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AID AND DEVELOPMENT

Part I: Principles and Methods

by

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AID AND DEVELOPMENT

Part I : Principles and Methods

Part II: Problems of Application

Akademisk avhandling

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AID AND DEVELOPMENT

A study of the principles to assess the impact of foreign assistance and Swedish case material.

"The purpose of aid is to satisfy the prejudices of the donor, such as they are at any one time"

A wise contemporary

M. Radetzki
March 1972

AID AND DEVELOPMENT

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CHAPTER 1. INTRODUCTION AND READER'S GUIDE

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CHAPTER 1. INTRODUCTION AND READER'S GUIDE

Substantial amounts of resources are being spent on providing assistance to u-countries.[1] Aid has been transferred in a multiplicity of forms, and for a number of varying purposes. The ultimate objectives of aid givers have been many and somewhat vague, but an important proclaimed aim has been the improvement of economic and social conditions in the receiving countries. While the needs for assistance in general are obvious, aid givers appear to have devoted, so far, too little effort to design forms and define areas, in which the impact of international assistance on the development of the receiving country could be particularly valuable.

The central problem of this book is easy to state: Suppose that you have a sum of money available for aid. Assume that the countries in which the money should be spent, have already been selected. Suppose, finally, that you disregard the various donor interest motives for aid, and that you take the development of the recipient countries as the overriding objective for giving aid. How should your money be spent under these circumstances? What forms should your aid programs have, and to which sectors and projects ought your money to be allocated, in order to make the development impact as large as possible?

The above paragraph implies considerable limitations in the scope of our subject. The intention is not to outline any optimal general relationship between the donor and recipient country. As will appear from the discussion in chapter 2, the macro-level aid concept on which I wish to focus attention, is narrowly defined as the grant equivalent of the concessional resources transferred. We will not concern ourselves with the effects of commercial transactions between the donor and recipient country. Neither will we treat the important subject of trade policy. Another significant omission will be the intricate considerations and processes on the donor side, which in fact influence the form, size and country allocation of concessional resources provided to u-countries. Perhaps somewhat naively, I will take the donors on their word, when they proclaim their forthright desire to promote development in recipient nations by pursuing some independently determined quantitative aid goals. The arguments and policy conclusions will thus be based on the simplifying premise that the donor will not object to changes in the contents and forms of aid, aimed at speeding up progress

1. Throughout this book, u-countries will stand for underdeveloped, i-countries for industrialized or developed nations.

in recipient nations, so long as the amount of aid remains unchanged.

Even with all these simplications, it is not easy to formulate coherent replies to the questions posed above. The purpose of this book is to provide some tentative answers, and to discuss, criticize and formulate methods which could be used in assessing, ex ante and ex post, how and to what extent foreign aid contributes to development in u-countries. Part one of the book contains a general discussion of the principles and methods required to disentangle the issues involved. Part two attempts a practical application of the methods designed , on actual empirical experiences of international aid.

Although the second part of the book concentrates on a scrutiny of Sweden's foreign assistance experiences in some countries, the study should not be regarded as an essay on Swedish aid. For this, the selection of empirical data is far too scattered. The purpose of this study is somewhat more general. It is my hope that the methods used and findings and conclusions derived, will be of some relevance not only to Swedish aid administrators, but to the decision makers on aid in any smaller donor country, interested in using foreign assistance primarily as an instrument for the promotion of development in recipient nations.

Development is a many-faceted process, which includes a number of economic and social factors, affecting individuals as well as nations. In my analysis I have tried to take this diversity of development dimensions into account. Nevertheless, I fear that since I am an economist by profession, I may unconsciously have given an undue importance to economic considerations, and too superficial a treatment to social development factors in the discussions and analyses of the following chapters.

Several lines of thought are pursued throughout the book. For instance:

The development impact of aid is seriously reduced, not only as a result of a multitude of self-interests, pursued by the donors, but equally, or perhaps even more, because our understanding of the development process, and its constraining factors is extremely limited.

The very widespread habit among donors to tie their aid to particular purposes or uses, has frequently been misdirected in terms of development. This type of tying, in my opinion, always entails a donor responsibility to clarify how the purpose or project to be supported, will contribute to development. Such clarification cannot be obtained without detailed micro-level scrutinies of the ventures to be supported.

The overwhelming dominance of i-countries in social and technical science and practice influences and sometimes even forces u-countries to adopt problem solutions designed for the circumstances which exist in i-countries, but unsuited and ill-adapted to the realities of poor nations. Aid contributes importantly to this misdirected influence.

Far too little foreign assistance is allocated to penetrative long-term aid ventures attempting to design solutions specific to u-countries' problems and needs, based on the conditions and development constraints, prevailing in these countries.

Chapter 2 in this book discusses the concept of aid. It is intended, first, to clarify who the donors are, and second, to derive a measure of the value of the benefactory element from the commonly quoted statistics on resource transfers to u-countries. In the last section of the chapter, we undertake a critical scrutiny of the multitude of forms in which aid is actually provided to u-countries. In chapter 3 I start out by discussing the various aspects and components of development, and settle on a working definition, where it is seen as a disaggregated positive change in eight economic and social factors. I then proceed to an analysis of the constraints, commonly slowing down the development pace in u-countries. Starting out from a Chenery analysis, with skills, savings and exchange as the common resource bottlenecks, I study the underlying conditions, e. g. poverty, structure, policy and international relations as the causes to the emergence of the three resource constraints.

The purpose of chapter 4 is both to discuss methods for assessing the impact of aid on development at different sophistication and aggregation levels, and to suggest, in broad terms, the areas where particularly valuable development contributions could be made with the help of foreign support. In the process of my discussion, a distinction is derived between bulk aid, providing, in the main, additional resources for development, and innovation aid, contributing, or creating new knowledge or resources, which, for some reason, were not available earlier in the development work. Some problems to which innovational aid efforts could advantageously be applied, are also specified.

Chapters 2, 3 and 4, discussing and defining in turn, aid, development, and the interrelations between the two, thus provide us with the framework required for practical attempts at assessing the development value of aid.

The empirical part of this book starts with a brief chapter, which brings out the characteristics of Swedish aid in an international comparison. The three following chapters are then devoted to a scrutiny of Swedish assistance involvements in East Africa. Chapter 6 tries to define the sectors and areas where foreign aid could make valuable contributions, after having attempted to analyze the nature of the development hampering constraints in Kenya and Tanzania. Chapter 7 applies some of the macro-level assessment criteria, designed in the first part of the book, on the overall Swedish aid program in the two countries. Chapter 8 complements this macro-analysis by detailed micro-level scrutinies of two projects supported by Sweden.

The type of development constraints, and assistance required would differ considerably between Sub-Sahara African countries on the one hand, and South Asian countries, on the other. The appendix at the end of the book summarizes these differences, and discusses, very briefly, the purposefulness of actual Swedish aid to India, against the particular realities and problems of South Asian development.

In chapter 10, finally, I first provide a brief summary of the main deficiencies of Swedish aid practices, as they have emerged in the discussions of earlier chapters, and draw the practical implications from this criticism on some aspects in the future organization of aid from this country. I then proceed to specify a few important but neglected problem areas in the development work, and contend that the development impact of Sweden's aid might be considerably enhanced by allocating resources for innovative aid efforts, aimed at providing solutions to those problems.

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PART I, PRINCIPLES AND METHODS

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CHAPTER 2. WHAT IS AID?

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CHAPTER 2, WHAT IS AID?

2.1 An introductory definition

U-countries have many types of relations with i-countries. Some of these may promote development, while others can be shown to hinder it. From among all those relations we wish to sort out the one which could be defined as aid. It would obviously be wrong to include all the development-promoting i-u-country relations in an aid definition. Aid, as I see it, is equal to a gift, something given up for nothing by the donor. This means that my proposed definition excludes the commercial transactions taking place between i- and u-countries. Likewise, i-country measures, concerned for instance with trade policy, although sometimes implying considerable advantages to u-countries, are excluded, since they do not ordinarily involve any giving up of resources, in favor of u-countries. What remains is the value of the grant equivalent in concessional resource flows from rich to poor nations, to be more narrowly specified in section 3 of this chapter.

The value of aid is likely to differ when seen from the donors', and from the recipients' point of view. Here, I choose in the main to regard the matter from the donors' side. After all, it is the donor, who decides on the size of the aid flows, and it is therefore important to determine, with his valuation, the magnitude of resources given up for international assistance.

A definition of aid along these lines appears reasonable and relevant and there is nothing strikingly novel about it. In fact, a number of students of foreign aid have worked with identical or closely related aid concepts in their investigations.[1] It provides us with a relatively simple measure of the donors' sacrifice. It is important to compare this sacrifice with the likely effect that the aid resources will have on recipient countries, since the donor willingness to accept continued, and perhaps increasing costs for aid transfers, cannot remain unaffected by the size and type of impact on recipients, which results from these costs.

In the following section we will study the different aid donor groups, and their relative importance. Section 2.3 will use the definition of aid, proposed here, to derive the value of pure aid, e.g. of the grant equivalent, embodied in the official resource transfers, as reported by OECD. In the last section, finally, we will make a critical assessment of the forms in which aid resources are commonly transferred to u-countries.

1. See section 2.3

2.2 Who are the donors?

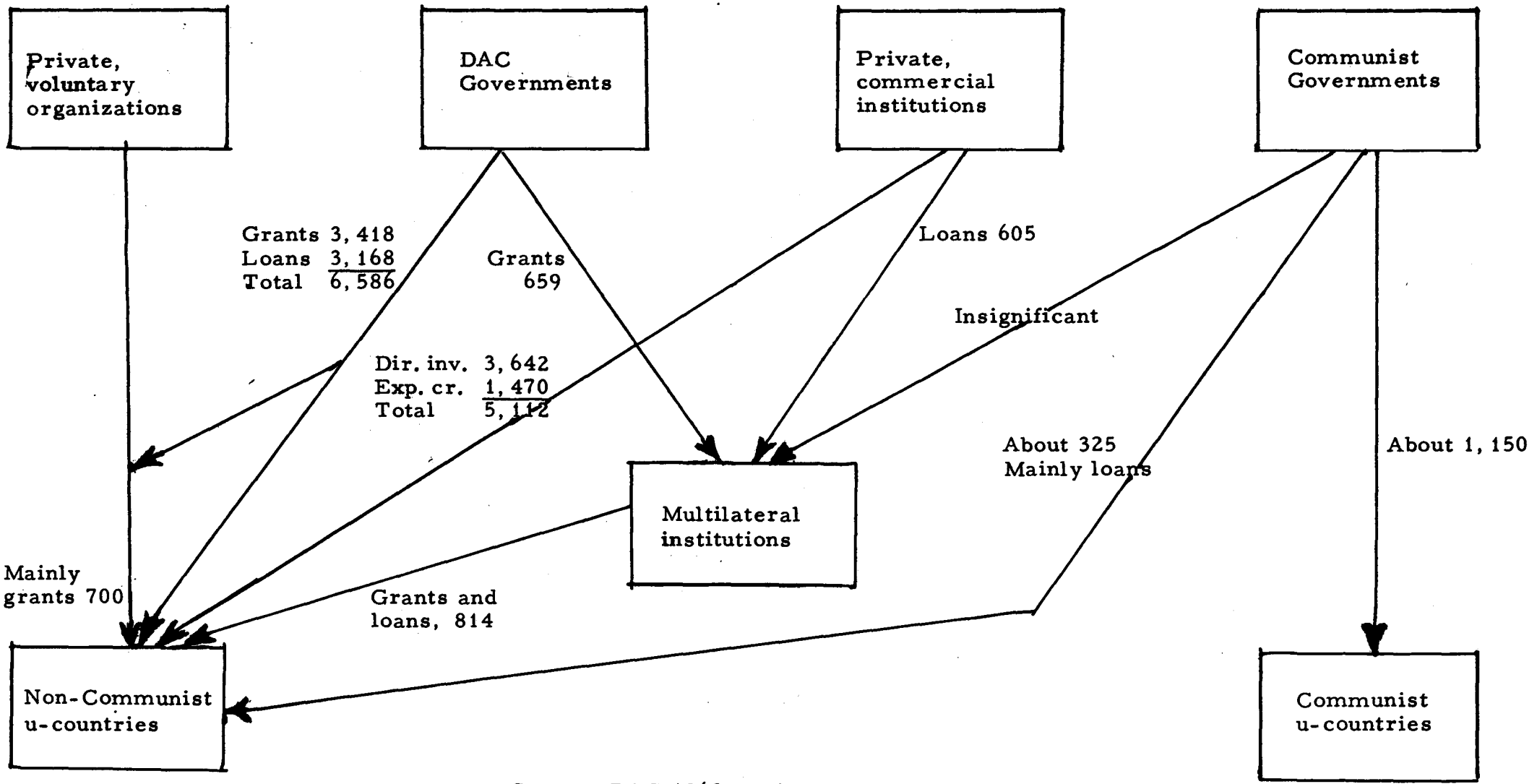
A great variety of data on the financial flows from i- to u-countries are prepared by OECD-s Development Assistance Committee (DAC) in its yearly Reviews. Unless otherwise stated, the magnitude presented in this section have those documents as their source.

It may be instructive to start our presentation of the aid donors by an overview of financial flows from i- to u-countries, as given in figure 1. It should be noted that the figures given are disbursements net, in the sense that deductions have been made for loan amortizations and disinvestments, but not for interest payments and profit transfers from u- to i-countries.[1] A simple, unqualified addition of the sums involved, which flowed out from donor countries in 1968, renders a sum total of a little over $ 15 billion, the sums reaching u-countries amount to somewhat less due to a difference in the in- and out-flow through the multilateral agencies.

It is difficult to come by detailed information with regard to flows originating in Communist countries. As appears in Figure 2.1, substantial sums were disbursed during 1968 by Communist donors. The flows to non-Communist u-countries have been roughly estimated at $ 3-400 million per year during the 60-s. Most of this money has been spent in a limited number of countries, usually on large-scale projects, the most well-known of which are the Assuan Dam in Egypt, the Bhilai and Bokaro steel mills in India, extensive road development projects in Afghanistan, and more recently, the Tan-Zam railway. Predominantly, East European aid is provided in the form of loans for deliveries tied to the donor country, with repayment in about 12 years, at 2.5 - 3% interest.[2] Some of the poorer countries have received part of the funds needed as grants. Chinese aid is usually given in the form of interest free loans.[2] Soviet loans, which dominate the total flows to non-Communist recipients, are usually to be repaid in local currencies of the recipient country. The Soviet Union has commonly utilized commercially its acquired local currenty assets, for imports from the recipients of the loans. Soviet imports of this type frequently exceed its domestic needs, so that part must be reexported through the world market. This has caused considerable irritation for instance in India with cotton textiles and cashew-nuts, in Egypt with cotton, and Burma with rice, because Soviet international sales have depressed the markets for these countries' own direct exports.[3] Another

1. Throughout this section, the figures given in the tables are disbursements net as defined by DAC.
2. See Marshall I Goldman: Soviet Foreign Aid, Praeger, New York, 1967. For more recent information see Economist of November 6, 1971, p. 66-67.
3. Marshall I Goldman, op. cit., p. 110.

FIGURE 2.1 FINANCIAL FLOWS TO U-COUNTRIES, Disbursements net, 1968, million $



Source: DAC 1969 Review

similar case is the Soviet international sales of Cuban sugar. Nevertheless, the condition of accepting payment in local currency has in all probability contained a beneficial element in comparison with convertible currency repayment terms, for the Soviet resales could hardly have been commercially profitable[1], and, furthermore, the recipient countries were relieved of the marketing costs in connection with the sales.

In addition to the arrangements described above, there is a considerable flow of resources between the Communist countries. Data on these transactions are hard to come by. It is reported that this flow exceeded $ 1 billion in 1965[2], and that in 1968 it amounted to $ 1,150 million.[3] A considerable proportion of this must have been shipments to North Vietnam. It is still more difficult to obtain sufficient details about the terms of these flows, to make some calculations about their benefactory elements. This is partly because concessionary loans are commonly mixed up with trade agreements and military sales, with prices removed from world market levels.

The Communist countries' contributions to multilateral institutions for development work, are insignificant. Aside from Yugoslavia, none of these countries is a member of the IBRD group. The Communist contributions mainly went to the UNDP, and to the UN Specialized Agencies.

Private,voluntary organizations is another donor group, handling a resource flow of considerable significance. A great variety of institutions are involved. In 1970, they accounted for a transfer of almost $ 850 million. Among the organizations included in this group can be mentioned religious missions and welfare institutions, trade unions and cooperatives, and a variety of socially oriented foundations. The most important and well-known among these are Ford, and Rockefeller Foundation. The flow from non-governmental voluntary agencies differs from that of most other donor groups in that it consists almost exclusively of grants. Therefore, when deriving the net value of this flow, no downward adjustments need to be made for the repayment flows.

Following Figure 2.1, we will now briefly deal with the private commercial financial flows. The first point to note is their importance. Out of the total flow of about $ 15 billion, they accounted in 1968 for more than one third. Comparing with DAC Governments' flows only, we find that the private

1. C S Gray reaches the same conclusion in his Resource Flows to less Developed Countries, Praeger, New York 1969, p. 54.
2. New York Times, April 7, 1965, p. 14.
3. DAC 1969 Review, p. 63.

transfers in that year were almost as large as the official ones. It is also highly probable that DAC underestimates this flow, because many private firms may not report fully on the loans extended to foreign customers. According to the definition presented in the beginning of this chapter, private commercial flows ought not to be considered as aid. In view of their importance in the overall flow, it is nevertheless worthwhile to make a few observations about them.

A point of considerable interest is the fast growth that the private flows have experienced since the mid-60's, in relation to the official flows. This can be seen by comparing tables 2.1 and 2.2 below. Between 1964 and 1970, the private commercial flows grew by more than 100% in comparison with a 34% expansion for the official DAC flow. Consequently, private flows currently account for a much higher proportion of the total than in earlier years.

It is also interesting to distinguish between the different types of the private flows. Thus, the $ 605 million, which, according to Figure 2.1 reach the multilateral institutions, mainly consist of purchases of bonds and participations[1] from International Development Banks. The private multilateral flow is very volatile, and depends mainly on the amount of bond issues and redemptions undertaken by the Development Banks. In 1967, for instance, this flow was only $ 15 million. The 1968 figure, of $ 605 million, therefore, appears to be unusually high.

The private commercial flow which reached u-countries directly, can be split up into three parts. There are the export credits of more than one year's duration, the bilateral portfolio investment, which in colonial periods was of overriding importance in private flows, and finally, and nowadays most importantly, the direct investments, which regularly account for more than half of the total private transfers. Table 2.1 summarizes some data about the private flows.

Table 2.1 Private commercial DAC-country flows to u-countries and to multilateral institutions, million $

	1960	1964	1968	1970
Export credits	571	946	1,470	2,174
Portfolio investments	645	410	724	831
Direct investments	1,741	1,791	2,918	3,406
Total bilateral	2,957	3,147	5,112	6,411
Multilateral	205	141	605	343
Total	3,162	3,288	5,717	6,754

1. By acquiring participations, the purchaser becomes the immediate creditor to a project, originally financed by loans from for instance a development bank.

Distribution of export credits shows sharp yearly variations between receiving countries. The bilateral portfolio investments are highly concentrated geographically. In the late 60's, about 80% of such investments went to Israel, Mexico and Argentina, countries on the border-line between developed and underdeveloped. The concentration appears to be a reflexion of the confidence of private financial institutions in the economies of these countries. Direct investments also tend to concentrate in the economically more well-off countries. More than one third of the total has gone to Latin America in later years.

The remaining flow of resources to u-countries, appearing in Figure 2.1, is the one originating from DAC-country governments. Aside from being the largest of the flows discussed here, it assumes added importance from our point of view, because it is the best documented one, with abundant, fairly reliable statistical data, to draw from for different types of analysis.

Our Figure 2.1 indicates a flow of $ 659 million from DAC governments to multilateral institutions. This, as may be noted, constitutes almost exactly 10% of the bilateral DAC country flows. The most important multilateral institutions, chanelling funds from i- to u-countries, are the UNDP, the various specialized UN agencies, and the IBRD with its affiliates IDA and IFC. The number of multilateral bodies has grown fast in the late 60's, with additional regional development banks being created almost every year. Practically the whole flow of resources from DAC Governments to the multilateral institutions is in the form of grants and capital subscriptions which carry neither dividend nor interest payments, and have no repayment date, and are thus in essence equal to grants. Only marginal amounts are forwarded through governmental purchases of bonds and participations. Loans of this type may, however, become more important in future. IBRD plans to approach governments with bond issues, so as to ensure increasing financial flows on somewhat better terms than those of commercial markets.[1] The example of IBRD is likely to be copied by other multilateral institutions. The relative size of DAC countries' contributions to multilateral bodies was substantially increased in 1969 and 1970, as compared with earlier years, as a result of a considerable expansion of the resources channelled through IDA.

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1. Information from interview with William Clark, Director, Information and Public Affairs, IBRD, June 1970.

Table 2.2 Official DAC country flows to multilateral institutions and directly to U-countries, million $

	1960	1964	1968	1970
Multilateral				
Grants and capital subscriptions				
UN agencies	156	230	281	367
IBRD	119	1	9	4
IDA	97	130	139	288
EEC-s European Development Fund	96	1	98	130
Asian Development Bank	-	-	47	79
Other institutions	80	-	84	225
Total grants and capital subscriptions	548	362	658	1,093
Loans, bonds and participations	67	18	1	304
Total Multilateral	615	380	659	1,397
Bilateral				
Grants	2,504	2,582	2,997	3,237
Loans repayable in recipient currencies	217	229	39	60
Sales for recipient currencies	901	1,056	382	
Total grants and grant-like	3,622	3,867	3,418	3,297
Long term loans net	639	1,695	3,168	3,276
Total Bilateral	4,261	5,562	6,586	6,573
Total multilateral and bilateral	4,876	5,942	7,245	7,970

Table 2.2 summarizes the multilateral and bilateral official flows from DAC countries. The bilateral transfers, constituting an overwhelming proportion of the total, are offered in a multiplicity of forms, and a simple adding up of the various elements into a total does not convey a clear picture of the proper contents behind each heading. In the next section we will have reason to penetrate somewhat deeper into this matter.

During the period studied, loans have grown considerably in importance in relation to grants and grant-like contributions in the bilateral flow. This is primarily because of changes in US policy. US sales of surplus commodities for local currencies, and provisions of loans to be repaid in local currencies, were quite substantial in the early 60's. They are classed as grant-like contributions in table 2.2, because the US, in distinction from the Soviet practice, has seldom made use of the local currencies in its credit. In later years, however, the US government has decreased its provision of capital and commodities to be paid for in local currencies. Instead, the major share of US surplus commodity shipments is sold for long term concessional loans.

It may be of interest to study the relative importance of the various DAC countries' official flows. Table 2.3 provides some information on this matter.

Table 2.3 Flow of official resources from DAC countries, to u-countries and to multilateral institutions, millions $

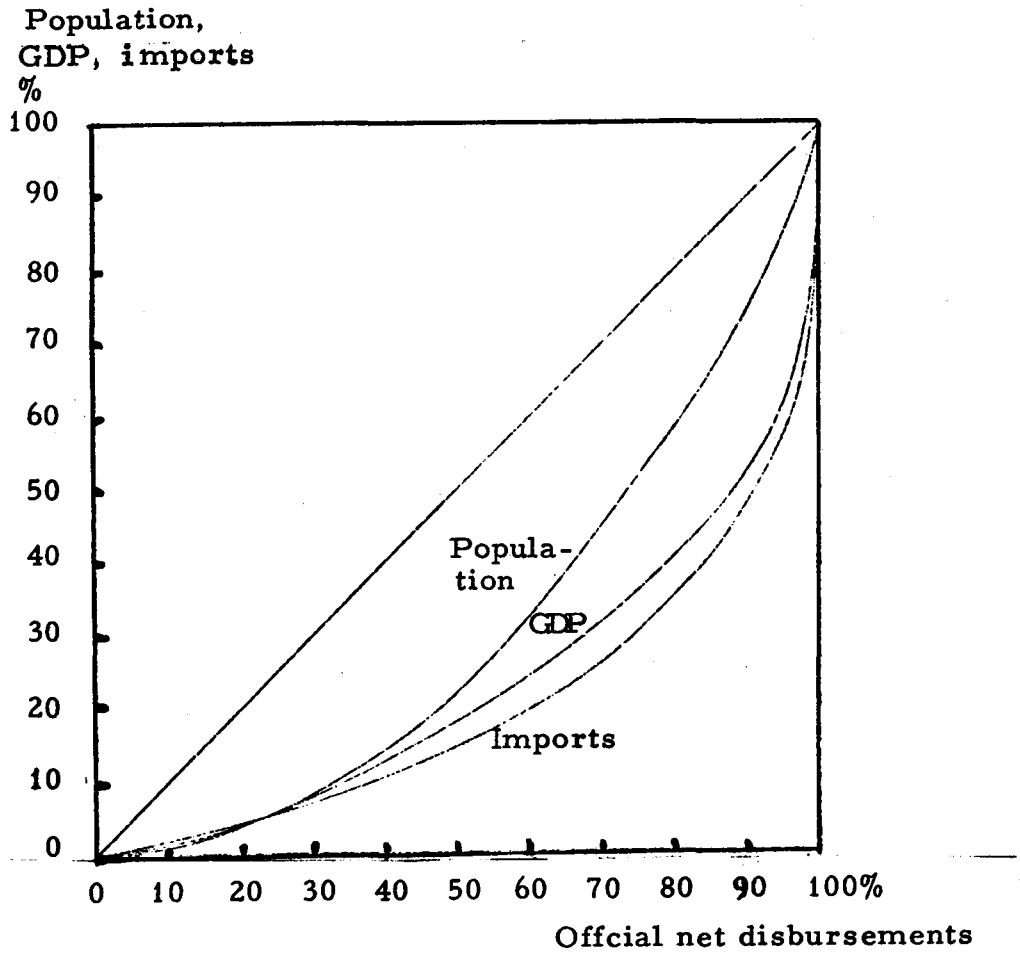
	1960	1964	1968	1970
Australia	59	104	157	210
Austria	0	15	28	20
Belgium	101	71	93	121
Canada	75	128	214	402
Denmark	6	11	29	56
France	843	831	855	979
Germany	352	423	595	731
Italy	105	40	150	177
Japan	144	211	809	1,152
Netherlands	35	49	134	215
Norway	10	17	23	37
Portugal	37	62	35	58
Sweden	7	33	71	117
Switzerland	4	9	19	25
United Kingdom	407	493	428	453
U.S.	2,776	3,445	3,605	3,218
Total	4,965	5,942	7,245	7,971

Not surprisingly, the US plays a very dominant, but somewhat decreasing role in the total. From 1960 to 1970, its share decreased from 56% to just above 40%.

The net official flows from DAC countries, both bilateral and multilateral are not very evenly distributed among recipient countries. Many different measures of the unevenness of distribution can be applied. Average yearly per capita flows in 1966 - 68 are highest to Malta ($ 53.8), Liberia ($ 31.6) and Israel ($ 30.7), and lowest in Saudi Arabia (- $ 2.3)[1], Argentina (-$ 2.0) and Irak ($ 0.9). An alternative measure, rendering different results, is the resource flow in relation to the country's total imports. The highest inflows are then recorded for Laos (217.8% of imports), Afghanistan (71.6%) and Ruanda (67.9%), while the lowest are for Saudi Arabia (-1%), Argentina(-0.2%) and Libya (0.2%). Still a third measure takes account of the foreign flows in percent of the gross domestic product of the recipient country. By this measure, the most generous flows were recorded to Laos (34.9% of GDP), South Vietnam (20.3%) and Congo Brazzaville (16.4%), while Argentina and Saudi Arabia experienced a negative figure, and Libya an insignificant positive percentage fraction. This unevenness can be illustrated with the help of Lorenz curves, as presented in Figure 2.2.

1. Minus indicates a net outflow on account of loan repayments.

Figure 2.2 Cumulative percentage distribution of official financial flows from DAC countries, compared with the population, GDP and imports of 87 u-countries, 1964-67.



Source: DAC 1969 Review, p. 172.

Undoubtedly, the distribution of official DAC resources is determined by a number of elements, which are unrelated to the wish to promote economic and social development of recipient countries. The direction of flows seems to be governed to a high extent by political and commercial considerations, and by various kinds of whims and idiosyncracies prevalent with donors.[1] It is clear, on the other hand, that an unambiguous decision on the distribution of financial flows to u-countries for maximum promotion of development, is extremely difficult to reach.[2] Occasionally donors have tried to maximize the development impact of their assistance by concentrating aid to countries thought to be on the verge of a development breakthrough[3], or by formulating

1. See for instance the discussion in I Little - J Clifford: International aid, Allen & Unwin, London 1965. See also the first section of next chapter.
2. See the discussion in I Little - J Clifford, op. cit., chapter 3, and H Eisler: En saklig betraktelse, SNS: Stockholm 1969, chapter 6.
3. I Adelman - C Morris: Performance Criteria for Evaluating Economic Development Potential, An Operational Approach, Quarterly Journal of Economics, May 1968.

performance criteria for recipient nations, and providing aid only to those countries which showed sufficient seriousness in pursuing these donor-formulated rules.[1] It does not appear, however, that such criteria have played a qualitatively important role for the allocation of assistance flows. Even if it were possible to establish, with reasonable certainty, the preconditions for a visible economic take-off, it would be difficult to justify a concentration of aid to countries possessing these preconditions. This is first, because aid may play an equally important, but, with our rough measurement tools, less visible role, at earlier stages of a country's development. Second, the neglect of the least developed, and poorest countries, implied in a concentration principle of this kind, would seem deplorable on humanitarian grounds.

We will not pursue the problem of international country allocation any further, since our primary concern is with the allocation and utilization in u-countries, of the resources made available from abroad, irrespective of the criteria on which the international distribution of these resources was determined.

For the sake of completeness, mention should be made of two further resource flows to u-countries, not at all noted in our Figure 2.1. The first one originates in the three i-countries, which are neither Communist nor members of DAC, namely Finland, New Zealand and South Africa. The bilateral and multilateral private and official net flow from these countries increased from $ 6 million in 1960 to $ 11 million in 1964 and $ 20 million in 1968.

The second one originates in u-countries themselves. This inter-u-country financial flow increased from $ 200 to $ 400 million between 1967 and 1968. A very large proportion of the latter figure consists of development loans from Kuwait and a few other Arab oil producing countries, after the 1967 war with Israel. India, Pakistan and Singapore maintain sizable technical assistance programs abroad. Spain and Yugoslavia, in addition to technical assistance activities, have established government sponsored export credit schemes. In a sense, it seems less appropriate to refer to this as inter-u-country flows. From many points of view, perhaps different for each, Israel, Kuwait and Spain, hardly belong to the underdeveloped category, and could equally well be classed as developed countries.

The next section of this chapter will try to distil the value of pure aid from the multitudinous flows of resources to u-countries. In this attempt I propose to start out with the flows, official and private commercial, originating in

1. See the discussion in R Mikesell: The Economics of Foreign Aid, Weidenfelt and Nicholson, London 1968, chapter 5.

DAC countries, and to abstract from the remaining flows. This is primarily a matter of convenience. The Communist governments' and the private voluntary organizations' flows are not sufficiently documented for proper analysis. The flows from Finland, New Zealand and South Africa are insignificant and may be disregarded, while the inter-u-country flows by definition do not add anything to the underdeveloped world. We should then be aware that what we deal with is not the whole, but certainly a major part of the resource transfers to u-countries.

2.3 How much pure aid?

The Principles

According to the definition in the beginning of this chapter, aid equals the value of the grant equivalent embodied in the resource transfer, and our task will now be to determine this value for the various parts of the transfers originating in DAC countries. This matter would not require any further consideration, if aid resources were provided as outright cash grants in convertible currency. This, however, is not the case. Practically no aid is given in this simple, straight-forward form.

Our way of looking at things immediately leads to the first conclusion, or rather exclusion: Private commercial flows, both investment and export credits, being by definition commercial, do not comprise any element of benefaction, and should therefore not be included in the amount which we try to determine. Indeed, if private flows were included in the definition of aid, by analogy, Canada rather than India would be by far the largest aid recipient in absolute terms.[1] But nobody would think of the US direct investments in Canada and Western Europe, or European portfolio investment in North America as aid. The exclusion of private flows from aid figures does not in any way deny their possible positive development effects in u-countries, in the same way as for instance, certain types of trade relations or political contacts can promote the development process. But this is another matter, which does not change the fact that the private flows result from purely commercial transactions, without any gift element.

Another matter for consideration in connection with the private flows is whether and to what extent aid is involved when private credits

1. Aid to Canada in 1968, had it been so recorded, would have totalled about $ 1.4 billion, considerably more than total world aid in that year to India. See K G Helleiner: The Development Business, Next Steps, International Journal, Canadian Institute of International Affairs, Winter 1969-70, p. 163.

and investments are promoted or guaranteed by the donor government. One could then argue that the government expenditure for the support of private flows ought to be counted as aid, since it is a measure undertaken for the benefit of u-countries, e. g. to make their borrowing to finance imports cheaper, and to encourage a larger resource transfer than would come forth in an unsupported market situation. In practice, this proposition is somewhat doubtful.

First, in the case of guarantees for export credits and investments to u-countries, these are usually offered by i-country governments for a fee similar to an insurance premium. The government will incur expenditure only, if it has to make payments which exceed the fees collected. No such government net losses have yet been reported. In fact, while the three countries with the largest investment guarantee commitments, US, Germany and Japan, charge yearly fees amounting to 0. 5% or more of the investments guaranteed, the overall indemnified claims on the US and German schemes have been limited to 0. 1% of the values insured, while Japan has not reported any losses.[1] It is true, on the other hand, that foreign nationalizations, like those of US copper assets in Chile, might empty in one stroke the accumulated reserves of an investment insurance scheme.

Second, it should be realized that support is frequently given by the i-country government to promote the competitiveness of its enterprises versus the firms from other countries in u-country markets. Accordingly, the most generous government support is usually provided to the industries in less competitive countries, for reasons which are little concerned with the situation in u-countries. The outcome then is that the unsupported, more efficient supplier may be replaced by a less efficient, supported one, with the gain accruing to the private firm of the country maintaining the supporting scheme. In Mikesell's elegant expression ".... government sponsored or assisted export credits (which often provide repayment terms in excess of ten years) constitute government subsidized exporting - the modern form of competitive currency depreciation...".[2] Even if a net cost were incurred by the supporting government, this cost ought then to be regarded as part of an export promotion expenditure, rather than as part of aid.

My conclusion is therefore that the aid element in support towards investment and export credits to u-countries is negligible, and can be disregarded.

1. OECD Observer, August, 1970, p. 3-8.
2. R Mikesell: The Economics of Foreign Aid, Weidenfelt and Nicholson, London 1968, p. 205.

Let us now study the official flows, which, as we have seen in the previous section, consist of loans and grants of various kinds. Official loans are aid only to the extent that the conditions on which they are given are more favorable than those prevailing in the market. A common method to calculate the value of the concession in a loan is to derive the grant equivalent by deducting from the loan's face value the present value of interest and amortization payments, discounted by some suitable rate of interest. If our purpose is to measure the cost incurred by the government extending the loan, the relevant interest rate could be the long term borrowing rate in the donor country, or in international money markets, at which the i-country government could itself acquire the funds. The size of the grant equivalent will depend on the difference between the concessionary rate of interest at which the loan is given and the rate at which repayments are discounted, as well as on the grace and repayment period. To illustrate, in an interest free loan of $ 100 million, repayable over 50 years, the present value of repayment flows discounted at 8% will be $ 24.4 million, leaving a grant equivalent of $ 75.6 million. On the other hand, in a five year loan of the same amount, extended at 6% interest, the present value of the repayment flows will be $ 95.2 million, and consequently, the grant equivalent will only amount to $ 4.8 million. The obvious implication is that it would be a great overstatement to regard the face value of loans as aid. Only the grant equivalent is a cost to the donor, and the discounted repayment flow should therefore be deducted when assessing the amount of pure aid.

One more consideration has to be taken into account before we are ready to revert to the statistics to calculate the value of pure aid. This concerns the prices at which the donor country supplies the goods and services under the loan and grant programs. The value of aid should reflect the value of the supplies under aid programs, computed at prices not exceeding those which prevail in international markets. Since the donor who finances the transfers, is always able to purchase the aid resources at international prices, there is no reason to value his aid contribution at a higher level just because he happens to have a preference for more expensive sources of supply. In practice, a major share of aid is in fact valued at prices exceeding markedly the international market levels. Most aid deliveries are tied to the donor country, and valued not lower than the prices prevailing in the donor's markets, even if these prices exceed the world market levels. Aid tying is widespread, and affects both the grant and loan flows. Two reasons are usually forwarded by the donors as an explanation for their tying practices. 1. Tying enhances their exports, and relieves the burden on their balance of payments, and

2. It is easier to identify tied aid, and hence to generate necessary public support for it. We should notice that both arguments refer to domestic conditions and problems in the donor countries.

The excessive prices at which tied aid deliveries are accounted, can conveniently be explained by three different cases. The first one has to do with the valuation of commodity surpluses shipped to u-countries as grants or against soft loan obligations. The US PL 480 deliveries, which accounted for a large proportion of world aid in the mid-60's, are the most important example. The surpluses are usually a result of domestic policies in support of the donor country's agriculture, the consequences of which are higher production and higher average costs. The artificial domestic cost and price levels have then sometimes been used to compute the value of the surplus shipment to the recipient country, in spite of the fact that the same commodity is obtainable in the world market at lower prices. The excess price included in the aid out-flow is then nothing but part of the domestic agricultural support[1], and should correctly be treated as such, and not blow up the value of aid shipments.

The second case concerns technical assistance involving transfer of personnel from donor to recipient. Here too, there is usually an excess cost. Take the case of medical personnel from the US, Canada or Sweden, where salary levels are far above those of poorer countries. If the purpose of a technical assistance venture is to provide a medical doctor of a certain specification, the value of this venture should be based on the cost at which such a doctor can be hired internationally. If it is possible to recruit him from India, Brazil or Israel at, say, $ 10,000 per year, it is obviously incorrect to value the venture at $ 30,000, only because, for domestic reasons, the donor insists that the doctor be recruited at home. This argument is of course not valid when the personnel qualifications required are not obtainable other than in the donor country. Scientific personnel of some types might be a case in point.

The third case concerns tying aid to supplies from the private industry of the donor country. Two reasons for pricing above world market levels can now be discerned. First, the industry, from which deliveries will come, may be a high-cost industry, which can survive international competition only thanks to a tariff wall. Second, the industry, although internationally competitive, may be the only producer in the donor country, of the goods under considerations. Even if it has to compete with foreign suppliers in its domestic market, it becomes a monopolistic supplier of the tied aid goods, and can therefore charge higher prices for such aid shipments.

1. J Pincus: Trade Aid and Development, McGraw Hill, New York 1967, p 354.

The disadvantage of tying will depend on whether the ties apply only to deliveries from the donor country, or, in addition also to deliveries of specific goods for ventures which form part in the aid program. In the former case, when the ties concern the donor country only, the recipient can to some extent use aid to finance his ordinary imports from the donor. The ordinary imports will presumably consist of goods for which the donor's industries do not charge prices above world market levels, and consequently no excess pricing need arise. This way out is ordinarily not available, if the tying applies to the type of goods as well as to the donor country.

We can now summarize the discussion in three brief points. In calculations of the value of pure aid, we should:

1. Exclude the non-concessional flows.
2. Deduct the discounted repayment flow from the amount of concessional loans, to derive their grant element.
3. Recalculate the value of loans and grants tied to deliveries in the donor country, on the basis of international prices.

The net resuot will by necessity be a far smaller sum than the values computed by DAC as the official flows from i-countries.

Pure aid is not an imaginary concept, but a highly relevant measure of the donor's cost for providing aid. This is because, in principle, the donor is always free to buy and borrow internationally the goods and capital which he supplies as aid.Although the donor government may consider it necessary to procure the aid resources at higher prices, in order to satisfy some domestic interests, this is not a reason to debit the donor's aid account with any costs over and above the cost for obtaining the aid resources in international markets.

A few further notes are in place, before we revert to the empirical material, to carry out the above operations. The first one has to do with points 2 and 3 above. We studied earlier in this section the grant equivalent of a loan of $ 100 million, given on different conditions, and showed that the present value of the repayment obligations would amount to $ 24.4 million and $ 95.2 million respectively, depending on the terms of the loan. Suppose, however, that the loan is tied, and that the prices for the goods provided exceed the world market level by 15%. In other words, the goods supplied for $ 100 million could have been obtained for $ 87 million, if there were no provision of tying. To arrive at a pure value of aid in our two cases, we must now deduct two sums from the face value of the loan, the discounted repayment obligation, and the excess cost, the latter amounting to $ 13 million. Under these conditions, we find that the aid value of the loan in the first case is only $62.6 million, while in the latter case we find that the repayment obligation exceeds by $ 8.2 million the value of the goods supplied! In this case, the gain is reaped by the suppliers from the donor country. The recipient would have been better off with an untied loan on commercial terms, e.g. 8%, instead of the concessional 6%,

on which the "aid" loan was granted. Donors' price manipulations can thus have unexpected consequences, which are not always perceived by the recipients. Suppose now that the disadvantageous financial arrangement just described was used to finance an export oriented enterprise which has to face world competition. Certainly, the excess cost will considerably reduce the competitiveness of the venture, and can easily lead to total failure.

A second note which also emerges from our aid definition is that in principle, the loans extended by for instance the IBRD, do not contain any pure aid. This is because the IBRD obtains its financial resources on non-concessional terms, from private institutions. It is true that it can both borrow and lend at somewhat lower rates than others, but this is not because concessions are involved, but as a result of its standing as a first class reliable borrower in the financial community. The better terms on which the IBRD can offer money to u-countries in comparison with for instance, bilateral export credits, is simply a reflexion of a superior institutional financial arrangement, and of the guarantees extended by its member governments on the loans it takes up. Aid would then be implied only in the i-country costs for building up this institution, and, in the unlikely future costs for indemnifying lenders, in case the bank becomes insolvent.

The third note expresses a doubt: Although from the donors' point of view, the analysis of pure aid as we have carried it out here, seems relevant and important, can the same be said if the problem is regarded by the recipient? Could it be that his problem is much more short-term, expressable in the simple phrase: "Where do I get finance for that road project now?" Is it possibly so that to the recipient country's decision maker the question of grant equivalent is less important, particularly if the loan has a longer repayment period, because he is much closer to the needs, while the repayment obligation, if at all it will have to be honored, is put among the less immediate concerns, which perhaps will bother his successors rather than himself? Our argument would suggest that the short-term impact and leverage of aid is likely to be more closely associated with the entire official resource disbursements than with the amount of pure aid. This will be particularly apparent in the empirical micro-evaluation studies, presented in chapter 8. Over a longer time period, however, the pure aid concept assumes a gradually increasing importance, even if the aid relationship is regarded from the recipient's horizon.

The Practice

The aid statistics presented in section 2.2, show throughout the disbursements undertaken during the actual year, minus amortization payments made in the same period. These figures cannot be used outright in our calculations

for two reasons: First we need the volume of gross flows, because in deducting the discounted value of repayment flows, we take full consideration of amortization payments. Second, DAC statistics provide information on the loan terms applying to commitments and not to disbursements. It is easy to note the conditions of the loan when it is committed by the donor. But it would be next to impossible to sort out from among the thousands of transactions, the terms applying to the disbursement flows during a year. In a growing financial flow, commitments will usually be larger than disbursements, reflecting the fact that the financial undertaking comes first, while actual payments follow later, and may be spread over a number of years. To show the difference in magnitudes involved, a few figures comparing net and gross disbursements with commitments of DAC governments are given below.

Table 2.4 Net and gross disbursements and commitments of grants and loans by DAC Governments to u-countries and multilateral institutions, million $

	1960	1964	1968	1970
Net disbursements	4,940	5,870	7,250	7,971
Gross disbursements	5,340	6,550	8,210	10,145
Commitments	6,320	9,120	9,160	10,586

Sources: DAC 1968, 1969 and 1970 Reviews. The Flow of Financial Resources in 1960, OECD, Paris 1962.

The wider variations experienced by commitments are a result of the irregular intervals at which governments commit themselves to aid undertakings. The resources in the pipeline, e.g. amounts committed but not yet disbursed, contribute to a greater evenness in the disbursed flow. In spite of a sizable decrease in the US commitments since the mid-60's, it has been possible to maintain the disbursement flow relatively stable for several years, by tapping the resources available in the pipeline.

The existing data allow us in principle two ways of calculating the grant equivalent in loans, neither of which will be fully correct. We can either calculate it on the basis of terms and conditions as they apply to commitments. We will then have a correct donor burden, but this burden will materialize first in the future, when the commitments become due for payment. As commitments are usually larger than disbursements, we are likely to somewhat exaggerate the donor's present burden by using this method. Alternatively we may apply the loan conditions contained in the commitments, on the actual gross disbursements. Some measure of incorrectness is involved in this method, because this period's disbursements can have been committed on other terms than current commitments. Pending the availability of improved

statistical data, these are the two possible approximations to calculating the grant equivalent in official assistance loans.

The uncertainties in estimating the excess prices in aid due to tying, are much greater than in the calculations of grant equivalent. Such estimates have to be based on highly scattered evidence and guesses rather than on regular and reliable figures.

Several attempts to assess the value of pure aid have been undertaken. Some of these will be briefly described below. Little and Clifford[1] use the 1962 commitment terms of each of the DAC countries to calculate the grant equivalent of gross disbursements of loans in 1963. Assuming average grace periods to be 5 years, and using a discount rate of 6%, they arrive at a grant equivalent in loans of about $ 600 million, or roughly 28% of their disbursed value of $ 2.1 billion. The PL 480 shipments, which in that year amount to $ 1.3 billion, are treated as grants. The authors propose to value them either at the reported prices, or at the zero prices, the motive for the latter being that the donor does not incur any cost, but rather a benefit by getting rid of his surplus stocks. The value of gross aid disbursements in 1963 is then reduced in their calculations from $ 6.5 billion to $ 5.0 billion or $ 3.7 billion, depending on the treatment of PL 480. The authors have a long discussion about the excess pricing in tied aid, but do not arrive at any concrete figures to include in their calculations.

Ohlin[2] compares the net official financial flow in 1963, $ 6,285 million, with the "real" value of commitments in the same year, where reported loan commitments are devalued to their grant equivalent by discounting repayment obligations at 6%, and valuing PL 480 shipments at assumed world market prices. The "Estimated Real Cost of Aid Commitments", thus arrived at, amounts to $ 4,209 million, or much less than the net flows in the same year.

An OECD Report[3] presents grant equivalent calculations for 1964 and 1965. The estimates are based on commitments. The loan repayment flows are discounted at the domestic long term bond rates in each donor country. The grant equivalents in loans committed in these two years amount to 22 and 15% respectively. The total commitments in these two years are $ 9,070 million and $ 7,660 million. Adjusted for the discounted repayment obligations the commitments instead decrease to $ 6,230 million and $ 5,070 million, respectively.

1. I Little - J Clifford, op. cit., chapter 2.
2. G Ohlin: Foreign Aid Policies Reconsidered, OECD, Paris 1966, p. 70-75.
3. Flow of Financial Resources 1961-65, OECD, Paris 1967, p. 142.

John Pincus[1] has undertaken calculations on a similar basis for the years 1962-66. The discount rates used were 1% higher than those applied by OECD above. The values of PL 480 were adjusted to world market price levels. The following results were obtained.

Table 2.5 Reported and adjusted official commitments, by DAC Governments to u-countries and multilateral agencies, million $

	Officially reported value of commitments+	Commitments adjusted for grant equivalent and PL 480 valuation
1962	6,705	4,382
1963	6,127	3,765
1964	7,680	4,907
1965	7,298	5,101
1966	7,888	5,241

+ These figures do not tally with the total commitment amounts reported in DAC Documents. This is because Pincus does not include all the countries reported on by DAC, and also because he has rectified PL 480 figures, incorrectly reported to DAC by the US Government.

Source and method: See the text.

The grant equivalents for loan commitments from various donors during the five years varied between 0.6% for Belgium and Canada in 1962, and 45% for Norway in 1963.

We will try a similar calculation exercise based on more recent data, for 1968 and 1970, but will also proceed a step further, by at least conjecturing the decrease in the value of aid due to the common tying procedures. Let us therefore start out by estimating the amount of excess pricing in tied aid.

Out of total gross disbursements in 1968, OECD reports 75%, inclusive of bilateral technical assistance, to be bilaterally tied.[2] Since the early 60's, the degree of tying has been increasing. It is therefore reasonable to assume that the tied proportion is at least as high in total commitments for that year. Tying in practice, however, is certain to constitute a still larger share than the figure quoted here. This is because many donors impose informal conditions in connection with their untied aid, threatening to curtail assistance to a particular recipient country, if the aid proceeds are spent for purchases otherplace. Furtheron, since a few years, parts of the multilateral flow, reported in its entirety as untied in the OECD document quoted here, have in fact been restricted with regard to purchase sources. This applies

1. Proceedings of UNCTAD II, Vol. IV, New York 1968, p. 111-141.
2. Resources for the Developing World, OECD, Paris 1970, p. 285.

to the funds channelled through the Inter-American Development Bank since 1967, and more recently to the US contributions to IDA.[1] It is therefore certainly safe to assume that in practice, not less than 80% of the official contributions in both 1968 and 1970, have been tied.

Let us now review the scattered evidence of excess pricing due to tied aid. "Excessive pricing" is intended to mean the difference between the quantity of goods and services which could have been obtained for the sums reported, from internationally competitive suppliers, and the quantities actually obtained.

Mahbub ul Haq's famous investigation[2] of the tied credits to Pakistan concludes that the supplies for some 20 projects studied, were priced on the average 51% higher by the tied source, as compared to available competitive international bids. In view of Pakistan's varied needs, the possibility to substitute tied aid deliveries for ordinary imports, and the proportion of untied aid which it receives, the reduction in the value of all aid to Pakistan in 1965 was assessed at about 12%.

For the same year Pincus[3] reports that the excess price for all deliveries financed by US aid, had they been tied in full, would amount to some 17%. Since then the US aid has in fact become virtually totally tied.[4]

For its second session in New Delhi in 1968, UNCTAD commissioned several country studies[5] on the excess costs resulting from aid tying. The findings, which are by no means exhaustive, suggest a visible excess cost in tied aid of above 12% in Chile, between 10 and 15% in Iran, and in Tunisia about 18% for US commodity surplus deliveries and 20% for other tied deliveries. UNCTAD's tentative conclusion is that tying directly increases the cost of tied supplies by somewhere between 10 and 20%.

A more recent OECD study, comparing the prices of tied fertilizer aid to India from various sources, with actual and potential commercial supplies from the Persian Gulf, notes a very substantial difference, to the disadvantage of the source tied supplies. In 1968 and 1969, the cif India price per ton of urea supplied as tied assistance, varied between $ 72 and $ 86, while simultaneously the corresponding untied Kuwaiti price was less than $ 50. By 1970, cif prices of Japanese and Dutch urea delivered on commercial terms to the US, were no higher than $ 45.[6]

1. DAC 1968 Review, p. 77.
2. In John Adler, editor: Capital Movements and Economic Development, International Economic Association, London 1967.
3. Proceedings of UNCTAD II, Vol. IV, New York 1968, p. 113.
4. Resources for the Developing World, OECD, Paris 1970, p. 194.
5. Proceedings of UNCTAD II, Vol. IV, New York 1968, p. 72-110.
6. F Kahnert: Aid tying and exports of nitrogenous fertilizers from the Persian Gulf, OECD, Paris, 1971.

Other sources, although not providing definite quantifications, also point to the considerable price increases, resulting from aid tying. DAC-s 1969 Review feels that "available evidence leaves little doubt that aid tying does cause significant extra costs."[1] Mikesell draws the attention to the excessive shipping costs due to provisions that aid deliveries must be transported on donor countries´vessels. Furtheron, Mikesell points out that firms do not participate in international bidding unless there is a reasonable hope for their winning the contract. Competitive bidding will therefore not reflect the real spread in price, if efficient producers abstain from participation, because their governments do not provide generous export credits.[2] This is likely to cause empirical studies to underestimate the excess pricing resulting from tied aid. Jagdish Bhagwati[3], discusses the indirect costs of tying, caused by higher spare parts, servicing and repair costs, and delays in deliveries due to inexperience or unavailable supplies with the incompetitive donor.

At a more subtle level it has been reported that donors sometimes make concessional aid resource supplies conditional upon accepting tied export credits on commercial terms.[4] It is true that we have decided to exclude finance on commercial terms from our deliberations. But in view of the interdependence of the two flows in the case considered here, it would be appropriate to deduct the excess costs due to tying in the commercial export credits, when assessing the value of pure aid contained in the concessional flows.

Most of what has been said here, refers to goods. But similar points could be made about human resources provided in technical assistance, where professional personnel provisions are tied to the donor country. Salary scales for professionals vary widely between rich and poor countries. And, i-country professionals tend to get still higher paid when they take up temporary assignments with the aid providing agencies. The excess prices for tied material resources are therefore, with exceptions for special cases, probably even exceeded in the case of tied human resource transfers.

With all this evidence, it seems safe to assume that the value of tied aid, constituting about 80% of all concessional official commitments, is at least 15% lower than what is officially reported.

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1. DAC 1969 Review, OECD, Paris 1969, p. 136.
2. R. Mikesell: The Economics of Foreign Aid, Weidenfelt and Nicholson, London 1968, p. 253.
3. Proceedings of UNCTAD II, Vol. IV, New York 1968, p. 54-57.
4. This point was made by Basim Ustunel of the Institute for International Economic Studies at Stockholms University, in a discussion of an earlier draft of this chapter.

Next, we must choose an interest rate at which the interest and amortization costs of development loans can be discounted. Interest rates for new foreign and international issues of bonds by prime borrowers in 1968, clustered around 5.5 - 7%. In 1970, which was a year with exceptionally high interest rates, they had increased to between 7 and 9%.[1] Not aspiring at a high degree of precision, let us take 8% as the interest rate by which the servicing costs of loans obtained by u-countries in 1968, are discounted to the present, and 9% for the same purpose in 1970. These rates certainly do not overestimate the servicing charges of the loans.

We are now ready to compute the value of pure aid. The calculations are presented in table 2.6. A refinement of the DAC statistics of recent years has consisted of separating out the official lending to u-countries, which takes place on purely commercial terms. The amounts of such non-concessional loans have simply been deducted from the total commitments in our calculations. The terms of concessional lending did not differ much between 1968 and 1970, and, on the basis of these terms we have approximated the present value of servicing costs resulting from the loans at about 50% of the loan amounts committed in 1968, and 45% in 1970.

Table 2.6A Value of pure aid committed in 1968, million $

Total commitments		9,160
Deduct non-concessional official lending:	1,070	8,090
Deduct tying costs, 15% on 80% of 8,090:	970	7,120
Deduct present value of servicing costs on concessional lending, discounted at 8%. Amount of loans committed: 3,390. Average terms: 31 years' maturity, 2.7% interest, 7.2 years' grace, give a present value of servicing costs of about 50% of loan value:	1,700	5,420

Table 2.6B Value of pure aid committed in 1970, million $

Total commitments		10,590
Deduct non-concessional official lending	2,440	8,150
Deduct tying costs, 15% on 80% of 8,150.	980	7,170
Deduct present value of servicing costs on concessional lending, discounted at 9%. Amount of loans committed: 2,970. Average terms: 30 years, 2.7% interest, 7.5 years' grace, give a present value of servicing costs of about 45% of loan value:	1,340	5,830

Source to tables: DAC 1969, 1970 and 1971 Reviews.

1. IBRD Annual Report 1971, p. 78.

The pure aid committed, $ 5.4 billion in 1968, and $ 5.8 billion in 1970, is about 59% and 55% respectively of total reported commitments. Making the reasonable assumption that pure aid disbursements are related to gross reported disbursements in the same way as pure to reported commitments, we can conclude that the pure value of disbursed aid in 1968 was some 59% of $ 8.2 billion, and 55% of $ 10.1 billion in 1970, or about $ 4.8 billion and $ 5.6 billion respectively in the two years. Indeed, these are very different figures from the officially reported commitments and flows, and yet, the deduction for repayment obligations and excess pricing, undertaken above, seem in my opinion to be on the conservative side.

Let us end this section with a query: What are the determinants for the supply function of pure aid? Could it be that the pure aid flow is in fact maximized through the present complicated mixture of terms and kinds of resource flows to u-countries, because the arrangements sweeten the sacrifice involved for various influential donor lobbies, e.g. exporters or finance ministers and central bankers guarding the balance of payments in the case of tied aid, or labor facing the prospect of unemployment, in the case of commodity aid from surplus production? This query opens up very broad vistas which would require a separate treatise for proper clarification. We will not pursue the matter any further, and will continue on the simplifying assumption that as long as his aid cost proper, e.g. the value of pure aid that he provides, remains constant, the donor ought to prefer those forms and terms of aid which are particularly efficient in promoting development in recipient countries.

2.4 The current procedures and forms of aid, a critique

The critique of current aid, which I propose to undertake in this section, will emerge as an important by-product from distinguishing among various aid forms. Several such distinctions between assistance forms are possible. We have discussed above the implications of loan versus grant and tied versus untied forms of aid. The further distinctions, which I propose to discuss below, include:

1. Bilateral versus multilateral aid
2. Technical assistance and its peculiarities
3. Aid according to its area of activity, and
4. Project versus program aid.

Some relevant information on the magnitudes of different types of aid is provided in table 2.7.

Table 2.7. Multilateral and official bilateral DAC commitments by purpose

	Official bilateral			Official multilateral+		
	1967	1968	1967-68 annual average %	1967	1968	1967-68 annual average %
	Million US dollars			Million US dollars		
Capital Project Assistance....	2,771	2,378	30.04	1,458	1,814	83.09
Agriculture.....	216	192	2.38	459	204	16.82
Industry.....	1,015	878	11.04	281	246	13.39
Energy.....	503	222	4.23	176	585	19.34
Transport.....	594	495	6.35	288	502	22.57
Social Infrastructure.....	300	296	3.47	240	147	9.82
Other.....	145	295	2.57	14	30	1.14
Technical Assistance.....	1,632	1,670	19.27	(290)	(315)	15.37
Non-project Assistance.....	1,998	1,961	23.10	28	32	1.52
Export Credits.....	1,396	1,428	16.50	-	-	-
Other Contributions.....	937	967	11.11	1	-	x
Total.....	8,735	8,406	100.00	1,778	2,161	100.00

+ The commitment data in this table are not directly comparable with those shown in other DAC reports, due to differences in coverage, timing, cancellations etc.

Source: DAC 1969 Review, p. 313.

Each type of aid has its own problems and advantages, which make it more or less useful as generator of development. At this stage I will concentrate on a critical presentation of the different forms. After having discussed, in the following two chapters, the contents of development, and the process by which aid in general can contribute to progress, I will provide at the end of chapter 4, some suggestions for a change in the contents of aid, which might increase its development impact.

Multilateral versus bilateral aid

We have already noted in section 2.2 above, the distinction between bilateral and multilateral aid. The multilateral institutions' receipts have amounted to around 10% of the bilateral official DAC flows. The multilateral transfers to u-countries have been somewhat larger, because part of the resources available to multilateral organs, stem from their borrowing in private capital markets. Multilateral disbursements rose from $ 0.5 billion in 1960 to $ 1.1 billion in 1964, and $ 1.5 billion in 1968 and 1970. The IBRD group has accounted for more than half of these amounts, the UN Institutions for another 20-25%.[1]

There have recently been several proposals by authoritative bodies or persons, that the multilateral share of total aid should be considerably expanded.[2] Undoubtedly, the cause to these suggestions is dissatisfaction with many features in bilateral aid. Let us study some of the deficiencies in bilateral procedure,and compare them with the apparent shortcomings in multilateral aid.

It is well-known that bilateral aid is highly affected by non-developmental considerations. The donor's interest in furthering his own exports or promoting his political and military objectives, is likely to make the aid program less development-oriented, and consequently of less value to the recipient. Furthermore, the donor's self-interest also explains the very uneven distribution of assistance among receiving countries. National donor considerations will be lsss prominent in multilateral programs. It should therefore be easier to make development the primary objective of such programs. This is one important reason for the preference of multilateral aid.

1. Pearson Report, Praeger, New York 1969, p. 390.
2. See for instanee the Jackson Report, UN, Geneva 1969, Pearson Report, op. cit., the Peterson Report, Washington DC, March 1970, or G Myrdal: Challenge to World Poverty, Pantheon, New York 1970.

The present aid giving structure, with its emphasis on independent bilateral flows, complicates a proper coordination of the overall assistance flows. In spite of the consultative and fact-gathering work performed by DAC, and the impressive efforts by IBRD and OECD to organize donor nations into consortia and consultative groups, within which a better planned and coordinated aid flow to a given recipient country could be hammered out, it is difficult to avoid improductive duplication, since each donor is keen on maintaining a high degree of autonomy in his aid decisions. An expression of this is the common "perpetual" student from u-countries, who succeeds in obtaining consecutive scholarships in different donor countries for perhaps tens of years. Another is the possibility that current decentralization offers to aid recipients to play off donors against each other. A presumptive donor can be threatened that unless he agrees to support a venture, whose value he doubts, the recipient will approach a competing donor. The threat becomes more compelling if the donor's self interests in aid would suffer from the transfer. There is considerable persuasiveness in the argument that much is to be gained by a somewhat higher degree of centralization and coordination of decision making in the international aid work.

A closely related deficiency in bilateral aid is that each donor country follows its own specific rules and procedures in scrutinizing and accepting or rejecting requests. Thus, the same project has to be presented in different terms and with emphasis on different aspects, to get favorable treatment with the aid giving agencies in various countries. This becomes administratively cumbersome for recipients.

Many bilateral programs also suffer from the practice that funds are appropriated for one year at a time. This results in difficulties and uncertainties with regard to the many ventures, which are dependent on a steady aid support for a long period. In addition, it complicates the planning procedures in recipient countries. This problem is not so prominent in multilateral aid. First, some multilateral donor contributions are fixed in advance for several

years. Second, a multilateral body on the average receives its funds from many more donor countries than an individual recipient country. This will tend to even out the fluctuations in the individual donor flows. Finally, at least the development banks can compensate the instability of their official receipts, by varying their borrowing in commercial markets.

There is thus a considerable strength in the criticism of bilateral aid arrangements, which backs up the proposals for a higher degree of mulitilateralism. Unfortunately, an equally forceful critique can be made of multilateral aid too. This critique is perhaps less directed against multilateralism as such, as against the present arrangements, under which multilateral assistance is functioning.

From what was said above about donors' self interest in bilateral aid, one might expect multilateral assistance to show a more even distribution among recipient countries, or alternatively, to compensate for the inequality of bilateral flows. In fact, multilateral aid per capita is as widely dispersed as bilateral, and to some extent even concentrated on the same countries.[1] Could this reflect the influence of national donors on the multilateral bodies? Is it the result of the varying degrees of difficulty in rendering aid to different receiving nations? Or is the unevenness explained by some kind of "small country effect", whereby the aid volume, both multilateral and bilateral, is only to a limited extent dependent on the population, GNP or imports of the recipient nation?[2] It is difficult to understand the rationale behind the current multilateral distribution of aid.

To function efficiently, an aid providing agency must be able to recruit and maintain in its employment a cadre of efficient and devoted administrators and technicians. In the UN family at least, the average quality of personnel has gradually impaired.[3] The explanation to this is complex, but includes a relative deterioration of UN salary scales vis à vis the richest i-countries, quotas on recruitment from all member countries, which often compel the organizations to accept persons with less suitable qualifications, in order to fill the quotas, and, most importantly, the fact that higher posts are usually filled by political appointments, thereby impeding the careers of individuals lower down the line. All this must be discouraging able and competent individuals from joining. The Jackson Report has also pointed to the extreme bureaucracy which lowers efficiency, and restrains fresh thinking in many of

1. DAC 1969 Review, p. 177
2. For a discussion of the "small country effect", see DAC 1969 Review, p. 178.
3. This point is strongly, although somewhat indirectly put forward in the Jackson Report, UN, Geneva 1969.

the UN bodies. Excessive bureaucratization is probably partly a result of the size of the UN and several of its specialized agencies, partly a defence mechanism against the constant pressures on the organizations from all their member countries.

An argument for higher concentration of aid into multilateral channels is that it would then be easier to launch an efficient and coordinated effort towards development in the third world. Current evidence from multilateral institutions does not support this view. On the contrary, competition and duplication of effort seem to be common features also in multilateral aid. Thus, for example, there is fierce competition between the ILO and FAO with regard to promotion of cooperatives, and between ILO and UNIDO on matters pertaining to industrialization and labor. Surveys of UN assistance programs point out that the representatives of one agency operating in a u-country, are uninformed about the endeavors of the others, and sometimes even work at cross purposes.[1] Similarly, duplicated activities are reported for the IBRD and the Regional Development Banks, with regard to country survey for example.[2] With the proliferation of regional development banking institutions, coordination is likely to grow still more difficult.

Criticism has been directed against the IBRD family, for undue concentration, during a long period of time, on infrastructural investments in transport, power, and in heavy industry,in the execution of which the IBRD acquired considerable excellence, and neglect of agriculture, education and other social aspects of development. This is changing, however, and the Group is increasingly becoming more alround development oriented, by stepping into several new areas of activity.[3]

The multilateral aid organs have in general not been innovators, or promotors of new ideas. With few exceptions, they have rather been followers, picking up innovations from others. But then, the same criticism can be directed towards many bilateral donors.

In conclusion, it is apparent, that both multilateral and bilateral aid practices contain severe deficiencies. With the present multilateral set-up, the argument that more aid should be multilaterally channelled, does not sound particularly convincing.

1. See for instance Evaluation of UN Programs in Iran, E/4626, March 1969, Stencil.
2. See DAC 1968 Review, p. 83.
3. See R MacNamara's addresses to The Board of Governors, dated September 29, 1969, and to The Columbia University Conference, dated February 20, 1970.

The peculiarities of technical assistance

Technical assistance has experienced a very fast growth in value, rising from some 12% of the total official disbursements in the early 60's to more than 20% in recent years. This, no doubt, is mainly a result of fast rising professional salaries in i-countries. Technical assistance contains the most various aspects of resource transfer, but common to them all is the human element. This is where all experts and volunteers, as well as u-country students on scholarships come into the picture. Between 1966 and 1970, more than 100,000 experts and volunteers have been working at any one point of time under public technical assistance programs in u-countries. Simultaneously, between 70 and 80,000 students and trainees from u-countries have been pursuing studies under assistance financed schemes. France, in particular, has concentrated on this type of "human transfers". It has accounted for some 40% of all experts and volunteers and 20-25% of students and trainees.[1]

Although technical assistance is ordinarily provided on a grant basis, it involves considerable costs to the recipient. As a rule, the recipient has to cover a bundle of local costs, including housing, transport etc. for the expert. Thus, recipient costs have been estimated as equal to or sometimes even higher than donor costs in many technical assistance programs.[2] Furthermore, the practice of requiring domestic counterparts to the experts from abroad, often creates problems to the recipient, because it ties up the scarce administrative or technical talent available in the u-country.

Undoubtedly, a number of valuable ideas have been transmitted to u-countries under technical assistance programs. Temporary shortages of qualified personnel in a particular field, constituting the effective development bottleneck, have on many occasions been overcome with the help of technical assistance personnel. Nevertheless, severe criticism has been directed towards the technical assistance practices.

First of all, doubts have been raised about the quality and appropriateness of experts provided to u-countries under technical assistance schemes.[3] It is often the individual, who has failed at home, that takes aid assignments abroad. Top quality personnel is usually not provided with sufficient incentives and career opportunities, to be tempted by the temporary assignments

1. DAC 1969 and 1971 Review.
2. Pearson Report, Praeger, New York 1969, p. 182.
3. See for instance G Myrdal: Asian Drama, Pantheon, New York 1968, p. 639, or D Seers: Why visiting economists fail, Journal of Political Economy 1962, p. 327.

offered. The short period of most field jobs, usually 1-3 years, is a result of donor agency policy, aimed at ameliorating the social insecurity felt by experts, if they remain abroad for too long periods of time. The result of these short term job arrangements is an administratively cumbersome shuffle of people, whose benefits are open to question, in view of the difficulties to adapt and work efficiently during a short period of time in a culturally and socially unfamiliar environment.[1] Most experts tend to regard their aid assignment as a temporary break only in their i-country career. Consequently, they seldom devote much effort to the retraining, which would be needed to make them well-equipped for the assistance job. Instead, they ordinarily try, as best as they can, to apply their i-country knowledge and experiences on the conditions in u-countries, with less than fortunate results in some cases. When the expert returns home and goes back to his old job, the experiences which he has gained during his period abroad, is frequently lost to the aid agency.

What has been said about experts, is valid, by and large, also for students from u-countries, going abroad for training. The procedures are cumbersome, the temporary adaptation difficult, the training often irrelevant to their home conditions[2], and the arrangements are highly conducive to an increased brain drain.

A further, somewhat politically flavored problem, connected with the temporary transfer of experts, arises because the individuals sent on missions, often have unclearly specified functions. Most assignments are designed as advisors' jobs. Recipients' preference for advisors rather than outright executives is probably explained by the wish to guard their newly won independence, their awareness that the experts' knowledge may sometimes be irrelevant or even dangerous in the underdeveloped circumstances, and the conscious or unconscious practice to use technical assistance experts as indirect salesmen of equipment or ideologies, which the donor wishes to disseminate.

Areas of activity

Table 2.7 above, provides only a partial break-down of assistance into various sectors of the economy. Capital assistance projects alone are so divided, while nothing more than sum totals are given for the other headings. The high

1. This point has been strongly emphasized by J Kaplan: The Challenge of Foreign Aid, Praeger, New York 1967.
2. D Seers: The Limitations of the special case, Bulletin of the Oxford Institute of Economics and Statistics, May 1963.

multilateral shares devoted to energy and transport are the result of the heavy concentration of the development banks in these fields. The bilateral sector emphasis is not fully apparent from table 2. 7, because only 30% of the total is shown in the broken-down form.

Choice of the area of activity is a difficult donor task. The emphasis of donors has been changing over the years, according to prevalent fashions, derived from fragmentary insights into development. Thus, the stress in aid endeavors has shifted from plain budgetary support, over machinery and equipment, into technical assistance and infrastructure. More recently, aid efforts, have tended to concentrate on agriculture, education and population control[1], while the change presently taking place is towards employment creation, and measures to even out income and wealth distribution. Retrospectively, these erratic shifts may seem surprising. Arthur Lewis' Theory of Economic Growth, published already in 1955, did point to the comprehensiveness of the development process, and to the interdependence between its various components. In the practice of aid extension, however, it has been easier to work with much simpler approaches, and to regard development as crucially dependent on only a few factors at a time, on which the aid efforts could be focused. It has not been difficult for the aid administrators to find theoretical support for these oversimplified, and apparently incorrect approaches to the development process.[2]

The inadequacy of a theoretical framework, specifically fitted to suit the conditions of underdeveloped economies, has encouraged the tendency to use i-country concepts and inter-relations in designing the development strategies of u-countries. The development plans, mostly formulated on the urge or with the assistance of aid donors, often take a view of development as conceived in i-countries. A M Kamarck has given an excellent critique of development planning, with special reference to Africa.[3] Those who work with the plans, are without exception foreigners or foreign trained. The emphasis is on mathematical elegance and consistency, rather than on realism. The underlying statistics are regularly very unreliable or even non-existent. Copying i-countries, the planners over-emphasize investment, without giving much

1. See J Kaplan: The challenge of foreign aid, Praeger, New York 1967, and Pearson Report, Praeger, New York 1969, p. 169.
2. Paul Streeten provides a fuller discussion of this tendency among economists to concentrate on a one-factor development analysis. See K Martin-J Knapp, editors: The teaching of development economics, Frank Cass & Co London 1966, p. 57-59.
3. A M Kamarck: The economics of African development, Praeger, New York 1967, chapter 10.

thought to the problems in its generation, nor in its detailed allocation. Social conditions and their impact on the economy, have usually not been given sufficient consideration in the national plan, although in many cases the social structure may have constituted the effective constraint both to growth and to increased savings and investment volume. Such development plans have then been the basis for decisions on aid allocations. In these circumstances, it is rather obvious that the predominant aid requirement appears to be abundant capital imports, to finance an economic structure similar to that prevailing in i-countries. Only in exceptional cases do these plan documents penetrate the problem further by enquiring whether parallells with i-countries' development patterns are relevant, or whether the structure which is built up, will be conducive to further development. In H Chenery's words: Sometimes we recommend u-countries to import more Cadillacs because the US, which is more developed, has more Cadillacs per 1000 of inhabitants.[1]

Aid giving is a two-sided political process. The habit to imitate the i-country development patterns and technology is to a degree a result of lacking imagination and a self-interest among donors. But it is frequently also due to the influential vested interests of the ruling minority in the receiving country. Aid for installing urban electric supply or drinking water is favored, because it mainly benefits the urban rich. Expansion of health and educational facilities along i-country patterns, will tend to distort in the same direction, because the services of such institutions are so expensive that an underdeveloped country cannot afford to provide them to more than a minority of its population. Industrialization will have a similar effect if the factories concentrate on production of tractors and washing machines rather than improved ox-carts and animal driven iron ploughs. An alteration in the direction of aid supported activities, therefore, presupposes a change of mind, not only with the donors, but in many countries also with the recipient governments.

Project versus program aid

Aside from being tied to purchases in the donor country, most aid is, in addition, given on the condition that it is spent for a particular, definite purpose. As appears from table 2.7 about half of the bilateral, and practically all multilateral commitments are for specific projects, either as technical or capital assistance. The remaining titles, non-project assistance and export credits, are to a high extent also given for specific purpose only. A large proportion of the two has to be spent on commodity shipments, mainly surplus

1. Lecture delivered in Montreal, April 3, 1970.

food from the US. Such shipments were valued at above $ 1 billion between 1967 and 1970.[1] Another part of the non-project assistance is given for rescheduling old loans. DAC has estimated that only 20% of the amounts committed consist of so called program assistance[2], which the recipient country can use for any purpose of its choice, within the framework of its overall development plan.

A long discussion has been going on concerning the advantages of project- or purpose-tied aid versus program assistance. The preference among donors, shared by multilateral agencies, for project assistance, is complex. It includes a wish to decide on the specific use of aid, a desire to be identified, expertise in a particular field, and the relative simplicity in controlling and supervising the utilization of project tied funds.

Towards the end of the 50's, an increasing critique of the project approach was mounted. Predominant reliance on project aid favors countries, whose administrations are proficient in project formulation, and even these countries after some time tend to run out of suitable ventures. Donors have used the project approach to promote their particular pet ventures, with insufficient regard to the overall development needs of the recipient countries.

Another problem with project aid has to do with tying. The practice of double tying of aid, e. g. both to donor country, and to a specific purpose, is undoubtedly increasing the excess price of aid, discussed in section 2. 3. If purchases are constricted not only to a certain country, but also to a specific commodity, the recipient is left with much less choice, and the likelihood that he is forced to buy from high cost or monopolistic market sources, is increased.

Donors' tendency to view aid as a way to overcome the recipient's foreign exchange gap, explains the common practice that project aid should only finance the foreign exchange part of the total project costs. The result has been that recipients, in an attempt to maximize assistance flows, unduly concentrate on ventures with a high import content, or opt for imports, even if local supplies could be provided. This tendency is likely to harm the growth of local production and to increase the dependence of the recipient economy on imports, thus in itself aggravating the exchange bottleneck. Excessive concentration on purpose and project tied assistance, has in fact caused

1. Resources for the Developing World, OECD, Paris 1970, p. 206, DAC 1971 Review.
2. DAC 1969 Review, p. 146.

severe problems in some u-countries. Industrial and other ventures, often established with aid finance, have not been able to run at full capacity, because scarcity of foreign exchange has prevented the imports needed for production. Brazil, India and Pakistan are among the countries, which have acutely suffered from this difficulty.[1]

The advantages of program assistance suggest themselves from the above critique of project aid. Program assistance is particularly important, and frequently used to finance imports of raw materials and spare parts, needed to keep the recently established industries of u-countries at full capacity production. Furtheron, such aid does away with the sometimes unnecessarily detailed donor supervision of individual projects. Instead, donors or donor consortia can concentrate their scrutiny on the recipient country's development plan, and the policies implied therein. Program aid, therefore, provides the donor with important leverages with regard to planning and key policy formulation in the economic and social fields.

In practice, these leverages have proved to be a mixed blessing. As was pointed out by Bird and Hirschman[2], attempts to influence important policy issues in u-countries, have frequently met with strong opposition, and caused severe donor-recipient conflicts.[3] The leverage problem has mainly afflicted the large donors. Exertion of influence with the help of program aid may have been relevant for the US and other sizable contributors of assistance. For small donor countries, which decide to supply program aid, the choice rather appears to be to accept the plan and policy program of a recipient country, as they stand, and provide program support, or to discontinue program aid altogether. There is, of course, nothing preventing big donors to adopt a similar attitude.

It would be incorrect to state generally that program aid is superior to project aid or vice versa. With prevailing exchange constraints plaguing the execution of development work in many countries, much more aid finance, untied by purpose could probably be usefully absorbed by a number of countries. But a strong case can be made for continuation of project aid too, on the other hand. The project approach seems better suited for countries, whose government have not yet acquired the ability to formulate and execute national development plans. Many African countries fall into this category. Project aid also seems suitable in cases where the donor is not satisfied with

1. I Little - T Scitovsky - M Scott: Industry and trade in some developing countries, Oxford University Press, London 1970.
2. A O Hirschman and R M Bird: Foreign Aid, a Critique and a Proposal, Essays in International Finance, No. 69, July 1968, Princeton University, Princeton.
3. See also T Hayter: Aid as imperialism, Pelican, London 1971.

the general objectives of the recipient country's development program, and wants to ensure that the resources provided by him are used only for ends which he can whole-heartedly support. Finally, the project form seems indispensable, when assistance is concerned with innovations, transfer of ideas, technology or similar. It is difficult to envisage the specific promotion of, say, family planning or animal husbandry genetics, with the help of program assistance. Currently, the donor's choice between project and program aid seems to be mainly a matter of trust. If the donor trusts the reliability and competence of the recipient, he has no reason for hesitation in extending most of the aid resources as program support. In the early 70's, apparently, this trust is generally lacking.

Taking a broader view, and disregarding current arrangements, one might speculate about the optimal role that aid could play, in order to contribute to u-countries' development. Is its main function to provide capital for investment? It hardly seems so, if we reflect on the ability of any country to mobilize internal savings, when confronted with an external threat, and, on the other hand the fact that capital transferred through aid tends to decrease domestic savings.[1] Is it primarily to widen the exchange bottleneck? Again, there is some doubt to this proposition, for, as we have pointed out above, aid, as currently practised, might rather aggravate the exchange scarcity in many instances, and in any case, the exchange need will be dependent to a high degree on the development strategy chosen. Is it to bring in from outside, and help to create locally, larger amounts of knowledge and experience? Yes, probably, but only if it is the relevant one. Anticipating the discussion at the end of chapter 4, it seems to me that a very valuable role which aid could play is to survey and diagnose the main development obstacles in u-countries, in a much more detailed way than through the rough macro-economic gap approaches, and with much less etnocentric ties, and then to help in designing specific solutions to some of them, to suit the economic, social and political circumstances in each country. This ideal direction of the aid work, apparently calls for a certain concentration of aid resources into individual projects.

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1. See discussion and references in section 4. 2.

M. Radetzki
March 1972

CHAPTER 3. DEVELOPMENT AND ITS BOTTLENECKS

Contents

CHAPTER 3 DEVELOPMENT AND ITS BOTTLENECKS

3.1 The objectives of aid

While the purpose of this study is to analyze ways in which aid could best contribute to the recipient countries' development, it must be clarified at the outset of this chapter that the motives for which donors provide aid, are complex, and in no way limited to a desire to speed up progress in u-countries. One might perhaps differentiate between the bilateral aid doctrine, consisting of a mixture of self-interest and more altruistic motives for extending aid, and the multilateral doctrine, also adhered to by several of the smaller bilateral donors, which emphasizes the obligation of the advanced countries to assist the poor ones simply because of the demonstrated poverty of the latter.

Strategic, commercial, political and cultural are perhaps the principal self-interest motives of bilateral donors. The charitable aspect has certainly never been absent from US aid considerations. But it is clear that the sizable expansion of that country's foreign assistance in the late 50-s was a political response to the increasing Soviet activities in u-countries[1]. The strategic objective in US aid is perhaps clearest expressed in the huge allocations to South Vietnam, South Korea, Thailand and Taiwan, to strengthen these countries' ability to prevent the spread of Communism[2]. A mixture of self-interest motives has directed to dominant shares of British and French aid flows to their former colonies. An official French aid document specifically states the importance of France's "rayonnement", e.g. the diffusion of a civilization claiming universal validity, and the legitimate desire of France to implant its culture peacefully[3]. This appears to provide the rationale for France's stress on personnel-intensive technical assistance, discussed in the previous chapter. Commercial donor interests have taken various expressions, for instance the habit to supply aid only for activities in which the donor is efficient and experienced,[4] or, more outrightly, by tying aid supplies to the donor country. The commercial motive has perhaps been most evident in the assistance from countries like Japan or Italy, whose flows have had a heavy share of publicly guaranteed export credits, and from Western Germany, where official statements on aid policy have underlined the superiority of assistance which promotes German private investments and other commercial relations

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1. J. Kaplan: The challenge of foreign aid, Praeger, New York, 1967.
2. R. Mikesell: The economics of foreign aid, Weidenfelt & Nicholson, London 1968, p. 5.
3. Jeanney Report, dated Paris 12 March 1963, submitted to the French government on 18 July 1963.
4. This tends to concentrate aid to the modern sector. See also discussion in section 7.4, on the distortions that such donor practice is likely to lead to.

with the recipient countries.[1] Western German aid practice has in addition also been strongly concerned with attempts to prevent East Germany's diplomatic recognition. Little and Clifford provide an elegant summary for these donor self-interests by noting that the most privileged aid recipients have been either closely allied with France, have had a common border with communist nations or contained natural resources attractive to foreign business interests.[2]

What has been stated here must not be taken to mean that there is no concern with development of u-countries in the aid programs of the countries mentioned above. But while in these countries' assistance, development of recipients is one of many motives, and not necessarily the most important one, it is stated as the overriding objective, even if not the only one, in the multilateral assistance endeavors and in the aid flows from donors like Holland, Canada or the Scandinavian countries.[3] This of course does not preclude a difference between an altruistic policy, and a more self-interested practice, as our brief survey of Sweden's aid to India will show.[4]

The adherence to the development objective for aid in no way guarantees that the emerging program will be particularly development promoting. The reason for this might be a wrong understanding of the forces which promote development, or of the inter-connections between aid measures and development. The Swedish aid policy, for instance, has been strongly influenced by the missionary notion that Sweden's solutions of social or institutional problems possess some kind of superiority, and that therefore it is particularly valuable to give them a wide international spread. This country's somewhat uncritical emphasis on promoting cooperatives or vocational training, is an example of this tendency. IBRD-s earlier loan program could be criticized on similar grounds for its tendency to over-emphasize the importance of large-scale, physical infrastructural investment.

Even if today only a minor share of aid is given with the objective of promoting development, it is important to search for methods and approaches whereby its development effects could be clarified and increased. With more efficient approaches and allocation criteria at hand it might be possible to improve the development impact of aid from the predominantly altruistic donors. But, perhaps more importantly, it is likely that a clarification of the inter-connections between aid and development could strengthen those forces in the large bilateral donor countries, which would prefer to put more emphasis on development as the ultimate goal for which aid is given.

1. G. Ohlin: Foreign aid policies reconsidered, OECD, Paris 1966, p. 41.
2. I M D Little-J M Clifford: International aid, Allen & Unwin, London 1965, p. 66.
3. For a substantiation of this statement see for instance G Myrdal: The challenge of world poverty, Pantheon, New York 1970, p. 363.
4. See appendix after chapter 9.

The rest of this chapter will be devoted to a study of the contents of development, and of the forces which prevent it from proceeding faster. This will prepare the ground for the chapter which follows, where we will try to illuminate how aid could best be used in order to increase the development pace.

3.2 What is to be developed?

It is common to think of development as a continuous process of change in a number of conditions affecting human life. Varying conditions will play the key role at different development levels. Increasing human consumption and extension of life expectancy will be crucial changes at low development levels. When basic consumption needs have been satisfied and the average length of life approaches what is physically feasible, other changes may assume a higher priority. At this development level it is perhaps more important to bring about environmental improvements and amend health conditions during the normal human life span, rather than to increase consumption and extend the length of life still further. Our discussion of development will be simplified by narrowing the vista to poor countries. We will disregard the present or future development goals of prosperous countries, and concentrate attention on the conditions and expectations now prevailing in the majority of u-countries.

The definition of development has to be based on some value premises. At the level with which we are concerned, it appears reasonable to regard human miseries and basic deficiencies as the overriding problem, and consequently to look at development as a change to ameliorate such conditions. The measure we are seeking, therefore, should be one which can be generally accepted as an indicator of widespread improvement in human living conditions. The procedure will be to scrutinize critically a number of indicators which have been used as proxies for development, and eventually to present the somewhat more broad-based, although by necessity unprecise development measure, which will be used in the following chapters for assessing the impact of aid.

Economic development aspects

Changes in per capita GNP have since long been used to measure the progress of development in various types of societies. The deficiencies of this measure are well-known. First are the difficulties in measuring GNP properly in u-countries, where the subsistence sector is large. There is a wide tendency for national accounts to underestimate the contributions of the subsistence sector[1]. A consequence of this is that a country which invests more in the

1. S Kuznets: Modern Economic Growth, Yale Univ. Press, London 1966, p. 371.

modern sector, will show a faster expansion in GNP than another which concentrates its investment to the subsistence sector, although production may be rising at the same rate in the two. Second, the objective of development measurement is often to make international comparisons. Here, the GNP concept is particularly uncertain, because prevailing exchange rates do not always reflect corresponding differences in price levels between countries. Thus, the same average per capita GNP in two countries may represent varying real values of purchasing power. This problem becomes particularly evident when exchange rates are changed. Expressed in $, India's per capita GNP decreased from 95 to 80 between 1965 and 1966, as a result of the devaluation undertaken in the latter year.[1] It is true, on the other hand, that the weakness just described, does not affect time series comparisons in the same country. A third objection to per capita GNP as a measure of development is that it does not say anything about the distribution of income and wealth. In societies with a sharply uneven distribution of income, a relatively high GNP/capita figure may be an average which hides the poverty and under-development of perhaps a majority of the population. This would be particularly true for mineral-based enclave economies, like Liberia, Libya and Venzuela, whose GNP growth has, at least so far, not much affected living conditions outside the modern enclave. Another problem connected with uneven income distribution has to do with valuation. In countries with unequal income and wealth distribution, production of luxury goods, to satisfy the concentrated purchasing power of the well-to-do minority, will tend to be larger than in those with more equalized income spread. But while general improvement in living conditions in poor countries is primarily dependent on increased availability of basic necessities, GNP will grow irrespective of what is produced, as long as there is demand for it. A fourth deficiency of per capita GNP, is that it measures the economic development aspects only, while the word "development" certainly has a much broader scope. Social factors, which constitute important components of development, are completely left out from GNP-estimations.

In spite of the deficiencies enumerated here, and the numerous attempts to construct alternative development indicators, GNP/capita continues to be the most important and commonly used measure of development. The reason is that alternative indicators usually reflect a still narrower sector of reality than GNP. Furthermore, after long use, we are fairly familiar with the weaknesses of GNP measures, while newly constructed development indicators can have deficiencies not yet discovered or fully understood. Finally, as will be shown later[2], it seems as if growth in per capita GNP gives a fairly good

1. UN Statistical Yearbook 1969, p. 559.
2. See discussion on development indexes later in this section.

reflexion of broad-based economic, social and structural changes in most cases. In Myrdal's words, "within wide margins of uncertainty, the increase in national income per head can serve as an indication of the movement of the entire social system".[1]

After this brief scrutiny of GNP, I propose to proceed and have a look at a few alternative concepts, through which one might try to measure development. These concepts will, somewhat unprecisely be divided into economic, social and political ones.

Consumption, rather than GNP is sometimes used to determine a country's development level. Consumption data are preferred for at least two reasons. First, especially in poorer countries, consumption is a major component of welfare. Second, statistics on real consumption of certain goods and services are derived from more reliable sources, and avoid the difficulties in international comparisons of monetary entities. Usually consumption of one or a few key items only is then considered. A difficulty arises here from differences between consumption habits and relative prices. Potatoes may be preferred to wheat, and wine to beer either because they are thought to taste better or because they are cheaper. Consumption of steel could vary not because of variations in level of development, but as a result of differences in exports of steel-made machines in the inter-country or inter-temporal comparison. Consumption of electricity as a development indicator has been suggested to overcome most of the difficulties connected with GNP in the same use[2]. Thus no exchange problem would exist in inter-country comparisons. Data of generation are easily obtained and exact. In the absence of foreign trade, the amount generated should reflect the domestic know-how and technical progress needed in its production. As electricity enters the public as well as the private sectors, and both consumption and production, it should give a fair summary of the advancement in all four sectors. But one should of course be on guard with countries whose topography facilitates cheap generation, or whose primary commodity production, like that of aluminum, requires massive electricity inputs. On a more basic level, FAO has established adequacy criteria for per capita consumption of calories and proteins. In countries where the FAO standards have not yet been reached, increases in calorie and protein intake can be taken as an important development aim. Observing that reliable national accounts data exist for only 20-25 countries, Wilfred Beckerman[3] has tried to define the non-monetary indicators

1. G Myrdal: Asian Drama, Pantheon, New York 1968, p. 1868.
2. D C McClelland: Does education accelerate economic growth? Economic Development and Cultural Change, April 1966.
3. W Beckerman: International comparisons of real incomes, OECD, Paris 1966.

most closely correlated with consumption in the national accounts of these countries. The indicators finally chosen, namely meat and steel consumption, cement production, number of letters sent, and stock of radio receivers, telephones and road vehicles, all on per capita basis, were then used to make independent estimates of real per capita consumption in the countries whose national accounts were considered less reliable.

Production, rather than consumption figures are sometimes proposed as development indicators. Selected production indices are then used to estimate the rate of progress. Alternatively, the share of certain sectors in total production is taken as an indicator of development achieved. If development is seen as a gradual transition from dependence on agriculture to a higher degree of diversification and industrialization, then a fast increase in the production of non-agricultural sectors will be taken as a sign of advancement. The industrial sector, in particular, has long been thought of as an important contributor to the development process, in view of its educational and other positive external effects, and because investment has been thought to be facilitated by a strong industrial base, providing domestically produced investment goods. The emphasis here is not so much on the actual development level, as on prospects for future expansion. Sometimes, economic development is seen as a result of expansion of a few leading industries, like steel or manufacturing[1], which are thought to have particularly large repercussions on the rest of the economy.

This last notion is akin to the more general one where the development level is ascertained from the overall structure and flexibility of the economy and its institutions. The degree of development is then judged by the efficiency and adaptability to changing conditions of such entities as the financial institutions in generating savings and channelling finance, the fiscal system and its ability to collect taxes, or the government administration, its development-mindedness and ability to formulate and pursue national development plans. The changes leading to a flexible and efficient institutional pattern of this kind, are then seen as a key feature in the development process, and a necessary precondition for economic progress. The institutional magnitudes, while highly important in the development process, are of course very difficult both to quantify and to measure, certainly much more so than the GNP estimations.

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1. See for instance W W Rostow: The take-off into self-sustained growth, Economic Journal, March 1956, or N Kaldor: Causes of the slow rate of growth of the UK, Inaugural lecture, Cambridge 1960.

Social and political development aspects

In my knowledge there does not exist a social development indicator of a generality corresponding to the GNP-concept. There seems to be much less agreement on the definition and contents of social development, as compared to the economic field.[1] A useful distinction might be made between indicators reflecting the volume of consumption of items associated with social progress, and indicators measuring the degree of inequality and rigidity of the social structure. The former would usually be closely correlated with economic growth, while no self-evident association exists between GNP expansion and distributional indicators. In view of the paucity of data in u-countries on income- and wealth-distribution, it is of interest to consider to what extent changes in distribution could be reflected in the indicators of "social consumption".

Housing standards, expressed for instance as the number of inhabitants per available residential room, is a commonly used social development indicator. Obviously it does not tell much about distribution. Health conditions is another social indicator, which can be quantified, for instance, by measuring the amount of per capita health service consumption, e. g. number of doctors, hospital beds etc. Alternatively, to overcome the problem of differences in quality, infant mortality could be used as the measuring unit. By concentrating attention on life expectancy at birth, as a third alternative, one would catch not only the amount and quality of health services, but a good deal of the nutrition standards as well, because nutrition should have a repercussion on the longevity of life. Another advantage with the life-expectancy measure is that if it experiences sizable changes, these could, for physical reasons, hardly be concentrated to limited population strata. Current life expectancy figures in u-countries stand at about 50 years, after a very fast increase during the post-war period.[2] When the average life-span is prolonged by one decade or more, the change must have its repercussions on the majority of the population body, implying some evening out of earlier differences between various population groups. Underlying this will be a more general improvement in some sense of living conditions among broad population strata. Education is another factor often used as a measure of social advancement. Primary school enrolment gives an idea of the spread of education in the younger portion of the population body. An education system which reaches a

1. Compare for instance the disparity of social indicators presented as between I Adelman-C Morris: Society, Politics and Economic Development, Johns Hopkins, Baltimore 1967, D V McGranahan et. al: Contents and measurement of socio-economic development, UNRISD, Geneva, 1970, and the report of the UN Expert Group Meeting on Social Policy and Planning, Stockholm, September 10, 1969.
2. Pearson Report, Praeger, New York 1969, p. 40.

major share of the school age population will plausibly guarantee some extent of equalization in the society, as a fair amount of educational background is a precondition for meaningful participation in social, political or economic development processes. The quality of primary education, however, is often highly deficient. For many u-countries drop-out rates during the first 4-5 years of schooling have been estimated at above 50%.[1] Unavailability of reading material in the country-side further limits the usefulness of literacy, and many of the early school-leavers soon lose the knowledge they have acquired. All this limits the relevance of primary school enrolment as an important social development indicator. Alternative educational indicators could be based on enrolment figures or capacities in secondary and unversity education, or on literacy rates for a country's entire population.

With increasing awareness of the very incomplete utilization of u-countries' labor resources, employment creation has come to be regarded as an important part of social development. By ensuring an income to those without a job, employment creation should help in improving the conditions of the poor population strata, and thus increase the degree of equality.

While liquidation of rigid social structures, and an evening out of what is regarded as excessive income and wealth disparities between different groups in society, is considered a most important issue in the social development of u-countries, not much material is available, which could ascertain the current conditions or changes in these respects. Only a few reliable studies have been undertaken of the size distribution of income in u-countries. Available estimates are usually built up from a patchwork of fragmentary data, derived from a number of sources and, as a rule unable to catch the very high and very low income groups in their entirety. Still less information is available on the distribution of wealth, although it is thought to be more unequal than income distribution.[2]

Paucity of data, and, perhaps, more fundamentally, lack of a general agreement on how inequality should be measured[3], increase the importance of the

1. See P Coombs: The World Educational Crisis, London 1968, Chapter 2.
2. N Baster: Distribution of income and economic growth, UNRISD, Geneva 1970.
3. I Adelman and C Morris provide no less than seven different measures of income distribution, namely 1. The concentration (GINI) coefficient, 2. The share of income of the poorest 20%, 3. The share of income of the poorest 60%, 4. The share of income of the middle quintile, 5. The share of income of the richest 5%, 6. The share of income of the richest 20%, and 7. An index of the point at which the income distribution shifts its slope from less than unity to greater than unity. Each of these measures will render distinctly different results, when applied on a set of cross country data or on time series data for one country. See their An anatomy of patterns of income distribution in developing nations, Grant AID/csd-2236 Northwestern University, February 12, 1971, stencil, p. 15-16. For further discussion of measures of income distribution, see R Weisskoff: Income distribution and economic growth in Puerto Rico, Argentina and Mexico, Review of Income and Wealth, December 1970.

indirect distributional evidence emerging from social indicators like life expectancy, school enrolment ratios or more intensive utilization of the labor force.

Compared with social development, where there is at least agreement on the direction of change for a number of variables in a positive development process, it is much more difficult to find a consensus about the significant features of political change, leading to higher political development levels. Sometimes political development is characterized by a gradual transformation of the political system from autocracy to increasing popular participation. A measure of the political development level could then be based on such conditions as the ability for the common man to participate in political decisions at different levels, the functioning of political parties, the judicial system, the liberty of news media, national integration etc.[1] A rather different approach takes the degree of a nation's independence and emancipation from earlier colonial rule as the criterion on which the political development level is determined. Efforts to replace expatriates with skilled nationals in all key administrative and management positions, economic diversification, decreasing the country's dependence on a few trade partners, and an independent foreign policy can then be seen as expressions of political development.[2] Following Myrdal's soft-state concept[3], political development can be regarded as an increasing ability for the political leadership to mobilize resources. In more general terms, the political development level could be determined by the political system's capacity to survive, while achieving important social goals.[4] The focus here seems to be on the ability of the political structure to pursue and facilitate the achievement of economic and social objectives.

Political development will not be referred to henceforth as an indicator of development. This is both for the lack of agreement on what constitutes the political development path,and because data are unavailable to describe the processes enumerated above. It seems, furtheron, that the changes in human living conditions, which we desire to mirror, are adequately reflected in the economic, social and socio-distributional variables which have been discussed. Finally,the fourth political development definition, concentrating on the political system's facilitation of social and economic development, if properly measured should be highly correlated with economic and social development, and would hardly add anything new to the contents of development. We will come back, however, to the development hampering effects of political systems, in the forthcoming discussion on development constraints.

1. See C Wolf: The political effects of economic progress, Economic Development and Cultural Change, October 1965.
2. These political self-determination manifestations can be studied in a large number of u-countries. See for instance Tanzania's second 5 year plan, Dar es Salaam 1969.
3. See Asian Drama, Pantheon, New York 1968, p. 66.
4. See G Hydén: Political development in rural Tanzania, Uniskol, Lund, Sweden, 1968, chapter 1.

Development indexes

Dissatisfaction with the narrowness of the various development indicators enumerated so far, has led to several efforts to construct comprehensive development indexes. Two recent attempts in this direction will now be surveyed.

The first development index to be taken up here, emerges from the Adelman-Morris study, cited above[1]. The authors define and quantify 41 economic, social and political indicators, and use them for the classification of 74 u-countries. The results form the basis for a cross country analysis of inter-relationships between economic, social and political conditions. The data collected are from around 1960, and the work is carried through with the help of factor analysis.

When relating the GNP/capita figures to 24 social and political variables, the authors are able to discern four factors, composed of these variables, which "explain" no less than 70% of the GNP/capita country variations. Slightly more than half of the total GNP/capita variance is "explained" by the first of the four factors, which is characterized as representing "the processes of change in attitudes and institutions associated with the break-down of traditional social organization." The scores obtained by each country for this factor are used as an index, according to which a country ranking can be made. To clarify the forces underlying the index, it is necessary to have a brief look at the ten indicators from which this factor is derived.

Size of traditional agricultural sector is the first variable underlying the factor. This variable classifies the countries into five groups according to the proportion of their total population in the subsistence sector. Countries in the highest group have less than 25% of their population in subsistence agriculture, while those in the lowest show a figure of more than 80%. Extent of dualism is another variable involved. This measure is related to the previous one, and divides the countries into four groups in accordance to the importance of the "modern" or exchange sector in the economy. The more important the exchange sector, the higher the degree of dualism, and the higher the group in which the country is placed. Where the modern sector is dominated by foreigners, the country is placed in a somewhat lower group. Extent of urbanization is the third measure. Countries are divided into five groups according to the proportion of their population living in urban areas which contain more than 20,000 people. The variable character of basic social organization is used to classify countries according to whether the immediate family group, the extended family or the tribe predominates as the social unit. Importance of indigenous middle class is a measure of the proportion of certain

1. I Adelman-C Morris: Society, politics and economic development, Johns Hopkins, Baltimore 1967.

occupations in the total indigenous population. Countries in the first group have more than 20% of their active male population in commerce, banking, administration etc. In the countries of the fifth group, the corresponding figure is less than 10%. Three levels of extent of social mobility are defined on the basis of school enrolment, importance of indigenous middle class and the presence or absence of prohibitive cultural or ethnic barriers to upward social mobility. The variable extent of literacy divides the countries into four groups, with the highest having attained a 65% literacy level and the lowest with a rate below 16%. Extent of mass communication is another social variable underlying the factor derived by Adelman. This variable is an index of daily newspaper circulation and number of radio receivers per thousand of population, and countries are divided into four groups according to their index figures. Crude fertility rate, finally, is used to classify the countries in four groups, with the highest having rates of less than 30 o/oo and the lowest showing a crude fertility of 50 o/oo and above.

According to the authors, the configuration of country attributes enumerated above, tallies fairly well with what is commonly understood by "development". They further state that the technique of factor analysis ensures that the factor scores obtained for each country for the factor dealt with here, will automatically provide a criterion for the selection and weighting of the various country attributes in the construction of a composite index of development.[1]

The authors divide the 74 countries studied, into three groups, with the lower group showing factor scores below -0.45 and the higher group above 0.65. The results are presented in table 3.1, where the 1961 GNP/capita figures are given for comparison.

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1. Adelman-Morris, Society, Politics and Economic Development, op. cit., p. 168.

Table 3.1. Grouping of Countries by Factor Scores on Factor Representing Level of Socioeconomic Development §

Lowest Group			Intermediate Group			Highest Group		
Country	Factor Score below - 0.45	Per Cap GNP 1961 ($)	Country	Factor Score	Per Cap GNP 1961 ($)	Country	Factor Score above +0.65	Per Cap GNP 1961 ($)
Afghanistan	-1.02	70	Algeria	.18	281	Argentina	1.91	379
Cambodia	- .55	101	Bolivia	-.35	113	Brazil	.79	186
Cameroun	-1.34	86	Burma	-.41	58	Chile	1.39	453
Chad	-1.70	40	Ceylon	.35	137	Colombia	.66	283
Dahomey	-1.54	40	Ecuador	.54	182	Costa Rica	.78	344
Ethiopia	-.99	44	Ghana	-.01	199	Cyprus	1.08	416
Gabon	- .83	200	Guatemala	.35	175	Dominican Rep.	.81	218
Guinea	-1.47	60	Honduras	.26	207	El Salvador	.71	220
Ivory Coast	-.98	184	India	-.28	80	Greece	1.47	431
Kenya	- .53	80	Indonesia	-.40	83	Israel	1.77	814
Laos	-1.06	60	Iran	.09	211	Jamaica	1.06	436
Liberia	-1.01	159	Iraq	-.03	194	Japan	1.63	502
Libya	- .68	204	Jordan	.16	184	Lebanon	1.44	411
Malagasy	-1.31	75	Pakistan	-.08	79	Mexico	.75	313
Malawi	-1.57	40	Philippines	.56	117	Nicargua	.88	213
Morocco	- .57	150	Rhodesia	.14	215	Panama	.84	416
Nepal	-1.36	53	South Africa	.62	427	Paraguay	.97	130
Niger	-1.86	40	Surinam	.54	310	Peru	.68	181
Nigeria	- .91	82	Syria	.57	152	South Korea	.85	73
Senegal	- .52	175	Thailand	.50	97	Taiwan	1.05	145
Sierra Leone	-1.39	70	Tunisia	-.18	161	Trinidad	1.15	594
Somali Rep.	-1.35	40				Turkey	.88	193
South Vietnam	- .49	89				U.A.R.	.73	120
Sudan	- .64	94				Uruguay	1.59	450
Tanganyika	-1.22	59				Venezuela	1.37	692
Uganda	-1.22	68						
Yemen	-1.35	90						
Zambia	- .89	170						

§See text for details.

Source: I Adelman-C Morris: Society, Politics and Economic Development, op. cit., p. 170.

A different approach in formulating a development index has been used in a study by the UN Research institute for Social Development.[1] The first step in the elaboration of UNRISD-s development index has been to define a number of social and economic indicators, which distinguish countries at differnt levels of development and which are highly inter-correlated among themselves. 18 indicators were thus identified, and data concerning the conditions around 1960 were collected. Index figures have been worked out for all countries where data were available on ten or more indicators. The indicators are presented in column 1 of table 3.2. The next step was to adjust the per capita indicators to the population structure. The idea behind this is simple. If for instance a high

1. D V McGranahan et el: Contents and measurement of socio-economic development, UNRISD, Geneva 1970.

proportion of the population is under the age of 15, protein consumption will be smaller to ensure a certain nutrition level, than if the proportion of grown-ups is higher. These adjustments are shown in columns 2-4 of table 3.2. Appropriat

Table 3.2. List of indicators used in construction of index, giving adjustments for age-structure and transformation, if any

Column 1	Column 2 - 4			Column 5
Indicator	Adult-equivalents for age-group (in years)			Transformation
	<15	15-64	65+	
Expectation of life at birth	-	-	-	Demi-exponential[1]
Population in localities of 20,000 and over as per cent of total population	-	-	-	Demi-logarithmic[2]
Consumption of animal protein, per capita, per day	1/2	1	2/3	Demi-logarithmic
Combined primary and secondary enrolment as per cent of age group 5-19	-	-	-	-
Vocational enrolment as per cent of age group 15-19	-	-	-	Logarithmic
Average number of persons per room	1/2	1	1	-
Newspaper ('daily general interest') circulation per 1000 population	1/3	1	1	Demi-logarithmic
Telephones per 100,000 population	1/3	1	1	Logarithmic
Radio receivers per 1000 population	1/3	1	1	Demi-logarithmic
Per cent of economically active population in electricity, gas, water, sanitary services, transport, storage and communications (ISCO divisions 5, 7)	-	- -	-	-
Agricultural production per male agricultural worker (ISIC division 0) in 1960 US $	-	-	-	Logarithmic
Adult male labour in agriculture as per cent of total male labour (ISCO division 0)	-	-	-	-
Electricity consumption, kwh. per capita	1/2	1	2/3	Logarithmic
Steel consumption, kg. per capita	1/2	1	2/3	Logarithmic
Energy consumption, kg. of coal equivalent per capita	1/2	1	2/3	Logarithmic
GDP derived from manufacturing as per cent of total GDP(ISIC divisions 2-3)	-	-	-	Demi-Logarithmic
Foreign trade (sum of imports and exports) per capita, in 1960 US$	1/2	1	2/3	Logarithmic
Salaried and wage earners as per cent of total economically active population	-	-	-	Demi-exponential

1. The demi-exponential transformation values of an indicator are obtained by averaging the arithmetic and the exponential values (on 0-100 scales) of that indicator. The values are more or less the same as those obtained by using "square" transformation.

2. The demi-logarithmic transformation of an indicator are obtained by averaging the arithmetic and the logarithmic values (on 0-100 scales) of that indicator. The values are more or less the same as those obtained by using "square root" transformation.

Source: D V McGranahan et al, op. cit., p. 149.

scales had to be worked out, to suit the various types of variables. It would for instance clearly be incorrect to regard an increase of yearly per capita electricity consumption by 100 from 200 to 300 kwh as a development equally important to a change of equal magnitude from 2,000 to 2,100 kwh. In this case a logarithmic scale appears more reasonable, so that the increase of electricity consumption at the higher level should amount to 1,000 kwh, to be equally important as the change at the low level. The scale transformations which were undertaken, are shown in column 5 of table 3.2.

A central idea behind the UNRISD development index is that the various facets of development proceed in a parallel manner. Development is seen as the movement of a cluster of closely interrelated variables. The weight given to a variable was consequently made dependent on its correlation with the development index. As this correlation can differ at different development levels, the weights of some variables had to be changed accordingly at different heights of the scale. It is admitted that a certain circularity is involved in the argument. Weights of variables cannot be determined until the index values are known, but the weights are needed for the construction of the index. The problem was resolved by a method of successive approximations, through which both the index figures and the weights of variables were approached. Table 3.3 gives the development index figure for 58 countries, with per capita GNP for comparison.

In assessing the results of the two indexes in ranking countries, it may first be noted that they both show a high correlation with per capita GNP-s. In the Adelman-Morris index, r=0.73. In the UNRISD index r is as high as 0.89 for the whole sample, but decreases to 0.74, when only u-countries (index below 50) are considered. For u-countries, in other words, both indexes "explain" about 55% of per capita GNP variations. The correlation naturally does not tell anything about the direction of causality. Rather, it should be seen as an indication that growth of per capita GNP is commonly associated with fairly broad-based social and structural changes. Both indexes seem to provide a more reasonable ranking to some countries than per capita GNP-s. This is true for instance for UAR and South Korea, which, although having low GNPs, have been ranked relatively high by the indexes, because they are complex societies, with substantial highly developed sectors. The opposite holds for Venezuela and Libya, whose GNP-s have been blown up by oil export incomes from isolated enclaves, with little repercussion, so far, on general conditions in the two countries.

Table 3.3 UNRISD's Development Index and per capita GNP, 1960, for 58 countries

Country	Development Index	P. C. GNP 1959/61
U. S. A.	111	2828
United Kingdom	104	1369
Canada	103	2092
New Zealand	103	1515
Sweden	103	1696
Australia	98	1542
Norway	98	1274
Belgium	96	1247
Netherlands	96	965
Switzerland	96	1591
Denmark	95	1300
Germany, Fed. Rep.	94	1327
France	88	1303
Austria	86	867
Finland	85	1085
Israel	81	1220
Hungary	75	-
Hong Kong	74	-
Ireland	74	653
Japan	74	463
Uruguay	74	494
Argentina	73	551
Poland	73	-
Italy	71	684
Venezuela	63	958
South Africa	62	453
Chile	61	604
Spain	58	344
Greece	52	432
Portugal	52	300
Yugoslavia	51	-
Costa Rica	50	352
Panama	48	385
China (Taiwan)	46	149
Colombia	46	253
Jamaica	45	396
Mexico	44	348
Brazil	38	267
Peru	37	198
U. A. R.	34	158
El Salvador	32	231
Jordan	32	196
Nicargua	32	238
Syria	32	-
Ecuador	31	202
Dominican Rep.	30	228
Libya	29	283
Paraguay	29	160
Turkey	27	202
Iran	26	210
Morocco	26	154
Korea, South	25	149
Philippines	24	206
Honduras	23	209
Guatemala	21	269
Ceylon	18	139
Ghana	16	195
Thailand	10	96

Countries having the same value on the Development Index are arranged in alphabetical order.
Source: D V McGranahan, et al, op. cit., p. 151-152.

Both indexes are based on cross country data. Checking with the help of time series analysis would be needed to confirm whether development in an individual country really proceeds over time according to the path suggested by the index. Current lack of data prevents a full-fledged time series analysis at the present time. A comparison of the UNRISD results for 1960 with an incomplete set of data for 1950 confirms the pattern of development of the UNRISD index, with the exception for education, which seems to have expanded much faster than expected at low development levels during the decade.

Neither of the two development indexes involves any political variables in the mix from which they are derived. A weakness of the Adelman-Morris index is that it is mainly based on social variables, and does not consider any economic indicators at all. Furtheron, the definition of the variables used, and the data from which they were quantified, seem to rest on a somewhat uncertain ground. A cursory glance at the 18 variables in table 2, from which the UNRISD index is derived, reveals a dominance of economically biased indicators, and absence of any direct measures of equality.

The methods used in combining and giving weight to the variables composing the indexes, are not based on any established principles. Adelman and Morris themselves underline the fact that factor analysis, the tool used in their investigation, is at present a highly uncertain method, whose usefulness is at the borderline of science. Factor analysis, therefore, outlines only the crudest first map of a new domain. The trial and error implied in the successive approximations when deriving the weights of variables included in the UNRISD index, does not rest on any stable theoretical foundation either. In both indexes, great emphasis is placed on a close inter-dependence between the variables from which they are composed. Factor analysis has the purpose of combining into factors the most inter-correlated variables. And in the methodology of UNRISD, a guiding principle when selecting variables was that they be highly inter-dependent. The two indexes therefore view development as parallel changes in a group of distinct, but highly related conditions. One may question this approach. Development is a many-faceted process, and there is no logical necessity that its different parts should be related. By requiring a high inter-correlation, we risk to exclude variables which are not closely related to the rest, but which nevertheless represent important features in what is commonly understood as development.

A proposed definition of development

Each one of the various individual development indicators presented earlier, appears too narrow in scope, to be used in determining development levels, or the pace at which development progresses. The development indexes too, are somewhat unsatisfactory for this purpose, primarily because it is unclear what significance should be attached to the aggregation which they represent. The development definition to be used in this study will try to overcome both of these shortcomings. Development will be defined broadly by reference to a number of economic and social conditions of basic importance for human well-being. The levels and changes in each indicator used, will be noted on an individual basis, without attempts at aggregation into a unitary measure. The advantage of not aggregating is that we avoid the conceptual problems of weighting, and that we never lose any one indicator out of direct sight. The disadvantage is that we will not be able to determine uniquely either the level of development or its changes.

By accepting a degree of vagueness in the definition of development we can simplify the problem of deficient data. Quantification of the factors does not then have to be bound by hard and fast rules, but can be made somewhat dependent on the availability of statistical information. If, for instance, reliable literacy data are not available, the educational development level can be alternatively determined by reference to school enrolment, availability of teachers etc. Where it proves impossible to provide clear-cut quantitative data on a factor, qualitative judgments and relative rather than absolute changes can be used to draw conclusions about the on-going development process. Even then, we will sometimes come across situations where non-existent statistics will prevent a broader analysis, and where it will be necessary to revert back to the per capita GNP measure, and use it as a proxy for development.

The vagueness in the definition and the absence of uniformity in measuring the different factors, makes our development definition unsuitable for international comparisons of development levels. But its primary use in this study will not be for international comparisons, but in assessing the benefits from different types of foreign aid. In such assessments, a quantitative or qualitative evaluation of the positive and/or negative changes in each of the factors used, is likely to give a more specific impression of the comparative value of different aid activities, than an aggregated and apparently exact measure, hiding both the underlying statistical uncertainties and the individual components, which it has aggregated.

The factors comprised in the definition will be:

Consumption today and potential consumption in future. The amount of GNP which is not saved should give a fair indication of today's consumption levels. The amount of GNP which is invested can be regarded as a rough measure of the possibilities for expanding consumption in future. Total per capita GNP should thus give an idea of both the current and future ability to consume.

Employment. Available employment statistics usually register paid employment only, which commonly constitutes a minor share of total employment in u-countries. Evidence of employment conditions will therefore have to be sought outside the wage sector too, when determining the conditions or changes in the employment situation.

Nutrition. Rough data on this factor are available for most countries in the form of per capita availability of calories and proteins for consumption.

Health. Alternative measures to determine this factor have already been discussed. They include: Life expectancy, infant mortality, or amount of medical services available per capita.

Education. Here too, the measures to quantify the society's achievements have been discussed. Literacy rates, enrolment ratios at different levels, and availability of teachers and school facilities can be used to determine the level and changes in this factor.

Income distribution and conditions of the poor. Distribution is mirrored only indirectly, and, in my opinion, insufficiently, in some of the other factors of our development definition. It is therefore important to add some direct distributional measures. Unfortunately, data on distribution are scarce, and the two factors will have to be judged by qualitative or inductive evidence in most cases. Conditions of the poor is included to cross-check that an evening income distribution implies not only greater equality for the high income strata, but also augmenting the incomes of the poorest population layers.

In brief, our development definition is based on the per capita GNP indicator, cross checked by reference to several social conditions of key importance for the well-being of a country's population. The contents that we have assigned to development, are in no way novel or unusual. In fact, they tally very closely with the objectives, as expressed in the development plans, which guide the development work of a great number of socially conscious u-countries.

3.3 The development constraints

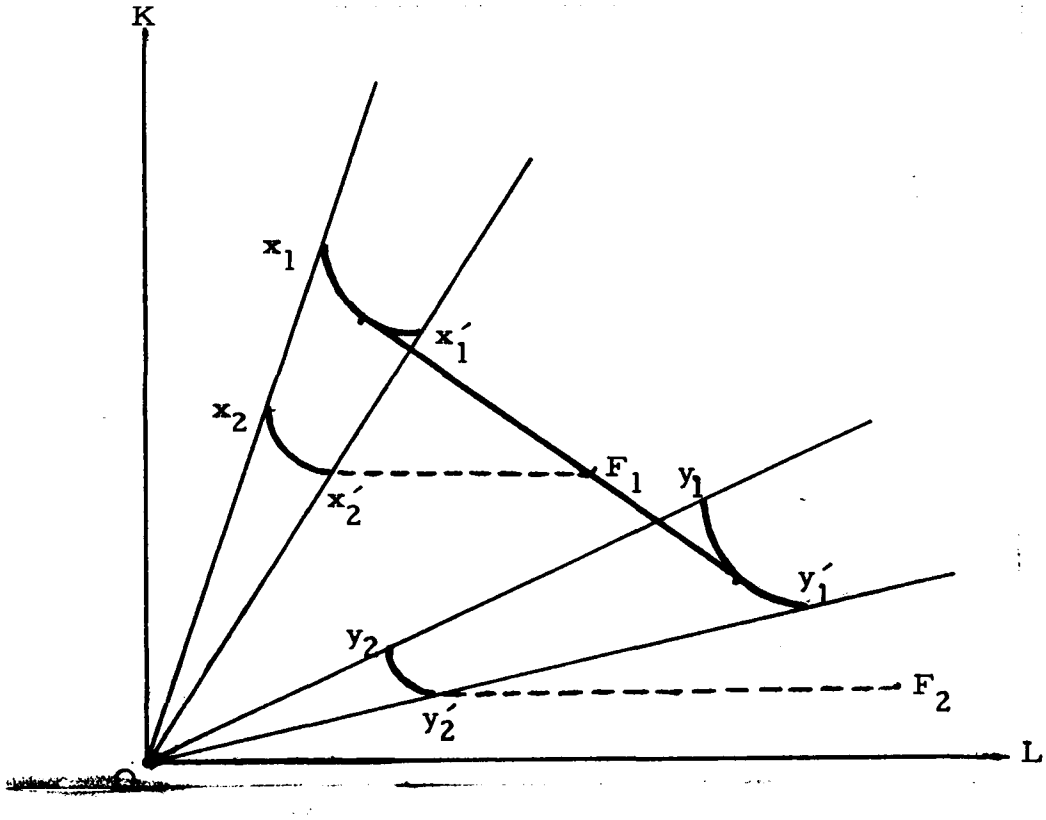
Some countries develop at fast rates, others more slowly, while some perhaps do not show any positive development at all during substantial periods of time. It is difficult to explain these variations, because our insights into the complex development process are highly incomplete. We will not attempt any thorough penetration of these extremely complicated interrelations. Instead we will start out from the common observation that progress in perhaps a majority

of u-countries appears to be effectively constrained by the insufficient availability of some crucial resource. Empirical investigations suggest that skills, domestic capital formation and foreign exchange are the three most common resource bottlenecks which slow down development.[1] We will start out by illustrating in somewhat more formal terms the conditions under which development or growth is effectively constrained by the insufficient availability of a resource like capital. In preparation for the next chapter's discussion on the contribution of aid to development, we will then proceed to an investigation attempting to clarify the underlying causes to the common resource constraints.

Preconditions for the emergence of the resource constraints

Under what conditions can capital be regarded as an effective bottleneck, whose deficient supply keeps other production factors redundant, and thus slows down growth and development? In a simplified world with one commodity, two factors and two production technologies distinguished by their markedly different factor combinations, one could illustrate this situation as in figure 3.1. The equal production curves, x and y, show the possibilities to produce with the capital and labor intensive techniques respectively. Production with each technique can take place within a

Figure 3.1.



1. H Chenery - A Strout: Foreign assistance and economic development, American Economic Review, September 1966.

limited range only, given by the rays from origo, which bound the equal production curves. The limited range of substitution within a technology may be because no factor substitution is technically possible beyond those limits. So long as the factor endowments are within the area bounded by the Ox_1 and Oy'_1 lines, full employment of both capital and labor is technically feasible, by an appropriate combination in the use of the x and y technologies.[1]

Full employment of factors can no longer be guaranteed, however, if there is some restriction in the use of one of the techniques. Suppose that while the factor endowment is F_1, and the equal production curves $x_1x'_1$ and $y_1y'_1$ represent the same amount of output, there is a limitation on the use of the y-technology. This could be because entry is restricted to enterprises using the labor intensive technology, or because due to inadequate information, fashion or foreign influence, investors have a preference for the x-technology.[2] Another reason for not using the y-technology could be that it is cheaper to produce a given quantity of goods with the x-technology, either as a result of a low capital/labor cost ratio, or because absolute factor prices differ between the two techniques.[3] A factor price relation, preventing the full employment of available labor could for instance result from the downward limit on wages, given by the subsistence wage level. But aside from the minimum subsistence wage, there are many other social and political reasons why the capital/labor cost ratio, or the absolute factor price levels could be such as to favor the use of the x-technology, thereby preventing full factor utilization. The causes to these price distortions will be discussed at length later in this chapter. If, for some reason, the labor intensive technology is not at all used, capital will constitute an effective constraint. In this case, production cannot exceed the level represented by the $x_2x'_2$ curve, and the minimum labor redundancy will be x'_2F_1. The labor redundancy will diminish with increasing utilization of the y-technology.

The problem will be more serious still, when the availability of production factors is so uneven that full employment cannot be attained even if the most suitable of existing production technologies is adopted. Taking again our simplified two-factor-two-technologies illustration in figure 3.1, suppose that

1. See R S Eckaus: The Factor proportions problem in underdeveloped areas, American Economic Review, September 1955, from where the framework to this analysis originates.
2. See also section 4.5
3. See discussion on the effects of policies, later in this section.

a country's factor endowments are F_2. Then, even if only the labor intensive y-technology is used, availability of capital will constrict production, and labor redundancy can never decrease below y'_2F_2.

A generalization of the specific conditions used in our illustrations, to several products, each of which can be produced with different techniques, will increase the substitutability between factors, and relax the problem of factor redundancy, but will not change the conclusions reached in the above discussion. With given demand patterns, which cannot be much changed in the short run, the x and y production curves can be taken to represent the entire assortment of products demanded. And even if we have many more than two technologies of production, there are bound to be technological limits for the substitution of factors, like the Ox_1 and Oy'_1 boundaries in our simplified figure. Neither is our conclusion about the reasons for labor redundancy invalidated by the fact that not only capital, but skilled manpower and foreign exchange could also be insufficient for technological reasons, or due to socio-economic conditions, to provide employment to the entire labor force. To allow for this, our K-axis could be taken to represent that particular type of factor, which for the moment happens to constitute the severest constraint on output.

Foreign trade could further relax the existing factor deficiency problem, by enabling the country to concentrate production to more labor-intensive activities than required by the structure of its demand, and to import the more capital intensive goods. In practice this possibility is limited by the inflexibilities in u-countries' economic structure, by their domestic policies, favoring economic diversification and self-reliance, and by i-countries' tariff barriers, which discriminate against the labor input of u-countries' exports.

With a number of given structural conditions, inflexibilities and sticky economic policies superimposed on an abundant supply of unskilled labor in relation to the availabilities of other key inputs, like capital and human skills geared to productive purposes, the substitutability between production factors will frequently prove to be insufficient to provide employment for the entire factor endowment. Given a limited choice of production techniques, a u-country will commonly hit against the capital-, skill- or other constraints, long before it has been able to employ the whole unskilled labor force in the development work. In this situation, it is correct to say that development could proceed faster, if only the actual resource bottleneck were widened.

In the article cited above, Chenery and Strout study the empirical experiences of a great number of u-countries, and derive the probable time sequence for the emergence of the three resource constraints. When it starts its development effort, the u-country is likely first to be constrained by lack of skills and concomitant institutions. As the skill supply increases, following the expansion of school systems and the learning involved in practical development work, insufficient savings, rather than scarcity of skills tends to become the next effective constraint. But as income grows in the development process, savings will tend to increase, and in the last of Chenery's and Strout's three phases, availability of foreign exchange to finance the import content of required investment, usually becomes the constraining factor. On the basis of this analysis, certain conclusions can be derived regarding allocation of aid. In the skill constraints phase, foreign aid should predominantly consist of technical assistance aimed at expanding the skill availability in the recipient country. In the second phase, capital assistance is better advised, while in the exchange constraint period, financing of the foreign exchange component of development ventures, is said to be the best way to transform foreign assistance into development.

From an operational point of view, one would desire far more specific recommendations concerning aid than the very general indications, derived above. It is not uncommon, for instance, that at a given time, the effective resource constraints will differ as between sectors in a country's economy. Besides, some of the assumptions from which the three distinct development stages are derived, for instance the increasing savings propensity with growing income[1], can be questioned. Furthermore, since sufficient time series statistics are available for very few u-countries, the empirical verification of Chenery's model has to rely mainly on cross country data. This is certainly not a dependable basis for the derivation of development paths for individual countries. It is moreover uncertain whether, even with the help of adequate time series data on past events, one could

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1. See for instance D Felix: On Gapsmanship, and the Prospects for the Less Developed Countries, AID Stencil, April 1968.

verify in a strict way the magnitude and succession of the three development bottlenecks. Usually it is possible to identify a constraining factor only ex ante, as it appears in the plan document of a country. If for instance the availability of skills restricts the development pace ex ante in a country, there will be a tendency for the supply of savings and exchange needed in the development work, to adjust downwards. It may then be difficult to ascertain from ex post data the nature and size of the resource gap which slowed down the pace of progress. Finally, the unavoidability of the three phases in Chenery's model is the result both of inflexible background conditions and of a given development strategy. But as his critics have pointed out, a key role for aid is to influence and change those very conditions which he has assumed as given.[1] And once the given framework is changed, there will not be any inevitability in the sequence or even arousal of each of the three resource constraint stages.

While keeping all these cautions and reservations in mind, let us attempt to scrutinize, at a less formal level, the background causes to the frequent occurrence of the resource bottlenecks in u-countries, as manifested, for instance by their foreign exchange crises, by their unemployed labor resources, by the recurrent necessity to scale down the size of their development plans, and by the common use of concessionally supplied capital and skills from abroad, to fill out the domestic inadequacies. The scrutiny should help in clarifying the degree of inflexibility of the underlying conditions, and might at the same time provide some further background for a discussion on aid allocation. The argument will be general, and will try to bring out conditions which are typical for

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1. See the responses to the Chenery-Strout article in the American Economic Review, by J Fei and G Ranis, 1968, p. 897-912, and by H J Bruton, 1969, p. 439-446, or in R Mikesell: The Economics of of Foreign Aid, Weidenfelt & Nicholson, London 1968, p. 91-97.

u-countries. Naturally, there will always be countries which deviate from the patterns outlined here. A useful subdivision of the underlying causes to the emerging resource constraints could be the structural conditions, the development strategies and economic policies of u-countries, and the nature of the resource transfers from rich to poor countries.

Structural conditions

One important structural cause to the skills and savings constraint appears to be the poverty of u-countries. The simple fact is that because of their poverty, many u-countries find it hard to afford adequate training for a sufficient number of nationals, to supply the skills required in the development effort. Likewise, their poverty would generally imply that the capital stock is low in relation to population. Even if the country can achieve impressive investment ratios, the absolute additions to capital stock are bound to be limited. 20% net savings out of a per capita income of $ 100, releases only $ 20 for net investment, while a similar savings rate in a country where GNP/capita amounts to $ 3,000, enables an increase of the capital stock by no less than $ 600. Expansion of the capital stock in a poor country is therefore bound to be a drawn-out process, and meanwhile capital will tend to remain a deficient resource in the development work.

The conditions of poverty will be further prolonged by fast population growth. Whatever progress is achieved, will thus have to be distributed among a larger group, and there will consequently be less for each individual to share. In countries where population is fast increasing, considerable resources must be spent merely on maintaining status quo. Colombia, India, Morocco, Brazil, Ghana and Tunisia are estimated to need investments equal to 10% or more of their GNP every year, only to maintain unchanged per capita income levels.[1] If the population increase were slowed down, more resources could instead be used to achieve a faster rate of development.

More serious perhaps than poverty in itself, is the fact that for various reasons, available skills and capital resources are not particularly well geared to the development effort. One cause to this situation is the colonial heritage of many u-countries.

The limited number of existing schools, for instance, has been patterned to suit the colonial requirements for clerks and possibly lower administrators, but not for the many technical skills needed in the development work. The

1. G C Zaidan: Population growth and economic development; Finance and Development, March 1969.

predominance of arts and law subjects among the limited group with university training is also a reflexion of the preferences formed in colonial conditions, when a comprehensive development process was held back. During the time needed for building up more development oriented educational institutions, and training the management and technical cadres needed, the countries have had to rely on a considerable inflow of expatriates, to initiate the development work. In Africa, where the initial conditions at independence were most wanting in this respect, the skill constraint still continues as the dominant resource deficiency in most countries.

A similar argument can be made about the structure of the capital stock. A sizable share of investment in colonial times was geared to expanding the primary commodity supplies from the colonies to their mother countries. Transport routes were established to facilitate exports rather than to connect the various parts of the country with each other. Most production facilities were geared to foreign rather than to domestic needs. As a consequence, only a partial use can be made of the colonial investment in the present national development effort. The savings-investment needs are obviously increased thereby.

To some extent, the exchange bottleneck too, could be explained in terms of the colonial heritage. The heavy primary commodity concentration in exports, along with the undiversified structure of the economy, were to a high extent a result of colonial status, and constituted a strong tie between the colony and its mother country. With independence, and the advent of substantial national development programs, the import requirements rose. The one-sidedness of u-countries' domestic economy, and above all the absence of capital goods production, necessitated a very high import content in the development expenditure. But while the import requirements rose, many u-countries hit against what Linder has described as "export maximum".[1] The slowly growing and inelastic demand for primary commodities constituted a barrier to increasing export revenues through an expansion of export supply. Inexperience in the production of manufactures created a difficulty for u-countries to compete with such products in export markets. Unfamiliarity with tastes and preferences in i-country markets, lack of knowledge about export marketing, deficient quality consciousness and high tariffs in i-countries was one part of the difficulty. The other concerned the cost levels. It was difficult to overcome excessive costs with the help of devaluation. First of all, the prospective manufactures would usually contain a high proportion of

1. S B Linder: Trade and Trade Policy for Development, Praeger, New York, 1967, p. 34.

imported components. Devaluation would therefore have to be quite substantial to have the required effect. Second, it might easily lead to increased domestic factor costs, whereby part of the competitive advantage gained would be diluted. Third, a devaluation was likely to increase supplies of primary commodities for export, which, with inelastic international demand, might lead to a decrease in the traditional export revenue.[1] For all these reasons, it was difficult to break through the "export maximum" in the short and medium term.[2] With growing import needs, therefore, a sizable foreign exchange gap developed in many u-countries.

Aside from the colonial heritage, there are numerous other structural conditions, which constitute causes to the emergence of the three resource constraints to development. Traditional attitudes and the prevailing social stratification, have in many cases been a disincentive to savings-investment, and a cause to unproductive utilization of capital. Partly for traditional reasons, the wealthy in many u-countries have a habit to keep their savings in luxury residential facilities rather than investing in activities whereby production could be enhanced. The insecurity of tenure resulting from the traditional social and economic power of the landlords, deters the tenants from saving and investing in the improvement of their plots. Where the joint family is the basic social unit, it frequently constitutes a disincentive to the individual's savings and investment, both because his basic needs are already provided for within the family framework, and because all benefits which may be derived from the investments which he undertakes, have to be shared with other family members.

Where heritage rather than ability is the dominant selection criterion in filling positions of influence, there is likely to be less incentive for those without an appropriate family background, to acquire training and skills of various types. The rigidity in the social structure can therefore be seen as a contributor to the skills constraint. A well-known example of this situation is when a foreign minority monopolizes the commercial sector, like to Chinese have done in South-East Asia, and the Indians in East Africa. Those who do not belong to the foreign minority will then tend to find it

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1. One way out of this predicament would of course be to impose an export tax on primary commodities at the time of devaluation.
2. The ease with which a number of countries broke through their "export maximum" in the late 60-s, might suggest that the structural difficulty described here was more a belief than a reality. See the discussion on policies in the following sub-section.

unrewarding to develop an entrepreneurial talent, to be used in commerce and trade, because they know that their entry in those fields is effectively closed.

The foreign exchange constraint too, can be reinforced by the u-countries' social stratification. The upper social strata, which dominate the demand for marketed goods, have sophisticated consumption patterns which cannot be satisfied by the supply of local goods. Their consumption will therefore add to the import requirements. The stronger this group, the larger its consumption in relation to the total economy, and the more "westernized" its consumption patterns, the larger will the drain on the balance of payments from this source tend to be. As will be shown later, this problem is usually not overcome by import substitution. The import substitution industries which are established as a result of the domestic upper class demand, frequently perpetuate the balance of payments strain by spreading the westernized consumption patterns, while simultaneously requiring considerable input imports.

The social structure characteristics contributing to the emergence of the resource constraints, are sometimes reinforced and institutionalized by the political system. Those who decide over resource use in a nation, may simply not have any wish to pursue development. This might be true in countries whose political setups could be characterized by a "vested interest orientation".[1] A primary political preoccupation of such political systems is to preserve the privileged positions of the upper class minorities, by maintaining status quo, and by suppressing the demand for improvement by the poor majority. This could express itself in the use of resources for purposes not much related to our development objective, e. g. warfare or amassing of capital for status purposes, in forms which don't contribute to production and general material warfare. Alternatively it could mean that resources are left altogether idle. Development will slow down, or cease altogether under such conditions. But in addition, the concomitant social rigidities will make it more difficult to overcome the resource constraints.

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1. For an extended definition and discussion on this subject, see L Rudebeck: Utveckling och politik, Wahlström & Widstrand, Stockholm 1970, chapter 5.

Aside from the social and political inflexibilities, there is the problem of geographic dichotomies, which lead to inadequate contacts and information flows. For instance, an important reason why the subsistence farmer does not increase his production and savings effort, to invest in improved farming practices, is that he lacks market outlets, information on improved agricultural production techniques, and the tools and implements required. The existing public agricultural extension services in most u-countries only reach the easily accessible farmers. And the network of functional institutions, like farmers' unions, marketing and credit cooperatives, nationwide production and distribution companies, or savings- and loan banks, which cement the rural sector with the rest of the economy in i-countries, is very weakly developed in u-countries.[1] The monopoly of traditional middle-men will tend to reinforce the dichotomy and discourage new prospective private entrepreneurs from entering the field to supply inputs or market the surplus agricultural production. Meanwhile, the rural production and savings-investment potential remain underutilized.

All these structural conditions result in a sharp compartmentalization of society, and an inability of smooth adjustments, as envisaged in neoclassical economic theory. Prices will tend to differ between the separate markets, will not reflect real scarcities, and will not always be an efficient tool for inducing resource reallocation. In the absence of adequate communications, the village trader will be able to exert both monopoly and monopsony power in his dealings with the local farmers. With weak integration between rural production and urban consumption markets, pricing signals will sometimes be lost on the way. Increased food prices due to higher consumption demand in towns, may not influence those farmers who could expand supply, because the widened price differential may be eaten up by increased profit margins of middle-men, or because facilities to transport additional supplies cannot be expanded in the short run. In the absence of financial institutions, which are able to extend their activities down to the local villages, savings will take the form of hoarding precious metals at zero interest rate, while simultaneously agricultural production credit, provided by money-lenders, will tend to be very expensive, due to exorbitant risk premia and profit margins, in comparison with the rates at which capital can be borrowed in provincial or national capitals. The differential in the earnings of wage labor between the urban modern sector and traditional agriculture, is only partly explained by higher living costs and a better average education level among workers employed by modern industries. To a considerable extent, this differential too must be seen as a result of market sub-divisions, strengthened by the monopolistic practice of labor organizations to limit the entry of new workers into the modern sector.

1. H Myint: Economic Theory and the Underdeveloped countries, Oxford University Press, London 1971, chapter 14.

An institutional pattern, geared to maintaining status quo, along with a deficiently functioning market system, strongly contribute to the difficulties experienced by u-countries, to undertake elastic adaptations in order to overcome the resource constraints which emerge during the development process.

Development strategies and economic policies

In the short run the structural conditions in u-countries must be taken as given. But structural conditions are only one of the determinants of the resource constraints. Another is the development strategy chosen, and the economic policies pursued. With given structural conditions, the forces constraining development can vary a good deal, depending on the strategies and policies adopted, and on the influence they will have on the choice of production technologies. Besides, the pursuance of economic policies will affect the structural conditions over time. For all these reasons it is important to study how development strategies and economic policies have in fact been used.

A common characteristic in the strategies pursued by a great number of u-countries after gaining independence has been that of planned and publicly supported industrialization.[1] The rationale behind the thrust to industrialize has been many-folded. The fast transformation of the Soviet Union into an industrialized power, achieved with the help of comprehensive national planning, certainly had some influence on the newly independent governments of many u-countries. Since long, industry rather than agriculture has been regarded as the dominant generator of growth and modernization. Expansion of industry was thought to have very considerable external effects on development in the form of learning processes, modernization of attitudes and promotion of managerial skills. In a situation where agriculture was thought unable to give employment to much more labor, a growing industry was seen as the major alternative surplus labor absorber.[2] The memories of the second world war, when the i-country supply of manufactured goods failed, and the depression of the thirties, when the ability to buy manufactures was curtailed by severe primary commodity price falls, were further inducements for the u-countries to diversify out of the very high reliance on raw materials. Independence provided the political ability to undertake the

1. See for instance D Paauw and J Fei: The Political Genesis of Transition Growth, National Planning Association, March 1969, p. 6, or A Maddison: Economic Progress and Policy in developing countries, Allen & Unwin, London 1970, p. 164-180.
2. A Lewis: Economic development with unlimited supplies of labor, Manchester School, May 1954. Lewis distinguishes between the subsistence and the capitalist sectors. Many of his followers, however, have equalled the capitalist sector's growth with industrialization. See for instance J Fei-G Ranis: Development of the labor surplus economy, Theory and Policy, [illegible]

decision, the high exchange reserves, amassed during the war, constituted the economic potentiality for the initiation of the new industrial support policy.[1]

In a number of countries, the government stepped in directly as industrial entrepreneur. This was sometimes motivated by a socialist ideology, like in Ghana, India or UAR[2], or because it was felt that the private sector was not sufficiently advanced to manage large-scale investments through their unprofitable initial period without outside support. Aside from the government's own involvement, most u-countries pursued deliberate economic policies to nurture industrial growth.

The policies used were a combination of measures to manipulate the foreign/domestic goods prices with an aim to favor modern industry, and outright subsidies on capital to the growing industrial sector. To illustrate how they worked, let us study what was likely to happen in a typical u-country, with an insignificant industrial sector, which had hitherto financed its industrial capital and consumer goods requirements through agricultural commodity exports.[3]

The first measure ordinarily undertaken was protection, through tariffs or quotas, on imports of consumer goods. Protection was usually not raised for capital goods imports. Imports of capital equipment were needed in the industrialization process, and had therefore to be facilitated as much as possible. The consumer goods protection policy was ordinarily combined with a more or less substantial overvaluation of the country's domestic currency, achieved through a gradual inflation process.

This package of policies turned the domestic terms of trade in favor of industry. The overvalued exchange rates ensured low prices in domestic currency for the capital goods imports required by industry. Protection from import competition enabled the industrial enterprises to increase their prices on the domestic market. For agriculture, on the other hand, overvaluation of the domestic currency meant a decrease in export profitability. Prices in $ were set by the world market. Overvaluation of the country's currency therefore meant fewer local currency units per exported $ value.

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1. I Little - T Scitovsky - M Scott: Industry and trade in some developing countries, Oxford Univ. Press, London 1970, p. 2.
2. A Maddison, op. cit. p. 164.
3. The empirical evidence which underlies the following analysis can be found in a number of places, for instance W Baer: Industrialization and economic development in Brazil, Yale Univ. Press, New Haven 1965, B Hansen and G Marzouk: Development and economic policy in the UAR, North Holland, Amsterdam 1965, or the works of Little-Scitovsky-Scott, and Maddison, which have just been cited.

A subsidiary set of industrial promotion measures consisted in a policy of low rates of interest, food price controls and subsidized services to industry. In many countries, special public or publicly-supported industrial finance institutions were established, to channel credit on favorable terms to the growing industrial sector. Coupled with the low interest policy were price controls on domestic food articles. In this way, agriculture was deprived of the possibility to compensate its decreased export profitability by higher prices at home. For industry, the food price controls meant that wage demands could be kept down. Even when the governments did not themselves participate as entrepreneurs in the industrial build-up, they provided increasing amounts of industrial infrastructure facilities, like electricity, transport and technical training, often at subsidized rates.

Effects of the policies

One important effect of these policies was to increase the government's control over the monetary sector of the economy. The subsidized credits had to be rationed, and the government expanded its supervision of the institutional financial flows. Overvaluation of the country's currency led to an excess demand for imports. Permits to import began to be licenced out according to the government's discretion. As a result, the setting up of industries became heavily dependent on government support. The food price regulations gave the public authorities a considerable power to influence the marketed agricultural production patterns as well. Undoubtedly, a consequence of all this was a further decrease of the role of the market mechanism as a device for resource allocation, and a concentration of economic decisions to the government.

The process of selection of industries to be established in the many countries which pursued policies like those discussed here, was bound to be difficult. Where the market is undistorted by inflexibilities and government regulations, private profits give a reasonable reflexion of the social utility of an activity. This certainly does not apply to u-countries.[1] Where, for structural reasons, industry cannot immediately become competitive without support, the infant industry argument should apply. Accordingly, industries with the best prospects of improving and eventually internationally competitive productivity, ought to be established. As suggested by Little[2], one could expose the different prospective industrial activities to a social cost-benefit analysis, in the context of the country's situation, to derive the ones to be promoted. In fact, the

1. See discussion in section 4. 3
2. I Little - J Mirrless: Manual of industrial project analysis, Vol. II, OECD, Paris 1969.

selection of industrial activities in u-countries during the post-war industrialization drive, was commonly influenced by the actual private profitability, as a result of the pressures exerted by private investors on the licence granting authorities. The overvalued exchange rates made export industries less remunerative. Capital goods production too, was not so profitable, because it had to compete with international imports. Instead, the choice often fell on domestic consumption industries, which profited from import protection. In view of the scarcity of foreign exchange, an additional factual criterion used by the licencing authorities for selecting industrial activities, was the extent of foreign currency savings, expected from each venture. The resulting industrial sector which the u-countries built up, became heavily biased towards the domestic, predominantly upper class consumption demands, which had used to be satisfied by imports. The positive linkages between these industries and the dominant traditional sector of the economy, were rather limited.

As a result of the public support measures, the industrial investments undertaken, were often highly profitable. The profits were reaped by three groups of entrepreneurs, viz. the government itself, local emerging entrepreneurship, and foreign private investors, who wanted to participate in the profit boom. The foreigners were particularly welcome, if their production substituted for earlier imports, and if they brought with them modern production technologies, which were thought essential in the general modernization of the country. An explicit purpose of the redistribution of income in favor of industry, was to ensure an overall increase in the investment ratio. As long as the attractive profitability rates remained, there was a strong inducement for the industrialists to use most of the profits for expanding industrial investment.

The smallness of the domestic markets in which the new enterprises grew, did not always permit full scale economies of modern production techniques. In some countries the scale of production was further decreased by the habit of licencing several firms to produce the same commodity. In Chile in 1964, about 20 different companies were assembling a grand total of no more than 7,600 automobiles.[1] In spite of the competitive conditions, price levels must have been kept very high, to cover the costs of this smallness in scale. In other countries, there was more concern about economies of scale. With only one or a few firms dominating in many markets, monopolistic situations arose, with the result that although cost levels might have been lower, prices remained high.

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1. See L Johnson: Problems of Import substitution, the Chilean automobile industry, Economic Development and Cultural Change, January 1967.

Industrialization was often regarded as a transitory nation-building process, which had to be passed through even if in the short run the investment allocations did not stand up to an economic scrutiny.[1] Reported inefficiencies nurtured domestically behind shields of protection, were considerable. The small scale of operation, the absence of international competition, and the ability to charge domestic prices at almost any level, to cover the costs of production, resulted in several instances of negative value added. The first year cost of production of a certain type of diesel engines in India was $ 7,300, as compared to the international price of $ 4,550. But the import content of the Indian product, including the foreign personnel required to carry on production in India, was higher than the cost of importing the complete product, and the prospects for a fast decrease of the Indian production costs within a reasonable time period was small.[2] Several other instances of negative value added have been reported in Pakistan, Philippines and other countries.[3]

The high costs of production tended to reduce industrial profits. Consequently, the realized savings and investments generated within the industrial sector, remained below expectations. Foreign investors had few opportunities for expanding their investments, once the limited domestic demand for the good produced had been satisfied. The rate of investment was therefore further decreased by a tendency to repatriate profits abroad.

Exports by these newly established industries were hardly feasible under the prevailing circumstances, in view of the inefficiencies and high cost levels. Dependence on imports remained, because, to maintain capacity production, the industries had to rely on a heavy import flow of spare parts, replacement machinery and production inputs. In a recent study on import substitution, Henry Bruton concludes that "there is little evidence that even hints that the trade balance improves as a consequence of import substitution policies."[4] The industrial sector which emerged, was thus rather far removed from the expectations of modernization, development, and national economic independence, which the policies favoring industry were thought to bring about.

The policies pursued had spill-over effects on the rest of the economy as well. We have already noted that the domestic terms of trade were turned against agriculture. The same forces also made small scale industry less attractive

1. D Paauw and J Fei: The political genesis of transition growth, op. cit. p. 2 and 46.
2. J Baranson: Manufacturing problems in India, Syracuse 1967, p. 83.
3. See Little-Scitovsky-Scott, op. cit. p. 186.
4. H Bruton: The import substitution strategy of economic development, Williams College, Mass., April 1969, Stencil, p. 26.

and profitable. The practice of subsidizing and rationing credit tended to widen the difference in interest rates on loans to the modern and to the traditional agricultural and small scale industry sector. Even if rationing had been neutral as between sectors, the small traditional units would have been at a disadvantage, because of their inexperience in coping with the bureaucratic procedures in the administration of the economic controls, But, as we noted above, the rationing policy was not neutral. Instead it was consistently used to favor the large enterprises in the modern sector. The drain of the capital market which the industrial support implied, left smaller financial resources at the disposal of the traditional sector. And as these were mainly disbursed outside the officially controlled credit system, higher rates of interest could be used to equilibrate demand with the decreased supply. Discrimination against the traditional sector also applied to the rationed foreign exchange and to the provisions of various services, supplied by the government.

Domestic prices of industrial goods were increased as a result of higher tariffs, inflation and the high costs in domestic production. The cost of production in the traditional sectors increased as a result. The decreased profitability in agriculture slowed down its production expansion, particularly for the main foodgrains, to which price controls usually applied. While in the mid 60-s aid shipments of wheat helped to maintain India's cereal price controls, there was a tendency among farmers to opt out of rice and wheat production into luxury commodities like grapes and oranges, which were not tied by price regulations.[1]

The expansion of traditional small scale industries was also held back by the fact that these industries had to meet product competition from modern enterprises in many fields. Aside from substituting for imports, the new industries also started to substitute for small scale industry products, like many food and drink articles, furniture, shoes, tobacco etc.[2] The coexistence and competition between the modern and traditional industries in a particular line of production could perhaps be illustrated figure 3.2. Even in the absence of discriminatory government policies, modern industrial firms are likely to have access to cheaper capital and ancillary services than traditional sector enterprises. The labor costs, on the other hand, will tend to be higher in the modern sector. This is mainly a result of differences in size and location as between the two sectors' enterprises. Suppose that for a given sum of money, traditional

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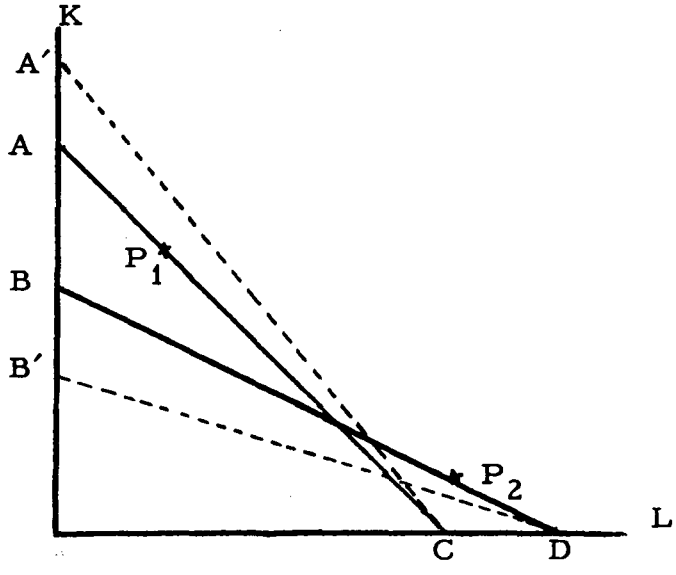
1. Own experience from discussions with individual farmers and with National Agricultural Cooperative Federation in India in 1965 and 1966.
2. See for instance M Koga: Traditional and modern industries in India, The Developing Economies, September 1968.

industries can obtain 30% less capital and ancillary services, and 30% more labor than the modern industries. With physical quantities of capital and ancillary services on the vertical and labor on the horizontal axis, the equal expenditure line AC in the modern sector will correspond to BD in the traditional sector. Production will take place at points like P_1 and P_2, where the equal expenditure line of each sector is tangent to an isoquant. Production will tend to concentrate at P_1 in the modern sector if its equal expenditure line can reach a higher isoquant than that which can be reached with the same expenditure in the traditional sector, and vice versa. Note that to the left of the intersection of the two equal expenditure lines, modern methods will always be economically superior, while to the right of the intersection the same will be true for traditional methods. The effects of a government policy to favor the modern sector through subsidies on capital and infrastructural service inputs, will change its equal expenditure line to A′C, which is tangent to a higher isoquant than AC. The repercussions on the traditional sector from this policy are negative, and have already been described. Its equal expenditure line will shift to B′D, which is tangent to a lower isoquant than BD. The new policy implies that the comparative advantage of traditional small scale industries will decrease in each product line. The policy change will make it advantageous to transfer the production of at least some items from traditional to modern enterprises.

Figure 3.2



The neat lines of figure 1 will obviously not be found in reality. The traditional sector may try to adapt itself to the new situation either through a profit- or a wage squeeze, especially when there are no alternative employment opportunities for the factors involved. The main conclusions of the above argument, however, seem to be generally valid. The increased competition which arises from the industrialization policies, will hold back the expansion of the traditional sector.

On at least three counts, the policies pursued, have had clearly negative effects on development as we have defined it. First, both by making capital cheap in relation to labor, and by discriminating in favor of modern industry, the policies led to an increased overall capital intensity in the production methods used by the economy. But a high capital intensity implies a smaller employment creation, because more capital will be needed for each job. Emerging evidence of the magnitude of unemployment in u-countries[1], points to the increasing severity of the problem, which these countries face in keeping their unskilled labor occupied. The industrialization policies thus appear to be a contributory cause to this adverse trend.

Second, the same policies, by turning the domestic terms of trade against the traditional sector, have quite probably contributed to a more unequal income distribution. The well-to-do minority, dependent on the modern sector, has been the main beneficiary of the industrial promotion measures. This refers both to the capitalists, who could take advantage of the subsidized capital and foreign exchange, and to industrial workers, whose wages, already high by national standards, have been further boosted by social legislation. Time series data on income distribution are hardly available for u-countries. Demand and consumption patterns can however be used as indirect evidence on what happened to income distribution. After estimating income elasticities for food, with given income distribution and relative prices, Little et al[2] study the factual availabilities and prices of food over time in some u-countries. They conclude that with unchanged income distribution, demand for food should have risen much faster over the period than it in fact did, and infer that the factual development results from a concentration of income gains to the upper income layers, where food demand elasticity is lower. The very brisk demand expansion for a number of the import substituted consumer capital goods, provides a further indirect evidence that the income gains accrued predominantly to the high income earners, who can afford the purchase of items like refrigerators, passenger cars etc.

A third adverse development effect relates to the excessive centralization of decision making. In the face of a complicated, overworked, and often impenetrable licence giving bureaucracy, little scope was left for new and independent entrepreneurial action outside the modern sector. Even if scattered local investment initiatives do not constitute an ideal allocation

1. See for instance D Turnham-I Jaeger: The employment problem in less developed countries. AReview of evidence, OECD, Paris 1971.
2. Little-Scitovsky-Scott, op. cit. p. 99-110.

pattern in any sense, they are usually better than no investment at all. Besides, they guarantee more flexibility and local adaptation in the overall investment effort. Much of this type of activity was depressed, with negative consequences on income and investment levels.

We are now ready to summarize the effects of the industrialization policies on the three resource constraints. Most of these effects should be evident from what has already been said, and we can therefore be brief. We should not forget, however, that the policies explain only a part of the emerging deficiencies, and that the structural conditions are always at the base of the problem.

The severity of the skill constraint can be explained to a considerable extent by the industrialization urge. Modern industry is a skill intensive activity[1], and the skills required are unrelated to the common availability of knowledge and experience in u-countries. Usually therefore, the new skill base had to be built up from near scratch. The skill constraint was further reinforced by the requirements of the central administrative apparatus, which had to be established to design and supervise the licensing, rationing and price control schemes.

Several features in the industrialization policy help to explain the occurrence of the savings-investment constraint. Modern industries tend to be both skill- and capital intensive. Furtheron, if the institutional interest rate is decreased, demand for capital from those who have access to the credit market institutions, will rise both to expand investment, and to replace labor by capital. To the extent that the supply of savings is interest sensitive, it will tend to fall. Urban household savings can hardly have been encouraged by interest rates, which, over long periods, have been below the rates of inflation. If equilibrium prevailed before, an excess demand is therefore likely to emerge, when interest rates are cut.

The exchange-constraint can be explained in very similar terms. By being foreign, the modern technologies of the industries set up, are not only capital- and skill- intensive, but also import intensive. Imports are needed both at the stage of establishment, and later, for spare parts, replacements, and

1. Certain types of modern industries are skill saving in the sense that they replace middle level management and supervisory staff with capital. Such industries might be suitable in circumstances (like those of some oil exporting countries), where middle level skills are particularly deficient, but capital is amply available. The qualified technicians required to handle the modern equipment will then ordinarily have to be supplied from abroad along with the machines.

servicing, and for components and other inputs required in the production process. The overvaluation of domestic currency contributes to the constraint, because it discourages exports, and tends to make imports profitable even where tariffs are high.

Policy is obviously only one among a number of factors which shape the conditions in a country. In u-countries in particular, instruments of economic policy may have a somewhat more limited influence, in view of deficient communications, and absence of a widespread institutional network, through which they can be implemented. This would be particularly true for the traditional sector. It would therefore be presumptious to believe that changes in price, exchange rate or in industrial promotion policies could cure underemployment or other deep-seated structurally caused problems in the traditional sector in the short run.

Policies and structural conditions are to some extent inter-dependent, however. The choice of a policy package in a country will always be influenced by the structural conditions which prevail there. But a consistent pursuit of a given set of policies over a period of time can also profoundly affect the structural conditions. The reason for taking up so much space in discussing u-countries´policies, is that in contradistinction from the structural set-up, policies are much more amenable to change in a short span of time, and that aid may provide the necessary inducement for such a change.

A different set of policy measures, could have made the resource constraints less compelling. With policies more geared towards mobilizing the abundant resources in u-countries like unskilled labor, promoting modern industrial technologies only when the products required could not be manufactured by the traditional small scale sector, and placing a greater emphasis on agriculture, whose import inputs are relatively low, the skill-, savings- and exchange constraints would not have assumed the proportions which they actually did in the post-war period. Apparently, the policies pursued, were based on an analysis of the development process, which took insufficient account of the disadvantages of excessive centralization of decision making, and of the insignificance of linkages between modern industries and the traditional sector, and which, by emphasizing economic growth, tended to disregard certain social aspects of national progress.

During the late 60-s, there have been signs of a policy change in many u-countries. This change is the result of an increasing awareness of the ill-effects, economic and social, brought about by the excessive promotion of an inwardly oriented modern industry. Growing unemployment and inability to expand manufactured exports are one explanation to the urge for change. Another is the recent technological break-through in sub-tropical and tropical cereals technology, which has made food production in many u-countries much more remunerative. The changes in policy, which are gradually taking place, include more emphasis on agricultural development, a greater concern with employment creation, and various attempts to favor the expansion of manufactured exports. Some effects are already discernible. Manufactured exports from u-countries, for instance, which grew annually by 12.3% during 1960-67, have been expanded by more than 21% per year in 1967-68 and 1968-69, increasing perceptibly u-countries' share in world manufactured exports.[1] In spite of these changes, the main features of the industrialization policy package continue to dominate the picture in most countries.

The role of foreign resources

It is instructive to study the role played by aid and by the commercial capital flows in the context of the policies pursued and the emerging resource constraints. The function of aid was predominantly seen as that of supporting the industrialization policies and filling in the bottlenecks, experienced by u-countries. This provides a rationale to the great number of experts, with experiences predominantly from i-countries, who were sent out on technical assistance missions, to overcome the u-countries' insufficiencies in modern skills. Project tied assistance was given to help in erecting the modern industrial structure, and to speed up the investment process by substituting aid capital for deficient domestic savings. The practice to finance the foreign exchange part only, of aid project expenditures was motivated by the increasing exchange scarcities in a great number of u-countries. The contribution of private capital transfers was also regarded as a support for the industrialization drive. Export credits were offered and taken, to overcome both the savings- and exchange constraints. Direct investment was seen as a measure to overcome the skills scarcities as well. While providing momentary relief for the acute resource constraints, aid and private foreign capital were not very effective in contributing to the solution of the underlying problems.

1. UNCTAD Review of International Trade and Development 1971, TD/B/369/Add 1, p. 23-24.

Rather, the foreign support tended to institutionalize and reinforce the problems caused by the economic policies. This resulted from the contents and terms on which the foreign support was provided, but also, from the fact that the capital or commodity inflows relieved the immediate pressure for national mobilization and structural reform.

Thus, both direct foreign investment and aid strengthened the predisposition of u-countries to choose modern, capital intensive production technologies. To the multinational firms the u-country markets are highly marginal, and usually not of a great importance in the overall whole. As a consequence, relatively little adaptation of production techniques will be undertaken when investing in u-countries. In many cases, such adaptation requires a considerable effort and outlay, which is not considered worthwhile in the context of the firm's global operations.[1] Foreign aid tied to purchases from the donor country will also have a tendency to favor excessively capital intensive methods, not the least because the donor country may not have more labor absorbing equipment to offer.[2] Even if aid is untied by source of purchase, appraisals and pre-investment studies undertaken by engineers and technicians who are used to i-country standards and designs, will tend to have similar effects.[3]

Furtheron, by tying a majority of the foreign resources provided to specific projects, aid and foreign capital help in overcoming the resource scarcities for establishing modern ventures, but usually leave to the u-country itself the increasing problem of obtaining enough foreign exchange to run them at full capacity. A number of countries, and notably India and Pakistan, have been experiencing increasing problems in utilizing the productive capacity installed, because this capacity is dependent on a continuous flow of imports, for which foreign exchange is lacking. Increasing amounts of program aid have more recently been used as a way out of this predicament.

The sizable shipments of surplus food to India, Pakistan and other countries, mainly under the US PL 480 law, enabled the recipient countries to continue the heavily industry-biased policies, and supported the governments' efforts to keep down agricultural prices, thereby helping to kill the incentives to expand domestic food production.

1. Even without adapting its production processes, the multinational firm could a priori be expected, wherever possible, to locate the labor intensive part of its production in low income countries. The surprising result could therefore emerge, that multinational firms, operating in a u-country, have, on average, a more labor-intensive production composition than domestic firms in the modern sector.
2. I Little - T Scitovsky - M Scott, op. cit., p. 90.
3. For a practical example of this see section 8.2.

Finally, as is apparent from chapter 2, most of the resource inflow to u-countries has been either commercial or on a concessional loan basis, and has generated outflow obligations in the form of profit transfers, interest rate payments and loan amortizations. The value of foreign private investment assets in u-countries has grown by about 10% per year during the 60-s, that of medium and long term loans guaranteed by u-country governments by 14%.[1] Data are not available on the profit repatriation from private investments. Servicing charges on the loans considered here have grown by no less than 17% per year between 1958 and 1968. It has been estimated that the rate of growth of the debt service payments over the whole decade of the 60-s, has been about twice the rate of growth of export earnings of u-countries, and almost three times that of their combined gross domestic product, all expressed in current $ terms.[2] This means that loan servicing takes an increasing share of u-countries' export revenues. As the service burden grows, an increasing proportion of the gross foreign capital inflow has to be used to pay for interest and amortization. Service on DAC official loans only, constituted about 67% of gross lending in 1968.[3] During the 60-s a number of countries had to request for a rescheduling of their foreign debt, because they did not feel capable to meet the obligations according to original terms. The aid indebtedness and the foreign owned investment assets, thus contribute to the severity of the exchange constraint.

In summary, our discussion of development constraints has focussed on the inadequate availability of skills, savings and exchange, and their underlying causes, e. g. structural conditions and policies in u-countries, an inappropriate practice in the transfer of resources from rich nations, and the fast mounting debt obligations.

To what extent has aid been effective in resolving these problems? How can its development impact be measured? What can be done to improve the development productivity of aid? These are some of the questions to which we turn in the following chapter.

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1. Pearson Report, Praeger, New York 1969, p. 72, 375 and 376.
2. IBRD Annual Report 1970, p. 50.
3. IBRD Annual Report 1970, and DAC 1970 Review, p. 179. For a broader discussion of the increasing debt problem, see for instance M Radetzki: Will the development debts ever be repaid? Skandinaviska Banken Quarterly Review 1971:4.

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CHAPTER 4. THE INTERRELATIONSHIPS BETWEEN AID AND DEVELOPMENT

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4.1 Introduction

The evaluation of aid's impact on development is a highly complicated matter, which can be tackled from different angles, and at varying levels of aggregation and sophistication. There does not exist today any set doctrine as to how the aid assessment tasks should be tackled. With increasing volumes of aid, donors find it more and more important to clarify and to quantify the effects resulting from aid. As a consequence, a continuously growing flow of studies of varying quality emerges from the multilateral assistance bodies and bilateral donor organizations, but also from independent research institutions in various countries.

Among the more ambitious contributions to the evaluation of aid, are the IBRD's ex post assessments of many of the projects, in which the Bank had invested its money.[1] The project is usually at the center of the Bank's evaluation. The OECD too, has undertaken project evaluation studies of its own assistance endeavors.[2] In addition, the OECD Secretariat has sometimes been commissioned to evaluate project activities carried on by other donor organizations.[3] The US AID's Spring Reviews frequently deal with the impact of US assistance to a particular sector in recipient countries.[4] More general evaluation studies of the overall technical assistance endeavors of two donors, namely Israel and Australia, have been published[5], while a general study of the effectiveness of UK's technical

1. A collection of IBRD's excellent ex post evaluation studies is presented in J A King: Economic Development Projects and their Appraisal, John Hopkins, Baltimore, 1967. Also see H G Van der Tak and Jan de Weille: Reappraisal of a Road Project in Iran, World Bank Occasional Paper No. 7, Washington DC 1969, or Manning and Ela: An economic Evaluation of Irrigation Rehabilitation Projects in Mexico, EC-180, September 1971.
2. See the series: OECD Technical Assistance Evaluation Studies. The first in the series is entitled Regional Project of Kosovo-Metohija, Yugoslavia, OECD, Paris, 1968.
3. See for instance OECD's evaluation of the Nordic Projects in Africa: Evaluation of the Nordic Tanganyika Project at Kibaha in Tanzania, Paris, February 1969, and Evaluation of the Nordic Project for Co-operative Assistance to Kenya, Paris, April 1969, both stencils.
4. See for instance: The effect of AID supported intermediate credit institutions on overall development, PPC/Evaluation Staff, AID, July 1969.
5. M E Kreinin: Israel and Africa, A study in technical cooperation, Praeger, New York 1964, and A H Boxer: Experts in Asia: An Enquiry into Australian technical assistance, Canberra 1969.

assistance is underway.[1] The development impact of policy influence exerted by the aid from IBRD and AID in Latin America, has been investigated in a recent publication.[2] The UN has attempted an assessment at the overall recipient country level, of all its assistance endeavors, in Equador, Iran[3], and a few other countries. Another impressive evaluation study at the overall recipient level is that of Neil Jacoby, on the impact of US aid to Taiwan.[4] The list of titles provided here, is far from complete, and should merely be seen as an illustration of some of the possible approaches to the evaluation of aid.

In part II of this book we intend to study the development impact of Sweden's overall aid at the national level of individual recipient countries. We will find in our deliberations, however, that few definite conclusions can be reached at this level of aggregation, and that therefore the macro-approach has to be combined with project evaluation studies at the micro-level.

In this chapter, we will use the findings and conclusions from many of the studies enumerated above, in an attempt to outline some methods, whereby aid's development impact could be assessed. Thus, the following section will discuss various approaches and problems in evaluating the effects of aid at the overall national level in recipient countries. A dinstinction is drawn between what I call bulk aid and innovation aid, and I attempt to define and describe the specific characteristics of the latter. The next two sections are devoted to discussing different aid evaluation methods at the micro-level. In section 4.5, finally, I outline a few areas, where innovative aid efforts could have a particularly high development impact.

4.2 The macro-level assessment of the impact of aid

How big?

The analysis of this sub-section will be based on available statistics of income, investment and growth in u-countries. I will try to approximate the role that aid plays in the progress of the underdeveloped world, by making use of some alternative, highly simplified and crude economic

1. See A Macbean - K Morton: A note on factors affecting the effectiveness of technical assistance, Institute of Development Studies, Sussex, Bulletin, January 1971.
2. Evaluation of UN Programs in Equador, E 4598, December 1968, and Evaluation of UN Programs in Iran, E 4626, March 1969.
3. T Hayter: Aid as imperialism, Pelican, London 1971.
4. H Jacoby: US Aid to Taiwan, Praeger, New York, 1966.

tools. Most of what will be said, refers to the relation between aid and growth, rather than between aid and development.

The main data sources to the figures presented here, are materials from OECD, UNCTAD and IBRD. There is a slight and unimportant difference in the definition of u-countries in that OECD includes Greece and Spain in the group, while the others don't. Data on the Communist u-countries of China, North Korea, North Vietnam and Cuba are not included. The aid figures presented are the official flows based on OECD- s statistics, as elaborated in chapter 2, and related to flows from DAC-countries only. All the data must be taken as very rough and tentative. Individual u-country statistics of GNP, investment and other macro-variables are inherently unreliable. International aggregates of such figures will naturally be still more uncertain.

Total GNP in u-countries according to UNCTAD, was $ 365 billion in 1970. The population was about 1.7 billion in the same year. This renders a per capita GNP of $ 215. Gross investment ratios in u-countries in the late 60's have been estimated by the IBRD at about 19 %. This would correspond to a total investment in 1970 of $ 70 billion, or around $ 40 per capita.

According to OECD's statistics, the total official resource flow from DAC countries in 1970 amounted to $ 8.0 billion. This corresponds to 2.2 % of total u-country GNP, 11 % of total gross investment, and $ 4.70 per capita. Our conclusions in section 2.3 suggest that the amount of pure aid, e.g. the grant equivalent of this transfer, valued at competitive international prices, was about 30 % less. Disbursed pure aid in 1970 was then no more than $ 5.6 billion, corresponding to 1.5 % of GNP in recipient countries, 8 % of gross investment, and about $ 3.30 per capita. Since pure aid is a measure of the sacrifice undertaken by the donors, it may be appropriate to study what aggregate achievements could reasonably be expected from this sacrifice. The exclusion of credits on commercial terms and private investments in the following macro-level computations, in no way denies the existence of positive development effects, resulting from such transactions.

I will not attempt, in this context, to refine the data, by comparing time series of investment, variations in aid and growth figures over the period covered, or by working with lags of various magnitudes. The weakness and low reliability of statistical data from u-countries, considerably diminish the usefulness of such refinements. Besides, my present

ambition is only to obtain a very rough measure of the plausible proportion of growth that could be attributed to the aid flow, by using the simplest possible approaches. For this, the available data may be acceptable. Let us, however, not forget that the inter-relations are extremely complicated, and that we are disregarding many of the inherent conceptual and methodological problems. The very simplest would be to start out from a Harrod-Domar approach, where the entire GNP growth is explained by the level of gross investment. Between 1960 and 1970, the yearly GNP growth in u-countries has been estimated by UNCTAD at 5.1 %. With gross investment at 19 % of GNP, the gross incremental capital output ratio (ICOR), will be 3.7 (19/5.1). Postulating the same gross ICOR for the aid resources as for the foreign commercial and the domestically generated part of the investment effort, pure aid would account for some 8 % of the total growth rate, or about 0.4 % per year.

This estimate is likely to overemphasize the role of aid capital for at least two reasons. First, we assume here that whatever the cause to growth, should be ascribed to capital formation. This would be correct only in so far as capital is the effective constraint to growth. In reality, however, a number of the u-countries included in our aggregate, are likely to be constrained by other factors than capital. Second, it should be clear that far from all aid is used for productive investment. Some assistance is given with the specific purpose of consumption, e.g. food shipments.[1] There are also indications that foreign resources, intended for investment, sometimes substitute for domestic savings and investment efforts.[2] An OECD study of 53 countries suggests that as investment is a rather stable magnitude, it is not surprising that foreign capital inflows will substitute for domestic savings. A relatively high negative correlation between the foreign capital inflow in % of GNP, and the average savings rate (-0.73) is given as a supporting evidence.[3]

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1. Increased food consumption can undoubtedly improve productivity in poor countries, and thus raise the GNP level. See for instance G Myrdal: Asian Drama, Pantheon, New York 1968, or S Kuznets: Modern Economic Growth, Yale University Press, New Haven 1966, p. 429. D Turnham and I Jaeger provide more specific instances of this interrelation in The employment problem in less developed countries, a review of evidence, OECD, Paris 1971, ch. 4. Higher food consumption also implies improved nutrition standards, and thus contributes to development as we have defined it.
2. See N H Leff: The Brazilian Capital Goods Industry 1929-64, Cambridge, Mass. 1968, or K Areskoug: External public borrowing, its role in economic development, Praeger, New York, 1969.
3. OECD: Interrelations among performance indicators, DAC/BA(69)8, September 1969.

In another crude attempt we might try to distinguish between the contribution of investments and of other production factors to growth. We could then start out from a simple Cobb-Douglas production function, and derive the role of investments in growth from the output elasticity of capital and the rate of expansion of the capital stock. Kuznets has estimated that the gross output elasticity of capital has changed in the now industrialized countries from around 0.75 to about 0.25 during the last 200 years.[1] Some empirical studies compiled by Hollis Chenery[2], confirm the latter figure for i-countries, but suggest that for u-countries today the gross output elasticity of capital is rather close to 0.5. Conjecturing that the yearly growth of the capital stock is around 4 %[3], the contribution of capital to GNP growth will be some 2 % per year (0.5.4). Since pure aid constitutes about 8 % of the overall investment volume, its contribution to the yearly GNP growth, calculated in this way[4], would be between 0.1 and 0.2 % per year.

These results correspond to a net real rate of return on pure aid of around 10 %. The $ 5.6 billion supplied from abroad would then add $ 560 million to NNP. Their contribution to GNP, incorporating an 8 % allowance for capital consumption, would be $ 610 million, or again between 0.1 and 0.2 % of u-countries' entire GNP.

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1. S Kuznets: Modern Economic Growth, op. cit, p. 180.
2. Time series estimates of sources of growth: Less developed versus advanced countries. Compiled by Hollis Chenery, Harvard University, March 1970, stencil.
3. The growth of the capital stock can be calculated on the basis of the following reasonable premises: Say that capital replacements account for about 40 % of gross investment, which equals 8 % of GNP. Assume further that the overall net capital/output ratio is around 3. (These two assumptions follow closely a set of estimates for low-income countries, presented by Kuznets. See Modern Economic Growth, p. 406 and 427). The size of the capital stock can now be obtained from the relation K/NNP = 3. NNP in 1970 would be 92 % of GNP, or $ 335 billion. This renders a total capital stock of about $ 1,000 billion in the u-countries considered. With net investments around $ 40 billion (some 60 % of $ 70 billion), the growth rate of the capital stock will be about 4 %.
4. Assuming that the proportion of aid devoted to reinvestment is the same as the reinvestment share in overall gross investment.

It should be underlined that the Cobb-Douglas approach, which was originally designed for i-country applications, is based on a number of restrictive assumptions, which don't hold in reality even in i-countries, and much less still in underdeveloped conditions. The figures just derived are likely to underestimate the impact of foreign assistance. This is because one of the assumptions underlying the analysis has been that the production factors employed along with the additional capital, have alternative, equally productive employment opportunities. This, of course, does not generally hold in u-countries. To the extent that the capital, skills and foreign exchange, contained in aid, activate underutilized labor and land in the recipient country, their contribution to the national product will be higher.[1]

We will not continue with further refinements along the formal paths outlined here. The measures presented should have clarified that if aid is regarded merely as investment capital, its contribution to growth will be rather small.

How good?

Since long, aid has been presented to alectorates in donor countries as a crucial prerequisite for growth in recipient countries. The latest expression for this is the Pearson Report. Thus, it is claimed that aid is not merely an addition to capital, but a catalytic input, activating dormant domestic resources. A key role attributed to aid is in helping to overcome the foreign exchange bottleneck, which limits the amount of possible investment, due to economy's dependence on imports of capital goods. Technical assistance is supposed to widen the recipient country's capacity constraints in the field of management and administration skills, to initiate valuable training programs and create lacking institutions, to improve the efficiency of industrial and agricultural production, by introducing suitable efficient technologies, and suggest activities which can make use of hitherto unutilized resources in the recipient country. Financial assistance, likewise, is said to be directed to infrastructural sectors with insufficient capacity for a reasonably balanced growth, or to build up industries, which will attract workers from the subsistence sector, where labor productivity is notoriously low. Furthermore, donors sometimes use program aid as an inducement or a bribe, to discard development hampering economic policies, which may be entrenched in domestic vested interests in the recipient country, while their advisors design more

1. See also the discussion on private versus social profitability in section 4.3 in this chapter.

dynamic strategies for that country's development. In the absence of such purposeful aid efforts, less labor could be absorbed in the labor force, and labor's productivity, as well as the productivity of the domestic part of investment would be lower. The conclusions drawn by aid donors, suggest that aid plays a key role as a cause to development and growth, and that its contribution to the growth rate is likely to be considerably higher than that derived from the measurements discussed above, since it depends also on aid's qualitative features, and not merely on its quantity. These are all crucial claims, which must be carefully examined in macro-evaluation exercises of aid.

If what has been said above is true, and aid does play a crucial role in the growth of recipient countries, it ought to be possible to find a strong positive correlation between the aid inflows and GNP growth rates. The attempts undertaken, however, have not been able to reveal any such correlation. Using a 40 country sample, the IBRD[1] finds no significant correlation in the 1960-65 GNP growth figures, and the same period's inflow of official capital and guaranteed export credits. More in line with the concept of aid used here, the OECD Secretariat undertook a correlation of GNP growth and "net official flows of resources" for 53 countries during the period 1963-66[2]. Again, no significant correlation was found.[3]

A somewhat different attempt is that of Chenery[4], who picked out 31 u-countries, with growth rates significantly above the average, and classed them into 4 categories, according to the particular features of their growth patterns. These were: 1. high primary exports, 2. low external dependence, 3. moderate capital inflow, and 4. high aid. The "high aid" group, which is defined as having a particularly high ratio of deficit in the Balance of Payments current account to total gross investment (from about 30% and upwards), consists of 8 countries, whose average GNP growth between 1960 and 1967 was between 6.4 and 9.4%, as compared with 5.0% for all u-countries. "Aid", as defined here by Chenery, is very different from the concept we have developed. What the figures show is simply that some countries have been successful in transforming a high foreign capital inflow into growth, but they don't indicate, whether other countries, which have

1. IBRD: Economic Growth, Trade and the Balance of Payments in the Developing Countries 1960-65, IBRD Staff Paper, March 1968.
2. OECD: Interrelations among Performance Indicators, DAC/BA(69)8, September 1969, Stencil, p. 12.
3. Also note K.B. Griffin - J.L. Enos: Foreign assistance objectives and consequences, Economic Development and Cultural Change, April 1970. The authors derive a weak negative correlation between growth and foreign capital inflows for a group of Latin American countries.
4. Barbara Ward, editor: The Widening Gap, Columbia University Press, New York 1971, chapter 1.

also had big capital inflows were less successful in this respect, nor do they show the specific effects of the concessional transfers.

It is unlikely that more meaningful results would emerge from a correlation of pure aid, as defined in chapter 2, and growth rates in u-countries. The difficulty in obtaining a strong correlation between growth rates and resource flows, certainly has a number of explanations. First, conditions vary considerably between countries with regard to labor availabilities, natural resources, economic policies, etc., all of which affect growth rates. Second, the effects of aid on GNP are difficult to catch, since they will emerge with a lag, and will be spread over several years. Third, it can be contended that the role of aid as a catalyst, claimed by many donors, is greatly exaggerated. We will develop this contention in the following several paragraphs. But if the predominant function of aid is merely to add to investment capital, its effect on growth is bound to be a small fraction of the total growth rate, as suggested by the calculations carried out above. So small magnitudes would hardly be noticeable in the wide inter-country differences of growth rates, even if the countries were classed according to their natural conditions, investment rates, or similar. It should finally be mentioned that a significant correlation, if found, would not prove the growth generation effects of aid. It could equally well result from the common donor attempts to maximize the productivity of their aid resources by allocating them to "success countries".

When we study the actual aid practice, it is fairly clear that aid in a world-wide context cannot possibly be the well-directed, properly conceived, dynamizing development input, which it is claimed to be by many donors. The entire section 2.3 was devoted to a criticism of the deficiencies in current aid flows. In summary, the competition among donors results in a lack of coordination of aid endeavors, geographically and sector-wise in recipient countries. The intricate and highly diverse aid donor bureaucracies tend to occupy far too high a proportion of the scarce administrative resources of the countries receiving aid. A combination of donors' self-interest and lack of imagination also decreases the development impact of aid. Sometimes it even gives a clearly counter-developmental orientation to parts of the aid effort. The short tenure and occasionally questionable quality of personnel involved in the execution of aid, frequently results in routine problem solutions, based on i-country experiences, with no testing of their appropriateness for the quite different circumstances of the recipient country.

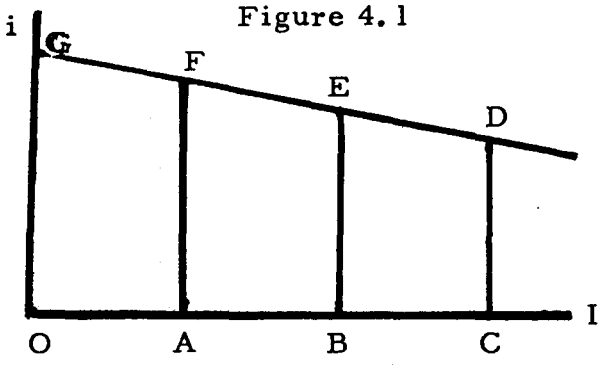
In view of all these deficiencies, the claim that overall world aid is a catalytic input, without which growth would be considerably slower, cannot be accepted on its face value, and remains to be proved by much closer scrutinies on a country-by-country or donor-by-donor basis. The specific questions to be asked in a quality examination of this type, emerge from the donors' claims of the excellence of aid. The following ought to be included: Is foreign assistance really directed towards relieving the recipient country's resource constraints? Is it provided in a form which will help in overcoming these constraints over a longer period of time? Are the aid resources efficiently used, and suitably combined with domestic inputs in bringing about the specific objectives pursued? Are the aid endeavors repetitive in the sense than they replace existing activities, or do they venture into fields with important and largely unsatisfied requirements? What is the quality and relevance of the knowledge and experience transferred with the aid personnel? Does aid contribute to a more smoothly functioning market system or does it reinforce the market- and price-distortions existing in the recipient country? How well conceived are the technologies, policies and institutions introduced and promoted by the aid effort for the circumstances prevailing in the recipient country? Are they creating economic and social enclaves, or do they help in the integration of the country's political, social and economic structure?

When undertaking such a scrutiny of overall aid, it is also essential to try to determine what would happen to growth or to development in the absence of the aid flow, rather than to add up the effects of all the aid-supported endeavors. Unless their own domestic, commercial, strategic or political interests guide them otherwise, aid donors have a tendency to concentrate their assistance on "attractive" ventures, with a relatively certain economic outcome, and preferably with a high contribution to GNP growth. This is because such a project selection is generally thought to be preferred by the public opinions in donor countries, while it is simultaneously easily accepted by the planners of the aid receiving country, in view of the risk that alternatively the concessional resources might be transferred elsewhere.

The result of this is that aid tends to be concentrated to the modern, more efficient sector of society. Aid resources are more commonly used to support large, modern industries, than to augment cottage industry production. In the transport sector, we will probably find a higher aid involvement

in developing trunk roads, and expanding truck freight, than in opening up the back country with the help of feeder roads or investment in ox-carts. In agriculture, the tendency is to assist the marketed rather than the subsistence part of production. This lopsided aid allocation obviously does not prove that aid resources are inherently more efficient than the domestic ones. Rather, it reflects the fact that aid donors in a sense have the first choice in selecting areas of activity. With aid, the recipient country is enabled to concentrate its own resources on other matters. If aid were not available, the order of priorities for domestic resource use would quite certainly be changed, but many ventures which are now aid supported, would be materialized even in the absence of international assistance. The conclusion is that the effects of aid would probably be smaller than the summation of the effects of all individual aid endeavors.

Figure 4.1



Let us illustrate what has just been said, with the help of a set of highly simplifying assumptions. Say that the development plan of country U requires a volume of investments, OC, over a given period of time, to enable the country to grow at a desired rate. In figure 4.1, these investments have been ranked according to their rate of return, i, taken as a proxy for each venture's contribution to GNP growth, to form the descending line, GD.

Suppose now that country U can generate on its own, through savings, export income and attraction of foreign investment, an amount of investible resources equal to OB, and that donors provide an aid volume equal to BC. Following the practice described above, the donors of aid will tend to concentrate their support to ventures with high rates of return, that is the ones between O and A. Does this mean that the productivity of aid will be higher than that of the other development resources? In the absence of aid, the best course for country U to follow, would be to concentrate its efforts on the projects between O and B. This means that the marginal contribution of the aid resources is only BCDE, with smaller average rates of return, than those from the other resources.

The situation will be different, however, if we assume that on the average, the import input requirement into investments is 50%, and that country U

suffers from an exchange bottleneck. Suppose, for instance, that the ex-ante savings potential is OC, but investment is restrained to OB by insufficient exchange availability. An inflow of program aid, equal to 1/2 BC in the form of untied exchange resources, will now be sufficient to enable the country to undertake the whole planned development effort, and aid will on average have a very high productivity, through its activation of domestic savings resources, which could not otherwise have been used for investment.

This graphical illustration may be purposeful as a warning against an uncritical over-valuation of the growth- or development-effects of aid. It is far too rough a tool, on the other hand, to be used in practical assessments of the overall effects of aid in a recipient country. This is due to several reasons. First of all, the national development plans, although in general considerably improved over the past decade, are still so unprecise in a majority of countries, that they could not be presented anywhere near the neat form of figure 4.1. Second, even if the theoretical GD schedule could be constructed, it is highly uncertain to what extent u-countries would be able to move around their own resources between various purposes, along with the short-run variations in the amounts and allocations of aid. Political pressures of diverse types, earmarked taxes, and forceful independent ministries are likely to restrict very severely the flexibility in use of domestic development resources. Third, it should be noted that the plans, and their underlying development strategies have frequently been heavily influenced by the donors.[1] This influence might express itself in high and inflexible foreign exchange requirements in the plan execution. To the extent that this donor influence is an important cause to the u-country's exchange scarcity, it would seem somewhat out of place to attribute a high growth effect to aid, just because it overcomes a constraint which it has itself helped to create. It is, finally, only in unusual cases, that aid is provided in the form of untied foreign exchange programe support. If the aid-supplied exchange is tied to purchases in the donor country, or to specific projects, it is not at all certain that the recipient country's exchange constraint will be relieved.[2] These are some of the considerations, which have to be kept in view, when assessing the impact of aid in a recipient country's progress.

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1. See discussion in section 2.3.
2. See discussion in chapter 6 on Kenya's and Tanzania's constraints.

Innovation aid versus bulk aid

At this juncture it might be useful to introduce the distinction between what I have chosen to call innovation aid - and bulk aid. The difference between the two, as I see it, is that bulk aid provides additional resources for known activities in the recipient country. Innovation aid, on the other hand, contributes something new, which for various reasons could not have been accomplished without aid support. I can think of three different cases, where aid plays this crucial role. The first is when the aid venture results in some completely new concept, product or process, which had been unknown before. The second is when aid provides a resource which was not unknown, but for some reasons difficult to obtain. The third is when the resource provided is neither original nor difficult to obtain, but where the decision makers in the recipient country were ignorant of its existence, or consequences.

It will not be easy to draw a clear-cut line distinguishing the two types of aid. A number of assistance activities, although predominantly of the bulk variety, will have some innovative features embodied in them. Perhaps a somewhat more formal approach might be helpful in clarifying the distinction.

It will then be necessary to become specific about the definition of development, by assigning weights to the eight development variables, presented in chapter 3. Let the objective function, Q, be the development level, defined by an aggregation of the quantifiable and comparable levels in consumption, health, education, employment, etc., called x_i, expressed as:

$$(1) \quad Q = Q(x_1 \ldots\ldots\ldots x_n).$$

The maximization of the objective function (1) is constrained in three ways. First, the domestically generated resources required for reaching improved levels in health conditions, employment, etc., are limited. This is expressed in the set of inequalities

$$(2) \quad \begin{array}{l} g_1\ (x_1 \ldots\ldots x_n;\ P_1 \ldots\ldots\ldots P_z;\ T) \leq R_1\ (y_1 \ldots\ldots\ y_m) \\ \vdots \\ g_s\ (x_1 \ldots\ldots x_n;\ P_1 \ldots\ldots\ldots P_z;\ T) \leq R_s\ (y_1 \ldots\ldots\ y_m) \end{array}$$

which show that for instance the requirement of resource 1, say, foreign exchange, needed to reach the x_i's expressed in the "development production function" g_1, must not be greater than R_1, the availability of that

resource. Note, however, that the domestic availability of foreign exchange in this case, is itself a function of a number of parameters, the y_i's, characterizing the country, e. g. its poverty, its colonial heritage, and its social and political structure. Note also that the y_i's themselves depend on both the level and the rate of development, whereby the system becomes inter-dependent. This means that the set of functions (2) has not been reduced as far as mathematically feasible. I have chosen the present formulation because it is illustrative in explicitly bringing out the commonly observed resource constraints, R_i, like savings, exchange or skills, and is thus useful for the following exposition, where we distinguish between the roles of various forms of aid. Also, further mathematical refinements are not necessary, since I do not intend to solve the system.

The second constraint arises out of the government's desire to pose certain restrictions on the policies which it pursues, e. g. to put a maximum on the number of foreigners in the country's administration, to require that industrial expansion is faster than agricultural growth, to promote capital intensive methods by an unwillingness to increase interest rates above a certain level, to restrict the development of higher educational facilities until universal primary education has been attained, etc. Adherence to a specific policy may constrain the attainable level of development by preventing or limiting activities with a considerable development impact, or by necessitating the use of activities which have especially intensive requirements of scarce resources. In terms of our model, the policies P_i, determine the level of the "development production functions" g_1-g_s, and thus constitute a constraint on the value of the x's, which can be reached by given resource inputs R_i. Thereby they also limit the attainable level of Q. The whole system of "development production functions" is shifted, when a development hampering policy is relaxed. As a result it becomes possible to reach a higher level of Q.

The third constraint results from a limited knowledge of technology, T, which determines the "development production functions" g_1-g_s in much the same way as policies. When more appropriate technological choices are made available, the "development production functions" can again be shifted, and a higher level of Q be attained with an unchanged level of resource inputs.

The reader should note that the term "development production function" as used here, incorporates economic, social as well as political inter-

relations, and is therefore a much wider concept than what is commonly understood by the term "production function" in economic analysis.

I have preferred a static formulation of the model, in order to ensure a greater simplicity in exposition. But it is naturally understood that we should be equally concerned with the future levels attained by the system. Thus, a more realistic formulation of the objective function (1), for instance, would also have to take the growth of the x's over time into account.

The model can now be used for a broad definition of areas, where aid can play an important role in overcoming the constraints.

1. The most common use of aid is to expand the domestic resource base of u-countries by adding to the R-s, through provision of skills, capital, foreign exchange etc.

2. Instead of simply adding to the scarce resources, aid can be used to effect the y-s themselves, e.g., the structural, social and political conditions, as distinct from policies, on which the resource constraints are dependent. For example, to help in weakening the savings constraints, aid can be used for expanding the banking network in the country-side, as a measure to generate more domestic savings.

3. There could be a role for aid to clarify the effects of the policies, P_i, on the "development production functions" g_1-g_s, and thereby on the maximization of Q. This may induce the recipient government to change its policies, so as to decrease the constraining effects generated by policy.

4. Finally, aid can be used with the specific purpose of providing new insights into T, the development production techniques in their widest sense, again with the aim at changing the "development production functions" g_1-g_s.

Aid of category 1 would then always be of the bulk variety, while that of category 4 would belong to the innovative kind. It is more difficult to classify unequivocally the assistance efforts of the second and third categories. In general, their innovative nature would have to be tested by asking whether aid is indispensible in bringing about the changes or initiating the activities, and not merely substituting for domestic resources,

due to the insufficiency of the latter.[1] A few factual instances of innovation aid ventures might further clarify the contents of our concept.

In the mid-50's, birth control was a new, and not widely accepted activity, uncommon in the development thinking of most u-country administrations. Except for one or two institutions with limited resources, nobody supported family planning aid. At that time, both the work intended at clarifying to u-country governments the effects of slower population growth and the actual financing and execution of birth control programs, was innovation aid. Since then, most governments of u-countries have become convinced about the urge and economy of slowing down the population increase. Techniques for carrying out birth control programs are available from actual experiences of several countries. There is today nothing preventing a country from venturing into such activities on its own without aid support, by simply purchasing on commercial terms the foreign-made contraceptives and advice required. In a majority of cases, therefore, birth control has ceased to be innovation aid, and has instead become bulk aid.

A similar argument holds for comprehensive agricultural development programs, e. g. Ford Foundation's Intensive Agricultural Development Program in India, the Comilla Village Academy work in East Pakistan, or the more recent Swedish-supported CADU-project in Ethiopia. When first

1. The model outlined here can also be used to give more precision to the aid as a catalyst term, which has been somewhat loosely used in the above discussion. Aid will have catalytic effects if some of the u-country's resources, R_i, which were earlier redundant for technological or other reasons, can be activated with the help of aid. Innovation aid can have catalytic effects if it makes available to the recipient country a novel, and more labor intensive competitive production technology, which helps in absorbing underemployed labor. Bulk aid can also have catalytic effects, for instance when it is supplied in the form of capital which was so scarce before, that part of the labor force was unemployed. The catalytic effects of aid will be small or non-existent, on the other hand, if the aid transfer concerns resources which are not scarce in the recipient country (school teachers to India), if assistance is provided for highly capital intensive equipment, which will not absorb, but rather increase the number of, the unemployed, or when aid's absorption of the recipient country's scarce administrative resources is so large, that it results in a decrease, or a qualitative deterioration of the domestic part of the development effort (proliferation of aid-financed "high-level" seminars for public decision-makers from u-countries).

introduced on the Indian sub-continent, this intensive and comprehensive rural development approach was clearly innovation aid, whose purpose was to provide a superior alternative to the then common peace-meal agricultural development approaches. Today, the working and results of comprehensive agricultural development programs are well-documented and well-known. Aid support for such ventures would therefore hardly be innovative any more.

Help in breaking up international monopolies is another example of innovation aid. This can take many forms, for example provision of advice in negotiations with foreign investors, so as to obtain better terms to the host country or help in locating alternative sources for otherwise monopolized and inaccessible supplies of capital goods or technology.

Development of technologies or products suitable for the conditions of u-countries must also be referred to the innovation aid category. The work from which the new high-yielding wheat and rice varieties emerged, is a case in point. An interesting question is to what extent the aid work put into the green revolution after the development of the new seeds should be regarded as innovation or bulk qid. In the definition above I included into innovation aid the dissemination of new, development-related concepts, of which u-countries were ignorant. Thus, the propaganda around the green revolution was a clear case of innovation aid. But now that the new seeds are both known and accepted, further work for their spread and use would hardly warrant inclusion in the innovation aid category.

National development planning has now become an accepted feature in most u-countries. Support for drawing up a conventional development plan, showing the interrelations between efforts and expected achievements at the national level, would hardly qualify as innovation aid any longer. But if the expert support consists of an innovation in the planning technique, or a novel development strategy, it should be classified as innovation aid. An instance of this is ILO- s interesting approach in making employment a goal superior to GNP-growth, in designing labor-intensive development strategies for Columbia and Ceylon.[1] Likewise, an assistance effort to persuade the uninformed government in a highly underdeveloped country of the usefulness of development planning itself, should be considered innovation aid too.

1. Towards full employment, a program for Columbia, ILO, Geneva 1970, and Matching employment opportunities and expectations, a program of action for Ceylon, ILO, Geneva 1971.

Innovation aid could naturally also be misdirected. In fact, its novel and relatively untested nature implies a high degree of unpredictability in application. The concept of highly capitalized, large-scale groundnut plantations in Tanzania, was certainly original, but proved to be an utter failure. Similarly, advice on untried economic policy directions does not guarantee a successful development outcome.

The reason for the amount of attention devoted to the somewhat unprecise distinction between innovation- and bulk aid, is its great importance in assessing the development impact of foreign assistance. Bulk aid will, in principle, permit an increase in the development level, Q, without changing the form of the "development production functions" g_1-g_s. The role of innovation aid, on the other hand, will consist in increasing the development level by changing these functions. In the latter case, the impact may be completely out of ordinary proportions in relation to the aid input. Consider for example the effects of the innovative introduction of the high-yielding wheat and rice seeds in South Asia. With the new agricultural technology, all inputs into agriculture suddenly became more productive than before. A number of the "development production functions" were shifted so as to permit the attainment of a higher level of the objective function Q.

It might be possible to design more or less general rules for measuring the effects of bulk aid. In the case of innovation aid, on the other hand, general rules will not do. A complete assessment of the overall impact of aid, would therefore first require an identification of the innovative elements in the aid program studied, and second, a detailed analysis, tailormade for the circumstances at hand, clarifying how and to what extent the innovations contribute to development.

An overwhelming part of all foreign assistance rendered in recent years has been of the bulk variety. In my opinion, aid could play a far more development promoting role, by redirecting part of its resources into "Schumpeterian" innovations, aimed at reformulating the current input-output relationships in development work. Such reformulations would be particularly important, since once a more suitable "development production function" has been brought into use, it is likely that bulk aid too will become more productive. In the last section of this chapter we will again take up the thread pursued here, by pointing to specific areas of activity, where aid could play an important innovating role.

Some tentative conclusions

We have mainly dealt with aid in a world-wide context in this section. But the approaches and arguments can be equally applied in studies of individual recipient countries. One such attempted application will be undertaken in chapter 7.

We have found our subject difficult to tackle, even when the problem was simplified to the inter-relations between aid and growth, rather than between aid and development. If aid is merely regarded as an addition to recipient countries' investment capital, its effect on growth will be rather small, as the numerical measures in the beginning of our exposition suggest. This reflects the limited availability of pure aid.

The evaluation of aid's impact on development at the macro-level is still more intricate, and its outcome could hardly be expected to provide definite, quantitative results. One could conjecture that the contribution of world aid to the development process during the past decades has been less important than its contribution to growth. This is because during the 1950's and 1960's, growth of GNP was taken as the overriding objective for aid. The various social factors which form part of our development definition, have only recently been brought into the center of aid discussion. In earlier years, and to a high extent still today, changes in the social conditions are usually considered as byproducts rather than as the essential results from international assistance. With the interest so concentrated on growth, it seems reasonable to assume that the effects of aid have been more significant on the increase of GNP than on the other variables in our development definition.

We have not been able to verify the claim that aid plays an important role as a catalyst, activating dormant domestic resources in u-countries, and that therefore its contribution to growth or to development is much higher than its share of investment resources would imply. Neither have we been able to refute this claim. However, the inability to find a positive correlation between aid and growth, the many inefficiencies in the present practice of transferring assistance, and the smallness of innovation aid, suggest that the claim is somewhat doubtful.

Our inability to reach definite results in the attempted macro-assessments of aid's role, strongly point to the importance of combining the macro-evaluation with an alternative approach, which could bring us some additional insights into the problem. Evaluation of aid at the micro-level, to which we now turn, might help us somewhat further in dissolving the com-

plexities of the problem in our hand. The inconclusiveness of the attempted macro-assessments should not induce us into discarding the macro-level approach. For, whatever the advantages of the micro-level analysis, it will never provide us with the overall perspective, without which it is impossible to judge whether an individual aid project, no matter how good within the micro-horizon, will fit into the overall whole. A combination of the two approaches, therefore, appears to be indispensable.

4.3 Aid evaluation at the micro-level

The ultimate objective of aid evaluation at the micro-level is to determine each project's contribution to development, so as to get a basis for the selection of projects to be supported. Ideally, where a comprehensive development plan exists and is in use, there should not be any need to evaluate individual projects separately. The usefulness of the projects contained in the plan, has already been judged in the plan preparations. The complete plan must also provide a time dimension, indicating the sequence in which its various parts should be executed. All this being given, no further choice between activities is required, and the necessity and importance of every project can be taken as granted, by its inclusion in the plan.

In practice, the situation is different. Although most u-countries have now adopted development planning as a tool for speeding up development, the plans are far from the ideal, comprehensive development instrument, referred to above. The difficulties in the preparation and execution of national plans can perhaps be summarized as lack of information, insufficient foresight and inadequate instruments for control. The result is that many development plans in u-countries are not much more than a collection of anticipated activities in the public and private sector, sometimes spiced by the planning ministry's wishful thinking, where insufficient consideration has been devoted to the development implications of the whole, and where in any case, the ex post outcome is likely to differ very considerably from the plan, both in contents and in magnitude. In some cases, the plan may not even pretend to have development as its primary goal. Military adventurism, or maintenance of power for a small oligarchy, both aspects with which aid donors may find it difficult to associate, can for instance heavily influence the direction of the planned effort.

In these circumstances, there is more than sufficient cause for aid donors not to take the plan's preferences and goals for granted, but to be concerned about the usefulness of the specific projects which they intend to support.

Although there is much confusion in the vocabulary, it is possible to discern in current linguistic usage, the distinction between evaluation and appraisal. Appraisal usually refers to a scrutiny of the value and usefulness of a project at the planning stage, before the activity has been initiated. A similar investigation is called evaluation, if it takes place after the activities have started, or when they have been completed. In the context of this study, there is no particular reason in maintaining a distinction between the two. In what follows, the expression evaluation will be used irrespective of when in the project cycle it is undertaken.

Evaluation of development effects from projects is complicated. If a proper analysis is to be made, the evaluation endeavor is bound to be somewhat cumbersome. This is probably one explanation to the rather limited work done in this field so far. It is somewhat pathetic to find that in a discussion of the productivity and usefulness of public sector activities in Sweden, the practical example provided, refers to Swedish family planning endeavors in u-countries.[1] In the next section I will outline the methodology which I propose to use in the case studies to be presented in chapter 8. In the remaining part of this section we will deal with some of the alternative approaches which are now currently used in evaluating aid projects. The order of presentation will be according to their ascending level of relevance to development.

Some evaluation endeavors capitulate at a very early level, and don't proceed much beyond a scrutiny of the administrative efficiency, with which a project is run.[2] This does not carry us very far in assessing the value of the activity in terms of contributions to development. At the next level of sophistication, evaluation is centered on scrutinizing the quantitative achievements of a project. Number of students enrolled or examined, kilometers of road built, amount of electricity generated or increases in agricultural production, are compared either with pre-determined targets, or with the costs incurred. A number of question marks immediately pose themselves, regarding the validity of evaluating in this way. For example, the predetermined targets could have been wrongly forecast. Alternatively, the targets are no longer relevant, due to some changes external to the project. More efficient technologies in electricity generation, or the green

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1. Förvaltningsrevision i staten. Riksrevisionsverket, Södertälje, Sweden. 1970, p. 82..
2. This is how I would describe OECD's "Evaluation of the Nordic Project for Cooperative Assistance to Kenya", Paris, April 1969, stencil. After a brief, and somewhat inconclusive discussion of the role of cooperation in the Kenyan economy, the study centers its attention on the administrative efficiency of the venture.

revolution, would alter substantially the quantitative output expectations in these two fields. Secondly, the activity of individual projects must be seen in relation to what is going on in general in the country. In other words: Is there a development need for the particular output provided? Training in the history of art, or English literature may be considered valuable by those receiving the training. But 100 more graduates in these subjects will have little to contribute to development, unless their training has linkage with and can support other development activities in the country. Thirdly, and somewhat related to the previous point, there is the question of how to determine the value of the output, to be compared to the cost of resources used. Quantitative data alone don't provide a ready reply to this point.

Many of those involved in development work would like to see the answer to the last query in an analysis of the profitability, expected, or achieved, of a given venture. This would automatically furnish the values to be allotted both to the inputs used, and the outputs of the project. It is obvious that profitability tests precede all private foreign investment involvements. Similarly, international investment banks, dependent on the confidence of private financial centres, put a heavy emphasis on profitability evaluation of projects in which they are involved.

Private profitability is probably a reasonable short-term measure of the recipient's ability to service and repay the loans received. Likewise, in most cases it would be an acceptable indicator of the gain to society from the project, if the conditions are not too far removed from competitive equilibrium.

But in most u-countries, the economic reality could in no way be described either as competitive or as equilibrium. The subject has been dealt with at length in chapter 3. In summary, monopoly or oligopoly situations are common in u-countries. This partly results from a combination of economies of scale in many lines of production and distribution, and the smallness of most u-country economies. The smallness of the economy also leads to non-marginal effects, when larger development projects are initiated. A majority of u-countries suffer from severe unemployment, which is aggravated by undeveloped information and communication channels. Interest and exchange rates are pegged by the government at too low levels in many cases. This results in rationing, which commonly favors the big and established institutions. Use of quantitative controls in the field of investment and imports is likely to have a similar effect. Under these conditions, private profits are a very deficient guide to the social usefulness

of various activities. It should also be noted that to obtain a private profitability figure at all, it is necessary that there is somebody prepared to pay for the output. In the case of public goods, therefore, it is often difficult to establish any private profitability measure at all.

One way to come to grips with the deficiencies of private profitability is to replace it with the social rate of return or the benefit/cost ratio, of the venture considered. The analysis required to obtain the social rate of return is akin to the calculations through which private profitability is derived, and the easiest way to understanding it, might be to examine the differences between the two. In what follows, we will work through a numerical example which might help clarifying some of the issues involved. It should be underlined that our example is entirely hypothetical.

Consider first the private profitability measure. A private investor will choose activities with the highest expected profit ratio, e.g., the present value of net profits over the present value of invested capital, both discounted by the market rate of interest. In development projects like roads, schools and hospitals, where no ordinary sales take place, the correspondent to private profitability will have to be derived by postulating a social value, e.g. the amount that society would be prepared to pay, in order to obtain the goods and services supplied by the project considered.

To simplify, we assume that the entire investment takes place in the beginning of the period under review, and that it results in a flow of unchanged yearly profits. In judging an activity, it will then be sufficient to compare one year's profits with the original investment. This simplifying assumption will be removed later on. Fixed prices and perfect foresight are also assumed.

Suppose that the private investor can choose between the alternative shoe production ventures, each involving an investment expenditure of 200, 10 % of which is worn out, and has to be replaced each year. Account M1 shows the expected yearly profit estimates from investing in a modern, capital intensive venture. Account T1 shows the results from a corresponding investment in a traditional, and far more labor intensive outfit. We need not be specific about the technique and organization adopted in the traditional venture. It could, for instance be based on handicraft production, carried out in the homes of the workers, but with input supplies and marketing centrally organized.

Private profit and loss accounts

Modern Venture Account M1				Traditional Venture Account T1			
1. Purchase	20	7. Sales	120	1. Purchase	40	7. Sales	150
2. Wages	20			2. Wages	50		
3. Interest paid	20			3. Interest paid	30		
4. Depreciation	20			4. Depreciation	20		
5. Profit tax	20			5. Profit tax	0		
6. Net profit	20			6. Net profit	10		
	120		120		150		150

Ceteris paribus, the private investor will prefer the modern venture, since this ensures a net profit (item 6) of 10 % on the capital he has invested, in comparison with only 5 % in the traditional venture.

Assume alternatively, that the modern and traditional sectors are dichotomized, so that investors do not operate simultaneously in both, and that the market rate of interest on borrowed capital is considerably higher in the traditional sector, say 15 %, in comparison with 5 % in the modern sector. These assumptions resemble the real conditions in many u-countries. In such a situation, it is likely that the modern venture will be established, since its private rate of return on capital invested, 10 % considerably exceeds the rate of interest on borrowed capital. The traditional venture, however, will probably not be set up, since the traditional sector expectations of the private rate of return on capital would not be lower than 15 %, while an investment in the venture offers no more than 5 %.

The private rate of return is usually considered a deficient measure of society's benefit from a project. The deficiencies result from taxes, marked imperfections and externalities.[1] The latter two usually carry a heavier influence in underdeveloped economies. This adds to the importance of social profitability calculations in u-countries. To obtain the social rate of return, we can start out from item 6 in accounts M1 and T1, but have to adjust the calculations as follows:

1. The market prices may not reflect the real scarcities of inputs and outputs. Shadow prices have to be used instead in the valuation of the investment expenditure, and of items 1, 2, 3 and 7, in both accounts, to derive the social profit. In theory, one could think of a perfect set of shadow prices obtained, for instance, from a solution of the macro-economic

1. I. M. D. Little and J. A. Mirrlees: Manual of industrial project analysis in developing countries, Vol. II, OECD, Paris, 1969, p. 20-21.

programming model presented in section 4.2. The model would provide not only a set of prices, reflecting the real scarcities of all factors and products, but also the optimal investment allocation pattern, given the preferences, and available resources.[1] There would therefore be no need to scrutinize individual projects.

In practice, such an exercise becomes meaningless, in view of the real world complications, and much more pedestrian methods have to be used. What we search is the approximate alternative cost to society from the ventures' resource use. The most common price adjustment concerns the inputs, and in particular the labor input. If unemployment is a severe problem, the labor force would not be able to secure alternative work, except perhaps at lower wages than those offered in the two activities. The shadow wage will therefore be lower. If, as a result of economic policies, the prices of capital and foreign exchange have been distorted and dichotomized as between sectors, we should search for their equilibrium levels, and adjust accordingly the two ventures' interest costs (item 3), and outlays for purchased inputs (item 1), insofar as these have been imported. Frequently, the black market prices of rationed inputs give a fair approximation of the shadow price. As a rule, it is therefore not difficult to decide on the direction of the shadow price adjustment, but its precise magnitude is much harder to determine.

2. Tax payments, which constitute a cost in private profit accounting should not be deducted in the social profit calculations, because they are not a cost from society's point of view. We have assumed that the venture in the traditional sector is not liable to any taxes. In the modern venture, however, item 5 should be deleted. If indirect purchase taxes are included in, for instance, item 1, such taxes should also be excluded in calculating the venture's social input costs.

It may be instructive to pause now, and to reformulate the profit and loss accounts on the basis of the adjustments undertaken so far. We start with the modern sector venture. Say that item 1 consists of imported goods, on which a purchase tax of 5 has been imposed. The purchase cost, exclusive of tax is then 15. We estimate, however, that the shadow price of these imported items ought to be twice as high, in view of the overvalued currency, and ensuing import licensing. The adjusted cost will then be 30,

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1. See I. Adelman. F. Sparrow: Dynamic linear development planning, two case studies, AID stencil, June 22, 1966, for a practical attempt to apply this approach.

considerably higher than in the original account. The modern venture employs 10 workers, and its unit labor cost is 2. From available information on wage levels in agriculture, we estimate that an appropriate shadow wage level[1] should be no higher than 1. The wage costs therefore decrease to 10. The shadow interest rate should be set so as to create balance between the demand and supply for investible resources. The shadow rate will then correspond to the social rate of return obtained from the marginal, least profitable venture which is undertaken. In practice, we may content ourselves with the rough conclusion that the modern sector interest rate is far too low, and conjecture that the shadow level might rather be somewhere around 10%. The shadow interest payment in the modern venture will then double to 40. Item 5, profit tax, is naturally deleted.

A similar recalculation of the traditional activity involves the following changes. Purchase costs remain unaffected, because the goods bought are of domestic origin, and have not been taxed. The traditional venture employs 40 workers at a unit labor cost of 1.25. With a shadow wage of 1, the social labor cost decreases to 40. Similarly, actual interest payments at 15%, have to be adjusted to the 10% shadow level, and will therefore decrease to 20. Before we study the new profit and loss accounts of the two ventures, it should be clarified that we have omitted the shadow price adjustments of item 7, the sales value, and of the original investment costs of the venture. The principles for these omitted adjustments are exactly the same as for the input reevaluations just undertaken. The reason for the omission is simply to shorten and simplify the argument. In what follows, we will assume that the unadjusted amounts of these two items do in fact reflect their real scarcity values.

Profit and loss accounts exclusive of tax, and with adjustments for real scarcity input prices

Modern venture Account M2				Traditional venture Account T2			
1. Purchase	30	7. Sales	120	1. Purchase	40	7. Sales	150
2. Wages	10			2. Wages	40		
3. Interest paid	40			3. Interest paid	20		
4. Depreciation	20			4. Depreciation	20		
5. Profit tax	0			5. Profit tax	0		
6. Net profit	20			6. Net profit	30		
	120		120		150		150

The adjusted profit and loss accounts have turned around the attractiveness of the two ventures. While the modern shoe factory gives a profit

1. The shadow wage also takes into account the cost to society from increased consumption and consequently decreased investment, resulting from the employment earnings.

which is barely adequate to cover the 10% shadow capital cost of investment, the traditional shoe manufacturing now renders a 15% net profit, well above the real scarcity price of capital.

The profit figures which emerge in the adjusted accounts, have a particular significance, because they constitute the marginal contribution of the two ventures to the net national product at factor cost, that is to the resources available to the nation for consumption and net investment. This can easily be understood by considering what happens to NNP, if the ventures are not established. Our valuation of the inputs under items 1, 2 and 3 implies that in an alternative use, their contribution to national product would remain unchanged. Depreciation does not contribute to consumption or net investment, and what remains, therefore, is item 6, the adjusted profit. The sum of items 4 and 6 is the contribution to GNP from each of the two ventures. It is useful to keep this link between the macro- and the micro-aspects of growth in mind.

3. The third adjustment concerns the externalities brought about by the venture, which are neither included in the private profit calculations, nor taken care of in the adjustments which we have undertaken so far. In principle, the externalities should be incorporated in the social profit calculations of our accounts. Thus, if there is a damaging influence on the environment, this should be assessed, and added to the costs of the project which causes the damage. Likewise, if any of the ventures cannot internalize the full benefit from its labor training activities, because the trained workers move to other firms, this should be reflected in a higher social profit, by adding the value of the external benefit among the outputs, on the credit side in the social profit and loss account. The amount of externalities will also be determined by the extent and force of the forward and backward linkages of the venture considered, with the rest of the economy.[1] If the shoe manufacturing causes a fall in the price of shoes, or an increase in the price of leather (already taken into account in our input and output price calculations), this may in turn lead to a socially profitable expansion of tanneries or shoe marketing. These linkage effects would have been foreseen and incorporated in the perfect shadow prices of inputs and outputs emerging from a total and perfect dynamic macro-economic development model of the type briefly referred to above, but are not in our pedestrian shadow price calculation efforts. On a more down-to-earth level, linkage considerations ought to be a central issue in composing a national development plan. Choice of ventures incorporated in the plan would in such event automatically ensure sizable positive linkage effects. But the

1. For a definition of linkages, and a discussion of their role in economic development, see A. Hirschman: The strategy of economic development, Yale University Press, New Haven 1958, chapter 6.

perfect dynamic macro-model does not exist. Neither can we be sure that the linkages have been sufficiently considered in the national plan. A proper social profitability calculation would therefore require an attempt at quantifying and incorporating these positive linkage effects among the outputs of the venture considered. In a sense, one could say that a quantification of the linkages involves an attempt to foresee the future dynamic external consequences of the venture under scrutiny.

In practice, it seems very difficult to reach agreement on the existence and importance of externalities, with the result that many of them are frequently disregarded in factual social profitability calculations of individual development ventures.[1]

To account for the uncertainty and lacking precision, the external effects could be presented in the form of wide ranges. But since our figures have only an illustrative purpose, and we wish to simplify as far as possible, we will present the external effects as unambiguous numbers. Assume, then, that the environmental damage can be valued at 5 in our modern venture, but at 0 in the traditional undertaking. The positive external effect of labor training is again 5 in the modern venture, but 0 in the traditional one. The value of linkages, finally, is estimated at 10 in the modern venture, but at 20 in the traditional one. After incorporating these externalities into our profit and loss accounts, we are ready to calculate the social rate of return in each of the ventures. The calculation appears from the M3 and T3 accounts on the next page.

Profit and loss accounts exclusive of tax, and with adjustment for real scarcity prices and externalities

Modern venture
Account M3

1.	Purchase	30	8.	Sales	120
2.	Wages	10	9.	External value of labor training	5
3.	Interest paid	40	10.	External value of linkages	10
4.	Depreciation	20			
5.	Profit tax	0			
6.	Environmental damage	5			
7.	Social profit	30			
		135			135

1. This view is supported by the arguments forwarded in Little-Mirrlees, op. cit., chapter 16. For a specific example, see H Van der Tak and J. de Weille: Reappraisal of a Road Project in Iran, World Bank Occasional Staff Papers, no. 7, 1969, which is an ex post study, evaluating the society's returns from a trunk road project for which the Bank had lent money. Even though the study notes the nature of external effects created by the project, no attempt is made to calculate their magnitude.

Traditional venture
Account T3

1.	Purchase	40	7.	Sales	150
2.	Wages	40	8.	External value of linkages	20
3.	Interest paid	20			
4.	Depreciation	20			
5.	Profit tax	0			
6.	Social profit	50			
		170			[illegible]

In our example, the social rate of return would then amount to 30/200, or 15% in the modern venture, but 50/200, or 25% in the traditional venture. Both ventures appear worthwhile to undertake, since their social rate of return exceeds the shadow rate of interest, but the traditional one is preferable, in view of its higher social rate of return. It should be underlined that the examples presented in the profit and loss accounts have had a purely illustrative purpose, and are not intended to show that the social rate of return in traditional, labor intensive ventures will always be higher than the corresponding private rate of return.

Our initial simplifying assumption of all investments taking place initially and equal yearly profits thereafter, can now be relaxed. If net investments are spread over several years, and profits fluctuate, the social rate of return will be that interest rate which equates the combined present value of the yearly profits and the proceeds from the sale of the venture at the end of the period considered, with the present value of net investment costs.

It is not equally easy to relax the more fundamental simplifying assumption about perfect foresight. To come to grips with the problems involved, we would have to appraise the degrees and ranges of uncertainty of the various figures in each of the projects, and on that basis try to estimate the likelihood for different levels of profitability to emerge.[1] It might be that the greater degree of uncertainty in the traditional sector would decrease the relative attractiveness of the traditional venture.

Having the data needed for calculating the social rate of return, we can easily obtain the social benefit/cost ratio, by using the shadow interest rate, when calculating the present values. The benefit will then be the combined present value of the profits and of the proceeds from the sale of the venture in the terminal year. The cost will be the present value of the net investment expenditures undertaken during the period. With the exception of very special cases, the social rate of return, and the benefit/cost ratio will give the same ranking between different development

1. See L. Y Pouliquen: Risk Analysis in Project Appraisal, IBRD Staff Occasional Papers 1971, for the techniques involved.

projects.[1]

There remains the practical problem of how to induce private investors to engage themselves in projects, which have a high social rate of return, but whose private profitability is unattractive. We will not devote much attention to this inducement problem, since our concern is not with private investment, but with aid, and the donor who has the recipient country's development as his primary objective, has no reason to be concerned about private profitability considerations in his predispositions. The simplest way to induce private investors to undertake socially profitable projects, would be by increasing foreign exchange prices and interest levels, or taxing the use of capital and exchange, while simultaneously subsidizing labor costs, in an effort to make private profit estimates more similar to their social counterpart.

Among the criteria discussed in this section, the social rate of return, or the social benefit/cost ratio of individual ventures at the micro-level, appear to come closest to the measure which we are seeking. Yet, it should be clear that the social rate of return calculations discussed above, provide a purely economic measure. If our objective is confined to growth, we need not continue the analysis, and can use the social rate of return derived so far, incorporating a venture's internal and external contribution to economic growth, as our criterion for project ranking.

Since our development definition includes several non-economic variables, we have to proceed one step further. In principle, we could continue to develop the accounts used hitherto, by incorporating positive or negative values for the non-economic effects of the project. Thus, we could estimate the two ventures' effects on income distribution, quantify that effect in money terms, and add it to the credit or debit side, depending on whether we found it desirable or not in relation to our development goals. Likewise, we could evaluate the effects of the projects' output on nutrition, and incorporate that too in the accounts. An alternative formal method of taking account of both economic and non-economic effects of a project has been suggested by Tinbergen through the formula

$$R = \frac{p_1 z_1 + p_2 z_2 + p_3 z_3 + \ldots\ldots}{q_1 y_1 + q_2 y_2 + q_3 y_3 + \ldots\ldots}$$

where the z's express different social or economic advantages, like income produced, employment created, savings achieved, of the project considered,

1. See A C Harberger: Survey of literature on cost-benefit analysis for industrial project evaluation, University of Chicago, for the special conditions under which the ranking would differ.

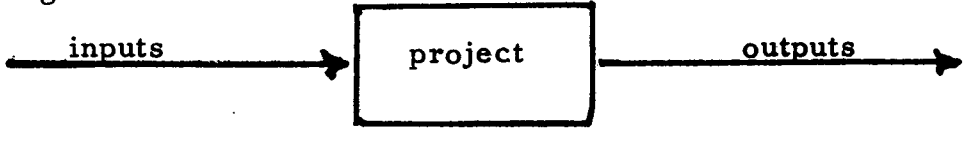
the y´s the different kinds of disadvantages, while the p´s and q´s are the prices (weights) of the advantages and disadvantages respectively. R may then be conceived of as a very broad-based social rate of return.[1] I have not yet seen a practical application of such formal methods for the derivation of the broader social rate of return of real projects. This is probably because the quantification of the various non-economic factors, and the determination of their relative weights, present formidable difficulties, and can always be criticized for arbitrariness. My own preference is therefore to rely on a qualitative, non-formal, analysis, wherever clear-cut economic relationships cannot be established. The proposed procedure is presented in the following section.

4.4 The micro-level development effects: a methodological discussion

In this section I propose to outline a methodology which could be used to assess the development effects of individual projects.[2] The methodology should be useful for judging the value of aid projects as well as that of domestic ventures. The method proposed is akin to that of cost-benefit analysis, though without the claim at clear-cut quantification. In view of the difficulty to quantify many development effects, qualitative arguments will frequently be used. The resulting assessment, will therefore tend to be subjective and, of necessity, unprecise.

We can compare what happens in development projects to a production process, as illustrated in the figure below:

Figure 4.2



Optimally we should try to maximize the outputs from a given input, or alternatively minimize the inputs for a given volume of outputs. Expressed in simple terms, if we have two ventures, each requiring an input value of 100, we will prefer the venture, whose direct and indirect outputs, e.g. development effects, are larger.

First, it is necessary to estimate the value of inputs. For the sake of simplicity, let us assume that aid is provided as a gift. If the contribution

1. See Bent Hansen: Lectures in Economic Theory, Part II, Lund, Sweden, 1967 p. 115.
2. I have received much inspiration for the contents of this section from G. Dahlgren´s methodological study "Development Dimensions A Social Cost Benefit Approach to Planning and Evaluation of the public development projects, UNITAR, New York 1969. Although they are similar in contents, Dahlgren´s and my approaches differ considerably in methodology used.

is tied, and its value decreased thereby, the value of inputs should be adjusted correspondingly.

Second comes the identification of the development effects of the project, and an attempt at their quantification. This is where our analysis differs from the ordinary cost-benefit approach. For while in cost-benefit studies, each type of benefit is given a weight, and the sum total of benefits is presented as an aggregate value, our procedure will be to seek benefits in the form of changes in each of the variables included in our development definition, without attempts to convert them all into a common unit.

To be more concrete, we shall study the effects of a specific, identified project. Let us assume that the aid donor agrees to construct and donate a factory to the National Agricultural Federation of the recipient country, in support of the country's agricultural development endeavors. Where and how do we search for the development effects of the project ? Our discussion will center on the various features of the venture, and we will study what effects each feature will have on the different development variables. The opposite approach, concentrating on one development variable at a time, would of course be equally appropriate.

Production

Production in the new factory is likely to increase employment and income in the country, and will thus contribute to a positive change in several of our development variables. The employment and income benefits will be greatest, if the enterprise can utilize hitherto unemployed labor. The employment effect will then simply be the entire labor force, and the whole income received will be added to GNP, and thus contribute to a positive change in per capita income.[1] The employment and income effects will also have social repercussions. Presumably, income distribution will become more even than before, when the employees were without income. If the factory undertakes a vocational training program, this will have to be credited as an educational development effect.

U-countries suffer from severe under-utilization of labor. Suppose now, that to help in overcoming this problem, the aid-financed factory has been specially designed so as to utilize a much more labor-intensive technology than the production methods used in the sector upto now in the recipient

1. In the rest of this section, no difference is made between total and per capita GNP, in view of the short time horizon within which this discussion is carried out.

country (an aspect of innovation aid). If the new labor-intensive method is competitive, it may be adopted by other production units in the country, whereby the employment repercussions from the original project could be very substantial. The ex ante quantification of this indirect effect will be next to impossible. Even ex post, it is likely to prove very difficult to map down the diffusion of the innovation, and to quantify its effect.

Suppose alternatively, that instead of utilizing earlier unemployed labor, the project requires certain skills with those who are to be employed and that such skilled labor is already employed elsewhere. To get these laborers the factory has to offer somewhat higher wages than their current earnings.

The addition to income will now only be the difference between the laborers´new and old wages. No immediate additional employment is created. The further effects will now depend on what happens with the old enterprises which employed the laborers earlier. If they employ new workers, the employment effect will be like in the previous case. Presumably, the newly employed in the old factories must be trained to obtain necessary skills. This, then, is an indirect, positive educational effect of our project. But it is also necessary to take account of the negative counter-effect, caused by the involvement of the old enterprise in the training endeavor, since this is likely to decrease temporarily its output and profits. We could also envisage a situation where the old factory which lost its labor force, finds replacement so difficult or expensive, that it decides to discontinue production. The employment, income, and various social effects of the aid project will in this case only be the difference between the new and old enterprise. The net effects could well be negative.

We have discussed so far mainly the direct effects on employment, income, education, poverty and distribution. Obviously, in addition, there will be indirect effects on nutrition, health and education, as the newly employed workers acquire purchasing power, and can better satisfy their needs in these fields. Employment multiplier effects might emerge too, as the new demand induces expanded production and investment activities in various fields. Supposedly, the improved economic conditions will also give the workers greater possibilities to be politically and socially active, which would thus contribute to more equality in a broader sense than the economic only.

The products

Further development effects will emerge as a result of the products manufactured by the aid financed project. Suppose the factory produces a superior

chicken feed, and that for reasons of ignorance among farmers, or uncertainty about demand, no other chicken feed production exists in the country (innovation aid). This will supposedly improve economy of chicken breeding farmers, with ensuing consequences on the nutrition, health and educational standards of these farmers. The farmers may decide to use part of their income increase for productive investment in agriculture. This will augment their future income, as well as agricultural employment and output as a result. The effects on the poverty and income distribution aspects of development are more difficult to predict. They will depend on which group of farmers will benefit from the improved chicken breeding economy. If the large, well-established farmers are first in reaping the advantages, the result will probably be negative, as measured by our criteria, with a more uneven income distribution than before. But irrespective of which poultry producers benefit, the consumers will certainly be better off. Lower chicken prices will increase consumption with a consequent improvement in consumption standards.
This is likely to have repercussions on the health standards, somewhat more indirectly on productivity and hence on production in general, and GNP, all of which will be positive development effects. But the poverty and equality consequences in this case too, are more difficult to generalize. They will depend on the extent to which, after the increase in production, chicken can be enjoyed by the majority of the population. If only the richest can afford its consumption, the development effects on these two counts could be negative. This would suggest that it is better to allocate aid resources on production of something else, which could be more broadly enjoyed by the recipient country's population.

Suppose, alternatively, that the factory produces iron ploughs, not much superior to those supplied up to now by village smiths (bulk aid). One of the likely effects of such a factory is that it will put many of the smiths out of work, probably without adding to employment to the same degree. The effect on employment will consequently be negative. The size of this effect will depend on the extent to which the smiths can obtain other work, or be transferred to alternative occupations. If they cannot, the negative employment effect will weigh heavily against the venture. This is an obvious argument for concentrating aid to areas, where demand cannot easily be satisfied from existing domestic resources.

Let us consider the consequences from production of yet a third case. Say that it is common among farmers to have kitchen gardens where they grow fruit. But the fruit season is brief, and as no preservation facilities exist,

most fruit is wasted. A plant for taking care of and processing the surplus fruit could have many positive development effects. Aside from the general employment, social and income effects emanating from the establishment of production as discussed before, the farmers would get a new source of income in selling the fruit to the factory, without having to put in additional work. The production of preserved fruit may perhaps be exported. This could be facilitated, if part of the donor's engagement is an undertaking to provide export markets in his country. Now, the exchange earned can help in overcoming an existing exchange scarcity, and contribute to development by allowing additional imports of capital goods, with increased investment and GNP growth as a consequence.

Profits and taxes

Assuming that the products are sold at market prices, the activities of the enterprise, if run successfully, ought to result in profits, accruing to the owner, in this case the National Agricultural Federation in the recipient country. The profits will be another contribution to GNP, but this will not be their only development effect. Much will depend on how the profits are used. If they are spent on consolidation and further investment in the enterprise, production will grow, and the original effects, positive and negative, will be expanded. The profits can be used for general agricultural promotion work. The effects of such work would have to be determined after a close scrutiny of the specific activity. The leadership of the Federation could in an extreme case consist of representatives from the conservative landed aristocracy, with substantial social and economic vested interests in maintaining their privileged position. As a result of this, the decision on the use of profits could be such as to primarily favor the landed aristocracy, with negative effects on the poverty and equality counts. An analogous argument can be applied on the part of profits which is taxed by the government. Here too, the development effects will depend on the way in which the government decides to spend its tax proceeds, which in turn is a reflexion of its development orientation.

Decision making

The previous paragraph brings into focus the importance of the political and institutional conditions in the recipient country, when planning aid so as to maximize development. If the National Agricultural Federation in a country is a progressive, development oriented institution, the best policy may be to hand over the project to it. But if in another country, it is not,

the donor will have to reconsider the issue of recipient institution. Perhaps it would be better in such a case, to propose that the Ministry of Agriculture handles the project? Alternatively, the donor might suggest to the recipient government that a completely new organization is set up, while simultaneously expressing his willingness to assist in its establishment. Or, if this is politically unpractical, perhaps the development of the country would be better promoted by an aid supported activity still closer to the small farmer, than the factory originally considered? Direct agricultural extension on a pilot basis for instance? If, on the other hand, the government's development policies reflect conservatism and vested interests which don't tally well with our development definition, we might like to minimize the government's role in the venture. In our above example, the government came into the picture mainly as tax collector. The profits and taxes could be decreased by charging the farmers less for the products sold to them, or paying them more for the supplies provided by them to the project. The main consideration in such a shift of income from the government to the farmer-customer of our enterprise is, in whose hands the income will generate most development.

The various facets and directions of development will be highly dependent on who decides on resource use. With the ideals as expressed in our development definition, resources should be put into the hands of economically sensible and socially responsible people. Obviously it is the national government which will decide in the majority of cases, in whose hands the responsibility for resource use should rest. But the aid donor too has some influence on these decisions, and he can use it for good as well as for bad purposes. Careful analysis on the part of the donor, on the consequences emerging from the stand he takes in such issues, could contribute to tipping the balance in the right direction, with ensuing better resource allocation, and higher development as result.

Integration and linkages

The background conditions in the recipient country will also determine how well a specific aid project will be integrated into the society. The degree of integration will have a crucial influence on the development effects resulting from the project. The mining or plantation enclaves, almost completely isolated from the rest of the highly underdeveloped society, are common and well-known. Donors of aid have to guard against developments whereby the benefits of their aid stay with a small geographical or social sector, without much repercusion on the rest of the

recipient country. Integration into the whole society can be expressed in different ways. Clark Reynolds in his description of the Chilean copper industry, sees increasing degrees of domestic expenditures and taxation as signs of higher integration of a foreign dominated enclave into the domestic economy.[1] Hirschman classifies industries in accordance with their backward- and forward-linkages, e. g. their dependence on purchase of factors from other industries and sales of products to other industries in the country.[2] Such linkage will of course differ widely for a specific industry between countries. One could also think of non-economic integration, e. g. the degree of political acceptance in a country of a particular activity. The political hostility towards US foreign investment in Soekarno's Indonesia certainly limited the impact which these investments could otherwise have had.

If the aid project purchases large quantities of domestic goods this will have repercussions on the producers of these goods. Production and employment will increase, and perhaps even new production units will be established. The effects will be similar if the output from the aid project can be used as input in later phases of production, and gives rise to expanded activity at this level. A well integrated project which introduces new suitable technology, is likely to disseminate knowledge of this technology and spread its use through the many contacts with the rest of the domestic economy. This would hardly result from an isolated enclave venture.

We have given above instances of several types of linkages. The indirect development effects, resulting from them, will all have to be judged on their own merit. Obviously, the sum total of development effects from a project has greater chances of being larger, if we can add to the direct effects a great many induced and indirect ones. In general, therefore, the likelihood is that the development effects from projects which are well integrated in the recipient society, will be greater than otherwise. It should already be apparent from our comparison of private and social profitability in the previous section, however, that the indirect effects are much more difficult to identify and quantify than the direct ones.

Our methodological discussion has been limited to one type of assistance only, namely a production enterprise related to agriculture. Our discussion of the development effects from aid is therefore by no means exhaustive. But the variation of conditions provided in the above examples should give at

1. M Mamalkis - C Reynolds: Essays on the Chilean Economy, Homewood, Ill., 1965.
2. A O Hirschman: The Strategy of Economic Development, Yale University Press, New Haven, 1958.

least some suggestions on how to proceed in identifying development effects for different types of aid. More examples will be given in the case studies presented in a later chapter.

The discussion should also have clarified how the development effects from similar projects will vary, depending on the conditions prevailing in the recipient country. To render optimal benefits, aid has to be tailor-made for each and every country and situation in which it is offered.

The methodology outlined here has not been particularly helpful in indicating how to evaluate innovation aid projects ex ante in a systematic way. It seems as if the formulation of innovation aid ventures will have to continue mainly on the basis of informed hunches. The unpredictability of the effects of such aid will then also remain considerable.

To what extent could the method suggested here be helpful in practical decisions of choice between aid endeavors? My contention is that in distinction from other methods of evaluation, the approach adopted here is broad enough to identify many effects of aid which would not be considered at all in available alternative evaluation methods. This refers for instance to the social and employment effects discussed above, or to the consideration of the suitability of different groups as decision makers. The present approach is directly related to development, and consequently a more useful tool for judging the contribution to development from the varying aid endeavors.

4.5 Some highly needed innovation aid

The criticism of current aid in section 2.3, has brought out some of the important inadequacies in present aid practice. In section 4.2 in this chapter, we made the distinction between innovation and bulk aid, and suggested that it would be advantageous, if more resources could be spent on well-conceived innovation aid. In this section we will tie these two threads together, by pointing to areas where suitably designed innovation aid could push u-countries' "development functions" upwards, and thereby help them to achieve a more efficient use of both domestic and foreign resources available for their development work. The suggestions will be grouped around two headings, namely technological and socio-economic.

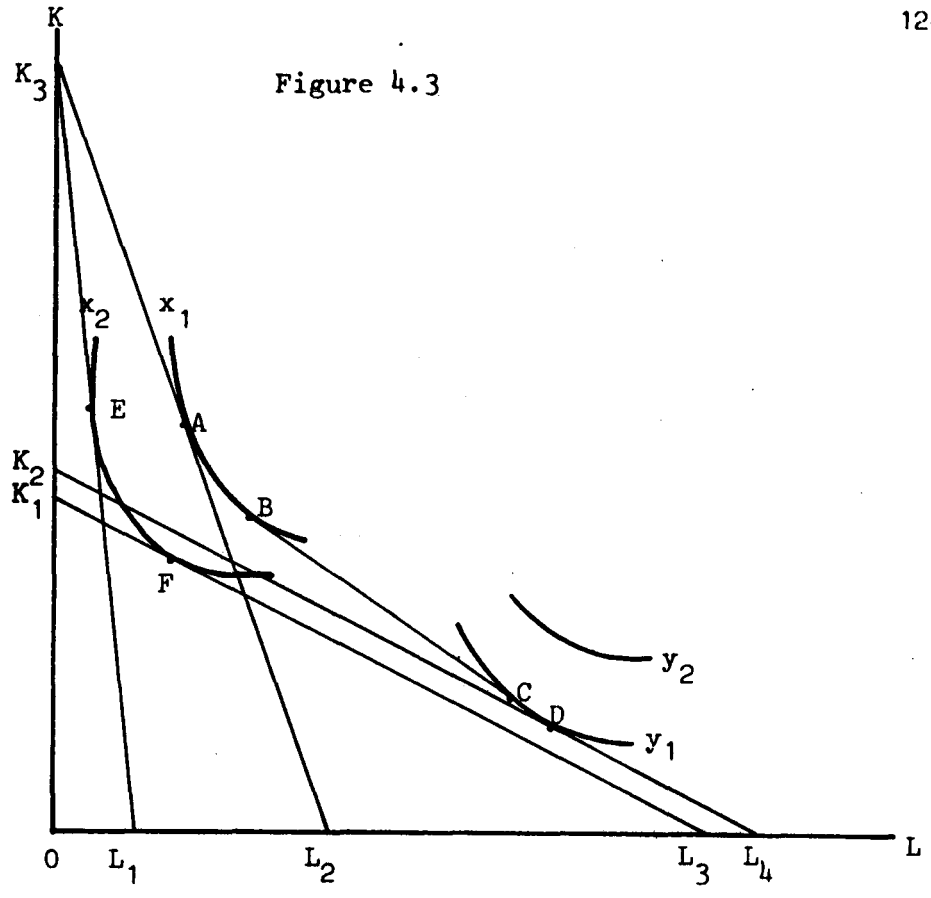
Suggestions for aid to improve or change available technology

We discussed in chapter 3 some of the reasons why capital intensive production techniques are preferred in u-countries, and the unfavorable employment consequences which result from this preference. The overwhelming dominance of the industrialized world with regard to research and technological innovations,[1] and its strong influence on the development strategy choices of poor countries, provides one further explanation to their unduly capital intensive production methods. It seems as if u-countries were caught by the current i-country conceptions in various fields, and unable to break loose on their own. Yet, the increasing labor redundancy, partly due to limited technological choices, strongly suggests that specific solutions, tailor made to suit u-countries´problems, would considerably ease their development difficulties, by enabling a fuller utilization of their labor endowment. Consequently, there is much in favor of the argument that aid resources should be utilized for the designation of technologies especially suited for underdeveloped societies. For similar reasons, strong arguments can be advanced for using aid to finance product designs adapted to the extremely limited household budgets of a majority of u-countries´inhabitants, and not available on the world market. We will first try to clarify the principles of the issue, and will subsequently indicate some areas in which aid could make a valuable contribution of this kind.

We can start out from an extension of figure 3.1 in chapter 3, with a capital intensive technology, x, and a labor intensive one, y, which can both be used for the production of a commodity. The isoquants at x_1 and y_1 in figure 4.3 below, indicate the requirements of capital and labor of the respective technologies, to produce a given quantity of the commodity. With constant returns to scale, the equal production curve will have the shape x_1BCy_1. Factor use along the BC segment, which is tangent to both x_1 and y_1, will result from a simultaneous use of the two techniques. With the factor price ratio given by the K_3L_2 line in the developed economy, only the x technology will be used there, with production at A, the tangent between isoquant x_1 and the price line.

1. H Singer claims that more than 95% of the world´s research and development expenditures take place in i-countries. See his Dualism Revisited, A new approach to the problems of dual society in developing countries, Journal of Development Studies, October 1970.

Figure 4.3



Since technological innovation takes place almost entirely in i-countries, it is reasonable to expect that practically all improvements in production techniques will be concentrated to the x technology.[1] The successful technological improvements can be summarized in the x_2 isoquant, showing the future factor requirements to obtain an unchanged production volume. Production at this future time will take place at a point like E, the tangent between the new isoquant and the future price line, which is likely to be steeper in view of the tendency for labor prices to increase faster than the price of capital over the long run.

In u-countries, however, labor is much cheaper, and its relative price is not likely to increase, in view of the widespread un- and underemployment. The present and future factor price ratio is given by the K_2L_4 line, and current production is most economically carried on at D, using exclusively the y technology. With the innovational process taking place in the x technology only, much can be said in favor of adopting the x technology for all new investments, even if currently it happens to be less economical. This is readily apparent from the figure. Having adopted the x technology the investor can take advantage of the ongoing innovational changes, and will eventually be able to produce the quantity considered, with inputs along the x_2 isoquant. With his factor price ratio remaining

1. A Atkinson - J Stiglitz : A new view of technological change, Economic Journal, September 1969.

unchanged, he will be able to produce at F, on the equal cost line K_1L_3, parallel with, but lower, and therefore more economical than K_2L_4. With innovational activities concentrated to the x technology, there is also a probability that with time the efficiency of the y technology might deteriorate absolutely as well, pushing factor requirements for a given production from the current y_1 isoquant to a future one like y_2. This is because, on the one hand, there is little likelihood that the technological progress taking place in the x technique, would have positive spillovers on the y technique. Improvements are most often specific to particular production methods,[1] and the benefit of the concentrated innovation efforts will therefore accrue in its entirely to the x technology. With the declining relative economy and importance of the y technology, on the other hand, difficulties are likely to arise in obtaining service and spare parts for the capital equipment used, with lower capacity utilization, and higher capital maintenance costs as a consequence. The relative and absolute deterioration will increasingly discourage switching the innovational effort to the y technology.

A distinguishing feature of technological innovation work is that its potential impact is extremely uncertain, and that it is subject to large external economies.[2] An individual firm will therefore be hesitant to undertake a major effort to improve the y technology, particularly as it may be difficult to protect the traditional technique improvement with patents, to internalize the benefit, if the firm is successful.

The preference for modern i-country technologies is not only economically motivated. A considerable prestige tends to surround the most modern, imported technology, and part of this prestige is commonly reflected upon those who have decided in favor of its introduction or are responsible for its management.

All these dynamic considerations help to explain why both public and private investors might frequently prefer the more capital-intensive modern i-country technology, when establishing production facilities in u-countries.

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1. A Atkinson and J Stiglitz, op. cit.

2. M I Nadiri : Some approaches to the theory and measurement of total factor productivity, a survey, Journal of Economic Literature, December 1970.

A similar argument can be applied to the product markets as well. The course of change in product assortment and design is determined by market tests in i-countries, and adapts to the demand patterns of well-to-do consumer groups in these countries.[1] The result is that the products get steadily more sophisticated, requiring elaborate servicing facilities, and satisfying exacting requirements of the prosperous i-country consumers and producers. The emerging products will then hardly be geared towards satisfying the needs of the poor population layers in u-countries, nor will they fit into their extremely limited household budgets. Meanwhile, demand for such products is boosted by an advertising system concentrated to the modern sector.[2]

The state of things in technological improvement and in product change, described above, is by no means inevitable, however. The process of change would certainly proceed along a different route, if only the engineers and product designers were given other directives. But under the overwhelming dominance of the industrialized world, it would be necessary to provide special incentives, in order to alter the present course of events. Appropriately organized aid could play a crucial role in this context. We will discuss below in somewhat more concrete terms, the fields where suitable aid action could be introduced.

On the production technology side, the aim of the aid financed ventures might be to help u-countries to overcome their capital-skills- and exchange bottlenecks, by improving the efficiency of more labor intensive techniques. Where two distinctly different techniques exist, like in our figure 3 above, the effort should primarily be aimed at moving the y isoquant in the southern or south-western direction. Where there is only one technology, like the x_1 isoquant in figure 3, and there are no easy prospects for designing another and more labor intensive one, the effort ought to concentrate on moving the south-eastern portion of the existing isoquant in the southern or south-western direction.

With our development definition, the development effects of such efforts to change technology, will depend inter alia on the product whose production technique is improved. In general, the effect of a more efficient production technique will be a lower price and consequently a higher consumption. To maximize the development impact of aid financed ventures aimed at changing production techniques, such efforts ought to be concentrated on products which will somehow contribute to improved educational, health, and nutrition standards, and which will also benefit the

1. This argument has been developed by S Hymer in The Efficiency (contradictions) of multinational corporations, American Economic Review, May-70.
2. See Towards Full Employment, A Program for Colombia, ILO, Geneva 1970, chapter 11.

poorest layers of the population in aid receiving countries. This will ordinarily mean concentration on necessities, which are actually or could be potentially included in the household budgets of low income population layers. Disregarding foreign trade, it will generally be more development promoting to improve the production technique and thereby lower the production cost of rice and shoes, than of beef and television sets. The development impact of aid support to design products better suited to the conditions and consumption needs of the population majority in poor countries, will also depend on the ability of the new products to affect positively the vital factors composing our development definition.

The decision to support technological change or new product development, will have to be preceded in each case by an evaluation, where the required aid inputs are weighed against the prospects of higher employment and scarce resource savings, and against the development effects from the increased consumption or altered consumption pattern. A number of fields appear to offer promising prospects for aid action of this type. An investigation of the costs and development benefits of aid support for technological improvement or product development could advantageously concentrate on some of the areas which will now be outlined.

The disadvantages experienced by u-countries from copying the school systems of i-countries are well documented. Yet, very little international aid effort seems to have been devoted to designing an educational technology suitable for a country, whose per capita GNP is below $ 200, where 45% of the people are aged under 15, and where the majority of the population is illiterate and spread in rural areas. Fast rising educational costs, spent on the minority in each age group, increasing unemployment among the educated, and high drop-out rates are only some signs of the unsuitability of the rich countries´educational system in these circumstances. Yet, aside from very scattered suggestions, such as Dumont´s for agriculturally oriented village schools,[1] Myrdal´s for village-wide educational efforts, without discrimination between ages[2], or practical non-conventional attempts in a few countries, e. g. Pakistan[3] or Tanzania, there is nothing but the i-country solutions that the international education expert can refer to, when giving educational advice in u-countries.

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1. R Dumont: False Start in Africa, Sphere Books Ltd., London 1964, ch. 14.
2. G Myrdal: Asian Drama, Pantheon, New York 1968, p. 1691.
3. See R Åsberg: Planering för utbildning i u-land, Studentlitteratur, Lund, Sweden, 1970, ch. 9 on Functional Literacy Education.

Not even UNESCO's Institute for Educational Planning seems to have any comprehensive proposals to offer, other than that the current systems will prove unfeasible in the longer run[1]. Many universities in i-countries support u-countries' higher educational efforts under contracts with their national aid agencies. Not much independent thinking on innovation in education technology has been reported from this work, probably because all efforts are devoted to carrying on and improving within the present system. In recent years it has been fashionable to refer to television satellites as a device whereby mass education in u-countries could be brought about. This seems to be yet another example of the overwhelming influence of the industrialized world technology, which is transferred to u-countries without a proper analysis of its suitability or implications. The claim that television education is in fact capital saving, by diminishing the investments involved in teacher training, has not been proved. Certainly, it is not likely to apply to the increasing number of u-countries, which experience problems with growing unemployment among secondary school leavers, since the investment in additional training required to make a primary school teacher out of the unemployed secondary school graduate, cannot be very large. Furthermore, experiences from the use of television in instruction in i-countries, suggest that it is efficient in assisting the teacher, not in replacing him. The force with which the idea of televised satellite instruction for the masses, has been introduced among the aid giving agencies, provides an illustrative instance of the great convincing power possessed by the product development departments of leading, technologically advanced, world-wide companies.

Yet it does not seem to be overly difficult to establish an aid supported venture, involving educators, manpower planners, economists and other specialists, who would start their work by scrutinizing in depth the problems of the present educational structure in one or a few u-countries. With the problem properly identified, the next step would be a search process, in literature and life, for a comprehensive and politically acceptable solution to the educational needs, starting perhaps with Dumon's suggestions mentioned above, or referring to the experiences of some Communist u-countries, but in any case, with no undue reliance on the i-country patterns. Why is it that this exciting venture has not yet been undertaken, or, if it has, not been widely reported on?[2]

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1. See a recent publication by a former Director of this Institute, P Coombs: The World Educational Crisis, Oxford University Press, New York 1968.
2. The Ford Foundation is reported to be involved in a large scale program aimed at finding an appropriate structure for the education system in Indonesia.

A similar argument can be made about the medical and health systems in u-countries. Training of doctors follows closely i-country standards, and specialization abroad is generously supported by aid finance. The result is a drain, first of the rural areas in u-countries, of medical personnel[1], second, of u-countries in general, because better earnings and working conditions are available abroad. Foreign assistance is granted in the form of luxury hospitals with imposing equipment, situated in the capital[2], which then attend to the urban upper classes, often with the help of medical personnel, provided from abroad on technical assistance contracts, to fill in the holes caused by the brain drain. Something, apparently, must be wrong.

In my view, the fault, again is an uncritical imitation of the i-country pattern. An underdeveloped country requires a different kind of medical service, probably with simpler education, much cheaper equipment, concentrating on uncomplicated illnesses and preventive medicine, without ambition to provide more complex treatment, but evenly available throughout the country. The design of such medical technology is another challenging task for an aid venture, strangely enough unattended to, so far.

Several more sectors in u-countries could increase their contribution to development as defined above, by a restructuring to suit the needs of the country. Transport is a case in point. Instead of supplying tractors and other heavy equipment, aid donors could help in developing and increasing the functionality of simple light and reliable transport means, cheap enough to be within reach of most u-country farmers. The following quotation illustrates the type of equipment needed:

> "Transporting goods over short distances is a problem that has been confronting the Nigerian farmer for a long time. A partial answer is the ox-cart, but there are many farmers who do not have ox teams. A small two-wheeled cart, pulled behind a bicycle has considerable potential, as there are many bicycles in Nigeria. Such a cart could be used to carry vegetables, firewood, fertilizer, field crops and many other items.
>
> The main merits of the Samaru bicycle cart is that it is light in weight, cheap in cost, strong enough to carry 200-250 lb, requires little maintenance, and can also serve as a hand-cart. The bicycle wheel is used, as it has low rolling resistance, spare parts are readily available, and it can be serviced in most villages."[3]

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1. The health and production consequences of this uneven spread of medical services, are illustratively described in Towards full employment, a program for Columbia, ILO, Geneva, 1970, chapter 17.
2. It is reported that Bulgaria provided Addis Ababa with an aid financed hospital, whose medical doctor requirements corresponded to the entire medical doctor availability in Ethiopia, outside the country's three largest cities.
3. Intermediate Technology Development Group Ltd, Bulletin No 5, July 1969, p. 4

In the industrial sector, too, important areas for technological change have been neglected. In a recent article, Oshima[1] divides the labor market in Asian countries into three sectors, e. g. agricultural, modern industrial, and the small scale labor intensive one. Employment-wise, the last one is certainly much larger than the modern, industrial sector in most Asian countries. To some extent, the two are competing with each other but in many areas, at least at present, they seem to be complementary. Oshima points out the great advantages of the small scale, labor intensive industries to the underdeveloped economies in Asia. Thus, they use a maximum amount of labor, but exert a minimum of pressure on the capital markets and the balance of payments. Being small, frequently family run enterprises, they mainly generate their capital through proprietor's savings, and the capital equipment they use, is usually simple, often locally produced, sometimes second-hand. In contrast to the case in the modern industrial sector, the need for infrastructural and human investment is minimal. Another valuable characteristic is that the small scale labor intensive sector often utilizes labor which is considered as marginal, e. g. housewives and children, who have no alternative employment opportunities. Furtheron, expansion of the small scale labor intensive sector tends to lead to a more even income and wealth distribution, and higher savings in comparison with what would happen if the modern industrial sector expanded instead. With our definition of development, there is thus much to be said in favor of promotion of the small-scale labor intensive activities.

Foreign assistance could help in several different ways to expand this sector, and to make it more dynamic. The fact is that very little research has been carried out for the small units, and there appears to be stagnation in technological progress. This stagnation could be broken by research in three inter-related fields.

Improvement is needed in the production processes used by this sector. It is likely that production technologies imported from i-countries, would prove too complex to be suitable. Therefore, it would be advisable to design novel alternatives suited to the circumstances. Improvement is also required in the management functions, e. g. organization, financing,

1. H Oshima: Labor force explosion, and the labor intensive sector in Asian growth, Economic Development and Cultural Change, Jan. 1971.

accounting, and, perhaps most importantly, marketing. Again, it seems inadequate, to adopt uncritically prevailing i-country patterns. Rather, the improvements of the management function will have to emerge from a thorough study of the specific circumstances at hand. Finally, there is probably much to be done in product development. Most production from these small industries is sold to the agricultural sector. Many of the products have low income elasticities of demand and this restricts the growth of production and sales. Fresh thinking in product design and development is required. Oshima reports for instance on the introduction of a $ 10 washing machine, requiring neither running water, nor electricity. In another context, Gordon Winston[1] gives an account of successful sales, domestically and to other u-countries, of a diesel engine, produced in Pakistan. Its success depends not on economy in fuel consumption, in fact this was higher than usual for the power output, but on the high standards of reliability, and minimal demands on scarce maintenance skills, both features, which are of high importance in underdeveloped surroundings.

Certainly, here is an essential field for aid support. But, like in the case of the green revolution, which took some 20 years from the initiation of work to the international reaping of benefits, this is a long term task, which could hardly be solved with the help of peripatetic experts.

In a recent article Pack and Todaro[2], after pointing to the growing employment problems in u-countries, and indicating the difficulties in importing and using older, more labor-intensive capital goods, suggest that u-countries ought to produce their own machinery, copying initially the earlier, more labor-intensive designs of the Western countries, and gradually redesigning the machine models to their specific needs. The authors point out that contrary to common thinking, machinery production is not particularly capital intensive, especially as the capital intensive components and inputs could well be imported. Even if i-countries happen to possess a competitive advantage in production of this labor-intensive equipment, competitive production is unlikely to arise, because there is no domestic market in i-countries for such equipment, and u-countries are considered as very marginal and uncertain market outlets. To u-countries, the establishment of an independent machinery production sector on these lines would be extremely important, because it would free them from the present i-country domination with regard to the factor

1. G Winston: Conforming Technology as an Exportable Commodity, stencilled note from Williams College, Department of Economics, Williamstown, Mass., 1969.
2. H Pack and M Todaro: Technical Transfer, Labor Absorption and Economic Development, Oxford Economic Papers, November 1969.

using bias. A considerable initial effort is required to realize the suggestions of Pack and Todaro. So far as is known, neither UNIDO nor any other aid agency has undertaken much work in this direction. Why not?

Ordinary consumer goods manufacturing industries could also be redesigned, so as to better suit the conditions prevailing in u-countries. Philips, the multinational Dutch electrical manufacturer, with production investments in a great number of countries, has undertaken an interesting experiment in this direction[1]. In isolation from the rest of the enterprise, a pilot unit has been set up in Netherlands, where u-country conditions are simulated, and various solutions to the emerging problems attempted. Some of the features of the pilot plant are: A small scale of production, utmost simplicity in production and assembly line work, time consuming communications with the head office reliance on manual administrative procedures, and a management structure based on the assumption that additional management talent is hard to come by. The experiences gained in the plant are then used by Philips in advising subsidiary enterprises in u-countries, or when setting up new units in small underdeveloped markets.

This is an interesting attempt, which could be repeated and expanded with the help of aid. Foreign assistance could thus be used to subsidize appropriate industrial enterprises for their work in designing production units, specified to suit conditions in underdeveloped areas, and technologies, which could productively absorb larger quantities of unskilled labor. Foreign investment in u-countries certainly needs this push, away from the large-scale, capital-intensive model.

In the longer run, such efforts might more generally improve the competitive advantage of locating production enterprises to underdeveloped areas.

Suggestions for action in socio-economic fields

A controversy has been taking place among economists on the applicability of economic theory, as developed and used in the West, on u-countries[2]. In many cases there is of course much in H Myint's argument[3], that basically there is nothing generally wrong with the wide variety of

1. Reported in a printed, undated document, entitled "The Utrecht Pilot Plant"
2. See for instance N Georgescu-Roegen: Economic Theory and Agrarian Economics, Oxford Economic Papers, February 1960, or Dudley Seers: The limitations of the Special Case, Bulletin of the Oxford Institute of Economics and Statistics, May 1963.
3. H Myint: Economic Theory and Development Policy, Economica, May 1967.

theoretical models and arguments of economic thinking. The problem rather lies in the difficulty of selecting the right one for each case at hand. This is where many of the economic advisors to u-countries have gone wrong, with the result of discrediting the economic profession as such.

Proper understanding of the economic functioning of underdeveloped societies must be regarded as a matter of first hand importance for a more efficient development effort, both domestically and with the help of international aid. This understanding, unfortunately, continues to be scanty and poor, based on simple inter-relations which may be relevant for i-countries, but about whose validity in u-countries serious doubts can be raised. Much more concerted aid endeavors seem highly advisable in this field.

As I see it, the problem should be attacked at two levels. First, much more ought to be done to bring out factual information in the form of reliable and relevant statistics. Criticism of the statistical data which flow out from u-countries, for instance those on employment, education or GNP, is so common that it hardly needs to be repeated here. The various UN institutions have done a good deal to make statistics from u-countries internationally available. Much more needs and could be done, both through multilateral channels, and on bilateral, country to country basis.

Second, it is necessary to study in much greater detail the interconnection between economic, social and political factors in u-countries. Absence of knowledge on how these factors are joined, explains the faulty conclusions and inappropriate advice, frequently given by economists, who work temporarily in u-countries. Foreign advice, which put an undue emphasis on maximum economic growth, and took too little account of regional and social distribution, was probably a contributory factor to the upsetting political development in Pakistan in the late 1960's and early 1970's. Inadequate factual knowledge about the functioning of institutions in u-countries, leads to the common recommendation by economists to augment taxation of the wealth in order to raise the u-country's investment ratio. But, as Enke[1] has pointed out, this advice disregards the fact that the marginal propensity to consume in many u-countries is considerably higher with the government administration (expanding the bureaucracy, providing income transfers etc.) than with the small class of wealthy people, who are taxed.

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1. S Enke: Contributions of Fiscal Policy to Development, in Krivine, Editor: Fiscal and Monetary Problems in Developing Countries, Praeger, New York 1967.

Other related socio-economic areas, where aid support should in my opinion have a high priority, include research to find the suitable pattern of legal systems in underdeveloped societies, or the functions and structures of viable, dynamic trade unions and cooperatives. Up to now, these institutions have usually been indiscriminately copied from i-countries. The result is that rather than forming part of a coherent social whole, the foreign legal system becomes parasitic[1], the trade unions acquire a single-minded conflict creating role for the benefit of a privileged employed minority only, while the cooperatives, established with the aim of benefitting the poor, tend to increase stagnation, and sharpen polarization between social groups in the village.[2] The reason for these development-hampering mistakes is obviously lacking knowledge and understanding of the intricate societies, into which Western institutions are implanted.

Some attempts have been made to tackle problems of this type. On the macro-level, Myrdal, UNRISD and Adelman-Morris[3] have undertaken important, but by no means exhaustive research, to look into the important economic, social and political interconnections in u-countries. On a more down to earth level, Ungku Aziz[4] has studied the economic and social consequences of the institutional set-up in villages in South-East Asia. Much more research of both types is required, to give us an acceptable understanding of the functioning of underdeveloped economies. Certainly, this type of research could be greatly promoted by aid support. An explanation to the relatively scarce aid involvement in this area is probably lack of recognition, until recently, of the existence of a problem. This again is the result of the dominance of thinking on i-country patterns, strengthened by the shortness of the assignment of most foreign advisors, on economic and related matters in u-countries.

Other areas, where in my opinion, aid supported research could be of great consequence for future policy and impact on international assistance, include designations of dynamic, socially oriented development strategies,

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1. See Guy Hunter: The Best of Both Worlds, Oxford University Press, London 1967.
2. See UNRISD: A Review of Rural Cooperation in Developing Areas, Geneva, May 1969.
3. G Myrdal: Asian Drama, op. cit. See chapter 3 for the UNRISD and Adelman-Morris work.
4. See U Aziz: Cooperation as a method to increase agricultural productivity in Role of Cooperation in Social and Economic Development, Asia Publishing House, London 1966; or Fundamental Obstacles to Rural Development, with Special Reference to Institutional Reforms, Paper presented at the South Asia Symposium, Stockholm, September 1969.

which are somewhat less dependent on imports than the ones common today, studies suggesting how modern sales and persuation techniques could be adapted to u-country conditions, and used in activities like birth control or agricultural extension work, and the effects of foreign direct investment in u-countries.

The latter is a controversial subject with polarized opinions. The development impact will naturally vary with different types of investment. It would be valuable to know more about the processes which account for the transfer and diffusion of technology connected with investment in different fields and forms. It would also be interesting to draw the practical implications of Keesing's proposition[1], that certain types of investment are more prone to create skills which are scarce in u-countries, and consequently, more valuable as development generators. For that, however, we need to know which investment should be included in that category, and at present this knowledge is, by and large, lacking. A more detailed analysis of the effects from direct foreign investment would enable the aid providing agencies to give much more fundamental and specific advice to u-countries with regard to the investment issues than the superficial general proclamations practiced today. It would furthermore enable the donor agencies to give a selective support to particularly development promoting foreign investment ventures.

The suggestions for assistance support, brought out above, are mainly concerned with innovation aid, in most cases related to research in one way or other. In comparison with the total aid flows in the late 1960's they would not require very substantial funds. Their importance, however, would most probably be much greater than the sums involved. A better grasp of the development process and its requirements, along with the design of suitable technologies for the circumstances, would most likely contribute to a substantial change in the contents, directions and forms of bulk aid, with an increased development impact as the final result. It is tempting once more to compare with the research preceding the green revolution. The sums involved were not overwhelming, but the Schumpeterian innovation has greatly increased the development effects of subsequent agricultural bulk aid.

Work of the type suggested here is not commonly pursued, nor even much supported by governmental aid agencies. Some is carried on by the big independent US Foundations, by the British Intermediate Technology Group

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1. D B Keesing: Outward-looking policies and economic development, Economic Journal 1967, p. 303.

Ltd. and by academic institution like the Sussex Institute for Development Studies. The Canadian Government established in 1970, the International Development Research Centre, which in a few years is to have at its disposal some 5% of the total Canadian official assistance budget, for research and implementation work connected with problems similar to the ones discussed here.[1] This, in my opinion, is an approach which should be adopted by many more donor countries, if we wish to come to better grips with the intricacies of development, and thereby increase the development effects of aid.

1: See a note entitled "International Development Research Centre", Ottawa, January 30, 1970.