

AGENCY FOR INTERNATIONAL DEVELOPMENT WASHINGTON, D. C. 20523 BIBLIOGRAPHIC INPUT SHEET	FOR AID USE ONLY
---	-------------------------

1. SUBJECT CLASSIFICATION	A. PRIMARY ECONOMICS
	B. SECONDARY GENERAL ECONOMICS

2. TITLE AND SUBTITLE
INDUSTRIALIZATION POLICY AND INCOME DISTRIBUTION

3. AUTHOR(S)
HENRY J. BRUTON

4. DOCUMENT DATE JULY 1974	5. NUMBER OF PAGES 96 PAGES	6. ARC NUMBER ARC 338.012-8913c
--------------------------------------	---------------------------------------	---

7. REFERENCE ORGANIZATION NAME AND ADDRESS
**PRINCETON UNIVERSITY
 CENTER OF INTERNATIONAL STUDIES
 PRINCETON, NEW JERSEY 08540**

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

9. ABSTRACT

The purpose of this paper is to study the relationship between foreign trade policies and income distribution. More specifically, the objective is to examine the way in which measures that ~~are~~ affect access to and price of foreign exchange and imports act on the distribution of income. Attention is given to the effect of policies with respect to exchange rates, tariffs, licensing and other direct controls, and subsidy systems on the extent and manner that the rewards of development are shared among the population. The policy measures in this area have been largely aimed at fostering industrialization in the developing countries. In this sense then the purpose of the paper is to examine how these industrialization policies affect the distribution of income.

There are seven parts to the paper. In Part I some general notions are discussed. These definitions and the statement of some of the obiter dicta that provide the point of departure of the paper. Part II discusses the role of industry in the overall income distribution picture and describes a general model that identifies the principal determinants of income distribution over time in the industrial sector. These include rates of investment, wage rates, productivity growth, the composition of demand, foreign trade, and rural industrial activity. Each of these is discussed in the following parts of the paper. The last part, Part VIII, is a summary and a brief review of the policy implication revealed in the various arguments.

10. CONTROL NUMBER PN-AAA-468	11. PRICE OF DOCUMENT
12. DESCRIPTORS FOREIGN TRADE POLICY, FOREIGN EXCHANGE, IMPORTS, EXCHANGE RATES, TARIFFS, LICENCES, SUBSIDIES, MODEL, INVESTMENT	13. PROJECT NUMBER 931-17-995-568
	14. CONTRACT NUMBER AID/CM/otr-73-237
	15. TYPE OF DOCUMENT RESEARCH PAPER

Version submitted to
Brookings Institution
for publication.

INDUSTRIALIZATION POLICY AND INCOME DISTRIBUTION

by

Henry J. Bruton
Williams College

This paper has been prepared for the Princeton University-Brookings
Institution project on Income Distribution in Less Developed Countries,
funded by USAID. Revised January 1975.

Jan. 1975

INDUSTRIALIZATION POLICY AND INCOME DISTRIBUTION

by

Henry J. Bruton

Introduction

The purpose of this paper is to study the relationship between foreign trade policies and income distribution. More specifically, the objective is to examine the way in which measures that affect access to and price of foreign exchange and imports act on the distribution of income. Attention is given to the effect of policies with respect to exchange rates, tariffs, licensing and other direct controls, and subsidy systems on the extent and manner that the rewards of development are shared among the population. The policy measures in this area have been largely aimed at fostering industrialization in the developing countries. In this sense then the purpose of the paper is to examine how these industrialization policies affect the distribution of income.

There are seven parts to the paper. In Part I some general notions are discussed. These are definitions and the statement of some of the obiter dicta that provide the point of departure of the paper. Part II discusses the role of industry in the overall income distribution picture and describes a general model that identifies the principal determinants of income distribution over time in the industrial sector. These include rates of investment, wage rates, productivity growth, the

composition of demand, foreign trade, and rural industrial activity. Each of these is discussed in the following parts of the paper. The last part, Part VIII, is a summary and a brief review of the policy implication revealed in the various arguments.

I.

In this part, some general notions are discussed in an effort to make clear what is being talked about and why it is being talked about in the rest of the paper.

1. It is necessary to begin with an observation or two on the notion of distribution itself. Economic welfare is generally more directly related to size distribution than to functional. Size distribution is not however unrelated to functional, and one of the tasks of the paper will be to examine how policies that affect functional distribution directly also have an impact on size. Conventional measures of size distribution usually encompass the entire economy. The Gini Coefficient, the Kuznets Ratio, the Pareto Coefficient are all indicators of the extent to which a given proportion of national income accrues to a given percentage of the population. These are useful measures, but for most developing countries at the present time, the most pressing social problem seems to be the existence of widespread, severe poverty. It would appear then that a more directly relevant guide to policy than any of the general measures is

the extent to which the very poor are helped by the policy. For example, a poverty line may be defined, and the measure of effectiveness of a policy be determined by the rate of reduction in the percentage of the population whose income is below this level. "Improved" income distribution would then refer to an increase in real income for that part of the population whose present income is below this poverty line. The source of increase may be reduced income of the richer groups, but may also be increased total output, that raises the income of the low end poverty groups and that of the richer groups by as much or more.

This criteria is meant to represent an empirical judgment, not a value judgment. We assume here that the very poor are mainly interested in having more absolutely, not simply more relatively to some other group. "Mainly interested" means that the low end poverty groups have, at the present time, a welfare function whose arguments are absolute levels of income, not relative levels. Evidently such a function may change as a country grows richer, but that is a later story. In the language of Albert Hirschman's tunnel metaphoric [31], we are interested in getting the stationary lane moving and not in what happens to the other lane -- except in those instances where the speed of the fast moving lane is responsible for the non-movement of the poverty lane. As will be argued just below, the attack on high end riches is best undertaken by direct taxation rather than other means.

2. The second general point has to do with some of the notions that underlie the approach taken in subsequent sections of this paper. Various broad based studies of income distribution in developing countries have appeared recently, and have identified a fairly common list of factors accounting for inequality in general and for the failure of those whose income is very low to experience much of a rise over the past two decades.¹ Such lists include a great variety of factors: extent of dualism in the system, size of the government controlled sector, extent of dependence of the economy on raw materials or agriculture, structure of foreign trade, and, of course, a variety of other things. These studies show the evident fact that income distribution, like other things in economics, depends on everything else. Such studies have been helpful in outlining the various factors that affect income distribution. Some few hypotheses specific enough to be tested have emerged, but in general they are of such a broad, historical nature that they lead to few policy conclusions. It is, however, important to appreciate the point that the existing accumulated inequalities have emerged out of the way the economies have developed over the past rather than to peculiarities in one sector or another. Also the fact that many countries have experienced essentially the same distribution pattern suggests that the problem is not a matter of size of country, form of government, availability of natural resources, or other country specific characteristics. It also appears generally correct to say that governments only

rarely seek explicitly to hold down the growth of income of the very poor. Rather it seems that the problem emerges, or at least is accentuated, by the policies that have been followed in the search for development, and the kind of institutions and power structure that have evolved as these policies have been pursued. The fact that it is now necessary to attack the problem from an existing set of policies, institutions, and power bases that have brought about the problem complicates matters. It not only makes the implementation of any new policy much more difficult than it would have been twenty years ago, but also makes the design of the policy itself a more complicated matter.

There is one further observation suggested by the preceding paragraph. A common practice of recent years has been to downgrade the importance of rates of growth of GDP as a measure of the success of policy. Such a downgrading is somewhat misleading. The problem would appear to be with our understanding and practice of the development process, not with the objective of increased output of goods and services. It seems clear, however, that to attack the income distribution problem (as defined above) simply by seeking higher rates of growth of output by the same methods as those widely used during the 1960's will not succeed, will not succeed in producing continued growth or in helping the very poor. What does seem to be the case is that a development policy built on a more effective use of domestically available resources can produce a growth rate and a distribution of the rewards of that growth that are more

compatible with general notions of equity as well as with social and political stability than is the case for the recent past. To argue in this way implies considerable confidence that major effects can be accomplished by specific policy measures of the conventional sort, i.e., policy toward exchange rates, wage rates, credit, etc. And, as will be argued explicitly later, getting conventional policy right -- or at least working in the right direction -- is necessary before one proceeds into the more intractable areas of institutional change and revolution.

3. Specific reference to taxes and transfers as a policy instrument to help relieve low end poverty should be noted. This is the subject of another paper in this volume, and need not be elaborated here. At several points in later discussions, however, the key role of taxation will emerge. It is especially relevant in efforts to reduce extreme wealth and to break the power hold of dominant groups.

4. The specific economic characteristics that seem to account for the low end poverty are also explored in another paper. Data are not very plentiful, but four such characteristics are fairly firmly established, and are of especial significance in the set of issues examined below. They may be summarised as follows:²

a. The poor are engaged in very low productivity activities. In some instances they have no job at all, but literal open unemployment is a luxury the poor can rarely afford.

b. The poor have little human capital, and are not

in a position to accumulate it, either through formal training or job experience.

c. The poor own little physical capital or land, and of course have little capacity to acquire it.

Such characteristics follow almost from the definition of poverty, but they do help to isolate a bit more the nature of the problem. The question of the present paper may now be put: how do the several aspects of trade and industrialization policy affect these three major characteristics of the low end poor.

II.

In Section A of this Part, the role that manufacturing can play in the attack on low end poverty is discussed. Given this role, Section B contains two variations of a model that will provide the basic framework within which the remaining topics are analyzed.

A. The Role of Manufactures

Manufacturing accounts for a modest portion of GDP in most developing countries, and offers employment to an even smaller proportion of the labor force. In modern sector manufacturing productivity per worker and wage income is generally much higher than in other sectors of the economy. Despite this small size, modern sector manufacturing occupies an important

position in the efforts to alleviate low end poverty.³ The early versions of the labor surplus, dual economy model of development imply that a high rate of growth of the modern sector (dominated by manufacturing) would produce a rate of growth of demand for relatively unskilled labor such that the employment and poverty problem would both be solved in an acceptably short period of time. The resolution of the problem would work in two directions. The modern sector itself would absorb increasingly large numbers of workers, and thereby reduce the numbers who remained in traditional, low productivity activities. Reductions in the numbers remaining in traditional activities would result in a rise in the quantity of goods available per capita there, and, more importantly, facilitate a rationalization of techniques and practices in that sector which would in turn produce an increased rate of growth of productivity. The origin, the prime mover, of the process in the model is however investment in the modern sector. This location of the prime mover is important in the story as it has a significant impact on the policy followed, and on policy changes to be suggested below.

If the level and structure of wage rates do not change over time, if the price of capital remains unchanged, if there is not change in productivity due to technological improvements, to learning or to increased human capital, if there are constant returns to scale, and if there are no major changes in the composition of output, then output and employment in the modern

sector must grow at the same percentage rate. If wage rates (and productivity) in the modern sector are higher than in the traditional sector and than in the economy as a whole, the growth of the modern sector in excess of the labor force will result in a shift of labor from low to higher productivity activities. The more rapid the growth of investment and output in the modern sector, the more rapid will this shift be. In this context then, growth of the manufacturing sector offers a major focus for the alleviation of low end poverty.

This way of thinking contributed to the establishment of a series of policies aimed primarily at generating as rapid a rate of growth of capital and output in the modern sector as possible. These policies (to be examined below) did in fact produce the high rate of capital accumulation, especially in the period of the early 1950's to the mid-1960's, but the expected corresponding growth of employment did not follow. In the following section, a model is established that helps to pinpoint the variables that are relevant in explaining this pattern of development.

B. A General Framework

1. Consider first a model in which productivity increasing technical progress embodied in physical capital plays an important role.⁴

Diagram 1 will serve as the basis around which to build the discussion and illustrate the arguments. The vertical axis

incorporated in the newly created capital or the newly hired labor or both, and once incorporated cannot be modified. This assumption makes considerably more sense for physical capital than it does for labor, but as discussed later has some merit for labor as well.

This set of assumptions seems especially useful in the context of the industrializing developing countries. New forms of physical capital are being made available year after year, which for the most part embody a technology that existing capital cannot use. Most of these economies are now adding to capital, rather than replacing old capital so that to a greater degree than in richer countries capital of varying productivity is observed. Similarly new managers and workers entering the labor force may be more productive due to better training, better infrastructure, and more efficient distribution arrangements. It perhaps should be noted that rising productivity of the already employed labor force due to learning-by-doing cannot be shown on Diagram 1. What then does this set of assumptions teach us about distribution as industrialization gets under way?

In Diagram 1 the newest unit of capital and labor is that marked d. It is this unit that yields the highest labor (and capital) productivity. With a wage rate equal to AE, the least productive capital labor unit that is profitable to use is that identified as e. With capital labor unit e the wage paid absorbs the entire output and no profit at all is realized. The capital to the left of e is so unproductive that, at a wage AE, labor

costs would not be covered so profits would be negative. With the most productive capital, d , profits are equal to BC . Total employment equals ED , the total wage bill is $EACD$, total profits ABC , and total output $EABD$. So profit's share is $ABC/EABD$. If it is assumed that FAB is a straight line, i.e., productivity growth and the investment rate are constant, the profit area is equal to $1/2(BC) \cdot AC$. Total output is this area plus $AE \cdot AC$, so profit's share is $\frac{BC}{BC + 2AE}$. It is evident from this expression that if the wage rate were lower, e.g., HJ , profit's share would necessarily rise, as would total employment. Suppose now that total profits accrue to a (small) fixed number of the labor force, evidently the per capita income of this fixed small number will rise relative to the per capita income of the wage earners. At the same time income within the entire (employed and unemployed) wage earning groups becomes more equal with the rise in employment, and total output rises proportionately to $HAEJ/ABDE$. In this context the lowering of the real wage rate added to the quantity of capital stock that it was profitable to operate. Such a result could also be achieved by increasing the number of hours per day that the capital stock was utilized.

A more important -- or at least a more empirically relevant -- case is what happens as new capital-labor units are formed with still higher productivity while wage rates remain at AE . The new unit, u , is more productive than the d unit, and if wage rates remain constant, profit's share is greater with m than with d , and therefore profit's share of total output must

be greater now than was the case before m was created. Here again total output rises, and the total output accruing to labor also rises. Therefore, with the added employment (equal to DM) income distribution among wage earners becomes still more equal, low end poverty is reduced, and output available to the non-profit receivers rises. The increased output is due to the higher productivity of the new capital-labor units, and to the added employment. On the other hand, if wage rates rise with the productivity growth, profit's share would remain unchanged as would labor's. In this event, output will rise only by the annual increase in productivity, and the total output accruing to labor will be less than if wages remained constant. Of course the employed workers have higher pay, but if it is they who support the unemployed then evidently they too would benefit more from constant wage rates than from rising wage rates.

Under present assumptions the profit rate is also rising over time as new units of capital labor are created.⁵ This process continues (in the model) until full employment is reached, i.e., until all workers in the economy are receiving at least a wage equal to AE . After this point wage rates would (in the model) begin to rise along with productivity, and shares would remain constant. When this point is reached, then the assumption of a given capital labor unit becomes open to even more severe question than before. Presumably as wages rise, the capital labor ratio will also begin to rise and possibly incentives may emerge that result in productivity growth not

affecting both inputs equally. More on all this later.

In this argument the enlarging profit's share is a consequence of the raising of per capita incomes of the labor groups, i.e., it is a consequence of creating employment in those sections of the economy where productivity is higher. (This is not the same thing as arguing that high profits are necessary to produce the saving that will permit a satisfactory rate of capital formation.) It is also evident from Diagram 1 that with a more rapid increase in productivity -- a greater slope of FAB -- profit's share and the profit rate rise more rapidly, as the relationship between BD and AE govern the relative shares. At the same time the higher rate of productivity growth generates investment opportunities, and thereby should contribute to a more rapid eastward movement along the horizontal axis. Finally, the diagram shows that technological depreciation penalizes the movement toward effective utilization of labor and the levelling off of relative shares. I.e., if physical capital falls apart, then this fact reduces the rate of increase in profit's share and employment growth, and thereby increases the time required to reach the full employment point.

This form of the vintage model assumes no substitution between capital and labor after construction of the physical capital. Prior to construction there is substitutability, but the capital labor ratio remains unchanged because real wage rates and capital costs are assumed constant and productivity growth is assumed to act on both inputs equally. If some ex

post increase in productivity is technically possible, the diagram becomes more complicated, but the general argument remains relatively the same. If it is assumed that a remains positive and constant and some increase in productivity growth can occur ex post, then FAB itself shifts upward with the same slope. This upward shift in FAB would also contribute to a rising profit's share and a rising profit rate.

As this happens the wage rate AE (Diagram 2) falls below the level of productivity of labor with unit e. If there exists unutilized physical capital left of e, the producer now has an inducement to bring these machines into use. In Diagram 2 employment will rise by EH, the wage bill by G'AEH, and total profits by G'A'AG. Profit's share of the new output (G'B'DH) will also be greater than it was before the upward shift in FAB. In the event that there are no unutilized capital units available, then evidently this source of increased employment is impossible. If, in addition, there is zero ex post substitution between capital and labor, then a rise in wage rates from AE to A'E will not penalize employment growth and will contribute to increasing per capita income of labor. Such a rise in wage rates will also reduce the growth of profit's share and the rise in the profit rate. These consequences may also reduce the rate of eastward movement on the horizontal axis, but this cannot be told without further assumptions.

On the other hand, if there is positive ex post substitutability between capital and labor (and no previously idle

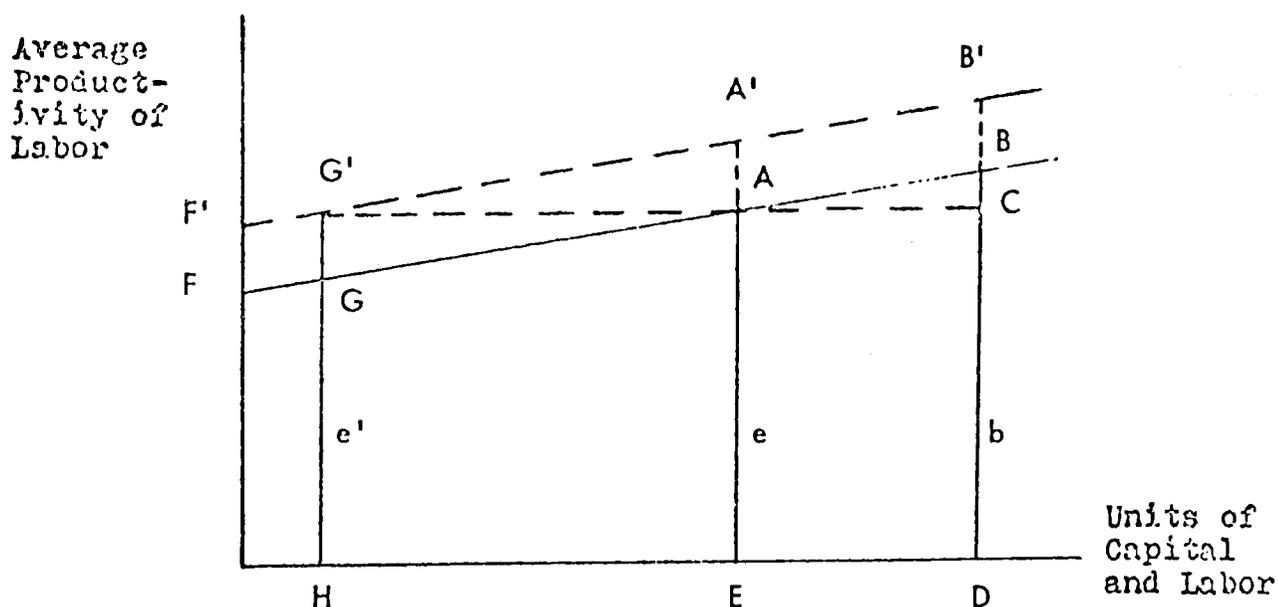


Diagram 2

machines) the increase in labor productivity to $A'E$ with wages remaining at AE will induce an increase in employment relative to capital. In this case employment will rise relative to capital until Q/L is equal to AE again. How much increase this amounts to depends on the elasticity of substitution. The greater it is, the greater will be the increase. If this happens, then the effect on relative shares depends also on the value of the elasticity of substitution. The outcome of this argument can not be shown on the diagrams as it involves a change in the unit of measurement along the horizontal axis. Further implications of a changing K/L are examined in the following section. It is, however, clear what the consequence of rising wages are in this circumstance.⁶

To summarize briefly: The modified vintage model

described above brings out the impact of productivity growth, wage rates, profits, investment, and output growth on employment, profit's share, and labor's per capita income. It shows that a rising profit's share with constant wage rates is a necessary consequence of increasing employment and increasing the per capita income of labor, employed plus unemployed. If government owns the plants, profits accrue to the government, but that does not modify the argument. Rising wage rates will prevent the share of profits from rising, but will then create intra-labor inequality, and penalize employment growth. It is likely that there is more sharing within labor than between labor and profit receivers, but it is not likely that there is enough sharing within labor to justify seeking simply to maximize labor's share. (This is not, to repeat, the same thing as arguing that a rising profit's share is necessary in order to achieve an adequate saving rate. Nor is a "trickle down" notion involved here.) Profit's share will continue to rise until "full employment." Profit's share rises faster as does the profit rate, the more rapid is embodied productivity growth, given constant real wages and the longer the physical life of the capital. So too does the rate of growth of employment and income accruing to the labor sector. In the context of the industrialization effort of less developed countries the conclusion would seem to be that rapid rates of growth of productivity, output, and investment with constant real wages in the modern sector will in fact produce a rising profit's share, but the same process generates

the most rapid growth of employment and labor income possible with a given rate of capital formation. In particular it is clear that rising real wages, though holding down the growth of profit's share, will penalize the growth of employment and labor's income. The only instance where rising wage rates do not penalize employment and labor's income is in the case where there is a disembodied increase in productivity and there is zero substitutability between capital and labor. In the case where productivity grows as a consequence of accumulated experience increased wage rates will add to intra-labor inequality while holding back the growth of profit's share.

2. The argument is neater if it can be assumed that none of the increased productivity is embodied, i.e., that it occurs irrespective of the level of investment.⁷

Suppose that all firms hire labor until the marginal product of labor equals an exogenously given wage rate. Suppose further that capital formation is determined autonomously, and that the following production function describes the modern manufacturing sector:

$$1) Y(t) = F(a(t)K(t), b(t)L(t))$$

where Y is output

a is the index of capital augmenting productivity growth

b is the index of labor augmenting productivity growth

L is labor

K is capital

t refers to time period

Assume this production function has constant returns to scale. Then as is shown in the appendix to the Frank-Webb paper in this volume, the proportionate rate of growth of the demand for labor is

$$2) \quad r_L = r_K + r_a - r_b + \frac{\sigma}{Y - WL} [r_b - r_w]$$

where the r 's identify proportionate rates of growth, e.g., $\frac{dL}{dt} \frac{1}{L}$, etc., w is the wage rate, and σ is the elasticity of substitution. Evidently, employment grows with capital formation and capital augmenting productivity growth, and falls with labor augmenting productivity growth. The most interesting component is the last, which tells us that labor augmenting productivity growth, not matched by wage increases, will produce employment growth if the elasticity of substitution exceeds zero. If $\frac{\sigma}{Y - WL}$ exceeds one and r_w is zero, the net effect on employment growth of labor augmenting productivity growth is positive. Capital's share is of course less than unity, and generally less than .75. A "low" capital share therefore facilitates employment growth.

There are three points in particular to note about (2). First, if $r_a = r_b$ then employment will grow faster than r_K if $r_b > r_w$ and $\sigma > 0$. In this event the greater are σ and r_b (relative to r_w), the greater will be r_L ; in order therefore for $r_K > r_L$, (1) r_b must exceed r_a and (2) $r_b \leq r_w$ or (3) σ must equal zero. If r_w is zero, the capital labor will rise

only if $r_b \left(\frac{\sigma Y}{Y - WL} - 1 \right)$ is negative and absolutely larger than r_a . This suggests that considerations with respect to r_b , r_a , and σ are relevant in the income distribution problem. It may be noted in passing that in almost all developing countries, capital's share is larger than in the more developed countries. Therefore with a given elasticity of substitution and a given difference between r_b and r_w , employment will expand more rapidly in the latter than in the former countries.

Secondly, if $r_b = 0$, then $r_L > r_K$ if $r_a > \frac{\sigma Y}{Y - WL} \cdot r_w$. If $r_b = r_w = 0$, then $r_L - r_K = r_a$. In either case if $r_b = 0$, employment will grow more rapidly, the higher is r_a and the lower is r_w .

Third, the rate of growth of labor's share (with product prices assumed constant) (LS) can be shown to be⁸

$$3) r_{LS} = (\sigma - 1) [r_b - r_w]$$

Labor's share will rise if r_b exceeds r_w and the elasticity of substitution exceeds unity. If wage rates were constant, and $\sigma > 1$, then labor's share will rise over time in this model. Earlier it was shown that employment will grow more rapidly, the greater is r_b relative to r_w and the greater is σ . Now from (3) it is evident that if σ exceeds unity, the greater it and r_b are, the more rapid will labor's share rise. With r_w equal to zero, the increase in labor's share is due entirely to increasing employment. In this event employment grows more rapidly than output, and observed labor productivity falls.

These circumstances would appear to produce the most favorable effect on low end poverty as well as on the overall size distribution of income. If $\sigma > 1$, rising wage rates actually reduce the rate of growth of labor's share by their penalizing of employment growth. It is also evident that if $r_w > r_b$, then a less than unity will produce a rising labor share, at the expense of a slow growth of employment.⁹

In the present formulation of the model, the elasticity of substitution plays a more important role than in the vintage version. The growth of wage rates remains crucial as does the rate of growth of productivity. The present formulation also brings out more clearly than did the vintage version the importance of different forms of productivity growth on both employment and income distribution. Also brought out is the fact that a rising profit's share is not a necessary condition for growth of employment, as was the case with the vintage model.

The two forms of the model indicate that the following are strategic elements in an analysis of the problem: productivity growth (magnitude and bias), wage rates, factor substitutability, and capital formation (and hence profit rate). The question of the paper may now be put as, How do industrialization policies in general and trade policies in particular affect these several elements?

III.

The models just considered place a heavy role in investment in modern manufacturing activities, but that investment must take place in a manner consistent with the resource endowment of the economy. The investment must "fit" the economy, if it is to serve the income distribution objectives very effectively. In this Part I review some aspects of the role that industrialization policies seem to have on the rate and the form of investment. Section A considers formal investment incentives, and Section B the profit rate and its relationship to the rate and composition of investment.

A. Investment Incentives

Almost all developing countries have a variety of regulations intended to encourage investment in manufacturing. There are a great variety of such regulations, but some common characteristics do obtain, and some general observations appear legitimate. In almost all instances the incentives are in terms of exemptions from company taxes or from customs duties and include measures that may reduce the level of taxable income (at least for a time), e.g., accelerated depreciation and investment allowances. The latter are less frequently found and result essentially in deductions of part of the cost of investment from taxable income. Outright grants for investment are very rare. The range of variations and modifications within

these categories is great indeed. Tax holidays vary widely in the length of time that they are applicable, may apply to the entire income or to some part only, may or may not apply only to pioneering enterprises, may or may not apply to a firm's expansion, or to its location, and so on. Exemptions of custom duties are here and there dependent on available domestic supplies, type of commodity, sometimes apply to raw materials and sometimes not, and on and on. In many instances the advantages increase as the absolute size of the investment increases, and some indeed have a minimum size investment requirement. In most countries the vast majority of investment projects in terms of number are not affected at all by the incentive system, but in terms of money value of investment the proportion is much higher.¹⁰

It is correct to say, as many have, that almost all incentive systems favor the use of capital at the expense of labor. We have little empirical evidence on the extent to which the incentives themselves contribute to the observed rising capital labor ratios or result in activities being chosen that have a higher capital labor ratio than would have been the case in their absence. If one believed that these particular incentives were necessary to produce the investment, then of course employment growth is greater with them than it would be without them. Again efforts to measure the effect on the rate of investment of incentive systems have not been successful, but qualitative evidence is leading an increasing number of economists

to conclude that any such effect is minor. This evidence is largely from reports on interviews with producers and from studies in developed countries of the determinants of investment. Answers to questionnaires on this kind of issue are not completely reliable, but the consistency with which tax advantages are downgraded appears convincing. These questionnaires usually consist of a set of questions as to the factors that led to the decision to invest. Tax advantage rarely appeared high on such lists and were frequently not mentioned at all. In particular countries at particular times, tax incentives may be crucial, but it now seems safe to conclude that the case should be proved, and where there is no evidence on the contrary the best assumption is that tax advantages have little impact on the rate of investment.

From the standpoint of employment growth and allocative decisions, the worst of all worlds is the situation where the rate of investment is not affected, but the choice of techniques and choice of sector are affected in a manner that penalizes employment growth of unskilled workers, discourages the use of domestically produced inputs, and discriminates relatively against small-scale operations. This in fact seems to be the case in many countries at the present time. There are other consequences more directly related to the distribution of income that may be worth discussion in the present context.

Any incentive that is built around relief from profit taxes evidently depends on profits being earned. If profits are not earned early in the life of the firm, or if they are not

expected to be earned, then tax forgiveness can have no effect on the investment decisions. It therefore increases the variability in profits relative to that which would obtain in the absence of tax holidays. Thus the rich firms get richer, and the firm that may have a hope if it can survive for a few years gets no help. Evidently where the extra profits (profits that would otherwise be taxed) are paid out in dividends, the size distribution of income in favor of the higher income groups is enhanced.

A second aspect of investment incentives relevant to the employment and income distribution follows from the fact that in many countries the incentives apply only to certain types of activities, or additional government authorizations are necessary. For example, imports of capital goods may be exempted from duty, but an import license must be obtained. The retaining of considerable discretionary power requires consideration of criteria for deciding which activities to permit and which imports to allow. One such criteria that has found favor in a number of countries is whether or not there is "room" for an additional producer. This usually means that the decision-making authority asks itself what would happen to product prices and to the utilization rates of existing capacity were new capacity to become available. If such consequences appear undesirable from the standpoint of the existing producers, new applications are rejected. This arrangement means that the new industry is offered not only protection from imports, but also protection

from future domestic competition. As is discussed more fully below this kind of protection has especially adverse effects on the kind of productivity and employment growth that helps reduce the proportion of the labor force left beyond the reach of the modern sector. It is evident that such an incentive provides more or less guaranteed profits without any inducements to find and install cost reduction measures. Evidence seems completely lacking on this point, but it may well be that removal of guarantees of protection of this kind would have marked negative effects on the rate of investment in some countries, especially in those activities where exporting potential is assumed to be slight.

A third point having to do with incentive systems has to do with their cost in terms of government projects foregone because of lacks of funds. It has often been noted that if tax relief has zero effect on the rate of investment, then the producers have profits rather than the government having tax revenues. The amounts involved may not be large, but in many cases are large enough to matter, especially if foregone customs receipts are included. Lent estimates that revenue foregone (on the assumption that the incentives have no effect on the level of investment) ranges between two and thirteen percent of total government revenues.¹¹ For countries at the upper end of this range, foregone receipts can clearly matter. They matter even more if the government seeks to obtain revenue by other taxes, e.g., payroll taxes, that unambiguously penalize employment

growth. The consequence of this for income distribution and employment depends of course on what each government and industry does with resources available to it. The situation doubtless varies from country to country, but in many countries evidence would seem to suggest that government projects could be devised which would contribute more to these objectives than is likely to be the case out of the untaxed profits. In particular, government expenditures that facilitate the growth of small scale industry, and still more particularly that facilitate new activities in non-urban areas, are more likely than private expenditures for the same purpose.

A final general point is this: the investment incentive packages almost always refer (in fact or in law or both) to larger scale, modern enterprises. In some countries they are more often aimed at foreign rather than at domestic investors. This often means that the government officials neglect or actually discourage smaller undertaking and those employing the more traditional methods and the more traditional techniques. This in turn has two effects on low end poverty and income distribution in general. Indigenous activities that fit the economy are rarely helped and are sometimes destroyed by the (unnecessarily) subsidized new firms, and thereby opportunities for income earning activities that can reach a significant segment of the labor force are hurt. More generally, however, is the fact that the investment climate that is created militates against indigenous activities and the evolution of those kinds of activities that

best fit the system. This notion is both vague and important. Discussions with industrial policy officials in many parts of the world confirm this attitude. It is an attitude based partly on an implicit assumption that the only hopeful long-run prospect is rapid growth of large-scale, modern factories. More generally it seems to be based on the notion that no policies can be designed that will help the truly indigenous enterprises. This latter notion, like export pessimism and variable coefficient pessimism can be eroded away, if at all, only by success stories.

To summarize briefly. Most developing countries have investment incentives that usually involve tax advantages to the investor. Although empirical evidence is slim, several reports of interviews and questionnaires indicate these incentives are not especially important in generating investment. They do have other effects, however, most of which dampen employment growth and contribute to increased inequality of earnings among producers and among recipients of firm income. Guaranteed protection from foreign and domestic competition does appear important, and has adverse effects on productivity growth. These incentives are generally relevant, and in some cases only applicable, to larger scale, modern sector activities. As such they direct attention and energy away from small-scale, indigenous operations which fit the economy better and that are more likely to generate employment for the low end poor.

B. The Profit Rate

In any discussion of income distribution the rate of return on physical capital in manufacturing enters in a variety of ways. (The return on human capital is discussed in the section on wage rates.) On the one hand, of course, is the presumption that high rates of return on physical capital induce the further accumulation of more capital, and the further presumption that variation in profit rates affects the allocation of capital among manufacturing sectors. On the other hand, as noted above, profits go (or are assumed to go) to the rich at the expense of the poor, and thereby to exacerbate the distribution problem. More revealing language is to distinguish between useful profits and useless profits. The former being those profits that induce investment and that measure the social contribution of investment, and the latter are those that result only in income inequality. The point here is not just that high profits may be saved or may be consumed. The point is to understand their impact on the rate and allocation of investment.

The models of Part II showed that if a large part of productivity growth is of the embodied type, then it is expected that profit's share and the profit rate will rise over time if the maximum contribution to relieving low end poverty and to preventing growing intra-labor inequality is to be made. If these high and rising profit rates are legitimate signals and if they induce a high rate of investment, then movement toward the elimination of low end poverty is accelerated. If, however,

the high profits come from excessive protection, from inappropriate incentives, from penalizing productivity growth, etc., the result will be simply inequality of income distribution.

In this section two general issues are discussed: How in fact have profit rates evolved over the last two decades or so, and to what extent have these developments produced satisfactory rates of investment? The examination of the first issue includes an effort to explain the impact of incentives and tariff policy on this evolution. Neither issue can be discussed satisfactorily. Data on these matters are the least available of less developed country data, and efforts to accumulate enough data to justify speaking of a general picture were, at best, a flat failure.

1. Profit Rates. While data do not permit a very inclusive analysis, there are several general pieces of evidence and a couple of case studies that are helpful in understanding the problem.

All available data show that total value added less the wage bill is a much larger share of value added in almost all less developed countries than it is in the richer countries. This holds for manufacturing as a whole and for almost every sector, at least at the two-digit classification. We also know that the capital-output ratio in manufacturing in the developing countries is much more nearly the same in both the developed and less developed countries. Where it is higher, it is not as much higher as is capital's (i.e., non-labor's) share. This last

statement holds even if with substantial underutilization of physical capital. If non-labor share is read as profit's share, this circumstance produces a higher rate of return in developing countries than in the richer countries. For example, in the United States labor share of manufacturing value added is about 50 percent. In less developed countries it will generally be between 25-35 percent. A capital output ratio of three would produce a rate of return of 16 percent in the United States and 20 to 25 percent in the less developed countries. For manufacturing, a capital output ratio of three is often high. Indeed, where capacity is fully utilized over the relevant time period, the capital output ratio is almost sure to be below three. So a rate of return of at least 25 percent would seem indicated by this rough and ready calculation.

There are a few studies that have made efforts to estimate directly the rate of return. Three of these may be mentioned.

a. Bent Hansen and Girgis A. Marzouk provide some data on Egypt relevant to the issue [28]. Their major estimate is for 1960 and amounts to 17 to 18 percent of replacement costs for total industry (of which manufacturing accounts for about 90 percent of value added, employment, and wages). This is a before tax figure, and profits are net of depreciation. If book value capital figures are used, the rate of return is 21 percent.

Hansen and Marzouk quote censuses of production data as showing wages and salaries amounting to 32 percent in 1960 compared to 40 percent in 1952. For 1960 they suggest a capital

output ratio a bit less than three, and hence a profit rate of 24 to 25 emerges with this way of calculation. This is higher, but not absurdly higher, than the figure they arrived at by direct estimation. Their data also show that (most probably) the capital stock grew less rapidly than output over the decade of the 1950's. If profit's share rose (from 60 to 68 percent) and the capital output ratio fell, then it can confidently be concluded that the profit rate rose over this period. The data show that wage rates probably did not grow as rapidly as did observed labor productivity, and there was a rise in product price which also added to capital's share. While no specific relationship between the rising profit rate and the rate of investment could be shown, there was, during those years, a rate of growth of physical capital of near seven to eight percent. This rate produced a marked rise in the capital-labor ratio. This increase in the capital-labor ratio may have been due mainly to a composition of investment effect rather than to increasingly capital intensive techniques with each sector.

The authors do not attach a great role to any government policy to account for these favorable profit rates. They do note that protection gave some monopoly power, but do not emphasize this as the full panoply of import substitution measures were not in effect in these years.

b. Stephen R. Lewis' story of Pakistan's industrialization is more directly applicable to our general framework [44]. Although there were a variety of measures in effect during the

1950's designed to encourage manufacturing investment, the policies of the 1960's were much more potent. In particular, during the 1950's import limitations and tariff policies did not create differential rates of growth of investment and profit rates. The general scarcity of manufactures swamped any differential effects of the tariff structure might have had, and the tariff structure was much less differentiated in the mid-1950's than in the 1960's. Profit rates were high across the board, although Lewis offers no actual estimates on this, but there is no doubt his assertion is correct. Industries responded remarkably well to these profit opportunities and investment and output grew rapidly. Lewis also shows evidence that costs of production in most Pakistani manufacturing activities declined over the 1950's. The general disequilibrium created by the partition and by the restrictions on imports were being eliminated in the textbook manner. Similarly the manufacturing sector showed good capacity to break any bottlenecks that appeared.

The major problems appeared when the general scarcity was relieved, and the (increased) differential tariffs and other discriminatory instruments began to bite sharply. The bottlenecks that then appeared were much less easily broken, the growth rate slowed down, and a stop-go situation emerged.

The 1950's in Pakistan were not characterized by ideal economic policies by any means. The capital-labor ratio probably rose significantly, and industries appeared that could hardly meet any test of efficiency. The point at the moment, however,

is that profit rates were high in the fifties, the industrialists responded, and profit rates began to decline. It was not until the heavy distortions of the 1960's began that high profits failed to produce the model results, and the bottleneck dominated stop-go picture appeared.

Similar evidence may be cited from Latin America. Carlos Diaz-Alejandro [19] has pointed out that the industries which developed in Argentina, Brazil, Colombia, and Mexico in the earlier part of the twentieth century did so with very modest levels of tariff protection, and did not require the complicated postwar type of import substitution policies. Investment in textiles, shoes, cement was substantial behind only very simple tariff protection. In the language used earlier, these industries seemed to fit these economies at that time much better, much more satisfactorily, than the more complicated and capital intensive activities that the more powerful protective devices of recent years have brought into being.

c. A detailed study of Argentinian profit rates over the years 1961-67 has been made by A.H. Petrei [66]. His calculations show rates (before taxes) ranging from a low of ten percent in 1962 to a high of 25 percent in 1965. The rate for 1963 was 12 percent, and all other years were in excess of 18 percent. No trend appears over these years. Wages and salaries share of value added in 1963 amounted to 38 percent. With a capital output ratio of three, the rate of return would be over 20 percent.

Petrei also calculates a variety of regressions of investment in manufacturing on rates of return and variation over time in the rates of return. These regressions all yield coefficients with the expected sign and t values that are significant at all conventional levels. The regressions show that variation in rates of return explain over one-third of the variation in investment.

Very little in the way of generalizations can be derived in this way.¹² At the same time it is difficult to convince oneself that profit rates have been significant barriers to investment in the modern sector. Indeed the bits and pieces of data available on this key subject would suggest that profit rates were generally quite attractive. The evidence from capital's share and ICOR's is not inconsistent with the assumption that profit rates have been rising over time. It is impossible to say whether these rates, if they were in fact as high as suggested, arose from the kind of phenomena accounted for by the models of Part II. The rising capital labor ratio and rising profit rate however can reflect a variety of other developments as well, and full explanation is not possible with the data that are available.

There are even fewer data from which to estimate profits for indigenous manufacturing activities. In such activities profits and wages are generally so entwined that a breakdown does not make much sense. Casual empiricism suggests that most (in terms of numbers) of these activities have little capital

and earn much lower return than do modern sector activities. As will be argued later, the contribution of such activities is much more strategic to the income distribution problem than is indicated by relative rates of return.

2. Rates of Return and Rates of Investment. The effect of high and rising profit rates on income distribution and the alleviation of low end poverty depends on the extent to which they induce capital formation in an economic environment in which the distortions are relatively modest. The models of Part II suggest that a rising profit share and profit rate can often be expected if the maximum contribution to the relief of low end poverty is to be made. But the more rapid is the rate of capital formation, the sooner will a situation be reached in which wage rates can begin to rise without penalizing employment growth.

Most observers would probably agree that investment rates in manufacturing have been reasonably satisfactory over the past 15-20 years. The precarious conclusion just reached that profit rates have been "high" does not necessarily mean that the latter induced the former. At the same time, it seems reasonably safe to argue that the attractive profit rates were a necessary condition for the high investment rates. We have also argued that the various tax incentive arrangements were rarely very important to the investment decision. What does seem unambiguously important in many instances is protection from imports, and probably (implied or explicit) protection from domestic competition. The distortion created by the tax incentive arrangements can be

removed therefore without penalizing investment. Lewis's analysis of Pakistan in the 1950's suggests that a relatively undifferentiated import policy and high rates of investment can co-exist, and the high rates of profits can be reduced over time by high rates of capital formation. Studies of recent Brazilian experiences, though much less complete than Lewis on Pakistan, suggest a similar conclusion.¹³

Can then protection schemes be designed that afford the necessary time and encouragement for industrial development, without so imposing distortions that the investment generated does little toward absorbing unskilled labor? Along with foreign trade policy, two other general categories of policy appear extra strategic: wage rates and technology. These three components of policy -- foreign trade, wage rates, and technological development -- must be consistent with and contribute to a high rate of capital formation, if the manufacturing sector is to play a very strong role in effecting a more acceptable sharing of the rewards of development. In addition, ways must be found to generate productive manufacturing activities in essentially rural areas and small towns. The following Parts of this paper consider some of the aspects of these several issues. Before that, however, a brief comment on the rationale and origin of direct controls and the role of the market.

IV.

In the models of Part II, a constant wage rate was found necessary if the maximum contribution to employment growth and to the elimination of low end poverty were to be achieved from a given rate of investment. Richard Webb considers the general question of wage rates in his paper in this volume, and it is possible to limit the discussion here to specific issues connecting wage rates and industrialization policy. Consider first some very general points.

It is not surprising that a government would look upon raising wage rates as a likely means of effecting a change in the distribution of income. Profit in many societies is equated to riches and, as noted, accrues to a very small proportion of the population. Rising wages then seem to imply simply taking from the rich and giving to the poor. For example, the Supreme Court in India ruled (in 1958) that "no fixation of wages which ignores this essential factor of the capacity to pay could ever be supported."¹⁴ The argument gains even more appeal when foreign firms are involved, and the profits accrue in large part to foreigners which are then transferred out of the country. Implicit in such a position is the notion that wage rates should be the means by which profits are distributed from the rich to the less rich. It is also evident that it is the workers employed by the profitable firms who are to be the gainers, not the unemployed or those employed in lower productivity jobs.

Finally, such a notion, if effected, would result in great diversity of wage rates, as the capacity of firms to pay varies widely. In seeking to prevent severe size inequalities arising out of "high" profits, such a practice would add to inequalities within the labor sector, as well as slow down employment growth.

There are also many examples of governments trying to link wage rates and workers' needs. Thus courts in India have ruled that if "the worker does not get enough to enable him to maintain a suitable standard of living -- he can ask his employer to pay him wages which would enable him to do so."¹⁵ There are instances in which governments and courts have argued that if a firm cannot pay such a wage, it should not be allowed to exist. Development plans often announce that wage rates should rise with productivity, but then demur by noting how difficult it is to measure productivity growth. In a similar vein, policies seek to relate wage rates to the level of national income or the "stage of development" of the country, and wages that yield incomes below the level implied by these are deemed unacceptable. There are also a great variety of examples of non-wage costs, extending from provision of day nurseries to the covering of funeral expenses, that add to labor costs. Estimates in Latin America and Africa show that these non-wage costs often are over 50 percent of the wage bill. Government employees are especially helped (relative to non-government workers) by these means. Larger private companies, however, are frequently required by law to provide certain services, e.g., medical. Arguments in

favor of minimum wages usually include statements to the effect that they are necessary to insure that the wage earner receives a fair wage, that he is not exploited, is not a "victim of the supply and demand for labor."¹⁶

There are many similarly motivated regulations applying to employment and discharge policies. In many countries there are legal requirements to the effect that employees of more than (e.g.) three month standing cannot be discharged without lengthy proceedings or costly severance pay. Along with these types of regulations, one also finds prohibitions of overtime work, and rules governing vacations and holidays which appear rather generous. In Peru one investigator found 103 different legal enactments that applied to hours of work [43]. There are also numerous examples of measures aimed at preventing undue mechanization. For example, in some Caribbean countries the shipment of sugar in bulk was prohibited as was the use of automatic sugar cane harvesters.

There are few solid empirical studies of the impact of these policies on wage rates, employment, and labor's share. Several qualitative points, however, appear valid and relevant in the present context.

a. Such regulations (insofar as they are not mere political gimmicks) imply that governments can by edict enforce a certain behavioral pattern on producers, can, in effect, counteract market forces. This is to be done without dampening or penalizing other activities that would contribute to the same

end, e.g., investment, productivity growth, reductions in product prices. It is true that labor regulations often do affect producer behavior in the direction intended, but it is also true the producers circumvent the regulations. Indeed in some instances the regulations induce actions that have contrary effects to those intended. Rules against discharge have surely added to the reluctance of firms to increase employment, and have in some cases resulted in increased lay-offs to prevent workers from gaining job security. Thus the job security that the policies sought to accomplish have in fact contributed to more insecurity. Such rules have also added to the inducements to replace men with machines. While these regulations may have had some effect in transferring real income from profit receivers to employed labor, there seems little doubt that they penalized both the rate of growth of modern sector employment and of productivity. In this way, they have probably contributed to an increase in the proportion of the population in low end poverty.

b. In any developing country where a great number of labor regulations are on the books, they are effective in varying degrees among the industrial activities. This fact adds to the imperfections of the labor market, as well as to inequalities in wage income. The variance of the growth rates of wages among manufacturing categories is markedly higher in less developed than in the more developed countries. Part of the explanation of this is the great number of labor regulations, their haphazard enforcement, and their unintended side effects.

c. To the extent that the kind of wage policy and philosophy described above does in fact push wage rates up, employment in modern sector activities is penalized. The evidence on this seems beyond dispute.¹⁷ Whether it also dampens the rate of investment is a matter on which there is little evidence. If productivity and product prices are constant, a rise in wage rates reduces the profit rate. There is reason to believe that many multinational companies do invest in certain countries to take advantage of the low wage rates, and rising wage rates may be expected to dampen that type of investment.¹⁸

In such an economic and social context, it is not surprising that wage rates in the modern industrial sector tend to creep up inspite of a general excess supply of labor. Increasing wages, especially by foreign firms, does help to keep labor peace, does usually appease government regulators, and, where productivity is growing, does not harm profit rates. It therefore is an easy way for firms to act, and does not cause the leading firms any difficulty. That it causes other firms and the society much difficulty has already been emphasized.

There is however a second question: Why does not the economy respond in such a way as to demonstrate that rising wage rates are heavily penalizing and thereby force modifications? There are many sides to any answer to this question, and some sides apply to some countries and others to other countries. One point, however, is general enough for special attention. The system of protection and exchange rate policies generally

penalizes all exports. The traditional sectors, where wage rates have not risen or have risen only moderately or foreign demand is quite inelastic, can export to the extent necessary to keep the balance of payments afloat (with protection, licenses, etc.). Foreign aid and private capital inflows also help. The protection of the domestic manufacturing activity eliminates foreign competition, and traditional exports (with protection, aid, capital inflows) maintain the balance of payments. The new manufacturing sector has then a captive market, and nothing happens to penalize the existing activities in this sector as wage rates rise.

To dramatize this argument consider an example suggested by John Power [68]. Suppose that almost all of Philippine industry were located in Manila. And then suppose Manila seceded from the rest of the Philippines. The rest of the Philippines would no longer be forced to buy Manila's high cost manufactures, but could buy from cheaper sources in other parts of the world. The new Manila industry could not continue (in the absence of large capital inflows) its practice of paying high wage rates as its balance of payments would collapse. Wage rates and prices must fall or there must be a devaluation that has the same effect. Evidently then the rising wage rates could not take place without the captive market, i.e., without the marked inequality in wage rates (and presumably income) between the manufacturing enclave and the rest of the economy. Evident also is the fact that new manufactures in city states (Hong Kong

and Singapore) cannot indulge themselves with high wage rates as they have no captive markets and no traditional sector to maintain their balance of payments.

In this argument, emphasis is placed on the protection of the manufacturing sector from foreign competition. Modern sector activities gain at the expense of the traditional activities, as the latter support the balance of payments and are forced to buy the high cost domestically produced manufactures. It may also be noted that income distribution could shift in favor of the workers and owners of the newly created manufacturing activities with very strong balance of payments pressure and even stronger upward pressure on manufacturing wage rates. In this event, the non-modern sectors are penalized (as modern sector wages rise) because of balance of payments pressures. Something like this may happen in most developed countries.¹⁹ In this event, wage (and other) income in some sectors is forced down by happenings on the balance of payments front, made necessary by the (autonomously, e.g., union induced) rising wage rates in manufacturing. For the developing economies, to which the argument applies, the milieu in which modern sector wages rise is less definable, less pin-pointable than strong labor union pressures. And the role of protection from foreign and domestic competition is crucial.

The extent of the applicability of the above arguments varies from country to country. In some countries, e.g., (possibly) the Central American countries, the observed rate

of increase in wage rates is probably due to more conventional supply and demand matters. More complete country studies are necessary of course, but there seems ample reason to believe that the kind of argument sketched here is applicable in a substantial number of countries.

This argument suggests that a significant source of intra-labor inequality arises out of the protection system. This same system also helps prevent any excess supply of labor from impeding the pushing up of wage rates. In this case therefore it is not only profits that are protected, it is the workers employed in the modern industrial sectors as well. The strategic policy instrument in this situation appears to be the exchange rate, to be discussed in the next section.

Consider once again wage rates and productivity. As productivity rises the equating of productivity and wage rates should be achieved by increased employment rather than by increased wages if the maximum effect on employment and on the elimination of low end poverty is to be achieved. The models of Part II demonstrated this. There are several complications, however, and two deserve attention in the present context: increased productivity due to education and that due to accumulated experience.

a. In Part I attention was called to the fact that the very poor are as lacking in human capital as in physical capital. One reason for the existence of low end poverty and for income inequality is therefore the inequality in the distribution of

education and training. If the educated manpower is technically necessary for production, and if workers pay for their own education, then a satisfactory return on this outlay is necessary to produce this educated input. The policy task then would be to try to insure that everyone has equal access to educational opportunities. This is not easy, practicably it is indeed impossible, but conceptually there is no great difficulty. Rising wage rates over time and constant educational costs would mean that rates of return on educational investment would be rising. If this reflected a demand and supply situation then we ask the same kind of question that was asked for physical capital, namely does the higher yield elicit the called-for increased supply. Here rising wage rates become a necessary condition to produce the necessary quantity of a given input. If there exists suitably trained unemployed labor, then the wage is "too" high, i.e., the rate of return on investment in education is uselessly (in the sense used above) high.

There are many examples of wage rates of educated workers being and remaining "too high" in this sense. The problem dissolves if all education were provided at zero cost to individual recipients. In this case presumably none of the return on the cost of the education is necessary to induce the training, and hence no payment necessary to the worker for the productivity increase due his education.

Though there may be instances where rising wage rates are due to the costs of education, it is difficult to be persuaded

that it is a frequent occurrence. Existence of educated unemployed, widespread programs of free (to the individual) education, evidence that formal education is rarely necessary for most jobs in manufacturing all militate against the empirical importance of the argument.

b. Where the increased productivity is due to accumulated experience the problem is, conceptually, more complicated. In this event an increase in productivity with constant wage rates cannot result in increased employment, because, by assumption, the newly employed are less productive than the veterans. If the experience generates increased productivity only in the job in which the experience was gained, there are no alternative opportunities to enable the worker to use in bidding up his wage. In this case what happens to these wage rates is pretty much a matter of bargaining. Where it is possible for the experienced worker to take his increased productivity and go elsewhere, then presumably he will be more nearly able to get his wage rate up as his productivity goes up.

The general outcome of all this is quite likely to be some increase in wage rates due to accumulated experience. It is difficult to be alarmed about these increases. They do not penalize employment growth and they do not result from exercise of any monopoly or discriminatory power. Such inequalities as do result from increases in wage rates due to this source, however, bring out the crucial importance of employment. The only way to accumulate on-the-job experience is to have a job.

In a situation in which jobs which result in the accumulation of such experience are available only to the select few the inequality is damaging. It would seem that the best way to attack this issue is on the employment side, not on the wage side.

In view of all this what conclusions about wage policy can be reached. It seems clear enough that the same set of industrialization policies that have produced distortions and bottlenecks as well as "excess" profits have also produced -- or at least, allowed -- rising wage rates. A case can be made that, in some instances, such wage increases are necessary to induce the acquisition of a necessary skill or as the outcome of a bargaining exercise consequent to productivity increasing experience. These instances appear relatively rare, and the general presumption prevails that rising wage rates are unnecessary and penalize the employment and income distribution objectives. It is a particularly relevant part of the present argument -- and hence worth repeating -- that the industrialization policies that have been so frequently condemned for creating unnecessarily high profits have also created high and rising wage rates, thereby exacerbating the distribution problem. The firmness and severity of this conclusion depends in part on the extent of substitutability between labor and other inputs as modified by capital's share. (See Expression 2 in Part II.) Even so, however, the conclusion appears defensible in light of the empirical evidence on the extent of that substitutability.

V.

In the models of Part II productivity growth entered in a crucial way in the explanation of both employment growth (and the consequent reduction of low end poverty) and the functional and size distribution of income. The task of this part is to examine the nature and sources of productivity growth in some further detail. The first section considers a number of general points associated with this issue and then develops a rather specific model of productivity growth. The second section considers what kind of policies and economic environment facilitate the appropriate kind of productivity growth.

A. The Role of Technology

There are assumptions that will result in technology dominating the entire process. If one assumes that the production coefficients are fixed by engineering considerations, that the composition of output is also given, and that there is no productivity growth, then the growth rate of employment is set by the growth rate of capital formation. The wage rate is determined by institutional factors of a social and political nature, but has no effect on the choice of technique used or on the choice of product to be produced. In terms of Equation 2 of Part II all of this adds up to assuming $r_a = r_b = \sigma = 0$. The picture can be further darkened and the role of policy further downgraded by assuming that engineering considerations

produce over time an r_b in excess of zero while leaving r_a about zero. This alone would explain the observed excess of output and capital growth over employment growth. More discouragement can be generated, however, by assuming that changes in the composition of demand result in demand for products that "require" increasing capital (physical and human) intensity in their production. This assumption too adds to the probability that employment will lag behind capital formation and output growth, and that a privileged (and small) group of workers and owners are an inevitable part of the development of an industrial complex. The income distribution problem is worsened by the fact that the technology used often imposes heavy demands not only for physical capital, but for human capital as well. High skill requirements on the part of labor adds to the cost of creating the productive unit and increases intra-labor inequality as the skilled workers must be paid at least enough to induce the acquisition of the skill.

The technology that produces these results is imported from the rich countries and is modified only slightly, if at all, in the course of its use in the developing countries. Productivity per worker is high and rising, but employment growth is low. The policy implication of this way of thinking is unambiguous: do everything possible to achieve a rapid rate of capital formation. "Everything possible" includes heavy subsidies to capital formation because such subsidies cannot penalize employment growth or labor's share because both of

these are determined by technological and institutional factors that are not affected by the subsidies that favor the use and accumulation of capital.

The preceding summary of an argument underlies many of the approaches to development found around the world, and as noted earlier, is a major part of the rationale justifying the development strategy pursued. It is not a nonsense strategy, and if population growth in developing countries since 1950 had been one percent rather than about three, it might have worked. However, to achieve a capital labor ratio in the developing countries equal to that in Western Europe or Japan at the same time that the labor force is growing at three percent imposes what is surely an impossible task.

A more important reason why the above described strategy has accentuated the distribution and low end poverty problem is simply that its basic assumptions now appear quite inappropriate. As producing units responded to the incentives and to the investment environment there emerged the rising capital labor ratios, a constant or only slightly falling proportion of low end poor, and the appearance of bottlenecks that brought the growth process to a slowdown or halt. Thus, it seems that policy measures do affect what is done and how it is done and that technology need not be, in all instances, so dominant.

Increased productivity (a positive r_a and r_b in Equation 2) comes from new knowledge, and new knowledge comes from many sources. New technical knowledge is most frequently associated

with Research and Development projects. There are in many developing countries research institutes of one kind or another that do training and research. Also universities support formal research projects in technical fields. The general rationale justifying these institutional arrangements rests on the assumption that creating scientists will in turn lead to the creation of new technical knowledge that will in its turn result in a technology that is more suitable to the factor endowment of the society. In several instances the formal articles establishing the research facility includes a statement to the effect that its ultimate purpose is to discover suitable new technologies or labor intensive technologies.

It is difficult to find evidence that such formally arranged research institutions have in fact contributed very much to a resolution of the problem. It is often observed that many institutions are patterned very much after similar western research organizations, and as such are concerned mainly with basic research and very little with applied matters. Many of the scientists are trained in the rich western countries, and are able to function as scientists only in the context of these types of organizations and with the "western type" research problems. It is then a form of import substitution that apparently faces the same kind of problems that other import substitution activities have faced and not resolved.²⁰

These points are important, but there is another issue that is more relevant. A supply of trained engineers is of

course essential, and measures that do result in the production of scientists are necessary. It is easy to look around the developing world and conclude that there are so very few scientists that the heart of the problem is unambiguously on the supply side. But it is the supply of new appropriate techniques and new processes and products that matter, not just the supply of engineers.²¹

The problem seems rather to be on the demand side. There is some evidence to support the notion that small indigenous entrepreneurs do not appreciate the usefulness of new technical knowledge or are unwilling for reasons of conservatism or risk aversion to accept new techniques that are available. More recently, however, evidence has been accumulated that suggests that entrepreneurs, foreign and indigenous, do respond when they recognize an opportunity. In particular, they accept new ideas and new processes if convinced it is in their interest to do so. This fact (assuming it to be a fact) suggests that part of the problem is in those characteristics of the economy that protect the manufacturer from inducements and necessities to reduce costs. As noted above some of the investment incentives do just this. Cost reducing incentives are rarely sought out if acceptable profits can continue indefinitely without them. In this way contact is made with the policies and practices followed in the developing countries to promote investment in their manufacturing activities. In appraising the effectiveness of a given set of investment incentives, therefore, it is necessary

to investigate the extent to which such policies act on the inducement to innovate and on the awareness of the need to find (or the profit from finding) ways to reduce costs.

The other aspect of the problem has to do with the link between research and development and industrial activity. Only in rare instances does one observe an effective working link between the research institute and the actual manufacturing sectors. This separation in a very real way conforms to many growth models in which technical improvements occur independently of the operation of the firm, but then somehow become part of the knowledge available to the firm. In such a situation, the process by which the firm becomes aware of the new knowledge is of great importance, and the various analyses of the diffusion of knowledge are relevant in this respect. More importantly, of course, is the fact that a technical research activity divorced from the manufacturing activities that it is supposed to serve can be expected to produce the most appropriate new knowledge only by accident. Edicts from the government to "invent new labor using processes" cannot be expected to be effective. In such circumstances most of the research activity is likely to be little more than an expensive form of consumption expenditure.

The importance of a close link between research activity and manufacturing activity in the economic and social context in which the latter operates is further enhanced by noting two additional points. Most of the applied industrial research done in the richer countries is carried out in just such a context.

Thus, the very fact that the technology imported into the developing countries is inappropriate is due, in part, to it being created in close contact with the economic environment of the more highly developed countries. If the research done in the richer countries were as isolated from the needs of the industrial concerns as seems to be the case in the developing countries, then presumably the new technologies developed would not be, except incidentally, designed to fit the rich country's environment. And this is surely not the case.

The second point to note has to do with some of the earlier history of the emergence of new technologies. In discussing the rapidity with which new technology spread over Europe in the nineteenth century, Professor S.B. Saul emphasizes that the requisite skills for the new industries of the bulk of the workers were easily come by.²² Much more of a supply problem were chief technical men who could train other men and adapt, and reproduce a technology. Most engineers on the continent and in Britain trained in the works of other engineers, as there was no substitute for first-hand knowledge and observation. This seems to have been the case whether or not the individual attended technical schools. Professor Saul cites many examples of the way and the speed that new industrial technology spread. He, along with others, notes that tolerances were greater and precision not so essential then (early and mid-nineteenth century) as later. This made learning by doing a bit easier as well as less costly. Finally, there was great need everywhere for

repair and maintenance personnel, an activity that is at once very labor intensive and a skill that is acquired primarily by on-the-job experience.

These paragraphs underscore the argument that effective technical development occurs in the context of -- as part of -- the industrializing process. To separate it out as an unrelated and exogenous process means that the productivity increasing effects are either minimal or of the wrong sort. These considerations enter directly into the discussion in the next section in which an approach to the creation of an indigenous technology takes place.

B. An Approach to the Creation of an Appropriate Indigenous Technology

In this Section I try to sketch the mechanism by which a process of technological change can emerge that makes increasing use of the most abundant resources. Once this process is described, the next question is how have the more common industrialization strategies affected this process, and then what kind of a strategy will facilitate the emergence of such a process.

Consider first an example. A new plant is built by foreign or domestic entrepreneurs. This plant will incorporate a fairly modern technique. It will probably not be the most modern, especially if it is a foreign owned firm. Foreign owned firms tend to install a technique for which all bugs have been removed. This is done to reduce the probability of breakdowns, the need

for an inventory of spare parts, and the necessity to keep or bring into the country highly skilled repair people. The choice of initial technique or process as to labor intensity or capital intensity is not as crucial as other matters to be described below. Evidently the more labor using in this initial version the better, but the choice of the initial technique from the "shelf" of techniques is not the crucial issue. The plant operates and the workers and managers gain experience. They learn more about what the supply problems and possibilities are, about alternative sources of inputs, about marketing opportunities. As a consequence of this learning process adjustments are made. It becomes crucial therefore for the economic environment to be such as to lead this learning process into channels that exploit fully what the economy has to offer. Industrialization strategy has great relevance in making clear what in fact it is that the economy has to offer.

An illustration or two may help. At the outset of operations the new plant uses an imported input. This it does partly because a foreign source has supplied this particular input to other producers around the world, and partly because of unfamiliarity on the part of management with possible alternative domestic sources of supply. If the exchange rate undervalues foreign currency and if import policies permit the item to be imported easily, there is little inducement to look toward internal sources. On the other hand, suppose the undervaluation of foreign currency is eliminated, and the imported input becomes

very costly. The firm then is pressed to find a domestically available replacement. It may do this by search by its own people or it may do so by asking specific help from a research organization. The latter has apparently happened with Korean manufacturers and the Korean Institute of Scientific Development.

A second example is more general. Some recent studies have shown that producers may use a technique that is less appropriate than the prevailing technology and factor prices would allow. I.e., even granted that factor price distortions exist, observed techniques are still less suitable than would obtain if these prices were dominant in the choice of technique. Two explanations are suggested to account for this.²³ One is that engineers are more potent in deciding what is done than economic advisors or the business executives. Engineers, it is assumed, are more interested in using machines than in using labor. The second is that managers and foremen accept at the outset the engineers' decisions, but then adapt and adjust as they learn more about the economic environment in which they operate. The policy objective then is to create inducements to move from a situation in which the employed factor combinations are inappropriate to the employment and income distribution objectives (because either engineers dominate or because an examination of alternative techniques was not feasible) to one where the combination used is much more appropriate to these ends (as alternative techniques are examined and managers learn how to exploit the advantages the economy offers). The literature

often distinguishes between ex ante and ex post substitutability of factors, and the former is assumed greater than the latter, i.e., that before construction or purchase options exist, but afterward few changes can be made in response to changing conditions. Such arguments always assume that the initial choice is the optimum for prevailing factor and product prices. The argument here is that ex post substitutability is greater (or that it rises over time) as managers learn and as new techniques are sought out. The common practice of requiring by edict that a firm use an increasing number of domestically produced inputs is an attempt to achieve a similar end. Such edicts, however, do more to penalize productivity growth than enhance it, and, more importantly, tend to reduce search and efforts to create more flexibility.

The argument may be summarized by use of the familiar isoquant diagram. The diagram follows closely that used by Pickett, Forsyth, and McBain [66b]. To produce an output of 100 the original position at d on ray D with a capital labor ratio equal to the slope of OD is chosen, for reasons noted above. This technique is either the latest one available from the advanced countries or is a slightly earlier version of the latest one available from the advanced countries or is a slightly earlier version of the latest. Possibly some used equipment is involved. The factor price line rw is the one which obtains, more or less, in the advanced countries. The cost line $r'w'$ represents the (distorted) market signals prevailing in the

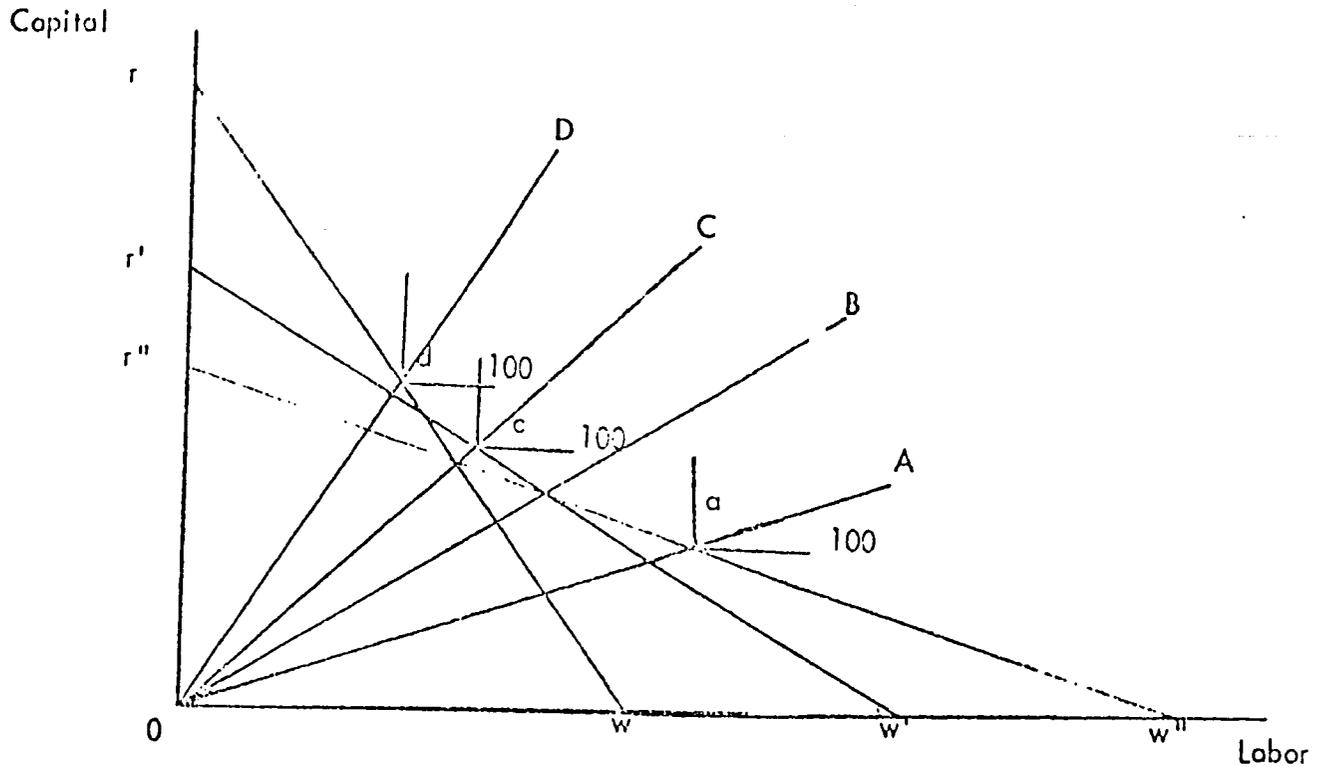


Diagram 3

less developed countries, and $r''w''$ the undistorted price ratio line. Evidently technique OA is the socially preferred technique, and OC is preferred to OD. The movement from d to c is, however, a movement through time; it is a consequence of learning and a consequence of increased efforts to adapt to the prevailing situation. It is a principal thesis of this paper that this move over time can be accomplished, can be induced, by appropriate policy measures. It is also argued that present strategies in many developing countries include policies which discourage such movements (as well of course as encourage the use of d to begin with). The movement from c to a requires the elimination of the distortions, and that too is, of course, a

matter of policy.

Diagram III does not bring out one additional important point. In many, probably most, manufacturing activities there exists a hard core of machinery that does not lend itself to a great deal of modification. This core is usually in the actual processing operation, and observed differences in the labor employed for similar activities among countries appear small. It is in the activities ancilliary to the core operation that substitution looms the largest and adjustments become most feasible.²⁴ In seeking out such adjustments, it is often the manager or foreman who is the crucial person rather than the engineer or scientist.

Diagram III also does not show another aspect that is equally important, namely that productivity growth is strengthened by these kinds of adjustments. For the same reasons that the process can be expected to move from d toward c, we also expect the productivity increases that occur to be those which facilitate the use of the economy's most abundant resources. Howard Pack, for example, observed in Kenya instances where a simple change in the position of two processes within a plant increased output [62]. Perhaps the most obvious kind of change that facilitates the increased use of labor is that which results in physical capital being utilized a larger and larger proportion of the time.²⁵ Moving to arrangements that are more consistent with factor endowments aids productivity in other ways. Evidence on some Latin American countries during World War II indicates

that, when these countries were forced back on their own resources, because no imports were possible, they were remarkably effective in finding ways to use their own resources. In this process, productivity (r_a and r_b) grew more rapidly than it did later when these countries began their big push toward industrialization through import substitution [1]a].

This way of thinking about both the substitutability between factors and the sources of productivity does not mean that formal research and development projects have no role to play. It is evident that scientific investigations are at the source of most modern major technical developments. It does seem clear enough (from casual observation) that too much is spent on R and D in many developing countries, but that is not the point of this discussion.

Emphasis is placed in this argument on the role of managers and foremen, and on the existence of inducements and signals and information that push the managers and foremen to adjust in the "right" direction. As noted above, most evidence is consistent with the assumption that workers' skills are so rarely a bottleneck that, except in specific instances, they can be ignored. The "supply" problem then is managers and foremen, and one important reason why the evidence often indicates that foreign owned and run firms use more labor intensive techniques than locally owned ones is that the former have better managers than the latter.

The question that emerges that is of direct relevance to

this paper, however, is the impact on this mechanism of industrialization strategies. A general statement is virtually self-evident. Any policy that protects or results in the creation of mis-information impedes this substituting, productivity increasing process. In a like manner any policy that creates advantages and pressures and information on how to move from d to e and on to a facilitates the process. In the example above, the correction of the undervaluation of foreign currency set in motion a search process to find domestic sources of supply of certain inputs. Investment incentives that reward on the basis of employment per dollar of investment could have a similar effect. There are few examples of investment incentives built around employment, and even fewer that are based on investment employment ratios. Policies that point up, that bring into unmistakable relief, the direction that the technology (and other) search efforts should move, (in the language of Diagram III the direction of d to c to a) appear necessary in most developing countries. This would seem to indicate that the principal policy approach is that of creating a set of inducements to search and incentives to reward finding.

There is one important additional consideration that has to do with small, indigenous industries. These industries, almost by definition, fit the economy much better than do most modern sector manufactures. These small-scale industries are in many ways analogous to agriculture [51]. There are many units, geographically dispersed, operating in a variety of types

of markets. Also, as is the case in agriculture, they are generally unable to provide their own technical needs. A case can be made therefore for more centralized research efforts and extension services along the lines of agriculture research and diffusion. Agriculture research has had of course its problems, but also some considerable successes. Much work has been done on helping small industries, but it is not easy to find specific formulas that have helped much. I return to this subject in Part VII.

To summarize: Technical choices enter directly and significantly into the determination of the rate of reduction in low end poverty and in the reduction of inequality in the size distribution of income. The near exclusive reliance on imported technology (in collaboration with the investment incentives described earlier) has tended to defeat the contributions to these objectives that appropriate technology could make. In terms of the models of Part II such reliance has produced low elasticities of substitution, high rates of growth of r_b (labor augmenting) relative to r_a (capital augmenting), some relative increase in high skill requirements, and upward pressure on wage rates. All of these effects, as shown in Part II, handicap efforts to increase employment growth and develop an industrial sector suitable -- that fits -- the resources of the community.

Efforts to meet this problem by establishing formal research institutes of a variety of kinds have not been very effective. Arguments have been suggested to the effect that an

approach that relies more heavily on individual firm search activity, search for new processes, new techniques and new products. This approach puts more of the burden on managers and foremen than on engineers and scientists, and the former have a much closer working knowledge of the firm's needs than do the latter. It also puts a burden on the policy maker to see that incentives and other rewards are such as to force this search into directions consistent with the achievement of the objectives. This approach may be less effective for the small, indigenous manufacturers who also play a strategic role in the argument. This question is considered in Part VII.

VI.

Foreign trade is perhaps the most fertile area of policy for affecting industrialization. Almost all countries have in one way or another used trade policy to try to step up their industrialization efforts. Such policies have had effects on wage rates and technology, which as we have seen, act directly on the income distribution and employment objectives. Trade policy also affects the quantity supplied and the price of consumption commodities, and in that way too affects income distribution. This Part begins with a brief discussion of the general question of outward and inward looking strategies, and then proceeds to examine a range of more specific issues of trade policy.

Although much attention has been given to the role of trade policies, it should be noted at once that trade policies may be a consequence of other decisions, rather than the initiating force. Thus a development corporation or Ministry of Industry may decide to build a particular kind of factory. Then trade policy will be arranged to accommodate that decision. This fact is one reason why changing and designing trade policy is so difficult. It may also mean that in many instances efforts to change trade policy must include references to investment decisions by the government and the private sector.

A. Inward and Outward Looking Policies

The many critical examinations of the import substitution strategy of development in the 1960's produced the widespread opinion that the opening up of the economies was essential if the employment and income distribution problems were not to worsen, and if distortions were not to become so severe that sustained growth was impossible. The general policy objective advocated was that of trade liberalization, more or less equalization of tariff rates, elimination of discriminatory exchange rates as well as the employment of more realistic exchange rates, and possibly the introduction of specific export and employment incentives. The empirical estimates of effective protection along with studies that show that such protection often results in the lowest income groups (peasant farmers) paying more for many of their consumption items and receiving less for their

output added to the urgency of change that many expressed. At best, it was argued by a few, import substitution was a phase through which it was necessary for a country to pass before it made economic sense to move toward a more outward looking strategy. Even this final defense did not last long, and has been pretty thoroughly demolished.

Recently, however, a backlash has set in, not so much to support the import substitution strategy itself, but in support of encouraging trade among developing countries, and strongly discouraging it between developed and less developed countries. The central theme of the argument is that openness and outward looking reduces the incentives and capacity to develop indigenous processes and products suitable for the low income, labor plentiful economy. Thus, economic contact with the rich countries is self-defeating. It necessarily results in the reproduction of rich country techniques of production and in the production of rich country products in an economic environment in which they are possible, if at all, only in a small enclave. By isolating an economy, or at least minimizing the contact it has with rich countries, techniques, processes, and products that are consistent with that environment are much more likely to emerge. The idea is not protection of infant industry or to provide learning time or to create investment incentives. Rather the idea is to protect the society itself from a contact that necessarily leads to wants, to practices, and to products that are not appropriate. By virtue then of this development

in (almost) isolation, employment and income distribution problems would be solved, because of the fact that the development fits the economy so well. China is frequently cited as an example of success with this kind of an approach, just as Taiwan is usually cited as an example of a successful outward looking strategy.²⁶

This attack on openness and liberalization seeks the same objective as that of those whose position is being attacked. The latter have emphasized the role of price distortions, misleading signals, indiscriminate adopting of rich country technologies in the emergence of an industrial structure that exacerbates, rather than resolves, the distribution problem. To correct this, open the system to competitive pressure, remove sources of distortions, provide accurate price signals, and bring the entrepreneurs into contact with new ideas. The alternate strategy says that the same result will be reached only by an internalizing of effort. The advocates of the inward looking approach have not spelled out a mechanism, a process by which their result is achieved. Until this is done appraisal is difficult. Study of China's recent developments may bring out what this process is.²⁷ Clearly merely isolation is not enough. There must be something more, and what this something more is, is crucial. It also seems probable that a large country is better able to proceed in this way than is a small country.

The argument, therefore, is interesting, not because it reveals new mechanisms or processes of development, nor because it

suggests a new idea, as autarchy is as old as economics. Rather it is interesting because it reveals another way of saying what is surely valid and important and has been emphasized before: namely, that a pattern of economic development that fits the society is more likely to succeed than one which does not.

B. Protection

There is much reason to believe that the major source of the distortion that produces low employment growth and continuing inequality in income distribution is the very high and uneven level of protection that characterizes so many countries. The major problems are not with protection as such, but rather with its height and permanence and its unevenness. The characteristic of protection that has been emphasized most frequently has been the low duties on capital goods (plus the usual case of getting an import license on capital goods). This means not only that capital intensity is encouraged, but that domestic production of capital goods is discouraged and that of previously imported consumer goods encouraged.

This kind of protection dampens employment growth in a rather obvious way. More importantly the consumer goods that were imported were generally products consumed only by the rich. Thus a productive capacity is encouraged whose use requires -- as noted above -- inequality of income. This process has created a small group of industrialists and workers in many countries whose private productivity is very much higher than the average

of the society. In this way then, the protection of the consumer goods manufacturing activity aggravates and then requires for its use inequality. It is also evident that this chain would, or at least could, be broken if the goods produced could be exported. But the very nature of protection makes exporting very difficult.

Protection affects distribution in another, sharper way. In most developing countries manufactures were imported and agriculture products exported. Keeping out low cost foreign manufactures means that farmers must then buy from the high cost domestic producers. The penalty can be severe. S.R. Lewis' data show that for Pakistan over most of the 1950's farmers received less than one-half the value that their produce would have brought at world prices, and in some years it was less than one-third [44]. Pakistan's tariff has been studied most completely, but a similar result applies to many other countries.²⁸ The basic rationale of such a policy is, of course, an infant industry argument. If productivity in the new industries rises rapidly enough and if prices follow productivity, then the original shift in income distribution can be reversed. The costs of a number of new manufactured goods in Pakistan did fall significantly during the 1950's [44]. The great questions then are the productivity growth question, already considered, and the pricing question. If productivity rises and prices do not fall, then the income distribution effect is more severe and continues longer. A protective policy that continues, more

or less indefinitely, therefore creates an indefinitely long change in the domestic terms of trade. Protection from foreign and domestic competitors tends, almost inevitably, to have this effect.

In many countries studies show that domestic prices often exceed the imported c.i.f. price plus the tariff. This kind of evidence is pretty convincing of the existence of monopoly profits. And again the conclusion that the protection system is not just providing a time for learning, but really a time to reap unnecessary profits at the expense of the agricultural consumer. Agriculture products are the principal wage good of the manufacturing worker, and the earlier labor surplus models emphasized the importance of keeping food prices low in order that urban wage rates would not be pushed up. This, however, is a different argument from that which leads to a situation in which the agriculture sector pays not only the necessary cost of the beginnings of the industrialization effort, but also is forced to continue to pay monopoly (i.e., unnecessary) profits to the industrialists and their workers.

Efforts to define and measure effective protection showed that relevant tariffs were in fact usually much higher than nominal tariffs generally indicated. This means that domestic prices of the product of a given activity can be higher than world prices by a larger margin than nominal tariffs would indicate. The penalty on those who must buy domestically produced items rather than imported ones may be very great. While in

only a few countries have reliable estimates been made, the presumption is strong that the penalties have been great. More important is the fact that the penalty once created, seems to decline only in isolated instances.

The failure of the domestic price to fall is, as just noted, partly a matter of technology and partly a matter of price. The failure of prices to fall with productivity can be due to a number of things of course, but the two most important are the behavior of wage rates and quasi-rents, discussed in Parts II and IV above.

The problem is further complicated because tariffs (with the exchange rate) rarely limit imports enough to protect the balance of payments. There must then be other controls to hurdle before importing is possible. In a number of instances the tariff may in fact be relatively unimportant in determining what is imported and who imports it. Where the actual imports depend heavily on specific decisions of a government official, the effects of the tariff level and structure are difficult to pin down. As already noted, however, there is little evidence that licenses and other specific import controls do much to counteract the direction the tariffs work. In those cases where imports of inputs are essential if existing capacity is to be utilized, the non-tariff system of rationing imports can be an important element in the preventing of monopoly rents from being competed away. This has surely happened in many developing countries over the 1960's. Also there appears considerable

evidence that direct control systems almost invariably favor the large, established firm. This favoring is due in part to the necessity for preparation of documentation and for negotiation with government officials. Small firms (and especially new, small firms) find this difficult to do. Government officials seem to find it easier and safer to deal with the established producer. This effect is strengthened if, as is often the case, retail importers of capital goods are less favored than direct users. Small manufacturers who use the retail importer are, therefore, further handicapped. These two consequences -- (1) the allowing of monopoly rents and monopoly wage rates to come into existence and to continue indefinitely and (2) the relative penalizing of small and new firms -- are perhaps the major ways in which non-tariff trade controls affect manufacturing employment and income distribution in developing countries.

There is one important qualification to all this insofar as it bears on the income distribution issue. Consider an extreme example. Suppose only the already rich were importing consumer goods. Suppose further that these same goods are now heavily protected, and high cost domestic production comes into being, and the rich continue to buy. If the poor were not previously buying the cheap imports, then they are not penalized by the protection. Suppose again that as a consequence of the protection, domestic entrepreneurs are induced into action and learn by experience. In this case, it is the rich who are paying for

the entrepreneurial learning. If this learning then results in increased productivity, falling relative prices, and more effective use of domestic resources, then the distribution effect can be toward greater equality, and the rich paid for it. This pure case is hardly realistic, but it is not completely unrealistic in many instances. The fact that manufacturing prices rise relative to agricultural prices is not sufficient evidence that the poor peasants are paying for the industrialization, though, of course, it is a necessary condition for that result. This example brings out once again the crucial role of learning, productivity growth, and the elimination of monopoly rents. That these should all be accomplished is, in fact, more important than the initial situation created by the protection system. The extent to which responses to inequalities occur is central as well as the question of who pays the cost of learning. This area is one in which little research has been done.

C. Exchange Rates

Part of the industrialization package usually includes an exchange rate that undervalues foreign exchange. There are two aspects of this question that bear on the income distribution question; one has to do with the question of what is the appropriate exchange rate in the context of an industrialization program and the other with the question of the impact of changes in the exchange rate on a variety of the variables that act on income distribution.

What is the appropriate exchange rate? When we say that an exchange rate undervalues foreign exchange we usually mean that, with existing tariff rates and other impediments to trade, the prevailing exchange rate does not protect the balance of payments. Consequently, as just discussed, some kind of licensing or other rationing device is often necessary. Suppose, however, that the exchange rate did in fact maintain an acceptable balance of payments position, would this then be the "right" rate from the standpoint of an industrialization strategy that seeks to make the greatest contribution to employment growth and reduced inequality.

We know of course that with tariffs or other impediments to imports, the exchange rate that maintains the balance of payments values foreign currency below that value that would prevail with free trade. It is in this sense that any form of protection necessarily penalizes exports. But most developing countries have significant inflows of foreign capital and aid that further bolsters the balance of payments. Also many countries have a small number of raw material or mineral export items that have few linkages with the rest of the economy, but that do produce foreign exchange. All of these factors strengthen the balance of payments, and hence permit a still lower valuation of foreign exchange. This means that exchange rate policy in the context of development -- with tariff protection, aid and other capital inflows, and export enclaves -- that seeks simply to maintain a stable balance of payments will also be

one that makes it very difficult for new manufactures to enter export markets. (This type of situation may be becoming more common and more severe now as prices of many traditional exports from less developed countries continue to rise markedly.)

Devaluation, however, in this context could well reduce foreign exchange earnings, even if manufactured exports shoot up, if foreign demand for the major foreign exchange earners is quite inelastic. A subsidy to manufactured exports with no devaluation or a devaluation and a tax on the major traditional exports would overcome the impediment to the new manufactures becoming exportable without reducing foreign exchange earnings. Subsidies are difficult to administer, and the devaluation makes more profitable the use of domestically produced raw materials and other inputs, i.e., provides further inducement to replace other than consumer good imports. In either case foreign exchange earnings should tend to rise, and this in turn should permit a stepped up rate of investment. In this case the higher value of foreign exchange represents a more accurate picture of the resource endowment of the economy, and leads to more satisfactory allocation of resources. In more extreme language, one might say that the source of the increased growth and employment following devaluation is not more foreign exchange as such, but rather an allocation of resources that makes more effective use of domestically available resources.

To illustrate this last point, consider the following argument. After a new manufacturing activity is created, we

expect, and indeed seek, rapid increase in productivity (both r_a and r_b of Equation 2, Part II). This increased productivity occurs as the activity expands its output rapidly to supply the domestic market. When it has more or less usurped all of the domestic market, its growth rate must fall as further increases in demand now depend primarily on the growth rate of total income. This slowdown in the growth of demand at the same time that productivity rises (at given capital labor ratios) will mean that employment growth must fall or even that the absolute level of employment must decline. On the other hand, if the activity can begin to export, its rate of growth is not so limited, and the advantageous effect of productivity growth on employment, previously outlined can obtain. Furthermore, the capacity to export avoids the kind of premature widening of the industrial sector that has characterized so many countries and that represents the use of resources in increasingly less suitable activities.

This discussion of exchange rate policy is built around the assumption that to export manufactured goods of great importance, and that the exchange rate policy is an essential part of any export strategy. The principal reason for exporting is that described in the previous paragraph. There are others. Exports must in general meet the world competition and in that respect producers are pushed toward the search and adaptation process described above. Exports, of course, can be pushed by policies that in effect protect them from world competition, but this

is much less common in the world.²⁹

An exchange rate favorable to exporting manufactured goods is also helpful in inducing producers to think in terms of exporting and in searching for export markets. In many ways an extra favorable exchange rate is necessary in the same way that an incentive system that rewards rapid rates of growth of employment is necessary. It tends to emphasize, to call attention to the advantages of exporting. The impossibility of exporting is referred to frequently (just as is the necessity of growing capital intensity), and a favorable exchange rate is often necessary to overcome this attitude. This argument is an argument for exporting, not for the dismantling of direct controls. Evidence from the Republic of Korea, Brazil, Colombia, and Taiwan suggest that exchange rate manipulation can be instrumental in inducing exports. Carlos Diaz-Alejandro suggests that a least risk approach is to get exports growing rapidly, then initiate the liberalization efforts [20]. The exact implication of this point is not clear, but it does suggest that an export oriented policy breaks -- or prevents from appearing -- bottlenecks that so penalize many import substituting economies. It is doubtful that the export orientation does this merely by making more foreign exchange available than otherwise would be the case. If this were the case, then one would expect that foreign aid, private capital inflows, large autonomous exports of minerals or raw materials would have an impact similar to that of increased exports. This is decidedly not the case.

The mechanism then appears to be that export inducement policies (just as labor inducement measurements) result in a structure of industrial activity that "fits" the economy better, and it is this better fit that prevents the bottlenecks and allows a more sustained growth. The very fact that bottlenecks stop the economy less frequently implies that the growth process is one that takes more effective advantage of the country's endowment.

This discussion of exchange rates puts into clearer relief a central point of the underlying theme of this paper and (what I believe to be) a significant difference between current and earlier thinking about development policy. The argument here gives prime place to the creation of an environment in which inducements and incentives exist to make maximum use of available resources, to solve all micro policies. Were this done then the aggregate problems would be solved more simply and easily. The alternative arguments seem to be that if it is possible to achieve high rates of growth of key aggregates (especially capital formation) then the micro problems would be swamped. Experience has surely shown this to be false. Joan Robinson is reported to have said that growth is the result of rational policy, not the objective.³⁰ When it is said that it is not that "more foreign exchange is earned" as a consequence of devaluation that is most relevant, but rather the establishment of a better fitting manufacturing sector, a similar (to that of Mrs. Robinson's) notion is implied.

An extra favorable exchange rate may also mean an extra

high price for consumer goods imports, some of which may be consumed by the very poor, e.g., certain basic food stuffs, such as rice and wheat. In this event a devaluation to encourage manufactured exports will penalize the poor and help the rich. Where these consumer goods are few in number, subsidies are a reasonable means to meet this problem. The more important point, however, is that if a devaluation induces the kind of adjustment described above, the cost may be rapidly reduced by increased employment. This is not to say, of course, that the poor should bear the burden. It is to argue, as before, that a measure that rationalizes the industrial growth can contribute, in the manner described above, to an effective reduction in low end poverty. To put the point a bit differently: if devaluation is necessary in order to produce a good "fit," then not to devalue in order to keep certain consumer good prices low is to choose to live with the source of the problem rather than to attack that source. It may also be noted that just as a tariff policy can be thwarted by licenses or other direct controls, so too can the effect of devaluation. This fact qualifies Diaz-Alejandro's point, noted above, that liberalization may (and possibly should) come after devaluation and stepped up export growth. This argument presumes that the effects of devaluation not be countered by other measures. Indeed one of the more important aspects of liberalization as such is that it does clear the deck for the indirect measures, such as exchange rate adjustment, to work themselves out.

To summarize: industrial activity needs protection, needs learning time. It is industrial activity that needs learning time, not simply domestic activity. But it is not protection from incentives and inducements to search for increased productivity and increased use of domestic resources that is required. Indeed the central problem of protection is how to protect from that foreign (and domestic) competition that destroys local industry, without protecting from the pressures that induce entrepreneurs to seek increasingly effective utilization of domestic resources. It has been argued above that tariff policy as such, plus the direct controls that further limit imports, plus the exchange rate policy that often undervalues foreign exchange create an economic environment in which there is protection from destruction, but also protection from the pressures to reduce costs, to seek out export markets, and to learn. There are several implications of this for the employment and income distribution issue. It has helped produce permanent monopoly rents, to dampen productivity growth, to discourage the use of domestic resources, to encourage over (and under) invoicing, to produce bottlenecks that stop or slow down the system, and to produce an enclave of alien economic activity. We do not know how important quantitatively these matters are, and it is always possible to cite counter arguments. At the same time, it is difficult not to be convinced that more suitable foreign trade policies are possible, and their use would make a significant difference. The recent experience of Brazil is

perhaps the strongest bit of evidence, although this period is not yet very well documented. Studies of the Republic of Korea, Taiwan, Mexico and Colombia relative to Argentina, India, a brief period for Pakistan, all are consistent with the view that the arguments summarized in this section do matter significantly.³¹

VII.

It was argued in Part I that an essential ingredient of an industrial policy package was the encouragement of small scale, non-urban, non-agricultural activities. In this Part, I want to outline a few arguments on this issue. It should be noted that small-scale, informal operations in the urban areas are also important. In previous pages it has been argued in several places that many industrialization measures that governments adopt have helped only large-scale projects, and often even penalized small, indigenous efforts. This is especially the case in urban areas. The withering of such activities adds to the employment problem of course, and to the low end poverty group. The more general problem, however, is the distinctly lower incomes in rural areas than in urban areas.³² If it is completely unrealistic to assume that modern, urban industry can grow at a rate and in a manner sufficient to eliminate low end poverty and rich enclaves, then evidently ways must be found to provide more productive employment opportunities in non-urban

areas. The main site of the task is in agriculture, but industry has a role as well.

The most interesting success stories in this regard are China and Taiwan. Keith Griffin notes that in Taiwan the categories rural and urban do not correspond very closely to agriculture and industry.³³ The policy to disperse industrial activity over the land has been exceptionally successful in the northern and central areas. Textiles, food processing, and construction materials appear in all parts of the island. These rural industries have, in particular, provided seasonal employment opportunities for agricultural workers. In the north and central areas over 60 percent of income in rural areas was earned from non-farm sources, and in the South over 40 percent. Income in the rural areas of Taiwan are therefore much nearer the income of urban industrial workers than is the case in almost any other less developed country. Of more importance in the long run is the emergence of close links between rural industry and agriculture. Some peasants have become and others are becoming small businessmen and entrepreneurs and others are becoming more dependent on employment as industrial wage earners. Along with fuller employment and rising income (absolutely and relative to urban workers) has come to a greater heterogeneity and social differentiation that is conducive to further change and growth, and further use of domestic resources.

The evidence on China is less complete, but several observers have emphasized that rural industries play an important

role in providing employment at levels of productivity not nearly so dissimilar to those in urban centers as in most countries. Production in these rural areas involves the use of a more primitive, more indigenous technology than in the big cities [72a, 31a]. Most of the output of these industries is used in agriculture, directly or indirectly, and is aimed at increasing agricultural output. This increased output in turn provides raw materials and markets for the local industries. There is some handing down of machinery from modern, urban sector to rural activities. In some instances there are regulations which restrict production of certain commodities to the smaller units of individual counties. This is to prevent the larger (more socially efficient?) units from gobbling up these enterprises. There is little evidence, however, to suggest whether or not these small, indigenous units are in fact more suitable than the larger, modern plant. This "walking on two feet" notion does, of course, require firmly enforced controls, and implies something of a holding action in the rural areas. Comparisons with most other countries is useful. Most other countries have used agriculture as a reservoir to hold workers (in poverty) until (hopefully) modern sector activities could absorb them. China on the other hand seems to be earmarking certain industries for the rural areas to help raise incomes and provide employment until the modern sector manufacturing and agriculture can absorb enough people to solve the problem. Wage income is lower in the rural activities than it is in the

modern sector. Almost all observers comment on the complete absence of the more unrelenting, damaging forms of poverty.

The exact policy mechanism by which the Taiwan dispersing occurs is not completely clear. It is not due to offering one more year tax exemption for investors choosing rural sites. More generally it would appear that the absence of the kind of tariff and exchange rate and control policies discussed above that provide so misleading signals vis-a-vis the use of domestic resources is important. Perhaps the key piece of evidence on this point is the share of wages in value added. This share ranges from 80 to 40 percent -- in the various manufacturing activities [54]. As noted above almost all developing countries show a very low labor share (20 to 35 percent). As was shown in Table 2 the wage share in Taiwan declined over the 1953-69 period, but since then has been rising due mainly to high rates of employment growth. Also the Taiwan government has long been aware of the advantages of dispersing, and was successful in providing the kind of infrastructure and lending facilities that lead entrepreneurs to invest outside Taipei [27].

So far as I can ascertain the Chinese policy is largely a matter of directives, but the fact that (apparently) successful efforts are being made to provide the kind of opportunities that would help induce similar action voluntarily facilitates the implementation of the directives. Controls on labor moving from rural to urban areas appear especially important.

In both these countries attention is focussed on the local level, and there is little in the way of big aggregative plans. Local initiative and local problem solving are heavily relied upon. In doing this it can be expected that the use of local resources and local expertise will be much more extensive than where central planning (or at least the writing of a central plan) occupies a primary place in economic policy making. It is also to be expected that out of this kind of approach a more indigenous oriented industrialization process will emerge. Finally, it may be worth reiterating that Taiwan has achieved their development by heavy use of price signals, while China has apparently not relied on such signals. In both countries there is a close link between the rural industries and agriculture. This adds to the extent to which such industrial activities serve the community, and brings out the importance of rural development in contrast simply to increased agricultural output as such as part of the means of meeting the distribution objective.

A number of economists have pointed to the importance of the link between industrial development and the use of the new high yielding seeds. The use of these seeds requires more care and work on the part of the cultivator than do the older varieties. They, therefore, have the potential of creating more jobs and more productive jobs in agriculture. Whether or not this happens depends largely on what kind of technology is available, and that in turn depends in part on what is happening in

industry in general and to rural industry in particular.³⁴

Pakistan in the 1960's illustrates the nature of the problem. Fertilizer was imported and sold well below landed cost, agricultural machinery was freely imported and also sold to farmers below landed costs, and the Pakistan rupee was clearly overvalued. Taxes on agricultural income and on land were virtually non-existent. Since it is the large-scale, advanced farmer who has access to funds to buy tractors, to the bureaucracy to clear imports, it is he who enjoys these advantages. This kind of a policy package means that it is virtually certain that excessive tractorization will accompany the use of the new seeds. The absence of such contrary policies would not automatically insure that local industrial activities will appear that provide the kind of machinery that effectively exploit the available labor supply.³⁵ It is, however, clear that with such policies, none will. It is also clear that a rural strategy that includes industrial activities would at least wrestle with the problem. The little evidence from a few countries suggests some optimism that in a situation where the rewards of new suitable instruments are high (because of the productivity of new seeds when properly cultivated) new industries will emerge. The nurture of such industries may require some inducements -- credit subsidies, some technical extension service, etc. -- and these things are difficult to provide to small, rural activities, but all this says is that just because the wrong thing is easy to do is no reason to do it. This issue links up with the

technology discussion, but the emphasis here is placed on the need to develop an industrial capacity in non-urban areas that meshes with agricultural development as well as serves other possibilities.

In this area perhaps more than any other we need case studies from which to isolate general principles for policy. But these kinds of studies appear rare. Further research on Taiwan and China will help. We do know that some things are wrong, but what specific things work is much less clear.

VIII.

The manufacturing sector alone cannot solve the low end poverty and income distribution problem. In most developing countries it can do more than it has done over the preceding two decades. In Part II of this paper models were developed that showed why and how rapid rates of investment and high rates of growth of productivity would produce rising capital's share, rising profit rates, and greater overall size inequality at the same time that it produces the highest rate of absorption of labor into the more productive sectors of the economy. The working of the model depends mainly on the rate of investment, the rate of growth of labor augmenting and capital augmenting productivity growth, changes in wage rates, and the extent of the substitutability of labor for capital. Development policies have concentrated heavily on achieving a high rate of capital

accumulation, and in so doing have penalized the other variables in the argument. The basic point of this paper is that a high rate of capital formation, without penalizing the other variables, is essential (and is possible) if the manufacturing sector is to do its share.

Attention was given to the kind of inducements that would produce a high rate and suitable composition of investment. A general target of constant wage rates in the manufacturing sector is a major aspect of the policy package. So too is an economic environment in which producers have major incentives to search out new technologies and to price products in accordance with productivity growth. Perhaps the most important policy area is that affecting foreign trade. The general policy aim is to offer protection that provides learning time without eliminating the incentives to learn. Finally, there must be a sizeable non-urban centered manufacturing effort. This cannot be accomplished by present tax holiday arrangements, but calls for a different kind of policy approach.

December, 1974

Footnotes

1. See especially Adelman and Morris [1] and Webb [85].
2. See Economic Commission for Latin America [22] for a general discussion of profiles of the very poor.
3. Some small developing countries are essentially manufacturing economies, e.g., Singapore and Hong Kong, and some large ones, e.g., Brazil and India, have large (absolutely) manufacturing sectors, but the text statement stands as a reasonable generalization. The argument in this section is limited to manufacturing. The modern sector includes service activities (especially government and retail and wholesale distribution) and social overhead facilities. A more complete analysis would include these sectors, and thereby include a larger proportion of total employment. To extend the analysis in this way, however, is beyond the scope of the paper.
4. The model developed here is built from the arguments and models found in Saiter [71], Solow [77], Nelson [59], Eltis [24], and Bruton [13]. Diagram 1 is adapted from Eltis, p. 45.
5. This follows from the fact that profit's share is increasing and the capital output ratio is falling as we move east on the diagram.

6. There are some complications for wage policy arising from particular sources of increased productivity. Some of these are discussed in Part IV below.

7. The argument presented here follows that in Bruton [11]. This more complete version owes much to the help of my colleague, Thomas O. McCoy.

8. This follows from the proof of Expression 11. It is evident that this expression is consistent with the well-known conclusion that labor share rises with a fall in wages if the elasticity of substitution exceeds unity.

9. If labor's share is rising, capital share's falling, and the rate of return on capital will decline unless the capital output ratio is falling at the same percentage rate. Presumably if a given rate of return is sought by investors, the rate of capital formation will in fact tend toward this rate. Let r_L be the rate of growth of labor services (i.e., $r_L + r_b$), and LS and KS be labor and capital's share respectively. Then if $r_k = r_L + \frac{KS}{LS} r_a - (\sigma - 1)(r_b - r_w)$, the capital output ratio will fall at the same rate as capital's share, and the profit rate therefore remains constant.

10. For rather complete surveys of tax incentives in developing countries see George Lent [42, 43] and Heller and Kauffman [30].

11. Lent [43].

12. Included in the Petrol paper are estimates of the profit rates in other countries. The rates of return are Argentina (manufacturing, 1955-63) 30-39 percent; Brazil (manufacturing, 1960-67) 14.3 percent; Colombia (Private sector less housing, 1960-67) 11-12 percent; India (Corporate industrial sector, 1955-59) 10-20 percent; and Mexico (whole economy, 1940-60) 20 percent.

13. Chales R. Frank and his associates have completed a thorough study of the effects of trade policy on economic growth, income distribution, and employment in Korea. The evidence Frank offers there is broadly consistent with the argument in the text.

14. See the revealing review of Indian attitudes toward wage policy in T.S. Papola [63].

15. Papola [63].

16. See the discussion of D.A.S. Jackson [37a] for a further elaboration of these points.

17. Some of the evidence is summarized and discussed in Bruton [10], Behrman [5], Morawetz [55], Turner and Jackson [81], and Williamson [88].

18. Interviews with managers of "footloose" industries in Singapore and Hong Kong indicate that they would move their factories to lower wage areas (e.g., Indonesia) at the drop of a welcome mat.

19. Phelps-Brown and Hart [66a] argue in this way about some evidence from the historical evidence on Great Britain.

20. Some further investigations have found several examples of more successful efforts by research institutions than the text statement suggests. In particular examples of "bootleg" operations by some personnel in the institutions have apparently proved extra fruitful. Full reports on these investigations are not yet available, but it is possible that they will require a significant modification of the position taken in the text.

21. Some developing countries (e.g., India) have more "scientists" than do most European countries, but rarely do we read that lack of scientists is a major bottleneck in the development of appropriate technology.

22. See his useful article in [90].

23. This argument is developed more fully and supporting evidence cited in [66b].

24. This point is made by several observers, perhaps most convincingly by Pack [62].

25. The very low rates of utilization of capital observed in most developing countries provides evidence of the failure to exploit all available resources (even those in "short" supply) and provides virtually costless opportunities to increase output and employment. Gordon C. Winston has a long series of papers on these issues. See [89] and the literature there cited.

26. This argument is developed in various forms in a variety of places. See especially the papers of Frances Stewart [78] and in [79], Friedmann and Sullivan [26], Keasing [38], and Sigurdson [72a].

27. See, for example, Perkins [65].

28. See especially the Frank study referred to in footnote 13.

29. The pervasive tendency to undervalue foreign currencies is difficult to explain. In part it is probably part of the general policy to keep capital prices low and thereby encourage investment. Devaluations have also been discouraged by elasticity pessimisms and fears that they breed inflation. These fears incidentally are generally unfounded [16]. Finally, part of the suspicion, noted in Part III, that frequently attaches to the use of prices as policy instruments, applies to reliance on exchange rates to ration foreign exchange even where extensive and high tariffs prevail.

30. Professor Robinson is so quoted by Paul Streeten in [79].

31. See Balassa [3], Little, Scitovsky and Scott [46] and Macario [49] for a number of detailed country reports.

32. Chapter 22 of the International Labour Organization's report on Kenya [33] is a useful discussion on informal activities in urban centers.

33. See [27]. This paragraph is based largely on Griffin's report.

34. Good general discussions of these issues may be found in Falcon [25] and Yudelman, Butler, and Banerji [91].

35. It can even be doubted that the kind of tractors imported increased yields per hectare by more than they would have increased by using more labor with the new seeds and traditional implements.

REFERENCES

1. Adelman, Irma and Cynthia Taft Morris, "Who Benefits from Economic Development", International Meeting of Directors of Development Research and Training Institutes, August 1972, mimeo.
2. Balassa, Bela, "Estimating the Shadow Price of Foreign Exchange in Project Appraisal", Economic Staff Working Paper No. 142, IBRD, 1973.
3. ———, (editor), The Structure of Protection in Developing Countries, The Johns Hopkins Press, Baltimore and London, 1971.
4. Beals, Ralph E., Mildred B. Levy, and Leon N. Moses, "Rationality and Migration in Ghana", Review of Economics and Statistics, November 1967.
5. Behrman, J. R., "Sectoral Elasticities between Capital and Labor in a Developing Economy", Econometrica, March 1972, pp. 311-326.
6. Bhagwati, Jagdish and Padma Desai, India, Planning for Industrialization, Oxford University Press, London, 1970.
7. Bhagwati, Jagdish and Anne O. Krueger, "Exchange Control, Liberalization, and Economic Development", American Economic Review, May, 1973, pp. 419-427.
8. Bird, Richard M., "Income Distribution and Tax Policy in Colombia", Economic Development and Cultural Change, July, 1970, pp. 519-535.
9. Bruten, Henry J., "Elasticity of Substitution in Developing Countries", Research Memorandum No. 45, Williams College, Center for Development Economics, 1972.
10. ———, "Economic Development and Labor Use: A Survey", World Development, December 1973, pp. 1-22. Also in Edwards [23].
11. ———, "Employment, Productivity, and Import Substitution", Research Memorandum No. 44, Williams College, Center for Development Economics, 1972.
12. ———, "The Import Substitution Strategy of Economic Development: A Survey", The Pakistan Development Review, Summer 1970, pp. 123-146.
13. ———, Principles of Development Economics, Prentice-Hall, Englewood Cliffs, New Jersey, 1965.
- 13a. ———, "Productivity Growth in Latin America", American Economic Review, December, 1967, pp. 1099-1017.
14. Chiswick, Barry R., "Earnings Inequality and Economic Development", Quarterly Journal of Economics, February, 1971, pp. 21-39.
15. Cole, William E. and Richard D. Sanders, "Income Distribution, Profits and Savings in the Recent Economic Experience of Mexico", Inter-American Economic Affairs, Autumn, 1970, pp. 49-64.

16. Cooper, Richard N., "Currency Devaluation in Developing Countries", *Essays in International Finance*, Department of Economics, Princeton University, 1971.
17. Cordova, Efrén, "Labour Legislation and Latin American Development: A Preliminary Review", *International Labour Review*, 1972, pp. 445-474.
18. Diaz-Alejandro, Carlos, "The Mechanisms for Containing Imports", Center Discussion Paper No. 154, Economic Growth Center, Yale University, 1972.
19. _____, "Some Characteristics of Recent Export Expansion in Latin America", Center Discussion Paper No. 183, Economic Growth Center, Yale University, 1973.
20. _____, "Trade Policies and Economic Development", Center Discussion Paper No. 180, Economic Growth Center, Yale University, 1973.
21. *Economic Bulletin for Africa*, "Industrial Growth in Developing Africa from 1950-1965 and Prospects for 1980", June 1970, pp. 1-15.
22. Economic Commission for Latin America, *Income Distribution in Latin America*, United Nations, New York, 1971.
23. Edwards, Edgar O., (editor), *Employment in Developing Nations*, Columbia University Press, New York, 1974.
24. Eltis, W. A., *Growth and Distribution*, Macmillan, 1973.
25. Falcon, Walter P., "Agriculture Employment in Less Developed Countries: General Situation, Research Approaches, and Policy Palliatives", Economic Staff Working Paper No. 113, International Bank for Reconstruction and Development, April, 1971.
26. Friedmann, John and Flora Sullivan, "The Labor Absorption in the Urban Economy: The Case of Developing Countries", *Economic Development and Cultural Change*, April, 1974, pp. 385-413.
27. Griffen, Keith, "An Assessment of Development in Taiwan", *World Development*, June, 1973, pp. 31-43.
28. Hansen, Bert and G. A. Marzouk, *Development and Economic Policy in the UAR (Egypt)*, North-Holland Publishing Co., Amsterdam, 1965.
29. Harberger, Arnold C., "Fiscal Policies and Employment Promotion", mimeo paper for Joint Workshop on Employment Generation, Government of India, 1972.
30. Heller, Jack and Kenneth M. Kauffman, *Tax Incentives for Industry in Less Developed Countries*, The Law School of Harvard University, 1963.
31. Hirschman, Albert O., "The Changing Tolerance for Income Inequality in the Course of Economic Development", *Quarterly Journal of Economics*, November, 1973, pp. 544-566.
- 31a. Howe, Christopher, *Employment and Economic Growth in Urban China*, Cambridge, 1971.

32. Huddle, Donald L., "Distributional Equity, Inflation, and Efficiency in the Brazilian Fluctuating Exchange Rate System", Program of Development Studies, Rice University, 1972.
33. International Labour Office, Employment, Incomes and Equality, A strategy for increasing productive employment in Kenya, Geneva, 1972.
34. ———, Fiscal Measures for Employment Promotion in Developing Countries, Geneva, 1972.
35. ———, Matching Employment Opportunities and Expectations, A Programme of Action for Ceylon, Geneva, 1971.
36. Isbister, John, "Urban Employment and Wages in a Developing Economy: The Case of Mexico," Economic Development and Cultural Change, October, 1971, pp. 24-46.
37. Jackson, Dudley and H. A. Turner, "How to Provide More Employment in a Labour Surplus Economy", International Labor Review, April, 1973, pp. 315-338.
- 37a. Jackson, D. A. S., "Wage Policy and Industrial Relations in India", Economic Journal, March, 1972, pp. 183-194.
38. Keesing, Donald B., "Income Distribution from Outward Looking Development Policies", mimeo, Williams College, 1974.
39. Knight, J. B., "Rural-Urban Income Comparisons and Migrations in Ghana", Bulletin of the Oxford University Institute of Economics and Statistics, May, 1972.
40. Kuznets, Paul W., "Labor Absorption in Korea since 1963", Working Paper No. 16, International Development Research Center, Indiana University, 1972.
41. Kuznets, Simon, Modern Economic Growth, Rate, Structure, and Spread, Yale University Press, New Haven, 1965.
42. Lent, George E., "Tax Incentives for Investment in Developing Countries", International Monetary Fund Staff Papers, 1967, pp. 249-323.
43. ———, "Tax Incentives for the Promotion of Industrial Employment in Developing Countries", International Monetary Fund Staff Papers, 1971, pp. 399-419.
44. Lewis, Stephen R., Jr., Economic Policy and Industrial Growth in Pakistan, George Allen and Unwin Ltd., London, 1969.
45. Lewis, W. Arthur, "Reflections on Unlimited Labour" in International Economics and Development, Essays in Honor of Raul Prebisch, Luis Eugenio di Marco, editor, Academic Press, New York and London, 1972.
46. Little, Ian, Tibor Scitovsky, and Maurice Scott, Industry and Trade in Some Developing Countries, Oxford University Press, London, 1970.
47. Lubell, Harold, "Urban Development and Employment in Calcutta", International Labour Review, July, 1973, pp. 25-42.

48. Lydall, Harold, The Structure of Earnings, Oxford, at the Clarendon Press, 1968.
49. Macario, Santiago, "Protectionism and Industrialization in Latin America", Economic Bulletin for Latin America, March, 1964, pp. 61-103.
50. Mehta, B. V., "Size and Capital Intensity in Indian Industry", Bulletin of the Oxford University Institute of Economics and Statistics, August, 1969, pp. 189-205.
51. Mellor, John W., "Developing Science and Technology Systems -- Experience and Lessons from Agriculture", Occasional Paper No. 63, Department of Agricultural Economics, Cornell University, 1973.
52. Mendive, Pedro, "Tax Incentives in Latin America", Economic Bulletin for Latin America, March, 1964, pp. 103-117.
53. Mincer, Jacob, "The Distribution of Labor Incomes: A Survey with Special Reference to the Human Capital Approach", The Journal of Economic Literature, March, 1970, pp. 1-26.
54. Mo-Huen Hsing, Taiwan Industrialization and Trade Policies, Oxford University Press, 1971.
55. Morawetz, David, "Employment Implications of Industrialization in Developing Countries: A Survey", Economic Journal, forthcoming.
56. Morley, Samuel A. and Jeffrey G. Williamson, "Demand, Distribution and Employment: The Case of Brazil", Economic Development and Cultural Change, forthcoming.
57. Navarrete, Ifigenia M., "Income Distribution in Mexico", in Mexico's Recent Economic Growth: The Mexican View. The University of Texas Press, 1967.
58. Nelson, Richard R. and Victor D. Norman, "Technological Change and Factor Mix over the Product Cycle: A Model of Dynamic Comparative Advantage", Center Discussion Paper No. 186, Economic Growth Center, Yale University, 1973.
59. _____ and T. Paul Schultz, and Robert L. Slighton, Structural Change in a Developing Economy, Princeton University Press, 1971.
60. O'Herlihy, C. S., "Capital/Labor Substitution and the Developing Countries: A Problem of Measurement", Bulletin Oxford University Institute of Economics and Statistics, August, 1972, pp. 207-230.
61. Ojha, P. D. and V. V. Bhatt, "Pattern of Income Distribution in an Underdeveloped Country: A Case Study of India", American Economic Review, September, 1964, pp. 711-720.
- 61a. Oshima, Harry T. and Lai Wen-hui, "Experience of Labour Absorption in Postwar Taiwan", Paper presented at Conference on Manpower Problems in East and Southeast Asia, Singapore, 1971.

62. Pack, Howard, "Employment and Productivity in Kenya Manufacturing", Eastern Africa Economic Review, December, 1972, pp. 29-52.

63. Papola, T. S., "Wage Determination in the Indian Cotton Textile Industry", International Labour Review, January, 1968, pp. 15-31.

64. Paukert, Felix, "Income Distribution at Different Levels of Development: A Survey of Evidence", International Labour Review, August-September, 1973, pp. 97-126.

65. Perkins, Dwight H., "Growth and Changing Structures of China's Twentieth Century Economy", Harvard Institute of Economic Research, Discussion Paper No. 339, 1974.

66. Petrei, Amalio Humberto, "Rates of Returns on Physical Capital in Manufacturing Industries in Argentina", Oxford Economic Papers, November, 1973, pp. 378-404.

66a. Phelps-Drown E. H. and P. E. Hart, "The Share of Wages in National Income", Economic Journal, June, 1952.

66b. Pickett, James, D. J. C. Forsyth, and N. S. McBain, "The Choice of Technology, Economic Efficiency and Employment in Developing Countries", World Development, March, 1974, pp. 47-54 and in Edwards [23].

67. Power, John H., "Protection and Employment: A Macroeconomic Approach", Institute for Development Studies, University of Nairobi, Working Paper No. 56, 1971.

68. ————— and Gerardo P. Sicat, The Philippines Industrialization and Trade Policies, Oxford University Press, 1971.

68a. Reynolds, Lloyd G., "Wages and Employment in a Labor Surplus Economy", American Economic Review, March, 1965, pp. 19-39.

69. Ridker, Ronald G. and Harold Lubell, Employment and Unemployment Problems of the Near East and South Asia, Vikas Publications, Delhi, 1971.

70. Ruprecht, Theodore K., "Output Stimulation and Employment Stagnation -- Policy Byproducts in the Philippines", Economic Development and Cultural Change, October, 1968, pp. 77-89.

71. Salter, W. E. G., Productivity and Technical Change, Cambridge University Press, 1960.

72. Sen, Amartya K., On Economic Inequality, Clarendon Press, Oxford, 1973.

72a. Sigurdson, Jon, "Technology and Employment in China", World Development, March, 1974, pp. 75-85.

73. Singer, Morris, Growth, Equality, and the Mexican Experience, University of Texas Press, Austin, Texas, 1969.

74. Smith, Anthony D., (editor), Wage Policy Issues in Economic Development, MacMillan, London, 1969.

75. Soligo, Ronald, "Factor Intensity of Consumption Patterns, Income Distribution and Employment Growth In Pakistan", Program of Development Studies, Rice University, 1973.
76. ————— and James W. Land, "Models of Development Incorporating Distribution Aspects", Program of Development Studies, Rice University, 1972.
77. Solow, Robert M., Capital Theory and the Rate of Return, North-Holland, Amsterdam, 1963.
78. Stewart, Frances, "Technology and Employment in LDCs", World Development, March, 1974, pp. 17-46 and in Edwards [23] .
- 78a. Strassman, W. Paul, "Economic Growth and Income Distribution", Quarterly Journal of Economics, August, 1956, pp. 425-440.
79. Streeten, Paul, (editor), Trade Strategies for Development, Papers of the Ninth Cambridge Conference on Development Problems, Macmillan, London, 1973.
80. Thoburn, J. T., "Exports and Economic Growth in West Malaysia", Oxford Economic Papers, March, 1973, pp. 88-111.
81. Turner, H. A. and D. A. S. Jackson, "On the Determination of the General Wage Level-- A World Analysis", Economic Journal, December, 1970, pp. 827-849.
82. Turnham, David and Ingelies Jaeger, The Employment Problem in Less Developed Countries: A Review of the Evidence, Organization for Economic Cooperation and Development, Development Centre, Paris, 1970.
83. Veen, Jan H. van der, "A Study of Small Industries in Gujarat State, India", Occasional Paper No. 65, Department of Agricultural Economics, Cornell University, 1973.
84. Watanabe, S., "Exports and Employment: The Case of the Republic of Korea", International Labor Review, December, 1972, pp. 495-426.
- 84a. Waters, Alan R., "Migration, Remittances, and the Cash Constraint in African Smallholder Economic Development", Oxford Economic Papers, November, 1973, pp. 435-454.
85. Webb, Richard, "Government Policy and the Distribution of Income in Peru, 1963-1973", Woodrow Wilson School of Public and International Affairs, Princeton University, Discussion Paper No. 39, 1973.
86. Weisskoff, Richard, "Income Distribution and Economic Growth in Puerto Rico, Argentina, and Mexico", The Review of Income and Wealth, December, 1970, pp. 303-332.
87. Wells, John, "Distribution of Earnings, Growth and the Structure of Demand in Brazil during the 1960s", World Development, January, 1974, pp. 9-24.

88. Williamson, Jeffrey G., "Relative Price Changes, Adjustment Dynamics, and Productivity Growth: The Case of Philippine Manufacturing", Economic Development and Cultural Change, July, 1971, pp. 507-526.
89. Winston, Gordon C., "The Theory of Capital Utilization and Idleness", Journal of Economic Literature, forthcoming.
90. Youngson, A. J., (editor), Economic Development in the Long Run, St. Martin's Press, New York, 1972.
91. Yudelman, Montague, Gavan Butler, Ranadev Banerji, Technological Change in Agriculture and Employment in Developing Countries, Organization for Economic Cooperation and Development, Paris, 1971.