.5	19.5	0.0	15.0	9.0	8.6	25.5	15.7
1401	Automobiles	5.8	6.9	19.6	0.0	15.0	9.0	5.8	21.9	13.4
1402	Trucks and Buses	6.2	7.5	19.5	0.0	15.0	9.0	6.2	22.5	13.8
1403	Motors & Vehicle Parts	9.4	10.6	19.4	0.0	15.0	9.0	9.4	25.6	15.8
1404	Shipbuilding	8.6	10.4	17.9	0.0	15.0	9.0	8.6	25.4	15.6
1405	Railway Equipment & Other Vehicles	9.5	11.4	20.4	0.0	15.0	9.0	9.5	26.4	16.3
1501	Wood	4.4	5.8	12.3	0.0	8.6	5.2	4.4	14.4	8.9
1601	Furniture	9.4	11.2	21.0	0.0	15.0	9.0	9.4	26.2	16.2
1701	Wood Pulp	5.8	6.9	11.3	0.0	10.0	6.0	5.8	16.9	10.4
1702	Paper	6.6	7.9	20.0	0.0	15.0	9.0	6.6	22.9	14.1
1703	Paper & Paperboard Products	8.8	10.0	19.9	0.0	15.0	9.0	8.8	25.0	15.4
1801	Rubber	5.4	8.8	17.1	0.0	13.6	8.2	5.4	22.4	13.8
1901	Leather & Leather Products	9.2	11.5	4.4	0.0	11.3	6.8	9.2	22.8	14.1
2001	Chemical Elements & Compounds	5.6	6.8	7.3	0.0	14.1	8.5	5.6	20.9	12.8
2002	Alcohol	14.4	6.9	0.0	0.0	0.0	0.0	14.4	6.9	4.4
2003	Petroleum Refining	0.5	0.6	2.9	0.0	0.1	0.1	0.5	0.7	0.4
2004	Coke & Coal Derivatives	1.3	1.5	9.5	0.0	3.3	2.0	1.3	4.8	3.0
2005	Chemical Resins & Fibers	3.5	4.9	24.3	0.0	13.3	8.0	3.5	18.2	11.1
2006	Vegetable Oils & Oilseed Products	4.8	6.0	-10.3	-10.2	- 9.8	-10.0	- 5.4	- 3.8	- 6.1
2007	Pigments & Paints	5.8	6.9	15.1	0.0	15.0	9.0	5.8	21.9	13.4
2008	Miscellaneous Chemical Products	4.5	5.4	11.5	0.0	10.7	6.4	4.5	16.1	9.9
2101	Pharmaceutical Products	6.4	7.7	11.0	0.0	14.9	8.9	6.4	22.6	13.9
2201	Perfumary & Soaps	5.3	7.5	17.4	0.0	12.5	7.5	5.3	20.0	12.3
2301	Plastics	6.0	10.6	13.4	0.0	15.0	9.0	6.0	25.6	15.8
2401	Basic Textile Processing Products	2.5	3.4	18.6	0.0	2.7	1.6	2.5	6.1	3.8
2402	Synthetic Fiber Textile Products	12.7	13.8	30.1	0.0	15.0	9.0	12.7	28.8	17.9
2403	Natural Fiber Textile Products	10.9	11.5	25.4	0.0	14.2	8.5	10.9	25.7	15.9

Appendix Table A8.1

NOMINAL EXPORT INCENTIVES, 72 TRADABLE GOODS SECTORS

1980 - 81

IBGE Code	Industry	Export Credit Subsidy Rate, s_{ECR} (%)		Export Fiscal Subsidy Rates, s_{EF} (%)			Nominal Export Subsidy Rate, s_E (%)		
		1980	1981	November 1979	1980	1981	Projected 1982	1980	1981	Projected 1982
2404	Other Textile Products	11.6	12.9	28.2	0.0	14.4	8.6	11.6	27.3	16.9
2501	Apparel	10.0	11.1	24.7	0.0	14.3	8.6	10.0	25.4	15.7
2502	Footwear	14.4	13.8	9.0	0.0	15.0	9.0	14.4	28.8	17.9
2601	Coffee Bean Products	0.0	0.0	-13.0	-13.0	-13.0	-13.0	-13.0	-13.0	-13.0
2602	Processed Coffee Products	4.1	5.0	- 4.6	- 4.6	- 4.6	- 4.6	- 0.5	0.4	- 1.4
2603	Processed Rice	0.0	0.0	-13.0	-13.0	-13.0	-13.0	-13.0	-13.0	-13.0
2604	Wheat Flour	0.0	1.0	-12.9	-12.9	-12.9	-12.9	-12.9	-11.8	-12.2
2605	Other Vegetable Products	5.1	5.8	13.8	0.0	2.3	1.4	5.1	8.1	5.1
2606	Meat Products	3.9	4.0	8.8	0.0	1.0	0.6	3.9	5.0	3.2
2607	Poultry Products	7.7	9.2	- 1.6	- 1.6	- 1.6	- 1.6	6.1	7.6	4.3
2608	Prepared Fish Products	9.5	10.7	6.8	0.0	5.6	3.4	9.5	16.3	10.2
2609	Dairy Products	1.2	1.4	6.9	0.0	0.0	0.0	1.2	1.4	0.9
2610	Crude Sugar Products	4.6	5.5	0.8	0.0	0.0	0.0	4.6	5.5	3.5
2611	Refined Sugar	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0
2612	Bakery & Pastry Products	8.3	10.0	2.1	0.0	3.4	2.0	8.3	13.4	8.4
2613	Edible Oils & Fats	4.2	5.0	- 3.5	- 3.5	- 3.5	- 3.5	0.7	1.5	- 0.3
2614	Other Food Products	5.6	6.9	3.8	0.0	7.0	4.2	5.6	13.9	8.6
2701	Beverages	7.7	9.0	12.8	0.0	6.4	3.8	7.7	15.4	9.6
2801	Tobacco Products	7.5	7.3	- 5.7	- 5.7	1.8	- 1.2	1.8	9.1	3.5
2901	Publishing and Printing	7.4	8.9	8.7	0.0	15.0	9.0	7.4	23.9	14.7
3001	Miscellaneous Manufactured Products	8.4	10.2	16.8	0.0	14.8	8.9	8.4	25.0	15.4

Notes: 1. Includes the credit premium based upon the IPI and indirect taxes imposed on exports such as the ICM and IUM.

2. The specific export taxes for 1980, covering mainly agricultural products, are not included.

Sources: See text for the description of estimation procedures. The November 1979 fiscal subsidies for export were kindly furnished by Honório Kume from his on-going research. See his "Quantificação da Proteção Efetiva Após Pacote de Dezembro de 1979 e Simulações da Política Tarifária", Fundação Centro de Estudos de Comércio Exterior, unpublished paper, 1981.

Appendix Table A8.2

NOMINAL EXPORT INCENTIVES, EFFECTIVE EXPORT PROMOTION RATES,
AND NET EFFECTIVE EXPORT PROMOTION RATE ESTIMATES,
72 TRADABLE GOODS SECTORS, 1980-81

IBGE Code	Industry	Nominal Export Subsidy Rate, s_E (%)		Effective Export Promotion Rate, σ_E (%)			Net Effective Export Promotion Rate, σ_E^* (%)	
		1980	1981	1980	1981	Projected 1982	1980	1981
0101	Forestry and Fishing	1.7	2.2	2.2	2.7	1.9	-13.9	-13.5
0201	Agriculture	- 9.8	- 9.1	-12.5	-11.7	-12.6	-36.3	-25.7
0301	Livestock and Poultry	1.3	12.4	3.7	17.3	10.8	-12.7	- 1.3
0501	Mining	- 5.2	1.4	- 6.1	1.2	- 2.5	-21.0	-14.8
0502	Combustible Mineral Extraction	0.0	0.0	- 0.3	- 0.3	- 0.3	-16.1	-16.1
1001	Cement	5.8	6.9	10.1	11.6	8.5	- 7.3	- 6.1
1002	Glass Products	8.6	25.3	5.3	26.7	14.3	-11.4	6.7
1003	Other Non-Metallic Mineral Products	8.3	26.2	12.9	34.7	22.5	- 4.9	13.4
1101	Pig-Iron, Iron Alloys & Primary Steel	5.1	18.2	47.0	79.8	62.2	23.7	51.3
1102	Iron & Steel Sheets	6.2	22.0	23.3	54.7	37.8	3.8	30.3
1103	Iron & Steel Castings	8.6	25.4	27.8	58.4	40.6	7.6	33.3
1104	Non-Ferrous Metals	1.0	9.4	5.9	17.7	12.5	-10.9	- 0.9
1105	Miscellaneous Metal Products	9.0	25.1	18.4	46.8	29.8	- 0.3	23.6
1201	Pumps and Engines	8.6	25.4	5.8	32.7	17.1	-10.9	11.7
1202	Machine Parts	9.6	25.9	14.9	46.1	27.2	- 3.3	22.9
1203	Industrial Equipment & Machinery	8.8	25.5	9.8	33.4	19.6	- 7.6	12.3
1204	Agricultural Equipment & Machinery	8.6	25.4	11.6	35.4	21.6	- 6.1	13.9
1205	Office & Domestic Use Equipment&Machinery	8.6	25.4	4.4	27.5	14.1	-12.1	7.3
1206	Tractors	7.9	24.5	19.1	43.1	29.5	0.3	20.5
1301	Electric Energy Equipment	8.6	25.4	10.4	33.1	19.9	- 7.1	12.0
1302	Electric Wire & Cables	8.6	24.2	13.2	34.3	21.7	- 4.7	13.0
1303	Electric Equipment	8.9	25.7	10.9	40.5	23.2	- 6.6	18.3
1304	Electrical Machinery & Appliances	8.6	25.4	9.1	37.8	21.1	- 8.2	16.0
1305	Electronic Equipment	8.6	25.4	1.4	27.9	12.5	-14.6	7.6
1306	Communications Equipment	8.6	25.5	-19.4	13.2	- 5.7	-32.2	- 4.7
1401	Automobiles	5.8	21.9	13.1	41.2	26.4	- 4.8	18.8
1402	Trucks and Buses	6.2	22.5	17.1	44.2	29.7	- 1.4	21.3
1403	Motors & Vehicle Parts	9.4	25.6	15.4	38.7	24.7	- 2.8	16.8
1404	Shipbuilding	8.6	25.4	5.7	30.0	15.8	-11.1	9.4
1405	Railway Equipment & Other Vehicles	9.5	26.4	13.4	37.0	22.9	- 4.5	15.3
1501	Wood	4.4	14.4	34.4	53.6	43.0	13.1	29.3
1601	Furniture	9.4	26.2	20.1	52.9	33.4	1.1	28.7
1701	Wood Pulp	5.8	16.9	17.7	34.0	24.5	- 0.9	12.8
1702	Paper	6.6	22.9	20.0	44.6	31.2	1.0	21.7
1703	Paper & Paperboard Products	8.8	25.0	15.1	38.4	24.6	- 3.1	16.5
1801	Rubber	5.4	22.4	6.0	28.3	17.2	-10.7	8.2
1901	Leather & Leather Products	9.2	22.8	5.9	22.7	12.1	-10.8	3.3
2001	Chemical Elements & Compounds	5.6	20.9	7.0	33.6	19.5	- 9.9	12.4
2002	Alcohol	14.4	6.9	188.5	157.7	147.5	142.8	116.9
2003	Petroleum Refining	0.5	0.7	1.7	2.0	1.7	-14.4	-14.1
2004	Coke & Coal Derivatives	1.3	4.8	5.5	9.8	7.5	-11.2	- 7.6
2005	Chemical Resins & Fibers	3.5	18.2	- 4.6	19.5	7.9	-19.7	0.6
2006	Vegetable Oils & Oilseed Products	- 5.4	- 3.8	- 1.5	0.7	- 2.4	-17.1	-15.2
2007	Pigments & Paints	5.8	21.9	0.9	27.1	13.4	-15.0	7.0
2008	Miscellaneous Chemical Products	4.5	16.1	0.6	18.8	9.1	-15.3	0.0
2101	Pharmaceutical Products	6.4	22.6	2.2	22.5	11.5	- 4.0	3.1

Appendix Table A8.2

NOMINAL EXPORT INCENTIVES, EFFECTIVE EXPORT PROMOTION RATES, AND NET EFFECTIVE EXPORT PROMOTION RATE ESTIMATES, 72 TRADABLE GOODS SECTORS, 1980-81

IBGE Code	Industry	Nominal Export Subsidy Rate, s_E (%)		Effective Export Promotion Rate, σ_E (%)			Net Effective Export Promotion Rate, σ'_E (%)	
		1980	1981	1980	1981	Projected 1982	1980	1981
2201	Perfumary & Soaps	5.3	20.0	23.3	57.0	39.4	3.8	32.2
2301	Plastics	6.0	25.6	- 2.3	23.9	10.8	-17.8	4.3
2401	Basic Textile Processing Products	2.5	6.1	27.5	35.7	30.4	7.3	14.2
2402	Synthetic Fiber Textile Products	12.7	28.8	2.9	28.4	11.1	-13.4	8.0
2403	Natural Fiber Textile Products	10.9	25.7	17.0	47.4	27.2	- 1.5	24.1
2404	Other Textile Products	11.6	27.3	6.5	30.4	14.6	-10.3	9.8
2501	Apparel	10.0	25.4	0.4	33.2	12.5	-15.5	12.1
2502	Footwear	14.4	28.8	21.6	50.1	28.4	2.3	26.3
2601	Coffee Bean Products	-13.0	-13.0	- 9.3	- 9.3	- 9.3	-23.6	-23.6
2602	Processed Coffee Products	- 0.5	0.4	v.h.	v.h.	v.h.	v.h.	v.h.
2603	Processed Rice	-13.0	-13.0	-10.5	-10.5	-10.5	-24.6	-24.6
2604	Wheat Flour	-12.9	-11.8	-25.4	-23.7	-24.3	-37.2	-35.8
2605	Other Vegetable Products	5.1	8.1	39.4	46.8	39.4	17.3	23.6
2606	Meat Products	3.9	5.0	23.2	25.3	21.9	3.7	5.5
2607	Poultry Products	6.1	7.6	54.9	59.0	50.1	30.3	33.8
2608	Prepared Fish Products	9.5	16.3	134.0	163.1	137.1	96.9	121.4
2609	Dairy Products	1.2	1.4	31.0	31.8	30.1	10.3	11.0
2610	Crude Sugar Products	4.6	5.5	12.5	13.9	11.0	- 5.3	- 4.2
2611	Refined Sugar	0.0	0.0	28.2	28.2	28.2	7.9	7.9
2612	Bakery & Pastry Products	8.3	13.4	30.8	39.1	31.0	10.1	17.1
2613	Edible Oils & Fats	0.7	1.5	v.h.	v.h.	v.h.	v.h.	v.h.
2614	Other Food Products	5.6	13.9	16.3	28.7	20.8	- 2.1	8.4
2701	Beverages	7.7	15.4	18.1	29.6	21.0	- 0.6	9.1
2801	Tobacco Products	1.8	9.1	6.4	16.0	8.6	-10.4	- 2.4
2901	Publishing and Printing	7.4	23.9	9.4	31.6	19.2	- 7.9	10.8
3001	Miscellaneous Manufactured Products	8.4	25.0	15.0	46.2	28.2	- 3.2	23.1

Note : The two sectors possessing negative value added in international prices are indicated as having very high (v.h.) effective rates.

Source: Author's estimates. See text for the description of the estimating procedures.

Appendix Table A8.3

ESTIMATED AND PROJECTED ANTI-EXPORT BIASES,

72 TRADABLE GOODS SECTORS, 1980-83

IBGE Code	Industry	Anti-Export Bias[1] (%) Estimated 1980	Estimated 1981	Projected 1982	Projected June 1983
0101	Forestry and Fishing	-41.1	-41.6	-40-8	-40.1
0201	Agriculture	11.4	10.6	11.6	12.3
0301	Livestock and Poultry	-11.7	-25.3	-18.8	-13.0
0501	Mining	1.5	- 5.9	- 2.2	1.3
0502	Combustible Mineral Extraction	- 0.4	- 0.4	- 0.4	- 0.4
1001	Cement	-39.3	-40.7	-37.6	-35.3
1002	Glass Products	21.8	0.4	12.8	24.1
1003	Other Non-Metallic Mineral Products	-38.9	-60.7	-48.5	-37.5
1101	Pig-Iron, Iron Alloys & Primary Steel	-14.1	-46.8	-29.2	-13.0
1102	Iron & Steel Sheets	- 1.4	-32.9	-15.9	- 0.3
1103	Iron & Steel Castings	78.0	47.5	65.2	81.4
1104	Non-Ferrous Metals	- 6.5	-18.2	-13.0	- 8.0
1105	Miscellaneous Metal Products	32.1	3.7	20.7	36.2
1201	Pumps and Engines	67.3	40.5	56.1	70.2
1202	Machine Parts	244.8	213.7	232.6	249.7
1203	Industrial Equipment & Machinery	81.8	58.2	72.0	84.5
1204	Agricultural Equipment & Machinery	- 5.0	-28.2	-15.0	- 2.4
1205	Office & Domestic Use Equipment & Machinery	- 7.1	-30.2	-16.8	- 4.6
1206	Tractors	-59.1	-83.1	-69.5	-57.1
1301	Electric Energy Equipment	21.8	- 0.9	12.3	24.3
1302	Electric Wire & Cables	49.5	28.4	41.0	52.5
1303	Electric Equipment	146.1	116.5	133.9	149.6
1304	Electrical Machinery & Appliances	110.7	82.0	98.7	113.8
1305	Electronic Equipment	227.9	201.4	216.8	230.8
1306	Communications Equipment	167.1	134.4	153.3	170.5
1401	Automobiles	-36.6	-64.7	-49.9	-36.2
1402	Trucks and Buses	-75.8	-102.8	-88.4	-75.0
1403	Motors & Vehicle Parts	-26.4	-49.7	-35.7	-22.9
1404	Shipbuilding	65.6	41.3	55.4	68.2
1405	Railway Equipment & Other Vehicles	15.2	- 8.3	5.7	18.4
1501	Wood	-16.7	-35.9	-25.3	-15.7
1601	Furniture	32.6	- 0.3	19.2	36.9
1701	Wood Pulp	-51.8	-68.12	-58.7	-50.1
1702	Paper	- 9.3	-33.9	-20.6	- 8.3
1703	Paper & Paperboard Products	-49.4	-72.8	-58.9	-46.3
1801	Rubber	-27.4	-49.9	-38.5	-28.2
1901	Leather & Leather Products	7.9	- 8.8	1.8	11.2
2001	Chemical Elements & Compounds	121.0	94.4	108.5	121.6
2002	Alcohol	-39.9	- 9.1	1.1	8.8
2003	Petroleum Refining	62.7	62.4	62.7	63.0
2004	Coke & Coal Derivatives	-48.5	-52.8	-50.5	-48.5
2005	Chemical Resins & Fibers	141.7	117.6	129.2	140.0
2006	Vegetable Oils & Oilseed Products	-49.0	-51.2	-48.2	-45.8
2007	Pigments & Paints	82.6	56.4	70.1	82.9
2008	Miscellaneous Chemical Products	138.6	120.4	130.2	139.2
2101	Pharmaceutical Products	114.1	93.8	104.8	114.9
2201	Perfumary & Soaps	68.2	34.5	52.1	68.3
2301	Plastics	30.6	4.4	17.5	29.4
2401	Basic Textile Processing Products	- 6.3	-14.5	- 9.2	- 4.6
2402	Synthetic Fiber Textile Products	13.5	-12.0	5.3	20.7

Appendix Table A8.3

ESTIMATED AND PROJECTED ANTI-EXPORT BIASES,

72 TRADABLE GOODS SECTORS, 1980-83

IBGE Code	Industry	Anti-Export Bias[1] (%) Estimated 1980	Estimated 1981	Projected 1982	Projected June 1983
2403	Natural Fiber Textile Products	35.0	4.6	24.8	43.0
2404	Other Textile Products	31.7	7.8	23.6	37.7
2501	Apparel	41.4	8.5	29.2	47.8
2502	Footwear	38.8	10.2	31.9	51.2
2601	Coffee Bean Products	-29.1	-29.1	-29.1	-29.1
2602	Processed Coffee Products	414.4	4.8.5	409.7	403.1
2603	Processed Rice	-11.9	-11.9	-11.9	-11.9
2604	Wheat Flour	-170.0	-18.6	-18.0	-17.6
2605	Other Vegetable Products	61.0	53.5	61.0	67.2
2606	Meat Products	14.5	12.3	15.8	18.6
2607	Poultry Products	-32.0	-36.1	-27.3	-20.5
2608	Prepared Fish Products	-29.5	-58.6	-32.6	-10.5
2609	Dairy Products	247.7	246.8	248.6	249.9
2610	Crude Sugar Products	-75.2	-76.6	-73.7	-71.5
2611	Refined Sugar	-110.3	-110.3	-110.3	-110.3
2612	Bakery & Pastry Products	-84.6	-92.9	-84.8	-78.1
2613	Edible Oils & Fats	350.6	353.1	347.7	343.7
2614	Other Food Products	-37.7	-50.1	-42.2	-35.2
2701	Beverages	-19.2	-30.7	-22.1	-14.7
2801	Tobacco Products	- 0.6	-10.3	- 2.8	3.7
2901	Publishing and Printing	22.6	0.3	12.7	24.1
3001	Miscellaneous Manufactured Products	156.7	125.6	143.6	159.9

Note 1. Defined as the effective rate of domestic market protection minus the effective rate of export promotion, i.e., $B_j = g_j - \sigma_{Ej}$.

Sources: Author's estimates as described in text.

Appendix Table A8.4

CROSS-SECTION CORRELATIONS BETWEEN EXPORT INCENTIVE MEASURES AND ECONOMIC STRUCTURE AND PERFORMANCE VARIABLES, 72 TRADABLE GOODS SECTORS

	Nominal Export Subsides Rate, 1981		Effective Export Promotion Rate, 1981		Anti-Export Bias, 1981	
	Pearson	Spearman	Pearson	Spearman	Pearson	Spearman
Export to Output Ratio, i.e., E/X, 1979	-.27**[3]	.04	-.04	.14	-.04	-.06
Imports to Total Available Domestic Supply Ratio, i.e., M/Z, 1979	-.04	.13	-.17*[4]	-.27**	.14	.33**
Value Added Growth Rate:						
1970-74	.40**	.39*	-.03	.18*	.01	.12
1974-79	-.08	-.07	.29**	.04	.07	.04
1970-79	.27**	.23**	.14	.22**	-.03	.10
Value Added to Labor Ratio, i.e., V/L[1]	-.25**	-.30**	-.10	-.24**	.13	.15
Average Wages, i.e., W/L[1]	.17*	.23**	-.12	-.05	.10	.19*
Direct Labor Inputs per Output Ratio, i.e., L/X[1]	-.21**	.49**	-.18*	.15*	-.07	.05
Direct and Indirect Labor Inputs per Output Ratio, i.e., L*/X[1]	-.74**	-.46**	.16*	.11	.18*	-.16*
Profits per Output Ratio, i.e., π/X[1,2]	.13	.24**	-.20**	-.20**	.06	.30**
Wage Costs per Value Added Ratio, i.e., W/V[1]	.66**	.69**	.01	.31**	-.08	.01

NOTES:

1. Variables were calculated from information in the 1970 IBGE input-output accounts.
2. Profits were calculated as a gross residual, including all returns to capital.
3. ** indicates significance at the 5 percent level.
4. * indicates significance at the 10 percent level.

Source: Author's computations.

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