

Estimating the Impact of  
U.S. Import Sanctions Against South Africa  
(Using Input-Output Analysis)

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## INTRODUCTION

This study uses input-output (I-O) analysis to examine the potential effects of sanctions by the U.S. against South Africa in the form of restrictions on imports of South African goods. The effect on profits, wages, employment, and value added are estimated. Employment effects are disaggregated by race. This study differs from the other three studies that are reviewed in this paper. In the study by Richard Porter a linear programming model is used to simulate the behavior of the South African authorities when confronted with trade sanctions. James Steward uses a political econometric model to determine the South African authorities' response function to sanctions. Gisela Hubner-Dick uses a political econometric model to determine the impact of investment sanctions on South African racial policies.

In this study estimates of the impact of import sanctions are made for both 1975 and 1985. The results are similar for both years, although there are some significant differences. U.S. imports equal approximately 1.5% of South African GDP, but the multiplier effect results in a reduction in output of about twice that of the cutoff of exports. Although the multiplier effect is significant, the initial impact is small; therefore, even in the event of a complete cutoff of U.S. imports from South Africa, the total impact would be small.

## REVIEW OF THE LITERATURE

Much has been written on the sanctions issue, but very little serious economic research has been done on the topic, and even fewer empirical studies have been done. Of the three empirical studies reviewed here, two of them are particularly interesting: One by Richard Porter and the other by James Stewart. Therefore, these two will be discussed more than the others.

Porter uses a static eight sector linear programming model of the South African economy to estimate the short-run impact of reductions in imports and capital flows into South Africa. He is interested in how a cutoff of exports reduces South Africa's ability to import. The parameters of his model are derived primarily through guesswork. However, he believes the values are plausible.

Porter discusses the basic theory of sanctions and various other specific propositions. He points out that the basic theory is that the effectiveness of sanctions depends on the flexibility of the production structure of a country, the flexibility of its consumption preferences, and its dependence on imports and exports. He goes on to say that the first theory states that the effectiveness of sanctions depends on the flexibility of consumption or production. He points out how the second theory is that sanctions work through the ability to reduce the growth rate. He then discusses how the third one is Keynesian in that it suggests that exports should

be targeted because of their effects on aggregate demand and the operation of the multiplier. He then shows how the fourth theory considers the "unlimited" supply of black labor and, therefore, assumes that the impact of sanctions will be felt by both blacks and whites. Finally, he presents the last one which says that sanctions forces a country to become more self-sufficient, which is considered to be conducive to development--the opposite of the desired effect.

He finds that in the short-run a cutoff of imports is more damaging to output than a cutoff of exports or capital flows. A cutoff of exports is damaging mostly because of its impact on South Africa's ability to import. South Africa's major export items are gold and minerals, which are homogeneous and exportable without South African markings so that sanctions can be easily circumvented.

He also finds that a cutoff of capital goods is even less damaging than a cutoff of exports in the short run. However, one third of gross domestic investment consists of imported capital goods. Consequently, he concludes that a cutoff of imports of capital goods would substantially reduce growth in the South African economy. He thinks divestiture is unlikely because South Africa will not allow capital equipment to be withdrawn. Investment sanctions would affect the balance of payments in the short run and growth in the long run. South Africa could respond to a ban on capital inflows by refusing to pay interest or dividends on foreign assets, which are large.

Porter simulates a cut in the value of exports and net

capital flow in 10% jumps, from 10% through 60%. Reductions of 10 to 20 percent of exports affect GDP very little. Between 20 and 30 percent sanctions become significant. At 30% they have a noticeable impact. At 40% his model is unsolvable because the constraints become so binding that his objective function is outside the range of the feasible set.

James Stewart produces an econometric model that takes both market forces and political factors into consideration. He tries to determine the South African authorities' response function. His model takes historical events into consideration. He assumes that South African policy makers are maximizing the growth rate in gross domestic product, the growth rate in white wages, and political stability. Maximization of white wages is constrained by labor market conditions, product market conditions, the historical relationships between the wages of blacks and whites, factor substitutability, political conditions, and the condition that the white unemployment rate be zero. Consequently, the regime tries to mobilize black labor and minimize costs of political unrest.

It is assumed that the policy instruments of the regime is a combination of wage incentives, short term restrictions, and force and violence. The instruments of Black political action are strikes, protests, riots, and armed attacks. Black resistance is treated as exogenous to the model.

He concludes that the growth of Black wages are positively related to export growth, more so than to growth in imports and

the wage gains are determined by both political and market forces. He believes that the reduction in wages resulting from a cutoff of exports will increase black political activism. However, it is not clear how this is suggested by the model, since black political activism is exogenous to the model.

Hubner-Dick et. al. uses a technique that is more familiar to political scientists than to economists, although it is based on an econometric model. The subject of the study is the impact of U.S. investment sanctions on South Africa's racial policy. It is concluded that the effects will be insignificant.

Stewart's paper has a point in common with Hubner-Dick and Porter in that the objectives of the South african authorities are taken into consideration explicitly. However, there is a clear distinction between the three approaches. Whereas, Porter's model is a neoclassical model of rational decision-making, Stewart's model is clearly not neo-classical and explicitly recognizes the predominance of the administration of the economy over market forces. Stewart clearly presents the stated goals of the authorities and shows how they subvert market forces. The question does arise, however, as to whether or not his proxy variables are reasonable substitutes for the true variables. Also, whereas Hubner-Dick bases political computer simulations on an econometric model, Stewart incorporates the political variables into his econometric model.

The studies reviewed in this section seek to model the behaviour of the South African authorities, i.e., determine the

choice that will be made by the South African decision-makers. This study is a preliminary one and, hence, less ambitious and narrower. Instead, an attempt is made to estimate the impact of U.S. import sanctions without regard to the response of the South African authorities

#### METHODOLOGY

The methodology used in this study is Input-Output (I-O) analysis. One of the advantages of this methodology over that used in the other studies is that a much greater degree of disaggregation is achieved. Whereas the other studies use no more than eight sector, the methodology used in this study uses 29 sectors. Like Porter's model, the model used in this study is a general equilibrium model. I-O analysis puts general equilibrium analysis in a form that is operationally useful. It shows how much output is needed to meet a certain level of final demand and how the change in output of each sector affects the change in output of every other sector. This can be explained in the following way. Let

$X$

be the vector of the output levels and

$A$

be the matrix of input-output coefficients and

$F$

be the final demand vector. Then the input-output system can be written as

$$AX + F = X$$

and solving for X we get

$$(I-A)^{-1}F = X$$

It is necessary that the level of output be enough to fulfill final demand.

This study estimates the reduction in output resulting from a reduction in final demand, i.e., a cutoff of exports to the U.S. To derive these results it was first necessary to place every commodity imported from South Africa to the U.S. into the appropriate industry (using the FT-155 U.S. General Imports and the Standard Industrial Classification of All Economic Activities). This constituted the change-in-final-demand vector. It will be denoted by

$$dF$$

Substituting  $dF$  for  $F$  in the solution for the I-O model results in

$$(I-A)^{-1}dF = dX$$

Where  $dX$  is the change-in-total-output vector. Consequently, this will show the impact of import sanctions on all the sectors of the South African economy. The assumption is made that exports are not sold elsewhere and that output is basically demand determined. Since I-O analysis shows how a change in final demand disturbs equilibrium, the effect of all sectoral output change on all other sectoral outputs will be captured.

The effect of sanctions was further disaggregated into direct and indirect effects (Young et. al., 1986: 58). Let

$$T = (I-A)^{-1}$$

and

That

equal a diagonal matrix whose diagonal is the the diagonal of  
T,

i.e., all offdiagonals are zero. The model is reformulated into

$$dF + (That-I)dF + (T-That)dF = dX$$

The first term on the left hand side is the direct effect, i.e. the change in the output of each sector due to a change in the demand for the output of that sector. The second term is the indirect effect on own industries, i.e., the change in the output of each sector due to the change in the demand for that sector's output to other sectors. Note that the off diagonals of That are all zeros, leaving only the change in the output of the one sector, direct and indirect; Note further that the diagonal of the identity matrix consists of all ones and all off diagonals are zeroes. These ones are subtracted from each element of the diagonal, leaving only the indirect effect. The third term is the indirect effect of other industries. Note that T-That is the Leontief matrix minus it's diagonal, or minus own direct and indirect effects, which leaves only the change in the output of each sector due to the change in the demand of the output of that sector from other sectors. It is, therefore, possible to see how the initial impact of sanctions multiplies into an even larger reduction in output.

Next, labor coefficients were created, i.e., the number of laborers per unit of output. This was done by taking the

number of jobs in each sector and dividing it by the total output of that sector. This ratio is then the labor coefficient. These labor coefficients were used to form a diagonal matrix whose diagonal is comprised of these coefficients (Miller et. al., 1985: 17). The procedure can be explained in the following manner. Let

$$l_i, i = (1...n)$$

be the labor coefficients and let

$$L = (l_1 \dots l_n)$$

be the labor coefficient vector. Let

Lhat

be a diagonal matrix whose diagonal consists of the labor coefficients. Now let

$$LR = Lhat * dX$$

Consequently, LR is a vector whose elements are the total reduction in jobs in each sector that accompanies the reduction in final demand. Next, an employment-by-race-by-industry, matrix,

E

is formed, where

$$e_{ij}$$

is the proportion of sector j's employment that consists of race i. Then

$$R = E * LRhat$$

where LRhat is a diagonal matrix whose diagonal is LR.

Thus, R is a matrix of the reduction in jobs by sector by race. The same is done with profits, wages, net indirect

taxes, and value added. These are not disaggregated by race, however. It is implicitly assumed that the percentage change in all factors is the same as the percentage change in total output. Also, since data for employment are given on a 29 industry basis while the I-O table consists of 51 industries, the 51 by 1 change-in-output vector had to be condensed into a 29 by 1 vector.

## RESULTS

It is interesting to note that even though South Africa does not export goods from every industry to the U.S., I-O analysis shows that a cut-off of U.S. imports from South Africa will result in a reduction in the output of every sector. For example, there would be a reduction in production of non-exportable items, such as electricity, gas, and water, even though there is no export demand for these outputs. Because I-O analysis captures the relationship between all sectors it shows how the reduction in output of one sector will result in the reduction in output of other sectors.

Estimation of the impact of a cutoff of imports from South Africa to the U.S. was done for two years, 1975 and 1985. For 1975, the impact on total output, profits, wages, indirect taxes, and value added was estimated. For 1985, the impact on output and employment, disaggregated by race, was estimated.

The impact on output is similiar in both years. After taking into consideration the multiplier effect, the total

reduction in output as a percent of total output is about 3% for both 1975 and 1985. The multiplier effect is slightly larger for 1975 than for 1985 (2.6 and 2 respectively).

The impact of sanctions does differ between the two years, however. Although the reduction in output relative to total output is relatively large in the structural metal products industries, it is largest in the consumer goods industry in 1975 but largest in miscellaneous manufacturing in 1985. The reduction in this sector for 1985 is so large as to be questionable. However a review of the data suggests that the appropriate commodities were placed in miscellaneous manufacturing. A cut off of diamond exports constituted half of the reduction in that sector; ferro-alloys made up one fifth.

The reduction in profits and wages was estimated for 1975 only. The reduction in profits was greatest in both iron-steel and agriculture industries. The reduction in millions of dollars was about the same for the two industries (40), closely followed by consumer goods, 34. The reduction in wages was greatest in consumer goods, 51, and the second greatest reduction was in both structural metals products and iron-steel basic industries (49 and 47 respectively). Miscellaneous services came in at a relatively close 43. So, for 1975 it appears that U.S. sanctions against South African exports would hurt South Africa most through the consumer goods and metal industries.

The impact of U.S. import sanctions on employment was estimated and disaggregated by race for 1985. It is estimated

that 121,641 jobs will be lost as a result of sanctions, 64,447 by blacks, 5,109 by asians, 19,900 by coloureds, and 32,184 by whites. This does not take into consideration the possible response of the South African authorities to shift the burden of job loss onto blacks, asians, and coloureds. The greatest reduction in employment is in miscellaneous manufacturing (47,264), followed by miscellaneous services (17,729), then mining and quarrying (13,755) and then basic metals and agriculture, which were close (9,450 and 9,162 respectively), came next. Blacks are hit hardest in miscellaneous manufacturing (18,392) as were all other groups. The second largest reduction in black employment comes in mining and quarrying (12,155) and third is miscellaneous services (8,573). The reduction in Asian employment in descending order of magnitude comes in miscellaneous manufacturing (3,208), miscellaneous services (449) and clothing (423). The greatest job lost for coloureds occurs in miscellaneous manufacturing (12,404), miscellaneous services (2,169) and agriculture (1,435). Whites experience loss of jobs in miscellaneous manufacturing (13,260), miscellaneous services (6,537), and mining and quarrying (1,397).

#### CAVEATS

Although the Standard Industrial Classification for Economic Activities (SIC) was used to place the commodities in the proper industry, some guess work was still involved. The

SIC refers to commodities by name rather than by a numerical code. A numerical coding system would rule out the need for guess work. Perhaps a data source using ISIC codes can be found. Also, the most recent I-O table is for 1978 (Since I began this study I have obtained a preliminary version of the 1981 I-O table. It is an updated version of the 1978 table). Since GDP tripled in size from 1978 to 1985, the magnitude of total output from the 1978 I-O table was tripled whenever it was used in conjunction with the 1985 data. The accurate procedure would have been to update the entire I-O table since the rate of growth of each sector probably differed for each year. Also, using data from different years, may have caused distortions. The most recent employment data are for 1979. The export data are for 1985. However, these distortions may not be significant given the stable change in production technology. Furthermore, the I-O table shows final demand of the government sector, but it does not show its contribution to production. It does not show the government sector as an intermediate input. Also, the household sector as an intermediate good is not given. Consequently, even though it was possible to calculate the initial reduction in wages, there is a series of successive reductions in wages and household final demand that is not captured in the analysis. The reduction in wages causes a reduction in household final demand which causes a reduction in wages until the cycle runs its course.

## SUMMARY

This is a preliminary study of the impact of U.S. import sanctions against South Africa. Three other studies of the impact of sanctions against South Africa were reviewed. The ones by Porter and Stewart are particularly interesting. Porter's is interesting because of his success in making a rigorous theoretical framework operational in the form of a linear programming model, which is particularly appropriate for simulating the short-run effects of sanctions. Stewart's, on the other hand, shows how administrative forces subvert market forces and how an alternative to a neo-classical model can be used to simulate the behavior of the South African authorities' response to sanctions.

The methodology used in this study is input-output analysis. It more closely resembles the methodology used by Porter than that used by any of the others; furthermore, a much greater degree of disaggregation is achieved with this model than with any of the ones reviewed in this paper.

This study shows the effect of sanctions on profits, wages, employment, and value added. It further shows which industries will be hurt most, and the employment effects are disaggregated by race. The overall effect of import sanctions is small, however. It seems that the imposition of U.S. sanctions on South African exports puts very little pressure on the South African regime to change.

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TABLE 1.a  
THE IMPACT OF 1975 U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

	REDUCTION IN FINAL DEMAND (US \$)	REDUCTION IN TOTAL OUTPUT (US \$)
1 <u>AGRICULTURE, FORESTRY AND FISHING</u>	6,000,000	80,000,000
<u>MINING AND QUARRYING</u>		
2 GOLD AND URANIUM ORE MINING	0	2,000,000
3 COAL MINING	8,000,000	20,000,000
4 OTHER MINING	0	40,000,000
<u>MANUFACTURING</u>		
5 MEAT, DAIRY PRODUCTS, AND FISH PROCESSING	30,000,000	40,000,000
6 GRAIN, SUGAR, AND ANIMAL FEEDS PROCESSING	60,000,000	70,000,000
7 OTHER FOOD PROCESSING	4,000,000	7,000,000
8 BEVERAGE INDUSTRIES	124,000	1,000,000
9 TOBACCO PRODUCTS	0	6,507
10 WOLL SCOURING, COTTON GRINNING AND	96,506	1,000,000
11 SPINNING, WEAVING, KITTING, AND	3,000,000	10,000,000
12 CLOTHING	225,842	2,000,000
13 LEATHER AND LEATHER PRODUCTS	354,766	685,791
14 FOOTWEAR	1,000,000	1,000,000
15 WOOD AND WOOD PRODUCTS	10,000,000	30,000,000
16 FURNITURE	2,513	913,120
17 PULP, PAPER, AND PAPERBOARD	13,430	9,000,000
18 PAPER CONTAINERS	6,989	5,000,000
19 OTHER PULP, PAPER AND PAPERBOARD ARTICLES	2,261	3,000,000
20 PRINTING AND PUBLISHING	158,482	9,000,000
21 FERTILIZERS AND PESTICIDES	0	7,000,000
22 SYNTHETIC RESINS, PLASTIC MATERIALS AND	0	10,000,000
23 OTHER BASIC CHEMICAL PRODUCTS, PETROLEUM AND	2,000,000	40,000,000
24 MEDICINAL AND PHARMACEUTICAL PREPARATIONS	114,858	1,000,000
25 SOAP AND CLEANING COMPOUNDS; PERFUMES,	66,201	878,314
26 PAINTS, VARNISHES, LACQUERS AND OTHER	1,000,000	10,000,000
27 RUBBER PRODUCTS	127,284	7,000,000
28 OTHER PLASTIC PRODUCTS	45,231	7,000,000
29 GLASS AND GLASS PRODUCTS	1,000,000	3,000,000
30 OTHER NON-METALLIC MINERAL PRODUCTS	20,000,000	40,000,000
31 IRON AND STEEL BASIC INDUSTRIES	8,000,000	200,000,000
32 NON-FERROUS METAL BASIC INDUSTRIES	40,000,000	90,000,000
33 STRUCTURAL METAL PRODUCTS	200,000,000	200,000,000
34 OTHER FABRICATED METAL PRODUCTS	0	30,000,000
35 AGRICULTURAL MACHINERY AND EQUIPMENT	4,000,000	7,000,000
36 OTHER MACHINERY, EXCEPT ELECTRICAL MACHINERY	248,219	30,000,000
37 ELECTRICAL MACHINERY, APPARATUS AND SUPPLIES	595,935	50,000,000
38 RADIO, TELEVISION AND COMMUNICATION	200,000,000	300,000,000
39 MOTOR VEHICLES	84,192	88,313
40 MOTOR VEHICLE PARTS AND ACCESSORIES	775,547	5,000,000
41 RAILWAY EQUIPMENT	20,579	2,000,000
42 OTHER TRANSPORT EQUIPMENT	120,717	756,439
43 OTHER MANUFACTURING INDUSTRIES	10,000,000	20,000,000
<u>ELECTRICITY, GAS, AND STEAM</u>		
44 ELECTRICITY, GAS, AND STEAM	0	20,000,000
45 WATER SUPPLY	0	2,000,000

	REDUCTION IN FINAL DEMAND (US \$)	REDUCTION IN TOTAL OUTPUT (US \$)
<u>CONSTRUCTION</u>		
46 BUILDING CONSTRUCTION	0	2,000,000
47 CIVIL ENGINEERING AND OTHER CONSTRUCTION	0	677,919
<u>WHOLESALE AND RETAIL TRADE</u>		
48 WHOLESALE RETAIL TRADE AND MOTOR TRADE	0	60,000,000
49 TRANSPORT, STORAGE, AND COMMUNICATION	0	60,000,000
50 <u>CATERING AND ACCOMMODATION SERVICES; FINANCE,</u> <u>INSURANCE, REAL ESTATE AND BUSINESS SERVICES;</u> <u>COMMUNITY, SOCIAL AND PERSONAL SERVICES</u>	0	100,000,000
51 <u>CATEGORIES NOT CLASSIFIED BY INDUSTRY</u>	10,000,000	60,000,000
TOTAL	621,183,552	1,697,006,403

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1975 & the U.S. Department of Commerce FT-155 US General Imports, 1975

TABLE 1.b  
THE IMPACT OF 1975 U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

	TOTAL OUTPUT OF EACH INDUSTRY A AS % OF TOTAL TOTAL OUTPUT OF THE ECONOMY	REDUCTION IN TOTAL OUTPUT OF EACH SECTOR AS A % OF TOTAL OUTPUT OF EACH SECTOR
1 <u>AGRICULTURE, FORESTRY AND FISHING</u>	6.43	2.14
<u>MINING AND QUARRYING</u>		
2 GOLD AND URANIUM ORE MINING	5.26	0.07
3 COAL MINING	0.57	6.06
4 OTHER MINING	2.73	2.52
<u>MANUFACTURING</u>		
5 MEAT, DAIRY PRODUCTS, AND FISH PROCESSING	2.33	2.96
6 GRAIN, SUGAR, AND ANIMAL FEEDS PROCESSING	2.47	4.88
7 OTHER FOOD PROCESSING	2.36	0.51
8 BEVERAGE INDUSTRIES	1.56	0.11
9 TOBACCO PRODUCTS	0.26	0.004
10 WOOL SCOURING, COTTON GRINNING AND	0.29	0.60
11 SPINNING, WEAVING, KITTING, AND	1.94	0.88
12 CLOTHING	1.48	0.23
13 LEATHER AND LEATHER PRODUCTS	0.18	0.64
14 FOOTWEAR	0.42	0.41
15 WOOD AND WOOD PRODUCTS	0.68	7.60
16 FURNITURE	0.48	0.33
17 PULP, PAPER, AND PAPERBOARD	0.61	2.55
18 PAPER CONTAINERS	0.61	1.41
19 OTHER PULP, PAPER AND PAPERBOARD ARTICLES	0.23	2.20
20 PRINTING AND PUBLISHING	1.13	1.37
21 FERTILIZERS AND PESTICIDES	0.75	1.60
22 SYNTHETIC RESINS, PLASTIC MATERIALS AND	0.37	4.61
23 OTHER BASIC CHEMICAL PRODUCTS, PETROLEUM AND	3.24	2.13
24 MEDICINAL AND PHARMACEUTICAL PREPARATIONS	0.44	0.39
25 SOAP AND CLEANING COMPOUNDS; PERFUMES,	0.53	0.29
26 PAINTS, VARNISHES, LACQUERS AND OTHER	0.80	2.16
27 RUBBER PRODUCTS	0.56	2.15
28 OTHER PLASTIC PRODUCTS	0.63	1.90
29 GLASS AND GLASS PRODUCTS	0.26	1.97
30 OTHER NON-METALLIC MINERAL PRODUCTS	1.41	4.87
31 IRON AND STEEL BASIC INDUSTRIES	3.26	10.55
32 NON-FERROUS METAL BASIC INDUSTRIES	1.06	14.60
33 STRUCTURAL METAL PRODUCTS	1.49	23.08
34 OTHER FABRICATED METAL PRODUCTS	2.00	2.57
35 AGRICULTURAL MACHINERY AND EQUIPMENT	0.23	5.34
36 OTHER MACHINERY, EXCEPT ELECTRICAL MACHINERY	2.47	2.09
37 ELECTRICAL MACHINERY, APPARATUS AND SUPPLIES	1.45	5.92
38 RADIO, TELEVISION AND COMMUNICATION	1.12	46.09
39 MOTOR VEHICLES	2.23	0.01
40 MOTOR VEHICLE PARTS AND ACCESSORIES	0.56	1.55
41 RAILWAY EQUIPMENT	0.41	0.84
42 OTHER TRANSPORT EQUIPMENT	0.36	0.36

	TOTAL OUTPUT OF EACH INDUSTRY AS AS % OF TOTAL TOTAL OUTPUT OF THE ECONOMY	REDUCTION IN TOTAL OUTPUT AS A % OF TOTAL OUTPUT
43 OTHER MANUFACTURING INDUSTRIES		
<u>ELECTRICITY, GAS, AND WATER</u>	0.68	5.04
44 <u>ELECTRICITY, GAS, AND STEAM</u>	1.89	1.82
45 <u>WATER SUPPLY</u>	0.34	1.00
<u>CONSTRUCTION</u>		
46 <u>BUILDING CONSTRUCTION</u>	5.37	0.06
47 <u>CIVIL ENGINEERING AND OTHER CONSTRUCTION</u>	3.82	0.03
<u>WHOLESALE AND RETAIL TRADE</u>		
48 <u>WHOLESALE RETAIL TRADE AND MOTOR TRADE</u>	12.35	0.84
49 <u>TRANSPORT, STORAGE, AND COMMUNICATION</u>	7.13	1.45
50 <u>CATERING AND ACCOMMODATION SERVICES; FINANCE</u>	8.19	2.10
<u>INSURANCE, REAL ESTATE AND BUSINESS SERVICES;</u>		
<u>COMMUNITY, SOCIAL AND PERSONAL SERVICES</u>		
51 <u>CATEGORIES NOT CLASSIFIED BY INDUSTRY</u>	2.57	4.01
TOTAL*	100.00	2.92

\* The total is a weighted average, i.e., the summation of the product of the absolute value of the output of each sector times its percent of the total.

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1975 & the U.S. Department of Commerce FT-155 US General Imports, 1975

TABLE 1.c  
THE IMPACT OF 1975 U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

	REDUCTION IN WAGES (MILL US \$)	REDUCTION IN PROFITS (MILL US \$)
1 <u>AGRICULTURE, FORESTRY AND FISHING</u> <u>MINING AND QUARRYING</u>	10.23	40.24
2 GOLD AND URANIUM ORE MINING	0.55	1.09
3 COAL MINING	8.17	6.37
4 OTHER MINING	10.16	14.87
<u>MANUFACTURING</u>		
5 MEAT, DAIRY PRODUCTS, AND FISH PROCESSING	2.69	2.83
6 GRAIN, SUGAR, AND ANIMAL FEEDS PROCESSING	5.03	7.12
7 OTHER FOOD PROCESSING	0.95	0.78
8 BEVERAGE INDUSTRIES	0.11	0.18
9 TOBACCO PRODUCTS	.00	.00
10 WOLL SCOURING, COTTON GRINNING AND	0.08	0.11
11 SPINNING, WEAVING, KITTING, AND	1.76	1.37
12 CLOTHING	0.43	0.16
13 LEATHER AND LEATHER PRODUCTS	0.15	0.07
14 FOOTWEAR	0.25	0.08
15 WOOD AND WOOD PRODUCTS	6.09	3.35
16 FURNITURE	0.25	0.07
17 PULP, PAPER, AND PAPERBOARD	1.35	2.00
18 PAPER CONTAINERS	0.70	0.85
19 OTHER PULP, PAPER AND PAPERBOARD ARTICLES	0.62	0.29
20 PRINTING AND PUBLISHING	2.83	1.02
21 FERTILIZERS AND PESTICIDES	0.57	0.89
22 SYNTHETIC RESINS, PLASTIC MATERIALS AND	1.03	1.50
23 OTHER BASIC CHEMICAL PRODUCTS, PETROLEUM AND	3.01	5.07
24 MEDICINAL AND PHARMACEUTICAL PREPARATIONS	0.16	0.14
25 SOAP AND CLEANING COMPOUNDS; PERFUMES,	0.12	0.12
26 PAINTS, VARNISHES, LACQUERS AND OTHER	1.70	1.15
27 RUBBER PRODUCTS	1.41	1.32
28 OTHER PLASTIC PRODUCTS	1.33	0.95
29 GLASS AND GLASS PRODUCTS	0.68	0.44
30 OTHER NON-METALLIC MINERAL PRODUCTS	9.09	7.82
31 IRON AND STEEL BASIC INDUSTRIES	47.19	40.29
32 NON-FERROUS METAL BASIC INDUSTRIES	10.18	19.23
33 STRUCTURAL METAL PRODUCTS	48.90	16.03
34 OTHER FABRICATED METAL PRODUCTS	7.31	3.75
35 AGRICULTURAL MACHINERY AND EQUIPMENT	1.21	0.51
36 OTHER MACHINERY, EXCEPT ELECTRICAL MACHINERY	8.43	3.91
37 ELECTRICAL MACHINERY, APPARATUS AND SUPPLIES	9.44	7.44
38 RADIO, TELEVISION AND COMMUNICATION	51.01	34.00
39 MOTOR VEHICLES	0.01	0.01
40 MOTOR VEHICLE PARTS AND ACCESSORIES	1.39	0.83
41 RAILWAY EQUIPMENT	0.34	0.23
42 OTHER TRANSPORT EQUIPMENT	0.36	-0.01
43 OTHER MANUFACTURING INDUSTRIES	3.76	2.39
<u>ELECTRICITY, GAS, AND WATER</u>		
44 <u>ELECTRICITY, GAS, AND STEAM</u>	4.03	6.92

	REDUCTION IN WAGES (MILL US \$)	REDUCTION IN PROFITS (MILL US \$)
45 WATER SUPPLY CONSTRUCTION	0.30	0.80
46 BUILDING CONSTRUCTION	0.52	0.12
47 CIVIL ENGINEERING AND OTHER CONSTRUCTION	0.18	0.05
48 WHOLESALE RETAIL TRADE AND MOTOR TRADE	19.95	18.04
49 TRANSPORT, STORAGE, AND COMMUNICATION	25.58	14.32
50 CATERING AND ACCOMMODATION SERVICES; FINANCE, INSURANCE, REAL ESTATE AND BUSINESS SERVICES; COMMUNITY, SOCIAL AND PERSONAL SERVICES	42.78	3.25
51 CATEGORIES NOT CLASSIFIED BY INDUSTRY	4.58	2.79
TOTAL	359.00	277.00

Calculated from data found in the Republic of South Africa, Department of  
 Statistics, Input-Output Tables, 1975 & the U.S. Department of Commerce FT-155  
US General Imports, 1975

TABLE 1.d  
THE IMPACT OF 1975 U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

	NET INDIRECT TAXES (MILL US \$)	REDUCTION IN VALUE ADDED (MILL US \$)
1 <u>AGRICULTURE, FORESTRY AND FISHING</u> <u>MINING AND QUARRYING</u>	0.42	50.89
2 GOLD AND URANIUM ORE MINING	0.01	1.65
3 COAL MINING	0.10	14.64
4 OTHER MINING	0.33	25.35
5 MEAT, DAIRY PRODUCTS, AND FISH PROCESSING	-0.44	5.08
6 GRAIN, SUGAR, AND ANIMAL FEEDS PROCESSING	-0.86	11.28
7 OTHER FOOD PROCESSING	-0.15	1.58
8 BEVERAGE INDUSTRIES	-.00	0.29
9 TOBACCO PRODUCTS	-.00	.00
10 WOLL SCOURING, COTTON GRINNING AND	.00	0.20
11 SPINNING, WEAVING, KITTING, AND	0.16	3.28
12 CLOTHING	0.04	0.63
13 LEATHER AND LEATHER PRODUCTS	0.01	0.22
14 FOOTWEAR	0.01	0.34
15 WOOD AND WOOD PRODUCTS	0.14	9.59
16 FURNITURE	0.01	0.32
17 PULP, PAPER, AND PAPERBOARD	0.05	3.40
18 PAPER CONTAINERS	0.07	1.62
19 OTHER PULP, PAPER AND PAPERBOARD ARTICLES	0.04	0.94
20 PRINTING AND PUBLISHING	0.09	3.94
21 FERTILIZERS AND PESTICIDES	0.04	1.49
22 SYNTHETIC RESINS, PLASTIC MATERIALS AND	0.11	2.64
23 OTHER BASIC CHEMICAL PRODUCTS, PETROLEUM AND	0.84	8.92
24 MEDICINAL AND PHARMACEUTICAL PREPARATIONS	0.01	0.31
25 SOAP AND CLEANING COMPOUNDS; PERFUMES,	0.01	0.25
26 PAINTS, VARNISHES, LACQUERS AND OTHER	0.19	3.04
27 RUBBER PRODUCTS	0.08	2.81
28 OTHER PLASTIC PRODUCTS	0.07	2.35
29 GLASS AND GLASS PRODUCTS	0.03	1.15
30 OTHER NON-METALLIC MINERAL PRODUCTS	0.41	17.33
31 IRON AND STEEL BASIC INDUSTRIES	0.93	88.42
32 NON-FERROUS METAL BASIC INDUSTRIES	0.33	29.75
33 STRUCTURAL METAL PRODUCTS	0.87	65.79
34 OTHER FABRICATED METAL PRODUCTS	0.16	11.22
35 AGRICULTURAL MACHINERY AND EQUIPMENT	0.02	1.74
36 OTHER MACHINERY, EXCEPT ELECTRICAL MACHINERY	0.12	12.46
37 ELECTRICAL MACHINERY, APPARATUS AND SUPPLIES	0.30	17.18
38 RADIO, TELEVISION AND COMMUNICATION	2.07	87.07
39 MOTOR VEHICLES	.00	0.02
40 MOTOR VEHICLE PARTS AND ACCESSORIES	0.02	2.24
41 RAILWAY EQUIPMENT	0.01	0.58
42 OTHER TRANSPORT EQUIPMENT	.00	0.36
43 OTHER MANUFACTURING INDUSTRIES	0.33	6.48
<u>ELECTRICITY, GAS, AND WATER</u>		
44 <u>ELECTRICITY, GAS, AND STEAM</u>	0.06	11.02
45 WATER SUPPLY	0.03	1.13

	NET INDIRECT TAXES (MILL US \$)	REDUCTION IN VALUE ADDED (MILL US \$)
<u>CONSTRUCTION</u>		
46 <u>BUILDING CONSTRUCTION</u>	0.01	0.65
47 <u>CIVIL ENGINEERING AND OTHER CONSTRUCTION</u>	.00	0.24
<u>WHOLESALE AND RETAIL TRADE</u>		
48 <u>WHOLESALE RETAIL TRADE AND MOTOR TRADE</u>	0.44	38.43
49 <u>TRANSPORT, STORAGE, AND COMMUNICATION</u>	1.05	40.95
50 <u>CATERING AND ACCOMMODATION SERVICES; FINANCE, INSURANCE, REAL ESTATE AND BUSINESS SERVICES; COMMUNITY, SOCIAL AND PERSONAL SERVICES</u>	9.02	55.04
51 <u>CATEGORIES NOT CLASSIFIED BY INDUSTRY</u>	0.22	7.59
TOTAL	18.00	1,097.53

Calculated from data found in the Republic of South Africa, Department of  
 Statistics, Input-Output Tables, 1975 & the U.S. Department of Commerce FT-155  
US General Imports, 1975

TABLE 2

THE IMPACT OF U.S. 1985 IMPORT SANCTIONS AGAINST SOUTH AFRICA  
REDUCTION IN OUTPUT AS A PERCENT OF TOTAL OUTPUT

	Direct Effect	Indirect Effect on Own Industries	Indirect Effect on Other Industries	Sum of Indirect Effects	Total Effect
1 AGRICULTURE	0.11	0.01	0.65	0.66	0.77
2-4 MINING & QUARRYING	0.16	0.00	1.83	1.83	1.99
5-7 FOOD	0.44	0.06	0.22	0.28	0.71
8 BEVERAGES	0.79	0.23	0.08	0.31	1.10
9 TOBACCO	1.33	0.01	0.01	0.02	1.35
10-11 TEXTILES	0.51	0.03	1.23	1.27	1.78
12 CLOTHING	1.25	0.03	0.17	0.20	1.45
13 LEATHER & PRODUCTS	1.66	0.07	0.20	0.26	1.92
14 FOOTWEAR	0.06	0.00	0.07	0.07	0.13
15 WOOD & CORK	0.05	0.02	1.08	1.09	1.15
16 FURNITURE	0.32	0.01	0.15	0.15	0.47
17-19 PAPER & PRODUCTS	1.20	0.20	1.34	1.54	2.75
20 PRINTING	0.00	0.00	0.91	0.91	0.91
21-26 CHEM & PRODUCTS	1.30	0.28	1.09	1.37	2.67
27 RUBBER PRODUCTS	0.20	0.00	1.28	1.28	1.48
28-29 PLASTIC PRODUCTS	0.38	0.05	1.96	2.01	2.39
30 NON-METALIC MINERAL	0.81	0.07	0.33	0.40	1.22
31-32 BASIC METAL	5.95	1.23	0.90	2.13	8.08
33-34 METAL PRODUCTS	0.00	0.00	0.73	0.73	0.73
35-36 MACHINERY	0.02	0.00	1.55	1.55	1.57
37-38 ELECTRICAL MACHINERY	0.35	0.14	0.46	0.61	0.96
39-42 TRANSPORT EQUIPMENT	0.08	0.01	0.31	0.32	0.40
43 OTHER MANUFACTURING	28.46	1.32	184.08	185.40	213.86
44-45 ELECTRICITY	0.00	0.00	1.97	1.97	1.97
46-47 CONSTRUCTION	0.01	0.00	0.05	0.05	0.06
48 TRADE & ACCM	0.00	0.00	0.56	0.56	0.56
49 TRANSPT & COMM	0.00	0.00	0.95	0.95	0.95
50 FINANCE & INSURANCE	0.00	0.00	0.69	0.69	0.69
51 OTHER SERVICES	0.02	0.00	1.91	1.92	1.94
TOTAL*	0.75	0.11	2.40	2.50	3.25

\* The total is a weighted average, i.e., the summation of the product of the absolute value of the output of each sector times its percentage reduction.

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1978 & the U.S. Department of Commerce FT-155 U.S. General imports, 1985

TABLE 3.a

## TOTAL EMPLOYMENT BEFORE SANCTIONS

	TOTAL	WHITES	COLOUREDS	ASIANS	BLACK
1 AGRICULTURE	1184341	14710	185466	3578	980587
2-4 MINING & QUARRYING	692,209	70,291	9,489	758	611,671
5-7 FOOD	165,900	23,500	25,400	9,500	107,500
8 BEVERAGES	31,800	7,000	4,100	500	20,200
9 TOBACCO	5,000	1,500	900	0	2,600
10-11 TEXTILES	111,800	9,900	21,700	8,300	71,900
12 CLOTHING	109,900	6,300	42,500	29,200	31,900
13 LEATHER & PRODUCTS	9,600	600	3,900	800	4,300
14 FOOTWEAR	24,000	2,100	10,700	7,800	3,400
15 WOOD & CORK	50,200	4,000	7,800	600	37,800
16 FURNITURE	29,600	4,600	10,300	2,900	11,800
17-19 PAPER & PRODUCTS	33,100	6,900	5,600	3,200	17,400
20 PRINTING	41,200	19,500	9,400	2,300	10,000
21-26 CHEM & PRODUCTS	93,200	31,700	8,100	3,000	50,400
27 RUBBER PRODUCTS	18,600	3,800	1,700	1,000	12,100
28-29 PLASTIC PRODUCTS	24,500	5,600	5,300	1,700	11,900
30 NON-METALIC MINERAL	85,900	13,300	9,000	1,300	62,300
31-32 BASIC METAL	116,900	45,700	2,300	1,200	67,700
33-34 METAL PRODUCTS	132,600	31,300	13,800	2,800	84,700
35-36 MACHINERY	78,600	29,400	6,100	2,100	41,000
37-38 ELECTRICAL MACHINERY	67,800	21,800	12,400	2,600	31,000
39-42 TRANSPORT EQUIPMENT	99,900	32,200	17,200	2,600	47,900
43 OTHER MANUFACTURING	22100	6200	5800	1500	8600
44-45 ELECTRICITY	42,600	15,400	2,600	0	24,600
46-47 CONSTRUCTION	411,200	55,200	60,700	7,100	288,200
48 TRADE & ACCM	737,764	273,938	89,586	38,834	335,406
49 TRANSP & COMM	341,249	158,807	32,239	3,025	147,178
50 FINANCE & INSURANCE	112,346	86,497	7,690	3,316	14,843
51 OTHER SERVICES	916,126	337,806	112,098	23,204	443,018
TOTAL	5,790,035	1,319,549	723,868	164,715	3,581,903

Source: The Republic of South Africa, Department of Statistics, South African Statistics, 1980

TABLE 3.b

THE IMPACT OF U.S. 1985 IMPORT SANCTIONS AGAINST SOUTH AFRICA  
 DIRECT EFFECT ON  
 THE REDUCTION IN EMPLOYMENT

	WHITES	COLOURED	ASIANS	BLACK	TOTAL
1 AGRICULTURE	16.6	209.7	4.0	1,108.8	1,339.2
2-4 MINING & QUARRYING	109.0	14.7	1.2	948.3	1,073.2
5-7 FOOD	102.3	110.6	41.4	468.0	722.3
8 BEVERAGES	55.3	32.4	4.0	159.7	251.4
9 TOBACCO	19.9	12.0	0.0	34.6	66.5
10-11 TEXTILES	50.7	111.2	42.5	368.5	572.9
12 CLOTHING	78.5	529.5	363.8	397.4	1,369.2
13 LEATHER & PRODUCTS	10.0	64.8	13.3	71.5	159.6
14 FOOTWEAR	1.2	6.3	4.6	2.0	14.1
15 WOOD & CORK	2.2	4.3	0.3	20.8	27.6
16 FURNITURE	14.5	32.6	9.2	37.3	93.6
17-19 PAPER & PRODUCTS	83.0	67.4	38.5	209.4	398.3
20 PRINTING	0.0	0.0	0.0	0.0	0.0
21-26 CHEM & PRODUCTS	412.2	105.3	39.0	655.3	1,211.8
27 RUBBER PRODUCTS	7.7	3.4	2.0	24.4	37.5
28-29 PLASTIC PRODUCTS	21.2	20.0	6.4	45.0	92.7
30 NON-METALIC MINERAL	108.2	73.2	10.6	507.0	699.1
31-32 BASIC METAL	2,718.7	136.8	71.4	4,027.6	6,954.5
33-34 METAL PRODUCTS	0.0	0.0	0.0	0.0	0.0
35-36 MACHINERY	5.1	1.1	0.4	7.1	13.6
37-38 ELECTRICAL MACHINERY	76.8	43.7	9.2	109.2	238.8
39-42 TRANSPORT EQUIPMENT	25.8	13.8	2.1	38.4	80.1
43 OTHER MANUFACTURING	1,764.6	1,650.8	426.9	2,447.7	6,289.9
44-45 ELECTRICITY	0.0	0.0	0.0	0.0	0.0
46-47 CONSTRUCTION	5.4	6.0	0.7	28.4	40.5
48 TRADE & ACCM	0.0	0.0	0.0	0.0	0.0
49 TRANSPT & COMM	0.0	0.0	0.0	0.0	0.0
50 FINANCE & INSURANCE	0.0	0.0	0.0	0.0	0.0
51 OTHER SERVICES	65.3	21.7	4.5	85.7	177.2
TOTAL	5,754.5	3,271.2	1,095.9	11,802.0	21,923.6

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1978 & the U.S. Department of Commerce FT-155 U.S. General imports, 1985 & the Republic of South Africa, Department of Statistics, South African Statistics, 1980

TABLE 3.c

THE IMPACT OF U.S. 1985 IMPORT SANCTIONS AGAINST SOUTH AFRICA  
INDIRECT EFFECT OF OWN INDUSTRIES ON  
THE REDUCTION IN EMPLOYMENT

	WHITES	COLOUREDS	ASIANS	BLACK	TOTAL
1 AGRICULTURE	1.9	23.6	0.5	124.5	150.4
2-4 MINING & QUARRYING	3.2	0.4	0.0	28.0	31.7
5-7 FOOD	14.4	15.6	5.8	65.9	101.7
8 BEVERAGES	15.8	9.3	1.1	45.7	72.0
9 TOBACCO	0.2	0.1	0.0	0.3	0.7
10-11 TEXTILES	3.3	7.3	2.8	24.1	37.5
12 CLOTHING	2.1	13.8	9.5	10.4	35.8
13 LEATHER & PRODUCTS	0.4	2.6	0.5	2.9	6.4
14 FOOTWEAR	0.0	0.0	0.0	0.0	0.1
15 WOOD & CORK	0.6	1.2	0.1	6.1	8.0
16 FURNITURE	0.4	0.9	0.2	1.0	2.5
17-19 PAPER & PRODUCTS	14.0	11.4	6.5	35.3	67.1
20 PRINTING	0.0	0.0	0.0	0.0	0.0
21-26 CHEM & PRODUCTS	87.3	22.3	8.3	138.8	256.6
27 RUBBER PRODUCTS	0.1	0.0	0.0	0.3	0.4
28-29 PLASTIC PRODUCTS	3.0	2.8	0.9	6.3	13.0
30 NON-METALIC MINERAL	9.1	6.1	0.9	42.6	58.7
31-32 BASIC METAL	563.3	28.4	14.8	834.5	1,440.9
33-34 METAL PRODUCTS	0.0	0.0	0.0	0.0	0.0
35-36 MACHINERY	0.5	0.1	0.0	0.7	1.3
37-38 ELECTRICAL MACHINERY	31.5	17.9	3.8	44.9	98.1
39-42 TRANSPORT EQUIPMENT	3.9	2.1	0.3	5.9	12.2
43 OTHER MANUFACTURING	82.1	76.8	19.9	113.8	292.5
44-45 ELECTRICITY	0.0	0.0	0.0	0.0	0.0
46-47 CONSTRUCTION	1.4	1.6	0.2	7.5	10.7
48 TRADE & ACCM	0.0	0.0	0.0	0.0	0.0
49 TRANSPT & COMM	0.0	0.0	0.0	0.0	0.0
50 FINANCE & INSURANCE	0.0	0.0	0.0	0.0	0.0
51 OTHER SERVICES	3.5	1.2	0.2	4.6	9.6
TOTAL	842.1	245.5	76.4	1,544.0	2,707.9

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1978 & the U.S. Department of Commerce FT-155 U.S. General Imports, 1985 & the Republic of South Africa, Department of Statistics, South African Statistics, 1980

TABLE 3.d

THE IMPACT OF U.S. 1985 IMPORT SANCTIONS AGAINST SOUTH AFRICA  
INDIRECT EFFECT OF OTHER INDUSTRIES ON  
THE REDUCTION IN EMPLOYMENT

	WHITES	COLOUREDS	ASIANS	BLACK	TOTAL
1 AGRICULTURE	95.3	1,201.5	23.2	6,352.4	7,672.4
2-4 MINING & QUARRYING	1,284.6	173.4	13.9	11,178.5	12,650.3
5-7 FOOD	50.8	54.9	20.5	232.2	358.3
8 BEVERAGES	5.9	3.5	0.4	17.1	27.0
9 TOBACCO	0.1	0.1	0.0	0.2	0.4
10-11 TEXTILES	122.0	267.4	102.3	885.9	1,377.6
12 CLOTHING	10.7	71.9	49.4	54.0	186.0
13 LEATHER & PRODUCTS	1.2	7.6	1.6	8.4	18.7
14 FOOTWEAR	1.4	7.2	5.3	2.3	16.2
15 WOOD & CORK	43.1	84.0	6.5	407.0	540.4
16 FURNITURE	6.7	15.1	4.2	17.3	43.3
17-19 PAPER & PRODUCTS	92.4	75.0	42.8	233.0	443.2
20 PRINTING	176.9	85.3	20.9	90.7	373.7
21-26 CHEM & PRODUCTS	345.9	88.4	32.7	549.9	1,016.9
27 RUBBER PRODUCTS	48.6	21.8	12.8	154.9	238.1
28-29 PLASTIC PRODUCTS	109.8	103.9	33.3	233.3	480.2
30 NON-METALIC MINERAL	44.3	30.0	4.3	207.5	286.1
31-32 BASIC METAL	412.1	20.7	10.8	610.5	1,054.2
33-34 METAL PRODUCTS	227.4	100.3	20.3	615.3	963.3
35-36 MACHINERY	455.0	94.4	32.5	634.6	1,216.5
37-38 ELECTRICAL MACHINERY	101.3	57.6	12.1	144.1	315.1
39-42 TRANSPORT EQUIPMENT	100.1	53.5	8.1	148.9	310.5
43 OTHER MANUFACTURING	11,413.0	10,676.6	2,761.2	15,830.9	40,681.7
44-45 ELECTRICITY	303.4	51.2	0.0	484.6	839.2
46-47 CONSTRUCTION	27.3	30.0	3.5	142.5	203.3
48 TRADE & ACCM	1,539.3	503.4	218.2	1,884.7	4,145.5
49 TRANSPT & COMM	1,506.2	305.8	28.7	1,395.9	3,236.5
50 FINANCE & INSURANCE	594.9	52.9	22.8	102.1	772.7
51 OTHER SERVICES	6,468.3	2,146.4	444.3	8,482.9	17,541.9
TOTAL	25,587.8	16,383.6	3,936.6	51,101.3	97,009.3

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1978 & the U.S. Department of Commerce FT-155 U.S. General imports, 1985 & the Republic of South Africa, Department of Statistics, South African Statistics, 1980

TABLE 3.e

THE IMPACT OF U.S. 1985 IMPORT SANCTIONS AGAINST SOUTH AFRICA  
TOTAL EFFECT ON  
THE REDUCTION IN EMPLOYMENT

	WHITES	COLOUREDS	ASIANS	BLACK	TOTAL
1 AGRICULTURE	113.8	1,434.8	27.7	7,585.8	9,162.0
2-4 MINING & QUARRYING	1,396.8	188.6	15.1	12,154.8	13,755.2
5-7 FOOD	167.5	181.0	67.7	766.1	1,182.2
8 BEVERAGES	77.1	45.2	5.5	222.5	350.4
9 TOBACCO	20.3	12.2	0.0	35.1	67.5
10-11 TEXTILES	176.0	385.9	147.6	1,278.5	1,988.0
12 CLOTHING	91.2	615.2	422.7	461.8	1,590.9
13 LEATHER & PRODUCTS	11.5	75.0	15.4	82.7	184.7
14 FOOTWEAR	2.7	13.6	9.9	4.3	30.5
15 WOOD & CORK	45.9	89.5	6.9	433.8	576.0
16 FURNITURE	21.7	48.5	13.7	55.6	139.4
17-19 PAPER & PRODUCTS	189.4	153.7	87.8	477.6	908.6
20 PRINTING	176.9	85.3	20.9	90.7	373.7
21-26 CHEM & PRODUCTS	845.3	216.0	80.0	1,344.0	2,485.4
27 RUBBER PRODUCTS	56.4	25.2	14.8	179.6	276.0
28-29 PLASTIC PRODUCTS	133.9	126.7	40.7	284.6	585.9
30 NON-METALIC MINERAL	161.6	109.4	15.8	757.1	1,043.9
31-32 BASIC METAL	3,694.2	185.9	97.0	5,472.6	9,449.7
33-34 METAL PRODUCTS	227.4	100.3	20.3	615.3	963.3
35-36 MACHINERY	460.6	95.6	32.9	642.3	1,231.4
37-38 ELECTRICAL MACHINERY	209.6	119.2	25.0	298.1	652.0
39-42 TRANSPORT EQUIPMENT	129.8	69.4	10.5	193.2	402.8
43 OTHER MANUFACTURING	13,259.6	12,404.2	3,208.0	18,392.4	47,264.2
44-45 ELECTRICITY	303.4	51.2	0.0	484.6	839.2
46-47 CONSTRUCTION	34.2	37.6	4.4	178.3	254.5
48 TRADE & ACCM	1,539.3	503.4	218.2	1,884.7	4,145.5
49 TRANSP & COMM	1,506.2	305.8	28.7	1,395.9	3,236.5
50 FINANCE & INSURANCE	594.9	52.9	22.8	102.1	772.7
51 OTHER SERVICES	6,537.2	2,169.3	449.0	8,573.2	17,728.8
TOTAL	32,184.3	19,900.3	5,108.9	64,447.2	121,640.8

Calculated from data found in the Republic of South Africa, Department of Statistics, Input-Output Tables, 1978 & the U.S. Department of Commerce FT-155 U.S. General imports, 1985 & the Republic of South Africa, Department of Statistics, South African Statistics, 1980



# IMPACT OF U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

FIGURE 2.1  
EXPORTS & GNP

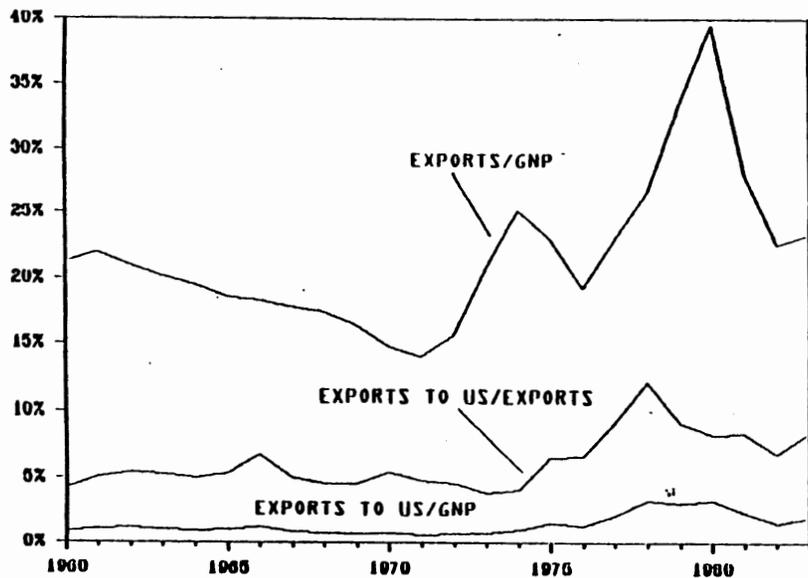


FIGURE 2.2  
CAPITAL TO LABOR RATIOS

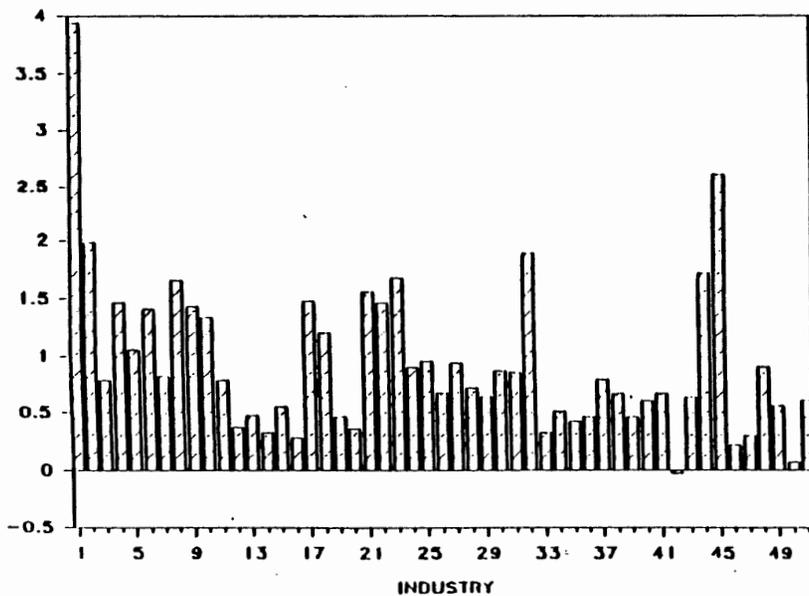


FIGURE 2.3  
REDUCTION IN OUTPUT AS % OF TOTAL

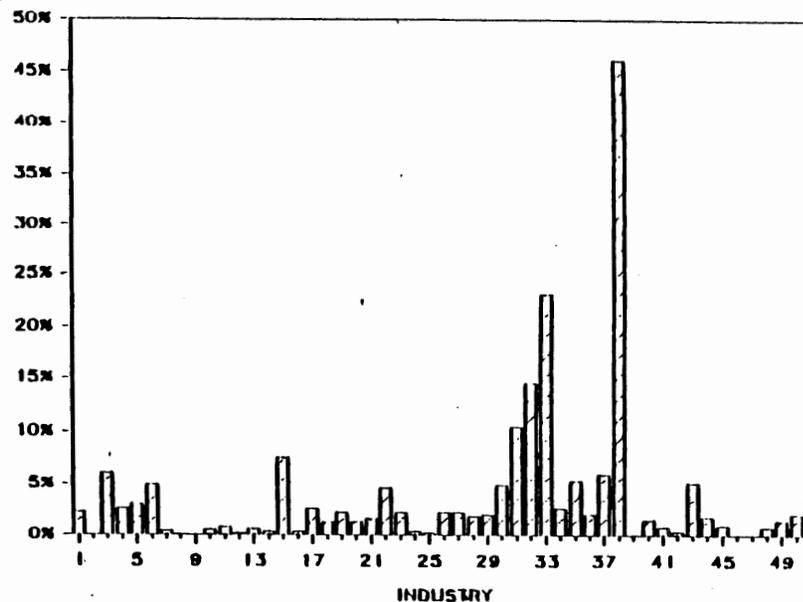
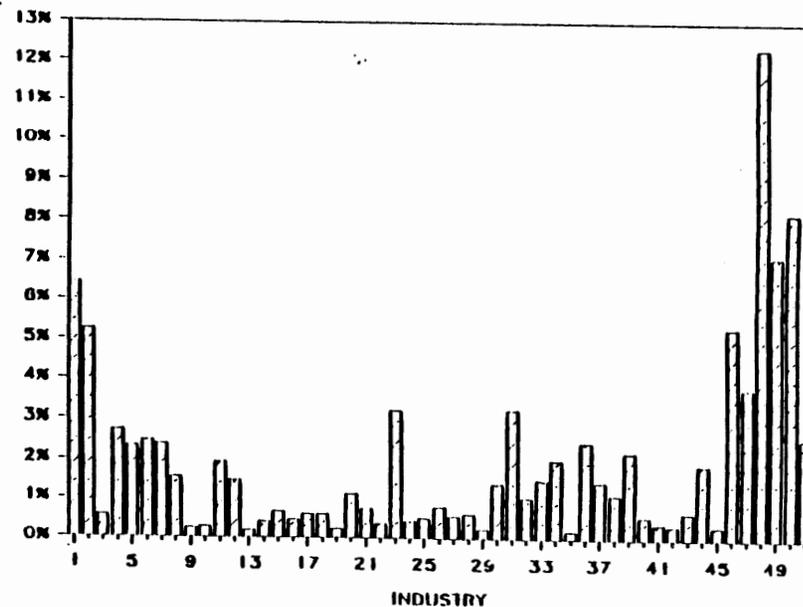


FIGURE 2.4  
OUTPUT OF EACH INDUSTRY AS % OF TOTAL



CALCULATED FROM DATA FOUND IN THE REPUBLIC OF SOUTH AFRICA, DEPARTMENT OF STATISTICS, INPUT-OUTPUT TABLES, 1975 & THE U.S. DEPARTMENT OF COMMERCE, FT-155 US GENERAL IMPORTS, 1975. FIGURE 2.1 IS CALCULATED FROM THE INTERNATIONAL MONETARY FUND, STATISTICAL YEARBOOK

IMPACT OF U.S. IMPORT SANCTIONS AGAINST SOUTH AFRICA

FIGURE 3.1  
REDUCTION IN TOTAL OUTPUT  
MILLIONS OF US \$

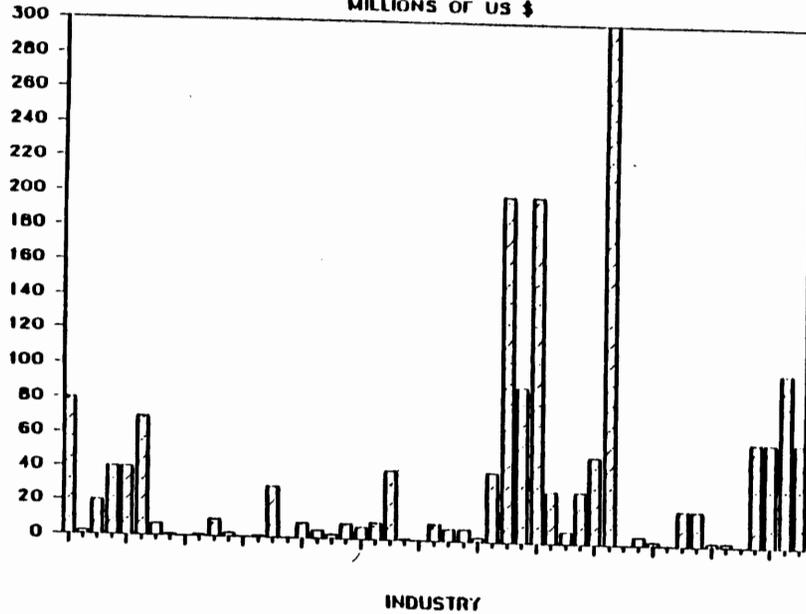


FIGURE 3.3  
REDUCTION IN WAGES  
MILLIONS OF US \$

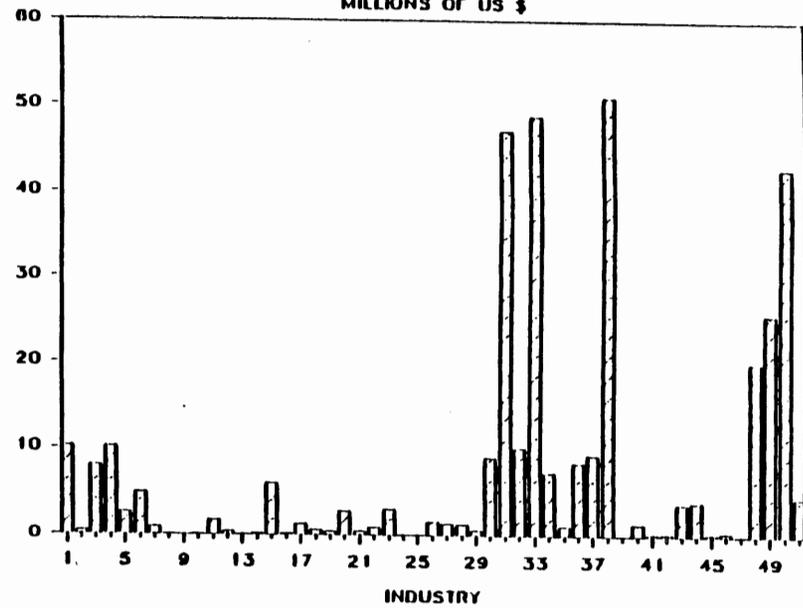


FIGURE 3.2  
REDUCTION IN FINAL DEMAND  
MILLIONS OF US \$

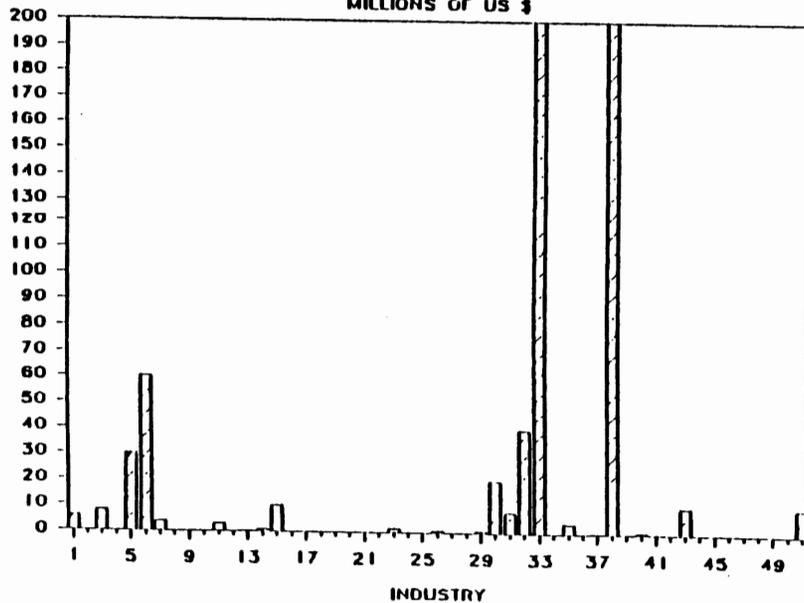
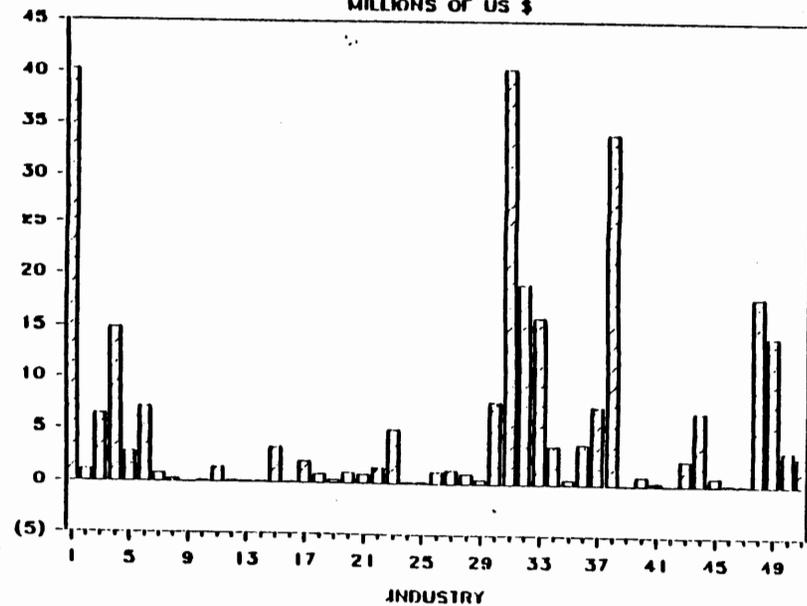


FIGURE 3.4  
REDUCTION IN PROFITS  
MILLIONS OF US \$



CALCULATED FROM DATA FOUND IN THE REPUBLIC OF SOUTH AFRICA, DEPARTMENT OF STATISTICS, INPUT-OUTPUT TABLES, 1975 & THE U.S. DEPARTMENT OF COMMERCE, FT-155 U.S. GENERAL IMPORTS, 1975