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INCOME DISTRIBUTION AND DEVELOPMENT: A SURVEY

by

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Irma Adelman and Sherman Robinson

California Agricultural Experiment Station
Giannini Foundation of Agricultural Economics
March, 1987

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A Survey

Irma Adelman

Sherman Robinson

Department of Agricultural and Resource Economics
University of California, Berkeley

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Irma Adelman
Sherman Robinson

Department of Agricultural and Resource Economics
University of California, Berkeley

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I. Introduction

The formulation of economic policy involves a contrapuntal interplay among several elements: societal values and ideology; perceptions of stylized facts concerning the recent and potential trends of economic variables; prevailing theoretical paradigms concerning the operation of the economy and the determinants of its dynamics; identification of instruments of policy; and interactions between perceptions of what is desireable and what is feasible under different institutional and socio-political structures. These elements do not operate independently of each other: values, ideology, and paradigms influence and are influenced by public perceptions of stylized facts. Institutions and socio-political structures affect the benefit-cost ratios of alternative policies and their incidence among different classes of actors in the economy. Variations in incidence, in turn, affect perceptions of what is desired and what is feasible. The interplay among these elements is nowhere clearer than in the priority given to income distribution and poverty in economic policy.

1. Societal Tolerance for Inequality

Distributional concerns have always been a central focus of economic policy and political debate. Even with unchanging values, one would expect variations over time in the social priority accorded to distributional concerns. Social tolerance of distributional outcomes is determined on the one hand by societal values and attitudes and, on the other, by perceptions of the range of feasible alternatives that can be achieved by policy choices. Currently, social tolerance for inequality is at a cyclical high. The discussion in the next two sections will make clear why we think this is a temporary phenomenon, soon to be reversed.

There are a few generalizations that can be made about how and why societies differ in their attitudes about inequality, and the evolution of these attitudes over time. Our discussion below raises a number of important issues for economists, but is not meant to be exhaustive or to survey the extensive political science literature on the subject.

Changes in relative inequality are more tolerable if a process of change involves absolute gains for all. This argues for Pareto improving changes. Of course, opportunities for such changes are rare and not characteristic of the process of industrialization.[1] However, if the economy is in the initial stages of a development process, actual improvements in the income of richer groups can be taken as a signal of impending improvement for poorer groups. Initially, one can argue that expectations about one's own prospects in a society in which growth is occurring are tied to the rate of growth of incomes in the reference group. The poor, in effect, feel better off in anticipation

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[1]See the discussion of stylized facts below.

of later improvement.[2] If the improvement fails to materialize, however, their patience wears thin. The "revolution of unfulfilled rising expectations" is a force to be reckoned with in developing countries.

In times of crisis, societal tolerance of hardship and inequality increases, if the crisis is perceived as due to exogenous events. War, pestilence, drought, and other plagues such as a foreign debt crisis can elicit a national response which, for a time, legitimates personal hardship and sacrifice. Political leaders are not above manufacturing such crises.

If there are opportunities for "exit", either through rural-urban or international migration, greater inequality is more tolerable.[3] Even apart from income transfers to be obtained through migrant remittances, exit opportunities provide a social "safety valve" through which potential political tension can be relieved. There are many examples, including Turkey, Mexico, and the opening up of the west in the U.S. during the nineteenth century. The point to be emphasized is that inequality has a dynamic component. In a growing economy, high social, geographic, and economic mobility imply an equalizing trend in lifetime (or perhaps intergenerational) income and status. High income inequality at a point in time is more tolerable in a mobile society. The converse also holds.

Another dynamic argument is that inequality is more tolerable if it is widely perceived to be a necessary precondition for eventual improvement in everyone's income. For example, it has been argued that inequality is necessary for accumulation, and that it therefore contains the seeds of eventual

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[2]This proposition is put forward by Hirschman and Rothschild (1973).

[3]This is the equivalent of the opportunity for "exit" in Hirschman's terminology. See Hirschman (1978).

increases in everyone's income.[4] Stiglitz (1986), has a more sophisticated view, arguing that there is a bargaining game between workers and capitalists underlying distributional allocations. They negotiate over the division of the current pie, each with a view to raising their own future income. Rawls (1971) reflects a similar approach, arguing that societies should tolerate only that degree of inequality which is necessary to raise the income of the poorest over time.

Tolerance of inequality, of course, depends on perceptions about income differences. Such perceptions, in turn, depend on what is visible. For example, inter-regional and/or inter-group inequalities are more tolerable if the within-region or within-group distributions are relatively unchanged. A corollary is that ostentatious display of wealth differentials invites lower tolerance. The discreet rich are more secure. By contrast, modern communications and education broaden horizons and facilitate comparisons with more distant groups and also often make the rich more visible.

Finally, social attitudes about the incidence of wealth and poverty are influenced by religion, culture, and history. In Western thought, various ethical arguments have been advanced to justify the continued tolerance of extensive poverty. For example, at different times, the poor have been assumed to be lacking in virtue, thrift, enterprise, or abstinence. Christian religious arguments have been used at times to justify acceptance of the existing order, as well as to support some ameliorative, essentially charity-based, programs. On the other hand, it is asserted that Confucianism does not tolerate large inequalities, which may be partly responsible for some of the

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[4]The view goes back to Marx and Schumpeter. Bauer (1981) is a modern proponent.

policy choices underlying the good distributional performance of the East Asian economies.[5] In addition to ethical arguments, analogies have been drawn from biology to support a policy of ignoring distributional issues by arguing that survival of the fittest is the mechanism underlying social evolution, and being rich is therefore evidence of desirable survival characteristics.

It is evident from the above discussion of tolerance of inequality that, in practice, one would expect the weight placed on distributional concerns to vary over time. Fundamentally, however, the concern never disappears and there are definite limits, varying from society to society and over time, on the extent of inequality which is socially tolerable. It is therefore not surprising that concerns with distribution and poverty have been with us since the inception of economics. In the next section, we consider the evolution of such concerns in the period after World War II.

2. Values and Policy Concerns Since 1950

One can discern at least three different subperiods from 1950 to the present in the priority accorded to poverty and income distribution as an independent goal of development policy.

2.1 Phase I: 1950-1970

The period immediately following World War II was one of euphoria about economic aid and growth. The high rates of economic growth were unprecedented in both developing and developed countries and flows of foreign assistance

[5] See, for example, Nakamura (1966).

from developed to developing countries were large and ungrudging. The dominant development models at the time were all capital constrained; that is, growth was assumed to be limited only by accumulation.[6] These models all suggested that the growth of the modern sector, if sustained, would eventually result in spreading the benefits of that growth across the economy --the "trickle down" hypothesis. Industrialization proceeded rapidly, at first stimulated by import substitution policies. In the early 1960s, a few countries, mainly in East Asia, achieved rapid growth through labor-intensive, export-oriented industrialization.

The trickle-down hypothesis was based on a misreading of history that ignored the increasing inequality characteristic of the Industrial Revolution in the nineteenth century.[7] It was assumed that growth would affect the poorest in contemporary developing countries as it affected those in the developed countries in the twentieth century. Thus assumption implicitly ignored the institutional reforms (e.g., development of labor unions and welfare legislation) introduced at great social cost in developed countries since the turn of the century. At the time, no data on income distribution, poverty, or unemployment in developing countries existed to test the then accepted view that the benefits of growth were trickling down to the poor.

There were some critics of the prevalent optimistic view of the development process. Baran (1957) argued that the nature of capitalist industrial development fostered an alliance between domestic and international elites

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[6]The major figures in this tradition were Lewis (1954), Fei and Ranis (1964), and Chenery and Strout (1966).

[7]See, for example, Adelman and Morris (1983), Morris and Adelman (1987), Williamson (1985), Williamson and Lindert (1980), and Lindert and Williamson (1985).

against the economic interests of the domestic majority. The dependency school, of which Prebisch (1959) was an initiator, argued that the world economy operated to turn the international terms of trade against developing countries. Observers of the Indian subcontinent, such as Myrdal (1968), argued that the combination of locally corrupt governments and a dualistic economic structure impeded the spread of the benefits of industrialization outside the enclave economy. In the absence of general data, the failures of the development process analyzed by these critics were considered by mainstream development economists to be either not central or very special cases of an otherwise beneficial process. During the 1960s, the principal debates were not about distributional consequences but rather about the relative benefits of import substitution versus export promotion, or about fostering primary versus manufacturing exports.

2.2 Phase II: 1970-1975

The first identification of development failures came at the end of the 1960s, when it was realized that rapid aggregate growth had been accompanied by deteriorating employment opportunities. The development models of the 1950s and 1960s were based on the classical model of rapid industrialization achieved by syphoning labor and economic surplus for capital accumulation from the traditional agricultural sector. The first attempts to explain the failures of this development model pointed to inappropriate factor prices. In contrast to the assumptions of the Lewis model, wages in the modern sector were rising rather than remaining constant despite the continued existence of surplus labor in the traditional sector. Efforts to accelerate the growth of the

modern industrial sector had led to subsidization of investment in physical capital, thus increasing the wage-rental ratio. The result was encouragement of capital-intensive technology; the remedy would be to increase the price of capital.

Several other arguments were put forth to explain the employment problem. Stewart and Streeten (1972) argued that the employment problem was not just the result of inappropriate factor prices, but also due to lack of appropriate labor intensive technologies. Industrial technologies available for use by developing countries originated in developed countries where wage-interest ratios are high and most goods are consumed by the middle class and rich. In addition to correcting factor price distortions, there was a need for developing appropriate technologies centered on wage goods that would be consumed by the bulk of the populations of developing countries.[8]

Another villain was demographic: the combination of rapid population growth with heavy rural-urban migration. The model by Harris and Todaro (1970) was used to explain why migration could sensibly coexist with urban unemployment. Such migration constituted a gamble on finding an urban job and would continue as long as the expected value of the urban job lottery exceeded average earnings in the rural sector. Since urban wages are typically at least twice rural per capita incomes, continued migration is compatible with urban unemployment rates of up to 50%, assuming that all urban workers have an equal probability of finding a job.[9] The remedy would be population control

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[8]A related argument by Pack (1971) linked unemployment to low capacity utilization arising from foreign exchange shortages.

[9]See the survey by Todaro (1980) that covered a number of variations of the standard Harris-Todaro model.

activities and reductions in rural-urban income gaps and in social amenity differentials.

Another demographic argument focused on the role of education. In many developing countries, an education explosion at the secondary and university levels had created a mismatch between the educational profile of the labor force and the structure of employment opportunities generated by rapid industrial growth. The result was high unemployment rates among graduates, with consequent economic and social tensions.[10] The obvious remedy would be a shift towards primary education, towards numeracy and literacy for the masses, and away from academic and classical education. The opposite argument was made in Brazil. Part of the explanation for Brazil's worsening distribution of income was that the high growth rate had caused a shortage of educated manpower, leading to increased wages for skilled labor and a consequent widening gap in wages between skilled and unskilled labor. The Brazil debate was quite heated, with much discussion about the data and the relative importance of the different trends.[11]

The combination of trends such as slow labor absorption in the modern sector, rapid population increase, education explosion, and exploitation of agriculture transformed disguised rural underemployment into urban underemployment in a large "informal sector" consisting of low-income, self-employed and casually-employed people. The problem was not one of open unemployment, with zero wages, but rather one of low productivity and low income employment [Turnham (1971)]. The underemployed work long hours but earn only a poverty

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[10]For a study of graduate unemployment in India that was influential in the development of this argument, see Blaug (1973).

[11]See Taylor et al. (1980), Morley and Williamson (1974), Langoni (1975), Fishlow (1972, 1973). Fields (1980) provides a short summary of the arguments.

income since they are employed in low productivity jobs in which they are underutilized. At this point, the employment problem and the poverty problem merge.

Independently of the employment problem, research into the distribution of benefits of growth was initiated.[12] Empirical work indicated that the development program of the previous two decades had gone seriously wrong. For most countries, the distribution of income had deteriorated as a consequence of growth, and social and political participation bore little relationship to economic growth. [Adelman and Morris (1973), Ahluwalia (1976a), Paukert (1973).] These findings altered both the research and the policy agenda in the latter part of the 1970s, and led to a search for development policies, strategies, and programs that would result in a more egalitarian distribution of development benefits.

2.3 Phase III: 1975-present

In the 1980s, distributional and poverty issues have again been pushed off the research and policy agenda. Policies in the developing countries aimed at maintaining growth in the face of declining exports and rising oil prices after 1973, combined with policies in developed countries aimed at fighting inflation through monetary restraint, generated both supply and demand pressures to increase lending to developing countries. In the 1970s, oil-importing developing countries borrowed massively from commercial banks in the OECD countries, and at variable interest rates. When real interest rates

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[12]This literature is reviewed in more detail below.

rose, problems of insolvency, potential default, and debt refinancing became acute and came to dominate discussions of development policy.

Short-term problems of structural adjustment to current and capital account imbalances in the balance of payments of developing countries took priority over more fundamental problems of designing development strategies that could generate economic growth and structural change while benefitting the poorer members of society. Also, disenchantment with income transfer programs in developed countries and an ideological turn to the right among policy makers in the OECD countries legitimized a shift away from direct concerns with the poor in formulating economic policy. These features also characterize the current policy environment.

Along with this shift in policy concern has gone a shift in underlying theoretical focus. The tenets of neoclassical economics stress the role of market prices as signals for Pareto optimal static resource allocation. False analogies with the growth process in the successful Gang of Four countries have been used by some to buttress a Candide-like faith that free markets will generate the best outcomes in the best of all possible worlds. This faith underlies arguments that policies to make prices flexible, privatize, and downgrade the role of government policy are all that is required to achieve successful development.[13] At a theoretical level, these arguments ignore the many qualifications which severely limit the applicability of the standard proof of static optimality: e.g., external economies, uncertainty, intertemporal inefficiencies when private and social discount rates diverge, and the theory of the second best. At an empirical level, one must also qualify the

[13]Extreme examples of this view are provided by Bauer (1981) and Lal (1985). More reasoned arguments along these lines can be found in Little (1982), Balassa and Associates (1982), and Krueger (1978).

applicability of the neoclassical model to developing countries which are characterized by the absence of some markets, the incompleteness of others, and the mixed nature of property rights, all of which tend to blunt and circumscribe the transmission of market incentives to the individual economic actors.

In any case, even within its own theoretical confines, the neoclassical model cannot provide an answer to distributional concerns. Any judgement of optimality of relative prices must necessarily entail a judgement about the optimality of the wealth distribution or, at the very least, a positive welfare judgement about the distributional outcome. Prices not only allocate resources between economic actors, but also economic welfare between people.

The period since 1973 has been dominated by exogenous shocks and crisis response. As discussed earlier, initially, crisis response leads to tolerance of increasing inequality during a recovery period. However, this tolerance erodes over time, especially if, as happened, absolute real incomes fall. Distributional concerns therefore cannot be ignored indefinitely. Poverty in developing countries is still massive. At the same time, the decline in inflation and interest rates in developing countries, the resumption of OECD growth, and various debt reschedulings are making the debt problems less acute. Economic and political considerations make the resumption of growth in developing countries imperative. And there is a dawning realization that the poor and near poor have born the brunt of many IMF-inspired structural adjustment programs.

As developing countries complete their adjustment to past shocks and move to new, more stable growth paths, it is time for both theorists and policy makers to resume the interrupted research and policy agenda of the early

1970s. Before starting anew, it is important to pull together what has been learned to date from the research program on distribution and development. We start by reviewing the empirical "stylized facts" --the patterns and trends characterizing the relation between inequality and development. We then consider diverse theoretical paradigms yielding alternative forecasts of the course of inequality. Policy models, some based on competing theoretical underpinnings, are examined next. Finally, we conclude with an examination of policy options in structuring programs and strategies yielding "equitable" growth.[14]

II. Facts, Theories, and Models

3. Stylized Facts

In his famous article "Economic Growth and Income Equality," Kuznets (1955) posed the research agenda for empirical and theoretical studies of the relationship between income distribution and development. He asked two questions, which subsequent analyses have tried to address: What is the systematic long term relationship between the size distribution of income and economic growth? What factors determine the secular level and trends of income inequality?

3.1 The U Hypothesis

[14]For two good recent surveys, see Bigsten (1983) and Lecaillon et al. (1984).

Using data on long-term growth in developed countries and drawing on his earlier studies, Kuznets (1966) showed that since 1930, the size distribution of income in developed countries narrowed. Based on a priori reasoning about structural change in development, he also hypothesized that early economic growth produced increasing inequality. The combination of these two trends constitutes the U-hypothesis. To explore this hypothesis in contemporary developing countries, Adelman and Morris (1973) used analysis of variance techniques with data they developed on the size distribution of income by quintiles for 44 less developed countries.[15] They found that: (1) all less developed countries experienced a significant decrease in the share of income accruing to the poorest when development starts; (2) the share of income accruing to the poorest 60 percent of the population continues to decline, albeit more slowly, for a substantial portion of the development process; and (3) in the phase of development represented by the most developed third of developing countries, policy choices determine whether an improvement in the share of income accruing to the poorest does or does not occur. The cross country relationship can be either U-shaped or J-shaped.

Their analysis was followed by cross country regression studies of the inequality-development relationship based on somewhat more refined, but still quite heterogeneous, data. The samples varied and often included developed countries. [Paukert (1973); Chenery et al. (1974); Ahluwalia (1976a,b); Ahluwalia, Carter, and Chenery (1979); Bacha (1979); Papanek and Kyn (1986).]

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[15]They argued that neither the quality of the data, which is quite heterogeneous, nor the state of a priori knowledge, which at the time was scant, permitted the use of regression analysis with a priori specification of functional forms. Their approach is fairly robust to data quality, imposes no a priori constraints on the functional shape of the relationship, and permits highly nonlinear relationships to become manifest.

These studies generally assumed that the relationship between the income share of the poorest 40 percent and per capita GNP is quadratic in the log of per capita GNP and may be conditioned by a set of dummy variables capturing characteristics such as whether the country is socialist or not, dualistic or not, rich in resources. These studies generally supported the U-hypothesis. Anand and Kanbur (1986) argue that the location of the minimum of the U is sensitive to the sample composition and to the specific functional form. Such sensitivity is to be expected if the underlying relationship is either U or J shaped in specific countries, depending on their policy choices. Papanek and Kyn (1986), on the contrary, argue that the relationship is stable and robust to the inclusion of additional explanatory variables, which may have captured some features of different policy choices. The mixed and sometimes contradictory results from these regression studies tend to confirm the early skepticism of this approach by Adelman and Morris.

All these studies agree on one descriptive result: the initial phase of the development process, during which a mostly agrarian economy starts industrialization, is necessarily marked by substantial increases in the inequality of the distribution of income, with a sharply reduced share of income going to the poorest 20, 40, and 60 percent of the population. But there is controversy whether a decrease in inequality with development is inevitable (the U-hypothesis) or a matter of policy choice (the J-hypothesis).

3.2 Analytics of the U Hypothesis

To study what factors affect how income distribution changes with development, we require some analytic apparatus. A simple conceptual framework

is provided by variance decomposition. National inequality can be decomposed into the weighted sum of sectoral (or regional, group, or class) inequality. If the decomposition is performed on an aggregative index and the index is statistically decomposable, then the decomposition is strictly the weighted sum of within and between-sector inequalities, with population shares as weights. Otherwise, the decomposition must take account of the covariance between within-sector inequalities as well. [see Fields (1980) and Pyatt (1976).]

The earliest two-sector decomposition is due to Kuznets (1955). Using a hypothetical numerical example for a two-sector economy, Kuznets showed that, even if within-sector inequality is constant and the ratio of mean sectoral incomes are also constant, the shift of population between sectors produces at first a widening in inequality and then a narrowing. In his model, the U arises because the sector with the higher mean income into which population is shifting (non-agriculture) is also the sector with the higher internal inequality. Varying hypothetical numerical assumptions concerning intrasector inequalities and sectoral income ratios place the maximum inequality at a proportion of population anywhere from .6 in agriculture to .8. Robinson (1976) also demonstrates the U hypothesis in a two-sector model, using a decomposition of the variance of income. In that model, he demonstrates that the existence of a U does not depend on whether or not the expanding sector has higher income or higher inequality, but only on there being intersectoral differences.[16]

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[16]See Fields (1980) who derives a similar result for the Gini coefficient. See also Lewis (1972) who argues that his dualistic model generates increasing inequality for the same reasons that Kuznets notes.

Fields (1980) divides the economy into n sectors and decomposes the increase in aggregate income into three components, which he terms: the sector enlargement effect, the sector enrichment effect, and an interaction term. He then applies this decomposition to a two-sector Lewis model and categorizes different phases of growth in that model by different combinations of "modern sector enlargement," "modern sector enrichment," or "traditional sector enrichment." He argues that modern sector enrichment results in an increase in inequality in the relative distribution, which is tolerable because average incomes are rising, even though there is no change in the poverty population. Modern sector enlargement leads to a U path for relative inequality, but an increase in average income and a decline in absolute poverty.[17] Traditional sector enrichment results in decreases in inequality and less poverty.

We now use the decomposition of variance approach as a framework for analyzing both: (1) the initial worsening of the distribution and (2) the existence of the turning point in the U or J.

3.3 Factors Determining Distributional Trends

The initial decline in the share of income of the poor is inevitable and arises through the introduction of a small high income island in a large low income sea. Avoiding the initial increase in relative inequality with development would require that there be a narrowing of the income gap between the two sectors and/or that the distribution of income within the sectors become more equal. The stylized facts of development indicate that neither

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[17] In this case, welfare judgements about the results depend on the particular welfare function chosen. See Fields (1980), pp. 54-55.

process is likely without specific policy interventions. In developing countries, increases in agricultural productivity lag increases in nonagricultural productivity and convergence in productivity between sectors occurs quite late in the development process. Initially, the average income gap between sectors therefore increases.[18]

The second factor is the within-sector variances. The typical developing country will tend to experience an initial widening in the distribution of income within agriculture. Avoiding such widening requires one or more of the following: (1) policies targeted at increasing productivity in small farms; (2) agrarian reforms that redistribute land (either access or ownership); or (3) increases in non-agricultural employment opportunities in rural areas. None of these occur automatically. The first two depend on policy choices and the third is unlikely since industrialization destroys cottage industry and so tends to reduce rather than increase non-agricultural rural employment opportunities. The only nonsocialist countries (other than city states) that have avoided this initial widening have been Korea and Taiwan, where initial land reforms redistributed land to the tillers and substantial increases in agricultural productivity occurred early in the industrialization process.[19]

Within the urban sector, growth is also unequalizing. Industrialization starts from reliance on import substitution, usually with extensive subsidization of capital accumulation and tolerance, if not active fostering, of oligopolies. This type of industrialization leads to dualistic development patterns within the urban sector, with increasing relative income inequality.

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[18]See Kuznets (1966) and Chenery and Syrquin (1975).

[19]See Adelman (1978) and Fei, Ranis, and Kuo (1979).

In summary, economic development in the early phase is characterized by: an increase in the share of the population involved in the modern high income sector of the economy; an increase in the income gap between the high-income and the low-income sectors of the economy; and increases in inequality within both the high-income and the low-income sectors. Overall, the tendency is for inequality to increase for a considerable time. Simulations with simple models that incorporate a turning point indicate that inequality increases at least until more than half the population is in the high income sector.[20] The existence of such a turning point in more complex models is not guaranteed.

As the process of industrialization unfolds, there is no automatic tendency for the distribution of income to improve. Brazil, for example, demonstrates the J-shaped transition, while Korea, Taiwan, and Japan have followed the U-shaped pattern. Whether inequality does or does not decrease in the late stage of the transition depends upon the policies which countries follow. In particular, it depends upon the extent to which the policies adopted narrow the mean income gap between sectors; the extent to which they decrease the dispersion of income within the modern sector; and the relative speed of absorption of labor into the modern sector.

Policies aimed at achieving convergence between rural and urban incomes necessarily entail increasing the rate of growth of agricultural incomes above those of urban incomes. This, in turn, requires raising the productivity of agriculture in order to achieve convergence in productivity between the two sectors, while allowing the transfer of resources from agriculture to industry required for industrialization. Reduction of inequality within urban areas,

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[20]See the models of Kuznets, Robinson, and Fields cited earlier. See also Frank and Webb (1977) and Adelman and Morris (1973).

the second possible source of reduced inequality, requires fostering labor intensive growth and stressing human resource investment policies which widen access to education. The combination of these policies will raise non-agricultural wages and equalize the distribution of urban wage income. The contrast between Taiwan and Korea, on the one hand, and countries such as Brazil and Turkey, can be explained by their differences in policy choices along these lines.[21]

3.4 Postwar Trends

The trends in inequality during the last two decades are consistent with the stylized facts described above. Table 1 presents summary data on the course of income concentration and on the poverty ratio from 1960 to 1980 in groups of non-socialist developing countries. The figures in the table were calculated by estimating the size distribution of income in each country by means by regressing the parameters of rural and urban Pareto distributions against various economic characteristics of the two sectors in individual countries. The estimated rural and urban frequency distributions were aggregated numerically in each country to generate national distributions. The national distributions were then aggregated numerically into regional distributions distinguished by levels of development.[22]

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[21]Dervis and Robinson (1980) use various decomposition techniques to analyze the role of between-group and within-group differences in "explaining" overall inequality in Turkey, using a variety of definitions of "groups," including socioeconomic status, region, and sector. See also other articles in Ozbudun and Ulusan (1980). For the Brazil case, see Bergsman (1979) and Taylor et al. (1980).

[22]The method is explained in Adelman (1985).

The figures in the Table 1 indicate that, between 1960 and 1980, income inequality in the group of non-communist developing countries increased substantially. But separate groups of developing countries were subject to different trends in income concentration: it increased quite markedly in the group of low-income non-socialist countries and in the group of oil-exporting countries, and it decreased significantly in the middle-income non-oil-exporting countries. Nevertheless, despite the overall increase in inequality, the percentage of the population with income falling below a poverty level (defined as a fixed level of real purchasing power) declined by a third during this period.

To sort out the relative contributions to these trends of "within country" and "between country" inequality, two experiments were performed. In columns 3 and 4 of Table 1, per capita income in each country was set equal to the worldwide average income; the only source of inequality in these columns is inequality within each country. In columns 5 and 6, the opposite experiment was performed; all individuals in each country were assumed to have a per capita income equal to the country average. The only source of inequality in columns 5 and 6 is therefore inequality among countries.

It is clear from these experiments that both within-country inequality and among-country inequality increased between 1960 and 1980. The growth process inside the non-socialist developing countries has generated greater income disparities within countries. The dispersion of growth rates among these countries has also increased since the middle income countries grew considerably more rapidly than the poorest non-socialist developing countries, and the dispersion in growth rates among the oil-exporting countries increased as well.

Table 1. Trends in Income Distribution and Poverty, 1960–1980

	Overall		Eliminating Inter-Country Inequality[a]		Eliminating Within-Country Inequality[a]	
	1960	1980	1960	1980	1960	1980
Income Distribution *(Gini coefficient[b])*						
All non-communist developing countries	.544	.602	.450	.468	.333	.404
Low-income	.407	.450	.383	.427	.113	.118
Middle-income, non-oil	.603	.569	.548	.514	.267	.251
Oil-exporting	.575	.612	.491	.503	.328	.375
Poverty *(poverty ratio[c]—percentages)*						
All non-communist developing countries	46.8	30.1	5.2	0.9	8.8	3.5
World	39.8	22.4	9.9	1.6	6.3	2.0

[a] The sum of the only-within and only-between country inequalities does not add up to the overall total because of inter-correlations between the two.

[b] The numbers labeled Gini coefficients are measures of the degree of concentration of the size distribution of income. A higher figure indicates greater inequality.

[c] Percentage of population falling below the poverty level (held fixed in real purchasing power). The definition of absolute poverty adopted for these calculations is that of the World Bank: an annual per capita income of less than U.S. $50 (1960). National currencies were converted into dollars using the Kravis purchasing power parity index for 1975.

Source: Irma Adelman, "The World Distribution of Income," Working Paper No. 346 Department of Agricultural Economics (University of California, Berkeley: August 1984).

The experiments also indicate that both within-country and among-country inequality are important contributors to overall inequality in developing countries. Within-country inequality is the more important in explaining total inequality, but reductions in either source of inequality can make important contributions to reducing poverty in these countries. Either, admittedly extreme, Gedanken experiment would result in the virtual elimination of poverty. In order to reduce poverty in developing countries, therefore, one must both foster more participatory growth processes and accelerate their growth rates.

4. Theoretical Paradigms

There has been continuing controversy about alternative theoretical explanations for the stylized facts described above. Part of the theoretical controversy about the determinants of the dynamics of the distribution of income arises from the use of different concepts of "the distribution of income." Before discussing alternative theoretical paradigms, one must therefore sort out the different concepts of "distribution" in common use.

4.1 Concepts of Income Distribution

At least three different concepts of income distribution can be distinguished: (1) the functional distribution, (2) the extended functional distribution, and (3) the size distribution. The functional distribution refers to the shares of the national income accruing to the primary factors of production --land, labor, and capital. The extended functional distribution disag-

gregates the functional distribution by sector and mode of production.[23] The appropriate choice of disaggregation depends on the country and the problem under study. In most developing counties, for example, extended functional distributions which are of interest would differentiate: capitalists and workers in both rural and urban areas; subsistence and commercial farmers; different tenancy forms in agriculture; and self-employed and other workers in the urban sector. Finally, the size distribution of income looks at the society disaggregated by income level. It describes the shares of national income accruing to each quantile (e.g., decile, quintile, or vintile) of households (or total population, or economically active population, or households per capita). The size distribution includes all sources of income, including transfers.[24]

Most economic theory relates to the dynamics of the functional distribution of income; but, in many ways, this is the least interesting concept for either political or welfare analysis. The functional distribution would be of political interest if the major political conflicts were defined only by the nature of the primary assets owned. This is the orthodox Marxian view. Contemporary Marxists, however, consider various extended functional distribu-

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[23]Our specification of the extended functional distribution is closely related to the "institutional distribution" specified in a social accounting matrix (SAM). Using a SAM framework, Dervis, de Melo, and Robinson (1982), chapter 12, distinguish five types of income distributions. The approach is described in more detail below in the survey of policy models.

[24]There are lingering conceptual and empirical problems concerning the treatment of government expenditures (expenditure incidence), taxes, and undistributed profits. Also, there is no uniform convention concerning the appropriate of the unit of analysis (e.g., workers, individuals, households, "adult equivalents").

tions, and argue about which version is appropriate.[25] In developing countries, the major interest-group cleavages include: urban and rural groups; major industrial categories; and importers (including those who import intermediate and capital goods) and exporters.[26] The simple functional distribution does not incorporate these distinctions and therefore cannot be used to portray the economic pressures operating on the policy process in a typical developing country. The extended functional distribution provides a better framework for analyzing these policy conflicts and is therefore the distribution concept that is the most useful for understanding interactions between economics and politics in developing countries. By contrast, the size distribution of income is the concept of distribution most relevant to welfare analysis if one believes that people in similar economic circumstances ought to be treated similarly.

One way to distinguish among theories is by indicating the kind of distribution they treat. As noted above, most theoretical work has been concerned with the functional distribution. While there is a significant literature on models of the size distribution, only a small body of theoretical work seeks to explain the size distribution by taking an integrated view of the demand and supply of income-generating attributes.

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[25]For a discussion of modern Marxist approaches, see de Janvry (1981) and Brenner (1977).

[26]For discussion of these political cleavages by political scientists, see Nelson (1979), Huntington and Nelson (1976), Bienen and Diejomaoh (1981), Danielson and Keles (1981). For discussions by economists, see Lipton (1977), Adelman and Morris (1973), and Chenery et al. (1974).

4.2 Models of the functional distribution

Concern with the functional distribution has been a part of economics since its earliest beginnings. For purposes of surveying the treatment of distribution in development economics, we need only consider a few strands of the literature. We start from the classical economists and trace out two modern approaches, one through Marx and Cambridge, England, and the other through the development of neoclassical general equilibrium theory.

The Classical View

In the time of Ricardo and Mill, the primary distributional issues were the distribution of power and income among classes, defined by their ownership of the major factor of production in the rural and urban sectors: the landed elites, on the one hand, and the rising manufacturing groups, on the other. It is these distributional issues which the classical models sought to illuminate.

Rather than attributing the dynamics of relative class shares to political forces, the classical models of distribution were based on the characteristics of the production system and how it changes over time. Of the classical economists, Ricardo has had the greatest influence on modern development theory. Ricardo's theory of distribution attributes long run variations in the functional distribution to systematic changes in returns to factors at the margin. He distinguished between the market wage rate, which varies with the demand and supply of labor, and the natural wage rate, which is the long-run equilibrium rate around which the market rate fluctuates. The natural rate

tends towards subsistence, but subsistence is a relative concept. The cost of the subsistence bundle is set by the marginal productivity of land, and its content is determined by socio-cultural norms and customs. Population growth, responding to the margin between the market and the natural wage rate, serves to keep market wages close to the natural wage rate.

The employment of labor depends upon the rate of capital accumulation. Accumulation, in turn, is a function of the surplus over wage payments (net income in Ricardo's definition) and of the difference between the actual rate of profit and the socio-culturally determined minimal rate of compensation for risk bearing.[27] The rate of profit in Ricardo is also set by the natural wage rate and varies inversely with it. Diminishing returns in agriculture lead to a natural tendency for profits to decline. The decline can be checked periodically by technological innovations in agriculture and in wage goods industries, but, since Ricardo believed that these innovations are also subject to diminishing returns, this is a temporary phenomenon.

At the margin, land yields no rent. Furthermore, in Ricardo, wage payments above the natural wage are also part of profit. The share of profits is therefore determined as a residual over and above natural wages on that portion of land which yields no rent. In a stationary state, profits go to zero, the wage stays at subsistence, and the residual goes to rent --the fixed factor captures the entire surplus. However, in their dynamics, the classical economists argued that the speed of approaching the stationary state involved a tradeoff between growth and distribution, given that the subsistence level

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[27]There are many expositions of Ricardo that make this argument, if not always using this terminology. See, for example, Blaug (1962) and Adelman (1961).

is determined by cultural and political factors and accumulation is out of profits alone.[28]

There is no feedback in the classical system between the functional distribution of income and demand for commodities. Distribution is purely a technological and socio-cultural phenomenon. In an economy in which all goods are internationally traded and in which there is always full employment, this view of the functional distribution is theoretically consistent. But these assumptions are not applicable to the typical developing country in which there is both open and disguised unemployment, and in which non-traded goods are important. Furthermore, in the medium run, political influences are important determinants of both the choice of development strategy and of the evolution of the institutional structure of the economy. In the medium run, therefore, rates of return to factors, accumulation patterns, and hence functional shares, depend on political as well as economic choices and are not dependent on just technology and tastes.[29]

Dual Economy Models

In his famous article on the labor-surplus economy, Lewis (1954) saw himself as just updating the classical model. The major difference between Lewis and Ricardo arises from Lewis's assumption that there exists a quasi-permanent supply of surplus labor in agriculture in a developing country. As a result, the market wage and the natural wage are always equal and industrial labor is

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[28]This point is nicely made in Lindert and Williamson (1985).

[29]For an exposition of theories of the state and their relevance to development, see Bardhan's chapter in this book and de Janvry (1981).

always paid a wage which is a constant multiple of the agricultural subsistence wage. Furthermore, the subsistence wage is fixed over time in real terms. Employment in the modern sector is determined by the marginal productivity of labor, which in turn is a function of the capital stock in the modern sector. Thus, the share of wages in national income is determined by agricultural productivity and by the accumulation of capital in industry. Since unlimited supplies of labor are available at a constant wage, the reinvestment of any part of profits will increase the share of profits in national income. The functional distribution of income therefore moves against wage earners. The distributional path is set in a "U" from the beginning, and there is no tradeoff between growth and distribution. Growth only determines how fast a country traverses the "U".

What happens to rent as a share of the national product depends on the ratio of population to land and on agricultural technology. In overpopulated countries, competition for land among cultivators sets the level of rent equal to the surplus over subsistence in agriculture. As long as there continues to be surplus labor in agriculture, the benefits of technical progress in agriculture accrue to the landlords and to the profit earners in the industrial sector. It is therefore puzzling that Lewis argues that the owners of plantations have no interest in land-augmenting technical progress [Lewis (1954, p 410)]. He also argues that, since capitalists have an interest in keeping the level of subsistence in agriculture low, they are against technical progress in agriculture. But this in conflict with his argument that technical progress does not increase the subsistence level of the farmer and the cost of the subsistence bundle drops with technical progress.

Fei and Ranis (1964) considered themselves to be providing a mathematical implementation of the Lewis model. In fact, while starting from Lewis, their model is quite neoclassical in spirit.[30] While Lewis emphasized the role of profits in determining the size of the investment effort and hence the rate of growth, Fei and Ranis focused on the issue of labor absorption and the "turning point" when the surplus agricultural labor has all migrated and the urban wage starts to rise. At that point, they argue, the distribution will also start to improve. Theirs is an optimistic view of the development process, with no groups losing absolutely as development unfolds and with the upturn of the "U" roughly corresponding with the labor-absorption turning point. The distributional implications of this model have been sorted out by Fields (1980), chapter 3.[31]

The Marxian Model

Marx was the first classical economist to introduce an explicit ethical judgement into a theory of distribution. Ironically, his ethical judgement was the same as that of the neoclassical economists who followed: each factor of production is entitled to the value of its marginal product. But for Marx, as for the other classical economists, capital is just congealed labor. Based on his value judgement that labor ought to retain ownership of the fruits of

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[30]Lewis also has some disagreements with the characterization of his model by Fei and Ranis. See Lewis (1972).

[31]See also Fei, Ranis, and Kuo (1979) and Ranis (1978). Fields' models have been discussed above.

its labor, Marx argued that the return to capital as well as wages should belong to labor.[32]

In Marx's theory of the operation of the capitalist economy, labor is not paid a wage which reflects its marginal product. Instead labor is paid a wage that varies cyclically around a socio-culturally defined subsistence level. The rest accrues to owners of capital. The difference between the wage bill and total income constitutes "surplus value." The ratio of surplus value to the wage bill is the "rate of exploitation of labor."

The long-run dynamics of capitalist development, according to Marx, are dismally unjust to workers. In the long run, there is a tendency for production to become more capital intensive, for productivity of capital to rise, and for the capital-labor ratio to increase. Since, unlike Ricardo, Marx believed that population growth is exogenous, there is a secularly rising excess supply of labor (the "reserve army") with a declining per capita income for workers at a secularly varying subsistence wage.[33]

In the Marxian model, the rate of accumulation depends upon the distribution of income between wage earners and profit takers, since wage earners do not save. In turn, the rate of accumulation determines the rate of technical change, the employment of labor, and hence the functional shares in the next period. The evolution of the Marxian economy is thus uniquely determined by the initial conditions of the system (primary endowments, technology, and

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[32]The Marxian view also treats labor's claim collectively rather than individually. This class view enables him to argue that the returns to past congealed labor should accrue to current workers.

[33]He also argued that there is a secular tendency for the rate of profit to decline, a proposition that has since been argued is inconsistent with his other assumptions. See Adelman (1961) and Morishima (1985).

institutions) and by its structural parameters reflecting technology and tastes.

Neo-Keynesian Models

Kaldor combines the Marxian assumption that all saving is out of profits with a Harrod-Domar dynamization of the Keynesian model. In a two-class society, the choice of growth rate determines the functional distribution of income. The causal chain goes from fixed growth rate to required fixed investment rate, to which the economy adjusts by changing the distribution of income between savers and non-savers to achieve the required aggregate savings. When the society is disaggregated into an extended functional distribution, the Kaldorian specification is not sufficient to derive the entire functional distribution.

Kalecki's theory of economic development and income distribution is more subtle than Kaldor's. Like Kaldor, Kalecki (1971) posited that development is capital constrained.[34] Investment, however, is constrained not only by the supply of savings, but also by an absorptive-capacity constraint imposed by limitations of skills and natural resources and by a shortage of wage goods. The latter two constraints on investment arise from the need to engage in a non-inflationary growth process. Inflation must be avoided in order not to depress the real incomes of the poor and of wage earners. Accordingly, development of the industrial sector is constrained by the rate of growth of agricultural output, a theme which was later taken up by Fellner and sounds

[34]For an exposition of Kalecki's views on economic development, see Feiwel and Klein (1975), chapter 16, and Kalecki (1966).

very modern indeed. In Kalecki's view, the natural tendency is for development to worsen the distribution of income and reduce the incomes of the poor. He argued that, in a mixed economy, investment is financed partially from private and government savings and partially through inflation. The major burden of inflation-financed investment is borne by the poor since the rich have sufficient political and market power to shift the incidence of taxation and rising production costs to the poor.

The theoretical strand that runs from Marx through Kaldor and Kalecki has been used by Lance Taylor and others to build a family of models that link the macroeconomic behavior of the economy to distributional outcomes. In its recent incarnation, this approach is often referred to as the "Latin American Structuralist School." We will discuss these models below in the section on economywide policy models and compare them with alternative approaches to linking macro and distributional processes.[35]

The Neoclassical Approach

Partly in response to Marx, the Austrian School (e.g., Menger, Boehm-Bawerk) focused on the role of capital as a true factor of production, emphasizing the role of time. Schumpeter, in turn, added the role of entrepreneurship, including risk bearing, as a factor of production deserving remuneration. At the margin, each factor should be paid its marginal product, with thrift and risk-bearing deserving an appropriate return. This school provided

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[35]This approach is also discussed in chapters by Taylor and Arida and by Robinson in this volume.

a legitimation of Marxian "exploitation" and provided a transition to the more fully developed neoclassical "marginalist revolution."

In the final fruition of the neoclassical model, provided by the Walrasian model of competitive equilibrium, all factors are paid the value of their marginal products, all markets clear, and the result is a Pareto Optimum in which no one can be made better off without making someone else worse off. Neoclassical welfare economics essentially stops at this point, defining an "efficient" equilibrium which is consistent with any distribution of initial endowments and, hence, of income. One can make the same point in terms of a social welfare function. Negishi (1960) proved that a competitive equilibrium can be described as the result of maximizing a "Paretian" social welfare function consisting of the weighted sum of individual utilities. The weights are determined endogenously and depend on the initial distribution of endowments. Given these endowments, the social welfare function whose maximum yields a competitive equilibrium has welfare weights that are inversely proportional to the marginal utilities of individual incomes.[36]

Thus, even if one accepts fully the theoretical apparatus of neoclassical general equilibrium theory, one need not accept the distributional results as either optimal or even desirable. If the static distribution of income generated by a particular structure of endowments in a competitive market economy is considered undesirable, there are a number of policy choices available for altering distributional outcomes: (1) a one-time change in the distribution of initial endowments; (2) post-equilibrium transfers of income; or (3) either pre- or post-equilibrium adjustments to market prices through taxes and sub-

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[36]For a discussion of the Negishi theorem in the context of planning models, see Ginsburgh and Waelbroeck (1981).

sidies. In theory, the first should engender no efficiency costs, the second may (if lump-sum transfers are impossible), and the third will definitely lead to incentive distortions and hence an efficiency-equity tradeoff.

We shall discuss each of these approaches below. In general, based on the empirical and theoretical evidence, we tend to favor primary reliance on asset-oriented approaches, using a broad notion of assets that includes both human and physical assets, as well as access to institutions for accumulation, access to jobs, and rights to the use of assets in the productive process. Research to date indicates that pure transfers, while potentially beneficial, must be maintained indefinitely and are too expensive for the typical developing country. Direct adjustments to market prices are usually less effective and have efficiency consequences which must be balanced against their distributive benefits.

Implicit in the concern with the functional distribution, reflected in the theories discussed above, is the assumption that a stable relationship exists between the functional and size distributions. The literature on distribution is full of statements linking a higher wage share with increases in relative equality. Empirical evidence for such a link is tenuous, at best. Indeed, empirical models that explicitly derive the size distribution from the extended functional distribution find no stable relationship.[37] Therefore, if one is concerned with the size distribution, one must analyze it directly.

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[37]See Adelman and Robinson (1978, 1987) and Lysy and Taylor (1980). These studies are discussed further below.

4.3 Models of the Size Distribution

Theories of the size distribution start at the individual level and are micro in nature.[38] They attempt to describe the course of the size distribution of income by looking at dynamic changes in the distribution of the supply side of factors. They take as given the economically, socially, and institutionally determined dynamics of the rates of remuneration of factors and the configuration of the overall supply of jobs and opportunities in the economy. These givens are the very factors stressed by the classical economists when discussing the long-run dynamics of the functional distribution of income.

Supply Models

Meade (1964) and Champernowne (1953) are good starting points for theories of the size distribution. They start from the basic definition of personal income as the market value of "sales" of services from human and non-human capital. Taking the distribution of rates of return to human and non-human wealth as given, changes over time in the size distribution of income are, as Fisher (1912, p. 513) pointed out, due to "inheritance, constantly modified by thrift, ability, industry, luck, and fraud." Inherited fortunes, both human and non-human, play a central role and determine the distribution of initial endowments among households. The sale of services from these endowments (affected by market conditions and "industry") and the prices at which they are sold (affected by ability, luck, inherited opportunities, and choice of strategies, policies, and institutions at the macro level) set the

[38]Sahota (1978, 1986) has done two surveys of this literature.

gross incomes of households.[39] Accumulation and decumulation (affected by thrift, inheritance laws, and marriage patterns) determine the changes in individual endowments over time.

There are good reasons to presume that the rich get systematically higher rates of return on their assets, both human and non-human, and that the rate of saving from profit income is higher than from non-profit income. These stylized facts give rise to unequalizing tendencies which, if not combatted by social policy (e.g., inheritance laws, equal opportunity legislation, tax policy, and compensatory social programs), lead the distribution to worsen over time. But even if one were to start from a completely equal distribution of wealth and assume only that there is a stochastic distribution of luck and that the rate of accumulation is proportional to endowments, these assumptions suffice to generate a lognormal distribution of wealth and income in the long run.[40]

In the literature, there are different schools of thought about the relative weight of human and non-human capital in determining the dynamics of distributional changes. The Chicago school posits an explicit intertemporal optimizing model of intra-generational accumulation and inter-generational transfers that is used to explain investment and inheritance patterns over time.[41] The Cambridge school represented by Meade and Champernowne uses reduced-form models that do not explicitly specify the behavior of agents.

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[39]For consideration of human capital, see Becker (1967). Meade (1964) and Champernowne (1953) consider the role of non-human capital.

[40]See Wold and Whittle (1957).

[41]See Becker (1967, 1983) and Chiswick (1974). In this area, one can also include Blinder (1974) as part of the Chicago tradition. See the survey by Sahota (1978).

Empirical tests of these theories [Pryor (1973) and Clague (1974)] demonstrate that no more than 50 percent of household income changes can be explained by systematic forces; the rest is in the stochastic term. In addition, the direct policy implications of the analysis are meager. In effect, according to these models, the poor are poor because they area born of poor parents, marry other poor folk, and/or are unlucky. We will consider such "micro based" policies, in the context of developing countries, in more detail below. The theories of the personal distribution impound macro processes in their ceteris paribus conditions. Unfortunately, relatively little can be accomplished to make the distribution of income more equal without affecting the macro environment in which micro actors operate.

Supply-Demand Models

There are a few models in the micro tradition that attempt to capture supply factors. Beginning with an early effort by Tinbergen (1956), a class of models of the size distribution has been based on the notion that an individual's income is determined by the sale of a variety of personal attributes.[42] In this view, the vector of relevant attributes includes not only ownership of factors of production, but also such characteristics as race, sex, social status, geographic location, and aptitudes. These represent the supply side.

The demand for these attributes is generated by the production profile of the economy, as well as by social, cultural, and political institutions. The

[42]See Ritzen (1977) and Adelman and Levy (1984) for applications of such models to developing countries.

"price" associated with each attribute can thus be viewed as determined by the interaction of supply and demand forces that extend beyond traditional markets, deep into the structure of society. This framework is useful, for example, for studying the social and private costs of barriers to mobility inherent in such institutions and attitudes as: discrimination, caste, social stratification, segmented labor markets, and so forth. There are no models that implement this approach fully.[43] The applied general equilibrium models discussed below are also in this spirit.

5. Economywide Policy Models

For policy analysis, the theories and theoretical models discussed above need to be given empirical content. Starting around 1970, efforts were begun to incorporate distributional concerns in empirical models. These models have been applied in a number of countries to evaluate the distributional implications of alternative choices of development strategies. We review these economy-wide models below and then review the policy findings in a separate section.

5.1 Linear Multiplier Models

Initial attempts to introduce distribution into linear multisector models involved closing the input-output models on the demand side by modelling the

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[43] A model of the U.S. labor market by Bennett and Bergmann (1986) comes close. See also Robinson and Dervis (1977) who use a dynamic model based on transition matrices to explore the distributional impact of socioeconomic mobility in developing countries.

links between production, factor incomes, and consumption. The first approaches assumed an exogenously given distribution of income, calculated the corresponding consumption patterns, incorporated the consumption by sector into the final demand vector of the input-output tables, and then used the Leontief inverse to calculate the implied changes in production and employment.[44] Contrary to expectations, major changes in the distribution of income were found to have only minor impact on the consumption vector (about 1 to 2 percent, at most, in a few sectors) and hence only minor effects on the patterns of production and employment.

Subsequent approaches involved making the changes in distribution consistent with the patterns of production through the factor income side as well as through the demand side. They were implemented first by iterating between the initially assumed distribution of income and the distribution of income derived from the pattern of consumption and employment until the two became mutually consistent.[45]

Later, the input-output accounting framework was enlarged into a Social Accounting Matrix (SAM) in order to maintain accounting consistency between the patterns of production, the institutional and household distributions of

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[44]See, for example, Cline (1972); Weisskoff (1970, 1985); and the Indian Third Five Year Plan.

[45]Thorbecke and Sengupta (1972) apply such an approach to Colombia.

income, and the patterns of consumption.[46] The earlier linear models can now be seen as special cases within the SAM framework.[47]

In the SAM, value added is distributed first to factors of production to generate the functional distribution of income. Then, functional income is in turn distributed to "institutions" which include categories such as government, enterprises, households, investment (the capital account), and the rest of the world. These categories, suitably disaggregated, can be used to generate the "extended functional" distribution described earlier. Finally, the household accounts are disaggregated by income ranges (and, perhaps, by socio-economic groups as well) to generate the overall size distribution.[48]

These SAMs can be converted into linear models by assuming constant distribution and expenditure coefficients, in addition to the standard Leontief constant production coefficients. The linear model supports the use of multiplier analysis to trace through the effects of changes in some exogenous variables on income distribution. However, unlike the input-output table, all SAMs are square, with column and row sums equal by accounting convention. Hence, the coefficients in every column of the full SAM sum to one and there is no inverse. In order to construct a multiplier model, one or more accounts in the SAM must be specified as being exogenous. The result is a partitioned SAM, with some columns specified as exogenous and some rows excluded. Such a

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[46]Further discussion of SAMs is provided in the chapter by Robinson in this volume. Pyatt and Round (1985) collect a number of studies which include examples of SAMs focused on distributional issues. See, especially, the survey chapters by Thorbecke (1985) and Stone (1985).

[47]Weisskoff (1985), in his updating of his earlier work, notes that his model can be recast into a SAM framework.

[48]See Dervis, de Melo, and Robinson (1982), Pyatt and Thorbecke (1976), and Thorbecke (1985) for a discussion of this mapping process in SAM-based models.

SAM coefficient matrix is given below, with the partitioned structure of non-zero coefficient matrices indicating the circular flow of income from activities to value added (V) to endogenous institutional incomes (Y) and finally back as final demand for goods (F).

$$(1) \qquad A^{*} = \begin{bmatrix} A & 0 & F \\ V & 0 & 0 \\ 0 & Y & T \end{bmatrix}$$

with the following matrices:

A^{*} = SAM coefficients (n+m+k,n+m+k),
A = input-output coefficients (n,n),
V = value added coefficients (m,n),
Y = income distribution coefficients (k,n),
F = expenditure coefficients (n,k),
T = inter-institutional transfer coefficients (k,k),

and where:

n = number of sectors,
m = number of value added categories, and
k = number of endogenous institutions.

Given the choice of exogenous accounts, the balance equations can be written:

$$(2) \qquad A^{*} \begin{bmatrix} x \\ v \\ y \end{bmatrix} = \begin{bmatrix} e^{x} \\ e^{v} \\ e^{y} \end{bmatrix}$$

with the following vectors:

x = sectoral supply (n,1),
v = value added by categories (m,1),
y = institutional incomes (k,1),
e^{x} = exogenous sectoral demand (n,1),
e^{v} = exogenous value added (m,1), and

e^y = exogenous institutional incomes (k,1).

Inverting A^*, we can write the multiplier matrix equation relating changes in sectoral supply, valued added, and institutional income to changes in the exogenous variables:

$$(3) \qquad \begin{bmatrix} x \\ v \\ y \end{bmatrix} = M \begin{bmatrix} e^x \\ e^v \\ e^y \end{bmatrix}$$

where $M = (I - A^*)^{-1}$.

Such multiplier models have been used to analyze the distributional impacts of large investment projects, of changes in government expenditure patterns, and of changes in development strategy.[49] Given the special structure of the circular flow captured in the SAM, it is also possible to decompose the multiplier matrix into terms that trace the direct or impact effects of a change in exogenous variables, the within-block effects, and the between-block effects.[50] Such a decomposition is very useful for determining the importance of indirect or "net SAM linkages" that capture how policies and programs affect the extended functional and size distributions of income.

The choice of which accounts to specify as being exogenous is important. Standard practice is to pick one or more of the capital, government, and rest-of-the-world accounts, justifying the choice on the basis of macroeconomic

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[49]See, for example, Bell and Devarajan (1985), Grais (1981), Pyatt and Roe (1977), and Pyatt and Round (1979). Thorbecke (1986) has developed a linear optimizing model that uses the SAM as a constraint set. In his model, a poverty measure based on the incomes of socioeconomic groups is the maximand. The model is used to explore how different degrees of societal aversion to poverty affect the optimal structure of the economy.

[50]Versions of this decomposition approach are described in Stone (1985) and Pyatt and Round (1979).

theory. The resulting multiplier model is completely demand driven, since no constraints on supply are specified, and is thus very Keynesian in spirit. In each case, a shock is defined as a change in elements of the exogenous columns. The computed multipliers will be sensitive to the initial choice of exogenous accounts, and the realism of the resulting model must be judged on the basis of the particular question under study.[51]

5.2 Nonlinear, Non-Market Models

There are a few examples of models incorporating income distribution developed during the 1970s which went beyond the linear framework, but did not seek to incorporate market interactions endogenously. A number of models were developed at the World Bank which incorporated distributional phenomena into an essentially dynamic input-output framework. For example, Gupta (1977a, 1977b) built models of Indonesia and Korea which were very close to standard dynamic input-output models in that they incorporated demand-driven growth paths constrained by sectoral investment allocation. However, he also incorporated various income flows and income distribution in the models, ending up with a mix of a SAM-based model including various macro, income-expenditure constraints and a dynamic input-output model constrained by capital stock growth. These models have nonlinear elements and incorporate wage and price equations, but do not seek to model market interactions.

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[51]Cardoso and Taylor (1979), for example, use the term "identity based" model to describe their Sraffian, fixed-coefficient model of distribution in Brazil. The issue of macro closure of the model, which is implicit in the choice of exogenous accounts in the SAM, carries over to the more elaborate CGE models. The question is discussed in detail in the chapter by Robinson in this volume.

Another class of nonlinear models is represented by the long-run, economic-demographic, BACHUE models.[52] These models were developed at the International Labour Organization (ILO) and were intended to provide a modeling framework that could be applied to a number of countries. They explicitly incorporate the extended functional and size distributions of income, as well as functional relations between economic and demographic variables. While the BACHUE models are nonlinear, they have a nearly-recursive structure that made them feasible to solve. They solved for wages and prices endogenously and also achieved balance between supply and demand, but not through endogenous price variation. The models focus on demographic variables and the labor market, with a much sketchier treatment of production and structural change.

5.3 Computable General Equilibrium (CGE) Models

The derivation of CGE models from SAMs is discussed in the chapter by Robinson. We focus here on the modifications of the basic CGE model needed to capture distributional phenomena.[53]

Starting from standard CGE models, both the institutional structure and the household accounts need to be disaggregated. This requires several steps. First, the endogenous institutions need to be defined so that they are both consistent with the extended functional distribution and adequate for mapping

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[52]The BACHUE model of the Philippines by Rodgers et al. (1977) is perhaps the best example of this family of models. The BACHUE models are surveyed by Sanderson (1980), who compares them with CGE models. See also the critical review of BACHUE by Arthur and McNicholl (1975) and the response by Rodgers, Hopkins, and Wery (1978).

[53]Dervis, de Melo, and Robinson (1982), chapter 12, also discusses in detail how distributional phenomena can be captured in CGE models.

income flows to the major socioeconomic classification of households. One must also move from the simpler one-consumer model to a model with many households. The institutional and household classification should delineate socioeconomic groups that are both economically and politically relevant. Second, given the partitioning of the society, a mapping of income sources of endogenous institutions is required. This mapping will consist of both the flows from value added and inter-institutional transfers. Third, the mapping from institutions to households, including inter-household transfers, must be specified. Fourth, there are a number of ways to go from the distribution of income to categories of households to the overall size distribution. One way is to specify the distribution of income within each category by a distribution function whose parameters (mean, variance, or log variance) can be estimated from the CGE model itself. The typical CGE model generates not only mean incomes for each functional category but also some income dispersion endogenously, since, for example, both wages and profits can vary by sector of activity. The overall distribution is then generated by aggregating the collection of within-group distributions.[54]

The process described above yields the size distribution by economically-active individuals. Finally, the distribution of income to households can then be derived from the distribution by individual recipients. To achieve this mapping, individual income earners must be grouped into households. One approach is to use a household composition matrix (based on survey data) which describes how individuals in different occupations (including dependents and unemployed) combine into households.

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[54]The details of this procedure are described in Adelman and Robinson (1978) and Dervis, de Melo, and Robinson (1982), chapter 12.

The theoretical roots of CGE models are diverse. Their structure is sufficiently flexible to portray, at one extreme, a purely neoclassical paradigm of complete, competitive markets with perfect price flexibility and, at the other extreme, an economy characterized by a number of "structuralist" features, as in the classical and neo-Keynesian paradigms. For example, some models that are neoclassical in spirit specify perfectly mobile capital and labor, and also have all prices flexible.[55] Most development economists, however, do not believe that such a specification offers a reasonable description of a developing country. Realistic models of developing countries usually combine structuralist features with some standard, neoclassical, general equilibrium features.

The distribution-focused CGE models fall into two broad categories: (1) neoclassical and micro structuralist, and (2) neo-Keynesian, macro structuralist.[56] The models by Adelman and Robinson (1978), M. de Melo (1979), and de Melo and Robinson (1980, 1982a,b) are all of the first type. The models by Lysy and Taylor (1980) and Ahluwalia and Lysy (1979) are of the second variety. In empirical applications, we find that the implications for the size distribution are largely unaffected by the significant differences in theoretical specification. Adelman and Robinson (1987) make this argument by comparing different theoretical specifications in a common CGE model framework applied to Korea and Brazil. This insensitivity to specification also carries across models not in the CGE family. Comparison of results from a BACHUE model of the Philippines with a CGE model of Korea indicates that the implica-

[55]See Shoven and Whalley (1974). The only example of such a flexible specification for a developing country is Kehoe and Serra-Puche (1983).

[56]These terms are defined with more care in the chapter by Robinson.

tions for policies aimed at changing the size distribution are very similar, notwithstanding the vast differences in theoretical specification.[57] There was some sensitivity to differences in initial conditions, especially with regard to land tenure and resource endowments.

5.4 Models and Policy

Empirical work with all these economywide models has yielded a few robust results:

(1) The extended functional distribution is very sensitive to exogenous and policy shocks.

(2) The size distribution is very insensitive to exogenous and policy shocks. Trends in the size distribution seem to be rooted in initial conditions, including resource endowments, asset distribution, and institutions, all of which are specified exogenously in these models.

(3) The initial effects of policy interventions rapidly dissipate throughout the economy. Programs targeted at specific groups or sectors tend to be very expensive or unsuccessful.

(4) Price changes which have a significant impact on the extended functional distribution are the agricultural terms of trade and the real exchange rate. The latter is especially significant in models that include trade restrictions and import rationing.

(5) Quantity adjustments that have a significant impact on the extended functional distribution relate to structural changes in employment,

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[57] See Adelman et al. (1979).

including population growth, aggregate employment, rural-urban migration, skill composition, and education.

(6) Alternative macro-adjustment mechanisms can have significantly different effects on the extended functional distribution. In particular, Keynesian, Kaldorian, and neoclassical macro models adjust factor shares and/or aggregate employment, and hence the extended functional distribution, differently, given the same exogenous macro shock.

(7) The size distribution is minimally affected by price, quantity, and macro interventions.

(8) The size of the poverty population is more sensitive to policy than the overall size distribution. The trick is to combine growth with little change in the size distribution --a combination that appears to make "trickle down" work.

The robustness of the above empirical results, in a variety of applied models, to variations in the underlying paradigms, theoretical specification, and functional forms is striking. There are two possible explanations, which are not mutually exclusive. One is that the course of income distribution is determined by factors not included as endogenous in the models such as the distribution of assets, institutional structure of the economy, and the dynamics of technical change. Second, the feasible space described by the accounting constraints, technology, and tastes (no matter how these are specified) is so small that it allows little room for policy impact, once the economy's basic course is set. We believe that both explanations are true, and that the models correctly reflect the great distributional inertia that characterizes the functioning of economic and social systems in non-revolutionary settings.

Under either explanation, the modelling results in applied settings suggest that, if the object of income distribution theory is to shed light on policy in practical settings, the theoretical fights among competing paradigms are of little practical significance. This is a heartening conclusion since it suggests that discussions of anti-poverty policy need not be dependent on particular theoretical paradigms and tend to be robust with respect to specific modelling choices. The downside is that, under any paradigm, it is not easy to change the course of the size distribution in an economy by non-revolutionary policies.

III. Policies, Programs, and Development Strategies

In the previous sections, we have argued that the evidence indicates that it is necessary to be concerned with distributional outcomes in the design of development policy. We have also provided different theoretical vantage points from which to view the design of such policy interventions. In this section, we consider policies based on theories of the size distribution, starting from households as the basic unit of analysis. In later sections, we widen our scope to include economywide policies.[58]

The general reformist approach to improving the distribution of income focuses on raising the absolute incomes of the poor rather than on cutting the incomes of the rich. A policy focus on raising incomes of the poor leads to a more equal relative distribution, if the rate of growth of the real income of the poor exceeds the average rate of growth of total household income and the

[58]This and the next two sections on alternative policies draw heavily on Adelman (1986).

rate of growth of the upper tail is less than the average. Substantial increases in the incomes of the poor thus improve the relative distribution as well, provided that the middle class does not lose ground. In their cross-section study, Adelman and Morris (1973) found that the middle forty percent gain consistently from development. As an empirical fact, then, a long-run focus on poverty reduction as a policy goal in development will subsume the goal of improving the relative distribution.

The focus of our section on policy will thus concentrate on poverty reduction as a means of improving the distribution. The emphasis on the poorer groups in society is consistent with any utilitarian social welfare function. Bentham defined a good society as one that achieved the greatest good for the greatest number. From a utilitarian vantage point, one can justify a more direct policy focus on the relative distribution than is adopted in the rest of this survey by noting that "deprivation" is both an absolute and relative concept. People care about the incomes received by others. The earlier discussion of social tolerance of inequality described a number of ways in which this interdependence operates to influence policy concerns.

6. Micro Based Policy Interventions

In developing countries, poverty is overwhelmingly rural. Usually, 80 to 100 percent of the population in the poorest first to fourth deciles is engaged in agricultural pursuits. The landless and the near landless are the poorest of the poor. In urban areas, the majority of the poor are unskilled workers in the service sector. But even they are generally richer than the rural poor. In developing countries, workers in the manufacturing sector,

whether skilled or unskilled, are part of the richest 20 to 40 percent of the population. Unskilled labor is the major asset owned by the poor.

The design of anti-poverty strategies at the micro level starts from the observation that the income of the poor consists of the value of the services of the assets owned by them which are sold on the market. In a very basic sense, then, the poverty problem is one of too few assets, not enough market sales, and too low a price.

All effective approaches to anti-poverty policy must therefore accomplish one or more of the following: (1) increase the quantity of assets owned by the poor; (2) increase the volume of market sales by the poor; and /or (3) increase the sale price of the services of the assets sold by the poor. The general approaches which have been advocated to achieve a non-immiserizing growth process can be grouped under these three headings.

6.1 Asset-Oriented Strategies

The quantity of assets owned by the poor can be increased either by redistribution policies (e.g., land reform) or by creating institutions for preferential access by the poor to asset-accumulation opportunities, or both. The approaches can be summarized in two slogans: "redistribution before growth" and "redistribution with growth." Adelman (1978) argues for the former approach for land and the second approach for education, while Chenery et al. (1974) argue for the latter approach for both types of assets.

Adelman (1978, 1980, 1986) examines the experience of the non-communist, newly industrializing countries that have successfully combined non-deterioration in the relative incomes of the poor with accelerated growth and

argues for: (1) tenurial reform in agriculture before implementation of policies designed to improve the productivity of agriculture, and (2) massive investments in education before rapid industrialization. Her rationale for the proposed sequence, which she calls "redistribution before growth", is twofold. First, with a better distribution of the major asset whose productivity is about to be improved and with more equal access to markets and to opportunities for improving the productivity of the major asset, most of the negative effects of change upon the asset-poor can be avoided. Second, before improvements in productivity, the redistributed asset is not as valuable as it is thereafter. Redistribution with full compensation would therefore be possible, at least in principle.[59]

Chenery's recommendations are more modest. In an approach he calls "redistribution with growth" he advocates differentially allocating a larger share of the proceeds of economic growth to asset accumulation by the poor. If, for example, the rate of growth is six percent per year, a third of the growth (or two percent of GNP) should be devoted to investment in assets owned by the poor or in assets which are complementary to assets owned by the poor. Examples of such investments include: nutrition, health, and education programs for the poor; investment in irrigation facilities for land owned by the poor; and investment in credit programs or input subsidies aimed at subsistence farmers.

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[59]Adelman (1980) argues for the establishment of an internationally financed Land Reform Fund to help countries interested in implementing land reform to design the reforms and to provide international guarantees for the nationally-issued industrial and commodity bonds used to compensate the landlords whose lands are redistributed. Montgomery (1984), in a review of land reform, supports the Adelman proposal.

6.2 Productivity Increasing Strategies

Another way to increase the price of the services of the major assets owned by the poor is to increase their productivity. This can be done through: (1) upgrading the quality of the asset owned by the poor (e.g., investment in their human capital); (2) increasing the access of the poor to complementary assets whose productivities are interrelated; and (3) productivity enhancing technical change (e.g., land intensive innovations in agriculture).

Human Capital Investments

Direct investments in the poor are desireable in and of themselves, as part of providing the poor with the minimal bundle of goods necessary to allow them access to opportunities for a full life. In contrast to the previous section, we are here viewing education as enhancing the quality of labor, rather than as increasing the stock of assets they own. The discussion which follows will focus only on how such investments can affect the productivity of the poor thereby enabling them to earn higher incomes which, in turn, would permit them to purchase the "basic needs" basket on the market by themselves at some future date. This represents one strand of the "basic needs" development strategy. [Streeten (1986).]

Investments in the nutrition, education, and health of the poor not only increase their welfare directly, but also enhance their capacities for productive labor. Much of the labor of the poor is physical. A study of food-for-work programs, found that the wage which the poor were paid was not even

sufficient to allow them to purchase enough food to replace the calories used up in earning that wage [Rodgers (1975)]. In this case, wage labor resulted in exposing the poor to higher morbidity and mortality rates and to higher health hazards than they would have had, had they remained unemployed. It is not surprising, therefore, that the productivity of the poor when employed remains low. In these circumstances, nutrition supplements or higher wages can raise the productivity of the poor.[60]

Investments in the education of the poor, through adult literacy campaigns and through increases in primary education facilities wherever the poor reside, spread the ownership of human capital. They qualify the poor for more productive jobs and narrow the distribution of wage income. They also increase the rate of rural-urban migration, thereby allowing the poor access to higher-income employment opportunities and improving the agricultural terms of trade. Primary education of females also tends to reduce population growth.

Improving the basic health status of the poor in developing countries can be achieved by investing in: mobile clinics, "barefoot doctors," environmental sanitation, potable water, and training in food preparation practices and in elementary hygiene. Such investment raises the well being of the poor, but there is little evidence of significant direct links with productivity. From a productivity point of view, the contributions of investments in better health are mostly indirect, raising the effectiveness of other productivity-enhancing investments. Better health does increase school attendance and learning while in school. It also raises the efficiency of transforming

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[60]Benefit-cost studies of nutrition supplement programs indicate their cost-effectiveness. See, for example, Reutlinger and Selowsky (1976) and Dasgupta and Rey (1984). Leibenstein (1957) argued for an efficiency-wage approach that, by paying higher-than-market wages to the poor, would raise their productivity.

nutritional intake into caloric output and therefore substantially reduces malnutrition.

Complementary Resources

The poverty of the rural poor is largely due to the meager amount of land they have to till with their own labor, combined with a low demand for hired labor by large cultivators. The most effective productivity improvements for raising the incomes of the rural poor are therefore land-augmenting investments and innovations, which stretch the yields from whatever land the poor cultivate and significantly raise demand for hired labor by larger farmers. Investment in irrigation and drainage facilities, for example, induces better water control and permits multiple cropping. Improvements in seeds through the "green revolution" can triple the yield per acre and require considerably more labor-intensive cultivation methods.

To be most effective, these innovations and investments require making complementary resources available to the poor. For example, even when, as with high-yielding varieties of wheat and rice, the more productive technologies are scale-neutral, the poor are not able to take advantage of the yield-enhancing innovations because they do not have access to water, improved seed, credit to buy fertilizer, and the technological know-how disseminated by agricultural extension services. At least in the early stages of the diffusion of such innovations, productivity-increasing innovations tend to have two opposite effects on the rural poor. They increase the demand for wage labor since the land-augmenting innovations are all quite labor-intensive. But they also reduce the price of the marketable surplus of small cultivators

since the increase in output from the larger farms generates an increase in overall supply in the face of inelastic demand. Large farmers benefit since they can increase their sales volume. But small farmers lose since they are not able to take advantage of the yield-increasing innovations. The initial net impact of agricultural innovations upon the rural poor therefore depends on the share of their income which they derive from farming as opposed to wage labor.

The backwash effects of the yield-enhancing innovations upon the near landless could be avoided if institutions were developed to provide them with access to the complementary resources needed to shift to more productive technologies. In order of decreasing importance, the necessary resources appear to be: credit, irrigation and drainage facilities, improved seed and fertilizer, and agricultural extension.

7. Institutional Reform

Structural change associated with development simultaneously: increases the absorption of some factors; displaces other factors; and generates geographic and sectoral reallocations of all factors. The net effect on the poor of these processes of displacement, absorption, and labor force redistribution depends upon institutions in factor and product markets. Segmentation of factor markets prevents the evening out of unemployment in some regions and sectors with labor shortages in others. Socially induced rigidities, lack of adaptability of skills, or absence of capital and information, may prevent the poor from counterbalancing the contractionary influences to which they may be exposed with expansionary ones elsewhere, in either the short or medium run.

7.1 Labor and Credit Markets

Studies of the structure of labor markets in developing countries indicate that they do not function in a neoclassical manner. For example, Bardhan (1980) argues that labor markets are interlinked with credit markets and that the wage rate is lower than the undistorted market-clearing wage would be.[61] Much of this work draws on the theory of implicit contracts to establish the nature of the equilibrium in agricultural labor and land markets.[62] Hayami and Ruttan (1971) and Hayami and Kikuchi (1982) find that in periods of substantial structural and technological change, contracts are changed in a manner which works against the weak and poor, minimizing the benefits they reap from development. The interlinked contracts reduce transactions and enforcement costs, circumvent incomplete markets, and reduce moral hazard with respect to work-monitoring [Bardhan (1986)]. However, the interlinking also poses barriers to mobility by making both entry and exit from the interlinked contracts more difficult. Interlinking also increases the power of the landlord vis a vis the peasant, and operates to segment the labor market. Institutional reforms to unbundle labor markets by making sources of rural consumption and production credit available to farmers on reasonable terms therefore appear essential for allowing the poor to benefit from employment opportunities which open up as a result of growth and structural change.

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[61] See also, Braverman and Srinivasan (1981), and Braverman and Stiglitz (1986).

[62] See, for example, Newbery (1977), Cheung (1969), Bell and Zusman (1976), and Stiglitz (1974). A recent survey of a number of these issues is provided by Binswanger and Rosenzweig (1981).

7.2 Land Markets

There is a vast literature on land reform in less developed countries.[63] There are two aspects of land tenure which are relevant for our purposes: the size of land holdings and the extent to which the cultivator reaps the benefits from his actions. Small, scattered, uneconomic holdings are the largest single cause of poverty in rural areas. Insecure tenancy or sharecropping contracts with too large a share of output going to the landlord blunt incentives to invest and improve productivity. Agrarian reforms which increase subsistence holdings and strengthen the link between cultivator choices and their net incomes are essential to reducing rural poverty. The recent success of the Chinese institutional reforms in agriculture shows the power of market incentives upon farmers.

Agrarian reform may be defined as a rapid change in one or more aspects of agrarian structure: land title; manner and scale of operation; relations between the cultivator, landowner, supplier of critical inputs, and marketing institutions; and the nature of the interlinking of all these characteristics [World Bank (1975)]. Actual agrarian reforms have been of many different types. Some land reforms have guaranteed security of tenure to the cultivator without affecting the vesting of land titles or the scale of operation. Others have involved land redistribution without directly changing the relations between the land operator and suppliers of inputs; while still others have altered relations between suppliers of inputs and farm operators without

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[63] See surveys by Dorner (1971), Barrachlough (1973), de Janvry (1981), and Montgomery (1984).

directly modifying land titles and scale of operation. Of course, since agrarian structure is an interrelated whole, changes in any feature affect other features, and may either strengthen the reform or nullify it.

The actual goals of land reforms are always both economic and political. Politically, the reforms aim at gaining political support, either stabilizing an old regime or increasing the support base for a new one. The economic aims of land reform vary. Progressive reforms aim at increasing the incomes and productivity of the small cultivators and at strengthening the links between the decisions of farm operators and the incentives they face. Conservative reforms aim at maximizing the extraction of marketable surplus.

The history of agrarian reform since World War II has been checkered and characterized by waves. The land reforms of the 1950s were mostly either revolutionary (as in Cuba) or based on the postwar American occupation (as in Japan, Taiwan, and Korea). By and large, they were quite successful. These land reforms were followed by a wave of conservative reforms in the 1960s aimed at reducing rural tensions and averting revolution. These land reforms were generally more limited in scope and their success more varied. The majority proceeded slowly and cyclically, depending on the commitment of the regime in power to reform, the resistance of affected landowners, the support by the intended beneficiaries, and the post-reform political and administrative organization. In India, Iraq, and Syria, the reforms were largely stalled. There has been a vicious circle between low commitment to reform, slow initial spread of implementation, time for the organization of counter forces against reform, disappointment in the benefits from reform, and hence weak support for the reform by its intended beneficiaries, and an eventual stalling of the reform process. Not infrequently, the reform process starts again five to ten

years later when a new leadership comes to power which feels it has to consolidate its strength, reduce agrarian unrest, or deliver on its campaign promises. The early 1970s saw more radical reforms in a few Latin American countries (Chile and Peru); but since the mid-1970s, only Nicaragua and, debatably, El Salvador have initiated new redistributive land-reform legislation.

Virtually every recent study of Third World agriculture stresses the economic superiority of agricultural development based on small owner-operated farms [World Bank (1982); Ladejinsky (1977)]. The most comprehensive study of land tenure to date is that of Berry and Cline (1979). They used aggregate cross-country data for different samples of 20, 30, and 40 developing countries and farm level studies in six countries to conclude that: (1) there is no evidence that farming is subject to increasing returns to scale; (2) both total factor productivity and the productivity of land are higher on small farms than on large ones; and (3) there is no evidence in favor of the common ssertion that large farm size increases agricultural dynamism. They conclude that land redistribution into family farms is an attractive policy instrument for increasing output, enhancing employment, and reducing rural inequality.

The East Asian land reforms of the 1950s increased the productivity of agriculture, enabled the acceleration of economic growth without a concomitant deterioration in the distribution of income, enhanced rural political stability, and generated fairly high rates of rural savings. The Latin American agrarian reforms in Bolivia, Chile, Mexico, Peru, and Venezuela had more varied economic outcomes. However, after an in-depth study, Eckstein et al. (1978) concluded that, with the possible exception of Peru, the effects of these reforms on agricultural production were generally positive, and that they uniformly improved the distribution of income despite the fact that none

of the reforms extended to all of the rural landless. The critical variables explaining the economic impact of land reform were the post-reform public support policies, the post-reform tenurial arrangements, the type of pre-reform lands redistributed, and the socioeconomic characteristics of the beneficiaries. Experience with land reform indicates that "land to the tiller" programs, complemented by appropriate infrastructural, institutional, and financial follow-up, are likely to contribute significantly to both efficiency and equity.

The recent lack of interest in the implementation of agrarian reform is surprising in view of the economic and political success of reforms when they are implemented on a sufficient scale and with sufficient speed and post-reform follow-up. There is a growing recognition that efforts to reach the poor and small farmer with productivity-enhancing programs are greatly hampered by existing tenurial conditions where no land reforms have been implemented. Indeed, the urgency for land reform is even greater now than it was in the 1960s. First, the rural development programs of the 1970s have resulted in increasing inequality as the incomes of large commercial farms increased while those of small, family farms remained at best unchanged. Second, there has been a tendency for reverse land reform. For example, in countries such as Bangladesh and Kenya, there are reports of privatization of land previously held as commons. Third, industrialization is increasingly displacing rural cottage industry, thereby reducing opportunities for nonfarm income of small farmers. Fourth, traditional relationships between employers and workers are changing in response to the introduction of new grain varieties. These changes have generated social strains, unrest, and a movement toward relations

involving greater market risk for both the worker in the labor market and the employer in the output market.

The case for land reform is thus quite strong on both productivity and equity grounds. Many of the obstacles to implementation could be overcome by the creation of an internationally funded land reform fund that could help with the design of the reform, provide guarantees of compensation to landowners, and provide funds for follow-up programs [Adelman (1980)]. In the early 1970s, there were examples of several regional agricultural projects funded by the World Bank that did just that.

8. Alternative Development Strategies

In the absence of major asset redistribution and institutional change, the choice of development strategy becomes the principal means for raising the relative incomes of the poor. With this restricted view of policy options, once the course of the economy has been set by the choice of development strategy, policies and programs aimed at changing the primary distribution of income can accomplish very little. As discussed earlier, work with CGE models indicates that the size distribution of income tends to be quite stable around the trend established by the basic choice of development strategy. This result applies to both transfer programs and poverty-oriented investment projects. After any intervention, even when sustained over time, the size distribution of income tends to return to the pre-intervention distribution. Only large, well-designed, complementary packages of anti-poverty policies and programs can change the primary distribution of income significantly. But, to

be effective, they must essentially amount to a gradual change in development strategy.

The strategy choice governs the speed of absorption of labor into the modern sector, the extent of the income gap which develops between the modern and the traditional sectors, and the degree of income inequality within sectors. The major policies which foster absorption into the modern sectors are reliance upon more labor-intensive growth in the modern sectors. The labor intensity of growth can, in principle, be changed either by expanding the share of labor-intensive products and sectors in total employment or by increasing the labor intensity of production of a given output mix (i.e., by appropriate technology). Of the two, the first process appears to be the most effective. Artificial shifts away from best-practice technology for a given factor mix reduce the amount of output obtainable from a given amount of resources. This approach is therefore less effective than shifting the mix of output towards sectors requiring a mix of resources which corresponds more closely to the basic factor endowments of the labor-abundant economies of developing countries.

8.1 Demand Generating Strategies

Since the assets owned by the poor consist largely of unskilled labor, development strategies that increase the absolute and relative demand for unskilled labor, coupled with institutions which enhance labor mobility and access to jobs by the poor, will benefit the poor most. Once institutional conditions have been established that permit access by the poor to high-productivity jobs, equitable growth requires strategies that stress rapid growth

in high-productivity, labor-intensive sectors and activities. The most labor-intensive sectors in any economy are agriculture, light manufacturing, and some types of services, particularly construction.[64] But these are not necessarily high-productivity sectors. Generally, in developing countries, labor-intensive manufacturing is a (relatively) high-productivity sector, while agriculture and labor-intensive services are low-productivity sectors. The policies required to foster high-productivity, labor-intensive growth are therefore quite different in different sectors.

Strategies that stress employment growth in manufacturing must focus primarily on generating demand for the output of the labor-intensive industries. In smaller countries, this implies that development will have to be oriented towards export markets. The small countries that follow this approach must therefore adopt a strategy of export-led growth and tailor their incentive policies to be compatible with such a strategy. In large countries, industrialization can be oriented towards the domestic market, particularly when the distribution of income is not too skewed. [de Janvry (1984)]

By contrast, strategies that focus on agriculture or on services can appeal to existing demand, but must concentrate on increasing the productivity of labor in these sectors. There are no known technologies for increasing the productivity of purely labor-intensive services nor are there any developing countries in which the service sector has been a leading sector.[65] The choice

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[64]Many services, such as banking and insurance, are skill-intensive rather than labor-intensive.

[65]Historically, Holland is about the only example of a country which pursued a service-led growth strategy. For a discussion of leading sectors in contemporary semi-industrial countries that supports the generalization made in the text, see Chenery, Robinson, and Syrquin (1986).

therefore is between a labor-intensive manufacturing strategy, on the one hand, and an agricultural strategy, on the other.

More specifically, the promising strategies entail either: (1) reliance upon export-oriented growth in labor-intensive manufactures; and (2) reliance upon agricultural development led industrialization (ADLI) in an outward-looking trade policy regime. In either case, trade strategy is critical. In the first strategy, the important function of trade is to provide markets and access to technology.[66] In the second, an ADLI strategy requires a shift within agriculture toward high-productivity food crops and a change in the structure of agricultural trade involving both lower exports and lower imports. The increased agricultural incomes, however, will lead to an increase in the demand for manufactured wage goods, which have a significant import component. The strategy thus requires major changes in the structure of trade and, hence, would be endangered by policies designed to restrict the volume of trade.

During the coming decade, some argue that the agricultural strategy looks more promising for most developing countries which do not yet have an established position in manufacturing-export markets.[67] The choice between the two strategies depends on two factors: (1) the size of the direct and indirect employment multipliers from expanding either labor-intensive manufactures or agriculture; and (2) the cost and feasibility of entering export markets, on

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[66]For a discussion of the advantages of a development strategy based on manufacturing exports, see the chapter by Balassa in this book.

[67]See Adelman (1984), Mellor (1976), and Singer (1979). In a sense, the arguments for an ADLI strategy are similar to those put forward in the 1960s in favor of balanced growth. For a review of the earlier debate, see Scitovsky (1959).

the one hand, versus the cost and feasibility of increasing agricultural productivity, on the other.[68]

Simulations with the two alternative strategies in a CGE model of South Korea by Adelman (1984) and in a global, multi-regional, CGE model by Adelman, Bournieux, and Waelbroeck (1986) indicate that both strategies can be effective in achieving higher growth rates and better distributions of income. However, they also indicate that, during a period of low growth in world demand for labor-intensive manufacturing exports (which is likely to be typical of the rest of the 1980s), the agricultural strategy is more effective. It results in less inequality and poverty, as well as in a higher rate of growth and a better balance of payments.

The basic reasons for the superiority of the agricultural strategy are: (1) agriculture is much more labor-intensive than is even labor-intensive manufacturing; (2) increases in agricultural productivity generate increases in demand for the labor of the poorest of the poor, agricultural landless labor; (3) increases in agricultural incomes generate high leakages into demand for labor-intensive manufactures on the consumption side and for manufactured inputs on the production side; (4) expansion in agricultural production is less import intensive than is an equivalent increase in manufacturing production; (5) increases in agricultural output with good-practice, developing-country technology are less capital intensive than increases in manufacturing; and finally (6) the agricultural infrastructure required to increase agricul-

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[68]Little, Scitovsky, and Scott (1970), Bhagwati (1978) and Krueger (1978), Balassa (1985), Balassa and Associates (1982), and the staff of the World Bank espouse the manufacturing strategy, while Mellor (1976), Adelman (1984), and Singer (1979) advocate the agricultrural strategy.

tural productivity (roads, irrigation, and drainage facilities) has a high labor-output ratio.[69]

It should be noted, however, that the success of both strategies depends on certain institutional and asset distribution prerequisites. The labor intensive growth strategy in manufacturing requires a wide distribution of education and low barriers to access to jobs by the poor. The agricultural strategy requires that tenurial conditions in agriculture be favorable enough so that small farmers have both incentives to improve productivity and access to the necessary complementary resources, particularly credit and water. Both strategies will fail if rapid productivity growth in the leading sector is not achieved.[70]

Both strategies also have implications for price policies. The trade-oriented strategy requires a price policy that does not discriminate against exports by means of an overvalued exchange rate and tariffs.[71] The agricultural strategy requires a price policy that allows farmers to capture some of the benefits from improvements in agricultural productivity. It therefore

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[69]See Lewis (1977) who is a strong proponent of a rural-public-works approach to poverty alleviation. To the extent that improving agricultural productivity requires infrastructure such as roads and irrigation facilities, it is dependent on a rural public works program. Such a program then becomes a necessary part of the agricultural strategy.

[70]For a discussion of the productivity requirements for successful manufacturing export-led growth, see Chenery, Robinson, and Syrquin (1986) and Kubo, Robinson, and Urata (1987). The institutional implications of manufacturing export-led growth are discussed in Balassa (1985).

[71]Indeed, the definition of outward-led growth is that incentives for domestic sales and foreign sales are neutral. See, for example, Balassa and Associates (1982), Krueger (1978), and Srinivasan (1983).

implies a terms-of-trade policy which shares the income benefits of increased output between urban and rural groups.[72]

8.2 Price Increasing Strategies

Development strategies that benefit the poor can operate not only by increasing quantity demanded for the services and commodities sold by the poor, but also by increasing their prices. Price-increasing strategies can operate through factor markets, through commodity markets, or through increasing the productivity of the assets owned by the poor. Price-increasing strategies which operate through factor markets must raise the wages of the poor. The labor-intensive growth strategies discussed above can also lead to rising average real wages since they involve an increase in the demand for labor. Success in raising real wages depends on: (1) how quickly the supply of surplus labor is depleted (the Fei-Ranis turning point), and (2) whether the government supports or directly engages in general wage-repression policies.

Even if average wages rise, the wages of the poor may not. The result for the poor depends critically on how the labor market operates. If barriers to access to jobs by the poor are low and the amount of unemployment and underemployment is small, an increase in the demand for labor will raise the wage rate of the poor. On the other hand, if there are institutional or economic barriers to an increase in the quantity of labor which can be sold by the poor (for example through interlinking, obstacles to migration, or large transactions costs), the increase in total labor demand engendered by the

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[72]Terms-of-trade problems have, of course, haunted agricultural policy in all countries. For a discussion in the context of developing countries, see Krishna (1982) and de Janvry and Sadoulet (1985).

strategy will augment the wage rate of the non-poor, while leaving the wage rate of the poor largely unchanged. The poor may benefit some through a second-round multiplier effect on their employment. The effects of demand-increasing strategies on the price of labor therefore critically depend on the institutional organization of the labor market.

Price-increasing strategies that operate through commodity markets must raise the prices of the goods produced with the labor of the poor. An increase in the agricultural terms of trade will benefit all farmers, including subsistence farmers. An increase in the terms of trade will also benefit landless workers, even though they are net buyers of agricultural produce, by increasing the demand for their labor. Given the usual employment elasticities in agriculture in developing countries, the employment effect raises the nominal income of landless labor roughly in proportion to the increase in agricultural prices, while the food-price effect reduces only that fraction of their income which the landless spend on purchased food. In the case of the urban poor, unless counteracted by price subsidies, the change in terms of trade will reduce their real wages. However, the urban poor, poor as they are, are richer than the rural poor. The net effect of improving the agricultural terms of trade will be a reduction in overall poverty.

8.3 Policy Summary

This review of policy approaches to improving the distribution of income through poverty alleviation suggests a number of lessons.

First, successful strategies, policies, and programs for poverty alleviation exist. Indeed, between 1960 and 1980, there has been substantial pro-

gress in reducing the share of the population living in poverty in the non-socialist developing countries as a group, despite the fact that the distribution of income has also become substantially less equal.

Second, approaches to poverty alleviation require the implementation of mutually consistent, mutually reinforcing, multifaceted packages of programs and strategies. The most effective approaches entail a combination of several elements: asset-oriented programs, institutional reforms to encourage access of the poor to jobs and resources that enhance the productivity of their assets, and development strategies which generate a rapid increase in the demand for unskilled labor.

Third, approaches to poverty alleviation are not unique. More than one method exists to achieve each element of the packages described above. The choice among instruments needs to be tailored to each country's particular initial conditions, its resource base, size, asset distribution, institutional structure, and socio-political configuration, as well as to the external conditions and trends which the country faces. Choices among packages and programs for rapid progress towards poverty alleviation entail political choices among competing goals and instrumentalities. A critical element in the political choice is the speed and time phasing of progress towards this goal. The most effective strategies are likely to vary over time as both the initial conditions within the country and the economic and political environment in which the country operates change dynamically.

Fourth, the sequence in which different policy interventions are taken up is important. The most effective approach to poverty alleviation entails implementing asset-oriented policies and institutional changes designed to give the poor access to high productivity jobs before, not after, shifting

development strategies. If that is done, there is no tradeoff between growth promotion and poverty alleviation. The same development strategy is optimal for both goals.

Finally, strategies for poverty alleviation are not compatible with just any kind of economic growth. While all successful strategies require growth, it must particular kinds of growth. Two development strategies appear to promise the poor the most: (1) reliance upon export-oriented growth in labor intensive manufactures, and (2) reliance upon agricultural-development-led industrialization. Adelman (1984) argues that the coming decade is likely to involve low growth in world demand for labor-intensive manufactured exports. In this case, the ADLI strategy is likely to be superior on both growth and distribution grounds.

IV. Conclusion

In this survey, we have indicated how concern with distributional issues involves an interweaving of stylized facts, theoretical paradigms, experience with applied models and policies, and societal concerns expressed through political processes. Whatever ethical judgments one might have about social welfare, concern with distribution is central to the political decision-making process in all systems. In policy analysis, therefore, economists cannot ignore such concerns. Indeed, it seems odd even to have to make the point!

The are a few lessons from the postwar experience of developing countries. First, there is an inevitable initial deterioration in the distribution of income which reflects the uneven, disequilibrium nature of the initial

phase of the development process. Second, the persistence of this deterioration into the middle and later phases of development is more a matter of policy choice. There is a variety of country experience, some quite successful in marrying rapid industrialization with at least no deterioration in the relative distribution and with rapid reduction in poverty. There are also a number of spectacular failures, some combining successful growth with substantial increases in inequality, and others failing on both fronts.

There are several distinct strands of theoretical analysis of distributional issues. The neoclassical model, the most thoroughly developed theoretical framework, has the least to say about distributional concerns. In their grand dynamics, the classical economists, whether Marxian or Ricardian, provide a better framework for analyzing distributional issues. However, they limited themselves to the functional distribution. If one is concerned both with welfare and with providing analysis that reflects political reality, one must go beyond the classical analysis and incorporate both the size and extended functional distributions into an integrated framework.

The theoretical debates have been very heated. When it comes to policy analysis that is anchored in empirical economywide models, however, it turns out that the policy implications of alternative paradigms are far less striking than one would have thought from theoretical analysis. Models in different paradigms yield similar results for the impact of typical policy interventions on the overall size distribution. The different underlying economywide models all focus on the impact of shocks and policies on the extended functional distribution. Empirical models in each of the paradigms indicate that the extended functional distribution is indeed sensitive to such shocks and changes. These models, however, also indicate that the overall size distribu-

tion is insensitive to shocks. The empirical fact is that the link between changes in the extended functional distribution and changes in the size distribution models is diffused. The differences between the way the models incorporate the extended functional distribution are not translated into differences in size distribution, and the policy results with regard to the size distribution are, in fact, similar.

The fact that the size distribution is relatively insensitive to shocks under a variety of theoretical specifications does not mean, however, that policy does not matter. To the contrary, our review indicates that the extent and incidence of poverty are strongly affected by policy choices with regard to: asset-oriented policies, productivity-enhancing policies, institutional reform in factor markets, and overall development strategy. The impact of policy choice on the relative size distribution is considerably weaker, but potentially significant.

Much has been learned about the interactions between income distribution and development. Advances have been made through an interplay among three strands of analysis: investigation of the stylized facts, theoretical explanations, and empirical modelling. It has also been an area where policy concerns have been a major driving force behind the analysis, and one which has strained the boundaries of "standard" economics. As interest in distributional questions waxes again, we hope that future work will further strain those boundaries, providing a vehicle for bringing back into economics the sorts of institutional, social, and political concerns that preoccupied the classical economists.

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