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ABSTRACT

THE EUROPEAN COMMUNITIES AND ITS FORMER COLONIES IN AFRICA, THE CARIBBEAN, AND THE PACIFIC-- AN EMPIRICAL TEST OF CERTAIN EMERSONIAN EXCHANGE-THEORETICAL PROPOSITIONS

By

Werner Dietrich von der Ohe

This study deals with the outcomes of exchange among developing and developed countries. Two interrelated groups of indicators are used for the independent (exchange) variables. The first group deals with market transactions, including directional trade matrices tracing the flow of goods and services and measures derived and constructed from this data base, e.g., for measurement of the concepts of exchange inequality and dependence upon exchange partners. The second group might be termed non-market transactions or, in the words of Horvath (1974), "net one-way resource flows." I am referring to foreign aid, of which multilateral aid is a special form. Such aid might be viewed as a temporary bandage on the wounds caused in part by the effects of market transaction losses.

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These independent variables represent exchanges in the context of international relations, on what has been metaphorically called the "macro" level. That is, such "micro" concepts as sentiments and attraction are systematically excluded from the analysis in the normative context of international relations.

The intention of this study is to explore the feasibility of utilizing exchange-theoretical propositions of Richard Emerson as an analysis guide within this "macro" context.

The major dependent variable, the outcomes or "balancing effectiveness" results of exchanges between nations, is measured by the growth or decline rates of 19 indicators of a country's development. An attempt is made to determine the extent to which these effectiveness measures correlate with, or are affected by, factors that are not indigenous but operate only in the presence of external exchanges.

The empirical setting of the study is the group of 44 developing countries that are currently negotiating or renegotiating about conditions under which future aid and trade exchanges should take place between themselves and the enlarged European Communities. This seems an appropriate time to explore, via the use of data from published sources, how these countries have fared historically in their exchanges with the EC⁴⁹ since its founding. The notion of how

⁴⁹During the time span under study--1958 through 1972--Denmark, Ireland, and Great Britain were not yet EC members and were not grouped with the other EC nations for analysis purposes.

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countries have "fared" as a consequence of their market and non-market exchange transactions with the EC, refers to their progress with respect to the 19 developmental effectiveness indicators.

Results of the research provide limited support for the contention that the magnitude of the initial exchange gap affects the subsequent developmental progress of the "underdog" partner (hypotheses 1 and 2). The major finding is that the magnitude of a developing country's exchange gap with abroad (its overall trade balance) appears far less consequential for its development than the magnitude of its exchange gap vis-à-vis the European Communities. To have a smaller positive or a negative trade balance with the EC is associated with lower growth rates. For example, the effectiveness outcome indicator of dependence upon one export item during one time period shows a correlation of .85 with a developing country's trade balance with the EC but only a correlation of .22 with its overall balance of trade.

• With respect to the measures of dependence (hypotheses 3A and 3B), mixed results are obtained. When dependence is operationalized in terms of a country's internal economy (lack of export diversification, i.e., dependence upon one export commodity) growth rates of higher education indicators show strong correlations in the predicted direction. When dependence is operationalized in external terms (dependence upon trading partners, i.e., number of countries accounting for 50 per cent of total exports and imports), these correlations are moderate to weak in the opposite direction. This inconsistent

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pattern of results raises validity questions regarding the operationalization of dependence. For example, diversification of an economy may not be a sign of weakened but of strengthened dependence if either exhausted supplies of natural resources or significant price cuts on the world market call for such shifts.

Predictions about non-market transactions (hypotheses 3B and 3C) receive little consistent support. The expectation that multilateral aid would be more beneficial to developing countries than bilateral aid--even when the effect of total amount of aid receipts was removed--is not supported. It is suggested that the critical underlying variable is not the multilaterality/bilaterality of aid-giving channels per se but the independence of authority to allocate aid, e.g., independence from pressures to distribute aid in accordance with the self-interests of donor governments. Somewhat more support is found for the prediction that a large initial exchange gap with the EC will serve to depress the amount of aid received from non-EC sources.

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THE EUROPEAN COMMUNITIES AND ITS FORMER COLONIES IN
AFRICA, THE CARIBBEAN, AND THE PACIFIC--
AN EMPIRICAL TEST OF CERTAIN EMERSONIAN
EXCHANGE-THEORETICAL PROPOSITIONS

By

Werner Dietrich von der Ohe

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for the degree of

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1975

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Werner Dietrich von der Ohe

1975

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Dedicated to my mother
and to
Erich and Renate Schmaus

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J. Gullahorn	C. Vanderpool
M. Lovall	

Thank you.

I would like to add acknowledgments in a different category that are no less important. Financial assistance for carrying out this

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CHAPTER I

INTRODUCTION

This study focuses upon several exchange-theoretical propositions—developed primarily from the analysis of relationships between individual persons--and attempts to test them at the higher aggregate level of the relationships between developing and developed nations.

The specific theoretical emphasis of this analysis is the notion of balancing operations, i.e., reactions to inequity¹ and balancing outcomes. I will use Emerson's exchange theory (1962, 1964, 1972a, 1972b) as a conceptual guideline but will take up his early suggestion (1962: 31n) to elaborate conceptual tools for explaining power-dependence relations at aggregate levels different from that of interpersonal relations, e.g., between organizations, cities, states, and--in the present study--even between countries.

Any reduction in inequality between exchange partners may be due to factors that operate only in the presence of exchange, to factors completely outside of any exchange, or to some combination

¹I will not draw a distinction between inequity and inequality. While I realize that equitable social relations may or may not also be equal, the notion of fairness and the "weighting" inherent in equity ideas were not measured in my research.

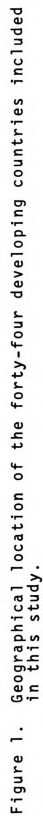
thereof. This research focuses only on the first of these. In it, I attempt to identify those sets of circumstances or factors contingent upon exchange which buttress or hamper balancing operations and balancing effectiveness outcomes, i.e., which facilitate or hinder improvement in the position of that exchange partner who is at a disadvantage.

The outcomes of balancing operations between nations cannot be adequately detected by standard synchronic analyses. A certain time-span must elapse before, for example, any improvement in a developing country's cost of living could possibly take place. To handle this problem, I have attached to each hypothesis a diachronic frame.

The empirical setting for my study, in a sense, is Brussels. At the time of this writing, Brussels was the center of extended trade and aid negotiations between the European Communities (EC) and their former colonial territories in Africa, the Caribbean, and the Pacific. To be more precise, my empirical focus is the ongoing relationships of the EC with this set of 44 developing countries, 25 of whom had ties with Great Britain and only became eligible to negotiate with the EC after Britain joined in 1973. Figure 1 illustrates graphically the ties which the EC has maintained with its former colonies.²

²Certain organizational and trade/aid ties of the EC with 19 newly independent African countries are described in a previous report, completed after my first visit to Brussels in December of 1973 (von der Ohe, 1974).





It is the aim of the present study to develop and test a set of conceptual tools with which to grasp and perhaps to explain important features of the evolving interrelationships between the EC and these developing countries. A detailed analysis of aid and trade links over time was undertaken, including a set of 57 X 57 directional trade matrices representing the exchanges between each pair of countries. This should provide a testing ground for a set of exchange-theoretical propositions in which the exchanges between and among nations are conceptualized as "balancing operations." To what extent, these propositions ask, can these external exchanges account for "more balanced outcomes" for the developing countries in question?

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CHAPTER II
ELABORATION OF THE THEORETICAL FRAMEWORK

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Le Proufict de l'un
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(adapted from Montaigne)

Introductory Comments

The motto of this chapter was chosen--and changed into a question--to hint at a very peculiar feature of any exchange. Two "founding fathers" of sociology, as disparate in their orientations as Marx and Tönnies, both agreed on this feature: by itself, an exchange is an essentially empty phenomenon in that it is unproductive. Nothing is created that was not present before;³ only the relational properties of the equation are manipulated as the "commodities" being exchanged change hands (see Marx, 1968: Chapter 2; Tönnies, 1963: 57f).

³This argument is most obviously true of material exchanges. However, a case can be made that it also applies to exchanges of less tangible commodities. In Blau's (1955) law enforcement office, expert workers gave advice in return for which they received deference from less-skilled colleagues. Although the deference may have been "created" so that the less-skilled workers would have something to offer in return--in order to meet some norm of reciprocity--the exchange relation served only as a catalyst to its creation and did not create it directly.

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This view of exchange may also imply that exchange is a zero-sum "game," that is, that one partner will lose if the other one gains--and will lose by exactly as much as the other benefits.

I do not disagree with this view of exchange. Yet the theoretical elaboration of the present study assumes that certain manipulations with the relational properties of the exchange equation will have "productive" consequences which, furthermore, may not necessarily be of a zero-sum nature (e.g., both a developing and a developed country may reap benefits from an exchange). I view the exchange equation as necessarily being "unproductive" and zero-sum in nature; if both partners give commodities of equal value, receiving a like amount for their "losses," absolute gains by both cancel each other out. But the exchange may serve as a catalyst for changes which are productive. Income from exports, for example, may be channeled into educational institutions which produce long-term benefits, perhaps eventually altering the relative economic positions of trading partners. These altered relative positions may affect future exchanges between the partners. I shall return to this notion of exchange as a catalyst later.

The exchange equation may be analyzed from several vantage points. My study deals with exchange between initially unequal partners and looks at the equation from the point of view of the underdog (that partner to the exchange who is at a disadvantage). In exchange terminology, this is a p-centric ("person" or actor centered) perspective rather than a network-centric one. The study

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1. *Journal of the American Medical Association*, 1997; 277: 1033-1038.

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

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explores the extent to which exchange-dependent properties such as the magnitude of the initial gap, the number of exchange partners, the availability of alternative exchange partners, etc., influence the chances for the disadvantaged partner to improve its lot. The exchange relationship, "unproductive" in and of itself, may provide the catalyst for beneficial results for either partner. I am concerned here with the absolute benefits or losses incurred by the "underdog," although I recognize (see von der Ohe, 1974) that gains reaped from international exchange by developing countries are often accompanied by even larger benefits to the developed partner.

Before I elaborate on the concepts used and their predicted relations to each other, I should comment on some things with which I do not intend to deal. First, the ideas developed in the extensive literature about individual modernity and modernization (e.g., Inkeles, 1969; Apter, 1965; Lerner, 1967) is outside the scope of my study. Although a number of indicators used in that literature--e.g., educational enrollment, per cent of population engaged in agriculture, cost of living, etc.--are also used in my research, I do not address myself to the intricate processes presumably involved in "becoming modern." I do not label as "less modern" or evolutionarily "underdeveloped" any of the 44 developing countries which I study. Instead, they are seen as exchange partners in relatively disadvantageous positions vis-à-vis the EC nations. However, my study does share with this tradition a number of etically normative assumptions. For example, a higher percentage of an age cohort in secondary education is assumed

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to be "better" than a lower one. I make these assumptions less out of conviction than because alternative criteria, from the point of view of the countries themselves, proved difficult to obtain.⁴ On the other hand, this study conspicuously ignores variables frequently included in modernization studies, such as ideology, political representation, and presence or absence of democratic institutions.

Second and more important, my research is not to be categorized as a contribution to the theories of neocolonialism (e.g., Fanon, 1963; Nkrumah, 1966; Rodney, 1972) or of imperialism (Lenin, 1917; Hilferding, 1910; Hobson, 1938; Baran, 1957; Frank, 1967; Weisskopf, 1974; and so on). Nor do I take sides in the debate between the "diffusionists" of underdevelopment and the "dependendistas" (see Chilcote, 1974). This exclusion has certain consequences for the potential value of this study. For example, Emmanuel's use of the category "unequal exchange" (1972a; 1972b) was intended to explain overall imperialistic trade relations between exploiting and exploited countries--as if inequality of exchange were an independent variable sui generis. By assigning to "unequal exchange" merely a catalytic value, I try to avoid the false conclusions that: (a) any initial inequality is "natural" and (b) simple "doctoring" with the exchange equation would automatically bring about all-out improvements for the underdog. The principal weakness of my study vis-à-vis this body of literature is that my focus upon the evolution of trade among 57

⁴I will not go into the difficulties encountered, except to say that my inquiries during my second trip to Brussels in May and June, 1974, were met with suspicion.

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countries over time rather than upon capital movement or surplus value generation precludes me from assessing the degree to which unequal exchange situations are not incidental but necessary, e.g., in Lenin's (1917) sense of the "natural" evolution of capitalism necessarily culminating in a stage of imperialism.

The last disclaimer involves that body of literature which may be called "developmental economics" (e.g., A. Smith, 1776; Kuznets et al., 1955; Adelman, 1961; Meier, 1963; Chenery & Stout, 1966; Elkan, 1973; Rosen & Kurth, 1974). Although many of my empirical indicators are either taken from this literature or are at least compatible with it, the theoretical scope and testing intentions of the present study differ. My set of independent variables has been chosen for the purpose of assessing the feasibility of applying exchange-theoretical propositions to a different aggregate level. It would not be too unfair to say that, in the developmental economics literature, just about any independent variable will be considered so long as it has an acceptable correlation with sustained economic growth rates.

The Theoretical Framework--An Overview

The set of inference rules and conceptual guidelines for the hypotheses to be tested will now be introduced. Since I focus upon exchange processes and how they might catalytically affect certain exchange outcomes, it may be necessary to justify beginning the conceptual outline with an exchange outcome, namely dependence.

Richard Emerson (1962, 1972a, 1972b), unlike most other social-psychological exchange theorists such as Homans (1961), has moved away from the analysis of actor attributes and of conditions under which such attributes can be changed. Instead he focused upon what I have called the Marx-Tönnies proposition, namely that exchange itself is unproductive--merely an operation on the relational properties of an equation.⁵ Viewed this way, any human interaction is always simultaneously an exchange outcome and a basis for future exchange (which may include, of course, either a one-sided withdrawal from the exchange or a mutually agreed upon termination of the relationship). Thus, to begin my conceptual outline with an end result--the outcome of dependence--should not seem strange since that outcome is the starting point for future exchange relations. But it is important that the time frame be kept clearly in mind and that an outcome at some base period not be confused with an outcome at a later point in time. The fact that the choice of these two time points is more or less arbitrary should not detract from the more important theoretical questions to be raised.

What, one should ask, are the conditions under which actors are able to manipulate the relational properties of their interaction

⁵It would be interesting to systematically compare Thibaut & Kelley's (1959) concepts of "fate and behavior control" to Emerson's power-dependence theory.

Two additional points should be noted here. A switch of aggregate levels, e.g., viewing nations as actors, seems less problematic if one focuses upon relational properties rather than cognition-related attributes of actors. Second, Emerson does not acknowledge the Marx-Tönnies "heritage" referred to above.

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equation? What prevents them from allowing a gap to develop between their relative positions? If a gap did develop, how far did they close it? What options are available to either party to the equation? Do norms of distributive justice exist and, if so, are they more often found on interpersonal "private" levels than on other aggregate levels?

As a point of departure for dealing with such questions, I have selected a single Emersonian theorem regarding balancing operations between/among exchange partners and have tested it at the level of international exchange. In a sense, all 44 developing countries in my study (all former European colonies with the exception of Ethiopia and Liberia) are taken as one exchange partner. The other partner is the group of six countries which composed the European Communities during the time under consideration. The theoretical and empirical inquiry will be concerned with whether or not--and if so, to what degree--the balancing moves predicted in Emerson's fifth theorem did in fact occur.

It is basic to this theorem that if $D_{BA} > D_{AB}$, then A--less dependent of the two--has more power; A will and must use his/her power and to use it means to lessen (loose) the power advantage over time. Several implications of this hypothesized dynamic process will be subjected to empirical test.

The theorem in question can be restated as follows:

(Emerson, 1972b: 67):

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In any exchange relationship A;B:

If $D_A \text{ upon } B > D_B \text{ upon } A$ at T_0 (base period)

then $\left\{ \begin{array}{l} \text{either } D_A \text{ upon } B \text{ decreases} \\ \text{or } D_B \text{ upon } A \text{ increases} \end{array} \right\}$ across continuous transactions at T_1 (period of balancing operations)

until $D_A \text{ upon } B = D_B \text{ upon } A$; i.e., until balance is reached at T_2 (outcome period)

Where D = dependence
 $A \ \& \ B$ = actors
 T_x = points in time

Figure 2. Emerson's fifth theorem.

One problem in designing such tests stems from Emerson's failure to sufficiently specify either the temporal sequences or the span(s) of time. One might ask whether Emerson's theorem isn't essentially unfalsifiable and thus theoretically and empirically empty; if it is not supported in some test, it can always be claimed that the predicted balancing operation has not had enough time to occur (or that it already occurred some time ago, after which other events intervened). As is characteristic of much of sociology, the concept of time is not treated as problematic. After all, the span between T_0 and T_1 and between T_1 and T_2 in Figure 2 could refer to minutes or decades.

Furthermore, the predicted balancing operations which either party could and/or would undertake presume that A and/or B (a)

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

2. Next, it is important to gather relevant information and data. This can be done through research, consultation with experts, or by analyzing existing resources.

3. Once the information is gathered, the next step is to develop a plan or strategy. This involves breaking down the problem into smaller, manageable parts and determining the best approach to solve each part.

4. After the plan is developed, the next step is to implement the solution. This involves putting the plan into action and monitoring the progress to ensure that the solution is effective.

5. Finally, it is important to evaluate the results of the solution. This involves comparing the actual outcomes with the expected results and identifying any areas for improvement.

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"perceive"⁶ the base period as being unbalanced; (b) dislike imbalance; and (c) are sufficiently willing and able to work toward balance. Aside from the thorny theoretical and empirical questions about exactly what constitutes balanced or imbalanced social relations, one should also keep in mind that balance does not necessarily imply equality. This point is clouded in Emerson's work. His early translation of the power vocabulary into dependency terms does not solve the conceptual riddle that links equity, equality, power, and dependency. I hope that my study may make some contribution to this problem by elaborating and testing whether unequal (i.e., not necessarily inequitable) social relations do in fact give rise to "effective" balancing operations.

Unlike Emerson, I do not assume that there will be a necessary tendency to close the gap when a situation of inequality between exchange partners exists. If taken seriously, Gouldner's argument that "power arrangements [may] constrain the continuance of [reciprocating] services" (1960: 164) almost requires that one not make such an assumption. Unequal exchange situations also may be a very acceptable state of affairs--to either side of the equation. However, all of this does not mean that balancing operations in

⁶Caution should be used with respect to the metaphoric use of sensory and cognitive terms which I occasionally apply in describing A and B's interaction. The terms stem from the original development of the theorem with the study of interpersonal relations in mind. I do not assume that my aggregate "actors" possess all of these human traits, nor do I seek to find theoretical equivalents for every human trait at the level of international exchange.

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Emerson's sense (1972b: 66f) are not operating as well. It is only that I assume that the arrival of balance is problematic,⁷ unlike Emerson who sees as problematic the "survival" of imbalance (op. cit., p. 67).

In concluding this overview, the four types of possible balancing operations specified by Emerson (1962, 1964, 1972) should be given attention.

Given any unbalanced social relation, where A is more powerful (i.e., less dependent) than B, then:

- (a) Actor A may increase the value (valuation) of what B has to offer;
- (b) Actor B may search for alternative supplies of valued exchange commodities;
- (c) Actor B may form a coalition with others, not necessarily to obtain supplies of valued commodities via that coalition but perhaps to prevent A from getting from others what it now gets from B;
- (d) Actor B may depreciate the value (valuation) of what A has to offer.

Any of these four strategies will move the relationship toward greater equality between A and B, i.e., toward a more balanced state.⁸

⁷For one thing, balancing operations may after all be anticipated by either side of the equation, thus dampening the full use of power across continuous transactions by the more powerful partner.

⁸It would be interesting to think about a set of scope conditions which would allow the assignment of certain probabilities that each of the four balancing strategies would occur.

1. The first step is to identify the problem.
 2. The second step is to define the problem.
 3. The third step is to analyze the problem.
 4. The fourth step is to develop a solution.
 5. The fifth step is to implement the solution.
 6. The sixth step is to evaluate the solution.
 7. The seventh step is to monitor the solution.
 8. The eighth step is to maintain the solution.
 9. The ninth step is to improve the solution.
 10. The tenth step is to document the solution.

1. The first step is to identify the problem.

It is important to note that Actor B appears to have more options than Actor A. While the above set should not be construed as being exhaustive, a certain imbalance of options becomes plausible. This is particularly so if one also assumes that altruism (option A) is less likely to be used than some of the other options listed.

One final point should be raised, namely that the above balancing operations should not be considered as alternative strategies; in fact, any combination of them seems possible. It would be rather naïve to assume that any balancing operation is a discrete step where, for example, A stands by with its hands tied and quietly waits while B forms a coalition against A's own future options. A careful analysis of the dynamics of balancing operations may conclude that the notion of balance itself is almost incidental; it is the continuous push and pull around balance that is of theoretical and empirical interest.

Conceptual Elaboration of Three Hypotheses

These theoretically interesting balancing operations are often very difficult to identify or test outside of the laboratory. Just as chess players may identify their partner's conceptual strategies by inferring them from the observed outcomes--single moves or sequences of moves--so also are balancing operations most easily inferrable from intermediate observable moves. I will take this approach in my three hypotheses.

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Before presenting the hypotheses, I will discuss the rationale for selecting a social-psychological theorem for a test of exchange relations among 57 nations. Then I will present each hypothesis in turn and conclude by singling out for discussion the overall dependent variable in this study--effective balancing operations.

The first reason for choosing a micro-level⁹ proposition as a conceptual guideline was the need for a set of testing "lenses" to allow analytical precision while also simplifying the otherwise unmanageable empirical complexity. Figure 3 gives a small example of the sheer complexity of the interconnections existing between the European Communities (EC) and its former colonies, illustrating the setting in which they currently negotiate the conditions of future exchange. One party in these negotiations, the EC as a multilateral group, alone requires enormous numbers of experts and public officials (Table 1) just to administer the current exchange. All in all, it is fair to assume that well over 2,000 additional higher-ranking public officials from all involved countries are employed in administering the ongoing exchange,¹⁰ not counting the exchanges with thousands of private trading partners.

⁹Obviously, I use the terms "micro level" and "macro level" uncritically. I do not imply that the social sciences are in a position to subject human actions (individually or in groups) to something like a vertical scale where a higher level "organism" implies virtually all lower level parts. In the context of my study, the terms "micro" and "macro" primarily carry geographical connotations. That the notions of micro and macro levels are not even uniformly agreed upon in a supposedly most-exact social science--economics--can be seen from Bain's (1959) discussion of the concept of market.

¹⁰Some theoretical questions regarding the interorganizational component of these exchange links have been raised elsewhere (see von der Ohe and Marcus, 1974).

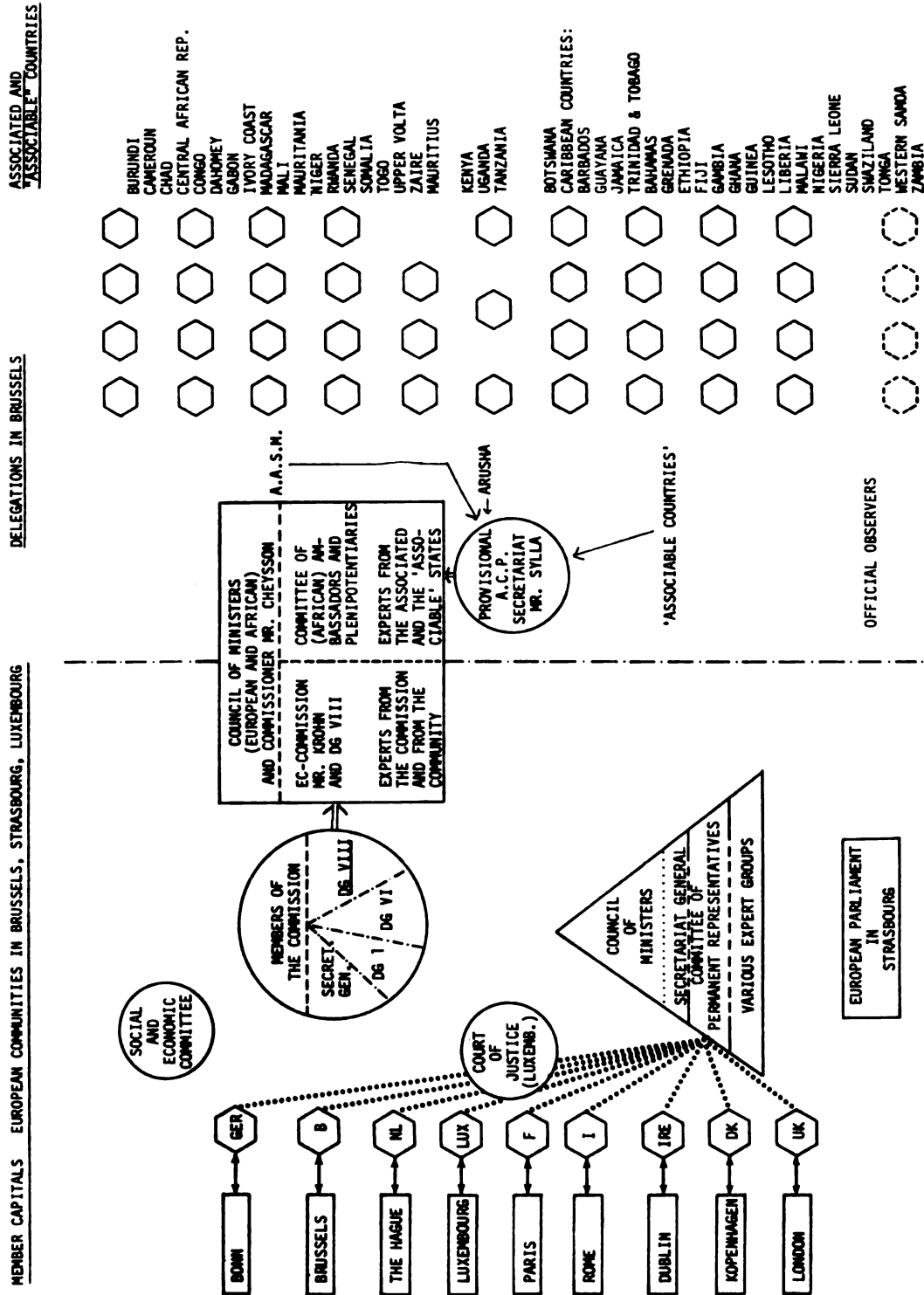


Figure 2. Illustration of the Organizational Arrangements During the Association Negotiations Between the European Communities and Forty-Four Developing Countries.

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Table 1. Distribution of positions within the Commission of the EC, by line and staff departments according to hierarchy of position. "A" positions are those of higher-level professionals and administrators. (Recomputed from EC statistics, see European Communities, Commission, DG IX.A-3, 1973).

| Number of Position Incumbents | | | | |
|-------------------------------|-------|--|---------------------|----------------------|
| | | Line Departments | | Staff
Departments |
| | | External Affairs
and Aid and
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| By
Grade | A | 235 | 1,226 | 519 |
| | Total | 552 | 2,736 | 2,849 |

The second reason for applying social-psychologically developed exchange notions to an international setting is of theoretical interest. Emerson's dynamic process has two advantages. It is sufficiently neutral so that my own values, e.g., helping the underdog, do not bias the analysis. And the theorem in question is not restricted to the interpersonal level.

The growth of knowledge about social relations has received meager contributions from such modest enough insights as "one should avoid ecological fallacies" (e.g., Robinson, 1950; Riley, 1973, Unit 12) and "faits sociaux can be analyzed at different aggregate levels" (e.g., Heiskanen, 1967; Zelditch, 1969). What does seem to be important is that ideas from various orientations are tested (a) by different methods and (b) at different aggregate levels. The simultaneous search

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for test conditions and theoretical incorporation of test results surpasses any exhortation.

I will now introduce the three specific hypotheses to be tested.

First Hypothesis

This hypothesis introduces a point not dealt with by Emerson. In his argument, A's power "rests" in B's dependence upon A.¹¹ More precisely, A is said to have power over B because B's dependence on A exceeds A's dependence on B. The size of A's power advantage over the other is, by definition, equal to the amount by which B's dependence exceeds A's own dependence. As the predicted balancing moves occur over time, A's power advantage or--what amounts to the same thing--B's dependence "surplus" is reduced.

For Emerson, it is of no concern how powerful or how dependent the partners were at any given base period; the same balancing operations are predicted whether A's initial power advantage over B is large or small.¹²

¹¹Throughout, I will use "A" as a short form for that party to an exchange that has an edge and "B" as a short form for the "underdog."

¹²In another context, Homans (1961) does consider the problem of how the magnitude of inequity influences response moves. However, he merely contends (and provides evidence) that one has a higher tolerance for inequity in one's own favor than for inequity to one's disadvantage.

1. The first step is to identify the problem. This involves understanding the current situation and the goals that need to be achieved.

2. Next, it is important to gather information. This can be done through research, interviews, or data analysis.

3. Once the information is gathered, the next step is to analyze it. This involves looking for patterns, trends, and potential solutions.

4. After analysis, the next step is to develop a plan. This plan should outline the steps that need to be taken to achieve the goals.

5. The final step is to implement the plan. This involves putting the plan into action and monitoring progress.

My first hypothesis contends that B's chances to narrow the gap are partially accounted for by the size of the initial gap between A and B. I suspect that beginning with a larger amount of inequality suppresses B's chances to move toward balance. That is, B's growth rate relative to his starting position will be suppressed. If the exchange rate between A and B is such that B is both at a relative disadvantage and dependent upon A--a nontrivial qualification--then the rate by which B moves towards closing this gap will be even smaller.

Translated into the empirical setting of this study, this hypothesis proposes that there is an inverse relationship between B's exchange inequality at T_0 and the growth rate of certain development-effectiveness measures between T_0 and T_1 . In like manner, B's inequality at T_1 should be inversely related to its growth rate between T_1 and T_2 .

Figure 4 illustrates this suspected connection. The time factor is introduced in order to allow some "trigger effect" to operate.

Since formation of the European Communities (EC) began in the late 1950s, I chose averaged measures for the 1958-1960 span as the base period (T_0). Only the "old"¹³ EC countries, those belonging during the times in question, are considered to be partner "A" for

¹³Founding ("old") EC members were Belgium, France, West Germany, Italy, Luxembourg, and the Netherlands.

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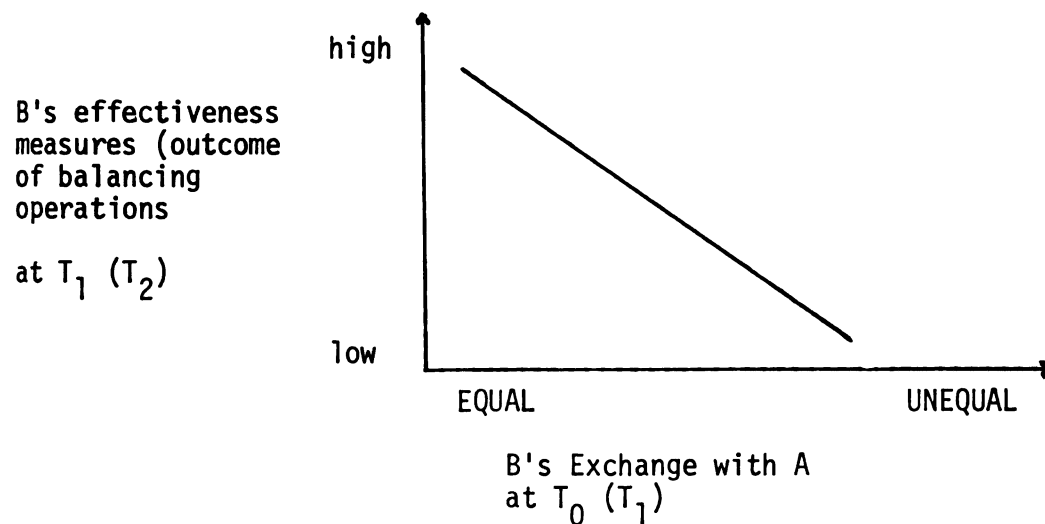
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Where: Exchange = absolute and per capita balance of trade

$$\text{Effectiveness in \%} = \frac{(T_1 - T_0) \times 100}{T_0}$$

T_0 = 1958/60 base period

T_1 = 1962/66 base period

T_2 = 1958/72 base period

Figure 4. Relationship between exchange inequality and effective balancing operations predicted by Hypothesis 1.

this and other hypotheses. These countries acted more or less as a unified, joint exchange partner both multilaterally and bilaterally (see von der Ohe, 1974). A list of all countries included in this study can be found in Figure 3.

The second and third time periods, T_1 and T_2 , divide the time span from the base period (1960) to the latest year for which data are available (1972) into two six-year periods. Within each

time period, averages were computed. This averaging procedure has the advantage of leveling extreme ups and downs that are due to non-exchange related factors; for example, 40 to 70 per cent of the Gross Domestic Product in developing countries is affected by the weather, a bad harvest often depressing GDP for several years (see Papanek et al., 1973).

This hypothesis, then, contends that the larger the exchange inequality at T_0 (T_1), the lower the growth rate of effectiveness measures at the later time point T_1 (T_2). But why should the magnitude of the gap suppress B's (i.e., the 44 developing countries') chances to move towards balance? At least two arguments can support this contention. First, there is the obvious point that high exchange inequality adversely affects a country's debt-servicing ability. As inequality increases, I suspect that debt-servicing increases relative to proceeds from exports. Balancing operations should be negatively affected, at least by the percentage by which interest on the debt compounds. Unlike at the social-psychological level, power and dependence between nations can be "banked."

The second argument supporting this hypothesis comes from scholars of the "development of underdevelopment" (see Baran, 1957; Frank, 1967; Vasconi, 1969). In their views, inequality and underdevelopment are not just the early stages in the evolution of modernization. They result not from "indigenous" factors affecting each exchange partner independently but can be attributed to the exchange itself. Griffin illustrates this phenomenon at the inter-regional level. Within Peru, he studied the trade flows between the

Sierra and the coastal area. The evidence suggested that "the process of development and underdevelopment are related" (Griffin, 1969) the Sierra would have had higher growth rates of both consumption and savings in the absence of exchange with the coast. In short, the Sierra region "financed" the faster development of the coastal area.

However, I am interested here in the influence of external rather than indigenous factors upon the growth rate of development. For that reason, I introduce as a control variable a measure of susceptibility to external influence (SEI).¹⁴ By "partialling out" this variable's effect on the effectiveness measures, I can have more confidence that any findings are the result of international exchange rather than of intranational exchange or other indigenous factors. If B's SEI is high, I predict that a given degree of inequality will suppress B's success more than if the SEI were low. A relatively isolated country should be less affected by external exchange relations.

Susceptibility to external influence resembles what Emerson calls "motivational investment" at the intraperson level. Even if the magnitude of exchange remains constant, a smaller investment will "hurt less"--although in this case it is finances rather than feelings which are vulnerable to hurt.

To summarize the line of reasoning thus far, the subhypotheses which will be tested are:

¹⁴SEI is measured as the ratio of (export proceeds + import proceeds + aid receipts + debt service outflows) over Gross Domestic Product. All components are in per-capita form. See Appendix B for a more detailed description.

- 1.A The larger the negative trade balance (exchange inequality) between a developing country and the Old EC at T_0 , the smaller the growth rate of effectiveness measures¹⁵ (outcomes of balancing operations) at T_1 .
- 1.B The larger the negative trade balance between a developing country and the Old EC at T_1 , the smaller the growth rate of effectiveness measures at T_2 .
- 1.C Same as 1.A, but with trade balance measured in per capita form.
- 1.D Same as 1.B, but with trade balance measured in per capita form.

Four more subhypotheses, 1.E through 1.H, correspond to the above when the influence of susceptibility to external influence has been controlled for. It is expected that partialing out SEI will reduce the original correlations; that is, SEI and effectiveness growth rates are also expected to be inversely related.

Second Hypothesis

The first hypothesis was concerned with B's exchange inequality vis-à-vis a certain group of countries (the "old" EC) and treated exchange inequality as if it were necessarily identical with dependence. It ignored, for example, the case in which B may have had a considerable trade deficit with the founding members of the EC but a huge trade surplus with other countries, thus having an overall positive balance of trade. Balancing operations such as coalition formation with other

¹⁵Appendix B provides a detailed description of the various effectiveness measures.

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developing or developed countries will now be considered, and will include all relevant options open to either A or B in the analysis. Like the first hypothesis, this one treats Emerson's conceptual scheme as a general guideline upon which to build.

B's dependence upon A in particular will be taken up in the third hypothesis. Here, we examine B's overall exchange position at given base periods and inquire again whether B's degree of inequality hampers or buttresses its chances of effective balancing operations. This has relevance for the concept of dependence (hypothesis 3) in the following way. In the presence of an unequal overall exchange position (inequality with alternative partners to A, as well as with A), the important Emersonian balancing option of coalition formation seems to vanish.¹⁶ B simply would not be in a position to take a strong bargaining position with A if B were an "underdog" relative to other exchange partners as well.

Thus, the second hypothesis predicts an inverse relation between B's overall exchange position at T_0 (T_1) and the growth rates at which B was able to move toward increased balance at T_1 (T_2). As in the first hypothesis, B's susceptibility to external influence (SEI) should be taken into account.

Specific subhypotheses to be tested are:

¹⁶One important distinction is purposely ignored: the difference between coalitions with alternatives to A (other powerful exchange partners) and with alternatives to B (other underdogs). This point will be taken up later.

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- 2.A The larger the negative trade balance between a developing country and the rest of the world at T_0 , the smaller the growth rate of effectiveness measures at T_1 .
- 2.B Same as 2.A, but for time periods T_1 and T_2 respectively.
- 2.C Same as 2.A, but with trade balance in per capita form.
- 2.D Same as 2.B, but with trade balance in per capita form.
- 2.E to 2.H correspond to the above hypotheses, with the addition of controls for SEI at the appropriate time period.

Third Hypothesis

I now turn to a specific analysis of B's dependence and to the reasons why it should be conceptualized as something distinct from exchange inequality.

Emerson's translation of Max Weber's power typology into a conceptual language of dependence fails to take into account a crucial element of Weber's analysis--action. Emerson gives the impression that all social actions (exchange) between A and B have some balancing consequences--affect the equation of their relative positions--so long as they continue to interact. I would distinguish between those actions which constitute the exchange and those actions which have balancing effects (intentional or otherwise). Although these categories may sometimes overlap--exchange actions will sometimes affect the equation--this is not always the case. If one follows Emerson's logic to its reasonable conclusion, all unbalanced situations would tend toward balance and--

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once balanced--the exchange situation would never again become unbalanced, except perhaps by intervention of outside forces.

Emerson does not allow for actions which are not equity seeking, i.e., moving toward balance. There are some genuine balancing moves in international interaction, such as aid programs (conceptually equivalent to Emerson's "status giving") and coalition formation. But there also exist actions like the following. Say that trade relations between developing and developed countries are such that chronically negative trade balances occur for the developing partners, i.e., unequal exchange outcomes. The powerful developed nations then take measures to stimulate an overproduction of agricultural or other raw products, lowering world prices because of oversupply.¹⁷ Export proceeds are depressed even further in the developing countries dependent upon such products, and their trade balances sink more deeply into the red vis-à-vis the developed nations. This type of action sets the parameters for (unequal) exchange, but is not a balancing operation. And A's power to make B accept lower prices for its exports was not the result of any increased dependence of B.

This points to the need for careful analysis of dependence in its own right, not simply as the negative reflection of power or vice-versa. B may be dependent upon A in an exchange relation for a

¹⁷In the context of trade, economists have termed this phenomenon "immiserizing growth." It refers to the simultaneous expansion of exports by many countries and a resulting decline in export proceeds because of falling prices.

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variety of reasons, such as:

- (a) their exchange relation favors A;
- (b) B does not have an internally diversified assortment of valued exchange goods (and so is more vulnerable to dropping world market prices);
- (c) B does not have an externally diversified set of trading partners to whom to go if A's terms are unsatisfactory;
- (d) B may be either unable or unwilling to participate in a coalition intended to counterbalance A's dominance;
- (e) B does not develop import substitution programs¹⁸ (import substitution is conceptually equivalent to Emerson's "withdrawal" strategy).

Where the first two hypotheses were concerned with what *might* be called the parameters of dependence, i.e., the circumstances and outcomes of exchange, the third hypothesis will focus upon the consequences of dependence itself. This general hypothesis is broken into four parts, each assessing different aspects of dependence.

Hypothesis 3A

One aspect of dependence is inherent in B's internal economic structure, namely the presence or absence of a diversified range of export goods. Hypothesis 3A suggests that there is an inverse relation between a country's dependence upon any one exchange (export) commodity and its growth rate of balancing effectiveness outcomes. More

¹⁸It is interesting to note that the so-called diffusionist school of underdevelopment emerged from within the United Nations Economic Commission for Latin America (ECLA). It strongly recommends such import substitution programs.

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specifically, the higher the percentage of total exports accounted for by one commodity, the lower the effectiveness outcome.

In a sense, this hypothesis seems intuitively correct and hence almost trivial. If B is not in a position, for example, to temporarily withhold an exchange item wanted by A because this item is just about B's only source of trade income, B will hardly be able to "motivate" A to pay increased prices (Emerson's "status giving" on A's part, and possibly one consequence of "coalition formation" on B's part).

But certain conditions have to be met before this predicted relationship between dependence on one export item and effectiveness can hold. First, B's SEI (susceptability to external influence) should be high; otherwise B would be in a fairly good position to withhold an export item, since trade would be a small part of the country's economy. Second, high dependence on one export commodity becomes an asset if and only if B has a controlling share of the world supply and hence is in a position to set prices. As an official in Brussels told me, Zambia was not really disadvantaged between 1958 and 1960 because about 90 per cent of its exports were copper; it controlled 20 per cent of total world copper exports and was in a position to affect prices. Compare these figures to Mauritius's during the same period, when 90 per cent of its exports were accounted for by sugar but when it supplied only about 2 per cent of world sugar exports.

Hypothesis 3A, then, predicts an inverse relationship between a country's dependence upon any one exchange commodity and

balancing outcomes:

3A.1 The larger the percentage of total exports accounted for by one export commodity (dependence) for a developing country at T_0 , the smaller the growth rate of effectiveness measures at T_1 .

3A.2 Same as 3A.1, but for T_1 and T_2 respectively.

In addition, two corresponding subhypotheses (3A.3 and 3A.4) will be tested controlling for Susceptability to External Influence. Because of analysis problems, it was not possible to control for a country's share of the world market in terms of major export at this time.

Hypothesis 3B

This hypothesis is concerned with the effect of the very number of exchange partners upon balancing effectiveness outcomes. The importance of "numbers" operates in a complex way, in that numbers can be seen as "surrogate variables" for concepts like exclusiveness, monopolization, limited competition, etc. In this context, I suggest operationalizing dependence in terms of the number of exchange partners accounting for 50 per cent of B's (a) exports and (b) imports. The lower that number of exchange partners, the higher B's dependence is assumed to be.¹⁹

¹⁹The linearity assumption inherent in this operationalization is problematic. For reasons both of "economy of scale" and minimum conditions of exchange differentiation, strict linearity is probably not a realistic assumption. However, for the purposes of this hypothesis, strict curve-fitting operations seem unnecessary.

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I suspect that an increase in the number of exchange partners is "beneficial" for balancing effectiveness outcomes. This is contrary to the notion that a few good friends are better than a hundred acquaintances. But the advantages of a few close trading friends are, I think, outweighed by the possibility of "withholding" by A which becomes a great potential threat when B has few others to whom to turn.

Also contrary to my hypothesis are the savings attending standardization, e.g., higher maintenance costs if some imported machines require Russian nuts while others need American bolts. Both the standardization and the friendship arguments are assumed to be important in situations where other things (i.e., dependence) are equal. If B divides its total trade equally between A_1 and A_2 , A_1 and A_2 in turn must each do half their trade with B in order for dependence to be equal. Any lop-sidedness in the number of exchange partners would have a negative effect on the underdog's balancing effectiveness. No prior theoretical reasons can be given regarding the relative importance of exports and imports. Therefore, the hypothesis will be tested separately for each.

3B.1 The smaller the number of trading partners accounting for 50 per cent of a country's total exports, the smaller the growth rate of effectiveness measures at T_1 .

3B.2 Same as above, but for T_1 and T_2 respectively.

3B.3 Same as 3B.1, but for imports.

3B.4 Same as 3B.2, but for imports.

When the above tests are controlled for SEI (3B.5 to 3B.8) there will be a total of eight subhypotheses.

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After a certain exchange inequality between A and B has been created or simply exists, hypotheses 3C and 3D take up the question of foreign aid as a possible balancing move on the part of A. Since this study takes B's point of view, I will not take up here the complex question of "cui bono?"--who really benefits from foreign aid. Rather, I will again use Emerson's balancing theorem as an inference guide and examine two different aspects of aid.

Hypothesis 3C

This hypothesis treats aid as a dependent variable. The independent variable is the same used in hypothesis 1, the exchange position of B relative to the Old EC countries. How does B's exchange position with A (the Old EC) affect the amount of aid²⁰ B receives from alternative trading partners? Theoretically, this is an intriguing problem since it assumes a set of conditions worth looking into in their own right. Specifically, it assumes at least that:

- (a) A's exchanges with B are constantly "watched" by alternatives to A;
- (b) aid is not just a "status giving" balancing operation at A's disposal but an option also at the disposal of others who exchange or anticipate exchanging with B;

²⁰The amount of aid, of course, could itself be considered as a balancing effectiveness outcome. In that sense, this hypothesis is a special case of hypothesis 1.

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- (c) aid-giving is a potential "coalition formation" balancing move as well, in which an outsider attempts to decrease B's imbalance vis-à-vis A.

In this particular hypothesis, I only inquire how the alternatives to A react toward an unequal exchange relation between A and B. An inverse relationship is predicted between the inequality between A and B at some base period and the amount of aid extended to B by alternatives to A at a later time. To put it another way, the more nearly equal B is relative to A, the more aid B will receive from other nations.

3C.1 The larger the negative trade balance (exchange inequality) of a developing country with the Old EC at T_0 , the smaller the amount of aid per capita received from non-EC nations at T_1 .

3C.2 Same as above, but at T_1 and T_2 respectively.

3C.3 Same as 3C.1, but with trade balance in per capita form.

3C.4 Same as 3C.2, but with trade balance in per capita form.

In all hypotheses, "aid" is measured as the grant-equivalent value of the transaction. Controls for total amount of aid received from all sources (3C.5 - 3C.8) and for debt-servicing performance (3C.9 - 3C.12) will be used. Debt-servicing performance is especially important, not because aid incurs return-obligations but because a good debt-servicing ability is an indication that the country is already in fairly good financial shape.

If the motive for aid-gifts were really pure altruism ("status giving"), the countries having the greatest inequality with A and the

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poorest debt-servicing ability would receive the most aid. I predict that the opposite will happen. The situation is analogous to a "poor risk" shopping around for another insurance company. The worse his or her standing with the present insurance company (in Emerson's terms, the more dependent B is upon A), the harder it is to find an alternative insurance company (exchange partner).

Hypothesis 3D

The final hypothesis in this study inquires into the conditions under which the "poor risk" will receive assistance from someone. Research on group behavior (e.g., Kogan and Wallach, 1967) shows that groups will more often make risky decisions than would members of the same groups as individuals. Along this line of reasoning, aid as an altruistic ("status giving") balancing operation should more likely occur from multilateral than from bilateral (individual country) sources. Multilateral aid should be given for purposes of helping B where the need is greatest, whereas bilateral aid would be given where the giver can expect some benefits for itself.

Without being too technical, let me mention two ways in which (bilateral) givers ensure some gains (low risk) for themselves through their aid "gifts." The giving of tied aid is a common practice, requiring that the aid be spent for products from the giving country. Also associated with bilateral aid is the giving of products made by the giver but not the receiver, thus discouraging B's development of competitive products.

A greater part of the aid given by multilateral agencies should be "real aid" than is true of aid given bilaterally. To date, there is no satisfactory formula for computing the actual grant-equivalent amount contained in aid flows (see Horvath, 1974). The crude estimates of grant-equivalent aid which I use are the best available but still overestimate the "real aid" from bilateral givers.

It should be apparent why aid from multilateral sources (either from the major capitalist givers belonging to the Organization for Economic and Cultural Development (OECD) or from the socialist member countries within the United Nations Conference of Trade and Development (UNCTAD)) is predicted to have more beneficial results for B's development than is bilateral aid. For one thing, many aid-giving nations divide their total aid between bilateral and multilateral channels. Those projects which yield no direct return for the giver, such as certain infrastructural investments and some expenditures on health and nontechnical education, would be delegated (transferred) to a multilateral agency. Such an agency is less subject to pressure from interest groups (i.e., intracountry groups) and also is more prone to absorb the blame for risky decisions.

From the point of view of any given B, this hypothesis predicts a direct relation between the percentage of its total aid receipts from multilateral sources and its balancing effectiveness outcomes at a later time point.

- 3D.1 The higher the percentage of total aid receipts of a country which are from multilateral sources at T_0 , the larger the growth rate of effectiveness measures at T_1 .

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3D.2 Same as above, but for T_1 and T_2 respectively.

As **before**, all aid is measured as grant-equivalent aid per capita.²¹

The predicted associations ought to be stronger if one controls for total amount of aid received by B (3D.3 - 3D.4) and if one partials out the effects of SEI (3D.5 - 3D.6) and of debt-servicing performance (3D.7 - 3D.8).

Balancing Effectiveness Outcomes:
The Main Dependent Variable

The primary dependent variable requires some elaboration at this point. The label "balancing effectiveness outcomes" is misleading in some ways since I do not measure the relative closure or widening of the exchange gap between developing and developed countries (see e.g., Ward et al., 1971; Pearson, 1969, etc.). I measure B's progress in moving in the direction of "development," but I do not measure A's progress. B may experience a great deal of growth without closing its gap with A, if A's growth equals or exceeds that of B. Since I do focus upon externally caused changes in growth rates over time, and since the relations among nations have been conceptualized as exchanges which may be--or may catalyze--balancing operations, it seems appropriate to call the hypothesized results of such exchanges balancing outcomes.

²¹If better grant-equivalent data had been available, there should be no differences between the effectiveness outcomes of the two types of aid--save perhaps some difference in administration costs.

"Balancing effectiveness outcomes" refers to the amount of the variance in intracountry development growth rates that is accounted for by a country's dealings with abroad. For example, one such indicator is the growth rate of caloric food supply per capita. A study about "balancing effectiveness outcomes" would not be concerned with all possible or likely factors influencing that growth rate (e.g., climate, population growth, fatalistic religious belief systems, etc.). It is only concerned with that portion of the growth related to externally induced factors such as imports of fertilizer, training of agronomists funded by foreign aid, foreign construction of hygienic food storage areas, and the like. One could distinguish between factors that operate in the absence of external exchange and factors that are more likely to operate in the presence of such exchange. The overall dependent variable in this study focuses upon the latter.

A list of the specific indicators²¹ of "balancing effectiveness outcomes" follows, in order to give a clearer idea of the content of this variable. All are change rates over time. See Appendix B for the specifics of operationalization and sources of data.

| <u>Indicator</u> | <u>Direction assumed to indicate improvement</u> |
|------------------------------------|--|
| % change over time in: | |
| a. Dependence upon one export item | Decrease |

²¹One socially important indicator, that of income distribution within a country's population, was omitted because data were only available for twelve countries.

Most of the indicators used are standard ones found in the literature on development.

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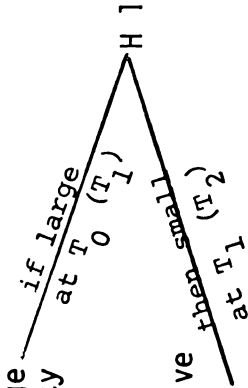
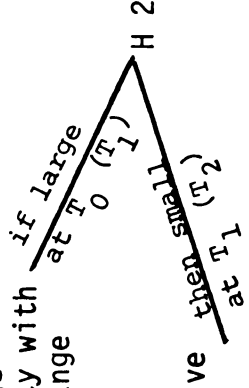
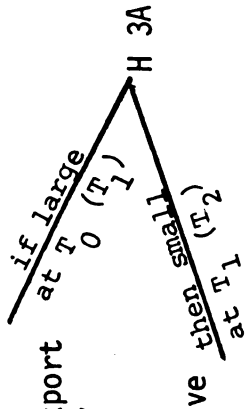
| <u>Indicator</u> | <u>Direction assumed to indicate improvement</u> |
|--|--|
| % change over time in: | |
| b. Debt-servicing position
(ratio of principal service payments over interest payments) | Increase |
| c. International Monetary Fund quota position, in per cent | Increase |
| d. Gross Domestic Product per capita (in constant dollars) | Increase |
| e. Per cent of GDP generated by agriculture | Decrease |
| f. Capital formation in percentage of GDP | Increase |
| g. Per cent of external public debt owed to private creditors | Decrease (?) |
| h. Per cent of external public debt owed to international organizations | Increase (?) |
| i. Cost of living | Decrease
(smaller increase) |
| j. Percentage of population in primary education | Increase |
| k. Percentage of population in secondary education | Increase |
| l. Percentage of population in tertiary education | Increase |
| m. Electricity consumption per capita | Increase |
| n. Daily caloric food supply per capita | Increase |

| <u>Indicator</u> | <u>Direction assumed to indicate improvement</u> |
|---|--|
| % change over time in: | |
| o. Percentage of population living in urban areas | Increase |
| p. Number of research institutions (including universities) per 500,000 persons | Increase |
| q. Population size (average annual growth rate) | Decrease
(smaller increase) |
| r. Number of telephones per 100 persons | Increase |
| s. Military expenditures per capita (in constant dollars) | Decrease |

Concluding Remarks

In summary, I would like to provide a diagramatic overview of my hypotheses with respect to (a) what relations among the variables are predicted; (b) which control variables should be taken into account; and (c) which terminological equivalence between Emerson's micro-level and my macro-level concepts is suggested.

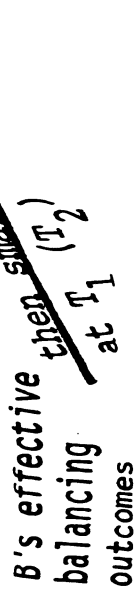
As was pointed out in the introduction, all independent variables are exogeneous factors, i.e., none would influence B's progress in the absence of international exchange. Since we do know that indigenous variables also play an important role, spectacular correlations should not be expected. However, the search for high correlations is not even the aim of this research. It is designed to test the feasibility of translating, testing, and--I hope--refining certain ideas that have been developed at a different aggregate level.

| CONCEPTS | HYPOTHESES | CONTROL VARIABLES | APPROXIMATE EMERSONIAN EQUIVALENTS |
|---|------------|-------------------|--|
| <p>B's exchange inequality with A</p>  <p>B's effective balancing outcomes</p> | | | <p>Power_A over B = Dependence_B upon A</p> <p>Power_B over A = Dependence_A upon B</p> <p>Balancing outcome = reduction in A's power advantage (over time)</p> <p>SEI: if low, then</p> <ol style="list-style-type: none"> low "motivational investment" low "availability" |
| <p>B's exchange inequality with all exchange partners</p>  <p>B's effective balancing outcomes</p> | | | <p>$P(A+A_{alt.})$ over B = D_B upon $(A+A_{alt.})$</p> <p>P_B over $(A+A_{alt.}) = D(A+A_{alt.})$ upon B</p> <p>Balancing outcome = reduction in B's "total" dependence (over time)</p> |
| <p>B's dependence upon one valued export commodity</p>  <p>B's effective balancing outcomes</p> | | | <p>B's dependence:</p> <p>From A's point of view, one condition for not extending "status giving;"</p> <p>From B's point of view, one condition making coalition formation more difficult</p> |

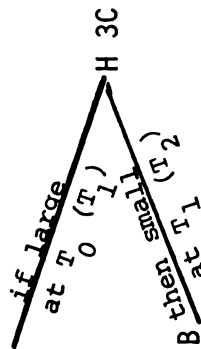
SEI at T_0 (T_1)

B's dependence upon exchange partners = a condition for coalition formation

SEI (at T_0, T_1)



B's exchange inequality with A



Aid = "status giving" operation by A
or A_{alt} .

SEI (at T_0, T_1)

Debt-servicing performance (T_1 only)

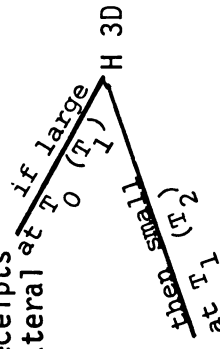
Amount of total aid received (at T_0, T_1)

(undetermined)

(undetermined)

Per cent of B's total aid receipts from multilateral sources

Multilateral aid = "status giving" balancing operation by A aggregate



B's effective balancing outcomes

SEI (at T_0, T_1)

Debt-servicing performance (T_1)

Amount of total aid received (at T_0, T_1)

Figure 5. Overview of the general hypotheses.

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CHAPTER III

RESEARCH METHODOLOGY

In this chapter I describe and discuss the procedures for collecting, preparing, transforming, and evaluating the data. A research project may be compared to the making of a movie. In the language of that metaphor, this section deals with the type of camera equipment and film used, the rationale for "shooting" some scenes in natural settings and others in the "studio," the editing and cutting of the filmed scenes, and the like. I begin with the choice of "actors" for my drama.

Sampling Procedures

My empirical unit of analysis is the country or nation-state. Those included in this study represent both a sample and universe. They constitute an empirical universe because they include all countries invited in 1973 to negotiate with the EC.²³ The theory, however, contains no location or time specifications; it applies to any exchange at any time in the past or future, involving either individual persons or aggregate exchange partners. In theoretical terms, my set of

²³This invitation is contained in Protocol No. 22. See European Communities, 1973.

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countries comprises but a sample of the universe to which the theory potentially applies. On the basis of findings about this sample, I cannot state whether exchange inequality, for example, always leads to certain effectiveness outcomes. My conclusions are descriptive of a particular group of countries at a particular point in time.

The design of this study is p-centric, that is, from the point of view of the 44 developing countries that seek an association agreement with the EC. These 44 countries resemble a non-random cluster sample, relatively homogeneous as compared to the developed nations (e.g., with regard to Gross Domestic Product per capita), and sufficiently heterogeneous among themselves to allow the empirical testing of certain propositions.

Data Collection

An Overview

My original plan called for a two-stage design in which Published aggregate data were compared with questionnaire responses From two delegates of each country negotiating in Brussels. I wanted to identify and evaluate the impact of certain interorganizational Variables--such as delegation authority, size of supporting staff, Composition of decision-making bodies, and the "profile strength" Of interorganizational units--upon the balancing effectiveness outcomes referred to in the previous chapter.

Figure 6 illustrates the overall theoretical model I had hoped to test. Values for the organizational variables (see Box III in Figure 6) were to be obtained from these questionnaires, while the

exchange variables (Box II) were to be operationalized using aggregate data. To prepare for questionnaire administration and to collect otherwise unobtainable aggregate data, I visited the Brussels negotiations in December and January of 1973/74 and again in June, 1974.

A number of events prevented me from testing the entire model (Figure 6) in the present study. These circumstances included the oil crisis which partially crippled the EC as a multilateral entity, the slow progress of the negotiations, the fact that many of my questions touched upon areas under negotiation and proved too sensitive to be asked until negotiations were completed, and the surprisingly open admittance that I--coming from the U.S.--might be spying.²⁴ As a result, I separated the testing of the model into two distinct phases, postponing that part dependent upon questionnaire data until a later time.

The present study builds extensive empirical groundwork by constructing directional exchange matrices over time (see Table A.3, Appendix A), by collecting information on many social variables, and by testing some exchange-theoretical hypotheses. With this underpinning, I will be in a good position later to assess the impact of

²⁴"Le fait d'ailleurs que l'initiative de l'enquête soit américaine a joué un rôle indéniable dans ce 'sabotage'." This quotation is from a letter addressed to me by Monsieur Doucy, President of the Institute for Public Opinion Research of the Free University of Brussels and is dated October 1, 1974. A copy of that letter and of the questionnaires is available upon request.

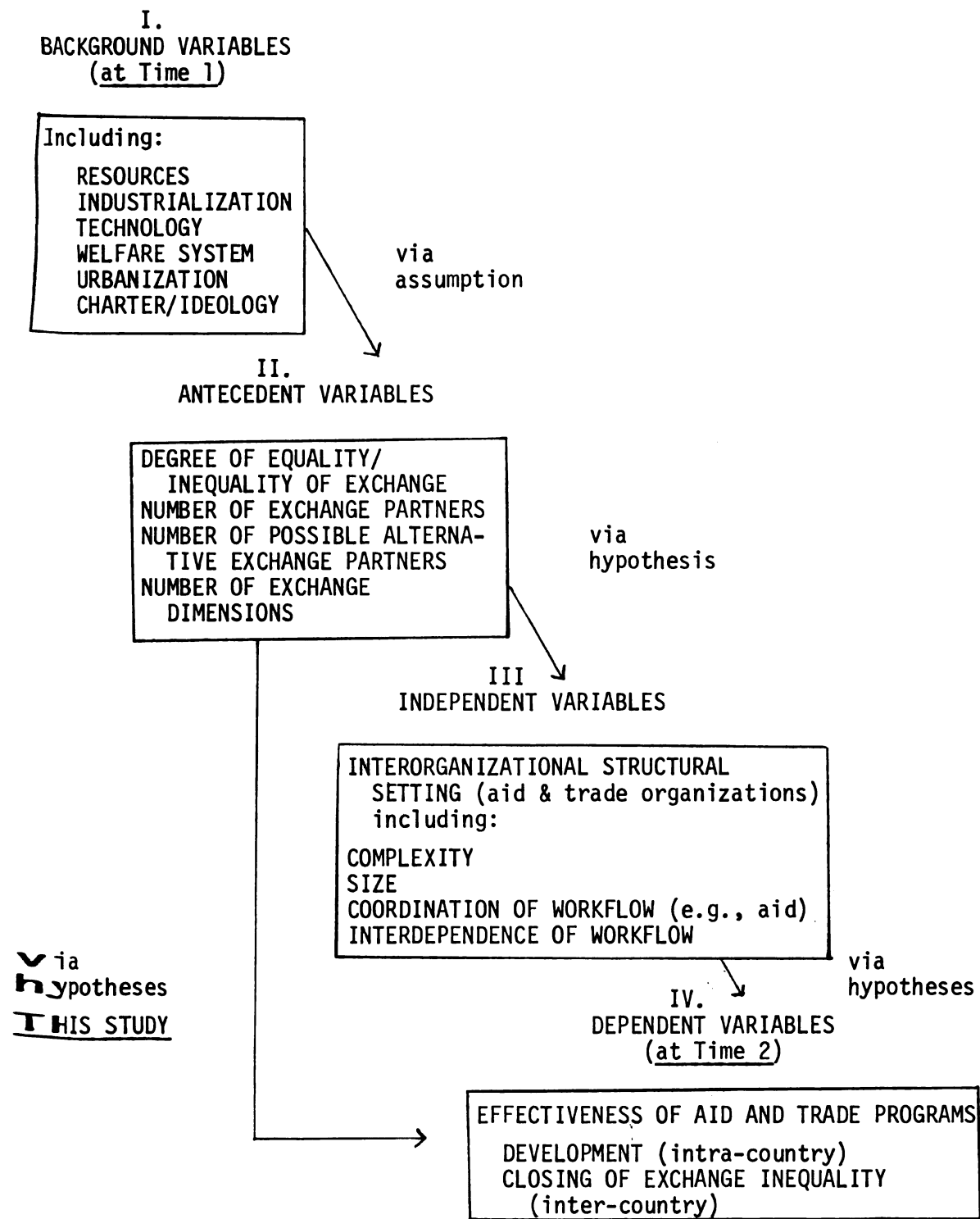


Figure 6. Illustration of the theoretical model of which this study tests one part.

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interorganizational variables upon balancing effectiveness outcomes. This second test phase, for the reasons mentioned, will have to wait until the political negotiations in Brussels have been completed.

Consequently, the data reported here are all aggregate, interval-scale data. Many are from published and unofficial EC and African sources, obtained in Brussels. In addition, I made extensive use of United Nations publications, World Bank periodicals and staff papers, and studies published by the Agency for International Development (A.I.D.). A detailed description of how each variable was operationalized and the sources from which data were collected appears in Appendix B.

Procedure of Data Gathering and Processing

Once I made the decision to select from the overall theoretical model (Figure 6) the link between exchange and effectiveness outcomes, I designed a time-series model for data gathering. Information for all 44 developing countries, six "old" and three "new" EC nations, and four "alternative" countries (Japan, U.S., U.S.S.R., and P.R. China) was to be collected on all indicators for sixteen points in time from 1958 to 1972.

This time-series model was eventually truncated (see Figure 7) by grouping the sixteen time points into three spans, referred to in this report as T_0 (1958-1960), T_1 (1962-1966), and T_2 (1968-1972). Many data, especially for the newly independent nations, were not available on a yearly basis. Since procedures for estimating the missing

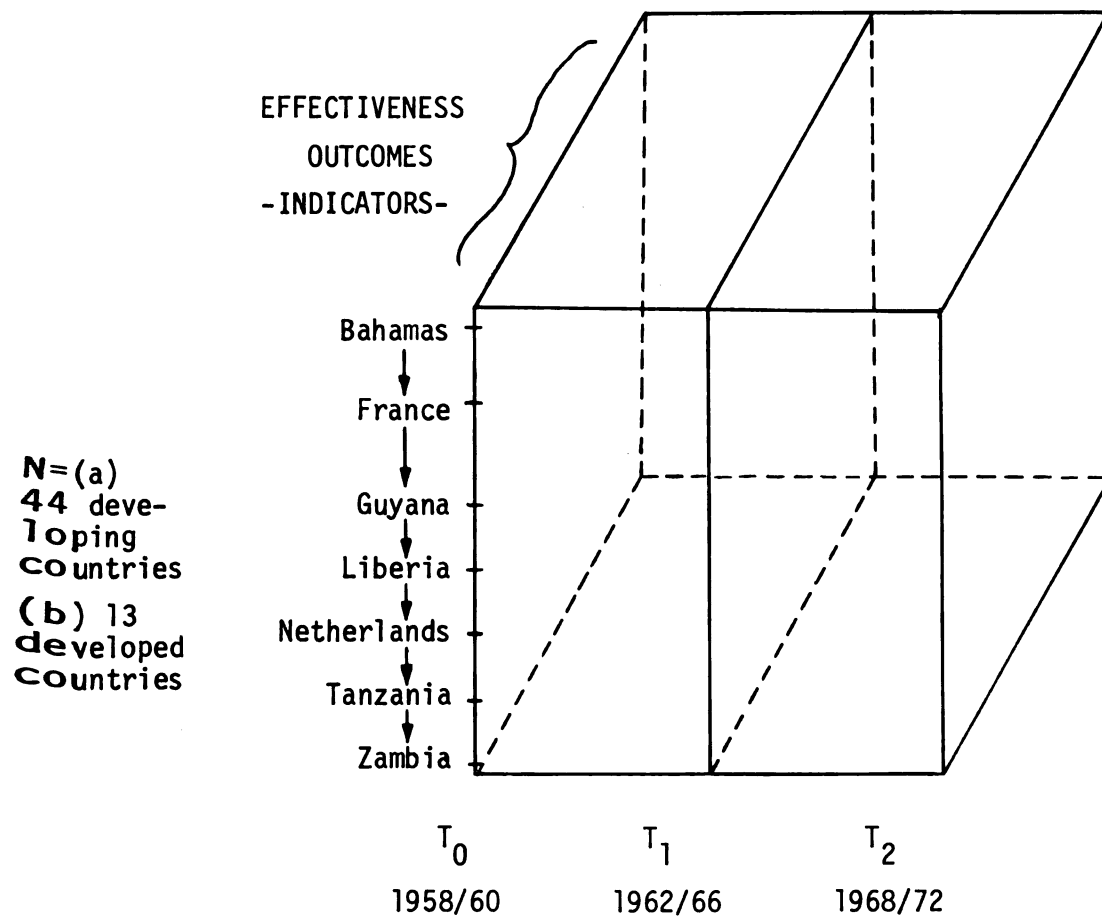


Figure 7. Truncated Time Series Model.

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data between census-taking years do not produce reliable data, the original time-series model was modified to one with three time periods. More than three values per country was available for most indicators; in these cases, averages were computed for each time span. Altogether thirty indicators were selected or constructed. If each indicator were counted at each time, there would be a total of 72 indicators for which reasonably complete data were available. (Inadequate data occurred primarily for T_0 , before many developing countries had adequate statistical services).

The primary independent variable--exchange inequality--was operationalized as a balance of goods and services exchanged over time, i.e., as a balance of trade and not a balance of payments. Trade flows between and among the 44 developing and nine EC countries were analyzed. To account for the notion of alternative exchange partners, four principal non-EC trade and aid partners were added, making a grand total of 57 countries.

Coding forms were designed to record both imports and exports from each country to each other country at eight points in time, in two-year intervals from 1958 to 1972. These eight points were then collapsed, producing averaged values for three time periods. This has the advantage of adjusting for abnormal short-term situations due to internal factors, such as a crop failure or a civil war.

From this data base,²⁵ I constructed a number of "who-with-whom" matrices for the directional flow of goods and services over

²⁵For source references and details of operationalization see Appendix B.

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time between/among the 57 nations. For each time period, this included matrices of raw exports in thousand dollars, of exports as a percentage of a country's total exports, of raw imports and of imports as a percentage of a country's total imports, and a final balance of trade matrix (raw exports minus raw imports). The last matrix for each of these three time periods is found in Tables A.3, Appendix A. These matrices, and derived grouped statistics, represent my efforts to operationalize the independent variable "exchange inequality."

The nineteen indicators of the major dependent variable "effectiveness outcomes" measure different aspects of a country's welfare and development status (see Appendix B for specific operationalization procedures). In content they could be likened to the major departments of any national government.

With respect to internal affairs (intra-country effectiveness), a treasury department handles questions of economic growth, a department of social welfare focuses on education and individual welfare, a commerce department upon communications, a department of defense upon military questions, and a housing and urban development department sets policies on urbanization and population growth. For each of these major areas, I have from one to four specific indicators.

Those indicators dealing with a country's position vis-à-vis other nations (inter-country effectiveness) are of particular interest to me. They ought to be more prone to external exchange influences and therefore should exhibit stronger correlations. Among the fifteen

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indicators of intra-country affectiveness, I will pay special attention to the six which are "future-oriented," directly affecting development in the years to come (capital formation, population growth rate, number of research institutions, and enrollments in primary, secondary, and tertiary education).

Each of these measures of effectiveness outcomes will be considered on its own merits; no scaling or other data reduction techniques were used.

Completeness and Reliability of Data

Most research reports dealing with published (aggregate) data repeat a standard set of cautionary statements. They cite the problems of meaning equivalence of concepts across cultures (see Przeworski and Teune, 1973), the unreliability of data collected by newly established statistical services (see Adelman and Morris, 1967), the caution necessary in interpreting data about politically sensitive areas (see Cutright, 1965), and so on. I can only add that most of the indicators included in this study have been double-checked by comparing multiple sources and that few politically sensitive indicators were used. Of those particularly sensitive indicators that were selected, income distribution had to be omitted because of the paucity of data and military expenditure data was obtained from a source outside the governments in question, namely the U.S. Arms Control and Disarmament Agency. Data on urbanization takes into account the varying definitions of what is considered "urban," since each country reported statistics according to its own definition.

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In the interest of obtaining comparable and more complete data, indicators of enrollment in primary, secondary, and tertiary education were recomputed from per cent of age group enrolled to per cent of total population enrolled. Many countries report the absolute number of students but not the number of persons in various age groups. Taking the number of students as a percentage of total population, although adding a source of error by not accounting for differences in age profiles among countries, proves to be a minor problem since only growth rates were taken as dependent variables.

Otherwise, standardization procedures such as utilizing per capita figures and controlling for differential inflation by converting current prices into constant dollars were applied wherever applicable. Table 2 gives an overview of the number of complete, non-missing observations for each indicator. Caution will be taken in the interpretation of those correlations based on smaller numbers of observations. Numbers of observations, out of a possible 44, are noted as well on each table in which findings are reported.

Data Analysis

After collecting and processing the data, I took five distinct analysis steps in order to test my hypotheses. These included construction of (a) trade matrices, (b) several variables, (c) a correlation matrix, and (d) partial correlation matrices. In addition, I ascertained (e) significance levels of the correlations and partial correlations.

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Table 2. Number of Complete (non-missing) Observations on 72 Indicators
Out of a Total of 44 Possible Observations.

| Indicator Name | Time Period | Number of Non-Missing Observations |
|--|-------------|------------------------------------|
| Debt Servicing Performance | 1 | 33 |
| | 2 | 34 |
| Amount of Aid (Total per Capita) | 0 | 42 |
| | 1 | 38 |
| | 2 | 42 |
| Percentage of Multilateral Aid | 0 | 43 |
| | 1 | 43 |
| Susceptability to External Influence | 0 | 37 |
| | 1 | 41 |
| | 2 | 43 |
| Inequality of Trade Position | 0 | 32 |
| | 1 | 39 |
| | 2 | 39 |
| Number of Countries That Account for 50% of a Country's Imports | 0 | 32 |
| | 1 | 39 |
| | 2 | 39 |
| Number of Countries That Account for 50% of a Country's Exports | 0 | 31 |
| | 1 | 39 |
| | 2 | 39 |
| Balance of Trade With Old EC Countries | 0 | 33 |
| | 1 | 39 |
| | 2 | 41 |
| Amount of Aid from Non-EC | 1 | 38 |
| | 2 | 42 |
| Balance of Trade With Old EC (per capita) | 0 | 33 |
| | 1 | 39 |
| | 2 | 41 |
| Decrease Over Time of a Country's Dependence Upon Any One Export Item--Decline/Growth Rate in Per Cent | 0 → 1 | 32 |
| | 0 → 2 | 32 |
| | 1 → 2 | 34 |

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1974. 1975.

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1982. 1983.

1984. 1985.

1986. 1987.

Table 2. Continued.

| Indicator Name | Time Period | Number of Non-Missing Observations |
|--|-------------|------------------------------------|
| Debt Servicing Performance | 1 → 2 | 33 |
| IMF Quota Position | 1 → 2 | 32 |
| GDP Per Capita | 0 → 1 | 40 |
| | 0 → 2 | 40 |
| | 1 → 2 | 41 |
| Per Cent of GDP That is Generated by Agriculture | 0 → 1 | 40 |
| | 0 → 2 | 40 |
| | 1 → 2 | 41 |
| Capital Formation | 0 → 1 | 39 |
| | 0 → 2 | 38 |
| | 1 → 2 | 39 |
| Per Cent of External Public Debt Owed to Private Banks and Other Private Creditors | 1 → 2 | 21 |
| Per Cent of External Public Debt Owed to International Organizations | 1 → 2 | 19 |
| Cost of Living | 0 → 1 | 25 |
| | 0 → 2 | 25 |
| | 1 → 2 | 37 |
| Per Cent of Population in Primary Education | 0 → 1 | 39 |
| | 0 → 2 | 39 |
| | 1 → 2 | 43 |
| Per Cent of Population in Secondary Education | 0 → 1 | 39 |
| | 0 → 2 | 38 |
| | 1 → 2 | 42 |
| Per cent of Population in Tertiary Education | 0 → 1 | 23 |
| | 0 → 2 | 23 |
| | 1 → 2 | 31 |
| Electricity Consumption Per Capita | 0 → 1 | 33 |
| | 0 → 2 | 33 |
| | 1 → 2 | 38 |

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Table 2. Continued.

| Indicator Name | Time Period | Number of Non-Missing Observations |
|--|-------------|------------------------------------|
| Daily Caloric Food Supply Per Capita | 1 → 2 | 35 |
| Per Cent of Urban Population | 1 → 2 | 39 |
| Number of Research Institutions (including universities) Per 500,000 Population | 1 → 2 | 34 |
| Average Annual Population Growth Rate | 0 → 1 | 40 |
| | 0 → 2 | 44 |
| | 1 → 2 | 44 |
| Telephones Per 100 Persons | 0 → 1 | 26 |
| | 0 → 2 | 26 |
| | 1 → 2 | 41 |
| Military Expenditure Per Capita | 2 → 1 | 34 |
| Decrease Over Time of a Country's Dependence Upon Any One Export Item | 0 → 1 | 32 |
| | 0 → 2 | 32 |
| | 1 → 2 | 34 |

It proved worthwhile to have confronted considerable technical problems during the construction of the nine 57 X 57 trade matrices; coding mistakes and source problems (e.g., two sources reporting very different figures) were detected which otherwise would have been almost impossible to find. For example, matrices showing a country's exports to various other countries as a percentage of total exports included a number of cases where totals considerably exceeded 100 per cent. A detailed comparison of original data sources with coded numbers and with other data sources enabled me to correct these errors.

The construction of variables proved to be straight-forward with one exception. As Table A.5 in Appendix A shows, the values for the variable "number of countries accounting for 50 per cent of a country's exports (imports)" have remarkably little variation. I had made a fiat decision when I set the 50 per cent cutting point for that indicator of dependency. As Ray and Singer (1973) observed in a different context, however, the composition of the last 50 per cent is just as important as that of the first 50 per cent. If I were to do this again, I would change the computer scanning program to print out the number of countries accounting for at least 80 per cent of a country's trade.

Pearson's product-moment correlation coefficients²⁶ were

²⁶Since my analysis plan was aimed at determining the extent to which external influences may, over time, account for growth rates of effectiveness indicators for the 44 developing countries as a group and not for each country separately, I decided not to use McGranahan's (1971) "correspondence analysis." If that technique were extended diachronically, however, it seems very useful.

computed, yielding a matrix of correlations of each indicator with each other indicator. Whereas many assumptions underlying Pearson's r --those requiring interval data, independent observations, and reasonably linear relations-- have been met, I have ignored the fact that others may not be met (e.g., normality of distribution). Despite Blalock's (1972: 366-369) warning, I decided that such a procedure was justified because my set of countries does comprise an empirical universe, if not a theoretical one. Also, the error introduced by ignoring the normality assumption for Pearson's r has been shown to be quite small indeed (see Zeller and Levine, 1974).

Tests of the significance of correlations and partial correlations helped my interpretation efforts. The same correlation may be statistically significant in one case and not in another, due to differences in the number of observations. Such significance tests provide one tool for taking the size of the "N" into account when interpreting findings.

I employed two similar formulas for transforming the relevant correlations into t-scores (see Steel and Torris, 1960: 190 and 301f).

(a) Significance of correlations:

$$t = \frac{r}{\sqrt{\frac{1 - r^2}{N - 2}}} ; \text{d.f.} = N - 2$$

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(b) Significance of partial correlations:

$$t = \left(\frac{r_p}{\sqrt{1 - r_p^2}} \right) \sqrt{N - K} \quad ; \quad \text{d.f.} = N - K$$

Where: N = number of paired observations

r_p = partial correlation

K = number of variables including those that are partialled out.

The t-scores obtained were compared with an appropriate significance table for one-tailed tests. The level of significance--.10, .05, or .005--has been marked by asterisks in the tables of findings in Appendix C.

I shall now turn to the presentation and discussion of my findings.

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CHAPTER IV

PRESENTATION AND DISCUSSION OF FINDINGS

Findings related to each hypothesis are presented below, but only the major patterns of relationships will be discussed. The complete set of correlations for each hypothesis at each time period is located in Appendix C.

Figure 8 provides an overview of the nineteen indicators of the dependent variable Effectiveness Outcomes. Findings will be ordered according to two major categories of effectiveness indicators, those dealing directly with a country's relations with the outside world (inter-country outcomes) and those dealing with its internal status (intra-country outcomes). Intra-country effectiveness outcomes, in turn, are subdivided into more "future-oriented" ones--directly affecting future chances for development--and the "present-oriented" indicators.

Hypothesis 1: Inequality of Exchange with the "old" EC in relation to Effectiveness Outcomes

I view an exchange equation between A and B as a catalyst, itself empty and "unproductive" but serving to facilitate or hamper B's chances to improve its position vis-à-vis A. In Hypothesis 1, I suggested that the magnitude of the initial gap between A and B is

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INTER-COUNTRY

Dependence upon one export item
 Debt servicing performance
 IMF quota position
 Debt owed to private creditors
 Debt owed to international organizations

INTRA-COUNTRYa) Future-oriented

- 1) Capital formation
- 3) Research institutions
- 3) Primary education
- 3) Secondary education
- 3) Tertiary education
- 6) Population growth

b) Present-oriented

- 1) GDP per capita
- 1) Electricity consumption
- 2) Agriculture, per cent of GDP
- 2) Urban population
- 4) Cost of living index
- 4) Caloric food supply
- 5) Telephones
- 7) Military expenditures

WHERE: 1 = Economic growth
 2 = Urbanization
 3 = Education
 4 = Individual welfare
 5 = Communications
 6 = Population growth
 7 = Military expenditures

Figure 8. Balancing Effectiveness Outcomes--A guide for the interpretation of 19 indicators.

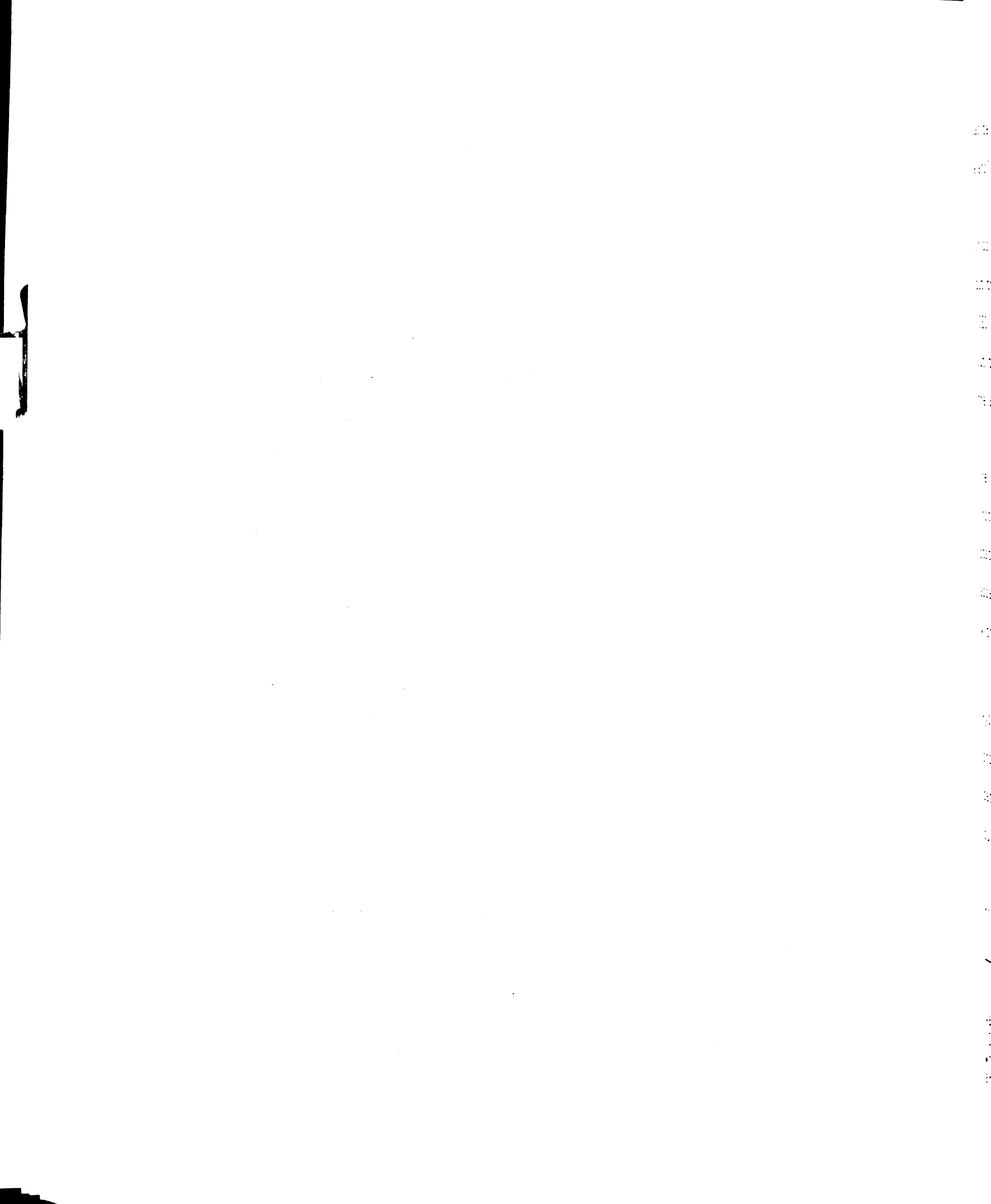
inversely related to B's later success in moving toward a more balanced exchange position. That is, if B (a developing country) begins with a very large disadvantage relative to A (the six "old" EC nations), B's chances of improvement will be hampered.

Inequality of Exchange was operationalized as B's balance of trade (exports minus imports) with the "old" EC countries as a group. Both raw and per capita balance figures were utilized. Large inequality is reflected in a very low (i.e., negative) trade balance. With four exceptions (dependence on one export item, cost of living, population growth, and military expenditures), correlations with Effectiveness Outcome indicators are predicted to be positive.²⁷ They will exhibit positive correlations if the hypothesis is supported,

Inspection of the data tables (Tables C.1 - C.4 in Appendix C) reveals a pattern of mixed support for this hypothesis. In the discussion of this pattern, one should remember that all dependent (effectiveness) indicators are change or growth rates over time. This diachronic frame permits a possible "trigger effect" to operate, i.e., the effects of a trade deficit or surplus at T_0 upon, for example, education enrollments will not be felt instantaneously but may appear later.

With few exceptions, the patterns of relationships were the same whether the independent variable was measured as a raw or a per

²⁷ See Appendix B for the "scoring direction" of specific indicators. Ratios such as debt-servicing performance and the re-scoring of some change rates (per cent of GDP generated by Agriculture and external debt owed to private creditors) can be confusing; therefore, I will indicate whether or not correlations are in the expected direction.



capita trade balance with the "old" EC. Below I will only cite examples of findings for the per capita indicator.

a) Inter-country effectiveness: Significant²⁸ relationships were exhibited for three of the five inter-country indicators but these occurred only with the T_0 balance of trade with "old" EC (OEC). These relationships were basically unaffected by partialling out the effects of SEI (susceptability to external influence) and the amount of foreign aid received.

The hypothesis is supported with respect to dependence upon one export item. Correlations with balance of trade with OEC at T_1 (not shown) are also in the predicted direction, although not statistically significant. Diversification of one's economy is apparently hampered by having had a large negative trade balance with the OEC.

b) Intra-country effectiveness: Broader support for Hypothesis 1 is found for indicators of internal development, as shown in Table 3. The T_1 trade balance with OEC produces a stronger pattern of support for the hypothesis than does that at T_0 , although quite consistent support is found for both times.

The hypothesis receives the most support in the areas of higher education (growth in number of research institutions and in

²⁸Correlations are based upon numbers of observations which vary from 19 to 41, the majority of which fall between 32 and 39. (See also Table 2 in the previous chapter). T-tests of significance, which take this into account, were performed. Levels of significance are indicated as follows: * = .10; ** = .05; *** = .005.

Table 3. Hypothesis 1: Inter-Country Effectiveness--Selected Findings from Tables C-1 to C-4.

Per capita trade balance with OEC at T_0 with:

| | Change Rate
Between Times | r | In the
Predicted
Direction? |
|--|------------------------------|----------|-----------------------------------|
| Dependence on one
export | 0 $\rightarrow$ 1 | *** -.78 | Yes |
| | 1 $\rightarrow$ 2 | * -.27 | |
| | 0 $\rightarrow$ 2 | *** -.85 | |
| Debt servicing
performance | 1 $\rightarrow$ 2 | *** -.85 | No |
| External public debt
owed to international
organizations | 1 $\rightarrow$ 2 | * -.31 | No |

tertiary education enrollments²⁹) and communications (number of telephones per 100 persons). The least overall support is found for the period between T_1 and T_2 , when the trade balance values are utilized. It is likely that exchange inequality with OEC has a rather immediate impact upon certain growth indicators--especially cost of living and capital formation--such that development between T_1 and T_2 is more affected by the T_1 trade balance than by the one at T_0 .

²⁹At T_1 , partialling out debt servicing position produced significant correlations for tertiary education and electricity in the predicted direction and, in the opposite direction, for agriculture ($T_1 \rightarrow T_2$) and secondary education ($T_0 \rightarrow T_2$). In general, however, the control variables had little impact upon the relationships between trade balance with OEC and effectiveness outcomes.

One additional relationship, not in the expected direction, occurs when raw rather than per capita trade balance is the indicator for the independent variable: military expenditures become significant at the .05 level.

Table 4. Hypothesis 1A: Intra-Country Effectiveness--Selected Findings from Tables C-1 to C-4.

Per capita balance of trade with OEC at T_0 with:

| | Change Rate
Between Times | λ | In the
Predicted
Direction? |
|---|------------------------------|-----------|-----------------------------------|
| <u>Future-oriented indicators:</u> | | | |
| Capital formation | 0 $\rightarrow$ 1 | ** +.39 | Yes |
| | 1 $\rightarrow$ 2 | -.06 | |
| | 0 $\rightarrow$ 2 | ** +.38 | Yes |
| Tertiary education | 0 $\rightarrow$ 1 | +.26 | |
| | 1 $\rightarrow$ 2 | -.01 | |
| | 0 $\rightarrow$ 2 | ** +.49 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Cost of living | 0 $\rightarrow$ 1 | +.18 | |
| | 1 $\rightarrow$ 2 | *** +.92 | No |
| | 0 $\rightarrow$ 2 | + .24 | |
| Telephones | 0 $\rightarrow$ 1 | +.16 | |
| | 1 $\rightarrow$ 2 | +.10 | |
| | 0 $\rightarrow$ 2 | ** +.37 | Yes |
| <u>Per capita balance of trade with OEC at T_1 with:</u> | | | |
| <u>Future-oriented indicators:</u> | | | |
| Research institutions | 1 $\rightarrow$ 2 | *** +.47 | Yes |
| Population growth | 1 $\rightarrow$ 2 | ** -.39 | Yes |
| | 0 $\rightarrow$ 2 | ** -.36 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Telephones | 1 $\rightarrow$ 2 | ** +.30 | Yes |
| | 0 $\rightarrow$ 2 | | |
| Agriculture | 1 $\rightarrow$ 2 | | |
| | 0 $\rightarrow$ 2 | * +.21 | Yes |

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In general, a favorable trade balance with the OEC appears to further the development of future-oriented and present-oriented areas in about equal measure. It is perhaps not a startling finding that cost of living rises, rather than declines, as a country's trade position with the OEC improves. Although I had expected an opposite finding, it is safe to assume that European inflation factors affect a country more strongly if that country is able to import commodities with a higher "technology content," purchased with export proceeds that are generated through a trade surplus.

c) Evaluation of the findings: Referring back to Figure 4 in Chapter II, the relative strength of the association measures is surprising. If one takes into account that more than one-half of the developing countries included in this study are neither colonies of the "old" EC nor had special trade associations with it, then it becomes plausible to suspect the following: that it is not necessarily historically grown dependence but contemporary trade imbalance with the world's largest trading partner--the European Communities--that can affect a country's internal development. Looking at the correlation over time, it does not seem that this effect weakens up to T_2 (1968-1972).

That these internal growth rates are related to the presence of exchange rather than being indigenous factors may be inferred from the rather high correlation between trade balance and debt servicing performances ($r = .85$). Although not in the predicted direction, it seems clear that the latter indicator--measured as the ratio of principal service payments over interest payments on external public debt--

[illegible]

point to a characteristic phenomenon of capitalism: As long as interest can be paid, erasing one's debt is not to the advantage of the creditor and--given a certain cost of living rise--not to the debtor either (see Appendix B, B-9 and B-10, and Hilferding, 1910). This line of reasoning seems to be supported by the rather high intercorrelation of debt servicing performance and cost of living ($r = .77$).

Hypothesis 2: Overall Inequality of Exchange in relation to Effectiveness Outcomes

Hypotheses 1 and 2 both attempt to link inequality of exchange with effectiveness outcomes, i.e., with B's chances to accomplish balancing operations over time. The first hypothesis dealt with B's exchange position in relation to A, whereas this one addresses itself to B's overall position (trade balance) with the rest of the world. This overall balance of trade is measured as the percentage of total exports that are "covered" by a country's total imports; any value exceeding 100 per cent indicates a negative (unequal) trade position. All correlations are predicted to be negative with the exception of dependence upon one export item, cost of living, population growth, and military expenditures.

The first--and surprising--observation is that the number of significant correlations drops sharply as compared with the results obtained in the first hypothesis (see Tables C-5 and C-6 versus Tables C-1 to C-4 in Appendix C). Only nine of the nineteen indicators show a significant correlation at either time period and, at the second time, only four of the nineteen are significant at all. It is tempting to interpret this crude finding as an indication that

having a trade deficit with the EC is much more consequential for a developing country's effectiveness growth rates than having a deficit with alternative trading partners. However, such an interpretation would rest on firmer ground if I had (a) tested this more directly, using trade balance with non-EC countries (overall balance minus balance with the "old" EC) and (b) if the trade balances in the two hypotheses had been measured by identical procedures.

A closer inspection of Tables C-5 and C-6 reveals the following specific findings.

(a) Inter-country effectiveness: Only the ratio of principal service payments over interest payments, my indicator of debt servicing performance, shows a moderate and significant correlation with the overall trade balance--and not in the direction predicted by the hypothesis, a substantial change from the respective correlation in the former hypothesis (see Table 3: $\lambda = .85$; Table 5: $\lambda = .29$).

Table 5. Hypothesis 2: Inter-Country Effectiveness--Selected Findings from Tables C-1 to C-4.

| <u>Overall trade balance at T_0 with:</u> | | | |
|--|--------------------------------------|-----------------------------|--|
| | <u>Change Rate
Between Times</u> | <u> </u> | <u>In the
Predicted
Direction?</u> |
| Debt servicing | 1 $\rightarrow$ 2 | * +.29 | No |

Even this relationship holds only at T_0 but not at T_1 . It is of interest that the relation between overall trade position and the percentage of external public debt owed to international organizations changes from an almost significant +.27 at T_0 to a slightly

negative correlation at T_1 which is in the predicted direction.

Finally, I should point out that one of the strongest relationships in the first hypothesis, with a country's dependence upon one export item, drops markedly when the independent variable is overall trade balance rather than balance with the OEC. Although the correlations in both instances are in the predicted direction, the T_0 values drop from .88 to .13 between hypotheses 1 and 2. I suspect that this change in the correlation from hypothesis 1 to hypothesis 2 is a result of a particular "weakness" of the European Communities. The EC is dependent upon imports of raw products, i.e., the export commodities included in this study (see Appendix B, B-2), unlike any other major trading power (except Japan). To turn this dependence into a power advantage relative to the developing countries is perhaps one of the more startling findings and would require a major refinement of the Emersonian theoretical scheme.

For example, one of the "actions" that seems to have no balancing intentions (see p. 26) on the part of "old" EC members such as France and "new" EC members such as Great Britain has been the creation and maintenance of currency areas, the Franc zone and the Sterling bloc respectively. To pay for a developing country's export items with these "hard" currencies at a price that tends to be set in the capitals of these currencies is one of the mechanisms for the maintenance of a power advantage.³⁰

³⁰One principal weakness of my operationalization of trade balance is that these currency factors have not been accounted for. Comparable data were simply not available. For a discussion of dependence through currency ties, see Singer, 1972: 266 ff.

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b) Intra-country effectiveness: There are four groups of correlations that should receive attention in this section. First, the relationship of overall trade balance at T_0 with capital formation is inconclusive (see Table 6). Capital formation growth between T_0 and T_1 is significant at the .05 level in the predicted direction but switches in the opposite direction during the following period, again to a significant level. This suggests that the influence of trade deficits at one time period may even stimulate the formation of capital at a later time.

Second, the percentage of GDP generated by agriculture--often considered an important indicator for industrial growth (see Kuznets et al., 1955)--shows a significant but contradictory pattern of correlations with overall balance of trade. Trade balance at T_0 is related to change rate in agriculture over the long run ($T_0 - T_2$) and in the short run between T_0 and T_1 --both opposite the predicted direction. With trade balance at T_1 , the long-run change in agriculture becomes significant at the .05 level in the predicted direction.

Third, there are surprisingly significant correlations in the opposite direction between overall trade balance and military expenditures. It will be recalled that the trade balance with the "old" EC yielded a significant correlation but in the predicted direction. Having a good overall trade position seems to allow a developing country to reduce military expenditures, whereas just the opposite seems true if it has a good trade balance with the OEC.

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Table 6. Hypothesis 2: Intra-Country Effectiveness--Selected Findings from Tables C-5 and C-6.

Overall trade balance at T_0 with:

| | Change Rate
Between Times | Δ | In the
Predicted
Direction? |
|-------------------------------------|------------------------------|----------|-----------------------------------|
| <u>Future-oriented indicators:</u> | | | |
| Capital formation | 0 $\rightarrow$ 2 | ** -.38 | Yes |
| | 1 $\rightarrow$ 2 | ** +.41 | No |
| | 0 $\rightarrow$ 2 | ** -.31 | Yes |
| Population growth | 0 $\rightarrow$ 1 | * +.39 | Yes |
| | 1 $\rightarrow$ 2 | +.02 | |
| | 0 $\rightarrow$ 2 | -.04 | |
| <u>Present-oriented indicators:</u> | | | |
| Agriculture | 0 $\rightarrow$ 1 | ** +.32 | No |
| | 1 $\rightarrow$ 2 | -.12 | |
| | 0 $\rightarrow$ 2 | ** +.26 | No |
| Urban population | 1 $\rightarrow$ 2 | * -.29 | Yes |
| Military expenditures | 1 $\rightarrow$ 2 | * -.28 | No |
| Electricity | 0 $\rightarrow$ 1 | +.00 | |
| | 1 $\rightarrow$ 2 | * +.24 | No |
| | 0 $\rightarrow$ 2 | -.02 | |

Overall trade balance at T_1 with:

| | | | |
|-------------------------------------|-------------------|----------|-----|
| <u>Future-oriented indicators:</u> | | | |
| Population growth | 1 $\rightarrow$ 2 | *** +.50 | Yes |
| | 0 $\rightarrow$ 2 | *** +.42 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Agriculture | 1 $\rightarrow$ 2 | +.06 | |
| | 0 $\rightarrow$ 2 | ** -.27 | Yes |
| Military expenditures | 1 $\rightarrow$ 2 | ** -.35 | No |

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And finally, the highest correlations of all are between overall trade balance at T_1 and average annual growth rate of population.³¹ The greater one's trade deficit, the higher is the population growth rate in both the short and the longer run (both significant at the .005 level). Again, it is worth pointing out that this expected relationship holds only with regard to overall trade inequality and not with inequality vis-à-vis the OEC.

c) Evaluation of the Findings: In discussing this second hypothesis, I have emphasized the--at times--striking differences between the measures of exchange inequality in hypothesis 1 and hypothesis 2, with respect to patterns of effectiveness outcomes. A developing country's trade position with one group of developed countries (the "old" EC) appears more consequential for its development than does its overall trade position with the world.

I found moderate supporting evidence for the hypothesis that the magnitude of unequal exchange does, in general, have a hampering effect on B's attempts to move toward balance. Furthermore, negative influence is stronger when one important set of trading partners is analytically separated from the total. To put it differently, an exchange partner's chances of achieving balance

³¹ Controls for SEI at T_0 serve to raise correlations from the .10 to the .05 level of significance, in the predicted direction, for population growth ($T_0 \rightarrow T_2$) and also for urban population ($T_1 \rightarrow T_2$).

Use of aid as a control variable at T_1 makes the relationship with secondary education ($T_0 - T_2$) significant at the .10 level, but not in the expected direction. Partialling out the effect of SEI at T_0 reveals a correlation with tertiary education ($T_0 - T_2$) which is significant at the .10 level, in the opposite direction from that predicted by the hypothesis.

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vary not only with the magnitude of the initial exchange gap but also with the constellation of exchange partners. Although I did not directly compare exchange relations of B with different sets of specific partners, it seems that the presence of alternative exchange partners (alternative to the EC) certainly did not decrease B's chances for improving its position.

Further research should investigate in greater depth the exact meaning of "constellation of exchange partners." To apply Emersonian guidelines proves not to be particularly useful in this instance, because the analytical restriction to a dyadic relationship with only peripheral references to constellation-specific actions such as coalition formation ignores, for example, that coalitions may promote or present balancing operations. In the present context, it should be explored whether the 44 developing countries will benefit more from entering into an association agreement with the enlarged EC than they did when trading with the OEC and with the new EC members separately.

Turning to the presentation and discussion of the next group of hypotheses, I shall now investigate to what extent "internal" and "external" dependence are in fact synonymous with being at a disadvantage in an unequal exchange situation.

Hypothesis 3A: Dependence upon one export item in relation to effectiveness outcomes

Arguing against theorists who define power in terms of an actor's attributes, Emerson instead claims that power and dependence ought to be defined in terms of the relational properties of exchange.

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The present study explores the feasibility of systematically changing the context of Emerson's exchange-theoretical propositions and derived extrapolations thereof. In the context of the exchange between and among countries, the concept of "dependence" certainly has a number of very different, if perhaps interrelated, meanings.

One meaning of dependence in this setting stems from the developing country's internal economic structure; if a very high percentage of B's bundle of goods-for-exchange is taken up by just one export commodity, B's vulnerability to shift in the world market situation should also be high. Hypothesis 3A suggests that B's percentage of total exports accounted for by one export item is inversely related to growth of effectiveness indicators. All correlations with effectiveness indicators are predicted to be negative, again with the exceptions of cost of living, average annual population growth, military expenditures per capita, and dependence upon one export item.³²

a) Inter-country effectiveness: Neither a country's International Monetary Fund quota position nor its indebtedness to private creditors is noticeably correlated with commodity dependence, nor were they strongly related to exchange inequality in hypotheses 1 and 2. Even debt servicing performance, important in previous hypotheses,

³²Hence dependence upon one export item, as an independent variable, was correlated with its own rate of change. There is some question of the conceptual independence of these two variables--although the empirical relationships were not high--and these correlations were excluded from the summary tables included in the text.

exhibited weak and inconclusive results. The remaining two inter-country effectiveness indicators, however, show significant correlations. Percentage of external public debt owed to international organizations is highly significant in the expected direction, but only with T_0 values of the independent variable (shown in Table 7). Even international organizations seem to favor less-dependent countries, increasingly preferring them over the "dependent" countries (who are presumably more in need of their lower interest rates). When the effect of SEI is partialled out, this correlation approximates $-.48$ with commodity dependence at both T_0 and T_1 (see Tables C-7 and C-8 in Appendix C).

Correlations of dependence upon one export item with its own change rate (not shown) vary in direction. Commodity dependence at T_0 is positively related to its rate of change between T_0 and T_1 , in the expected direction. However, commodity dependence at T_1 has the opposite effect on the $T_0 \rightarrow T_2$ change rate. Both correlations reach the .05 level of significance.

The question of debt servicing will be brought up again in the discussion of the succeeding hypotheses. It should be mentioned in this context, that one of the major international organizations, the International Monetary Fund (IMF) refinances the loans it provides to developing countries, to a large extent with capital which it borrows at the prevailing interest rates from principal money markets in the United States and Europe. For example, normal loans from the IMF cost 4.25 per cent in the late 1940s and a little over 8 per cent

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Table 7. Hypothesis 3A: Inter-Country Effectiveness--Selected Findings from Tables C-7 and C-8.

| Dependence upon one export item at T_0 with: | | | | |
|--|------------------------------|---|----------|-----------------------------------|
| | Change Rate
Between Times | | Δ | In the
Predicted
Direction? |
| | 1 | 2 | | |
| External public debt
owed to international
organizations | | | * -.35 | Yes |
| Dependence upon one export item at T_1 with: | | | | |
| External public debt owed
to international
organizations | 1 | 2 | ** -.46 | Yes |

in 1970 (see Osipov, 1972: 200). Only a relatively small share of the IMF loans is given at lower interest rates. These latter "soft" loans are administered by a sub-organization of the IMF, the International Development Association (IDA). The "old" six member countries of the European Communities hold a 18.47 per cent share of the voting power in the IMF, whereas the 44 developing countries included in this study hold a 7.05 per cent share. The merger of the three "new" EC members raised the EC's share to 29.17 per cent. In other words, even the external public debt repaid by developing countries to international organizations is really paid back to an organization where no other country in the world exceeds the EC with respect to voting power in the Executive Directorate.

b) Intra-country effectiveness: Virtually all indicators of economic growth (GDP per capita, electricity consumption, and

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capital formation) are significantly correlated with a developing country's dependence upon one export commodity (see Table 8). Of these, GDP and capital formation are related in the predicted direction and the results for electricity consumption are inconclusive (when controlled³³ for debt servicing performance at T_1 , the correlation becomes significant in the opposite direction).

It is worth mentioning that exchange inequality, measured either as overall trade balance or balance with OEC, had no noticeable effect upon gross domestic product. With respect to Emerson's theorem, I suspect that a developing country's chance of closing the GDP gap with exchange partners is related to its having a "balanced" (i.e., diversified) assortment of exchange items and not necessarily to the size of its initial trade inequality.

Neither the measures of individual welfare (cost of living and caloric food supply) nor the urbanization indicator is affected by degree of commodity dependence. As was the case in the first

³³The several control variables had varied effects upon other relationships with effectiveness indicators. Controls for SEI at T_0 reduced correlations found with population growth and agriculture and produced, for primary education ($T_0 - T_2$), a significance level of .10 in the opposite direction from that predicted. Gross domestic product, a measure of economic growth, is raised from a .10 to a .05 level of significance in the expected direction when the effect of foreign aid receipts are partialled out.

Debt servicing performance as a control variable at T_1 produced changes for a number of effectiveness variables. Correlations which had been in the expected direction were reduced in the cases of military expenditures, capital formation ($T_0 - T_2$) and debt to international organizations ($T_1 - T_2$). Tertiary education ($T_0 - T_2$) increased in significance from a .10 to a .005 level, opposite of the hypothesized direction.

Table 8. Hypothesis 3A: Intra-Country Effectiveness--Selected Findings from Tables C-7 and C-8.

Dependence upon one export item at T_0 with:

| | Change Rate
Between Times | Δ | In the
Predicted
Direction? |
|------------------------------------|------------------------------|----------|-----------------------------------|
| Future-oriented indicators: | | | |
| Capital formation | 0 → 1 | *** -.49 | Yes |
| | 1 → 2 | | |
| | 0 → 2 | *** -.45 | Yes |
| Tertiary education | 0 → 1 | | |
| | 1 → 2 | ** +.36 | No |
| | 0 → 2 | | |
| Research institutions | 1 → 2 | ** +.35 | No |
| Population growth | 0 → 1 | | |
| | 1 → 2 | * -.24 | No |
| | 0 → 2 | * -.28 | No |

Present-oriented indicators:

| | | | |
|----------------|-------|---------|-----|
| GDP per capita | 0 → 1 | | |
| | 1 → 2 | * -.27 | Yes |
| | 0 → 2 | | |
| Agriculture | 0 → 1 | ** -.31 | Yes |
| | 1 → 2 | | |
| | 0 → 2 | * -.27 | Yes |
| Telephones | 0 → 1 | | |
| | 1 → 2 | * +.27 | No |

Dependence upon one export item at T_1 with:

Future-oriented indicators:

| | | | |
|-----------------------|-------|---------|-----|
| Capital formation | 1 → 2 | | |
| | 0 → 2 | * -.26 | Yes |
| Tertiary education | 1 → 2 | ** +.41 | No |
| | 0 → 2 | * +.31 | No |
| Research institutions | 1 → 2 | ** +.30 | No |

Present-oriented indicators:

| | | | |
|-----------------------|-------|---------|-----|
| GDP per capita | 1 → 2 | ** -.37 | Yes |
| | 0 → 2 | ** -.32 | Yes |
| Agriculture | 1 → 2 | | |
| | 0 → 2 | ** -.30 | Yes |
| Telephones | 1 → 2 | ** +.31 | No |
| | 0 → 2 | | |
| Military expenditures | 1 → 2 | * +.23 | Yes |

hypothesis, it is higher education rather than primary or secondary education enrollments that is most affected by a country's international exchanges. However, correlations for tertiary education and for number of research institutions per 500,000 population were significant but not in the predicted direction. The same is true of population growth with T_0 measures of commodity dependence and for the communications indicator (telephones per 100 persons from T_1 to T_2 , with T_1 values of commodity dependence. At T_1 , military expenditures are significant at the .10 level in the predicted direction.

c) Commodity dependence: Evaluation of the findings:

It is immaterial to this hypothesis whether the dependence upon one export item, in turn, may have directly resulted from external influences of a prior time. The consequences of a given level of export diversification or non-diversification have been explored. At this point, I am unable to explain why growth in institutions of higher learning is associated with unfavorable commodity dependence situations. This hypothesis, in which an education measure operated in the unexpected direction while GDP per capita correlated according to predictions, may be compared with hypothesis 1; here the reverse situation was observed, where GDP was unrelated to exchange inequality with OEC but tertiary education was significant in the hypothesized direction. Further research should explore whether it is possible to rank-order the effectiveness indicators listed in Figure 8 according to their "degree of vulnerability" to concepts such as dependence and exchange inequality. Among the intra-country indicators, it would

then be possible to evaluate why a more dependent country has a lower growth rate of GDP and simultaneously a higher growth rate of college graduates.

For example, certain "transmission" factors that convert external results into internal consequences such as national elites or military rulers should be included in further research. In the above empirical case, one could explore whether other indicators that are class-dependent (as is tertiary education in developing countries) are more strongly affected by "external" dependencies,³⁴ a finding substantially supported in this study.

In the following hypothesis, I shall discuss a second meaning of dependence, one more readily connected with notions of relational, "external" dependence.

Hypothesis 3B: Dependence upon exchange partners in relation to effectiveness outcomes

Emerson's theorem leads one to believe that inequality of exchange is synonymous with power advantage (for the "top dog") and with dependence disadvantage (for the "underdog"); furthermore, the power of A over B is, by definition, equal to the dependence of B upon A. When Emerson defines power or dependence in a less circular fashion, he talks in terms of "motivational investment" in the interpersonal context. For example, B's dependence upon A is equal to the amount of B's motivational investment in rewards mediated by A. The more he or she values or desires those rewards from A, the more dependent B is.

³⁴I will return to this weakness of my study in the concluding chapter.

In doing so, Emerson does precisely what he says should not be done: he defines power and dependence in terms of "actor" attributes rather than relational properties. This weakness becomes more apparent when the context is switched to that of international relations, where an equivalent of motivational investment is difficult to pinpoint and one begins to question the usefulness of such a concept.³⁵

At both the interpersonal and the international levels, I would propose a definition of dependence which is non-tautological, relational in nature, and also more amenable to operationalization. B's dependence upon A can be measured as the percentage of B's total exchange network which is "occupied" by any A.

In more general terms, B's overall dependence upon exchange partners decreases as its exchanges are spread more equally among greater numbers of partners. I operationalized this notion of the "distribution" of B's exchanges as the number of countries accounting for one-half of B's total imports and of B's total exports. The larger this number of countries, the lower B's dependence.

Hypothesis 3B states that B's dependence upon trading partners is inversely related to B's chances for moving toward more balanced outcomes. All correlations with effectiveness outcome indicators are predicted to be positive, with the usual exceptions of dependence upon one export item, cost of living index, average annual rate of population growth, and military expenditures per capita.

³⁵Its usefulness at the interpersonal level could also be questioned. Any Skinnerian would claim that it is folly to predict behavior from "motivation;" how can one measure motivation except by inferring it from the behavior?

a) Inter-country effectiveness: Significant correlations occur for dependence upon trading partners at T_0 , but surprisingly, not at T_1 .³⁶ A highly significant correlation, not in the expected direction, appears for number of countries accounting for half of exports with external debt owed to private banks and other private creditors (see Table 9). Apparently private creditors "agree" that an increase in B's export buyers is good--for themselves; I had expected that such an increase would put B in a position to obtain more favorable sources of loans and that B would, in fact, do so.

In the case of exports, the other significant correlations occur with changes in dependence upon one export item. These are opposite the expected direction and serve to emphasize that "internal" and "external" dependence are indeed not synonymous. With respect to imports, "internal" and "external" dependence show highly significant correlations in the predicted direction but only for changes between T_0 and T_1 . In the following period, the direction is reversed. The unexpectedly high negative findings between T_1 and T_2 with respect to both imports and exports, makes one wonder if perhaps something happened between T_1 and T_2 which allowed a country's dependence upon one export to increase while the number of exchange partners also increased. A check of the historical record indicates that precisely

³⁶The one exception is external debt owed to international organizations when SEI is controlled for at T_1 . This correlation reaches the .10 level of significance in the opposite direction from that hypothesized, and occurs only with respect to export dependence.

1

Table 9. Hypothesis 3B: Inter-Country Effectiveness--Selected Findings from Tables C-9 to C-12.

| No. of countries accounting for 50 per cent of EXPORTS at T_0 with: | | | |
|---|------------------------------|----------|-----------------------------------|
| | Change Rate
Between Times | Δ | In the
Predicted
Direction? |
| Dependence upon one
export item | 0 $\rightarrow$ 1 | | |
| | 1 $\rightarrow$ 2 | *** +.49 | No |
| | 0 $\rightarrow$ 2 | * +.28 | No |
| Debt owed to private
creditors | 1 $\rightarrow$ 2 | ** -.45 | No |
| No. of countries accounting for 50 per cent of IMPORTS at T_0 with: | | | |
| Dependence upon one
export item | 0 $\rightarrow$ 1 | *** -.46 | Yes |
| | 1 $\rightarrow$ 2 | * +.27 | No |
| | 0 $\rightarrow$ 2 | | |
| Debt servicing | 1 $\rightarrow$ 2 | *** +.56 | Yes |

during this time span the so-called "Kennedy Round" of negotiations within the GATT framework took place, resulting in substantial joint reductions of tariff barriers (see Metzger, 1964).

The final significant relationship occurs for imports at T_0 : debt servicing performance supports the hypothesis at a significance level of .005.

b) Intra-country effectiveness: Whereas most strong correlations with inter-country indicators occurred with T_0 values of the independent variable, intra-country indicators were most often significant for T_1 .

Indicators relating to institutions of higher learning again proved to be "sensitive" barometers, particularly in relation to the

number of countries from which B imports. In the predicted direction, these correlations reach the .005 level of significance for both enrollments in tertiary education and number of research institutions per 500,000 persons.

Among the remaining indicators, it is perhaps ironic that military expenditures per capita increase with an increase in the number of countries from which imports are obtained. Is a decrease in dependence upon trading partners accompanied by the "necessity" to build up armed forces? The only other indicator which provides important support, with respect to imports at T_1 , is that of telephones per 100 persons ($T_1 - T_2$).

Other scattered correlations exist, but inspection of Tables C-9 to C-12 shows that the more important measure of dependence is the number of countries from which B imports. Import correlations were also very much influenced by controls for debt servicing ability,³⁷ which reflects the fact that imported goods are often purchased on credit.

³⁷The various control variables had negligible effects at T_0 , for exports and imports alike. At T_1 , exports and imports showed widely divergent patterns. Number of countries accounting for 50 per cent of imports became significantly related to several variables when the effect of debt servicing status at T_1 was removed: electricity and secondary education ($T_0 - T_2$) became significant at the .05 level in the opposite direction from predictions, tertiary education reached the .10 level in the expected direction, and the highly significant expected relationship with telephones ($T_1 - T_2$) all but disappears. Controls for SEI produce a .10 level of significance, in the opposite direction, for military expenditures.

The striking effect of debt servicing with respect to imports is not found for number of countries accounting for 50 per cent of

c) External dependence--evaluation of the findings: In the elaboration of this hypothesis (see Chapter II) I had mentioned that both standardization and friendship arguments could be raised against the plausibility of this operationalization of dependence. Table 10 provides some support for the standardization argument but only if imports are being considered; the decline rate of agriculture's share of GDP does correlate with having fewer exchange partners from which to purchase industrial equipment.

On the other hand, the high correlations found for both imports and exports with the indicators for higher learning seem to weaken the friendship argument considerably. Even the argument that it takes more trained specialists to build up and maintain an exchange network with more countries does not find empirical support; the correlation between the decline rate of agriculture and tertiary education is zero.

As was pointed out in Chapter III, I regret having set the arbitrary limit of 50 per cent. For example, at T_0 , 76.85 per cent of all imports of the Ivory Coast came from one country. At the same time period, 58.50 per cent of all imports of Gabon also came from just one country. Both countries were treated identically in

exports. Some small impact can be noted: Secondary education ($T_1 - T_2$) reaches the .10 level in the expected direction and electricity consumption ($T_1 - T_2$) becomes significant at the .05 level, but in the opposite direction, SEI at T_1 , again with respect to exports, has a depressing effect upon electricity consumption ($T_0 - T_2$) although correlations are still opposite of predictions; Military expenditures and secondary education ($T_1 - T_2$) both reach the .10 level, the former in the opposite direction and the latter in the predicted one.

Table 10. Hypothesis 3B: Intra-Country Effectiveness--Selected Findings from Tables C-9 to C-12.

No. of countries accounting for 50 per cent of EXPORTS at T_0 with:

| | Change Rate
Between Times | | In the
Predicted
Direction? |
|------------------------------------|------------------------------|--------|-----------------------------------|
| <u>Future-oriented indicators:</u> | | | |
| Research institutions | 1 → 2 | * -.28 | No |
| Population growth | 0 → 1
1 → 2
0 → 2 | * +.32 | No |

No. of countries accounting for 50 per cent of EXPORTS at T_1 with:

| | | | |
|-------------------------------------|----------------|----------|-----|
| <u>Future-oriented indicators:</u> | | | |
| Tertiary education | 1 → 2
0 → 2 | *** +.68 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Electricity | 1 → 2
0 → 2 | * -.26 | No |

No. of countries accounting for 50 per cent of IMPORTS at T_0 with:

| | | | |
|-------------------------------------|-------------------------|------------------|----------|
| <u>Future-oriented indicators:</u> | | | |
| Secondary education | 0 → 1
1 → 2
0 → 2 | * -.25 | No |
| Tertiary education | 0 → 1
1 → 2
0 → 2 | ** +.36 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Military expenditures | 1 → 2 | * +.27 | No |
| Agriculture | 0 → 1
1 → 2
0 → 2 | * -.25
* -.25 | No
No |

No of countries accounting for 50 per cent of IMPORTS at T_1 with:

| | | | |
|-------------------------------------|----------------|----------|-----|
| <u>Future-oriented indicators:</u> | | | |
| Research institutions | 1 → 2 | *** +.62 | Yes |
| <u>Present-oriented indicators:</u> | | | |
| Caloric food supply | 1 → 2 | * +.24 | Yes |
| Urban population | 1 → 2 | * -.21 | No |
| Telephones | 1 → 2
0 → 2 | *** +.47 | Yes |

this analysis, although it is obvious that the Ivory Coast is considerably more "dependent" upon that one country than is Gabon. Further research should take this into account and delete my arbitrary limits; both exchange inequality and dependence could be much better explored in their interrelationship. Furthermore, the concepts of size and differentiation--implicit in the formulation of this hypothesis--should be scrutinized analytically with respect to exchange inequality and dependence. Do independence and differentiation imply each other?

In the following, I shall present and discuss to what extent--in the terminology of economists--non-market transactions are likely to increase independence and decrease unequal exchange.

Hypothesis 3C: Inequality of Exchange with the "Old" EC in Relation to Amount of Aid From Non-EC

The final two hypotheses address a question that has been hotly debated among political scientists and other experts on international relations: Is foreign aid really helping the developing countries?³⁸ Mahmet, in discussing the single case of Somalia, describes the tying of aid, concentration of investments in the physical infrastructure to the neglect of the social infrastructure, and the enormous indebtedness to foreign countries. He concludes that "the moral emerging from Somalia's experience with foreign aid is that

³⁸For examples of this debate see: the various contributions contained in Chilcote, 1974; Rosen and Kurth, 1974; Osipov, 1972; Singer, 1972; Stevenson, 1972; Wittkopf, 1972; Ward, 1971; Dos Santos, 1970; Pearson, 1969; Frank, 1966.

aid is far from being an unqualified bonus given by well-wishing donors" (1971:47). One implication of this conclusion is that the most needy countries, being in a poorer position to return benefits to potential donors, will receive the least amount of foreign aid--either from the EC or from other nations.

In Hypothesis 3C, I am specifically interested in the amount of aid B receives from alternatives to A (all non-EC countries). The greater B's exchange inequality with A (the "old" EC), I predict, the less aid B will receive from alternative exchange partners. As in hypothesis 1, the magnitude of the initial exchange gap should directly affect B's chances for balancing outcomes--in this case by curtailing one of B's balancing options, that of finding alternative exchange partners.

As summarized in Table 11, I found that just the opposite is the case for T_1 .³⁹ The better a developing country's trade position with the OEC, the less total aid it received from other nations during the following time period. This relationship becomes weaker when population size is taken into account (by using per capita trade balance figures) but still remains statistically significant.

Partialling out the effect of debt servicing status further depresses the correlations, thus lending some support to Osipov's (1972) contention that the use of the single concept "aid" to cover both outright gifts and loans is misleading. Adequate measures of the

³⁹At T_0 , only low correlations (between $-.11$ and $-.14$) were found. These, however, are in the predicted direction.

"grant-equivalent" value of aid need to be developed before a truly rigorous test of this hypothesis can be made.

Table 11. Hypothesis 3C: Amount of Foreign Aid Received From Non-EC Countries--Selected Findings from Tables C-13 to C-16

Raw balance of trade with OEC at T_1 with:

| | <u>Time
Period</u> | <u>Δ</u> | <u>In the
Predicted
Direction?</u> |
|------------------------------|------------------------|----------------------------|--|
| Amount of aid from
non-EC | 2 | *** +.48 | No |

Per capita balance of trade with OEC at T_1 with:

| | | | |
|------------------------------|---|--------|----|
| Amount of aid from
non-EC | 2 | * +.26 | No |
|------------------------------|---|--------|----|

Two alternative explanations for the negative findings appear plausible. First, one could presume that non-EC givers of aid are altruistic, seeking out the poorest countries, i.e., those with the largest trade deficits. Second, one could argue that the correlations would switch in the predicted direction if Great Britain, a "new" EC member, were included with the OEC group; after all, about one-half of the 44 developing countries are former British colonies.

To have obtained lower correlations when trade balances are transformed into per capita values is consistent with that of an earlier World Bank study, recently confirmed by Wittkopf (1972). Although more populous countries receive larger absolute amounts of aid, they receive less aid per capita than do less populous countries.

This hypothesis dealt with specific sources of foreign aid, in terms of the donor countries involved. The next and final hypothesis takes a different approach to the question of aid. It examines the institutional channels through which aid is given. Any donor country may give aid directly (bilateral aid) and/or indirectly via contributions to international organizations (multilateral aid). Does the institutional form in which aid is given--bilateral versus multilateral--influence the "effectiveness" of a specific amount of aid?

Hypothesis 3D: Multilaterality of Aid in Relation to Effectiveness Outcomes

Using Emerson's fifth theorem as a guideline, this hypothesis predicts that multilateral assistance is more beneficial to B than bilateral aid--not necessarily because it has inherent advantages but because it has fewer of the disadvantages which frequently accompany bilateral aid (see, for example, Mehmet's list of disadvantages cited above). Multilateral aid more nearly approximates altruism, or "status giving" in Emerson's terms; as such, it is expected to increase B's chances of moving towards balanced outcomes.

a) Inter-country effectiveness: Findings are summarized in Tables 12 and 13. Only negative results⁴⁰ were obtained with respect to inter-country effectiveness indicators (Table 12).

⁴⁰At T_1 (not shown), results were not statistically significant. External debt owed to both private creditors and international organizations had lower correlations (-.12 and -.09 respectively) but were in the same direction as in T_1 .

Table 12. Hypothesis 3D: Inter-Country Effectiveness--Selected Findings from Tables C-17 and C-18.

Percentage of aid from multilateral sources at T_0 with:

| | <u>Change Rate
Between Times</u> | <u>Δ</u> | <u>In the
Predicted
Direction?</u> |
|---|--------------------------------------|----------------------------|--|
| External debt owed to
private creditors | 1 $\rightarrow$ 2 | ** -.54 | No |
| External debt owed to
international
organizations | 1 $\rightarrow$ 2 | * -.32 | No |

The relatively high correlation between multilaterality of aid and the increased rate at which developing countries are indebted to private creditors should be commented on. When presenting the list of effectiveness indicators on pp. 37-38, I was not sure whether a decrease or an increase in that rate should be assumed to indicate an improvement. After all, one could argue that an increase of private capital inflow reflects the creditor's confidence that a country will develop, at least to the extent that the profit return rate will equal or surpass the return rate in other countries. By the same token, an increase in indebtedness to international organizations could be interpreted as a sign that private creditors recall their capital from a country and prefer to spread the risk.

If this line of reasoning is sound, then the percentage of multilateral aid is indeed a good indicator for assessing whether or not private creditors, at least, believe that a country is doing well.

Although there are certain exceptions, the same general results are found for the indicators of intra-country effectiveness as well (see Table 13). The overall pattern seems to show that receiving assistance from multilateral sources is not an advantage, contrary to my predictions.

b) Intra-country effectiveness: The only correlations that are in the expected direction⁴¹ are with education and the decline rate at which GDP is accounted for by agriculture. All others seem to lend support to those who maintain that bilateral aid remains a beneficial way of helping B to improve its position.

c) Evaluation of the findings: The findings, at best, provide only weak support for the hypothesis that multilateral aid is more beneficial to developing countries than is bilateral aid. For example, no other independent variable in this study showed nearly so strong a correlation with the growth rate of primary education as this one did. Furthermore, the modest correlation between multilaterality of aid and the indirect indicator for industrialization--GDP accounted for by agriculture--is identical to the correlation

⁴¹The impact of control variables was negligible for T_0 . At T_1 the usual effect of controls was to somewhat reduce correlations for indicators listed in Table 13. One exception should be noted, that of SEI which tended to increase relationships (e.g., for agriculture, secondary education and capital formation ($T_0 - T_2$) which are all opposite the expected direction). Partially² out² SEI raised correlations to a .10 significance level for telephones ($T_1 - T_2$) in the opposite direction and, along with controls for foreign aid² received, revealed significant relations with population growth ($T_1 - T_2$ and $T_0 - T_2$) in the direction predicted by the hypothesis.

Table 13. Hypothesis 3D: Intra-Country Effectiveness--Selected Findings from Tables C-17 and C-18.

 Percentage of aid from multilateral sources at T_0 with:

| | Change Rate
Between Times | | In the
Predicted
Direction? |
|-------------------------------------|------------------------------|----------|-----------------------------------|
| <u>Future-oriented indicators:</u> | | | |
| Capital formation | 0 → 1 | | |
| | 1 → 2 | | |
| | 0 → 2 | * -.24 | No |
| Primary education | 0 → 1 | *** +.43 | Yes |
| | 1 → 2 | | |
| | 0 → 2 | *** +.46 | Yes |
| Research institutions | 1 → 2 | * -.26 | No |
| Population growth | 0 → 1 | ** +.27 | No |
| | 1 → 2 | | |
| | 0 → 2 | | |
| <u>Present-oriented indicators:</u> | | | |
| GDP per capita | 0 → 1 | * -.24 | No |
| | 1 → 2 | | |
| | 0 → 2 | | |
| Agriculture | 0 → 1 | ** +.30 | Yes |
| | 1 → 2 | | |
| | 0 → 2 | * +.21 | Yes |

 Percentage of aid from multilateral sources at T_1 with:

| | | | |
|-------------------------------------|-------|----------|-----|
| <u>Future-oriented indicators:</u> | | | |
| Capital formation | 1 → 2 | * -.26 | No |
| | 0 → 2 | * -.25 | No |
| Secondary education | 1 → 2 | * -.25 | No |
| | 0 → 2 | * -.27 | No |
| Tertiary education | 1 → 2 | ** +.44 | Yes |
| | 0 → 2 | | |
| Research institutions | 1 → 2 | * -.24 | No |
| <u>Present-oriented indicators:</u> | | | |
| GDP per capita | 1 → 2 | *** -.53 | No |
| | 0 → 2 | *** -.44 | No |
| Agriculture | 1 → 2 | ** -.29 | No |
| | 0 → 2 | * -.23 | No |
| Caloric food supply | 1 → 2 | * -.24 | No |

that was found between inequality of exchange with the "old" EC and agriculture. In other words,, whereas a large trade deficit with the EC depresses a developing country's chances to develop industrially, a higher percentage share increases that chance by the same amount.

On the other hand, the strong correlation between GDP growth rates and multilaterality of aid in the opposite direction suggests, in addition to the other negative findings, that multilaterality--as measured--is not the hoped-for midwife for developmental growth.

In concluding this chapter, I shall raise the question of how an improved operationalization for multilaterality can be found and what its underlying dimension could be, since multilaterality of aid simply refers to an organizational arrangement for handling non-market transactions.

I should have controlled for the relative poverty of the receiving partners. Poorer nations, for whom development is most difficult, may simply receive more multilateral aid or so little bilateral aid that what multilateral aid they get comprises a large percentage of their total.⁴²

⁴²Another procedure for determining the effect of the institutional form of aid, independently from the effect of the amount of aid involved, is the following. Instead of using percentage of aid from multilateral sources, I could have used the absolute amount of multilateral aid and then controlled for size of total aid receipts (both bilateral and multilateral). This would help avoid the problem that percentage of multilateral aid apparently is associated with the confounding variable of relative poverty.

A second improvement in the operationalization of aid multilaterality could also be made. One should distinguish between multilateral organizations having independent decision making authority and those in which aid allocations are determined according to self-serving interests of member governments. Almost all multilateral sources considered in this study lack independence to some extent, either from the constraints of interest rates prevailing in national money markets (see Osipov, 1972) or from the willingness of developed countries to supply subscription capital (see my discussion of the voting power arrangements in the IMF, p. 74.

The important underlying variable, in other words, may be independence of authority rather than multilaterality/bilaterality per se. If aid from relatively dependent givers (bilateral aid and that from certain multilateral organizations) were compared with aid from the more independent multilateral organizations, the expected results might be found.

The concluding chapter which follows will summarize the overall implications of this research project. It begins with a discussion of two possible objections about the data base upon which my findings rest. I then will assess the extent to which Emerson's fifty theorem has proved to be useful as a guideline for analyzing international exchange relationships.

CHAPTER V

CONCLUDING REMARKS AND DISCUSSION

Summary of the Study

This study dealt with the outcomes of exchange among developing and developed countries. Two interrelated groups of indicators were used for the independent (exchange) variables. The first group dealt with market transactions, (including directional trade matrices tracing the flow of goods and services and measures derived and constructed from this data base, e.g., for measurement of the concepts of exchange inequality and dependence upon exchange partners. The second group might be termed non-market transactions or, in the words of Horvath (1974), "net one-way resource flows." I am referring to foreign aid, of which multilateral aid is a special form. Such aid might be viewed as a temporary bandage on the wounds caused in part by the effects of market transaction losses.

These independent variables represent exchanges in the context of international relations, on what has been metaphorically called the "macro" level. That is, such "micro" concepts as sentiments and attraction are systematically excluded from the analysis in the normative context of international relations.

The intention of this study was to explore the feasibility of utilizing exchange-theoretical propositions of Richard Emerson as an analysis guide within this "macro" context.

The major dependent variable, the outcomes or "balancing effectiveness" results of exchanges between nations, was measured by the growth or decline rates of 19 indicators of a country's development. An attempt was made to determine the extent to which these effectiveness measures correlate with, or are affected by, factors that are not indigenous but operate only in the presence of external exchanges.

The empirical setting of the study was the group of 44 developing countries that are currently negotiating or renegotiating about conditions under which future aid and trade exchanges should take place between themselves and the enlarged European Communities. This seemed an appropriate time to explore, via the use of data from published sources, how these countries have fared historically in their exchanges with the EC⁴⁹ since its founding. The notion of how countries have "fared" as a consequence of their market and non-market exchange transactions with the EC, refers to their progress with respect to the 19 developmental effectiveness indicators.

Results of the research provide limited support for the contention that the magnitude of the initial exchange gap affects the

⁴⁹During the time span under study--1958 through 1972--Denmark, Ireland, and Great Britain were not yet EC members and were not grouped with the other EC nations for analysis purposes.

subsequent developmental progress of the "underdog" partner (hypotheses 1 and 2). The major finding is that the magnitude of a developing country's exchange gap with abroad (its overall trade balance) appears far less consequential for its development than the magnitude of its exchange gap vis-à-vis the European Communities. To have had a smaller positive or a negative trade balance with the EC was associated with lower growth rates. For example, the effectiveness outcome indicator of dependence upon one export item during one time period showed a correlation of .85 with a developing country's trade balance with the EC but only a correlation of .22 with its overall balance of trade.

With respect to the measures of dependence (hypotheses 3A and 3B), mixed results were obtained. When dependence was operationalized in terms of a country's internal economy (lack of export diversification, i.e., dependence upon one export commodity) growth rates of higher education indicators show strong correlations in the predicted direction. When dependence was operationalized in external terms (dependence upon trading partners, i.e., number of countries accounting for 50 per cent of total exports and imports), these correlations were moderate to weak in the opposite direction. This inconsistent pattern of results raises validity questions regarding the operationalization of dependence. For example, diversification of an economy may not be a sign of weakened but of strengthened dependence if either exhausted supplies of natural resources or significant price cuts on the world market call for such shifts.

Predictions about non-market transactions (hypotheses 3B and 3C) received little consistent support. The expectation that multilateral aid would be more beneficial to developing countries than bilateral aid--even when the effect of total amount of aid receipts was removed--was not supported. It is suggested that the critical underlying variable is not the multilaterality/bilaterality of aid-giving channels per se but the independence of authority to allocate aid, e.g., independence from pressures to distribute aid in accordance with the self-interests of donor governments. Somewhat more support was found for the prediction that a large initial exchange gap with the EC will serve to depress the amount of aid received from non-EC sources.

Discussion

The use of Emerson's fifth theorem as a working guideline--but only as a guideline--proved to be a useful strategy. It is now possible to pinpoint weaknesses in that theorem, which become more readily apparent when trying to apply it in a new context, and potentially to incorporate improvements into the original theory.

In particular, it was learned that the magnitude of the initial exchange inequality--not considered by Emerson--does indeed make a difference for balancing operations and should be taken into account. Second, dependence and exchange inequality,

although interrelated, should be kept separate analytically. Third, the constellation of exchange partners affects the "dyadic" relation between A and B, not only with respect to balancing operations but at a more fundamental level--by affecting the parameters under which their exchange takes place.

Further research should explore under what circumstances the constellation of exchange partners is a variable in itself. For example, directional dependency may "bind" A and B via third partners to the exchange although their direct exchange may be both negligible in terms of magnitude and equal regarding the exchange equation. Such an approach could lead to researchable questions that would investigate how social networks are conceptually equivalent to economic markets.

Underlying such an agenda for further research is a problematic assumption, however. I am referring to the adequacy and usefulness of a vertical integration of theoretical work. The application of "level-switching" theoretical ideas in more than a metaphoric or guideline sense seems to be questionable since context-specific parameters may eliminate or even reverse the connections among variables that the context-free theory stipulates.

For example, the present study pinpointed the necessity of researching both the interorganizational and the intraorganizational arrangements of the European Communities in their relations

with the developing countries. It is not merely the debt servicing performance--a powerful explanatory variable--but the organizational "referral system" of such a performance that should be studied. Should one attempt, then, to search for conceptual equivalents for these variables at different aggregate levels? Or should these variables be called context-specific parameters? Is it useful at all to make the distinction between context-specific and context-free theories?

I hope that the application of alternative theoretical models such as the triadic network model and interorganizational theoretical conceptual schemes to the data base that was constructed in this study may help in finding answers to these questions.

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APPENDICES

APPENDIX A

A COMPILATION OF CONSTRUCTED INDICATORS AND THE DIRECTIONAL TRADE MATRIX

Table A-1.* Inequality of Overall Trade Position: Total Imports as a Per Cent of Total Exports Over Time.

| Country | Time ₀
Per cent | Time ₁
Per Cent | Time ₂
Per Cent |
|--------------|-------------------------------|-------------------------------|-------------------------------|
| Bahamas | 919.05 | 2,898.40 | 462.00 |
| Barbados | 187.38 | 180.69 | 282.50 |
| Belgium | 103.86 | 105.39 | 98.91 |
| Botswana | .... | .... | .... |
| Burundi | .... | 175.00 | 116.67 |
| Cameroun | 82.61 | 100.00 | 113.51 |
| C.A.R. | 212.50 | 129.41 | 114.29 |
| Congo (P.R.) | 356.00 | 161.54 | 193.48 |
| Ivory Coast | 76.09 | 83.33 | 79.46 |
| Dahomey | 175.00 | 325.00 | 209.09 |
| Denmark | 114.47 | 124.09 | 122.13 |
| Ethiopia | 133.33 | 300.00 | 140.00 |
| Fiji | 128.89 | 130.28 | 179.28 |
| France | 99.25 | 107.41 | 104.77 |
| Gabon | 75.27 | 68.89 | 95.59 |
| Gambia | 108.57 | 119.59 | 143.35 |
| W. Germany | 87.50 | 90.49 | 85.27 |
| Ghana | 10.64 | 125.00 | 88.37 |
| Guinee | 25.00 | 26.67 | 46.67 |
| Guyana | 123.53 | 90.80 | 100.00 |
| Grenada | .... | .... | .... |
| Upper Volta | 300.00 | 266.67 | 225.00 |
| Ireland | 148.94 | 154.76 | 138.18 |
| Italy | 126.56 | 117.36 | 106.13 |
| Jamaica | 138.20 | 121.37 | 162.94 |
| Kenya | 180.00 | 140.00 | 144.00 |
| Lesotho | .... | .... | .... |

*See Appendix B-1 for measurement details and sources of data.

Table A-1.* Continued.

| Country | Time ₀
Per Cent | Time ₁
Per Cent | Time ₂
Per Cent |
|-------------------|-------------------------------|-------------------------------|-------------------------------|
| Liberia | 84.31 | 109.52 | 71.19 |
| Luxembourg | 100.00 | 100.00 | 100.00 |
| Madagascar | 135.29 | 146.67 | 123.81 |
| Malawi | .... | 158.33 | 164.29 |
| Mali | 200.00 | 220.00 | 220.00 |
| Mauritius | 129.63 | 104.12 | 116.16 |
| Mauritania | 1,566.67 | 66.67 | 64.79 |
| Netherlands | 112.50 | 119.32 | 103.32 |
| Niger | 66.67 | 200.00 | 155.56 |
| Nigeria | 123.08 | 108.33 | 78.26 |
| Rwanda | .... | 233.33 | 160.00 |
| W. Somoa | 75.00 | 160.98 | 2,728.57 |
| Senegal | .... | 97.96 | 127.27 |
| Sierra Leone | 100.00 | 119.44 | 102.38 |
| Somalia | .... | 130.77 | 166.67 |
| Soudan | 107.14 | 118.75 | 100.00 |
| Swaziland | .... | .... | .... |
| Tanzania | 50.00 | 78.95 | 119.05 |
| Tchad | 166.67 | 142.86 | 177.78 |
| Togo | 250.00 | 131.58 | 132.00 |
| Tonga | .... | .... | .... |
| Trinidad & Tobago | 984.85 | 103.34 | 113.37 |
| Uganda | 60.00 | 62.50 | 60.71 |
| United Kingdom | 118.09 | 117.02 | 115.77 |
| Zaire | .... | 87.50 | 75.00 |
| Zambia | .... | 59.38 | 74.87 |
| United States | 75.45 | 84.72 | 100.96 |
| P.R. China | 100.00 | 100.00 | 133.33 |
| U.S.S.R. | 103.85 | 94.59 | 92.45 |
| Japan | 93.02 | 76.34 | 90.82 |

*See Appendix B-1 for measurement details and sources of data.

Table A-2.* Dependence Upon One Export Commodity Over Time: Per Cent of Total Exports Accounted For by That Commodity Which Was The Largest Export Item at Time₀.

| Country | Largest Export Commodity (at Time ₀) | Time ₀
Per Cent | Time ₁
Per Cent | Time ₂
Per Cent |
|--------------|--|-------------------------------|-------------------------------|-------------------------------|
| Bahamas | .... | .... | .... | .... |
| Barbados | Sugar | 70.4 | 56.2 | 47.4 |
| Botswana | Coffee | .... | .... | .... |
| Burundi | Coffee | .... | 77.1 | 88.4 |
| Cameroun | Cocoa Beans | 33.9 | 21.3 | 25.4 |
| C.A.R. | Raw Cotton | 44.3 | 19.3 | 23.4 |
| Congo (P.R.) | Timber Broadleaves | 70.9 | 37.9 | 40.9 |
| Ivory Coast | Coffee | 50.1 | 37.9 | 30.4 |
| Dahomey | Palm oil | 18.2 | 21.4 | 7.1 |
| Ethiopia | Coffee | 52.0 | 65.3 | 57.5 |
| Fiji | Sugar | 59.3 | 63.1 | 58.0 |
| Gabon | Timber Broadleaves | 59.3 | 32.9 | 26.7 |
| Gambia | Groundnuts | 77.6 | 48.1 | 39.0 |
| Ghana | Cocoa Beans | 63.3 | 65.7 | 57.3 |
| Guinee | Coffee | 16.5 | 11.1 | 9.4 |
| Guyana | Sugar | 45.3 | 26.4 | 30.1 |
| Grenada | Cocoa Beans | 45.0 | 21.8 | 27.9 |
| Upper Volta | Raw Cotton | 2.0 | 7.4 | 21.4 |
| Jamaica | Sugar | 22.8 | 19.3 | 13.6 |
| Kenya | Coffee | 25.7 | 27.4 | 24.0 |
| Lesotho | .... | .... | .... | .... |
| Liberia | Rubber | 47.1 | 21.5 | 16.0 |
| Madagascar | Coffee | 31.9 | 31.5 | 30.2 |

*See Appendix B-2 for measurement details and sources of data.

Table A-2.* Continued.

| Country | Largest Export
Commodity (at
Time ₀) | Time ₀
Per Cent | Time ₁
Per Cent | Time ₂
Per Cent |
|-------------------|--|-------------------------------|-------------------------------|-------------------------------|
| Malawi | .... | .... | .... | .... |
| Mali | Groundnuts | 91.1 | 14.1 | 9.7 |
| Mauritius | Sugar | 89.8 | 90.2 | 88.9 |
| Mauritania | .... | .... | .... | .... |
| Niger | Groundnuts | 56.3 | 49.6 | 52.3 |
| Nigeria | Cocoa Beans | 21.7 | 15.9 | 20.5 |
| Rwanda | Coffee | .... | 52.5 | 57.4 |
| W. Somoa | Cocoa Beans | 29.1 | 23.7 | 40.3 |
| Senegal | Groundnuts | 38.1 | 28.9 | 19.5 |
| Sierra Leone | Iron Ore | 14.5 | 16.8 | 13.2 |
| Somalia | .... | .... | .... | .... |
| Soudan | Raw Cotton | 52.3 | 45.9 | 57.3 |
| Swaziland | .... | .... | .... | .... |
| Tanzania | Sisal | 25.3 | 21.4 | 10.4 |
| Tchad | Raw Cotton | 63.5 | 78.1 | 78.8 |
| Togo | Cocoa Beans | 37.3 | 25.3 | 29.6 |
| Tonga | .... | .... | .... | .... |
| Trinidad & Tobago | Sugar | 7.4 | 5.9 | 4.9 |
| Uganda | Coffee | 39.6 | 47.6 | 54.0 |
| Zaire | Copper | 17.7 | 50.9 | 65.1 |
| Zambia | Copper | 94.9 | 90.2 | 94.0 |

*See Appendix B-2 for measurement details and sources of data.

Table A-3.1.* Directional Balance of Trade Matrix--The Evolution of Trade Among Forty-Four Developing Countries and Twelve Developed Countries Over Time. (Time₀).

| From The Point
of View of: | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | |
|-------------------------------|--|-----------------|----------------|--------------|-------------|-----------------|---------------|-------------------|------------------|----------------|
| | <u>Bahamas</u> | <u>Barbados</u> | <u>Belgium</u> | <u>Bots.</u> | <u>Bur.</u> | <u>Cameroun</u> | <u>C.A.R.</u> | <u>Congo (PR)</u> | <u>Iv. Coast</u> | <u>Dahomey</u> |
| Bahamas | . | . | . | . | . | . | . | . | . | . |
| Barbados | . | . | . | . | . | . | . | . | . | . |
| Belgium | . | . | . | . | . | -2,100 | -800. | . | +607 | +136. |
| Botswana | . | . | . | . | . | . | . | . | . | . |
| Burundi | . | . | . | . | . | . | . | . | . | . |
| Cameroun | . | . | +636 | . | . | . | . | . | -12 | . |
| C.A.R. | . | . | +796 | . | . | . | . | . | . | . |
| Congo (P.R.) | . | . | . | . | . | . | . | . | . | . |
| Ivory Coast | . | . | -607. | . | +49 | . | . | . | . | . |
| Dahomey | . | . | -138. | . | . | . | . | . | -244 | . |
| Denmark | . | . | -46,300. | . | +61 | . | . | . | -409 | -70. |
| Ethiopia | . | . | -1,220. | . | . | . | . | . | . | . |
| Fiji | . | . | +82,450. | . | . | . | . | . | . | . |
| France | . | . | +73. | . | . | +2,200 | +700. | +25,700. | -85,800 | +1,600. |
| Gabon | . | . | . | . | . | +1,292 | . | . | . | . |
| Gambia | . | . | . | . | . | . | . | . | . | . |
| W. Germany | . | . | +178,200. | . | . | -4,850 | +1,100. | -8,100. | -8,100 | +140. |
| Ghana | . | . | +3,134. | . | . | . | . | . | +4 | . |
| Guinee | . | . | +1,250. | . | . | . | . | . | -77 | . |
| Guyana | . | +1,050 | +1,200. | . | . | . | . | . | . | . |
| Grenada | -0 | -0 | -0. | -0. | -0 | -0 | -0. | -0. | -0 | -0. |
| Upper Volta | . | . | +61. | . | . | . | . | . | -830 | . |
| Ireland | . | . | -8,450. | . | . | . | . | . | . | . |
| Italy | . | . | -14,000. | . | . | -1,050 | . | . | -9,101 | . |
| Jamaica | . | . | -2,050. | . | . | . | . | . | . | . |
| Kenya | . | . | -3,705. | . | . | . | . | . | . | . |
| Lesotho | -0 | -0 | -0. | -0. | -0 | -0 | -0. | -0. | -0 | -0. |
| Liberia | . | . | -1,350. | . | . | . | . | . | -114 | . |
| Madagascar | . | . | -861. | . | . | -11 | . | . | +107 | . |

Table A-3.1.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | |
|-------------------------------|---------|--|-----------------|-------------|---------------|--------------|---------------|-------------------|--------------|
| | | <u>Denmark</u> | <u>Ethiopia</u> | <u>Fiji</u> | <u>France</u> | <u>Gabon</u> | <u>Gambia</u> | <u>W. Germany</u> | <u>Ghana</u> |
| Bahamas | | | | | | | | | |
| Barbados | | | | | | | | | |
| Belgium | +44,400 | | +1,450 | | -92,750 | -73 | | -131,300 | -5,250. |
| Botswana | | | | | | | | | |
| Burunda | | | | | | | | | |
| Cameroun | -61 | | | | +4,233 | -1,292 | | -69 | |
| C.A.R. | | | | | -3,100 | | | -1,000 | |
| Congo (P.R.) | | | | | -25,700 | | | +8,100 | |
| Ivory Coast | +409 | | | | -5,295 | | | +790 | -919. |
| Dahomey | +70 | | | | -1,368 | | | -140 | |
| Denmark | | | +281 | | -32,300 | -300 | | -67,800 | +450. |
| Ethiopia | -281 | | | | -543 | | | -6,507 | |
| Fiji | | | | | | | | -150 | |
| France | +23,000 | | -600 | | | -20,800 | | -82,700 | -300. |
| Gabon | +300 | | | | +5,801 | | | +7,513 | |
| Gambia | | | | | | | | | |
| W. Germany | +64,500 | | +6,100 | +156 | +66,800 | -7,513 | | | -8,900. |
| Ghana | +1,490 | | | | -2,748 | | | +19,170 | |
| Guinee | | | | | -11,800 | | | +1,000 | |
| Guyana | | | | | -300 | | | -2,000 | |
| Grenada | -0 | | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Upper Volta | +134 | | | | -5,765 | | | | +2,471. |
| Ireland | -2,700 | | | | -7,500 | | | -17,150 | -3,350. |
| Italy | -43,050 | | +3,350 | | -71,000 | -217 | -600 | -46,000 | -16,450. |
| Jamaica | | | | | -3,250 | | | -5,450 | |
| Kenya | -530 | | +201 | | -5,523 | | | +2,607 | |
| Lesotho | -0 | | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Liberia | -1,450 | | | | -7,700 | | | | -96. |
| Madagascar | -105 | | | | -35,287 | | | -1,075 | |

Table A-3.1.1.* Continued.

| Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | |
|--|---------------|---------------|--------------|--------------------|----------------|--------------|----------------|--------------|----------------|
| | <u>Guinee</u> | <u>Guyana</u> | <u>Gren.</u> | <u>Upper Volta</u> | <u>Ireland</u> | <u>Italy</u> | <u>Jamaica</u> | <u>Kenya</u> | <u>Lesotho</u> |
| Bahamas. | | | | | | | | | |
| Barbados | | -1,050 | | | | | | | |
| Belgium | -1,750. | -1,200 | | -61 | +9,050. | +12,100 | +1,900 | +3,500 | |
| Botswana | | | | | | | | | |
| Burunda | | | | | | | | | |
| Cameroun | | | | | | +935 | | | |
| C.A.R. | | | | | | | | | |
| Congo (P.R.) | | | | | | | | | |
| Ivory Coast | +77 | | | +830 | | +4,445 | | | |
| Dahomey | | | | | | | | | |
| Denmark | | | | -134 | +3,000. | +37,250 | | +530 | |
| Ethiopia | | | | | | -6,357 | | -201 | |
| Fiji | | | | | | | | | |
| France | +6,361. | +300 | | +5,500 | +6,150 | +94,750 | +3,250 | +5,523 | |
| Gabon | | | | | | +217 | | | |
| Gambia | | | | | | | | | |
| W. Germany | +400. | +1,200 | | | +17,900. | +44,500 | +5,450 | -6,650 | |
| Ghana | | | | -2,471 | +100. | +10,189 | | | |
| Guinee | | | | -0 | | -50 | | | |
| Guyana | | | | | | | +2,100 | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Upper Volta | -0 | | | | | +4 | | | |
| Ireland | | | | | | -2,400 | | | |
| Italy | +50 | | | -4 | +1,550 | | +1,100 | +2,550 | |
| Jamaica | | -1,850 | | | | -1,100 | | | |
| Kenya | | | | | | -3,479 | | | |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Liberia | | | | | | -3,200 | | | |
| Madagascar | | | | | | +369 | | | |

Table A-3.1.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | |
|-------------------------------|--|--|-------------------|---------------|-------------|------------------|-------------------|--------------------|--------------|
| | | <u>Liberia</u> | <u>Madagascar</u> | <u>Malawi</u> | <u>Mali</u> | <u>Mauritius</u> | <u>Mauritania</u> | <u>Netherlands</u> | <u>Niger</u> |
| Bahamas | | | | | | | | -850. | |
| Barbados | | | | | | | | -1,850. | |
| Belgium | | +900 | +700 | | | +1,250 | | +176,950. | |
| Botswana | | | | | | | | | |
| Burundi | | | | | | | | | |
| Cameroun | | | +11 | | | | | +12,082 | |
| C.A.R. | | | | | | | | | |
| Congo (P.R.) | | | | | | | | | |
| Ivory Coast | | +114 | | | | | | +7,956. | +1,123 |
| Dahomey | | | | | | | | +269. | +98 |
| Denmark | | +1,450 | +105 | | | | | -76,100. | |
| Ethiopia | | | | | | | | -381. | |
| Fiji | | | | | | | | | |
| France | | +7,700 | +5,500 | | +5,200 | +2,365 | +5,840. | -43,050. | -5,600 |
| Gabon | | | | | | | | +1,394. | |
| Gambia | | | | | | | | | |
| W. Germany | | +20,650 | +1,600 | | | +2,565 | | +152,350. | +518 |
| Ghana | | +96 | | | | | | +6,925. | -42 |
| Guinee | | | | | | | | -200. | |
| Guyana | | | | | | | | -2,450. | |
| Grenada | | -0 | -0 | -0 | -0 | -0 | -0 | -0. | -0 |
| Upper Volta | | | | | +14 | | | -19. | +4 |
| Ireland | | | | | | | | -13,950. | |
| Italy | | +3,200 | -550 | | | +50 | | -24,100. | +159 |
| Jamaica | | | | | | | | -8,350. | |
| Kenya | | | | | | +150 | | -2,275. | |
| Lesotho | | -0 | -0 | -0 | -0 | -0 | -0 | -0. | -0 |
| Liberia | | | | | | | | -2,150. | |
| Madagascar | | | | | | -100 | | -1,945. | |

Table A-3.1.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | |
|-------------------------------|----------------|--|-----------------|----------------|------------------|----------------|---------------|--------------|-----------------|--|
| | <u>Nigeria</u> | <u>Rwanda</u> | <u>W. Somoa</u> | <u>Senegal</u> | <u>Sierra L.</u> | <u>Somalia</u> | <u>Soudan</u> | <u>Swaz.</u> | <u>Tanzania</u> | |
| Bahamas | | | | | | | | | | |
| Barbados | | | | | | | | | | |
| Belgium | -2,000 | | | +1,855 | | | +1,000 | | -3,600. | |
| Botswana | | | | | | | | | | |
| Burundi | | | | | | | | | | |
| Cameroun | +73 | | | -1,394 | | | | | | |
| C.A.R. | | | | | | | | | | |
| Congo (P.R.) | | | | | | | | | | |
| Ivory Coast | | | | | | | | | | |
| Dahomey | -127 | | | -325 | | | | | | |
| Denmark | +700 | | | | | +200 | +900 | | | |
| Ethiopia | | | | | | | -1,242 | | -49. | |
| Fiji | | | | | | | | | | |
| France | -2,800 | | | | +838 | | -5,600 | | -1,413. | |
| Gabon | +90 | | | -141 | | | | | | |
| Gambia | | | | | | | | | | |
| W. Germany | -20,300 | | | +2,600 | -3,550 | | -3,250 | | -10,200. | |
| Ghana | +217 | | | | +257 | | | | | |
| Guinee | | | | -328 | | | | | | |
| Guyana | | | | | | | | | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. | |
| Upper Volta | | | | -1,106 | | | | | | |
| Ireland | -850 | | | | | | | | | |
| Italy | -6,200 | | | +3,216 | +2,191. | -8,350 | -5,050 | | -2,750. | |
| Jamaica | | | | | | | | | | |
| Kenya | | | | | | +30 | +324 | | | |
| Lesotho | | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. | |
| Liberia | | | | | | | | | | |
| Madagascar | | | | +253 | | | | | | |

From The Point
of View of:

| | <u>Tchad</u> | <u>Togo</u> | <u>Tonga</u> | <u>Trin. & Tob.</u> | <u>Uganda</u> | <u>United King.</u> | <u>Zaire</u> |
|--------------|--------------|-------------|--------------|-------------------------|---------------|---------------------|--------------|
| Bahamas | | | | | | -12,250 | |
| Barbados | | | | -2,300 | | -3,350 | |
| Belgium | +450 | -150 | | +900 | -3,874 | -69,850 | -125,650 |
| Botswana | | | | | | | |
| Burundi | | | | | | | |
| Cameroun | -177 | | | | | -925 | -23 |
| C.A.R. | | | | | | -300 | |
| Congo (P.R.) | | | | | | | |
| Ivory Coast | | +85 | | | | -1,124 | |
| Dahomey | | | | | | -112 | |
| Denmark | | | | | | +34,600 | +1,150 |
| Ethiopia | | | | | | -4,234 | |
| Fiji | | | | | | +4,050 | |
| France | -850 | -900 | | -4,400 | +157 | +83,550 | -22,450 |
| Gabon | | | | | | +1,536 | -130 |
| Gambia | | | | | | -750 | |
| W. Germany | +1,421 | +1,050 | | +4,650 | -9,579 | +34,500 | -22,050 |
| Ghana | | -3,150 | | | | -14,756 | +12 |
| Guinee. | | | | | | +1,250 | |
| Guyana | | | | -1,700 | | -6,000 | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | | | | | | -74 | |
| Ireland | | | | -950 | | -15,400 | |
| Italy | +465 | +97 | | +2,500 | -3,000 | -100 | -25,850 |
| Jamaica | | | | -3,050 | | -24,000 | |
| Kenya | | | | | | -56,581 | +600 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Liberia | | | | | | -11,250 | |
| Madagascar | | | | | | -328 | -2 |

Table A-3.1.1.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | |
|-------------------------------|----|--|----------------------|-------------------|------------------------------|
| | | <u>Zambia</u> | <u>United States</u> | <u>P.R. China</u> | <u>U.S.S.R.</u> <u>Japan</u> |
| Bahamas | | | -30,350 | | |
| Barbados | | | -4,650 | | -650 |
| Belgium | | | -28,450 | +40,400 | -8,550 |
| Botswana | | | | | |
| Burundi | | | | | |
| Cameroun | | | +2,666 | | -553 |
| C.A.R. | | | -500 | | |
| Congo (P.R.) | | | | | |
| Ivory Coast | | | +18,399 | | +142 |
| Dahomey | | | | | |
| Denmark | | | -32,004 | | -12,650 |
| Ethiopia | | | +15,788 | -156 | -8,714 |
| Fiji | | | -1,050 | | -900 |
| France | | | -293,050 | +31,550 | +8,750 |
| Gabon | | | -2,788 | | +103 |
| Gambia | | | | | |
| W. Germany | | | -443,900 | +64,950 | +44,950 |
| Ghana | | | +34,275 | -475 | -22,014 |
| Guinee | | | | | +1,900 |
| Guyana | | | -1,850 | | -1,300 |
| Grenada | -0 | | -0 | -0 | -0 |
| Upper Volta | | | | | +109 |
| Ireland | | | -19,650 | +6,450 | -7,100 |
| Italy | | | -276,350 | +17,300 | -11,600 |
| Jamaica | | | -3,650 | | -4,300 |
| Kenya | | | -657 | | -14,398 |
| Lesotho | -0 | | -0 | -0 | -0 |
| Liberia | | | -5,400 | | -156,550 |
| Madagascar | | | +7,950 | | -1,593 |

Table A-3.2.* Directional Balance of Trade Matrix--The Evolution of Trade Among Forty-Four Developing Countries and Twelve Developed Countries Over Time. (Time₁)

| Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | |
|--|----------------|-----------------|----------------|--------------|----------------|-----------------|---------------|-------------------|------------------|
| | <u>Bahamas</u> | <u>Barbados</u> | <u>Belgium</u> | <u>Bots.</u> | <u>Burundi</u> | <u>Cameroun</u> | <u>C.A.R.</u> | <u>Congo (PR)</u> | <u>Iv. Coast</u> |
| Bahamas | | -22 | -81 | | | | | | |
| Barbados | +283 | | | | | | | | |
| Belgium | +2 | | | | +1,000 | -367 | +313 | -2,006 | -291. |
| Botswana | | | | | | | | | |
| Burundi | | | -4,024 | | | | | | |
| Cameroun | | | -651 | | | | +562 | -55 | -153. |
| C.A.R. | | | -282 | | | -114 | | | -59. |
| Congo (P.R.) | | | +3,118 | | | +84 | | | -103. |
| Ivory Coast | | | -451 | | | +299 | +59 | +60 | |
| Dahomey | | | -746 | | | -27 | | -40 | -278. |
| Denmark | +200 | | -55,666 | | | +100 | | -101 | -1,705. |
| Ethiopia | | | -1,647 | | | | | | |
| Fiji | | | | | | | | | |
| France | +1,697 | +900 | +99,999 | | +1,300 | -13,333 | +3,133 | +29,100 | -115,100. |
| Gabon | | | +92 | | | -276. | | | +725. |
| Gambia | | | +286 | | | | | | |
| W. Germany | +900 | | +185,266 | | +1,200 | -8,700 | -702 | -11,234 | -26,167. |
| Ghana | | | +4,111 | | | +259 | | +5 | -134. |
| Guinee | | | +300 | | | +4,548 | | | +5. |
| Guyana | +22 | +1,400 | -100 | | | | | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Upper Volta | | | -867 | | | -0 | | | -280. |
| Ireland | -0 | -4,000 | -10,400 | | | | | | |
| Italy | +461 | | +33,567 | | +652 | -5,100 | -485 | -367 | -20,400. |
| Jamaica | +1,633 | +200 | -1,900 | | | | | | |
| Kenya | | | -3,675 | | -900 | | | | -14. |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0. |
| Liberia | | | -3,366 | | | | | -10 | -9. |
| Madagascar | | | -1,035 | | | +177 | | +3 | +726. |

Table A-3.2.* Continued.

| Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | | |
|--|----------------|----------------|-----------------|-------------|---------------|--------------|---------------|-------------------|--------------|--------|
| | <u>Dahomey</u> | <u>Denmark</u> | <u>Ethiopia</u> | <u>Fiji</u> | <u>France</u> | <u>Gabon</u> | <u>Gambia</u> | <u>W. Germany</u> | <u>Ghana</u> | |
| Bahamas | | -500 | | | -1,697 | | | -900 | | |
| Barbados | | | | | -900 | | | | | |
| Belgium | -1,479 | -51,900 | +500 | | +15,433 | -15 | -900 | -72,700 | | +267 |
| Botswana | | | | | | | | | | |
| Burundi | | | | | -798 | | | -1,290 | | |
| Cameroun | +18 | -91 | | | -4,271 | +486 | | -262 | | -259 |
| C.A.R. | | | | | -6,788 | | | -1,642 | | |
| Congo (P.R.) | +40 | +170 | | | -36,095 | | | +4,335 | | -5 |
| Ivory Coast | +617 | +1,096 | | | -25,402 | -986 | | +6,077 | | +62 |
| Dahomey | | +80 | | | -9,519 | -7 | | -439 | | +17 |
| Denmark | -426 | | +667 | | -42,233 | -404 | | -221,233 | | +567 |
| Ethiopia | | -741 | | | -1,115 | | | -9,722 | | |
| Fiji | | | | | -911 | | | +318 | | |
| France | +7,266 | +41,833 | -367 | +911 | | -30,800 | +200 | -106,400 | | +3,400 |
| Gabon | +7 | +266 | | | +10,321 | | | +6,801 | | +57 |
| Gambia | | | | | -471 | | | +200 | | +199 |
| W. Germany | +435 | +203,267 | +8,467 | -318 | +161,467 | -11,647 | -300 | | | -5,326 |
| Ghana | -15 | +229 | | | -9,207 | -57 | -200 | +3,318 | | |
| Guinee | -42 | -10 | | | -6,300 | | | -1,767 | | +78 |
| Guyana | | -500 | | | -233 | | | -1,866 | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | | -0 |
| Upper Volta | +235 | +21 | | | -16,036 | | | -824 | | +1,757 |
| Ireland | | -6,067 | | | -5,166 | | | -37,566 | | -3,267 |
| Italy | +433 | -3,967 | +12,834 | +249 | -39,233 | -400 | -3,900 | +23,866 | | -6,300 |
| Jamaica | | -600 | | | -6,233 | | | -6,100 | | |
| Kenya | | -327 | +281 | | -5,281 | | | +2,598 | | +15 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | | -0 |
| Liberia | -18 | -1,830 | | | +1,533 | | | -2,567 | | -67 |
| Madagascar | | +256 | | | -44,148 | -82 | | -2,169 | | +2 |

Table A-3.2.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | |
|-------------------------------|---------------|--|--------------|-----------------|----------------|--------------|----------------|--------------|
| | <u>Guinee</u> | <u>Guyana</u> | <u>Gren.</u> | <u>Upper V.</u> | <u>Ireland</u> | <u>Italy</u> | <u>Jamaica</u> | <u>Kenya</u> |
| Bahamas | | -22 | | | -0 | -411 | -1,700 | |
| Barbados | | -1,200 | | | +1,000 | | -300 | |
| Belgium | +834 | -333 | | -155 | +8,300 | -13,367 | +1,000 | +3,867 |
| Botswana | | | | | | | | |
| Burundi | | | | | | -652 | | +952 |
| Cameroon | -4,951 | | | -0 | | +30 | | |
| C.A.R. | | | | | | +228 | | |
| Congo P.R. | | | | | | -1,112 | | |
| Ivory Coast | -5 | | | +1,984 | | +15,103 | | +14 |
| Dahomey | +43 | | | -238 | | -411 | | |
| Denmark | -0 | +200 | | -21 | +6,867 | +12,733 | +600 | -522 |
| Ethiopia | | | | | | -14,708 | | -444 |
| Fiji | | | | | | -249 | | |
| France | +5,333 | -867 | | +11,134 | +4,733 | +49,500 | +4,366 | +5,447 |
| Gabon | | | | | | -426 | | |
| Gambia | | | | | | +3,139 | | |
| W. Germany | +400 | +700 | | +623 | +30,567 | -42,700 | +4,534 | -8,100 |
| Ghana | -78 | | | -4,945 | +2,167 | -3,071 | | -15 |
| Guinee | | | | | -0 | -900 | | |
| Guyana | | | | | +400 | -100 | +1,533 | |
| Grenada | -0 | -0 | | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | | | | | | -195 | | |
| Ireland | -10 | -400 | | | | -6,134 | -1,900 | -1,100 |
| Italy | +767 | -300 | | +125 | +2,433 | | +1,434 | +5,867 |
| Jamaica | | -1,700 | | | +1,900 | -2,267 | | |
| Kenya | | | | | +633 | -3,761 | | |
| Lesotho | -0 | -0 | | -0 | -0 | -0 | -0 | -0 |
| Liberia | | | | | | +4,834 | | |
| Madagascar | | | | | | -654 | | -576 |

Table A-3.2.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | |
|-------------------------------|--|--|----------------|-------------------|---------------|--------------|------------------|-------------------|--------------------|
| | | <u>Leso.</u> | <u>Liberia</u> | <u>Madagascar</u> | <u>Malawi</u> | <u>Mali</u> | <u>Mauritius</u> | <u>Mauritania</u> | <u>Netherlands</u> |
| Bahamas | | | | | | | | | -6,200 . . . |
| Barbados | | | | | | | | | -2,523 . . . |
| Belgium | | | -533 . . . | +997 . . . | -100 . . . | +537 . . . | +565 . . . | -955 . . . | +396,967 . . . |
| Botswana | | | | | | | | | |
| Burundi | | | | | | | | | -894 . . . |
| Cameroun | | | -5 . . . | -264 . . . | | +37 . . . | | | +13,039 . . . |
| C.A.R. | | | | | | | | | -29 . . . |
| Congo (P.R.) | | | +10 . . . | -3 . . . | | | | | +4,918 . . . |
| Ivory Coast | | | -19 . . . | -938 . . . | | +838 . . . | | -2 . . . | +13,243 . . . |
| Dahomey | | | +19 . . . | | | | | | -509 . . . |
| Denmark | | | +6,334 . . . | -256 . . . | -96 . . . | -200 . . . | +955 . . . | +54 . . . | -85,333 . . . |
| Ethiopia | | | | | | | +174 . . . | | -1,026 . . . |
| Fiji | | | | | | | | | +660 . . . |
| France | | | -900 . . . | +36,747 . . . | -500 . . . | +8,300 . . . | +3,460 . . . | +6,000 . . . | -87,200 . . . |
| Gabon | | | | +82 . . . | | | | -6,105 . . . | +728 . . . |
| Gambia | | | | | | | | | -200 . . . |
| W. Germany | | | -17,633 . . . | -2,307 . . . | +400 . . . | +1,039 . . . | +2,545 . . . | -8,503 . . . | +266,900 . . . |
| Ghana | | | +3 . . . | | -1 . . . | -2,720 . . . | | | +7,325 . . . |
| Guinee | | | | | | +66 . . . | | | +1,733 . . . |
| Guyana | | | | | | | | | -1,967 . . . |
| Grenada | | | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . |
| Upper Volta | | | | | | -1,431 . . . | | | -703 . . . |
| Ireland | | | | | | | -0 . . . | | -16,034 . . . |
| Italy | | | -5,733 . . . | +471 . . . | +100 . . . | -262 . . . | +768 . . . | -4,500 . . . | +14,167 . . . |
| Jamaica | | | | | | | | | -10,534 . . . |
| Kenya | | | | +174 . . . | -749 . . . | | -1,385 . . . | | -1,173 . . . |
| Lesotho | | | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . | -0 . . . |
| Liberia | | | | | | -143 . . . | | | +1,066 . . . |
| Madagascar | | | | | | | +665 . . . | +3 . . . | -1,850 . . . |

Table A-3.2.* Continued.

| From The Point
of View of: | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | |
|-------------------------------|--|----------------|---------------|----------------|----------------|------------------|---------------------------------|
| | <u>Niger</u> | <u>Nigeria</u> | <u>Rwanda</u> | <u>W. Som.</u> | <u>Senegal</u> | <u>Sierra L.</u> | <u>Somalia</u>
<u>Soudan</u> |
| Bahamas | | | | | | | |
| Barbados | | | | | | | |
| Belgium | -282 | -7,800 | +152 | -12 | +2,100 | +331 | -3,257 |
| Botswana | | | | | | | |
| Burundi | | | +400 | | | | |
| Cameroun | +5 | +554 | | | -791 | | |
| C.A.R. | | | | | -350 | | -0 |
| Congo (P.R.) | +2 | +284 | | | -278 | | |
| Ivory Coast | +1,364 | -101 | | | -530 | -190 | |
| Dahomey | +245 | -490 | | | +77 | | |
| Denmark | | | | | -600 | +200 | +867 |
| Ethiopia | | | -1,667 | | | | +394 |
| Fiji | | -3 | | +892 | | | |
| France | -5,966 | -17,966 | +419 | | +26,600 | +3,990 | -5,900 |
| Gabon | | +371 | | | +713 | | |
| Gambia | | -45 | | | -297 | -182 | |
| W. Germany | +688 | -38,466 | +1,859 | -991 | +2,900 | -6,520 | +1,387 |
| Ghana | -972 | -3,839 | | | -237 | +174 | -15,633 |
| Guinee | -1 | +16 | | | -402 | -19 | +1 |
| Guyana | | | | | | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | -914 | -26 | | | -1,441 | | |
| Ireland | | -1,934 | | | | +533 | -500 |
| Italy | -241 | -1,533 | +273 | | +3,334 | +500 | -12,600 |
| Jamaica | | | | | | | |
| Kenya | | -18 | +300 | | | +1,421 | +1,023 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Liberia | | -46 | | | +119 | -228 | |
| Madagascar | | +10 | | | +291 | +17 | |

| | | | | | | | |
|------------------------|------|------|--|--|--|--|--|
| Nigeria | +114 | | | | | | |
| Rwanda | | | | | | | |
| W. Somalia | +588 | +74 | | | | | |
| Senegal | | -640 | | | | | |
| Sierra Leone | | +3 | | | | | |
| Somalia | | -30 | | | | | |
| Soudan | | | | | | | |

Table A-3.2.* Continued.

| From The Point
of View of: | | | | | | | | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | |
|-------------------------------|-------|----------|--------|--------|-------|--------------|--------|----------|--|---|---|--------|---|---|---|---|---|---------|
| | Swaz. | Tanzania | Tchad | Togo | Tonga | Trin. & Tob. | Uganda | U. King. | | | | | | | | | | |
| Bahamas | . | . | . | . | . | . | . | . | -1,359 | . | . | . | . | . | . | . | . | -14,066 |
| Barbados | . | . | . | . | . | . | . | . | -3,200 | . | . | . | . | . | . | . | . | -3,666 |
| Belgium | . | -5,933 | +142 | -1,334 | . | . | . | . | -766 | . | . | -2,890 | . | . | . | . | . | +41,567 |
| Botswana | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Burundi | . | -1,140 | . | . | . | . | . | . | . | . | . | -203 | . | . | . | . | . | -906 |
| Cameroun | . | . | +449 | -28 | . | . | . | . | . | . | . | . | . | . | . | . | . | -694 |
| C.A.R. | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | +336 |
| Congo (P.R.) | . | . | . | -19 | . | . | . | . | . | . | . | . | . | . | . | . | . | +5,035 |
| Ivory Coast | . | +5 | +2 | -12 | . | . | . | . | . | . | . | +11. | . | . | . | . | . | +2,464 |
| Dahomey | . | . | . | -38 | . | . | . | . | . | . | . | . | . | . | . | . | . | -760 |
| Denmark | . | -500 | -100 | -0 | . | . | . | . | +834 | . | . | +300 | . | . | . | . | . | +57,166 |
| Ethiopia | . | -9 | . | . | . | . | . | . | . | . | . | +1 | . | . | . | . | . | -6,451 |
| Fiji | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | +7,186 |
| France | . | -1,255 | +3,294 | -5,300 | . | . | . | . | -4,033 | . | . | -227 | . | . | . | . | . | -71,766 |
| Gabon | . | . | . | +16 | . | . | . | . | . | . | . | . | . | . | . | . | . | +789 |
| Gambia | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | +378 |
| W. Germany | . | -10,233 | +1,056 | +700 | . | . | . | . | -734 | . | . | -3,493 | . | . | . | . | . | -40,166 |
| Ghana | . | . | . | -1,853 | . | . | . | . | . | . | . | . | . | . | . | . | . | -23,703 |
| Guinee | . | . | . | +1 | . | . | . | . | . | . | . | . | . | . | . | . | . | -667 |
| Guyana | . | . | . | . | . | . | . | . | -1,367 | . | . | . | . | . | . | . | . | -9,166 |
| Grenada | -0 | -0 | -0 | -0 | -0 | . | . | . | -0 | . | . | -0 | . | . | . | . | . | -0 |
| Upper Volta | . | . | . | +19 | . | . | . | . | . | . | . | . | . | . | . | . | . | -644 |
| Ireland | . | -567 | . | . | . | . | . | . | +100 | . | . | -700 | . | . | . | . | . | -45,967 |
| Italy | . | -2,733 | -222 | -900 | . | . | . | . | +700 | . | . | -500 | . | . | . | . | . | -79,366 |
| Jamaica | . | . | . | . | . | . | . | . | -3,233 | . | . | . | . | . | . | . | . | -12,467 |
| Kenya | . | +430 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | -55,096 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | . | . | . | -0 | . | . | -0 | . | . | . | . | . | -0 |
| Liberia | . | . | . | +3 | . | . | . | . | . | . | . | . | . | . | . | . | . | -1,267 |
| Madagascar | . | +165 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | +611 |

| | | | | | | |
|--------------------|--------|--------|--------|--------|--------|---------|
| Swaziland | -2,066 | +709 | -1,166 | -7,066 | -688 | -11,843 |
| Netherlands | . | -46 | +35 | . | . | +62,833 |
| Niger | . | -1,702 | +180 | . | +10 | -765 |
| Nigeria | 11 | . | . | . | . | +24,469 |
| Rwanda | -289 | . | . | . | -3,467 | -634 |
| W. Samoa | . | . | . | . | . | +419 |

| | | | | | | |
|----------------|---------|--------|--------|---------|---------|----------|
| Ireland | -507 | -222 | -900 | +700 | -500 | -79,366 |
| Italy | -2,733 | | | -3,233 | | -12,467 |
| Jamaica | +430 | | | | | -55,096 |
| Kenya | -0 | -0 | -0 | -0 | -0 | -1,267 |
| Lesotho | -0 | -0 | +3 | | | +611 |
| Liberia | | | | | | |
| Madagascar | | | | | | |
| Malawi | +52 | | | | +7 | +532 |
| Mali | | | +3 | | | -498 |
| Mauritius | -107 | | | | | +36,025 |
| Mauritania | | | | | | +11,242 |
| Netherlands | -2,066 | +709 | -1,166 | -7,066 | -688 | +62,833 |
| Niger | | -46 | +35 | | | -765 |
| Nigeria | 11 | -1,702 | +180 | | +10 | +24,469 |
| Rwanda | -289 | | | | -3,467 | -634 |
| W. Samoa | | | | | | +419 |
| Senegal | +108 | +263 | +466 | | | -405 |
| Sierra Leone | | | | | | +16,892 |
| Somalia | -134 | | | | | -4,501 |
| Soudan | -25 | | | | -3,562 | -38,825 |
| Swaziland | | | | | | |
| Tanzania | | | | | | +16,624 |
| Tchad | | | -0 | | | +806 |
| Togo | | -0 | | | | -3,363 |
| Tonga | | | | | | |
| Trin. & Tobago | | | | | | -2,133 |
| Uganda | | | | | | -24,495 |
| United King. | -21,500 | -1,164 | +2,733 | -14,867 | -3,734 | |
| Zaire | -260 | -41 | -20 | | -3,534 | +33,944 |
| Zambia | -204 | | | | +44 | +113,973 |
| U.S.A. | -7,363 | +2,426 | -588 | -68,500 | -40,788 | +373,933 |
| P.R. China | -3,623 | +427 | | | -5,997 | +28,534 |
| U.S.S.R. | -700 | -490 | +320 | | -1,334 | +132,467 |
| Japan | +3,100 | +72 | +2,800 | +4,500 | +2,866 | +23,384 |

*See Appendix B-3 for measurement details and sources of data.

Table A-3.2.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | |
|-------------------------------|----------|--|----------|---------|----------|----------|
| | Zaire | Zambia | U.S.A. | China | U.S.S.R. | Japan |
| Bahamas | | | -49,500 | | | -515. |
| Barbados | | | -8,100 | | | +1,033. |
| Belgium | -170,233 | +800 | +19,666 | +633 | -29,766 | -10,167. |
| Botswana | | | | | | |
| Burundi | -598 | | -658 | | | -2,328. |
| Cameroun | -27 | | +6,076 | | +99 | -2,627. |
| C.A.R. | -403 | | +2,613 | | +20 | -600. |
| Congo (P.R.) | +183 | | -2,202 | +11 | -237 | -481. |
| Ivory Coast | -32 | | +30,686 | -509 | +2,528 | +3,759. |
| Dahomey | | | -614 | | | -136. |
| Denmark | +300 | -100 | -19,000 | -3,367 | -8,934 | -24,066. |
| Ethiopia | +26 | | +29,502 | -1,671 | -384 | -14,621. |
| Fiji | | | +2,035 | | | -6,219. |
| France | -27,233 | -44,500 | -535,067 | +27,933 | -48,567 | -1,667. |
| Gabon | | | +6,562 | | +6 | -101. |
| Gambia | | | +54 | | | -2,054. |
| W. Germany | -2,733 | -78,000 | -15,300 | +767 | -27,533 | +33,266. |
| Ghana | +5 | -186 | +16,182 | -1,567 | +3,983 | -9,102. |
| Guinee | -18 | | -2,400 | | -10,700 | |
| Guyana | | | -1,400 | | | -1,633. |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0. |
| Upper Volta | | | -824 | -46 | | -99. |
| Ireland | | | -38,867 | -1,100 | -3,967 | -8,900. |
| Italy | -34,167 | -24,900 | -406,233 | +3,700 | -54,633 | -35,167. |
| Jamaica | | | -10,266 | | | -7,300. |
| Kenya | -392 | -53 | -8,340 | -1,110 | -86 | -13,634. |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0. |
| Liberia | -56 | | -3,900 | | | -20,367. |
| Madagascar | -0 | -0 | -0 | -0 | -0 | -0. |

| | | | | | | |
|--------------------|--------|--------|----------|---------|---------|----------|
| Niger | -1,333 | -1,400 | -620,400 | -14,600 | -16,134 | -8,362. |
| Nigeria | -276 | | -1,313 | -1,047 | | -415. |
| Rwanda | -143 | -0 | -28,647 | -9,188 | +1,198 | -62,676. |
| W. Samoa | | | +5,972 | | | -852. |
| | | | -430 | -546 | | -546. |

Table A-3.3.* Directional Balance of Trade Matrix--The Evolution of Trade Among Forty-Four Developing Countries and Twelve Developed Countries Over Time. (Time₂)

From The Point

of View of:

Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With:

| | Bahamas | Barbados | Belgium | Botswana | Burundi | Cameroun | C.A.R. | Congo (PR) | Iv. Coast |
|------------------------|---------|----------|----------|----------|---------|----------|--------|------------|-----------|
| Bahamas | | +153 | -959 | | | | | | |
| Barbados | +81 | | -528 | | | | | | |
| Belgium | +312 | +498 | | | +3,233 | -700 | -1,800 | -1,933 | -2,633 |
| Botswana | | | | | | | | | |
| Burundi | | | -3,810 | | | | | | |
| Cameroun | | | +181 | | | | +2,713 | +1,509 | +775 |
| C.A.R. | | | +1,414 | | | -4,047 | | | +26 |
| Congo (P.R.) | | | +1,766 | | | -1,848 | | | +960 |
| Ivory Coast | | | -297 | | | +249 | -215 | -1,017 | |
| Dahomey | | | -1,617 | | | -24 | +94 | -99 | -1,498 |
| Denmark | +1,496 | +1,060 | -70,727 | +233 | +34 | -273 | +97 | -763 | -2,450 |
| Ethiopia | | | -1,422 | | | | | | -2 |
| Fiji | -23 | | | | | | | | |
| France | +4,512 | +1,000 | -144,667 | | +1,367 | +34,000 | +1,800 | +36,500 | -168,100 |
| Gabon | | | +1,295 | | | +6,766 | | | +3,078 |
| Gambia | | | -49 | | | | | | |
| W. Germany | +3,317 | +2,247 | -185,467 | | +433 | -19,133 | -9,301 | -11,833 | -61,367 |
| Ghana | | | +2,244 | -605 | | +28 | | -143 | -597 |
| Guinee | | | -4,866 | | | +4,116 | | | -2 |
| Guyana | +19 | +1,746 | -455 | | | | | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | | | -632 | | | | | | +450 |
| Ireland | +40 | +47 | +1,603 | | | +120 | | -227 | -853 |
| Italy | +32,734 | +1,138 | -20,767 | | -167 | +4,233 | +33 | -5,767 | -39,100 |
| Jamaica | +3,971 | +1,488 | -3,899 | | | | | | |
| Kenya | | | -5,513 | | +95 | | | | +48 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Liberia | | | +10,507 | | | +44 | | -3 | -441 |
| Madagascar | | | -4,862 | | | -9 | | | +1,841 |

| | | | | | | | | | |
|-----------------------|---------|--------|----------|--|------|---------|------|--------|--------|
| Switzerland | | | -10,991 | | | | | | -436 |
| Netherlands | +4,342 | +3,350 | +620,000 | | +564 | -41,300 | +642 | -234 | -7,700 |
| Niger | | | -181 | | | +351 | | -2,820 | -1,270 |
| Nigeria | +13,366 | +9 | -3,570 | | | | | | +4,129 |
| Rwanda | | | -455 | | -200 | -0 | | | |

| | | | | | | | | | | |
|----------------|---------|---------|----------|--------|---------|------|----|----|----|--------|
| Ireland | 140 | +47 | +1,067 | -167 | +4,233 | .. | .. | .. | .. | +48 |
| Japan | +32,734 | +1,138 | -21,67 | .. | .. | .. | .. | .. | .. | -0 |
| Japan's ex | +3,971 | +1,088 | -3,899 | +95 | .. | .. | .. | .. | .. | -3 |
| Kenya | .. | .. | .. | .. | .. | .. | .. | .. | .. | -441 |
| Laos | -6 | .. | .. | -0 | .. | .. | .. | .. | .. | .. |
| Malawi | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mali | .. | .. | +103 | .. | +116 | .. | .. | .. | .. | +18 |
| Mauritius | .. | .. | -480 | .. | .. | .. | .. | .. | .. | -5,042 |
| Mauritania | .. | .. | -989 | .. | .. | .. | .. | .. | .. | .. |
| Netherlands | +4,342 | +3,350 | +10,561 | +564 | -41,300 | +642 | .. | .. | .. | -436 |
| Niger | .. | .. | +620,000 | .. | .. | .. | .. | .. | .. | -7,700 |
| Nigeria | +13,366 | +9 | -3,570 | .. | .. | .. | .. | .. | .. | -1,270 |
| Rwanda | .. | .. | -455 | .. | .. | .. | .. | .. | .. | +4,129 |
| W. Somalia | .. | .. | +93 | .. | .. | .. | .. | .. | .. | .. |
| Senegal | .. | +18 | -2,649 | .. | .. | .. | .. | .. | .. | .. |
| Sierra Leone | .. | -1,083 | .. | .. | .. | .. | .. | .. | .. | -3,754 |
| Somalia | .. | -4 | .. | .. | .. | .. | .. | .. | .. | -59 |
| Soudan | .. | +219 | .. | .. | .. | .. | .. | .. | .. | .. |
| Swaziland | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Tanzania | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Tchad | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Togo | .. | .. | +1,616 | .. | .. | .. | .. | .. | .. | .. |
| Tonga | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Trin. & Tobago | +1,321 | +6,310 | -1,807 | .. | .. | .. | .. | .. | .. | .. |
| Uganda | .. | .. | -222 | .. | .. | .. | .. | .. | .. | .. |
| Un. King. | +17,800 | +8,266 | +131,200 | -6,500 | .. | .. | .. | .. | .. | .. |
| Zaire | .. | .. | +211,426 | +556 | .. | .. | .. | .. | .. | .. |
| Zambia | .. | .. | -3,588 | .. | .. | .. | .. | .. | .. | .. |
| U.S.A. | +39,333 | +12,733 | +24,467 | -1,517 | .. | .. | .. | .. | .. | .. |
| P. R. China | .. | .. | -6,333 | .. | .. | .. | .. | .. | .. | .. |
| U.S.S.R. | .. | .. | +10,933 | .. | .. | .. | .. | .. | .. | .. |
| Japan | +3,766 | +2,333 | +11,189 | +1,634 | .. | .. | .. | .. | .. | .. |

*See Appendix B-3 for measurement details and sources of data.

Table A-3.3.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | |
|-------------------------------|--|--|----------|----------|------|----------|---------|--------|----------|--------|--|
| | | Dahomey | Denmark | Ethiopia | Fiji | France | Gabon | Gambia | W. Germ. | Ghana | |
| Bahamas | | | -1,722 | | +8 | -4,539 | | | -3,430 | | |
| Barbados | | | -1,161 | | | -1,575 | | | -2,743 | | |
| Belgium | | -5,700 | +66,400 | +1,233 | | +286,800 | -1,633 | -67 | +140,767 | -3,034 | |
| Botswana | | | | | | | | | | | |
| Burundi | | +67 | | | | -1,678 | | | -1,088 | | |
| Cameroun | | +151 | +18 | | | -53,991 | -3,620 | | +12,147 | +67 | |
| C.A.R. | | -105 | +119 | | | -5,396 | | | -2,183 | | |
| Congo (P.R.) | | +10 | +547 | | | -42,176 | | | +7,057 | +31 | |
| Ivory Coast | | -1,424 | +857 | -4 | | -29,378 | -4,571 | | +26,282 | +379 | |
| Dahomey | | | -200 | | | -15,795 | -39 | | +857 | +89 | |
| Denmark | | +263 | | +1,136 | | -94,233 | -493 | -20 | -367,433 | -324 | |
| Ethiopia | | | -1,363 | | | -3,077 | | | -11,481 | +18 | |
| Fiji | | | -76 | | | -781 | | | -803 | | |
| France | | +11,100 | +76,333 | +966 | +542 | | -37,033 | -300 | -545,233 | +6,067 | |
| Gabon | | -9 | +344 | | | +18,795 | | | +6,922 | | |
| Gambia | | | +17 | | | +1,805 | | | +592 | +9 | |
| W. Germany | | -2,100 | +362,400 | +7,366 | +599 | +481,400 | -11,500 | -1,200 | | -7,333 | |
| Ghana | | -191 | -470 | -18 | | -8,573 | | +75 | +633 | | |
| Guinee | | | -283 | | | -18,133 | | | +2,590 | | |
| Guyana | | | -215 | | -0 | +648 | | | -1,156 | | |
| Grenada | | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | |
| Upper Volta | | +82 | +643 | | | -18,814 | | | -1,636 | +1,366 | |
| Ireland | | | +14,290 | +10 | -30 | -12,570 | | -95 | -78,200 | -4,483 | |
| Italy | | | +7,067 | +15,633 | +267 | -192,500 | -33 | -1,133 | +99,700 | -7,300 | |
| Jamaica | | | -1,264 | +1,480 | | -7,047 | | | -13,713 | +5,520 | |
| Kenya | | | -2,209 | | | -12,984 | | | -13,512 | +156 | |
| Lesotho | | -0 | -60 | -0 | -0 | -0 | -0 | -0 | -0 | -0 | |
| Liberia | | +1 | -22,592 | +17 | | +5,159 | | +1 | +15,905 | +121 | |
| Madagascar | | +320 | | | | -43,701 | | | -9,490 | | |

| | | | | | | | | | |
|-------------|--------|---------|--------|------|--------|--------|------|----------|--------|
| Netherlands | +2,633 | +48,800 | +1,567 | +594 | -4,994 | -5,933 | +334 | +351,233 | -4,034 |
| Niger | +1,067 | +55 | | | -3,055 | | | -1,640 | +1,018 |
| Nigeria | +97 | | | | -3,055 | | | -1,640 | +1,018 |
| Rwanda | | -117 | -99 | | -913 | | | -2,278 | |

| |
|---------|
| Ireland | |
|---------|

*See Appendix B-3 for measurement details and sources of data.

Table A-3.3.* Continued.

| Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| From the Point
of View of: | Guinee | Guyana | Gren. | Upper V. | Ireland | Italy | Jamaica | Kenya | Leso. | |
| Bahamas | | | | | | -34,637. | | | | |
| Barbados | | -1,752 | | | -69. | -130. | | | | |
| Belgium | +4,067 | +34 | | +533. | -10,833. | +52,533. | | +3,375 | +4,667 | |
| Botswana | | | | | | | | | | |
| Burundi | | | | | -228. | | | | | |
| Cameroun | -4,725 | | | | -205. | -6,271. | | | | |
| C.A.R. | | | | | | -676. | | | | |
| Congo (P.R.) | | | | -704. | +246. | +4,421. | | | | |
| Ivory Coast | +2 | | | +5,358. | +907. | +23,219. | | | -48. | |
| Dahomey | | | | -63. | | -2,153. | | | | |
| Denmark | -186. | +117 | | -1,007. | +12,933. | -2,334. | | +1,102. | +1,280. | |
| Ethiopia | | | | | -41. | -21,883. | | | -1,413. | |
| Fiji | | -0 | | | +33. | -251. | | | | |
| France | +16,233. | -1,434 | | +16,300. | -1,200. | +107,334. | | +5,967. | +11,800. | |
| Gabon | | | | | | -393. | | | | |
| Gambia | | | | | +154. | +1,181. | | | | |
| W. Germany | -3,700. | -1,800 | | +1,156. | +64,067. | -150,467. | | +11,033. | +8,867. | |
| Ghana | | | | -1,866. | +3,720. | +4,663. | | -5,122. | -156. | |
| Guinee | | | | | -60. | -4,190. | | | | |
| Guyana | | | | | +1,625. | +820. | | +857. | -118. | |
| Grenada | -0. | -0 | -0 | -0. | -0. | -0. | | -0. | -0. | -0 |
| Upper Volta | | | | | | +394. | | | | |
| Ireland | +60. | -1,776 | | | | -14,133. | | +1,133. | -1,870. | |
| Italy | +3,733. | -1,166 | | -666. | +11,233. | | | +5,467. | +11,234. | |
| Jamaica | | -205 | | | -1,265. | -5,919. | | | | |
| Kenya | | +118 | | | +1,176. | -12,807. | | | | |
| Lesotho | -0. | -0 | -0 | -0. | -0. | -0. | | -0. | -0. | -0 |
| Liberia | +331. | | | | -79. | +10,967. | | | -37. | |
| Madagascar | | | | | | -8,416. | | | -133. | |

| |
|--------|
| Malawi | |
|--------|

*See Appendix B-3 for measurement details and sources of data.

Table A-3.3.* Continued.

| From The Point
of View of: | | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | |
|-------------------------------|--|--|-------------------|---------------|-------------|------------------|-------------------|--------------------|
| | | <u>Liberia</u> | <u>Madagascar</u> | <u>Malawi</u> | <u>Mali</u> | <u>Mauritius</u> | <u>Mauritania</u> | <u>Netherlands</u> |
| Bahamas | | -5,652 | | | | | | -4,725. |
| Barbados | | -7 | | | | | | -3,715 |
| Belgium | | -11,867 | +4,862 | -1,400 | +500. | +833. | -12,666. | +484,800. |
| Botswana | | | | | | | | |
| Burundi | | | | | | | | -616. |
| Cameroun | | -44 | +9 | -53 | -5. | | -30. | +38,430. |
| C.A.R. | | | | | | | | -935. |
| Congo (P.R.) | | +2 | | | | | | +1,116. |
| Ivory Coast | | +317 | -1,977 | -46 | +3,648. | | +436. | +21,366. |
| Dahomey | | -4 | -320 | | +10. | | | -2,703. |
| Denmark | | +39,333 | | -10 | +23. | +313 | -13. | -87,953. |
| Ethiopia | | -19 | | -399 | | +252 | | -1,992. |
| Fiji | | | | | | | | -722. |
| France | | -1,866 | +43,701 | -67 | +13,033. | +3,733 | -533. | -190,934. |
| Gabon | | | | | | | -97. | +5,285. |
| Gambia | | | | | | | | +396. |
| W. Germany | | -38,667. | +9,490 | -200 | +1,800. | +3,533. | -11,434. | -141,000. |
| Ghana | | -71 | | -6 | -3,234. | | | +17,153. |
| Guinee | | -391 | | +18 | | | | -853. |
| Guyana | | | | | | | | -3,203. |
| Grenada | | -0 | -0 | -0 | -0. | -0 | -0. | -0. |
| Upper Volta | | | | | -1,492. | | | -1,111. |
| Ireland | | +63 | | -1,820 | | +76. | | -21,850. |
| Italy | | -16,300 | +8,416 | -1,033 | -100. | +1,077. | -12,133. | -24,700. |
| Jamaica | | | | | | | | -5,717. |
| Kenya | | +37 | | +295 | | +1,573. | | +1,751. |
| Lesotho | | -0 | -0 | -0 | -0. | -0. | -0 | -0. |
| Liberia | | | | -743 | +515. | | +1,114 | -6,468. |
| Madagascar | | | | | | +1,514 | | -2,657. |

| | | | | | | |
|-------------|---------|--------|------|-------|-----|-----------|
| Netherlands | +11,033 | -1,967 | -200 | 1,667 | -34 | 1,004 |
| Niger | | | +47 | | | -1,922. |
| Nigeria | +236 | -60 | -11 | +19 | | +142,189. |
| Rwanda | | | | | | -371. |
| W. Samoa | | | | | | 142 |

Table A-3.3.* Continued.

| From The Point
of View of: | Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | |
|-------------------------------|--|----------------|---------------|-----------------|----------------|---------------------|----------------|
| | <u>Niger</u> | <u>Nigeria</u> | <u>Rwanda</u> | <u>W. Samoa</u> | <u>Senegal</u> | <u>Sierra Leone</u> | <u>Somalia</u> |
| Bahamas | | -13,366 | | | | | |
| Barbados | | -9 | | | | | |
| Belgium | -133 | -2,367 | +34 | -93 | +2,333 | +366 | -200 |
| Botswana | | | | | | | |
| Burundi | | | +67 | | | | |
| Cameroun | | +225 | -0 | | -140 | +101 | |
| C.A.R. | | | | | | | |
| Congo (P.R.) | | +2,820 | | | -71 | | |
| Ivory Coast | +1,493 | -2,451 | | | +2,162 | +65 | -1 |
| Dahomey | -1,681 | -68 | | | -2,117 | | |
| Denmark | -70 | -15,164 | | -88 | -910 | +60 | +1,800 |
| Ethiopia | | +50 | +27 | | -15 | | -3 |
| Fiji | | +23 | | +1,878 | | | |
| France | -1,567 | -127,434 | +600 | +54 | -1,700 | +5,000 | +633 |
| Gabon | | +88 | | | +5,812 | | |
| Gambia | | +48 | | | -47,212 | | |
| W. Germany | +1,200 | -56,867 | +800 | -723 | +4,267 | -5,767 | +3,267 |
| Ghana | -684 | -14,115 | | | -293 | +45 | -0 |
| Guinee | | -18 | | | -910 | -99 | |
| Guyana | | +1 | | | | | |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | +63 | -37 | | | -906 | | |
| Ireland | | -2,010 | | -177 | -620 | -280 | |
| Italy | -3,567 | -7,067 | +203 | | -3,533 | +334 | +2,834 |
| Jamaica | | | | | | | |
| Kenya | | +138 | +2,226 | | | -1 | +1,980 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Liberia | | -256 | | | +332 | +69 | |
| Madagascar | | +60 | | | +1,347 | | +192 |

| | | | | | | | |
|-------------|------|----------|------|------|--------|--------|------|
| Mauritania | | | | | | | |
| Netherlands | | -120,533 | +300 | -493 | -4,200 | +6,166 | +521 |
| Niger | | +2,200 | | | -1,340 | | |
| Nigeria | +955 | | | | +878 | +3,129 | +27 |
| Rwanda | | | | | | | |

*See Appendix B-3 for measurement details and sources of data.

Table A-3.3.* Continued.

| Balance of Trade in Thousands of U.S. Dollars at Current Market Prices With: | | | | | | | |
|--|-----------|----------|---------|----------|------------|----------|----------|
| | Un. King. | Zaire | Zambia | U.S.A. | P.R. China | U.S.S.R. | Japan |
| Bahamas | -19,263 | . | . | -33,857 | . | . | -3,071 |
| Barbados | -14,881 | . | . | -15,547 | -58 | -49 | -3,043 |
| Belgium | -55,567 | -260,934 | +3,300 | -34,200 | +3,067 | -18,434 | -43,367 |
| Botswana | +6,600 | . | . | . | . | . | . |
| Burundi | +969 | -700 | . | +14,596 | . | . | -2,141 |
| Cameroun | -4,921 | +110 | . | -1,275 | -1,461 | +3,803 | -1,375 |
| C.A.R. | +111 | -498 | . | +7,154 | . | +52 | -151 |
| Congo (P.R.) | +665 | +420 | +38 | -3,092 | -1,600 | -563 | +1,581 |
| Ivory Coast | +6,974 | +181 | +188 | +52,057 | . | +2,593 | -1,023 |
| Dahomey | -2,266 | -5 | . | -3,181 | . | . | -372 |
| Denmark | +114,110 | +2,750 | +2,316 | -41,927 | -5,130 | -9,866 | -48,736 |
| Ethiopia | -11,127 | . | -286 | +29,582 | -1,794 | +915 | -16,136 |
| Fiji | +1,069 | . | . | +7,764 | -1,144 | +236 | -15,997 |
| France | -90,467 | -17,800 | -69,533 | -765,000 | +66 | +69,666 | -67,473 |
| Gabon | -669 | . | . | +1,868 | . | . | +2,258 |
| Gambia | +66 | . | . | +624 | . | . | -3,423 |
| W. Germany | +327,100 | -3,767 | -77,233 | +424,434 | +76,967 | +144,667 | -195,666 |
| Ghana | +13,379 | -238 | -35 | +13,018 | -3,959 | +40,503 | +12,421 |
| Guinee | -1,776 | . | . | -3,924 | . | . | +121 |
| Guyana | -4,618 | . | -0 | +9,281 | -1,245 | -491 | -1,706 |
| Grenada | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Upper Volta | -427 | . | . | -2,131 | +278 | . | +1,338 |
| Ireland | -95,980 | +23 | -297 | -8,336 | -2,626 | -5,080 | -9,694 |
| Italy | +21,900 | -47,200 | -65,100 | -23,467 | +67 | -45,233 | -69,666 |
| Jamaica | -31,300 | . | . | -59,504 | . | . | -12,900 |
| Kenya | -69,174 | +369 | +7,419 | -14,070 | -1,782 | -207 | -34,404 |
| Lesotho | -0 | -0 | -0 | -0 | -0 | -0 | -0 |
| Liberia | -14,167 | +35 | +3 | +6,827 | -1,551 | -154 | +17,840 |
| Madagascar | -222 | . | . | +23,149 | . | . | -100 |

| | | | | | | | |
|-------------|----------|--------|--------|----------|---------|---------|---------|
| Switzerland | +117,200 | -1,867 | -1,700 | -5,240 | -12,800 | -14,734 | -43,000 |
| Netherlands | +217,134 | . | . | +718,900 | . | . | -83,600 |
| Niger | -1,436 | . | . | -2,628 | -21,505 | +26,056 | -2,264 |
| Nigeria | -10,440 | -109 | +4 | +49,472 | . | . | -47,404 |
| Rwanda | -675 | -819 | . | +2,205 | . | . | -2,824 |

Table A-4.* Balance of Trade With Groups of Countries, in Thousand U.S. Dollars at Current Market Prices, Over Time.

| Country | Time Period | Old E.C. ^a | Old E.C. Balance Per Capita in U.S. Dollars | New ^b E.C. | Altern. ^c Givers | Developing Nations ^d |
|----------|----------------|-----------------------|---|-----------------------|-----------------------------|---------------------------------|
| Bahamas | T ₀ | -850. | -007. | -12,250. | -30,350. | .... |
| | T ₁ | -9,289. | -072. | -14,566. | -50,015. | -3,103. |
| | T ₂ | -48,290. | -286. | -21,054. | -36,928. | -26,528. |
| Barbados | T ₀ | -1,850 | -008. | -3,350. | -5,300. | -3,350. |
| | T ₁ | -3,423. | -014. | -2,666. | -7,067. | -4,417. |
| | T ₂ | -10,083. | -040. | -16,172. | -18,697. | -10,372. |
| Belgium | T ₀ | -35,000. | .... | -16,400. | +4,200. | -131,412. |
| | T ₁ | +326,333. | .... | +101,767. | -19,634. | -186,517. |
| | T ₂ | +964,900. | .... | .... | -92,934. | -286,314. |
| Botswana | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | .... | .... | .... | .... | .... |
| | T ₂ | .... | .... | +6,600. | .... | .... |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Alterm ^c
Givers | Developing
Nations ^d |
|--------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Burundi | T ₀ | ..... | ..... | ..... | ..... | ..... |
| | T ₁ | -7,658. | -003. | -906. | -2,986. | -589. |
| | T ₂ | -7,420. | -002. | +1,036. | +12,455. | -3,644. |
| Cameroun | T ₀ | +17,817. | +004 | -986. | +5,755. | -2,814. |
| | T ₁ | +7,885. | +002. | -785. | +3,548. | -4,422. |
| | T ₂ | -9,504. | -002. | -5,144. | -308. | -649. |
| C.A.R. | T ₀ | -3,304. | -003. | -300. | -500. | ..... |
| | T ₁ | -8,513. | -006. | +336. | +2,033. | -926. |
| | T ₂ | -7,776. | -005. | -8. | +7,055. | -4,651. |
| Congo (P.R.) | T ₀ | -17,600 | -022. | ..... | ..... | ..... |
| | T ₁ | -24,836. | -030. | +5,205. | -2,909. | +195. |
| | T ₂ | -27,816. | -030. | +1,458. | -3,674. | +5,637. |
| Ivory Coast | T ₀ | +7,389. | +002. | -715. | +21,379. | +1,359. |
| | T ₁ | +8,570. | +001. | +3,560. | +36,464. | +2,500. |
| | T ₂ | +41,786. | +010. | +8,740. | +53,627. | +3,689. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old E.C. ^a | Old E.C. Balance Per Capita in U.S. Dollars | New ^b E.C. | Altern ^c Givers | Developing Nations ^d |
|----------|----------------|-----------------------|---|-----------------------|----------------------------|---------------------------------|
| Dahomey | T ₀ | -1,377. | -001. | -42. | .... | -598. |
| | T ₁ | -11,624. | -005. | -680. | -750. | -717. |
| | T ₂ | -21,411. | -008. | -2,466. | -3,553. | -5,779. |
| Denmark | T ₀ | -185,250. | .... | +37,600. | -52,654. | +4,714. |
| | T ₁ | -391,732. | .... | +64,033. | -55,367. | +5,480. |
| | T ₂ | -622,680. | .... | +127,043. | -105,659. | +25,571. |
| Ethiopia | T ₀ | -15,017. | -001. | -4,515. | +5,501. | -1,292. |
| | T ₁ | -28,218. | -001. | -7,192. | +12,826. | +867. |
| | T ₂ | -39,855. | -002. | -12,531. | +12,567. | -2,372. |
| Fiji | T ₀ | -150. | .... | +4,050. | -1,950. | .... |
| | T ₁ | -182. | .... | +7,186. | -4,184. | +892. |
| | T ₂ | -2,557. | -005. | +1,026. | -9,141. | +1,887. |
| France | T ₀ | +51,450. | .... | +112,700. | -251,800. | -72,779. |
| | T ₁ | -44,101. | .... | -25,200. | -557,368. | -110,821. |
| | T ₂ | -773,500. | .... | -15,334. | -762,741. | -205,826. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time
Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Gabon | T ₀ | +14,998. | +035. | +1,836. | -2,685. | +1,111. |
| | T ₁ | +17,516. | +038. | +1,055. | +6,467. | -4,410. |
| | T ₂ | +31,904. | +061. | -325. | +4,126. | +18,111. |
| Gambia | T ₀ | .... | .... | -750. | .... | .... |
| | T ₁ | +2,954. | +010. | +378. | -2,000. | -325. |
| | T ₂ | +3,925. | +011. | +237. | -4,047. | -47,393. |
| W. Germany | T ₀ | +441,850. | .... | +116,900. | -346,300. | -63,442. |
| | T ₁ | +570,933. | .... | +193,668. | -8,800. | -227,907. |
| | T ₂ | +4,466. | .... | +753,567. | +450,402. | -300,685. |
| Ghana | T ₀ | +36,670. | +006. | -13,166. | +20,954. | -5,077. |
| | T ₁ | +2,476. | +000. | -21,307. | +9,496. | -14,805. |
| | T ₂ | +16,120. | +002. | +16,629. | +61,983. | -25,991. |
| Guinee | T ₀ | -9,800. | -004. | +1,250. | -1,900. | -405. |
| | T ₁ | -6,934. | -002. | -677. | -131,000. | +4,232. |
| | T ₂ | -25,452. | -006. | -2,119. | -3,803. | +2,714. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time
Period | Old
E.C. ^a | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|-------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Guyana | T ₀ | -3,550. | -007. | -6,000 | -3,150. | +1,450. |
| | T ₁ | -4,266. | -007. | -9,266. | -3,033. | +1,588. |
| | T ₂ | -3,346. | -005. | -3,208. | +5,839. | -10,493. |
| Grenada | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | .... | .... | .... | .... | .... |
| | T ₂ | .... | .... | .... | .... | .... |
| Upper Volta | T ₀ | -5,719. | -002. | +60. | +109. | +553. |
| | T ₁ | -18,625. | -004. | -623. | -969. | -2,081. |
| | T ₂ | -21,799. | -004. | +216. | -515. | -349. |
| Ireland | T ₀ | -49,450. | .... | -18,100. | -20,300. | -5,150. |
| | T ₁ | -75,300. | .... | -52,034. | -52,834. | -13,745. |
| | T ₂ | -125,156. | .... | -110,270. | -25,736. | -15,347. |
| Italy | T ₀ | -155,100. | .... | -41,600. | -298,900. | -60,244. |
| | T ₁ | +32,367. | .... | -80,900. | -492,333. | -101,651. |
| | T ₂ | -138,267. | .... | +40,200. | -138,299. | -130,564. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old E.C.
Balance
Per Capita
in U.S.
Dollars | Old ^a
E.C. | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|------------|----------------|---|--------------------------|--------------------------|-------------------------------|------------------------------------|
| Jamaica | T ₀ | -012. | -20,200. | -24,000. | -7,950. | -4,900. |
| | T ₁ | -016. | -27,034. | -11,167. | -17,566. | -3,100. |
| | T ₂ | -019. | -36,295. | -33,859. | -72,404. | +9,471. |
| Kenya | T ₀ | -002. | -12,375. | -57,111. | -15,055. | +1,305. |
| | T ₁ | -001. | -11,292. | -54,790. | -23,170. | +2,903. |
| | T ₂ | -004. | -43,065. | -70,207. | -50,463. | +60,179. |
| Lesotho | T ₀ | ..... | ..... | ..... | ..... | ..... |
| | T ₁ | ..... | ..... | ..... | ..... | ..... |
| | T ₂ | ..... | ..... | -60. | ..... | ..... |
| Liberia | T ₀ | -011 | -14,400. | -12,700. | -161,950. | -210. |
| | T ₁ | +006. | +6,634. | -3,057. | -24,267. | -693. |
| | T ₂ | +031. | +36,070. | -36,838. | +22,962. | +475. |
| Luxembourg | T ₀ | ..... | ..... | ..... | ..... | ..... |
| | T ₁ | ..... | ..... | ..... | ..... | ..... |
| | T ₂ | ..... | ..... | ..... | ..... | ..... |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Madagascar | T ₀ | -38,799. | -007. | -433. | +6,357. | +247. |
| | T ₁ | -49,856. | -008. | +867. | +9,984. | +1,401. |
| | T ₂ | -69,126. | -010. | -222. | +23,049. | +5,132. |
| Malawi | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | +302. | +000. | +640. | -3,225. | -3,653. |
| | T ₂ | -1,469. | -000. | +4,045. | -6,182. | +4,036. |
| Mali | T ₀ | -13,704. | -004. | .... | -7,210. | +508. |
| | T ₁ | -11,159. | -002. | -212. | -11,129. | +3,925. |
| | T ₂ | -16,546. | -000. | +578. | -4,609. | -7,325. |
| Mauritius | T ₀ | -5,325. | -009. | +17,778. | -3,447. | -450. |
| | T ₁ | -8,983. | -012. | +35,507. | -2,861. | -2,850. |
| | T ₂ | -13,928. | -003. | +33,335. | -682. | -3,000. |
| Mauritania | T ₀ | -5,800. | -009. | .... | .... | .... |
| | T ₁ | +4,701. | +005. | +11,188. | -3,022. | -39. |
| | T ₂ | +26,629. | +023. | +17,705. | +2,787. | -8,305. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|-------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Netherlands | T ₀ | -203,950. | .... | +203,200. | -367,750. | -27,912. |
| | T ₁ | -483,290. | .... | +146,033. | -559,396. | -29,239. |
| | T ₂ | +74,034. | .... | +322,301. | -830,034. | -143,356. |
| Niger | T ₀ | +1,323. | +000. | -196. | +200. | -2,717. |
| | T ₁ | -7,392. | -002. | -692. | -2,775. | +907. |
| | T ₂ | -3,709. | -001. | -1,381. | -4,892. | +1,639. |
| Nigeria | T ₀ | +26,941. | +001. | -14,554. | -57,976. | -313. |
| | T ₁ | +62,808. | +001. | +28,550. | -99,313. | +4,927. |
| | T ₂ | +234,174. | +004. | -739. | +6,619. | +33,949. |
| Rwanda | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | -3,287. | -001. | -634. | +5,120. | -5,122. |
| | T ₂ | -4,483. | -001. | -792. | -619. | +6,814. |
| W. Samoa | T ₀ | .... | .... | +1,650. | .... | .... |
| | T ₁ | +1,420. | +012. | +419. | -976. | .... |
| | T ₂ | +3,766. | +026. | -1,205. | -2,553. | .... |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time
Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|--------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Senegal | T ₀ | -38,312. | -015. | +668. | -5,728. | +3,038. |
| | T ₁ | -2,150. | -001. | +287. | -10,676. | -2,111. |
| | T ₂ | -9,912. | -003. | +1,584. | -9,063. | +5,590. |
| Sierra Leone | T ₀ | +484. | +000. | +14,583. | -6,624. | -485. |
| | T ₁ | -4,846. | -002. | +15,768. | -12,145. | -705. |
| | T ₂ | -6,717. | -003. | +40,148. | -10,873. | -3,647. |
| Somalia | T ₀ | +5,347. | +003. | -2,556. | -1,140. | -993. |
| | T ₁ | +5,167. | +002. | -4,501. | -8,216. | -3,170. |
| | T ₂ | -12,940. | -005. | -3,678. | -14,269. | -3,934. |
| Soudan | T ₀ | +23,511. | +003. | -11,350. | +1,403. | -2,659. |
| | T ₁ | +25,342. | +002. | -39,599. | -3,828. | -6,007. |
| | T ₂ | +32,758. | +002. | -40,559. | +29,189. | -4,942. |
| Swaziland | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | .... | .... | .... | .... | .... |
| | T ₂ | -300. | -001. | +21,190. | .... | -69. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time
Period | Old E.C.
E.C. ^a | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|-------------------|----------------|-------------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Tanzania | T ₀ | +22,037. | +002. | +16,514. | +7,247. | +1,554. |
| | T ₁ | +12,551. | +001. | +18,185. | +5,482. | +2,308. |
| | T ₂ | -29,628. | -002. | -7,546. | -24,500. | -688. |
| Tchad | T ₀ | -6,402. | -002. | -714. | -610. | +724. |
| | T ₁ | -8,346. | -003. | +1,134. | -2,767. | +1,310. |
| | T ₂ | -9,089. | -002. | -602. | -2,755. | -8,896. |
| Togo | T ₀ | -731. | -001. | -923. | +693. | -351. |
| | T ₁ | +1,218. | +001. | -3,435. | -3,555. | -2,217. |
| | T ₂ | +6,751. | +004. | -5,515. | -6,201. | -2,533. |
| Tonga | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | .... | .... | .... | .... | .... |
| | T ₂ | -700. | -008. | .... | +100. | .... |
| Trinidad & Tobago | T ₀ | -300 | -000. | -9,550. | +12,200. | +8,150. |
| | T ₁ | +32,933. | +035. | -4,433. | +59,766. | +10,834. |
| | T ₂ | -9,599. | -010. | -29,947. | +129,376. | +11,933. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time
Period | Old ^a
E.C. | Old E.C.
Balance
Per Capita
in U.S.
Dollars | New ^b
E.C. | Altern ^c
Givers | Developing
Nations ^d |
|----------------|----------------|--------------------------|---|--------------------------|-------------------------------|------------------------------------|
| Uganda | T ₀ | +19,127. | +003. | +5,607. | +18,337. | +7,013. |
| | T ₁ | -210. | -000. | -24,045. | +16,838. | +6,556. |
| | T ₂ | -1,045. | -000. | +7,674. | +60,457. | -10,140. |
| United Kingdom | T ₀ | -246,250. | .... | -147,000. | -904,750. | -1,111. |
| | T ₁ | +32,533. | .... | -168,200. | -567,967. | -248,205. |
| | T ₂ | -767,200 | .... | -157,400. | -657,734. | -203,570. |
| Zaire | T ₀ | +2,185,250. | +158. | +4,900. | +26,350. | -910. |
| | T ₁ | +22,193. | +001. | +33,632. | -58,218. | -2,486. |
| | T ₂ | +248,053. | +012. | +6,616. | -23,588. | -10,237. |
| Zambia | T ₀ | .... | .... | .... | .... | .... |
| | T ₁ | +133,636. | +037. | +114,196. | +52,217. | +123. |
| | T ₂ | +187,472. | +044. | +85,698. | +156,142. | +14,877. |
| United States | T ₀ | +981,500. | .... | +211,900. | +184,300. | -88,641. |
| | T ₁ | +1,711,300. | .... | +402,166. | -450,233. | -191,001. |
| | T ₂ | +797,200. | .... | -35,300. | -1,995,034. | -259,977. |

*See Appendix B-4 for measurement details and sources of data.

Table A-4.* Continued.

| Country | Time Period | Old E.C. ^a | Old E.C. Balance Per Capita in U.S. Dollars | New ^b E.C. | Altern. ^c Givers | Developing Nations ^d |
|------------|----------------|-----------------------|---|-----------------------|-----------------------------|---------------------------------|
| P.R. China | T ₀ | -144,400 | .... | -21,650. | +20,900. | +50. |
| | T ₁ | -47,033. | .... | +31,368. | -146,567. | +5,072. |
| | T ₂ | -126,833. | .... | -12,700. | -249,500. | +12,814. |
| U.S.S.R. | T ₀ | -17,550. | .... | +83,050. | +12,050. | -2,050. |
| | T ₁ | +123,666. | .... | +132,567. | -323,834. | -1,543. |
| | T ₂ | -191,800. | .... | +230,717. | -52,766. | -105,277. |
| Japan | T ₀ | -29,650. | .... | +54,150. | -434,300. | +267,906. |
| | T ₁ | -52. | .... | +56,350. | -216,870. | +148,149. |
| | T ₂ | +293,524. | .... | +208,848. | +1,316,979. | -162,335. |

*See Appendix B-4 for measurement details and sources of data.

^a"Old E.C." - Founding members of the E.C.--Belgium, France, W. Germany, Italy, Luxembourg, Netherlands.

^b"New E.C." - Denmark, Ireland, United Kingdom.

^c"Altern. Givers" - U.S.A., P.R. China, U.S.S.R., Japan.

^d"Developing Nations" - All other countries included in the present study.

Table A-5.* Number of Trading Partners (Countries) Accounting For Fifty Per Cent of a Developing Country's Imports and Exports, Over Time.

| Country | Imports | | | Exports | | |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | T ₀ | T ₁ | T ₂ | T ₀ | T ₁ | T ₂ |
| Bahamas | 01 | 01 | 01 | 01 | 01 | 01 |
| Barbados | 03 | 03 | 03 | 01 | 02 | 02 |
| Botswana | .. | .. | .. | .. | .. | .. |
| Burundi | .. | 04 | 04 | .. | 13 | 01 |
| Cameroun | 01 | 01 | 01 | 01 | 01 | 02 |
| C.A.R. | 01 | 01 | 01 | 01 | 02 | 02 |
| Congo (P.R.) | 02 | 01 | 01 | 01 | 03 | 04 |
| Ivory Coast | 01 | 01 | 02 | 01 | 02 | 03 |
| Dahomey | 11 | 01 | 02 | 10 | 01 | 02 |
| Ethiopia | 04 | 04 | 04 | 02 | 02 | 02 |
| Fiji | 05 | 12 | 21 | 02 | 02 | 02 |
| Gabon | 01 | 01 | 02 | 02 | 02 | 03 |
| Gambia | 02 | 15 | 01 | 02 | 12 | 15 |
| Ghana | 03 | 04 | 03 | 02 | 03 | 03 |
| Guinee | 01 | 03 | 03 | 02 | 06 | 21 |
| Guyana | 02 | 02 | 02 | 02 | 04 | 02 |
| Grenada | .. | .. | .. | .. | .. | .. |
| Upper Volta | 01 | 02 | 02 | 01 | 02 | 02 |
| Jamaica | 02 | 02 | 02 | 02 | 02 | 02 |
| Kenya | 02 | 04 | 04 | 03 | 14 | 05 |
| Lesotho | .. | .. | .. | .. | .. | .. |
| Liberia | 01 | 02 | 04 | 01 | 02 | 03 |

*See Appendix B-5 for measurement details and sources of data.

Table A-5.* Continued.

| Country | Imports | | | Exports | | |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | T ₀ | T ₁ | T ₂ | T ₀ | T ₁ | T ₂ |
| Madagascar | 01 | 01 | 01 | 01 | 01 | 02 |
| Malawi | .. | 04 | 26 | .. | 03 | 02 |
| Mali | 03 | 05 | 03 | 05 | 04 | 06 |
| Mauritius | 05 | 09 | 10 | 01 | 01 | 01 |
| Mauritania | 05 | 01 | 02 | 04 | 03 | 03 |
| Niger | 02 | 01 | 02 | 01 | 01 | 01 |
| Nigeria | 02 | 03 | 03 | 02 | 03 | 04 |
| Rwanda | .. | 03 | 06 | .. | 02 | 02 |
| W. Samoa | 01 | 10 | 11 | 01 | 03 | 01 |
| Senegal | .. | 01 | 02 | .. | 01 | 01 |
| Sierra Leone | 02 | 03 | 04 | 01 | 01 | 01 |
| Somalia | .. | 03 | 04 | .. | 02 | 22 |
| Soudan | 06 | 06 | 06 | 04 | 06 | 05 |
| Swaziland | .. | .. | .. | .. | .. | .. |
| Tanzania | 05 | 05 | 05 | 04 | 05 | 07 |
| Tchad | 01 | 01 | 02 | 01 | 02 | 01 |
| Togo | 03 | 03 | 03 | 01 | 02 | 02 |
| Tonga | .. | .. | .. | .. | .. | .. |
| Trinidad & Tobago | 04 | 16 | 16 | 03 | 03 | 02 |
| Uganda | 11 | 02 | 03 | 04 | 07 | 04 |
| Zaire | .. | 04 | 04 | .. | 06 | 02 |
| Zambia | .. | 25 | 39 | .. | 04 | 03 |

*See Appendix B-5 for measurement details and sources of data.

Table A-6.* Susceptibility to External Influence: Over Time.

| Country | Time ₀ | Time ₁ | Time ₂ |
|--------------|-------------------|-------------------|-------------------|
| Bahamas | .... | .... | 1.45 |
| Barbados | 1.45 | 1.20 | 1.13 |
| Belgium | .64 | .69 | .81 |
| Botswana | .... | .42 | .34 |
| Burundi | .05 | .29 | .35 |
| Cameroun | .54 | .45 | .49 |
| C.A.R. | .50 | .44 | .42 |
| Congo (P.R.) | 1.76 | 1.75 | .78 |
| Ivory Coast | .71 | .23 | .69 |
| Dahomey | .53 | .33 | .46 |
| Denmark | .59 | .48 | .52 |
| Ethiopia | .23 | .17 | .21 |
| Fiji | 1.61 | 1.14 | .83 |
| France | .24 | .20 | .26 |
| Gabon | 1.14 | .79 | 1.17 |
| Gambia | 2.38 | 4.03 | 3.58 |
| W. Germany | .34 | .29 | .39 |
| Ghana | .35 | .35 | .36 |
| Guinee | .24 | .29 | .50 |
| Guyana | 1.20 | 1.14 | 1.10 |
| Grenada | .... | .45 | .... |
| Upper Volta | .25 | .39 | .30 |
| Ireland | .61 | .57 | .33 |
| Italy | .24 | .24 | .33 |
| Jamaica | .61 | .62 | .69 |
| Kenya | .63 | .54 | .48 |
| Lesotho | .... | .60 | .17 |
| Liberia | 1.33 | 1.32 | 1.43 |
| Luxembourg | .53 | .61 | .80 |

*See Appendix B-6 for measurement details and sources of data.

Table A-6.* Continued.

| Country | Time ₀ | Time ₁ | Time ₂ |
|-------------------|-------------------|-------------------|-------------------|
| Madagascar | .51 | .43 | .46 |
| Malawi | .14 | .68 | .62 |
| Mali | .41 | .33 | .27 |
| Mauritius | .84 | .76 | .90 |
| Mauritania | 1.11 | .66 | .79 |
| Netherlands | .80 | .70 | .72 |
| Niger | 1.60 | 1.50 | .40 |
| Nigeria | .53 | .36 | .42 |
| Rwanda | .06 | .35 | .29 |
| W. Somoa | .... | .... | 7.43 |
| Senegal | .14 | .48 | .47 |
| Sierra Leone | .97 | .61 | .51 |
| Somalia | .28 | .64 | 1.02 |
| Soudan | .31 | .35 | .44 |
| Swaziland | .... | .13 | .11 |
| Tanzania | .15 | .57 | .65 |
| Tchad | .85 | .41 | .46 |
| Togo | .39 | .51 | .55 |
| Tonga | .... | .... | .03 |
| Trinidad & Tobago | .75 | 1.27 | 1.29 |
| Uganda | .53 | .52 | .43 |
| United Kingdom | .33 | .28 | .36 |
| Zaire | .10 | .42 | .76 |
| Zambia | .06 | 1.23 | 1.01 |
| United States | .07 | .07 | .09 |
| P.R. China | .... | .... | .... |
| U.S.-S.R. | .09 | .11 | .11 |
| Japan | .18 | .17 | .20 |

*See Appendix B-6 for measurement details and sources of data.

APPENDIX B

CONCEPTUAL AND STATISTICAL MEASUREMENT ISSUES AND SOURCES

APPENDIX B

CONCEPTUAL AND STATISTICAL MEASUREMENT

ISSUES AND SOURCES

Details of operationalization and major sources of data for all indicators are included in this appendix. Wherever data were available for more than one year within each time period (1958-1960, 1962-1966, and 1968-1972 respectively), one of two procedures was used. An average of the available figures was calculated, in most instances. However, when this procedure seemed inappropriate--e.g., when data were available only for the middle and end of a time period--that figure closest to the "middle year" was used.

All raw figures used were converted into U.S. dollars and, where appropriate, "constant dollars" were used in order to eliminate the effect of differential inflation rates among countries.

Effectiveness Outcomes indicators (all dependent variables with the exception of Amount of Aid from Non-EC Countries) are change rates. Such rates may be either positive ("growth") or negative ("decline"). Rates for Population Growth and Military Expenditures are annual average changes in per cent. All others were calculated for the present study by taking the difference (change) between two time periods as a percentage of the base-year value. For example:

$$\frac{(T_2 - T_1)}{T_1} \times 100 = \text{per cent change}$$

Where not obvious, the direction of scoring (e.g., whether a high value or a low value is assumed to indicate high Effectiveness Outcomes) is indicated.

B.1: Overall balance of trade (independent variable).

a) Operationalization: This indicator of inequality of exchange is a country's balance of trade with the rest of the world. The usual method of subtracting imports from exports was not used.

In order to focus upon the relationship of imports to exports, the confounding influence of the sheer magnitude of trade was removed by taking imports as a percentage of exports:

$$\frac{\text{Total exports}}{\text{Total imports}} \times 100 = \text{inequality of trade balance}$$

b) Scoring direction: A "good" trade balance will have a value of less than 100 per cent, while a "poor" balance will exceed 100 per cent. In other words, this indicator is highest when B's (negative) inequality is greatest.

c) Source: International Monetary Fund, International Financial Statistics

1965: Vol. 18, No. 12
1973: Vol. 22, No. 12

B.2: Percentage of total exports accounted for by one export commodity (independent variable and--in the form of a change rate--also a dependent variable)

a) Operationalization: This is an indicator of a country's dependence upon one export item. The underlying assumption is that a diversified economy, i.e., one not highly dependent upon one or two export items but having a variety of valued export products, is less vulnerable to the ups and downs of world market prices.

From a list of the quantitatively most important exports of developing countries, fourteen export commodities were chosen. These agricultural and metal products are:

| | |
|--------------------|---------------|
| Copper | Palmoil |
| Cocoa Beans | Raw Cotton |
| Coffee | Tea |
| Timber Broadleaves | Sisal |
| Rubber | Tin |
| Sugar | Iron Ore |
| Groundnuts | Manganese Ore |

Each country's exports of these fourteen commodities at T_0 were then scanned by computer, which selected the one commodity accounting for the largest share of total country exports. That commodity was then examined at all time periods and its percentage of total country exports calculated for each time. Assuming an approximately equal country share of world exports for that commodity and no substantial market price cuts, a decrease in that percentage over time is assumed to indicate greater diversification of the economy and, hence, decreased dependence upon one export item. Those few countries for which none of the commodities listed was a major export were dropped from the analysis.

b) Scoring direction: A higher value is assumed to indicate lower dependence on one export item.

c) Sources: International Bank for Reconstruction and Development, International Development Association, Commodity Trade and Price Trends: 1973 Edition. Report No. EC-166/73.
United Nations Statistical Office, World Trade Annual, Vol. I.

1963
1965
1967
1969
1971
1973

B.3: Raw directional balance of trade matrix (used to construct independent variables B.4 and B.5).

a) Operationalization: Unlike the overall trade balance in B.1, these trade balances were computed by simply subtracting imports from exports. The procedure was more complicated than it sounds, since a total of nine 57 X 57 directional trade matrices were involved. For each time period, separate export and import matrices were constructed indicating the flows from each country to each other country. Trade balance matrices were then calculated by computer from the corresponding export and import matrices (see Appendix A.3). Imports and exports were in thousand U.S. dollars at current prices.

b) Sources: International Bank for Reconstruction and Development, Direction of Trade: A

Supplement to International Financial
Statistics

Vol. 1
 Vol. 3
 Vol. 4
 Vol. 6
 Vol. 7.

United Nations Economic Commission on Africa,
UNECA Trade Statistics, Series A. Various
 years.

United Nations Economic Commission for Asia,
UNEC-Asia Trade Statistics. Various years.

United Nations Economic Commission for
 Latin America, UNECLA Trade Statistics.
 Various years.

B.4 and B.5: Raw and per capita balance of trade with "old" EC
 countries (independent variables).

a) Operationalization: From the raw directional balance
 of trade matrices (B.3), each country's raw balance of trade with the
 group of six "old" EC countries was obtained by having the computer
 sum across these six individual balances.

Per capita balances were also calculated, as a way of con-
 trolling for the effect of differential size of developing countries.
 This was done by dividing the raw balance with the old EC by the
 average population size of the corresponding time period, with an ad-
 justment to convert the result into dollars (rather than thousand
 dollars).

b) Scoring direction: A higher value indicates a more favorable trade situation.

c) Sources: For trade statistics, see B.3.

For population statistics used in all per capita calculations:

United Nations Demographic Yearbook
1959 through 1973

United Nations Statistical Yearbook
1959 through 1973

B.6 and B.7: Number of countries accounting for 50 per cent of a country's exports and of a country's imports (independent variables)

a) Operationalization: These indicators of a country's dependence upon trading partners are based upon the assumption that dependence is greatest when most trade is concentrated on only one trading partner and is least when trade is evenly spread among a large number of partners. This notion was operationalized as the number of trading partners accounting for 50 per cent of a country's total exports and of its total imports. The cutting point of 50 per cent was an arbitrary one.

Construction of these indicators began with the 57 X 57 directional matrices for exports and imports respectively. Each matrix value was multiplied by 1,000 (in order to put the numerator and denominator on a common base), divided by the country's total exports or imports, and the resulting figure multiplied by 100 to obtain a percentage. By this method, six additional matrices were

obtained containing directional flows of imports and of exports at each time period as percentages of a country's total imports/exports. Such a matrix shows, for example, what percentage of Ghana's total imports come from each of the 56 other countries. By computer, these percentage export and import matrices were scanned; beginning with the largest percentage and working down, the computer summed the figures until a total of at least 50 per cent of a country's trade was obtained. It then printed out the number of trading partners required to obtain this total.

b) Scoring direction: A higher number is assumed to indicate lesser dependence upon trading partners.

c) Sources: For total import and export figures, see B.1.
For directional import and export figures,
see B.3.

B.8: Susceptability to external influence (control variable)

a) Operationalization: Countries are assumed to vary with respect to the relative openness of their economies to outside influence. For example, an isolated village in Lapland which comes in contact with the outside world on two market days a year is analogous to a country with extremely low "openness;" the external contact which does occur is unlikely to have a major influence--for either better or worse--upon the local economy. In my terminology, there is a low "susceptability to external influence" (SEI). At the other extreme is the situation where a large part of the economy depends upon trade and other contacts with the outside world.

In operationalizing this notion of susceptibility or vulnerability, net flows--e.g., exports minus imports--are inadequate since they give little indication of the total volume of flows. After all, jobs and profits are generated from both export trade and import trade; for the purpose of assessing impact upon the overall economy, it is appropriate to sum gross exports and gross imports.

Inflows of foreign aid (total rather than in grant-equivalent form and including East Bloc aid where known) and outflows of debt-service payments also have impact upon the economy and should receive consideration. Originally I had also planned to use factor income flows such as receipts or payments of entrepreneurial income, but comparable data was not available for the 44 developing countries.

The formula used for computing SEI is:

$$SEI = \frac{\text{exports} + \text{imports} + \text{aid receipts} + \text{debt-servicing}}{\text{Gross National Product}}$$

All component indicators are in U.S. dollars at current prices. All were also in per capita form, although the same result would have been obtained by using raw figures. Since statistics for the numerator were only available in current prices, the denominator is also at current prices. For countries for which aid and/or debt-servicing statistics were not available, the ratio was computed using only exports and imports.

I had thought this indicator to be an original idea. Later, however, I came across two discussions in the literature which

recommended the construction of a similar formula (including imports and exports but not aid or debt servicing). See Heintz (1972) and Caporaso (1974). To the best of my knowledge, such an indicator has never before been used in empirical research.

b) Scoring direction: A higher value indicates greater susceptibility to external influence.

c) Sources: For total exports and imports, see B.1.

For foreign aid see:

Organization for Economic and Cultural
Development, Development Assistance

1968 Review

1971 Review

Organization for Economic and Cultural
Development, Development Cooperation

1973 Review

International Bank for Reconstruction and
Development, International Development
Association. P.D. Henderson, "The Distri-
bution of Official Development Assistance
Commitments by Recipient Countries and by
Sources." Economics Department Working
Paper No. 92. 1970.

United Nations Economic Commission for
Africa, Survey of Economic Conditions in
Africa, Part I. 1972.

United Nations Statistical Yearbook

1965

1969

1973

For debt servicing see:

International Bank for Reconstruction and
Development, International Development Associa-
tion, "External Public Debt; Service Payments
and Terms, 1965-1970." Document Report No. EC-
167-71. October 15, 1972.

European Communities, Commission, Tropical Africa: Socio-Economic Indicators.
DG VIII., No. 557.

International Monetary Fund, Balance of Payments Yearbook
1965 through 1973

For GNP see:

United Nations Yearbook of National Accounts Statistics
1965 through 1971

United Nations Statistical Yearbook. 1970.

United Nations Economic Commission for Africa,
Survey of Economic Conditions in Africa,
Part I.
1969
1972

B.9 and B.10: Debt servicing performance I (control variable)
Debt servicing performance II (dependent variable)

a) Operationalization: The principal incentive for the export of capital (i.e., non-soft loans) to developing countries--as both Lenin (1917) and executives of Chase Manhattan Bank would agree--is not the country's total amount of indebtedness but its ability to service or pay back what debts it has. The two indicators included in this study capture different aspects of that ability.

Both were calculated for the present research. The first indicator is:

$$DS\ I. = \frac{\text{Service payments (on interest and principal)}}{\text{New disbursements}}$$

New disbursements are the amount of new loans taken on during the time period in question.

This first indicator was chosen as a control variable because I suspected that a low ratio, i.e., relatively substantial amounts of new loans contracted, could erase the otherwise negative effects of a large trade deficit.

The second indicator was chosen because it became apparent to me that debt-servicing involves large sums of money for many developing countries, money which otherwise could go toward economic and other forms of development. For example, 19 African countries in this study pay an average of 9.6 per cent of their total exports just to service debts (see von der Ohe, 1974: 18). As a dependent variable, an increase in the following ratio is considered to be an improvement:

$$DS\ II. = \frac{\text{Principal service payments}}{\text{Interest payments}}$$

b) Scoring direction: a high value on either ratio is assumed to indicate a favorable situation.

c) Sources: See debt servicing under B.8.

B.11: Amount of total aid, per capita (control variable)

a) Operationalization: Aid figures used were in U.S. dollars and refer to receipts of foreign aid. Total aid inflows and not the grant-equivalent thereof were used. Where available, aid from East Bloc countries was included.

b) Sources: See aid statistics under B.8.

B.12: Percentage of aid from multilateral sources (independent variable)

a) Operationalization: In most cases this indicator was computed for the present study. The amount of receipts from multilateral (international) organizations was divided by total aid receipts (see B.11) and multiplied by 100 to obtain a percentage.

b) Sources: See aid statistics under B.8.

B.13: Amount of aid from non-EC (dependent variable)

a) Operationalization: This figure was calculated using statistics for total aid receipts (not per capita) and for aid receipts from the six "old" EC countries including both bilateral and multilateral grants.

Total aid minus EC aid = non-EC aid

b) Sources: See aid statistics under B.8.

B.14: IMF Quota position (dependent variable)

a) Operationalization: Most developing countries, upon becoming a member of the International Monetary Fund, begin with quotas which are proportionately equal. Periodically all members have the opportunity to increase their subscription capital. Because the size of the "pot" increases at these times, a country must increase its subscription capital just to maintain the same percentage of the total.

A country's quota position is expressed in terms of its percentage of the total capital underwritten by all member countries.

b) Scoring direction: Higher values are assumed to indicate higher (inter-country) Effectiveness Outcomes, since they reflect improvement in economic position vis-à-vis other nations.

c) Sources: International Monetary Fund, International Financial Statistics

1962: Vol. 15
 1965: Vol. 18
 1966: Vol. 19
 1968: Vol. 21
 1973: Vol. 26

International Monetary Fund Annual Report

1971
 1972

B.15: GDP per capita (dependent variable)

a) Operationalization: Gross Domestic Product figures in constant dollars were used. Where per capita statistics were not available, these were calculated by dividing GDP by average population during each time period.

b) Sources: United Nations Yearbook of National Account Statistics. 1971.

United Nations Commission for Africa, A Survey of Economic Conditions in Africa, Part I.

1969
 1971

B.16: Per cent of GDP generated by agriculture (dependent variable)

a) Operationalization: Origin of Gross Domestic Product is reported according to the percentage contributions of various sectors of the economy. A decrease in the relative contribution of agriculture usually accompanies increased urbanization and increased industrialization.

b) Scoring direction: This variable was rescored such that a higher value indicates a decrease in the contribution of agriculture and, presumably, an increase in Effectiveness Outcomes.

- c) Sources: United Nations Commission for Africa,
A Survey of Economic Conditions in Africa,
Part II. 1970.
- United Nations Yearbook of National Account
Statistics. 1971.

B.17: Capital Formation (dependent variable)

a) Operationalization: Expenditure of Gross Domestic Product is reported according to the major uses to which it is put. This variable taps that part not used for consumption but invested for the future.

Expressed as a percentage of GDP, this indicator includes both Gross Fixed Capital Formation and Increases in Stocks. Sources using a base of constant market prices had to be supplemented with those using current purchasers' values. This inconsistency appears to create negligible problems, since the aim is to assess the importance of capital formation relative to other expenditures of GDP.

b) Scoring direction: Higher values are assumed to indicate increases in Effectiveness Outcomes.

- c) Sources: United Nations Yearbook of National Account
Statistics, International Tables. 1971.

United Nations Statistical Yearbook. 1973.

United Nations Economic Commission for Africa,
A Survey of Economic Conditions in Africa,
Part II. 1970.

B.18 and B.19: Percentage of external public debt owed to private
creditors and to international organizations (dependent
variable)

a) Operationalization: Public (governmental) debts to organizations and governments in other countries are reported according

to type of creditor. I chose for this study the percentage of debt owed to international organizations and to private banks and other private creditors.

One could argue about the relative merits of the two types of creditors, from the point of view of the indebted developing country. I would think that loans from international organizations are to be preferred because of their lower interest rates. Those countries heavily indebted to private creditors are often those who cannot obtain more favorable terms elsewhere.

b) Scoring direction: Higher values for debts to international organizations is assumed to indicate an increase in Effectiveness Outcomes. Debt to private creditors was rescored such that higher values indicate a decrease in such debts and, I suggest, an increase in Effectiveness Outcomes.

c) Source: International Bank for Reconstruction and Development, International Development Association, "External Public Debt: Service Payments and Terms, 1965-1970; Projected Service Payments, 1971-1980." Report No. EC-167-71. October 15, 1972.

B.20: Cost of Living (dependent variable)

a) Operationalization: The cost of living index reflects one aspect of individual welfare within a country. The effect of inflation is removed in the calculation.

Wherever possible, index figures with a base of 1958 = 100 were used. Different base years had to be used for some countries. Within each country, the same base year was used in all calculations. Because this indicator is a change rate, the error introduced should be minor.

b) Sources: International Monetary Fund, International Financial Statistics

1967-68: Supplement
1973

United Nations Statistical Papers
"Compendium of Social Statistics 1967"

United Nations Statistical Yearbook

1967
1972
1973

B.21, B.22, and B.23: Percentage enrolled in primary, secondary, and tertiary education (dependent variable)

a) Operationalization: As discussed in the research methods chapter, these enrollments are expressed as percentages of total population rather than of the appropriate age-group. This was done because age-group statistics are unavailable for many countries.

b) Sources: Agency for International Development, Economic Data Book - Africa, 1973.

Agency for International Development, Economic Data Book - Latin America. 1970.

United Nations Statistical Yearbook

1963
1966
1970
1972
1973

United Nations Economic Commission for Africa, A Survey of Economic Conditions in Africa, Part I. 1971.

B.24: Electricity consumption per capita (dependent variable)

a) Operationalization: This indicator reflecting one facet of industrialization is expressed in number of Kilowatt hours per capita.

- b) Sources: United Nations Statistical Papers, Series J.,
"World Energy Supplies."

No. 8
 No. 15
 No. 16
 No. 17

B.25: Daily caloric food supply per capita (dependent variable)

a) Operationalization: Food supply is given in number of calories per day eaten by the "average" person in a country.

- b) Sources: United Nations, Food and Agriculture Organization, Production Handbook

1962: Vol. 16
 1965: Vol. 19
 1968: Vol. 22
 1971: Vol. 25
 1973: Vol. 27

United States Senate, Committee on Agriculture and Forestry, World Food Conference 1974: Selected Material for the Use of the U.S. Congressional Delegation to the World Food Conference.

United States Congress, Subcommittee on Foreign Economic Policy of the Joint Economic Committee, Food and People, 1961.

B.26: Percentage of urban population (dependent variable)

a) Operationalization: This indicator is the percentage of a country's population which resides in what are considered urban areas. The definition of what is "urban" is set by each country and varies considerably. See my discussion of the merits of this variability in the research methods chapter.

- b) Sources: United Nations Demographic Yearbook

1960
 1962
 1970
 1971

Agency for International Development,
Economic Data Book - Africa.

1967

1968

1973

Agency for International Development,
Economic Data Book - Latin America. Various
 years.

B.27: Number of research institutions per 500,000 population
 (dependent variable)

a) Operationalization: The number of research institutions includes universities having research facilities and/or staff. In order to take into account the differential sizes of developing countries, I converted these figures to institutions per half million people.

b) Sources: UNESCO, A Survey of the Scientific and Technological Potential of African Countries. 1968-69.

United Nations Economic Commission for Africa,
A Survey of Economic Conditions in Africa,
 Part I. 1972.

B.28: Population size (dependent variable)

a) Operationalization: Unlike most measures of Effectiveness Outcomes, this is an annual average growth rate in per cent.

b) Scoring direction: A higher value--i.e., a large population growth rate--is assumed to indicate a lower Effectiveness Outcome. I realize that this assumption is open to some question.

c) Sources: International Bank for Reconstruction and Development, World Bank Atlas

1970

1973

United Nations Statistical Yearbook. 1963.

United Nations Demographic Yearbook. 1964.

International Bank for Reconstruction and
Development, World Tables. 1968.

B.29: Telephones per 100 persons (dependent variable)

a) Operationalization: This indicator of the development of communications is expressed in the number of telephones for each 100 persons. It does not, of course, indicate how widely such telephone connections are distributed throughout the country.

b) Sources: International Telecommunications Union,
General Telephone Statistics, Various years.

American Telephone and Telegraph Company,
The World's Telephones. Various years.

United Nations Statistical Yearbook. 1971.

B.30: Military expenditures per capita (dependent variable)

a) Operationalization: This is an annual average growth rate in per cent, based on constant dollars between the years of 1963 and 1972. The allocation of proceeds from trade surpluses or aid receipts is of no small interest, because money spent on such things as the military cannot be used for "productive" purposes. For this reason I included this variable in a study which otherwise systematically excludes variables such as intra-country political systems (the overwhelming majority of the 44 developing countries are or were ruled by military juntas) or political ideologies. It should also be noted that almost all military equipment for developing countries has to be imported, thereby creating a drain on the balance of payments.

On the average, developing countries as a group are gradually approaching the world average of military expenditures; in 1972 their average was 5.3 per cent of GNP as compared with the world average of 6 per cent (see p. 1 of the source below).

b) Source: U.S. Arms Control and Disarmament Agency,
World Military Expenditures and Arms Trade
1963-1973. Publ. No. 74. U.S. Government
Printing Office No. 1975 0-557-372.

APPENDIX C

A COMPILATION OF ALL CORRELATIONS AND
PARTIAL CORRELATIONS THAT WERE
COMPUTED FOR THE TESTING OF
THE HYPOTHESES

Table C.1. Hypothesis 1.A: Inequality of Exchange--Raw Balance of Trade of 44 Developing Countries With the "Old" EC at Time₀, as Related to Indicators of Effectiveness Outcomes at Time₁ and Time₂.

| CONTROLLED FOR: | | | | | |
|--|---|--|--|---------------------------------|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Raw Balance of
Trade With Old
E.C. at T ₀ (N=33) | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| | | | | | |
| A. <u>Inter-Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | ***-.81 | ***-.80 | ***-.81 | ***-.82 |
| | T ₁ → T ₂ (N = 34) | *-.29 | *-.28 | *-.27 | *-.30 |
| | T ₀ → T ₂ (N = 32) | ***-.88 | ***-.87 | ***-.87 | ***-.88 |
| Debt servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | ***-.84 | ***-.83 | ***-.84 | ***-.84 |
| | | | | | |
| IMF quota position | T ₁ → T ₂ (N = 32) | + .05 | + .07 | + .07 | + .05 |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | + .15 | + .22 | + .25 | + .14 |
| | | | | | |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | -.27 | -.23 | -.23 | -.27 |

Table C.1. Continued.

| | | CONTROLLED FOR: | | | |
|---|---|--|--|---------------------------------|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Raw Balance of
Trade With Old
EC at T ₀ (N=33) | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| | | | | | |
| B. <u>Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | -.13 | -.06 | -.06 | -.13 |
| | T ₁ → T ₂ (N = 41) | +.03 | +.01 | -.00 | +.04 |
| | T ₀ → T ₂ (N = 40) | -.08 | -.04 | -.04 | -.07 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | ++.26 | +.22 | +.22 | +.26 |
| | T ₁ → T ₂ (N = 41) | -.04 | -.03 | -.04 | -.03 |
| | T ₀ → T ₂ (N = 40) | ++.23 | +.19 | +.19 | +.23 |
| Capital formation | T ₀ → T ₁ (N = 39) | ***.37 | ***.34 | ***.34 | ***.37 |
| | T ₁ → T ₂ (N = 39) | 0 | +.01 | +.01 | +.00 |
| | T ₀ → T ₂ (N = 38) | ***.39 | ***.36 | ***.37 | ***.39 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | +.24 | +.24 | +.23 | +.26 |
| | T ₁ → T ₂ (N = 37) | ***+.96 | ***+.96 | ***+.96 | ***+.96 |
| | T ₀ → T ₂ (N = 25) | ***+.43 | ***+.43 | ***+.43 | ***+.44 |

Table C.1. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Raw Balance of
Trade With Old
EC at T ₀ (N=33) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | T ₀ → T ₁ (N = 39) | -.06 | -.08 | -.07 | -.07 |
| | T ₁ → T ₂ (N = 43) | 0 | -.03 | -.03 | -.00 |
| | T ₀ → T ₂ (N = 39) | -.06 | -.10 | -.09 | -.07 |
| Per cent of population in
secondary education | T ₀ → T ₁ (N = 39) | -.07 | -.08 | -.09 | -.06 |
| | T ₁ → T ₂ (N = 42) | +.20 | +.17 | +.17 | +.20 |
| | T ₀ → T ₂ (N = 38) | +.02 | +.02 | +.02 | +.02 |
| Per cent of population in
tertiary education | T ₀ → T ₁ (N = 23) | ***+.25 | +.20 | +.22 | +.25 |
| | T ₁ → T ₂ (N = 31) | +.01 | -.03 | -.03 | +.00 |
| | T ₀ → T ₂ (N = 23) | ***+.51 | ***+.47 | ***+.48 | ***+.52 |
| Electricity consumption
per capita | T ₀ → T ₁ (N = 33) | -.11 | -.18 | -.13 | -.13 |
| | T ₁ → T ₂ (N = 38) | -.15 | -.15 | -.15 | -.15 |
| | T ₀ → T ₂ (N = 33) | -.15 | -.17 | -.17 | -.15 |
| Daily caloric food supply
per capita | T ₁ → T ₂ (N = 35) | -.03 | -.05 | -.05 | -.03 |

Table C.1. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Raw Balance of
Trade With Old
EC at T ₀ (N=33) | CONTROLLED FOR: | | |
|---|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | T ₁ → T ₂ (N = 39) | -.02 | + .01 | + .01 | -.02 |
| Number of research institutions
(including universities) per
500,000 population | T ₁ → T ₂ (N = 34) | + .07 | + .11 | + .13 | + .06 |
| Average annual population
growth rate | T ₀ → T ₁ (N = 40) | -.05 | -.13 | -.13 | -.06 |
| | T ₁ → T ₂ (N = 44) | + .10 | + .04 | + .04 | + .09 |
| | T ₀ → T ₂ (N = 44) | + .10 | + .03 | + .03 | + .09 |
| Telephones per 100 persons | T ₀ → T ₁ (N = 26) | -.14 | -.18 | -.18 | -.14 |
| | T ₁ → T ₂ (N = 41) | -.02 | + .03 | + .04 | + .04 |
| | T ₀ → T ₂ (N = 26) | + .05 | -.04 | -.05 | -.02 |
| Military expenditures per
capita | T ₁ → T ₂ (N = 34) | + .04 | + .01 | + .01 | + .04 |

Significance levels: *** = .005

** = .05

* = .10

Note: See Table A-4 in Appendix A for raw trade balance with old EC by individual country.

Table C.2. Hypothesis 1.B: Inequality of Exchange--Raw Balance of Trade of 44 Developing Countries with the "old" EC at Time₁, as Related to Indicators of Effectiveness Outcomes at Time₂.

| EFFECTIVENESS OUTCOMES | Change Over Time
In Per Cent
Between | Correlations
Without Controls
Raw Balance
of Trade
With old EC
at T ₁ (N=39) | CONTROLLED FOR: | | | | | |
|--|--|--|--|--|--|---------------------------------|---|--|
| | | | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Ant. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
Servicing
& Total
Aid
(N=33) | SEI &
Debt
Servicing
& Total
Aid
(N=33) |
| | | | | | | | | |
| A. Inter-Country | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | - .19
- .15 | - .20
- .17 | - .21
* - .26 | - .20
- .17 | - .20
- .17 | - .20
- .24 | - .20
* - .25 |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | - .11 | - .13 | - .19 | - .12 | - .13 | - .18 | - .18 |
| IMF quota position | T ₁ → T ₂ (N = 32) | + .08 | + .10 | + .03 | + .08 | + .10 | + .02 | + .03 |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | - .12 | - .13 | - .14 | - .12 | - .13 | - .13 | - .13 |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | - .27 | - .28 | - .04 | - .27 | - .28 | - .03 | - .03 |
| B. Intra-Country | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | - .02
+ .08 | - .01
+ .08 | + .05
+ .01 | - .02
+ .07 | - .01
+ .08 | + .05
+ .05 | + .06
+ .05 |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | + .00
+ .19 | + .00
+ .21 | - .23
+ .14 | + .00
+ .19 | + .00
+ .21 | * - .24
+ .14 | * - .24
+ .15 |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | - .04
- .04 | - .05
- .04 | + .07
+ .07 | - .04
- .06 | - .05
- .04 | + .08
+ .12 | + .08
+ .12 |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | * + .24
+ .17 | * + .25
+ .19 | * + .31
+ .17 | * + .25
+ .17 | * + .25
+ .19 | * + .25
+ .17 | * + .30
+ .17 |

Table C.3. Hypothesis 1.C: Inequality of Exchange--Per Capita Balance of Trade of 44 Developing Countries
With the "Old" EC at Time₀, as Related to Indicators of Effectiveness Outcomes at Time₁ and Time₂.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | CONTROLLED FOR: | | | |
|--|---|---|--|---------------------------------|--|
| | | Correlations
Without Controls.
Per Capita Balance
of Trade With Old
EC at T ₀ (N=33) | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| <u>A. Inter-Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | ***-.78 | ***-.76 | ***-.78 | ***-.79 |
| | T ₁ → T ₂ (N = 34) | *-.27 | *-.26 | *-.24 | *-.27 |
| | T ₀ → T ₂ (N = 32) | ***-.85 | ***-.84 | ***-.85 | ***-.85 |
| Debt servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | ***-.85 | ***-.84 | ***-.84 | ***-.85 |
| IMF quota position | T ₁ → T ₂ (N = 32) | + .07 | + .09 | + .09 | + .07 |
| Per Cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | + .16 | + .24 | + .29 | + .16 |
| Per Cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | *-.31 | -.27 | -.27 | -.31 |

Table C.3. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Per Capita Balance
of Trade With Old
EC at T ₀ (N=33) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| B. Intra-Country | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | -.11 | -.04 | -.02 | -.11 |
| | T ₁ → T ₂ (N = 41) | +.08 | +.06 | +.03 | +.08 |
| | T ₀ → T ₂ (N = 40) | -.03 | +.02 | +.01 | -.03 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | ++.25 | +.21 | +.20 | ++.25 |
| | T ₁ → T ₂ (N = 41) | -.09 | -.08 | -.10 | -.09 |
| | T ₀ → T ₂ (N = 40) | +.20 | +.16 | +.15 | +.20 |
| Capital formation | T ₀ → T ₁ (N = 39) | ++.39 | ++.36 | ++.37 | ++.39 |
| | T ₁ → T ₂ (N = 39) | -.06 | -.05 | -.06 | -.06 |
| | T ₀ → T ₂ (N = 38) | ++.38 | ++.35 | ++.36 | ++.35 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | +.18 | +.17 | +.14 | +.19 |
| | T ₁ → T ₂ (N = 37) | ++++.92 | ++++.92 | ++++.93 | ++++.92 |
| | T ₀ → T ₂ (N = 25) | +.24 | +.24 | +.23 | +.24 |

Table C.3. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | CONTROLLED FOR: | | | |
|--|---|---|--|---------------------------------|--|
| | | Correlations
Without Controls.
Per Capita Balance
of Trade With Old
EC at T ₀ (N=33) | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | T ₀ → T ₁ (N = 39) | -.06 | -.08 | -.06 | -.06 |
| | T ₁ → T ₂ (N = 43) | +.02 | -.01 | -.01 | +.02 |
| | T ₀ → T ₂ (N = 39) | -.05 | -.09 | -.07 | -.05 |
| Per cent of population in
secondary education | T ₀ → T ₂ (N = 39) | -.08 | -.10 | -.12 | -.08 |
| | T ₁ → T ₂ (N = 42) | +.20 | +.17 | +.16 | +.20 |
| | T ₀ → T ₂ (N = 38) | +.00 | -.00 | -.01 | +.00 |
| Per cent of population in
tertiary education | T ₀ → T ₁ (N = 23) | +.26 | +.21 | +.24 | +.27 |
| | T ₁ → T ₂ (N = 31) | -.01 | -.06 | -.05 | -.01 |
| | T ₀ → T ₂ (N = 23) | ***+.49 | ***+.44 | ***+.46 | ***+.51 |
| Electricity consumption
per capita | T ₀ → T ₁ (N = 33) | -.06 | -.09 | -.07 | -.06 |
| | T ₁ → T ₂ (N = 38) | -.09 | -.09 | -.09 | -.09 |
| | T ₀ → T ₂ (N = 33) | -.08 | -.10 | -.10 | -.08 |
| Daily caloric food supply
per capita | T ₁ → T ₂ (N = 35) | -.02 | -.04 | -.04 | -.02 |

Table C.3. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Per Capita Balance
of Trade With Old
EC at T ₀ (N=33) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | T ₁ → T ₂ (N = 39) | + .02 | + .05 | + .05 | + .02 |
| Number of research institutions
(including universities) per
500,000 population | T ₁ → T ₂ (N = 34) | + .08 | + .13 | + .16 | + .08 |
| Average annual population
growth rate | T ₀ → T ₁ (N = 40) | - .04 | - .13 | - .12 | - .04 |
| | T ₁ → T ₂ (N = 44) | + .04 | - .03 | - .03 | + .04 |
| | T ₀ → T ₂ (N = 44) | + .06 | - .02 | - .02 | + .06 |
| Telephones per 100 persons | T ₀ → T ₁ (N = 26) | + .16 | + .13 | + .13 | + .16 |
| | T ₁ → T ₂ (N = 41) | + .10 | + .10 | + .10 | + .10 |
| | T ₀ → T ₂ (N = 26) | ***.37 | ***.36 | ***.36 | ***.37 |
| Military expenditures per
capita | T ₁ → T ₂ (N = 34) | + .08 | + .05 | + .05 | + .08 |

Significance levels: *** = .005

** = .05

* = .10

Note: See Table A-4 in Appendix A for per capita trade balance with old EC by individual country.

Table C.4. Hypothesis 1.D: Inequality of Exchange--Per capita Balance of Trade of 44 Developing Countries with the "old" EC Countries at Time₁, as Related to Indicators of Effectiveness Outcomes at Time₂.

| EFFECTIVENESS OUTCOMES | Change Over Time
In Per Cent
Between | Correlations
Without Controls
Per capita
Balance of Trade
With old EC
at T ₁ (N=39) | CONTROLLED FOR: | | | | | |
|--|--|---|--|--|--|---------------------------------|---|--|
| | | | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
Servicing
& Total
Aid
(N=33) | SEI &
Debt
Servicing
&
Aid
(N=33) |
| | | | | | | | | |
| A. Inter-Country | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | -.06
-.04 | -.07
-.06 | -.05
-.12 | -.10
-.13 | -.10
-.13 | -.10
-.18 | -.08
-.17 |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | -.03 | -.05 | -.09 | -.08 | -.08 | -.12 | -.11 |
| IMF quota position | T ₁ → T ₂ (N = 32) | +.02 | +.04 | -.04 | +.02 | +.02 | -.03 | -.05 |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | -.06 | -.07 | -.07 | -.09 | -.09 | -.09 | -.09 |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | -.24 | -.25 | -.03 | -.25 | -.25 | -.06 | -.05 |
| B. Intra-Country | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | +.07
+.17 | +.08
+.17 | +.14
+.12 | +.06
+.06 | +.06
+.06 | +.13
+.04 | +.12
+.03 |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | -.13
+.21 | -.13
+.23 | +.36
+.17 | -.14
+.21 | -.14
+.22 | +.34
+.18 | +.35
+.17 |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | -.05
-.06 | -.07
-.06 | +.05
+.03 | -.05
-.18 | -.05
-.18 | +.04
-.06 | +.05
-.08 |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | +.02
+.03 | +.03
+.05 | +.04
+.01 | +.05
+.04 | +.05
+.04 | +.06
+.02 | +.06
+.01 |

| by agriculture | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 40) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 40) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 40) |
|----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Capital formation | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) |
| Cost of living index | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) |

| | | | | | | |
|---|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Per cent of population in primary education | $T_1 \rightarrow T_2$ (N = 43) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 43) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 43) | $T_0 \rightarrow T_2$ (N = 39) |
| Per cent of population in secondary education | $T_1 \rightarrow T_2$ (N = 42) | $T_0 \rightarrow T_2$ (N = 38) | $T_1 \rightarrow T_2$ (N = 42) | $T_0 \rightarrow T_2$ (N = 38) | $T_1 \rightarrow T_2$ (N = 42) | $T_0 \rightarrow T_2$ (N = 38) |
| Per cent of population in tertiary education | $T_1 \rightarrow T_2$ (N = 31) | $T_0 \rightarrow T_2$ (N = 23) | $T_1 \rightarrow T_2$ (N = 31) | $T_0 \rightarrow T_2$ (N = 23) | $T_1 \rightarrow T_2$ (N = 31) | $T_0 \rightarrow T_2$ (N = 23) |
| Electricity consumption per capita | $T_1 \rightarrow T_2$ (N = 38) | $T_0 \rightarrow T_2$ (N = 33) | $T_1 \rightarrow T_2$ (N = 38) | $T_0 \rightarrow T_2$ (N = 33) | $T_1 \rightarrow T_2$ (N = 38) | $T_0 \rightarrow T_2$ (N = 33) |
| Daily caloric food supply per capita | $T_1 \rightarrow T_2$ (N = 35) | $T_0 \rightarrow T_2$ (N = 35) | $T_1 \rightarrow T_2$ (N = 35) | $T_0 \rightarrow T_2$ (N = 35) | $T_1 \rightarrow T_2$ (N = 35) | $T_0 \rightarrow T_2$ (N = 35) |
| Per cent of population living in urban areas | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | $T_0 \rightarrow T_2$ (N = 39) |
| Number of research institutions (including universities) per 500,000 population | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) |
| Average annual population growth rate | $T_1 \rightarrow T_2$ (N = 44) | $T_0 \rightarrow T_2$ (N = 44) | $T_1 \rightarrow T_2$ (N = 44) | $T_0 \rightarrow T_2$ (N = 44) | $T_1 \rightarrow T_2$ (N = 44) | $T_0 \rightarrow T_2$ (N = 44) |
| Telephones per 100 persons | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 26) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 26) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 26) |
| Military expenditures per capita | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | $T_0 \rightarrow T_2$ (N = 34) |

Significance levels: *** = .005
 ** = .05
 * = .10

Note: See Table A.4 in Appendix A for per capita trade balance with old EC by individual country.

Table C.5. Hypothesis 2.A: Inequality of Exchange--Overall Balance of Trade of 44 Developing Countries With the Rest of the World at Time₀, as Related to Indicators of Effectiveness Outcomes at Time₁ and Time₂.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Overall Balance
of Trade at T ₀
(N=32) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| A. <u>Inter Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | + .22 | + .20 | + .21 | + .22 |
| | T ₁ → T ₂ (N = 34) | - .05 | - .06 | - .07 | - .05 |
| | T ₀ → T ₂ (N = 32) | + .19 | + .17 | + .17 | + .19 |
| Debt Servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | *+ .29 | *+ .27 | *+ .27 | *+ .29 |
| | | | | | |
| IMF quota position | T ₁ → T ₂ (N = 32) | - .05 | - .06 | - .06 | - .05 |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | - .02 | - .05 | - .07 | - .02 |
| | | | | | |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | + .27 | + .26 | + .25 | + .27 |

Table C.5. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Overall Balance
of Trade at T ₀
(N=32) | CONTROLLED FOR: | | |
|---|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| <u>B. Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | + .22 | + .20 | + .20 | + .22 |
| | T ₁ → T ₂ (N = 41) | - .01 | - .00 | + .01 | - .01 |
| | T ₀ → T ₂ (N = 40) | + .14 | + .12 | + .13 | + .14 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | ***+.32 | ***+.35 | ***+.36 | ***+.32 |
| | T ₁ → T ₂ (N = 41) | - .12 | - .12 | - .12 | - .12 |
| | T ₀ → T ₂ (N = 40) | ***+.26 | ***+.29 | ***+.29 | ***+.26 |
| Capital formation | T ₀ → T ₁ (N = 39) | ***-.38 | ***-.37 | ***-.37 | ***-.38 |
| | T ₁ → T ₂ (N = 39) | ***+.41 | ***+.41 | ***+.41 | ***+.41 |
| | T ₀ → T ₂ (N = 38) | ***-.31 | ***-.30 | ***-.30 | ***-.31 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | - .02 | - .02 | + .00 | - .02 |
| | T ₁ → T ₂ (N = 37) | + .08 | + .10 | + .10 | + .08 |
| | T ₀ → T ₂ (N = 25) | - .03 | - .03 | - .02 | - .03 |

Table C.5. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Overall Balance
of Trade at T ₀
(N=32) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | T ₀ → T ₁ (N = 39) | -.12 | -.11 | -.12 | -.12 |
| | T ₁ → T ₂ (N = 43) | -.09 | -.08 | -.08 | -.09 |
| | T ₀ → T ₂ (N = 39) | -.16 | -.15 | -.16 | -.16 |
| Per cent of population in
secondary education | T ₀ → T ₁ (N = 39) | +.12 | +.13 | +.13 | +.12 |
| | T ₁ → T ₂ (N = 42) | -.22 | -.21 | -.21 | -.22 |
| | T ₀ → T ₂ (N = 38) | -.01 | -.01 | -.01 | -.01 |
| Per cent of population in
tertiary education | T ₀ → T ₁ (N = 23) | +.00 | +.03 | +.02 | +.00 |
| | T ₁ → T ₂ (N = 31) | +.18 | +.20 | +.20 | +.18 |
| | T ₀ → T ₂ (N = 23) | +.26 | *+.33 | *+.33 | +.27 |
| Electricity consumption
per capita | T ₀ → T ₁ (N = 33) | +.00 | +.01 | +.00 | +.00 |
| | T ₁ → T ₂ (N = 38) | *+.24 | *+.24 | +.24 | *+.24 |
| | T ₀ → T ₂ (N = 33) | -.02 | -.01 | -.01 | -.02 |
| Daily caloric food supply
per capita | T ₁ → T ₂ (N = 35) | -.17 | -.16 | -.16 | -.17 |

Table C.5. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Overall Balance
of Trade at T_0
(N=32) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | $T_1 \rightarrow T_2$ (N = 39) | *-.29 | **-.31 | **-.31 | *-.29 |
| Number of research institutions
(including universities) per
500,000 population | $T_1 \rightarrow T_2$ (N = 34) | -.07 | -.09 | -.10 | -.07 |
| Average annual population
growth rate | $T_0 \rightarrow T_1$ (N = 40) | ++.39 | +++ .45 | +++ .45 | +++ .40 |
| | $T_1 \rightarrow T_2$ (N = 44) | +.02 | +.05 | +.05 | +.02 |
| | $T_0 \rightarrow T_2$ (N = 44) | -.04 | -.01 | -.01 | -.04 |
| Telephones per 100 persons | $T_0 \rightarrow T_1$ (N = 26) | -.01 | +.01 | +.01 | -.01 |
| | $T_1 \rightarrow T_2$ (N = 41) | -.05 | -.04 | -.05 | -.05 |
| | $T_0 \rightarrow T_2$ (N = 26) | -.03 | -.02 | -.02 | -.03 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | *-.28 | *-.27 | *-.27 | *-.28 |

Significance levels: *** = .005

** = .05

* = .10

Note: See Table A.1 in Appendix A for specific trade balances of individual countries.

Table C.6. Hypothesis 2.8: Inequality of Exchange--Overall Balance of Trade of 44 Developing Countries with the Rest of the World at Time₁, as Related to Indicators of Effectiveness Outcomes at Time₂.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between | Correlations
Without Controls
Overall
Balance of
Trade at T ₁ ,
(N=39) | CONTROLLED FOR: | | | | | |
|--|--|--|--|--|--|---------------------------------|---|---|
| | | | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
& Servicing
Total
Aid
(N=33) | SEI &
Debt
Servicing &
Aid
(N=33) |
| | | | | | | | | |
| A. Inter-Country | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | + .18
+ .13 | + .19
+ .15 | + .18
+ .16 | + .21
+ .19 | + .21
+ .09 | + .21
+ .19 | + .20
+ .20 |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | -.06 | -.05 | -.04 | -.03 | -.03 | -.03 | -.02 |
| IMF quota position | T ₁ → T ₂ (N = 32) | -.16 | -.18 | -.14 | -.16 | -.17 | -.17 | -.15 |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | + .16 | + .17 | + .16 | + .18 | + .18 | + .18 | + .18 |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | -.05 | -.05 | -.15 | -.06 | -.05 | -.05 | -.14 |
| B. Intra-Country | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | + .16.
-.13 | + .15
-.13 | + .14
-.11 | + .17
-.06 | + .17
-.06 | + .17
-.06 | + .16
-.05 |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | + .06
**-.27 | + .06
**-.29 | + .13
**-.25 | + .06
**-.27 | + .06
**-.28 | + .06
**-.28 | + .12
**-.26 |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | -.14
+ .03 | -.13
+ .03 | -.18
-.00 | -.14
+ .10 | -.14
+ .10 | -.14
+ .10 | -.18
+ .07 |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | -.01
-.05 | -.02
-.07 | -.02
-.04 | -.03
-.06 | -.03
-.06 | -.03
-.06 | -.03
-.05 |

| | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 41) | $T_0 \rightarrow T_2$ (N = 40) |
|-----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| by agriculture | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 |
| Capital formation | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 |
| Costs of living index | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 | +.06 |

| | | | | | | | | | | |
|---|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Per cent of population in primary education | $T_1 \rightarrow T_2$ (N = 43) | +.00 | -.01 | -.01 | -.01 | -.03 | -.03 | -.03 | -.03 | -.03 |
| | $T_0 \rightarrow T_2$ (N = 39) | -.05 | -.06 | -.06 | -.06 | -.07 | -.07 | -.07 | -.07 | -.07 |
| Per cent of population in secondary education | $T_1 \rightarrow T_2$ (N = 42) | -.11 | -.12 | -.12 | -.12 | -.09 | -.10 | -.10 | -.10 | -.10 |
| | $T_0 \rightarrow T_2$ (N = 38) | +.16 | +.16 | +.16 | +.16 | +.24 | +.24 | +.24 | +.24 | +.28 |
| Per cent of population in tertiary education | $T_1 \rightarrow T_2$ (N = 31) | +.09 | +.09 | +.09 | +.09 | +.06 | +.06 | +.06 | +.06 | +.06 |
| | $T_0 \rightarrow T_2$ (N = 23) | +.20 | +.18 | +.18 | +.18 | +.16 | +.16 | +.16 | +.16 | +.10 |
| Electricity consumption per capita | $T_1 \rightarrow T_2$ (N = 38) | -.04 | -.05 | -.05 | -.05 | -.03 | -.03 | -.03 | -.03 | -.09 |
| | $T_0 \rightarrow T_2$ (N = 33) | +.06 | +.05 | +.05 | +.05 | +.07 | +.06 | +.06 | +.06 | +.09 |
| Daily caloric food supply per capita | $T_1 \rightarrow T_2$ (N = 35) | -.19 | -.18 | -.18 | -.18 | -.18 | -.17 | -.17 | -.17 | -.14 |
| Per cent of population living in urban areas | $T_1 \rightarrow T_2$ (N = 39) | -.20 | -.20 | -.20 | -.20 | -.15 | -.15 | -.15 | -.15 | -.14 |
| Number of research institutions (including universities) per 500,000 population | $T_1 \rightarrow T_2$ (N = 34) | -.12 | -.10 | -.10 | -.10 | -.03 | -.03 | -.03 | -.03 | -.04 |
| Average annual population growth rate | $T_1 \rightarrow T_2$ (N = 44) | ***+.50 | ***+.49 | ***+.49 | ***+.49 | ***+.46 | ***+.47 | ***+.47 | ***+.47 | ***+.53 |
| | $T_0 \rightarrow T_2$ (N = 44) | ***+.42 | ***+.41 | ***+.41 | ***+.41 | ***+.38 | ***+.38 | ***+.38 | ***+.38 | ***+.41 |
| Telephones per 100 persons | $T_1 \rightarrow T_2$ (N = 41) | +.00 | -.01 | -.01 | -.01 | +.01 | +.01 | +.01 | +.01 | +.15 |
| | $T_0 \rightarrow T_2$ (N = 26) | +.15 | +.13 | +.13 | +.13 | +.20 | +.20 | +.20 | +.20 | +.19 |
| Military expenditures per capita | $T_1 \rightarrow T_2$ (N = 34) | **-.35 | **-.37 | **-.37 | **-.37 | **-.38 | **-.38 | **-.38 | **-.38 | **-.36 |

Significance levels: *** = .005
 ** = .05
 * = .10

Note: See Table A.1 in Appendix A for specific trade balances for individual countries.

Table C.7. Hypothesis 3A.1: Dependence Upon One Export Item--Percentage of Total Exports of 44 Developing Countries Which is Accounted for by the Largest Export Commodity at Time₀, as Related to Indicators of Effectiveness Outcomes at Time₁ and Time₂.

| CONTROLLED FOR: | | | | | | |
|--|---|---|--|---------------------------------|--|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Largest Export
Item: Per Cent
of Total Exports
at T ₀ (N=32) | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) | |
| | | | | | | |
| A. <u>Inter-Country</u> | | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | ***.30 | +.22 | +.22 | ++.27 | |
| | T ₁ → T ₂ (N = 34) | +.02 | -.02 | -.01 | +.04 | |
| | T ₀ → T ₂ (N = 32) | +.23 | +.15 | +.15 | +.22 | |
| Debt Servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | +.19 | +.09 | +.10 | +.20 | |
| IMF quota position | T ₁ → T ₂ (N = 32) | +.03 | +.00 | +.00 | +.02 | |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | -.12 | -.24 | -.25 | -.09 | |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | *-.35 | ***-.48 | ***-.47 | *-.36 | |

Table C.7. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Largest Export
Item: Per Cent
of Total Exports
at T ₀ (N=32) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| <u>B. Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | + .21 | + .10 | + .11 | + .21 |
| | T ₁ → T ₂ (N = 41) | *-.27 | *-.26 | *-.29 | **-.33 |
| | T ₀ → T ₂ (N = 40) | -.03 | -.12 | -.12 | -.06 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | **-.31 | *-.26 | *-.26 | **-.32 |
| | T ₁ → T ₂ (N = 41) | + .08 | + .07 | + .07 | + .06 |
| | T ₀ → T ₂ (N = 40) | *-.27 | -.22 | -.22 | *-.28 |
| Capital formation | T ₀ → T ₁ (N = 39) | ***-.49 | **-.45 | **-.45 | ***-.48 |
| | T ₁ → T ₂ (N = 39) | -.02 | -.04 | -.04 | -.03 |
| | T ₀ → T ₂ (N = 38) | ***-.45 | **-.42 | **-.42 | **-.44 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | -.02 | -.00 | -.01 | -.08 |
| | T ₁ → T ₂ (N = 37) | -.15 | -.10 | -.10 | -.14 |
| | T ₀ → T ₂ (N = 25) | + .20 | + .23 | + .23 | + .19 |

Table C.7. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Largest Export
Item: Per Cent
of Total Exports
at T_0 (N=32) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | $T_0 \rightarrow T_1$ (N = 39) | + .12 | + .16 | + .17 | + .16 |
| | $T_1 \rightarrow T_2$ (N = 43) | + .10 | + .16 | + .16 | + .12 |
| | $T_0 \rightarrow T_2$ (N = 39) | + .17 | **+.25 | **+.26 | + .22 |
| Per cent of population in
secondary education | $T_0 \rightarrow T_1$ (N = 39) | + .07 | + .10 | + .09 | + .05 |
| | $T_1 \rightarrow T_2$ (N = 42) | -.12 | -.06 | -.06 | -.12 |
| | $T_0 \rightarrow T_2$ (N = 38) | + .00 | + .00 | + .00 | -.01 |
| Per cent of population in
tertiary education | $T_0 \rightarrow T_1$ (N = 23) | -.27 | -.20 | -.19 | -.23 |
| | $T_1 \rightarrow T_2$ (N = 31) | **+.36 | ***+.47 | ***+.47 | ***+.40 |
| | $T_0 \rightarrow T_2$ (N = 23) | -.27 | -.13 | -.13 | -.23 |
| Electricity consumption
per capita | $T_0 \rightarrow T_1$ (N = 33) | -.12 | -.09 | -.08 | -.08 |
| | $T_1 \rightarrow T_2$ (N = 38) | + .17 | + .17 | + .17 | + .17 |
| | $T_0 \rightarrow T_2$ (N = 33) | + .02 | + .05 | + .06 | + .03 |
| Daily caloric food supply
per capita | $T_1 \rightarrow T_2$ (N = 35) | + .09 | + .13 | + .13 | + .10 |

Table C.7. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Largest Export
Item: Per Cent
of Total Exports
at T_0 (N=32) | CONTROLLED FOR: | | |
|---|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | $T_1 \rightarrow T_2$ (N = 39) | -.08 | -.14 | -.14 | -.09 |
| Number of research institutions
(including universities) per
500,000 population | $T_1 \rightarrow T_2$ (N = 34) | ***+.35 | ***+.31 | ***+.33 | ***+.39 |
| Average annual population
growth rate | $T_0 \rightarrow T_1$ (N = 40) | +.02 | +.16 | +.17 | +.06 |
| | $T_1 \rightarrow T_2$ (N = 44) | *-.24 | -.15 | -.15 | -.22 |
| | $T_0 \rightarrow T_2$ (N = 44) | *-.28 | -.18 | -.18 | *-.26 |
| Telephones per 100 persons | $T_0 \rightarrow T_1$ (N = 26) | +.09 | +.16 | +.16 | +.10 |
| | $T_1 \rightarrow T_2$ (N = 41) | ***+.27 | ***+.33 | ***+.33 | ***+.31 |
| | $T_0 \rightarrow T_2$ (N = 26) | +.07 | +.11 | +.11 | +.06 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | +.05 | +.11 | +.11 | +.06 |

Significance levels: *** = .005

** = .05

* = .10

Note: See Table A.2 in Appendix A for a listing of specific export commodities.

Table C.8. Hypothesis 3.A-2: Dependence upon one Export Item--Percentage of Total Exports of 44 Developing Countries Which Is Accounted for by the Largest Export Commodity at Time₁, as Related to Indicators of Effectiveness Outcomes at Time₂.

| | | CONTROLLED FOR: | | | | | | |
|--|--|--|--|--|--|---------------------------------|---|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between | Correlations
Without Controls
Largest Export
Item: Per cent
of Total Exports
at T ₁ , (N=34) | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
Servicing
& Total
Aid
(N=33) | SEI &
Debt
Servicing
&
Aid
(N=33) |
| | | | | | | | | |
| A. Inter-Country | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | -.11
**-.33 | -.12
**-.36 | -.11
**-.38 | -.11
**-.33 | -.11
**-.35 | -.09
**-.36 | -.10
**-.38 |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | -.04 | -.06 | -.07 | -.03 | -.05 | -.05 | -.07 |
| IMF quota position | T ₁ → T ₂ (N = 32) | +.00 | +.02 | -.03 | +.00 | +.03 | -.03 | -.00 |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | +.02 | +.01 | +.02 | +.02 | +.02 | +.03 | +.03 |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | **-.46 | **-.47 | *-.40 | **-.46 | **-.48 | *-.39 | *-.42 |
| B. Intra-Country | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | **-.37
**-.32 | **-.36
**-.33 | **-.36
**-.37 | **-.37
**-.32 | **-.36
**-.30 | **-.35
**-.35 | **-.34
**-.34 |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | -.02
**-.30 | -.02
**-.29 | -.12
**-.35 | -.02
**-.30 | -.02
**-.38 | -.13
**-.35 | -.13
**-.33 |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | +.17
*-.26 | +.16
*-.26 | +.23
-.22 | +.17
*-.26 | +.15
*-.23 | *+.24
-.19 | +.22
-.17 |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | +.12
+.21 | +.14
+.23 | +.14
+.20 | +.12
+.21 | +.13
+.24 | +.13
+.20 | +.14
+.23 |

| | | | | | | | |
|----------------------|--------------------------------|---------|---------|---------|---------|---------|---------|
| by agriculture | $T_1 \rightarrow T_2$ (N = 40) | -.02 | -.12 | -.02 | -.02 | -.13 | -.13 |
| | $T_0 \rightarrow T_2$ (N = 40) | ***-.30 | ***-.35 | ***-.30 | ***-.36 | ***-.33 | ***-.33 |
| | | | | | | | |
| Capital formation | $T_1 \rightarrow T_2$ (N = 39) | +.17 | +.23 | +.16 | +.15 | +.24 | +.22 |
| | $T_0 \rightarrow T_2$ (N = 39) | ***.26 | ***.29 | ***.26 | ***.26 | ***.19 | ***.17 |
| | | | | | | | |
| Cost of living index | $T_1 \rightarrow T_2$ (N = 32) | +.14 | +.14 | +.14 | +.14 | +.14 | +.14 |
| | $T_0 \rightarrow T_2$ (N = 32) | +.14 | +.14 | +.14 | +.14 | +.14 | +.14 |
| | | | | | | | |

| | | | | | | | | |
|---|--------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Per cent of population in primary education | $T_1 \rightarrow T_2$ (N = 43) | +.17 | +.19 | +.18 | +.16 | +.17 | +.17 | +.18 |
| | $T_0 \rightarrow T_2$ (N = 39) | +.16 | +.17 | +.18 | +.16 | +.17 | +.17 | +.18 |
| | | | | | | | | |
| Per cent of population in secondary education | $T_1 \rightarrow T_2$ (N = 42) | +.12 | +.13 | +.06 | +.13 | +.15 | +.07 | +.09 |
| | $T_0 \rightarrow T_2$ (N = 38) | -.08 | -.08 | -.15 | -.07 | -.03 | -.12 | -.09 |
| | | | | | | | | |
| Per cent of population in tertiary education | $T_1 \rightarrow T_2$ (N = 31) | ***.41 | ***.42 | ***.42 | ***.41 | ***.40 | ***.41 | ***.41 |
| | $T_0 \rightarrow T_2$ (N = 23) | ***.31 | ***.36 | ***.55 | ***.31 | ***.34 | ***.55 | ***.57 |
| | | | | | | | | |
| Electricity consumption per capita | $T_1 \rightarrow T_2$ (N = 38) | +.16 | +.18 | +.27 | +.16 | +.19 | +.29 | ***.31 |
| | $T_0 \rightarrow T_2$ (N = 33) | -.02 | -.00 | -.06 | -.02 | +.01 | -.06 | -.03 |
| | | | | | | | | |
| Daily caloric food supply per capita | $T_1 \rightarrow T_2$ (N = 35) | +.07 | +.06 | -.01 | +.07 | +.06 | -.01 | -.02 |
| | | | | | | | | |
| | | | | | | | | |
| Per cent of population living in urban areas | $T_1 \rightarrow T_2$ (N = 39) | +.02 | +.02 | -.01 | +.04 | +.08 | +.03 | +.06 |
| | | | | | | | | |
| | | | | | | | | |
| Number of research institutions (including universities) per 500,000 population | $T_1 \rightarrow T_2$ (N = 34) | ***.30 | ***.28 | ***.29 | ***.36 | ***.37 | ***.38 | ***.38 |
| | | | | | | | | |
| | | | | | | | | |
| Average annual population growth rate | $T_1 \rightarrow T_2$ (N = 44) | -.06 | -.04 | -.09 | -.09 | -.10 | -.18 | -.18 |
| | $T_0 \rightarrow T_2$ (N = 44) | -.11 | -.07 | -.12 | -.14 | -.12 | -.19 | -.17 |
| | | | | | | | | |
| Telephones per 100 persons | $T_1 \rightarrow T_2$ (N = 41) | ***.31 | ***.32 | +.19 | ***.31 | ***.34 | +.17 | +.22 |
| | $T_0 \rightarrow T_2$ (N = 26) | +.21 | +.25 | +.25 | +.22 | ***.32 | ***.29 | ***.36 |
| | | | | | | | | |
| Military expenditures per capita | $T_1 \rightarrow T_2$ (N = 34) | ***.23 | ***.26 | +.20 | ***.23 | ***.26 | +.19 | +.22 |
| | | | | | | | | |
| | | | | | | | | |

Significance levels: *** = .005
 ** = .05
 * = .10

Note: See Table A.2 in Appendix A for a listing of specific export commodities.

Table C.9. Hypothesis 3.B-1: Dependence Upon Exchange Partners--Number of Countries Accounting for 50 Per Cent of a Country's Exports at T_0 , in Relation to Effectiveness Outcomes at T_1 and T_2 .

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. Countries
Accounting for
50% of Exports
at T ₀ (N=31) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| A. <u>Inter-Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | -.14 | -.08 | -.07 | -.11 |
| | T ₁ → T ₂ (N = 34) | ***+.49 | ***+.53 | ***+.53 | ***+.48 |
| | T ₀ → T ₂ (N = 32) | **+.28 | ***+.37 | ***+.37 | **+.30 |
| Debt servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | + .12 | + .20 | + .20 | + .12 |
| IMF quota position | T ₁ → T ₂ (N = 32) | -.15 | -.14 | -.13 | -.14 |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | **-.45 | **-.41 | **-.45 | **-.49 |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | + .16 | + .22 | + .22 | + .17 |

Table C.9. Continued.

| | | CONTROLLED FOR: | | | |
|---|---|---|--|---------------------------------|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No.Countries
Accounting for
50% of Exports
at T ₀ (N=31) | Susceptability
to External
Influence (SEI)
(N = 37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| | | | | | |
| B. <u>Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | -.03 | +.05 | +.04 | -.03 |
| | T ₁ → T ₂ (N = 41) | +.15 | +.14 | +.16 | +.20 |
| | T ₀ → T ₂ (N = 40) | +.06 | +.12 | +.12 | +.09 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | +.06 | +.01 | +.02 | +.06 |
| | T ₁ → T ₂ (N = 41) | -.15 | -.14 | -.14 | -.13 |
| | T ₀ → T ₂ (N = 40) | +.01 | -.04 | -.03 | +.01 |
| Capital formation | T ₀ → T ₁ (N = 39) | -.13 | -.19 | -.20 | -.15 |
| | T ₁ → T ₂ (N = 39) | +.14 | +.16 | +.16 | +.15 |
| | T ₀ → T ₂ (N = 38) | -.06 | -.11 | -.12 | -.08 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | -.20 | -.22 | -.21 | -.16 |
| | T ₁ → T ₂ (N = 37) | +.04 | +.00 | +.00 | +.03 |
| | T ₀ → T ₂ (N = 25) | -.11 | -.12 | -.12 | -.10 |

Table C.9. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. Countries
Accounting for
50% of Exports
at T ₀ (N=31) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | T ₀ → T ₁ (N = 39) | + .15 | + .13 | + .13 | + .12 |
| | T ₁ → T ₂ (N = 43) | + .01 | -.02 | -.03 | -.00 |
| | T ₀ → T ₂ (N = 39) | + .16 | + .13 | + .12 | + .13 |
| Per cent of population in
secondary education | T ₀ → T ₁ (N = 39) | -.10 | -.12 | -.11 | -.08 |
| | T ₁ → T ₂ (N = 42) | -.06 | -.11 | -.10 | -.07 |
| | T ₀ → T ₂ (N = 38) | -.13 | -.14 | -.13 | -.13 |
| Per cent of population in
tertiary education | T ₀ → T ₁ (N = 23) | + .16 | + .10 | + .10 | + .13 |
| | T ₁ → T ₂ (N = 31) | + .23 | + .20 | + .19 | + .21 |
| | T ₀ → T ₂ (N = 23) | + .19 | + .10 | + .09 | + .15 |
| Electricity consumption
per capita | T ₀ → T ₁ (N = 33) | -.11 | -.14 | -.16 | -.15 |
| | T ₁ → T ₂ (N = 38) | -.04 | -.03 | -.03 | -.04 |
| | T ₀ → T ₂ (N = 33) | -.20 | -.23 | -.23 | -.21 |
| Daily caloric food supply
per capita | T ₁ → T ₂ (N = 35) | + .16 | + .15 | + .15 | + .16 |

Table C.9. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. Countries
Accounting for
50% of Exports
at T_0 (N=31) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | $T_1 \rightarrow T_2$ (N = 39) | + .17 | + .21 | + .21 | + .18 |
| Number of research institutions
(including universities) per
500,000 population | $T_1 \rightarrow T_2$ (N = 34) | * - .28 | * - .25 | * - .27 | ** - .31 |
| Average annual population
growth rate | $T_0 \rightarrow T_1$ (N = 40) | ** + .32 | ** + .26 | ** + .26 | ** + .30 |
| | $T_1 \rightarrow T_2$ (N = 44) | + .06 | - .01 | - .01 | + .04 |
| | $T_0 \rightarrow T_2$ (N = 44) | + .07 | - .01 | - .01 | + .05 |
| Telephones per 100 persons | $T_0 \rightarrow T_1$ (N = 26) | - .03 | - .07 | - .07 | - .04 |
| | $T_1 \rightarrow T_2$ (N = 41) | - .09 | - .11 | - .12 | - .07 |
| | $T_0 \rightarrow T_2$ (N = 26) | - .08 | - .10 | - .10 | - .11 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | + .01 | - .02 | - .02 | + .00 |

Significance levels: *** = .005
 ** = .05
 * = .10

Table C. 10. Hypothesis 38.2: Dependence upon Exchange Partners--Number of Countries Accounting for 50 Per Cent of a Country's Exports at T_1 , in Relation to Effectiveness Outcome Indicators at T_2 .

| CONTROLLED FOR: | | | | | | | | | |
|--|--|---|--|--|--|---------------------------------|---|--|--|
| | | Correlations
Without Controls
No. Countries
Accounting for
50 Per Cent of
Exports at T ₁ (N=39) | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=38) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
& Servicing
& Total
Aid
(N=33) | SEI &
Debt
Servicing
& Total
Aid
(N=33) | |
| EFFECTIVENESS OUTCOMES | | | | | | | | | |
| Change Over Time
in Per Cent
Between: | | | | | | | | | |
| A. Inter-Country | | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | -.08
-.14 | -.10
-.19 | -.09
-.12 | -.09
-.16 | -.10
-.18 | -.10
-.14 | -.10
-.17 | |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | -.09 | -.13 | -.07 | -.10 | -.13 | -.09 | -.12 | |
| IMF quota position | T ₁ → T ₂ (N = 32) | -.09 | -.05 | -.07 | -.09 | -.05 | -.07 | -.01 | |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | -.04 | -.06 | -.04 | -.04 | -.05 | -.05 | -.06 | |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | +.00 | -.01 | -.10 | +.00 | -.01 | -.12 | -.18 | |
| B. Intra-Country | | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | +.07
+.04 | +.10
+.03 | +.05
+.07 | +.07
+.02 | +.10
+.07 | +.04
+.03 | +.08
+.09 | |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | -.07
-.06 | -.07
-.03 | -.00
-.03 | -.07
-.06 | -.07
-.02 | +.01
-.03 | +.03
+.03 | |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | +.17
+.15 | +.15
+.16 | +.14
+.12 | +.17
+.14 | +.14
+.21 | +.13
+.08 | +.09
+.15 | |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | +.06
-.14 | +.09
-.11 | +.05
-.13 | +.06
-.14 | +.09
-.11 | +.06
-.13 | +.09
-.09 | |

| by agriculture | T ₀ → T ₂ (N = 40) | | | | | | | | | |
|--|--|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| | T ₁ → T ₂ (N = 39) | | | | | | | | | |
| Capital formation | T ₀ → T ₂ (N = 38) | | | | | | | | | |
| Cost of living index | T ₁ → T ₂ (N = 37) | | | | | | | | | |
| | | | | | | | | | | |
| Per cent of population in primary education | T ₁ → T ₂ (N = 43) | -08 | -06 | -09 | -07 | -07 | -07 | -07 | -07 | -07 |
| | T ₀ → T ₂ (N = 39) | +12 | +15 | +11 | +13 | +14 | +14 | +12 | +15 | |
| Per cent of population in secondary education | T ₁ → T ₂ (N = 42) | +20 | ++23 | ++26 | +20 | +24 | +24 | ++26 | +++34 | |
| | T ₀ → T ₂ (N = 38) | +00 | +01 | +05 | -02 | +04 | +04 | +02 | +10 | |
| Per cent of population in tertiary education | T ₁ → T ₂ (N = 31) | -20 | -20 | -20 | -19 | -22 | -22 | -19 | -22 | |
| | T ₀ → T ₂ (N = 23) | ++++68 | ++++79 | ++++69 | ++++71 | ++++79 | ++++71 | ++++71 | ++++78 | |
| Electricity consumption per capita | T ₁ → T ₂ (N = 38) | -21 | -19 | ++-30 | -21 | -19 | ++-32 | ++-31 | | |
| | T ₀ → T ₂ (N = 33) | *-26 | -24 | *-24 | *-26 | -23 | *-24 | -20 | | |
| Daily caloric food supply per capita | T ₁ → T ₂ (N = 35) | +08 | +06 | +16 | +08 | +06 | +16 | +16 | | |
| Per cent of population living in urban areas | T ₁ → T ₂ (N = 39) | +09 | +10 | +12 | +08 | +14 | +09 | +16 | | |
| Number of research institutions (including universities) per 500,000 population | T ₁ → T ₂ (N = 34) | +10 | +06 | +12 | +09 | +10 | +08 | +10 | | |
| Average annual population growth rate | T ₁ → T ₂ (N = 44) | +01 | +06 | +03 | +04 | +03 | +10 | +11 | | |
| | T ₀ → T ₂ (N = 44) | +06 | +14 | +07 | +09 | +12 | +12 | +17 | | |
| Telephones per 100 persons | T ₁ → T ₂ (N = 41) | -01 | +00 | +17 | -01 | +01 | +19 | ++30 | | |
| | T ₀ → T ₂ (N = 26) | -20 | -15 | -23 | -21 | -13 | -26 | -17 | | |
| Military expenditures per capita (average annual growth rate between 1963 and 1972, based on constant dollars) | T ₁ → T ₂ (N = 34) | +19 | ++24 | +23 | +19 | ++24 | ++24 | +++32 | | |

Significance levels: *** = .005
 ** = .05
 * = .10

Table C.11. Hypothesis 3.B-3: Dependence Upon Exchange Partners--Number of Countries Accounting for 50 Per Cent of a Country's Imports at T_0 in Relation to Effectiveness Outcomes at T_1 and T_2 .

| CONTROLLED FOR: | | | | | |
|--|---|---|--|---------------------------------|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. of Countries
Accounting for
50% of Imports
at T ₀ (N=32) | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| | | | | | |
| A. <u>Inter-Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | ***-.46 | **-.44 | **-.43 | **-.44 |
| | T ₁ → T ₂ (N = 34) | *+.27 | *+.29 | *+.27 | *+.26 |
| | T ₀ → T ₂ (N = 32) | -.14 | -.11 | -.11 | -.12 |
| Debt servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | ****+.56 | ****+.63 | ****+.63 | ****+.56 |
| IMF quota position | T ₁ → T ₂ (N = 32) | -.15 | -.14 | -.14 | -.14 |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | -.26 | -.23 | -.29 | *-.30 |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | -.16 | -.13 | -.14 | -.16 |

Table C.11. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. of Countries
Accounting for
50% of Imports
at T ₀ (N=32) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| B. <u>Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | + .01 | + .06 | + .04 | + .01 |
| | T ₁ → T ₂ (N = 41) | - .09 | - .10 | - .06 | - .04 |
| | T ₀ → T ₂ (N = 40) | - .06 | - .03 | - .02 | - .03 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | - .13 | - .17 | - .15 | - .13 |
| | T ₁ → T ₂ (N = 41) | * - .25 | * - .25 | - .23 | - .23 |
| | T ₀ → T ₂ (N = 40) | * - .25 | * - .29 | * - .27 | * - .25 |
| Capital formation | T ₀ → T ₁ (N = 39) | - .15 | - .19 | - .20 | - .18 |
| | T ₁ → T ₂ (N = 39) | + .09 | + .10 | + .10 | + .10 |
| | T ₀ → T ₂ (N = 38) | - .09 | - .12 | - .13 | - .12 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | - .24 | - .25 | - .22 | - .20 |
| | T ₁ → T ₂ (N = 37) | + .14 | + .12 | + .12 | + .13 |
| | T ₀ → T ₂ (N = 25) | - .05 | - .06 | - .04 | - .04 |

Table C.11. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. of Countries
Accounting for
50% of Imports
at T_0 (N=32) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population in
primary education | $T_0 \rightarrow T_1$ (N = 39) | + .14 | + .13 | + .11 | + .11 |
| | $T_1 \rightarrow T_2$ (N = 43) | + .06 | + .04 | + .04 | + .04 |
| | $T_0 \rightarrow T_2$ (N = 39) | + .17 | + .15 | + .13 | + .13 |
| Per cent of population in
secondary education | $T_0 \rightarrow T_1$ (N = 39) | *-.25 | *-.26 | *-.25 | -.23 |
| | $T_1 \rightarrow T_2$ (N = 42) | -.07 | -.10 | -.09 | -.08 |
| | $T_0 \rightarrow T_2$ (N = 38) | -.20 | -.20 | -.20 | -.20 |
| Per cent of population in
tertiary education | $T_0 \rightarrow T_1$ (N = 23) | -.19 | -.24 | -.27 | -.25 |
| | $T_1 \rightarrow T_2$ (N = 31) | **+.36 | **+.34 | **+.34 | **+.34 |
| | $T_0 \rightarrow T_2$ (N = 23) | -.09 | -.17 | -.19 | -.15 |
| Electricity consumption
per capita | $T_0 \rightarrow T_1$ (N = 33) | -.03 | -.05 | -.08 | -.08 |
| | $T_1 \rightarrow T_2$ (N = 38) | -.05 | -.05 | -.04 | -.05 |
| | $T_0 \rightarrow T_2$ (N = 33) | -.13 | -.14 | -.15 | -.14 |
| Daily caloric food supply
per capita | $T_1 \rightarrow T_2$ (N = 35) | + .14 | + .13 | + .13 | + .13 |

Table C.11. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
No. of Countries
Accounting for
50% of Imports
at T_0 (N=32) | CONTROLLED FOR: | | |
|---|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | $T_1 \rightarrow T_2$ (N = 39) | + .06 | + .08 | + .08 | + .07 |
| Number of research institu-
tions (including universities)
per 500,000 population | $T_1 \rightarrow T_2$ (N = 34) | -.20 | -.18 | -.22 | -.23 |
| Average annual population
growth rate | $T_0 \rightarrow T_1$ (N = 40) | + .18 | + .14 | + .13 | + .14 |
| | $T_1 \rightarrow T_2$ (N = 44) | + .09 | + .05 | + .05 | + .06 |
| | $T_0 \rightarrow T_2$ (N = 44) | + .09 | + .05 | + .04 | + .06 |
| Telephones per 100 persons | $T_0 \rightarrow T_1$ (N = 26) | + .01 | -.01 | -.01 | + .00 |
| | $T_1 \rightarrow T_2$ (N = 41) | -.07 | -.08 | -.10 | -.10 |
| | $T_0 \rightarrow T_2$ (N = 26) | -.03 | -.04 | -.03 | -.02 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | *+.27 | *+.26 | *+.26 | *+.27 |

Significance levels: *** = .005

** = .05

* = .10

Table C.12 Hypothesis 3.B-4: Number of Countries Accounting for 50 Per Cent of a Developing Country's Total Imports at Time₁, in Relation to Effectiveness Outcome Indicators at Time₂.

| CONTROLLED FOR: | | | | | | | | | |
|---|--|---|--|--|--|---------------------------------|--|---|--|
| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls
No. Countries
Accounting for
50 Per Cent of
Imports at T ₁ (N=39) | Susceptibility
To External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid
(N=38) | Debt
& Servicing
Total
& Total
Aid
(N=33) | SEI &
Debt
Servicing &
Aid
(N=33) | |
| | | | | | | | | | |
| A. Inter-Country | | | | | | | | | |
| Dependence upon one export item | T ₁ → T ₂ (N = 34)
T ₀ → T ₂ (N = 32) | -.12
-.09 | -.17
-.19 | -.13
-.20 | -.12
-.10 | -.16
-.15 | -.11
-.18 | -.15
-.23 | |
| Debt Servicing performance (ratio of principal service payments over interest payments) | T ₁ → T ₂ (N = 33) | -.03 | -.11 | -.11 | -.04 | -.09 | -.09 | -.15 | |
| IMF quota position | T ₁ → T ₂ (N = 32) | -.07 | -.00 | -.16 | -.07 | +.02 | -.17 | -.09 | |
| Per cent of external public debt owed to private banks and other private creditors | T ₁ → T ₂ (N = 21) | -.05 | -.08 | -.06 | -.05 | -.07 | -.05 | -.07 | |
| Per cent of external public debt owed to international organizations | T ₁ → T ₂ (N = 19) | -.27 | *-.33 | -.02 | -.27 | *-.34 | -.00 | -.09 | |
| B. Intra-Country | | | | | | | | | |
| GDP per capita (constant prices) | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | -.18
-.06 | -.16
-.09 | -.14
-.17 | -.18
-.08 | -.15
-.01 | -.13
-.13 | -.10
-.06 | |
| Per cent of GDP generated by agriculture | T ₁ → T ₂ (N = 41)
T ₀ → T ₂ (N = 40) | +.02
+.00 | +.02
+.07 | -.22
-.09 | +.02
-.00 | +.02
+.09 | *-.24
-.09 | -.24
-.00 | |
| Capital formation | T ₁ → T ₂ (N = 39)
T ₀ → T ₂ (N = 38) | +.03
-.02 | -.02
-.01 | +.17
+.10 | +.03
-.03 | -.04
+.08 | +.18
+.17 | +.12
*+.29 | |
| Cost of Living Index | T ₁ → T ₂ (N = 37)
T ₀ → T ₂ (N = 25) | +.01
-.04 | +.06
+.02 | +.04
-.08 | +.01
-.04 | +.06
+.03 | +.03
-.09 | +.08
-.02 | |

| Per cent of GUP generated
by agriculture | $T_1 \rightarrow T_2$ (N = 41) | | +02 | -02 | +08 | -08 | +01 | -01 | +06 | -06 |
|--|--------------------------------|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | $T_0 \rightarrow T_2$ (N = 40) | $T_1 \rightarrow T_2$ (N = 40) | | | | | | | | |
| Capital formation | $T_1 \rightarrow T_2$ (N = 39) | | +03 | -02 | -09 | +02 | +02 | +02 | +06 | +06 |
| | $T_0 \rightarrow T_2$ (N = 38) | $T_1 \rightarrow T_2$ (N = 38) | +03 | -02 | -09 | +02 | +02 | +02 | +06 | +06 |
| Loss of living income | $T_1 \rightarrow T_2$ (N = 39) | | +03 | -02 | -09 | +02 | +02 | +02 | +06 | +06 |
| | $T_0 \rightarrow T_2$ (N = 38) | $T_1 \rightarrow T_2$ (N = 38) | +03 | -02 | -09 | +02 | +02 | +02 | +06 | +06 |
| Per cent of population in
primary education | $T_1 \rightarrow T_2$ (N = 43) | | +05 | +10 | +08 | +08 | +06 | +06 | +08 | +09 |
| | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | +03 | +08 | +06 | +06 | +06 | +06 | +08 | +09 |
| Per cent of population in
secondary education | $T_1 \rightarrow T_2$ (N = 42) | | +10 | +15 | -05 | -05 | -05 | +10 | +18 | +05 |
| | $T_0 \rightarrow T_2$ (N = 38) | $T_1 \rightarrow T_2$ (N = 38) | -13 | -13 | **-.33 | **-.33 | -15 | -15 | -06 | +.30 |
| Per cent of population in
tertiary education | $T_1 \rightarrow T_2$ (N = 31) | | +08 | +10 | +10 | +10 | +09 | +09 | +06 | +05 |
| | $T_0 \rightarrow T_2$ (N = 23) | $T_1 \rightarrow T_2$ (N = 23) | -09 | +01 | **+.31 | **+.31 | -08 | -08 | -02 | ***+.39 |
| Electricity consumption
per capita | $T_1 \rightarrow T_2$ (N = 38) | | -21 | -19 | -03 | -03 | -21 | -21 | -17 | +03 |
| | $T_0 \rightarrow T_2$ (N = 33) | $T_1 \rightarrow T_2$ (N = 33) | -18 | -14 | **-.31 | **-.31 | -18 | -18 | -12 | **-.32 |
| Daily caloric food supply
per capita | $T_1 \rightarrow T_2$ (N = 35) | | **+.24 | +22 | +07 | +07 | **+.24 | **+.24 | +08 | +08 |
| | $T_0 \rightarrow T_2$ (N = 39) | $T_1 \rightarrow T_2$ (N = 39) | **-.21 | **-.23 | **-.33 | **-.33 | **-.23 | **-.23 | -17 | **-.31 |
| Number of research insti-
tutions (including
universities) per
500,000 population | $T_1 \rightarrow T_2$ (N = 34) | | ***+.62 | ***+.62 | ***+.69 | ***+.69 | ***+.67 | ***+.67 | ***+.79 | ***+.84 |
| | $T_0 \rightarrow T_2$ (N = 44) | $T_1 \rightarrow T_2$ (N = 44) | -05 | +03 | -14 | -14 | -04 | -04 | -06 | **-.24 |
| Average annual popu-
lation growth rate | $T_1 \rightarrow T_2$ (N = 41) | | ***+.47 | ***+.56 | +15 | +15 | ***+.47 | ***+.47 | ***+.59 | ***+.31 |
| | $T_0 \rightarrow T_2$ (N = 26) | $T_1 \rightarrow T_2$ (N = 26) | -07 | +04 | -01 | -01 | -08 | -08 | +11 | +02 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | | +17 | **+.27 | +10 | +10 | +17 | +17 | **+.28 | +09 |
| | $T_0 \rightarrow T_2$ (N = 34) | $T_1 \rightarrow T_2$ (N = 34) | +17 | **+.27 | +10 | +10 | +17 | +17 | **+.28 | +09 |

Significance levels: *** = .005
 ** = .05
 * = .10

Table C.13. Hypothesis 3.C-1: Inequality of Exchange--Raw Balance of Trade of a Country with "Old" EC Countries at T_0 , in Relation to Amount of Foreign Aid Received From Alternative (non-EC) Sources at T_1 and T_2 .

| DEPENDENT VARIABLE: | Change Over
Time in Per
Cent Between: | Correlations
Without Controls
Raw Balance of
Trade With "Old"
EC Countries at
T_0 (N=33) | CONTROLLED FOR: | | |
|---|---|---|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=42) | Amt. of
Total Aid
Per Capita
(N=37) |
| Amount of aid received
from non-EC sources | T_1 (N=38) | -.11 | +.01 | +.02 | -.10 |
| | T_2 (N=42) | -.12 | -.11 | -.10 | -.12 |

Table C.14. Hypothesis 3.C-2: Inequality of Exchange--Raw Balance of Trade of a Country with "Old" EC Countries at T_1 , in Relation to Amount of Foreign Aid Received From Alternative (non-EC) Sources.

| CONTROLLED FOR: | | | | | | |
|--|---|--|--|--|---|-------------------------------------|
| DEPENDENT
VARIABLE: | Change Over
Time in Per
Cent Between: | Correlations
Without Controls | Susceptability
to External
Influence (SEI)
(N=41) | Debt Servic-
ing Perform.
(N=33) | Amt. of
Total
Aid Per
Capita
(N=38) | SEI &
Total
Aid
(N=38) |
| | | Raw Balance of
Trade With "Old"
EC Countries at
T ₁ (N=39) | | | | Debt Serv.
& Total Aid
(N=33) |
| | | SEI &
Debt
Serv.
& Aid
(N=33) | | | | |
| Amount of
aid rec'd.
from non-
EC sources | T ₂ (N=42) | ****+.48 | ****+.47 | ++.27 | ****+.48 | ++.29 |

Significance levels: *** = .005
** = .05
* = .10

Table C.15. Hypothesis 3.C-3: Inequality of Exchange--Per Capita Balance of Trade of a Country With "Old" EC Countries at T_0 , in Relation to Amount of Foreign Aid Received From Alternative (non-EC) Sources at T_1 and T_2 .

| DEPENDENT VARIABLE: | Change Over
Time in Per
Cent Between: | Correlations
Without Controls
Per Capita
Balance of Trade
With "Old" EC
Countries at T_0
(N=33) | | | | CONTROLLED FOR: | | |
|---|---|---|---------------------------------|--|------|-----------------|--|--|
| | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=42) | Amt. of
Total Aid
Per Capita
(N=37) | | | | |
| Amount of aid received
from non-EC sources | T_1 (N=38) | -.10 | +.04 | +.06 | -.10 | | | |
| | T_2 (N+42) | -.14 | -.13 | -.12 | -.14 | | | |

Table C.16. Hypothesis 3.C-4: Inequality of Exchange--Per Capita Balance of Trade of a Country With "Old" EC Countries at T_1 , in Relation to Amount of Foreign Aid Received From Alternative (non-EC) Sources at T_2 .

| | | CONTROLLED FOR: | | | | |
|--|---|---|--|--|---|--|
| DEPENDENT
VARIABLE: | Change Over
Time in Per
Cent Between: | Correlations
Without Controls | | Correlations
With Controls | | |
| | | Per Capita
Balance of Trade
With "Old" EC
Countries at T_1
(N=39) | Susceptability
to External
Influence (SEI)
(N=41) | Debt Servic-
ing Perform.
(N=33) | Amt. of
Total
Aid Per
Capita
(N=38) | SEI &
Total
Aid
& Total
Debt Serv.
& Total
Aid & Aid
(N=33)
(N=38)
(N=33) |
| Amount of
aid rec'd.
from non-
EC sources | T_2 (N=42) | *+.26 | *+.25 | + .00 | + .20 | + .20 - .03 - .04 |

Significance levels: *** = .005
 ** = .05
 * = .10

Table C.17. Hypothesis 3.D-1: Percentage of a Country's Foreign Aid Receipts Which Are From Multilateral (rather than bilateral) Sources at T_0 , in Relation to Effectiveness Outcomes at T_1 and T_2 .

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Percentage of Aid
from Multilateral
Sources at T ₀
(N=43) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptability
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| A. <u>Inter-Country</u> | | | | | |
| Dependence upon one export
item | T ₀ → T ₁ (N = 32) | -.03 | +.02 | +.01 | -.03 |
| | T ₁ → T ₂ (N = 34) | -.07 | -.06 | -.05 | -.07 |
| | T ₀ → T ₂ (N = 32) | -.08 | -.04 | -.04 | -.08 |
| Debt servicing performance
(ratio of principal service
payments over interest
payments) | T ₁ → T ₂ (N = 33) | -.20 | -.16 | -.15 | -.20 |
| IMF quota position | T ₁ → T ₂ (N = 32) | +.09 | +.10 | +.10 | +.09 |
| Per cent of external public
debt owed to private banks
and other private creditors | T ₁ → T ₂ (N = 21) | **-.54 | **-.52 | **-.53 | **-.55 |
| Per cent of external public
debt owed to international
organizations | T ₁ → T ₂ (N = 19) | *-.32 | -.30 | -.29 | *-.32 |

Table C.17. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Percentage of Aid
from Multilateral
Sources at T ₀
(N=43) | CONTROLLED FOR: | | |
|---|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| B. <u>Intra-Country</u> | | | | | |
| GDP per capita (constant
prices) | T ₀ → T ₁ (N = 40) | *-.24 | -.20 | -.19 | *-.24 |
| | T ₁ → T ₂ (N = 41) | +.18 | +.17 | +.16 | +.19 |
| | T ₀ → T ₂ (N = 40) | -.07 | -.04 | -.04 | -.07 |
| Per cent of GDP generated
by agriculture | T ₀ → T ₁ (N = 40) | ***+.30 | ***+.28 | ***+.27 | ***+.30 |
| | T ₁ → T ₂ (N = 41) | -.20 | -.20 | -.21 | -.20 |
| | T ₀ → T ₂ (N = 40) | *+.21 | +.18 | +.18 | *+.21 |
| Capital formation | T ₀ → T ₁ (N = 39) | -.17 | -.21 | -.21 | -.17 |
| | T ₁ → T ₂ (N = 39) | -.12 | -.11 | -.12 | -.12 |
| | T ₀ → T ₂ (N = 38) | *-.24 | **-.28 | *-.28 | *-.24 |
| Cost of Living Index | T ₀ → T ₁ (N = 25) | +.16 | +.15 | +.14 | +.17 |
| | T ₁ → T ₂ (N = 37) | +.01 | -.02 | -.02 | +.01 |
| | T ₀ → T ₂ (N = 25) | -.05 | -.06 | -.06 | -.05 |

Table C.17. Continued.

| | Change Over Time
in Per Cent
Between: | Correlations
Without Controls.
Percentage of Aid
from Multilateral
Sources at T ₀
(N=43) | CONTROLLED FOR: | | |
|--|---|--|--|---------------------------------|--|
| | | | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| EFFECTIVENESS OUTCOMES | | | | | |
| Per cent of population in
primary education | T ₀ → T ₁ (N = 39) | ****+.43 | ***+.42 | ****+.44 | ****+.43 |
| | T ₁ → T ₂ (N = 43) | +.07 | +.05 | +.05 | +.07 |
| | T ₀ → T ₂ (N = 39) | ****+.46 | ****+.45 | ****+.47 | ****+.47 |
| Per cent of population in
secondary education | T ₀ → T ₁ (N = 39) | -.45 | -.16 | -.17 | -.15 |
| | T ₁ → T ₂ (N = 42) | -.12 | -.05 | -.05 | -.02 |
| | T ₀ → T ₂ (N = 38) | -.12 | -.12 | -.13 | -.12 |
| Per cent of population in
tertiary education | T ₀ → T ₁ (N = 23) | -.08 | -.13 | -.12 | -.09 |
| | T ₁ → T ₂ (N = 31) | +.01 | -.02 | -.02 | +.01 |
| | T ₀ → T ₂ (N = 23) | +.05 | -.02 | -.02 | +.05 |
| Electricity consumption
per capita | T ₀ → T ₁ (N = 33) | +.09 | +.07 | +.09 | +.09 |
| | T ₁ → T ₂ (N = 38) | +.00 | +.01 | +.00 | +.00 |
| | T ₀ → T ₂ (N = 33) | +.02 | +.01 | +.01 | +.02 |
| Daily caloric food supply
per capita | T ₁ → T ₂ (N = 35) | -.14 | -.15 | -.15 | -.14 |

Table C.17. Continued.

| EFFECTIVENESS OUTCOMES | Change Over Time
in Per Cent
Between: | CONTROLLED FOR: | | | |
|---|---|--|--|---------------------------------|--|
| | | Correlations
Without Controls.
Percentage of Aid
from Multilateral
Sources at T ₀
(N=43) | Susceptibility
to External
Influence (SEI)
(N=37) | SEI &
Total
Aid
(N=37) | Amt. of
Total Aid
per capita
(N=42) |
| Per cent of population living
in urban areas | T ₁ → T ₂ (N = 39) | + .01 | + .01 | + .01 | - .01 |
| Number of research institutions
(including universities) per
500,000 population | T ₁ → T ₂ (N = 34) | * - .26 | * - .24 | - .23 | * - .27 |
| Average annual population
growth rate | T ₀ → T ₁ (N = 40) | *** + .27 | *** + .23 | *** + .24 | *** + .27 |
| | T ₁ → T ₂ (N = 44) | - .05 | - .10 | - .10 | - .05 |
| | T ₀ → T ₂ (N = 44) | - .11 | - .17 | - .17 | - .11 |
| Telephones per 100 persons | T ₀ → T ₁ (N = 26) | - .01 | - .04 | - .04 | - .01 |
| | T ₁ → T ₂ (N = 41) | - .10 | - .12 | - .11 | - .10 |
| | T ₀ → T ₂ (N = 26) | - .04 | - .05 | - .06 | - .04 |
| Military expenditures per
capita | T ₁ → T ₂ (N = 34) | - .19 | - .22 | - .22 | - .19 |

Significance levels: *** = .005
 ** = .05
 * = .10

Table C.18. Hypothesis 3.D-2: Percentage of a Country's Foreign Aid Receipts which are from Multilateral (Rather Than Bilateral) Sources at Time₁, in Relation to Effectiveness Outcomes Indicators at Time₂.

| EFFECTIVE OUTCOMES | Change Over Item
in Per Cent
Between | Correlations
Without Controls
Percentage of aid
From Multilateral
Sources at
T ₁ , (N=43) | CONTROLLED FOR: | | | | | |
|--|--|---|--|--|--|------------------------------|--|---|
| | | | Susceptability
to External
Influence (SEI)
(N=41) | Debt
Servicing
Performance
(N=33) | Amt. of
Total Aid
Per capita
(N=38) | SEI &
Total
Aid (N=38) | Debt
& Servicing
& Total
Aid (N=33) | SEI &
Debt
Servicing
&
Aid (N=33) |
| | | | | | | | | |
| A. Inter-Country | | | | | | | | |
| Dependence upon one export
item | T ₁ → T ₂ (N = 34) | +0.05 | +0.05 | +0.02 | +0.05 | +0.06 | +0.04 | +0.06 |
| | T ₀ → T ₂ (N = 32) | +0.06 | +0.12 | +0.08 | +0.13 | +0.15 | +0.13 | +0.15 |
| Debt Servicing performance
(ratio of principal
service payments over
interest payments) | T ₁ → T ₂ (N = 33) | +0.09 | +0.15 | +0.10 | +0.13 | +0.16 | +0.13 | +0.16 |
| IMF quota position | T ₁ → T ₂ (N = 32) | +0.09 | +0.04 | +0.10 | +0.09 | +0.05 | +0.10 | +0.05 |
| Per cent of external public
debt owed to private
banks and other private
creditors | T ₁ → T ₂ (N = 21) | -0.12 | -0.11 | -0.12 | -0.10 | -0.10 | -0.10 | -0.10 |
| Per cent of external public
debt owed to interna-
tional organizations | T ₁ → T ₂ (N = 19) | -0.09 | -0.08 | -0.16 | -0.10 | -0.09 | -0.14 | -0.10 |
| B. Intra-Country | | | | | | | | |
| GDP per capita (constant
prices) | T ₁ → T ₂ (N = 41) | ***-.53 | ***-.59 | ***-.55 | ***-.54 | ***-.59 | ***-.55 | ***-.59 |
| | T ₀ → T ₂ (N = 40) | ***-.44 | ***-.45 | ***-.43 | ***-.39 | ***-.44 | ***-.38 | ***-.44 |
| Per cent of GDP generated
by agriculture | T ₁ → T ₂ (N = 41) | ***-.29 | ***-.31 | *-.27 | ***-.30 | ***-.31 | *-.30 | ***-.33 |
| | T ₀ → T ₂ (N = 40) | *-.23 | ***-.29 | -.22 | ***-.23 | ***-.28 | -.23 | *-.29 |
| Capital formation | T ₁ → T ₂ (N = 39) | *-.26 | *-.24 | *-.29 | *-.27 | *-.25 | *-.28 | *-.26 |
| | T ₀ → T ₂ (N = 38) | *-.25 | ***-.28 | *-.28 | -.19 | *-.25 | -.21 | *-.26 |
| Cost of Living Index | T ₁ → T ₂ (N = 37) | -0.11 | -0.15 | -0.12 | -0.13 | -0.16 | -0.14 | -0.16 |
| | T ₀ → T ₂ (N = 25) | +0.06 | +0.02 | +0.07 | +0.05 | +0.02 | +0.06 | +0.02 |

| Per cent of pop. dependent
by agriculture | $T_1 \rightarrow T_2$ (N = 40) | ***.23 | ***.29 | ***.22 | ***.21 | ***.20 | ***.19 |
|--|--------------------------------|--------|--------|--------|--------|--------|--------|
| Capital formation | $T_1 \rightarrow T_2$ (N = 39) | ***.26 | ***.24 | ***.29 | ***.28 | ***.25 | ***.26 |
| | $T_0 \rightarrow T_2$ (N = 36) | ***.25 | ***.20 | ***.28 | ***.21 | ***.25 | ***.26 |
| Cost of living index | $T_1 \rightarrow T_2$ (N = 32) | ***.33 | ***.15 | ***.32 | ***.34 | ***.16 | ***.16 |
| | $T_0 \rightarrow T_2$ (N = 25) | ***.33 | ***.10 | ***.30 | ***.30 | ***.10 | ***.10 |

| | | | | | | | | |
|--|--|-----------------|------------------|-----------------|--------------------|--------------------|------------------|------------------|
| Per cent of population in
primary education | $T_1 \rightarrow T_2$ (N = 43)
$T_0 \rightarrow T_2$ (N = 39) | + .12
+ .18 | + .10
+ .16 | + .12
+ .18 | + .09
+ .16 | + .08
+ .16 | + .09
+ .16 | + .08
+ .16 |
| Per cent of population in
secondary education | $T_1 \rightarrow T_2$ (N = 42)
$T_0 \rightarrow T_2$ (N = 38) | *-.25
*-.27 | -.10
***-.30 | -.05
***-.25 | -.05
-.21 | -.08
*-.27 | -.04
-.21 | -.08
*-.28 |
| Per cent of population in
tertiary education | $T_1 \rightarrow T_2$ (N = 31)
$T_0 \rightarrow T_2$ (N = 23) | ***.44
+ .00 | ***.46
-.08 | ***.44
-.07 | ***.42
-.06 | ***.45
-.10 | ***.42
-.10 | ***.45
-.12 |
| Electricity consumption
per capita | $T_1 \rightarrow T_2$ (N = 38)
$T_0 \rightarrow T_2$ (N = 33) | + .03
-.01 | + .00
-.06 | -.01
+ .00 | + .04
-.01 | + .01
-.05 | + .03
+ .00 | + .01
+ .05 |
| Daily caloric food supply
per capita | $T_1 \rightarrow T_2$ (N = 35) | *-.24 | -.22 | -.22 | *-.23 | -.22 | -.22 | -.22 |
| Per cent of population
living in urban areas | $T_1 \rightarrow T_2$ (N = 39) | -.15 | -.17 | -.14 | -.08 | -.13 | -.08 | -.13 |
| Number of research insti-
tutions (including
universities) per
500,000 population | $T_1 \rightarrow T_2$ (N = 34) | *-.24 | -.20 | -.23 | -.15 | -.16 | -.15 | -.16 |
| Average annual popu-
lation growth rate | $T_1 \rightarrow T_2$ (N = 44)
$T_0 \rightarrow T_2$ (N = 44) | -.14
-.17 | *-.21
***-.28 | -.13
-.17 | ***-.29
***-.30 | ***-.29
***-.34 | *-.29
***-.29 | *-.30
***-.34 |
| Telephones per 100 | $T_1 \rightarrow T_2$ (N = 41)
$T_0 \rightarrow T_2$ (N = 26) | -.19
-.01 | *-.22
-.09 | -.16
-.02 | -.18
+ .04 | -.21
-.05 | -.20
+ .03 | *-.29
-.05 |
| Military expenditures per
capita | $T_1 \rightarrow T_2$ (N = 34) | + .11 | + .06 | + .13 | + .09 | + .06 | + .10 | + .07 |

Significance levels: *** = .005
** = .05
* = .10



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