DISARMAMENT, FOREIGN AID AND ECONOMIC GROWTH*

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1. *Introduction*

One of the most pressing international problems today is the marked gap between the growth rates of the developed and underdeveloped areas of the world. While the underdeveloped areas of the world contain more than two-thirds of the world's population, they produce as little as one-seventh of the world's gross output of goods and services, and experience an average rate of economic growth as low as one-half that of the developed areas. But even more important, the continuation of this growth lag will lead to an even greater reduction in the underdeveloped areas' share of the world's Gross National Product (GNP).

A rise in the growth rate of these areas will depend on an increase in their rate of productive investment. However, the low level of income in these areas, combined with high propensities to consume, leaves little savings available for internal investment. Thus the only major sources of possible increases in productive investment are external investments, in the form of aid, loans, or direct private investment from the developed areas of the world.

In light of this problem, it is important to consider the effects of possible disarmament programs, particularly among the developed areas of the world. Since even partial disarmament will involve a major reallocation of resources to peace-time uses, there is a real possibility for considering the effects of a planned increase in capital transfers to underdeveloped areas. This possibility raises two questions of interest: (1) how much additional investment would the underdeveloped parts of the world have to absorb if they were to raise their average growth rate, over the next ten-year period, up to the average growth rate of the economically advanced industrial countries, and (2) if capital transferred from developed to underdeveloped areas were to constitute the principal source of such additional investment, how large would this transfer have to be?

2. *The model*

The simple dynamic model chosen to study this question was designed specifically to rely only on statistical data which are actually available. The world economy is divided into two groups of economies — developed and underdeveloped (Group 1 and Group 2). The developed group comprises Western Europe (excluding Spain, Portugal, Greece, and Turkey), the United States, Canada, Japan, Soviet Russia and other socialist countries; the underdeveloped group comprises all other countries. The only interactions between the two groups which interest us here are flows of capital goods and services from *Group 1 to Group 2*. We will consider the two groups as isolated except for this set of flows, in order to study its direct effect on the gross incomes in Group 1, on productive investments in Group 2, and therefore its indirect effect on the growth rates in the two groups.

Variables: The following set of aggregative variables is used to describe the state of the two groups of economies at any particular time (t):

	Developed Areas		Underdeveloped Areas
Gross national product (domestically produced)	$Y_1(t)$		$Y_2(t)$
Productive investment (total)	$I_1(t)$		$I_2(t)$
Capital transfer from developed to underdeveloped areas .		$H(t)$	
Growth rate of the domestically produced Gross National Product, $\frac{\dot{Y}(t)}{Y(t)}$	$r_1(t)$		$r_2(t)$

The value of these seven variables given (that is, observed or assigned) for the year 1959 constitutes the empirical basis of a series of alternative projections of the economic growth of both groups of countries over the ten-year period ending at 1969.

Assumptions: The following is a statement of the basic assumptions implicit in the symbolic representation of the model below.

(1) The *Capital Transfers* (H) from Group 1 to Group 2, during any period of time are a fixed proportion of the Gross National Product in Group 1 (See Equation 5 below).

(2) *The Capital-Output Ratios* (b_1, b_2) of each group remain constant over time (see Equations 2, 7).

(3) The *Productive Investment* in:
   (a) Group 1 (I_1) is a fixed proportion of the Gross National Product in Group 1 during the period of time (Equation 1).
   (b) Group 2 (I_2) is the sum of:
      (1) *Internal Investment* [which equals a fixed proportion of the Gross National Product in Group 2 during the period of time (Equation 6)], and
      (2) *External Investment* [which equals the Capital Transfers from Group 1 (Equation 6)].

Equations of the Model:

(A) *Developed Areas:* The following theoretical relationships are used to derive and to solve the equations describing the growth of the developed areas.

Saving Function:

(1) $I_1(t) = i_1 Y_1(t)$

i represents the fraction of the GNP allocated to investment.

Acceleration Relationships:

(2) $Y(t) = \frac{i_1(t)}{b_1}$

b_1 is the capital coefficient (capital-output ratio) describing the amount of capital required per additional unit of annual GNP.

Growth Rate Equation, obtained from (1) and (2):

(3) $\dot{Y}_1(t) - \frac{i_1}{b_1} Y_1(t) = 0$

Exponential Growth Function, obtained by solving (3):

(4) $Y_1(t) = Y_1(0)e^{\lambda_1 t}, \qquad \lambda_1 = \frac{i_1}{b_1}$

where $Y_1(0)$ represents the level of the GNP in the base year, 0, and λ_1 its growth rate, which remains constant as long as i_1 and b_1 are fixed.

The amount transferred from the developed to the underdeveloped areas is assumed to constitute a fixed fraction, h, of the GNP of the capital-exporting countries. Thus, the following transfer relationship, which is derived from equations (4) above, implies that $H(t)$, the amount transferred, will grow exponentially at the same rate as the developed areas' GNP:

Transfer Relationship:

(5) $H(t) = hY_1(t) = hY_1(0)e^{\lambda_1 t}$

(B) *Underdeveloped Areas:* The following theoretical relationships are used to derive and to solve the equations describing the growth of the underdeveloped areas.

The productive investment in the underdeveloped areas is being supported from two sources: the saved fraction, i_2, of their Gross National Product, $Y_2(t)$, and the capital-imports, $H(t)$:

Investment Function:

$$(6)\quad I_2(t) = i_2 Y_2(t) + H(t) = i_2 Y_2(t) + hY_1(0)e^{\lambda_1 t}$$

Acceleration Relationship:

$$(7)\quad \dot{Y}_2(t) = \frac{I_2(t)}{b_2}$$

b_2 is the capital coefficient describing the amount of capital required per additional unit of annual GNP.

Growth Rate Equation, derived from (6) and (7):

$$(8)\quad \dot{Y}_2(t) - \frac{i_2}{b_2} Y_2(t) - \frac{h}{b_2} Y_1(0)e^{\lambda_1 t} = 0, \quad \text{if } \frac{i_2}{b_2} \neq \lambda_1 = \frac{i_1}{b_1}$$

Growth Function, obtained by solving the differential equation (8):

$$(9)\quad Y_2(t) = \left[Y_2(0) + \frac{H(0)}{b_2(\lambda_1 - \lambda_2)}\right] e^{\lambda_2 t} - \frac{H(0)}{b_2(\lambda_1 - \lambda_2)} e^{\lambda_1 t}, \qquad \lambda_2 = \frac{i_2}{b_2}$$

To verify the last equation one can substitute it and its derivative in (8); the expression on the left-hand side will identically equal zero.

The growth of the underdeveloped areas turns out to be described by a combination of two exponential terms. The first reflects the effects of internal savings, the second the contribution of investment financed through capital imports. Accordingly, the growth rate, λ_2, of the first component depends on the magnitude of the domestic savings — and capital-output ratios — while the second term grows at the same rate as the GNP of the developed areas.[1]

3. *The data*

The data for both developed and underdeveloped areas are taken as consolidated gross figures in order to treat these two groups of economies as single entities. All figures on which this analysis is based were chosen to lie within the limits of statistical estimates published by United Nations and other sources. The data used for the two major classifications of Gross National Products and Gross Productive Investments are as follows:

(1) The *Gross National Product* of the present armed world is assumed to be $1,400 billion of which $1,205 billion are produced in the developed (free enterprise and planned) economies and $195 billion in the underdeveloped countries. Of the estimated $120 billion of total military expenditures, $102 billion are assumed to be incurred by the economically advanced (free enterprise and planned) economies and the remaining $18 billion by the underdeveloped. The present annual capital flow from the developed to the underdeveloped areas is assumed to be $4 billion which equals 0.3 per cent of aggregate Gross National Product of the developed countries. Finally, the average growth rate of the Gross National Product of the developed countries in the present armed world is assumed to be between 4–6 per cent per annum, and the corresponding growth rate of the underdeveloped countries is assumed to be between 2–3 per cent per annum.

(2) The *Gross Productive Investment* of all developed countries is assumed to amount to $228 billion per annum which is 18.9 per cent of the present Gross National Product. Various published statistical estimates of the corresponding figures for the underdeveloped countries differ from

each other so much that two separate sets of computations were performed. The first is based on the assumption that the present aggregate productive investment in the underdeveloped countries amounts to $22 billion per annum, i.e. 11.3 per cent of the Gross National Product, while the second is based on the assumption that its magnitude is only $15 billion, i.e. 7.7 per cent of the Gross National Product.

Breakdown of the Alternative Projections

Since aggregative capital-output ratios (capital coefficients) and saving ratios can be estimated — particularly for the underdeveloped areas — only within a rather wide margin of error, and because our expressed purpose is to assess the possible effect of changes in the amount of outside capital received by underdeveloped areas on their rate of growth, not one, but many alternative projections were made, all computed from the same general formula, but each based on different hypothetical combinations of the magnitude of the structural parameters enumerated above.

Different Sets of Statistical Estimates:

(1) *Growth Rate in the Base Year:* Two possible initial growth rates are considered.
   (a) Tables 1–3 are based on an initial growth rate of 4% in the developed areas, and a rate of 2% in the underdeveloped areas.
   (b) Tables 4–6 are based on an initial growth rate of 6% in the developed areas, and a rate of 2% in the underdeveloped areas.

(2) *Productive Investment in Underdeveloped Areas:* Three base levels were used to cover the range of published data.
   (a) Tables 1 and 4 assume an aggregate investment level of $ 15 billion per annum for the underdeveloped areas in the base year 1959.
   (b) Tables 2 and 5 assume an aggregate investment level of $ 18 billion per annum for the underdeveloped areas in the base year 1959.
   (c) Tables 3 and 6 assume an aggregate investment level of $ 22 billion per annum for the underdeveloped areas in the base year 1959.

Alternative Economic Policies:

(1) *Alternative Conditions of Disarmament:* Three possible future states are considered.

STATE A: *No Disarmament*
Countries continue to spend the same proportion of their national products on defense as at present: 8.465% and 9.231% for the developed and underdeveloped countries respectively.

STATE B: *Complete Disarmament (Increased Social Consumption)*
Countries devote one half of State A military expenditures to increased social consumption (health, education, welfare, space exploration, etc.) and the rest to investment and consumption according to the ratio of domestically financed investment to consumption under State A in the base year.

STATE C: *Complete Disarmament (No Increased Social Consumption)*
Countries devote all military expenditures to investment and consumption according to the ratio of domestically financed investment to consumption under State A in the base year.

(2) *Alternative Levels of Capital Transfers:* Three possible levels were considered in each Table.
   (a) Columns 1, 2 and 5 were based on the assumed existing level of $4 billion per annum.

(b) Columns 3 and 6 were based on an assumed increase to $15 billion per annum.
(c) Columns 4 and 7 were based on an assumed increase to $25 billion per annum.

Discussion of the Projections

The results summarized in these six Tables indicate the possible effects of disarmament and capital transfers programs on the economic growth of developed and underdeveloped areas. In particular, they trace the growth implications of these programs through their possible effects both on the foreign aid policies, and on the distribution of GNP between consumption and investment in both developed and underdeveloped countries.

Each Table is based on a different combination of statistical estimates and economic policies, as outlined above. Only the estimates of the 1959 GNP's of both groups, and of the amount of gross investment absorbed in that year by the developed countries are held constant throughout the projections.

Because the basic format of each of the Tables is so similar, we will discuss Table 1 in detail here, and mention the other five Tables only insofar as their results differ significantly from the first.

The first column in Table 1 compares the ten-year growth projections of the two areas under the assumption of No Disarmament (State A). The figures indicate that while the growth rate of developed areas will not change (under the assumptions of the model), the growth rate in the underdeveloped areas will show a slight increase from 2.0% to 2.1%. This, of course, is a result of the rise in capital transfers due to a steady growth of GNP in the developed countries. But while the rate of growth in underdeveloped countries does show a slight increase, their percentage share of the world's GNP actually *decreases* from 13.8% to 11.7%.

The next three columns illustrate the growth effects of a disarmament policy with increased social consumption (State B). The columns are based on different assumed levels of capital transfers. The calculations of Column 2 assume no change in the level of capital transfers under State B. The figures show that even though the effective change in the distribution of GNP in the developed countries would increase their growth rate to 4.2% by 1969, the accompanying rise in productive investment would be too small to have a noticeable effect on the growth rate in the underdeveloped areas. The effects of an increased ratio of foreign aid are demonstrated in Columns 3 and 4. Column 3 indicates that an increase in the exports of capital to $15 billion will raise the growth rate in the underdeveloped areas from 2.1% to 3.5% without noticeably affecting the growth of developed countries. Similarly Column 4 shows that an increase from $15 billion to $25 billion will increase the growth rate of underdeveloped areas by more than a full per cent, while cutting the rate in developed countries by only a tenth of a per cent.

State C differs from B only in that the distribution of GNP in the developed countries has been altered. It is now assumed that none of the resources which are released from defense will be allocated to social consumption. The general effect of this new distribution is to increase growth rates in every instance. Note that an increase in capital transfers to around $20 billion under these conditions would *equate* the growth rates of developed and underdeveloped countries within the ten-year period. In order to achieve this equality, the underdeveloped countries would have to more than double their growth rate from 2.1% to 4.3%.

Tables 2 and 3 differ from 1 only in that the level of investment for the base year in underdeveloped countries is assumed to be higher ($18 billion and $22 billion). Since we are also assuming that

their base growth rate remains unchanged, these higher investment levels imply higher capital-output ratios. Since this will dampen the acceleration effect, it is not surprising to find that the projected growth for underdeveloped countries in these Tables is respectively smaller.

In Tables 4 to 6, we have altered the base year conditions by assuming an initial growth rate for developed countries of 6% rather than 4%.[2] This higher initial rate of course implies a general increase in all projected capital transfers, the projected productive investment in underdeveloped countries, and thus an increase in the projected rates of growth in these countries. The important implication here is that the ratio of three-to-one in the initial growth rates is too large to permit an equality in the projected rates within ten years.

4. *Conclusions*

The conclusions which can be drawn from the numerical results of these projections have to be accepted or rejected in light of the appropriateness of the analytical methods used, and the reliability of the factual information on which they are based. A critical examination of the alternate projections might lead some experts to question very seriously the plausibility of some of the projections in these Tables. Comparing the implicit capital-output ratios of $b_1 = 3.15$ and $b_2 = 5.64$ in the base year data of Table 6, for example, it seems quite unlikely that the average capital intensity of production would be so much higher in the less advanced countries.

Because of the controversial nature of the estimates used, I have chosen the forty-two alternate projections to include a wide range of initial conditions. Regardless of which initial assumptions one chooses to accept, one reaches the conclusion that the 'break-even point' between the rates of growth of economic expansion for the two groups of countries would not occur until the underdeveloped countries had raised their average annual growth rate to about 4.3 per cent at the minimum. To make this possible within the ten-year period of the projection, the level of their productive investment would have to more than double in the first year. If foreign aid from developed countries was to provide the substance of this rise in investment, it would require an increase of capital transfers during the first year of at least 500% under the most favorable of conditions.

While we have indicated that future disarmament, capital transfers and foreign aid policies may offer the possibility for such an increase, any final assessment of the feasibility of such an ambitious program is beyond the scope of this paper.

NOTES

* The materials of this paper were drawn from unpublished manuscripts of Wassily Leontief and were put together by Tony Smith. The general approach, the theoretical model, all empirical data, and the final conclusions reproduce as closely as possible the contents of these unpublished manuscripts.

Most of the discussion and some of the empirical materials are taken from Leontief, W. 'The Rates of Long-Run Economic Growth and Capital Transfer from Developed to Underdeveloped Areas,' presented at the Study Week on the Role of Econometric Analysis in Economic Development Plans and in Controlling Economic Fluctuations, Pontifical Academy of Sciences, October 1963, to be published.

[1] If the ratio of the saving to the capital coefficient in the developed and underdeveloped regions happens to be equal, the solution of the differential equation 8 is reduced to:

$$(9a) \quad Y_2(t) = Y_2(0)e^{\lambda t} + \frac{H(0)}{b_2} te^{\lambda t} \qquad \lambda = \frac{i_1}{b_1} = \frac{i_2}{b_2}$$

that is, the growth rates of both groups of countries would in this case be equal.

[2] Computations based on initial growth rates of 5 and 3 per cent for developed and underdeveloped countries respectively appear in Tables 1 and 2 of Leontief, W. op. cit.

Table 1: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 4%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National Product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 1784 bil.	$ 1818 bil.	$ 1818 bil.	$ 1801 bil.	$ 1853 bil.	$ 1836 bil.	$ 1836 bil.
Average annual growth rate over the ten-year period	4.0%	4.2%	4.2%	4.1%	4.4%	4.3%	4.3%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National Product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 11.0 bil.	$ 11.6 bil.	$ 11.6 bil.	$ 11.6 bil.	$ 12.0 bil.	$ 12.0 bil.	$ 12.0 bil.
as per cent of national product	5.6%	5.6%	5.6%	5.6%	6.2%	6.2%	6.2%
Total productive investment	$ 15.0 bil.	$ 15.6 bil.	$ 26.6 bil.	$ 36.6 bil.	$ 16.0 bil.	$ 27.0 bil.	$ 37.0 bil.
Total consumption	$ 166.0 bil.	$ 183.4 bil.	$ 183.4 bil.	$ 183.4 bil.	$ 183.0 bil.	$ 183.0 bil.	$ 183.0 bil.
as per cent of national product	85.1%	94.1%	94.1%	94.1%	93.8%	93.8%	93.8%
Situation Ten Years Later							
National product in the tenth year	$ 240 bil.	$ 240 bil.	$ 275 bil.	$ 309 bil.	$ 245 bil.	$ 280 bil.	$ 318 bil.
Average annual growth rate over the ten-year period	2.1%	2.1%	3.5%	4.7%	2.3%	3.7%	5.0%

Table 2: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 4%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 1784 bil.	$ 1818 bil.	$ 1818 bil.	$ 1801 bil.	$ 1853 bil.	$ 1836 bil.	$ 1836 bil.
Average annual growth rate over the ten-year period	4.0%	4.2%	4.2%	4.1%	4.4%	4.3%	4.3%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 14 bil.	$ 15 bil.	$ 15 bil.	$ 15 bil.	$ 15 bil.	$ 15 bil.	$ 15 bil.
as per cent of national product	7.2%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%
Total productive investment	$ 18 bil.	$ 19 bil.	$ 30 bil.	$ 40 bil.	$ 19 bil.	$ 30 bil.	$ 40 bil.
Total consumption	$ 163 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.
as per cent of national product	83.6%	92.3%	92.3%	92.3%	92.3%	92.3%	92.3%
Situation Ten Years Later							
National product in the tenth year	$ 240 bil.	$ 240 bil.	$ 272 bil.	$ 303 bil.	$ 245 bil.	$ 275 bil.	$ 306 bil.
Average annual growth rate over the ten-year period	2.1%	2.1%	3.4%	4.5%	2.3%	3.5%	4.6%

Table 3: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 4%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 1784 bil.	$ 1818 bil.	$ 1818 bil.	$ 1801 bil.	$ 1853 bil.	$ 1836 bil.	$ 1836 bil.
Average annual growth rate over the ten-year period	4.0%	4.2%	4.2%	4.1%	4.4%	4.3%	4.3%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 18 bil.	$ 19 bil.	$ 19 bil.	$ 19 bil.	$ 20 bil.	$ 20 bil.	$ 20 bil.
as per cent of national product	9.2%	9.7%	9.7%	9.7%	10.3%	10.3%	10.3%
Total productive investment	$ 22 bil.	$ 23 bil.	$ 34 bil.	$ 44 bil.	$ 24 bil.	$ 35 bil.	$ 45 bil.
Total consumption	$ 159 bil.	$ 176 bil.	$ 176 bil.	$ 176 bil.	$ 175 bil.	$ 175 bil.	$ 175 bil.
as per cent of national product	81.5%	90.3%	90.3%	90.3%	89.7%	89.7%	89.7%
Situation Ten Years Later							
National product in the tenth year	$ 238 bil.	$ 242 bil.	$ 267 bil.	$ 291 bil.	$ 245 bil.	$ 270 bil.	$ 294 bil.
Average annual growth rate over the ten-year period	2.0%	2.2%	3.2%	4.1%	2.3%	3.3%	4.2%

Table 4: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 6%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 2158 bil.	$ 2220 bil.	$ 2220 bil.	$ 2199 bil.	$ 2283 bil.	$ 2262 bil.	$ 2262 bil.
Average annual growth rate over the ten-year period	6.0%	6.3%	6.3%	6.2%	6.6%	6.5%	6.5%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 11 bil.	$ 12 bil.	$ 12 bil.	$ 12 bil.	$ 12 bil.	$ 12 bil.	$ 12 bil.
as per cent of national product	5.6%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%
Total productive investment	$ 15 bil.	$ 16 bil.	$ 27 bil.	$ 37 bil.	$ 16 bil.	$ 27 bil.	$ 37 bil.
Total consumption	$ 166 bil.	$ 183 bil.	$ 183 bil.	$ 183 bil.	$ 183 bil.	$ 183 bil.	$ 183 bil.
as per cent of national product	85.1%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%
Situation Ten Years Later							
National product in the tenth year	$ 242 bil.	$ 242 bil.	$ 286 bil.	$ 324 bil.	$ 245 bil.	$ 289 bil.	$ 327 bil.
Average annual growth rate over the ten-year period	2.2%	2.2%	3.9%	5.2%	2.3%	4.0%	5.3%

Table 5: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 6%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 2158 bil.	$ 2220 bil.	$ 2220 bil.	$ 2199 bil.	$ 2283 bil.	$ 2262 bil.	$ 2262 bil.
Average annual growth rate over the ten-year period	6.0%	6.3%	6.3%	6.2%	6.6%	6.5%	6.5%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 14 bil.	$ 15 bil.	$ 15 bil.	$ 15 bil.	$ 14 bil.	$ 15 bil.	$ 15 bil.
as per cent of national product	7.2%	7.7%	7.7%	7.7%	7.2%	7.7%	7.7%
Total productive investment	$ 18 bil.	$ 19 bil.	$ 30 bil.	$ 40 bil.	$ 19 bil.	$ 30 bil.	$ 40 bil.
Total consumption	$ 163 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.	$ 180 bil.
as per cent of national product	83.6%	92.3%	92.3%	92.3%	92.3%	92.3%	92.3%
Situation Ten Years Later							
National product in the tenth year	$ 240 bil.	$ 242 bil.	$ 278 bil.	$ 309 bil.	$ 245 bil.	$ 280 bil.	$ 315 bil.
Average annual growth rate over the ten-year period	2.1%	2.2%	3.6%	4.7%	2.3%	3.7%	4.9%

Table 6: *Disarmament, foreign aid, and economic growth*

Developed Countries (Growth rate before disarmament: 6%)	A. No Disarmament	B. Complete Disarmament (increased social consumption)			C. Complete Disarmament (no increase in social consumption)		
	1	2	3	4	5	6	7
Situation in the Base Year							
National product	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.	$ 1205 bil.
Military expenditure	$ 102 bil.	0	0	0	0	0	0
as per cent of national product	8.5%	0	0	0	0	0	0
Capital transfers to underdeveloped areas	$ 4 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.	$ 4 bil.	$ 15 bil.	$ 25 bil.
as per cent of national product	.3%	.3%	1.2%	2.1%	.3%	1.2%	2.1%
Domestic productive investment	$ 228 bil.	$ 239 bil.	$ 236 bil.	$ 234 bil.	$ 249 bil.	$ 247 bil.	$ 245 bil.
as per cent of national product	18.9%	19.8%	19.6%	19.4%	20.7%	20.5%	20.3%
Total consumption	$ 871 bil.	$ 962 bil.	$ 954 bil.	$ 946 bil.	$ 952 bil.	$ 943 bil.	$ 935 bil.
as per cent of national product	72.3%	79.8%	79.2%	78.5%	79.0%	78.3%	77.6%
Situation Ten Years Later							
National product in the tenth year	$ 2158 bil.	$ 2220 bil.	$ 2220 bil.	$ 2199 bil.	$ 2283 bil.	$ 2262 bil.	$ 2262 bil.
Average annual growth rate over the ten-year period	6.0%	6.3%	6.3%	6.2%	6.6%	6.5%	6.5%
Underdeveloped Countries (Growth rate before disarmament: 2%)							
Situation in the Base Year							
National product	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.	$ 195 bil.
Military expenditure	$ 18 bil.	0	0	0	0	0	0
as per cent of national product	9.2%	0	0	0	0	0	0
Domestically financed investment	$ 18 bil.	$ 19 bil.	$ 19 bil.	$ 19 bil.	$ 20 bil.	$ 20 bil.	$ 20 bil.
as per cent of national product	9.2%	9.7%	9.7%	9.7%	10.3%	10.3%	10.3%
Total productive investment	$ 22 bil.	$ 23 bil.	$ 34 bil.	$ 44 bil.	$ 24 bil.	$ 35 bil.	$ 45 bil.
Total consumption	$ 159 bil.	$ 176 bil.	$ 176 bil.	$ 176 bil.	$ 175 bil.	$ 175 bil.	$ 175 bil.
as per cent of national product	81.5%	90.3%	90.3%	90.3%	89.7%	89.7%	89.7%
Situation Ten Years Later							
National product in the tenth year	$ 240 bil.	$ 242 bil.	$ 272 bil.	$ 297 bil.	$ 245 bil.	$ 275 bil.	$ 300 bil.
Average annual growth rate over the ten-year period	2.1%	2.2%	3.4%	4.3%	2.3%	3.5%	4.4%

SUMMARY

This paper is concerned with the possible effects of disarmament and capital transfers which might be forthcoming in the form of foreign aid. These effects are examined for both the developed and underdeveloped areas of the world. A simple aggregative growth model is developed to study quantitatively the impacts of alternative capital transfer and disarmament policies upon the growth rates of these areas. Tables are presented to summarize the projected effects of a possible sample of such policies over a ten-year period, 1959–69.

Краткое содержание.

Эта статья рассматривает возможные последствия разоружения и перевода капитала. с применением его для финансирования помощи иностранным государствам.

Эти последствия анализируются, как по отношению к высокоразвитым, так и развивающимся странам.

Дальше в статье вырабатывается простой образец развития с целью количественного изучения последствий возможного перевода капитала и политики разоружения для темпов развития высокоразвитых и развивающихся государств.

Для подведения итогов предполагаемых последствий, вытекающих из данных такой политики, даются таблицы, охватывающие десятилетний период, 1959—1969гг.