AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY
BATCH 79 ARDA

1. SUBJECT CLASSIFICATION	A. PRIMARY Development and economics	DK00-0000-G176
	B. SECONDARY Trade and commerce--Rhodesia	

2. TITLE AND SUBTITLE
Zimbabwe, anticipation of economic and humanitarian needs: The effectiveness of economic sanctions against Rhodesia

3. AUTHOR(S)
Porter,R.C.

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1977	19p.	ARC RH330.96891.A217 v.2

7. REFERENCE ORGANIZATION NAME AND ADDRESS
AASC

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)
(In Transition Problems in a Developing Nation; consultant [occasional] paper no.9)

9. ABSTRACT
The paper discusses the theory of economic sanctions, evaluates the actual effectiveness of the Rhodesian sanctions, and looks at four alternative theories on how sanctions work. From 1965 on, the economic literature on sanctions is almost entirely consistent in its conclusions: some short run damage to the Rhodesian economy, a rapid growth of manufacturing to replace imports, the expansion of the tertiary sectors to maintain white employment, and some slowdown in overall growth to rates below those that could have been expected in he absence of sanctions. Actually, the GNP per capita fell only slightly in the late 1960's and rose rapidly in the early 1970's. Rhodesia has taken a giant step in import-substitution-industrialization since 1965. Zimbabwe would inherit a large and sound manufacturing sector. The shift of agriculture out of tobacco can be reversed. Sanctions have provided an experiment in alternative cropping patterns which have broadened the post sanction options. Zimbabwe, and the end of sanctions, will reverse the process whereby the principal burden of sanctions fell on African employment, but they will not reverse the gains made by Africans in this period. The removal of sanctions will not guarantee Zimgabwe an enhanced growth rate, but it will open and re-open many policy options which can only make a larger growth rate more easily attained.

10. CONTROL NUMBER PN-AAF-246	11. PRICE OF DOCUMENT
12. DESCRIPTORS Economic factors, International trade, Models, Rhodesia, Sanctions, Southern Africa, Theories	13. PROJECT NUMBER
	14. CONTRACT NUMBER AID/afr-C-1254 GTS
	15. TYPE OF DOCUMENT

AID 590-1 (4-74)

AID/afr-C-1254 DIS
AASC
PN-AAF-246

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OCCASIONAL PAPER NO. 9

FINAL REPORT

THE EFFECTIVENESS OF ECONOMIC SANCTIONS AGAINST RHODESIA

by

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January 20, 1977
Subcontract AID/afr-C-1254 for African-American Scholars Council, Inc.
and the Agency for International Development

THE EFFECTIVENESS OF ECONOMIC SANCTIONS AGAINST RHODESIA

I. Introduction

The term, "economic sanctions", in general means the application of restrictions by a group of countries on the external economic activities of one particular country for the purpose of reducing the economic welfare of the target country. In the past, particular groups of countries have applied a wide variety of such sanctions for a wide variety of reasons. But the imposition of economic sanctions "at the universal level"[1] has only been attempted twice, by the League of Nations against Italy in the 1930's and by the United Nations against Rhodesia during the last decade. In the Rhodesian case, the sanctions were added in stages following Rhodesia's unilateral declaration of independence (UDI) in November 1965; in their final forms they were intended to stop completely the movement of products and factors of production into and out of Rhodesia.[2]

II. Theory

The theory behind universal economic sanctions is simple, to impose hardship on the target country and thereby reduce its ability or willingness to persist in antagonizing the world community.[3] The manner and extent of the

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[1] Doxey, 1971, p. 46.

[2] U.N. Security Council Resolution No. 253, 29 May 1968.

[3] It should be noted that the "thereby" is critical, although there is neither logical reason nor historical evidence that political or psychological collapse inevitably follows economic hardship.

economic damage can be clearly seen by examining a country that produces and consumes two commodities and initially trades freely at exogenously determined prices.[1] Figure 1 displays the usual (concave) production possibility curve, the (convex) community indifference curve, and the optimizing trade possibility line, tangent to both curves. For maximum welfare, the country produces x_0 and y_0, exports x and imports y, and consumes x_1 and y_1. In Figure 2, a dashed community indifference curve is added which shows the highest welfare the country can attain if it is denied access to international trade; it produces and consumes x_2 and y_2; its welfare, W_1 instead of W_0, is clearly reduced. How much reduced cannot be discerned from W_0 and W_1 per se, but a measure can be developed in terms of the real income level of the country.[2] Assume the target country's community indifference curves are homothetic. Then it is indifferent between the autarkic consumption bundle, x_2 and y_2, and the bundle, x_3 and y_3, that it would choose to consume at existing world prices but at a reduced real income level. Thus, one measure of the effectiveness of sanctions that end trade is the relative loss of real income imposed in the country, that is, $(y_1 - y_3)/y_1$ or $(x_1 - x_3)/x_1$.

Examination of Figure 2 indicates that this relative real income loss will be greater 1) the less flat (i.e., more concave) is the production possibility curve, 2) the less flat (i.e., more convex) is the community indifference curve, and 3) the greater the initial trade. In other words, trade-ending sanctions will be more effective 1) the more inflexible the target country's production structure, 2) the more inflexible are its consumption preferences, and 3) the greater its initial dependence on imports and exports.[3] In the light of

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[1]For simplicity, we ignore the possibility that factors of production also move.

[2]Where real means that the goods, x and y, are added together at world-priced values.

[3]This last condition is much expressed in the sanctions literature - see for example, Maizels, 1964, pp. 120-121. The first two conditions are usually left implicit.

Figure 1

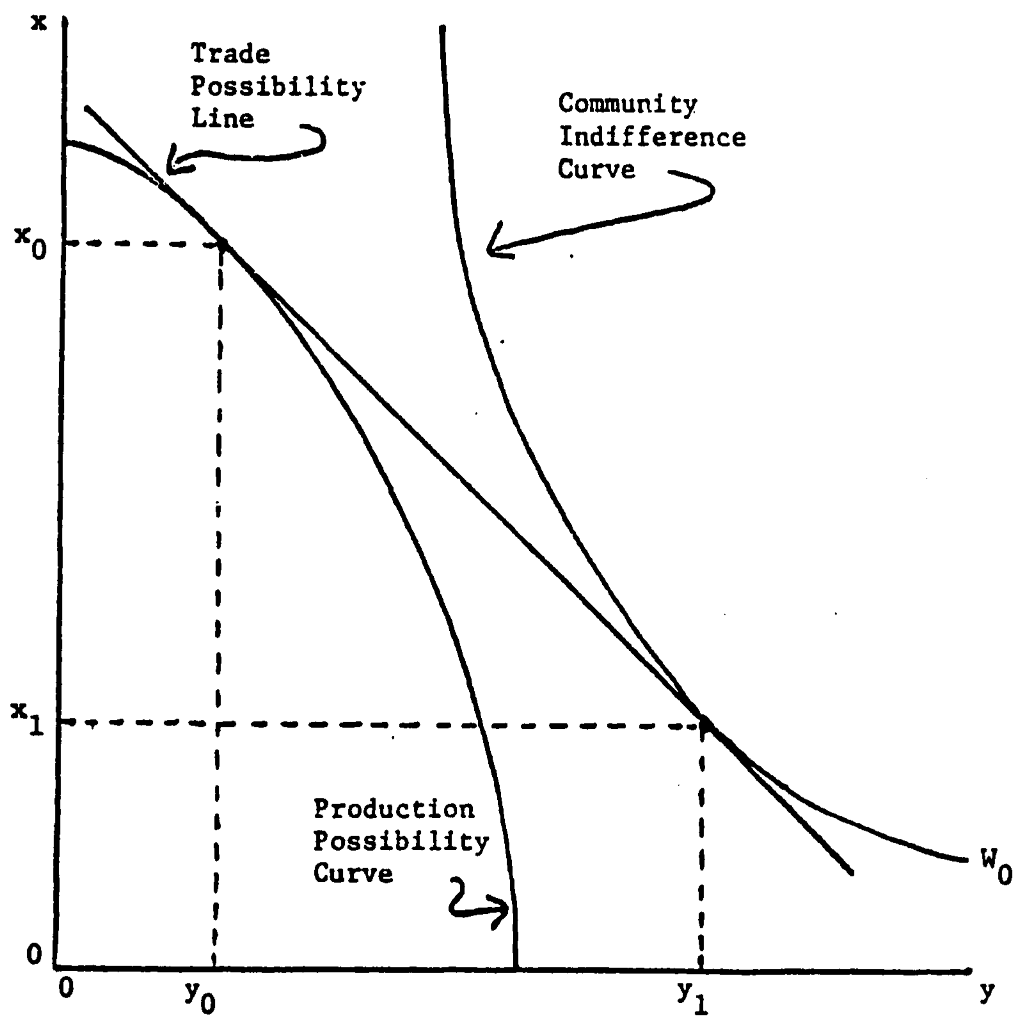
x
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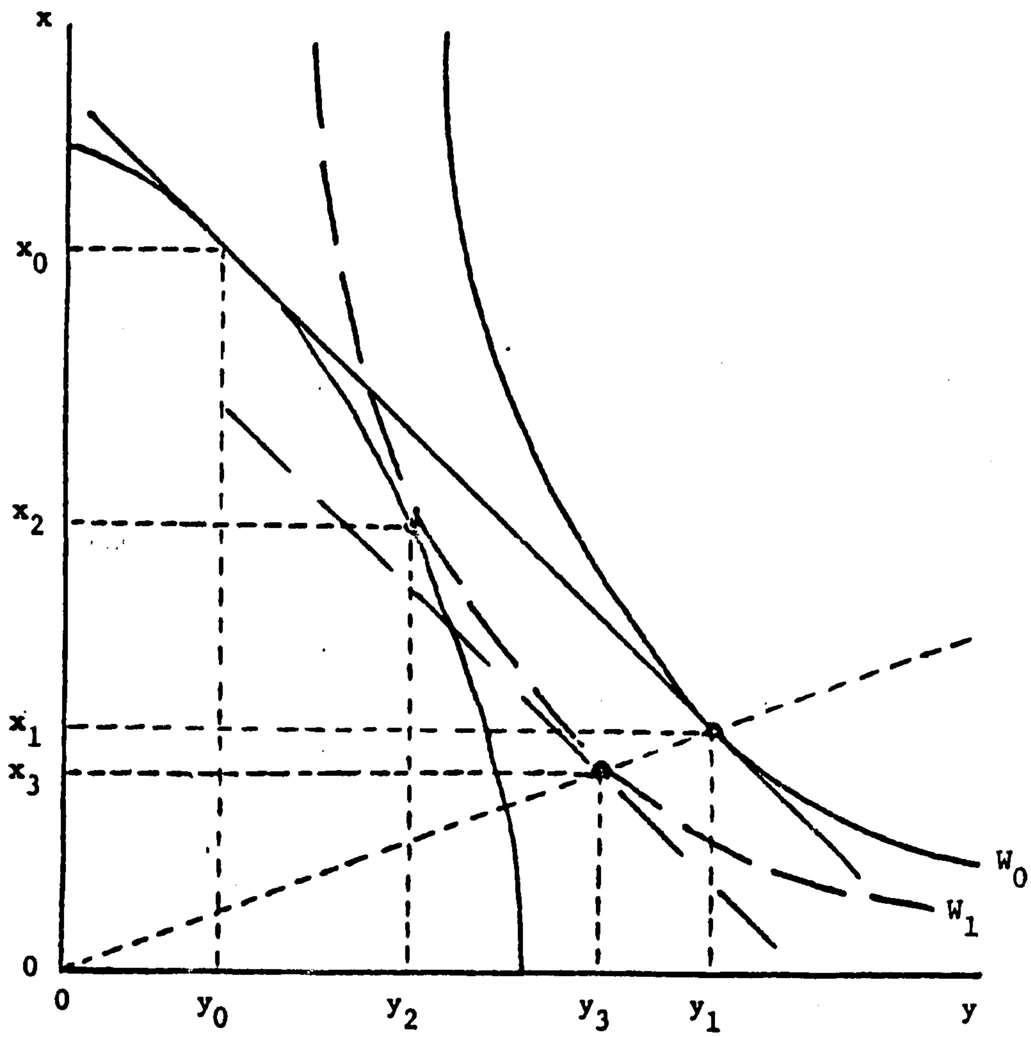
Figure 2



these three conditions, it is easy to see why great things were expected by the world community of its sanctions against Rhodesia. Exports (and imports) comprised nearly half of Rhodesia's GDP in 1965.[1] Its production and exports were heavily dependent on tobacco and a few minerals, and it still apparently lacked the economic maturity that lends flexibility to a productive structure. Finally, its governing white population had long shown a strong inclination for a consumption pattern that required extensive imports of consumer goods.

Before turning to the evaluation of the actual effectiveness of the Rhodesian sanctions, we should look, at least briefly, at four alternative theories about how sanctions work. The standard model, expressed above, is static and neo-classical; each of the following rejects some element of that model:

1. The inflexibility in the consumption, or more probably, the production patterns of any economy are extremely serious in <u>at least some</u> sectors of any economy, and sanctions achieve their greatest effectiveness there. Although this, as theory, is little more than an occasionally kinked, disaggregated version of the basic model presented earlier, it should be noted that its policy implications can be quite different: <u>partial</u> sanctions are seen as potentially very effective. In the Rhodesian case, advocates of this model placed great faith in the effects of i) a clogging up of inexportable tobacco[2], and ii) shortages of totally imported petroleum products.

2. Even if the static real income losses are not large, they represent losses at a critical margin and increasingly will show up as inefficiency,

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[1]Rhodesia's ratio of imports to GDP was exceeded by only a dozen other countries (see Kindleberger, 1965, p. 308).

[2]More than one-fourth of total Rhodesian exports in 1965 and largely to the United Kingdom (see Barnekov, 1969, pp. 59ff.).

reduced saving, and lower rates of growth. In essence, this is no more than a dynamic version of the neo-classical model, but again quite different policy implications may be drawn: by focusing on growth, and hence the long run, it suggests the need for patience and persistence in the use of sanctions.

3. A more Keynesian view of sanctions sees the lost exports as lost aggregate demand. Then, after the operation of the multiplier, the effectiveness of sanctions emerges through the ensuing recession and unemployment. While this model appears similar to the neo-classical model -- in that sanctions generate reduced real income in both -- it is really very different not only in its theoretical foundations but also in its policy implications.[1] From the neoclassical model, the critical sanctions are against imports;[2] from the Keynesian model, the critical sanctions are against exports.[3]

4. According to the widely held (albeit widely criticized) views of Myrdal, Singer, and Prebisch, economic development requires that a poor country free itself of dependence on the export of primary products. The appropriate policies include government encouragement of agricultural self-sufficiency and protection of industrial production. If one focuses only on this model, and ignores all the preceding arguments, then it is easy to discover that the effect of economic sanctions is perverse, in that the sanctions force a country to

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[1] As theory, it emphasizes demand where the neo-classical model emphasizes supply. It should be noticed that this aggregate-demand model must also assume that the target country is unable either to recognize the source of its reduced real income or to undertake the expansionary macroeconomic policies necessary to offset the export losses.

[2] In terms of Figure 2, if the country continues to export but is unable to import, its consumption bundle will be somewhere within the production possibility curve, and its welfare level therefore even lower than W_1.

[3] Although sanctions against imports will lower the propensity to import and hence raise the multiplier.

adopt the very policies needed for it to "develop". While very few writers take this extreme position[1]--and indeed, most economists find even a more moderate espousal of this theory untenable in the face of accumulating evidence--it is worth displaying because it is the source of many "radical" economists' ambivalence toward sanctions.

III. Effects on Rhodesia of Sanctions

We turn now to assessments of the impact of sanctions on the Rhodesian economy. The literature discussed below is not complete, being limited to those which were available and which I found interesting.[2]

T. Curtin and D. Murray (1967)

The date is important. While it was then already clear that the sanctions were not going to "bring the rebellion to an end in a matter of weeks rather than months,"[3] there were still few hard hard data with which to assess the actual impact of sanctions. Indeed, the subtitle of their monograph indicates that it is no more than an "examination" of the "possible" effects of sanctions.

Their analysis is conducted through the use of an 8-sector input-output table, but their uniform treatment of the sectors means that an aggregate analysis would have done just about as well. In essence, their model consists of two equations:

1) $Y = F - M$, and

2) $M = mY$,

---

[1] With respect to Rhodesian sanctions, only Hoogvelt and Child, 1973.

[2] A complete listing up to 1973 is found in Clarke, 1973, pp. 325-327. This list is not so obsolete as one might guess, for, as Rhodesia has become more the focus of international political and military concern in recent years, economists' interest in sanctions seems to have waned.

[3] New York Times, 1966, p. 8.

where: Y = Gross Domestic Product (GDP),

F = Final Demand,

M = Imports, and

m = Marginal (and Average) Propensity to Import.

They then consider two models, one without and one with import substitution (defined as a change in the propensity to import).

1. <u>No change in m.</u> Substituting (2) into (1), taking first differences, and solving for ΔY (where Δ refers to the change):

$$\Delta Y = \frac{\Delta F}{1 + m} . \tag{3}$$

Since their m is about .45[1], and they expect F to fall by R£68.0 as a result of sanctions.[2] This means a decline in GDP (i.e. ΔY) of almost R£47 million, or of almost 14 percent of the 1965 GDP.

2. <u>Reduction in m by 50 percent.</u> Solving (1) and (2) as before, but now including a Δm term :

$$\Delta Y \doteq \frac{\Delta F}{1 + m} - \frac{Y\Delta m}{1 + m} \tag{4}$$

Using the same numerical values as before, plus the facts that $\Delta m = -.225$ and Y (i.e. 1965 GDP) = R£332.6 million, this means an <u>increase</u> in GDP of about R£5 million, or of about 1 percent of the 1965 GDP.

Their conclusion from these two exercises is that sanctions will probably be effective if there is no import substitution, but "as import substitution

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[1] I.e., 149.2/332.6, ignoring indirect taxes (figures in millions of Rhodesian pounds).

[2] Mostly a decline in exports, of R£107.1 million, but offset somewhat by stock changes, of R£38.9 million (pp. 36-40).

increases so the probability must decline" (p. 47). Despite the simplicity of the model and the arbitrariness of the import-substitution assumption, it does have both supply and demand elements and as a forecast has not been far off--Rhodesian real GDP in fact never declined, and its real GNP fell only in 1966 (and then by less than 3 percent).[1]

Curtin-McKinnell Debate (1968-69)

Three short articles in African Affairs in 1968 and 1969 are most easily treated together.[2] Curtin argues that most of Rhodesia's imports at the time of the UDI were "relatively unnecessary" (p. 102). His basic numerical example assumes that the only necessary imports are those of capital equipment and that the current fraction (i.e., one-third) of all fixed capital formation must always be imported. He then shows that a much reduced and stagnant post-sanction level of exports (R£70 million instead of the actual 1965 level of R£180.5 million) would still be adequate to permit a "satisfactory" (p. 104) rate of growth for something like a half century.

McKinnell insists that the relevant calculation is not the actual GDP growth rate (or level) but rather the gap between what is and what would have been in the absence of sanctions; and this gap is large and growing. McKinnell further maintains that the determination of "reasonable increases" in white incomes must compare Rhodesian with South African whites; since South African income grows at 7 percent, according to McKinnell, the lower post-sanction growth rates calculated by Curtin do mean relative "economic hardship" (p. 232) to Rhodesian whites.

[1]The official statistics have, of course, been subjected to doubt and criticism, but no one has suggested that the decline was much greater than this.

[2]Curtin, 1968; McKinnell, 1968; and Curtin, 1969. Only those aspects are discussed here that neither repeat Curtin's earlier work (i.e., Curtin and Murray, 1967) nor anticipate McKinnell's later, longer study (i.e., McKinnell, 1969).

C. C. Barnekov (1969)

The presentation and possibly thinking is so garbled that a detailed review of the methods is unwise. Suffice to say that a series of informed, though ad hoc and arbitrary, estimates of the effects of sanctions in GDP are added up.[1] The largest effect is viewed, as in the Curtin and Murray study, as the loss of exports--offset essentially by, in order of importance, 1) evasion of export sanctions, 2) import substitution, 3) increased trade with South Africa, and 4) new agricultural exports. The net effect of sanctions on GDP is estimated to be minus R£17 million in the short run and plus R£12 million as "a possible long-term outcome of sanctions" (p. 73). While the methodology lacks the apparent elegance of the Curtin and Murray study, the important point is that it is different and yet yields similar results.

R. B. Sutcliffe (1969)

By 1969, analyses of the effect of sanctions begin to be based on post-1965 data. This, one of the first, makes rather casual, reportorial use of the data, but the conclusions were in agreement with others and were interestingly interpreted. Essentially, "sanctions have undoubtedly damaged the Rhodesian economy as a whole very severely" (p. 117)--although his own data show a drop in real GNP per head of only 7 percent in 1966 and a renewed growth in 1967 of 3 percent.[2] The severe damage is sectoral rather than aggregate, as exports declined 37 percent over 1965-67 and tobacco production declined 46 percent over 1965-68. But he maintains that all this has had little political effect because of Rhodesia's "ability to maintain white living standards at the cost of further African impoverishment" (p. 117). He

[1] With possibly double-counting in places.

[2] Table 1, column 1, p. 118.

cites Rhodesian employment statistics that show, for 1965-67, a rise in white employment of 2 percent and a fall in African employment of 3 percent. The regime has also "been able to impose economic costs upon foreign capitalists (by restrictions on profit repatriation)" (p.121). Only the tobacco farmers among whites were hit hard, and even here there has been a successful shift into maize, wheat, and cotton. In short: sanctions have had little effect on the living standards of urban white Rhodesians.

R. McKinnell (1969)

Although produced some years ago, this is the most careful study of the subject yet. The conclusion (tentative, since it "is too early as yet to judge"): "...the overall effect on the economy has apparently been slight" (p. 563). But he goes behind the "apparently" in several directions:

1. The GDP decline of only 3 percent over 1965-66 is misleading. Much tobacco was produced only to be stockpiled (5%); prices rose (3%); and population rose (3%). Thus the real, useful, per capita GDP fell more like 14 percent.

2. The aggregates are misleading. His sectoral picture is of the "basic productive sectors of the economy buffeted by sanctions, but of incomes being maintained by compensatory changes in the tertiary sectors of the economy" (p. 569).[1]

3. There has been a "decline in gross capital formation" which has "grave implications" (p. 571) for Rhodesia's growth.[2] Indeed, it is here

[1]He goes too far when he includes manufacturing in the "buffeted" sector; by his own data, it grew by 19 percent over 1965-68 (p. 570).

[2]Actually, his own data do not appear so "grave": the ratio of gross fixed capital formation to GDP averaged .136 over 1966-68, compared to .135 in 1965 (p. 565).

that McKinnell sees the greatest impact of sanctions. Past Rhodesian growth has been founded on "expanding exports and the inflow of capital and skills" (p. 594), all of which are hurt by sanctions.

G. Arnold and A. Baldwin (1973)

This brief report supports McKinnell's results, that Rhodesia is "standing still economically" (p. 2). They offer some new (as well as several already mentioned) reasons for this:

1. "The tremendous growth of secondary industry...is slowing down mainly because insufficient foreign exchange is available..."[1] This conforms with the conventional wisdom of the development literature that import substitution quickly passes through an easy stage into progressively more capital-intensive, import-intensive, and technology-intensive stages.

2. The growing inefficiency of the transport sector where "obsolescence" and "lack of supplies" have resulted in "large hold-ups and bottlenecks") (p.4). This too conforms with expectation. Initially, sanctions created excess capacity in this sector by stopping the Zambian flows through Rhodesia and cutting down external trade in general. But sooner or later, with depreciation in transport and growth in demand for its services, the excess capacity must disappear.

A.M. Hawkins (1976)

This most recent of evaluations also makes the most use of the empirical evidence. He notes that there are "two distinct periods" (p.19) in recent Rhodesian growth: 1963-1968, over which real GNP rose at only 2.8 percent per year and real income per capita fell; and 1968-1974, over which real GNP rose at 8.3 percent per year. Such an "impressive" growth rate in the face of sanctions is attributed "largely" to the refusal of South Africa and

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[1] P. 4. The quote is of J. Graylin, head of the Association of Rhodesian Industries, in April 1972.

Portugal to apply sanctions and the "disparity" between stated intentions and actual performance on sanctions by other countries. But there are many other reasons:

> the degree of excess capacity both in manufacturing and in the economic infrastructure as a whole at the time of UDI, the success of import substitution (especially in manufacturing but also in agriculture), the competitiveness of Rhodesian exports, including exports of manufactures, and the strength of international demand for Rhodesian primary products. (p.24)

Nevertheless, he argues that in the absence of sanctions "the available evidence suggest that the growth rate would have been faster" (p.28); the reasons:

1. There would have been export-led growth and the balance-of-payments constraint on growth "may not have existed at all (or at least would have been considerably less restrictive)" (p.28).

2. There has been "ever increasing state intervention in the private sector" since sanctions, especially in its "increasingly restrictive" application of price and import controls (p.28).

IV. Conclusions

From 1965 on, the economic literature on sanctions is almost entirely consistent in its conclusions: some short-run damage to the Rhodesian economy, rapid growth of manufacturing to replace imports, expansion of the tertiary sectors to maintain white employment, and some slowdown in overall growth--to rates below those that could have been expected in the absence of sanctions.

Nevertheless, the fact remains that real GNP per capita fell only slightly in the late 1960s and rose rapidly in the early 1970s -- i.e. at 4.4% over 1970-74. If there has been a notable negative impact of sanctions, it is not to be seen in the aggregates. There has been drastic sectoral change: in agriculture, the shift out of tobacco; in industry, the growth of import-substituting manufacture; and in the rest of the economy, the relative transfer of the white labor force not only to manufacturing but also to the service sectors. The final assessment of sanctions will require research into these disaggregated data -- research which, as indicated above, has hardly begun because of the hurry of the authors and the absence of crucial data.*

We can now ask what might be the benefit to a black-run Zimbabwe of the removal of sanctions. Since there were no serious short-run declines, there is no reason to expect much short-run recovery; and any lost growth during the past decade is lost forever. On the plus side, however, are a number of factors:

1. Rhodesia has taken a giant step in import-substitution-industrialization since 1965. Since international sanctions against Rhodesian imports were so far from perfectly enforced, there is reason to hope that the new manufacturing is reasonably efficient -- in the sense of being fairly competitive with world prices. If so, not only would Zimbabwe inherit a large manufacturing sector but a sound one, and one with prospects of extensive exporting toward the east, north, and west.

2. The shift of agriculture out of tobacco can be reversed to the extent that efficiency and the need for foreign exchange dictate it. Sanctions will have provided an experiment in alternative cropping patterns which can only have broadened the post-sanction options.

3. Zimbabwe and the end of sanctions will reverse the process whereby the principal burden of sanctions fell on African employment. But they will

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* Which will presumably become available eventually. Particularly useful will be data on the composition of foreign trade since 1965 which has been -- not surprisingly -- withheld by the Rhodesian govenment.

not reverse the gains made by Africans in this period -- for example, because GDP rose so much more rapidly than the white labor force, the ratio of African to non-African employment in manufacturing rose from 4.55 in 1965 to 5.69 in 1975. In a sense, the very failure of sanctions to cut the Rhodesian growth rate bequeathes Zimbabwe with a more significant black foothold in the modern sectors and, presumably, on the semi-skilled jobs in these sectors.

In short, the removal of sanctions will not guarantee Zimbabwe an enhanced growth rate, but it will open and re-open many policy options which can only make a larger growth rate more easily attained. *Ceteris paribus*, the removal of sanctions *must* be convertible into at least somewhat more rapid growth.

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