Hollis B. Chenery

Interaction between Theory and Observation in Development

World Bank Reprints


No. 263. Carl Dahlman and Larry Westphal, “Technical Effort in Industrial Development: An Interpretative Survey of Recent Research,” *The Economics of New Technology in Developing Countries*

No. 264. Michael Bamberger, “The Role of Self-Help Housing in Low-Cost Shelter Programs for the Third World,” *Built Environment*


No. 266. Bela Balassa, “Outward Orientation and Exchange Rate Policy in Developing Countries: The Turkish Experience,” *The Middle East Journal*


No. 268. Stephen P. Heyneman and William A. Loxley, “The Effect of Primary-School Quality on Academic Achievement across Twenty-nine High-and Low-Income Countries,” *The American Journal of Sociology*

No. 269. James R. Follain, Jr., Gill-Chin Lim, and Bertrand Renaud, “Housing Crowding in Developing Countries and Willingness to Pay for Additional Space: The Case of Korea,” *Journal of Development Economics*


Interaction between Theory and Observation in Development

HOLLIS B. CHENERY


Summary. - The author reviews empirical research carried out over the past 30 years with respect to the process of development. He first examines the extent to which economic theories and generalizations derived from the experience of the developed countries are relevant to the developing countries. He next explores the relationship between the 'structural transformation' that occurs in the process of development and economic growth, summarizing his own current research on several issues. Finally he compares applications of the neoclassical growth model to both the more advanced countries, whose economic transformation is near completion, and the developing countries still in the process of structural transformation. The author argues that further empirical work can reduce the controversy between neoclassical and structural approaches to development by making possible the formulation of computable models in which the distinction between developing and developed countries can be largely reduced to observable differences in certain statistical parameters: initial conditions, price and income elasticities, and adjustment lags.

1. INTRODUCTION

The study of less developed economies has emerged as a separate field of economics in the past 30 years. Like other applied branches, development economics has been motivated as much by the needs of policy makers as by opportunities for theoretical analysis. Despite this practical orientation, the theoretical underpinnings of the field have evolved considerably from the early application of existing neoclassical and Keynesian concepts in the 1950s to the more recent formulation of distinctive models designed to explain the observed phenomena of development.

What has been the feedback from this evolution to the general body of economics? Most of it has come from the interaction between theory and observation in which the samples studied include both developed and less developed economies. Under this heading one can distinguish two types of contribution: (i) generalizations of existing theories from testing them against a larger and more diverse body of experience; (ii) the evolution of new concepts to explain empirical phenomena. Both types are illustrated in the first section of this paper.

Although this interaction has been quite fruitful, its implications for the field of economic development are not yet clear. Will it be incorporated into a more comprehensive form of analysis or will it maintain its focus on the special problems of less developed countries? The potential benefits of the first alternative are illustrated in the second section of the paper, which examines the apparent differences in the sources of growth of developed and developing countries.

2. STYLISTIC FACTS AND EMPIRICAL TESTS

The comparative studies initiated by Colin Clark and Simon Kuznets have identified similar patterns of structural change in the historical experience of the advanced countries and compared them to recent trends in developing countries. This approach has provided a basis for testing a variety of hypotheses concerning the universality of economic behaviour. In some fields the result has been to strengthen existing formulations and extend their range of application. In others the existing theoretical base has proved to be too narrow to accommodate the range of observed behaviour, and the empirical tests have led to alternative hypotheses. I will consider examples of both types.
(a) Extending existing theory

Fields in which attempts to apply existing theory to developing countries have been generally rewarding include consumer behaviour, international trade, fiscal policy, and — with some qualifications — the theory of production. Starting with Houthakker’s (1957) confirmation of the validity of Engels’ Law in virtually all cases, the theory of consumer behaviour has been tested in cross-section and time-series studies of a number of developing and developed countries. The synthesis provided by Liuch, Powell and Williams (1977) takes advantage of observations from countries having a wide range of income levels to verify the existence of quite uniform income and price effects for all countries as well as some systematic shifts associated with the level of income.

Economic theory has also benefited considerably from attempts to analyse trade among countries at different levels of development. Measurement of the factor endowments of different countries and factor proportions of different commodities has made it possible to apply the Heckscher-Ohlin analysis of comparative advantage to a wide range of countries and commodities. The identification of a category of semi-industrial countries intermediate between advanced and less developed, and the emergence of the oil exporters as a significant trading group, have opened up a range of questions concerning the evolution of the trade patterns of each group. The greater specialization of less developed countries also makes them more susceptible to the effects of changes in their terms of trade on growth, which has been widely studied in recent years. The term came into general use in the postwar period to indicate that something more than increased output was required to raise the welfare of poor countries. Over time the term has acquired a number of connotations and has no agreed definition for all purposes.

The theory of production has been tested in comparative studies of developing and developed countries at both aggregate and sectoral levels. As in the case of consumer demand, these studies have led to some extensions of the underlying theory, but at the same time they have identified systematic differences among countries that are not explained within the neoclassical paradigm. While demand functions have been effectively studied without specifying other aspects of the economy beyond income levels and selected prices, similar approaches to the estimation of production functions have been less successful. Although the a priori case for assuming technological regularities across countries would appear to be at least as strong as that for uniform consumer preferences, nothing comparable to Engels’ Law has yet emerged from similar efforts at cross-country and time-series estimation.

In the intercountry study of production functions, attention has been focused on two sets of parameters: the elasticity of substitution among inputs and the rate of productivity growth. The estimates of elasticities of substitution seem to be very sensitive to the choice of samples and definitions of sectors, so that no stable ranking of sectors by degree of substitutability has yet emerged. Productivity growth seems to depend more on the economic environment of different countries than on the differences among sectors.

The last observation suggests that the omission of variables describing other aspects of the economy may be the source of the difficulties encountered. Price distortions, surplus labour and other country characteristics affect most sectors of the economy and need to be allowed for in some way. This problem is taken up in the next section.

(b) The concept of development

The most notable effect of the interaction between theory and observation is the evolution of the concept of economic development itself. The term came into general use in the postwar period to indicate that something more than increased output was required to raise the welfare of poor countries. Over time the term has acquired a number of connotations and has no agreed definition for all purposes. As Little (1982, p. 5) points out, much of the difficulty in defining development stems from differences in value judgments concerning social objectives.

The empirical studies of the past 30 years have made it much clearer how countries have developed even though they have not resolved some basic questions as to how they should. The central concept of development that has emerged from comparative studies is the ‘structural transformation’ required to sustain increased output or consumption. Kuznets’ work demonstrates the usefulness of analysing related shifts in resource allocation by measures such as the composition of demand, production,
trade and employment. The extent to which the structural transformation has been similar among countries in the postwar period is explored in Chenery and Syrquin (1975).

One of the earliest and most influential theories incorporating the main features of the structural transformation is Lewis' (1954) theory of a dual economy. His basic assumption is that there is a substantial category of developing countries in which the marginal productivity of labour is relatively low in traditional sectors such as agriculture and hence the supply of unskilled labour is quite elastic. The reallocation of such 'surplus' labour to more productive uses and the accompanying growth of savings form part of a distinctive growth mechanism that can persist so long as there are potential gains from reallocating resources.

A common feature of dual economy theories is that they provide an explanation of some of the central features of the transformation, such as the reallocation of labour among sectors and the potential acceleration of growth. Furthermore, the initial structure of demand and production and their change over time constitute an essential aspect of the theory, in contrast to general neoclassical theory in which the sectoral composition of growth is essentially irrelevant. As will be discussed below, this is the main point of difference between structuralist and neoclassical analyses of development.

The principal factor linking growth to structural change is the time required for the economy to adjust to changes in demand and supply, which leads to persistent differences in factor returns in different uses. The longest lags are in complex demographic phenomena, such as the demographic transition from high to low birth rates and the migration from rural to urban areas, both of which take several generations. Lags of ten years or more are common in adapting to changes in comparative advantage, particularly when these require a shift from primary exports to light manufactures involving a very different set of infrastructure and labour skills. While a well-functioning price mechanism can reduce the time required to bring about shifts in resource allocation, in practice lagged responses are a nearly universal characteristic of the structural transformation and the neoclassical equality of returns to factors in all uses is the extreme case.

The remainder of this paper will be devoted to an examination of the effects of introducing elements of structural analysis into the theory and measurement of sources of growth. Here it is possible to compare the results of applying the neoclassical framework to both developing and developed countries and to test the significance of the additional factors suggested by disequilibrium hypotheses related to the structural transformation. Since there is no sharp distinction between countries at different stages of the transformation, the study of growth in advanced countries may also be enriched by the adoption of a broader analytical framework.

3. GROWTH AND TRANSFORMATION 9

The concept of the transformation sketched above leads to quite a different view of the sources of growth in countries to which it applies than the concept of neoclassical or equilibrium growth. Growth may be retarded by the requirements of rapid structural change because of lags or imperfections in the mechanisms by which resources are allocated, but it can also be accelerated when these imperfections are overcome. If such a sequence is characteristic of a significant group of countries, it can provide a partial explanation of the acceleration of growth that has been characteristic of a large number of middle-income countries in the past 20 years. In this context, the neoclassical growth model can be seen as a limiting case in which there are no departures from competitive equilibrium and growth converges to a steady rate determined by population growth and technical progress.

On a priori grounds, lags in reallocating resources and differences in factor returns can be expected to be more important in countries starting from an initial disequilibrium or undergoing rapid structural change. Conversely, the neoclassical assumptions should fit better in the more developed countries where the economic transformation is closer to being completed. Since the neoclassical model has been widely applied, it provides a useful point of departure.

(a) Equilibrium growth

The neoclassical growth equation as developed by Solow (1957) has provided the basis for empirical work in at least 40 countries. This equation is derived from an aggregate production function that explains total output as a function of capital and labour inputs and time. In measuring aggregate capital and labour, each component is weighted by its marginal productivity; the same procedure could, in principle, be applied in the disequilibrium case in which
factors may receive more or less than their marginal products.

It is the assumption of competitive equilibrium in all factor and product markets that leads to the well-known equation for equilibrium growth that can be estimated relatively easily

\[ G_V = \beta_K G_K + \beta_L G_L + G_A \]  

(1)

where \( G_V \), \( G_K \), \( G_L \) and \( G_A \) are the growth rates of total output (value added), capital, labour and total factor productivity, and \( \beta_K \) and \( \beta_L \) are the shares of capital and labour in the total product.  

In subsequent work the conceptual basis for this equation has been extended to include changes in the quality of inputs as measured by the returns to different types of labour and capital.  

From the work of Christensen, Cummings and Jorgensen (1980), Elias (1978) and others, estimates of the three sources of growth — capital, labour, and factor productivity — are now available for a substantial number of developing as well as developed countries for several postwar periods. These provide a basis for the comparison of growth processes in these two groups as well as a starting point for testing the importance of other factors.

The main question that has been studied in this framework is the relative importance of the three factors in equation (1) in different countries.  

The answers to this question from separate country studies provide a starting point for examining the variation in these proportions with the rate of growth and the possibility of differences among groups of countries. Because of the arbitrary nature of some of the estimates of \( \beta \) in equation (1), I will concentrate on the division of sources of growth between total factor inputs \( (\beta_K G_K + \beta_L G_L) \) and total factor productivity, \( G_A \).

Figure 1 summarizes the results of studies of 12 developed countries and 18 developing countries that cover periods of a decade or more centred on the 1960s.  

For the world economy this period falls between the postwar recovery of the 1950s and the oil crisis of 1973.
and was characterized by generally high and stable growth. The chart plots the two elements in equation (1) so as to indicate the trade-off between them along lines of constant growth and also shows its relation to the rate of growth. The bulk of the countries observed had growth rates of between 4 and 7% during this period. The nine developed European countries form a distinct group (A) characterized by low labour growth (1%), which is offset by high TFP growth. (The United States and Canada have somewhat higher growth of labour and less TFP growth.)

The typical middle-income developing countries in Group B, by contrast, have high growth of labour inputs (3%) and hence somewhat higher growth of total factors. Under equilibrium assumptions, they achieve only a quarter of their total growth from productivity increases. At the extreme of this pattern is Brazil, which achieved a growth rate of 7% with TFP growth of only 1.5%.15

The six outliers in group C have growth rates averaging over 10%, achieved in roughly equal proportions by higher factor inputs (mainly capital) and higher TFP growth as compared to group B. Not surprisingly, the group consists of Japan plus five semi-industrial countries – Israel, Spain, Hong Kong, China/Taiwan, and Korea – that tend to be outliers in most comparative studies. In the next section it will be shown that their growth performance can be explained much better when the effects of resource reallocation are added to the elements contained in the equilibrium model.

These results have been tested in more formal regression analyses based on pooled observations for earlier periods as well as 1960–1973. Although there were a few significant changes in growth rates between the two periods, the significance of the differences between developed and developing countries, and between groups B and C of developing countries, is strongly confirmed. Adoption of the Denison methodology instead of the Jorgensen–Griliches (1967) approach would accentuate the difference between groups A and B, since the estimated quality changes are smaller in group B.

(b) Disequilibrium growth

Attempts to allow for the effects of disequilibrium in estimating sources of growth date from the 1960s. Denison (1967) allows for the continuing shift of labour out of agriculture in developed countries, showing that in the early postwar period it was quite significant in Japan, Italy, Germany and France. Other authors estimated the sources of growth from cross-country regressions, which make it possible to test the effects of other variables and avoid the necessity of assuming that returns to capital and labour are equal to their marginal products.16

Since it has only been possible to estimate an aggregate production function directly without resorting to the general equilibrium assumptions in a few cases (e.g. Bruno, 1968), cross-country studies provide some of the best evidence on the importance of disequilibrium factors.

Cross-country studies can shed light on the following questions:

(i) How important are resource reallocation and other disequilibrium factors to the explanation of growth?

(ii) Are there significant differences between developed and developing countries in this respect?

(iii) What is the effect of dropping the assumption of competitive equilibrium on estimates of the Solow growth equation?

The earlier studies focused on the first of these questions.17 For this purpose it was not necessary to formulate an explicit model. The results show significant associations of growth with resource reallocation, export expansion, capital inflows, and several other factors related to the structural transformation.

Feder (1982) has carried this methodology a step further by modelling the effects of resource reallocation and export expansion explicitly and estimating regression equations that reflect them. Since his results cover both developed and semi-industrial countries for the period 1964–1973, they can be compared to the equilibrium estimates reported above.

The general form of the regression equation used in all the studies cited is an extension of equation (1)

\[ G_V = a_0 + a_1 \left( \frac{L}{P} \right) + a_2 G_L + a_3 X_A + a_4 X_E + a_5 X_t \]

where \( X_A \) is a measure of the shift of resources out of agriculture, \( X_E \) is a measure of the growth of exports, and \( X_t \) are additional measures of structural change. Using only the first two explanatory variables gives a cross-country equivalent of the Solow equation in which the contributions of capital and labour growth are measured by the regression coefficients.18

Table 1 illustrates the results of Feder's estimates by comparing the sources of growth
Table 1. **Alternative specifications of sources of aggregate growth**
Sample: semi-industrial countries, period: 1964—1973

<table>
<thead>
<tr>
<th>Source</th>
<th>Specification</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Investment</td>
<td></td>
<td>4.97</td>
<td>2.80</td>
<td>2.14</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(78%)</td>
<td>(44%)</td>
<td>(33%)</td>
<td>(34%)</td>
</tr>
<tr>
<td>(2) Labour</td>
<td></td>
<td>1.62</td>
<td>0.89</td>
<td>1.39</td>
<td>1.72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(25%)</td>
<td>(14%)</td>
<td>(22%)</td>
<td>(27%)</td>
</tr>
<tr>
<td>(3) Resource allocation</td>
<td></td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(31%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Export growth</td>
<td></td>
<td></td>
<td>1.85</td>
<td></td>
<td>1.96</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(29%)</td>
<td>(31%)</td>
</tr>
<tr>
<td>(5) Residual</td>
<td></td>
<td>-0.18</td>
<td>0.72</td>
<td>1.04</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(11%)</td>
<td>(16%)</td>
<td></td>
</tr>
<tr>
<td>Total growth</td>
<td></td>
<td>6.41%</td>
<td>6.41%</td>
<td>6.43%</td>
<td>6.39%</td>
</tr>
</tbody>
</table>

Regression equations

<table>
<thead>
<tr>
<th>Specification</th>
<th>$a_0$</th>
<th>$a_1$</th>
<th>$a_2$</th>
<th>$a_3$</th>
<th>$a_4$</th>
<th>$N$</th>
<th>$\bar{R}^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0</td>
<td>0.25</td>
<td>0.78</td>
<td></td>
<td></td>
<td>30</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4.06)</td>
<td>(3.45)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>0.01</td>
<td>0.11</td>
<td>0.38</td>
<td>0.87</td>
<td></td>
<td>30</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.12)</td>
<td>(1.92)</td>
<td>(4.18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>0.01</td>
<td>0.10</td>
<td>0.59</td>
<td>0.145</td>
<td></td>
<td>34</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.67)</td>
<td>(3.28)</td>
<td>(4.73)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>0</td>
<td>0.11</td>
<td>0.74</td>
<td>0.23</td>
<td>0.90</td>
<td>32</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.0)</td>
<td>(4.15)</td>
<td>(3.23)</td>
<td>(5.07)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Feder (1982).

In semi-industrial countries, as calculated from four different specifications: (a) neoclassical only (terms I and 2); (b) reallocation added to $a$; (c) export growth added to $a$; (d) all four factors. Together with the results of the earlier studies, they lead to the following responses to the three questions raised above.

(i) In all of the studies of developing countries, the addition of structural variables improves the explanation of the sources of growth quite substantially. In general, considerably less growth is attributed to capital accumulation and more to the reallocation of capital and labour. (In Feder's estimates the reduction in the contribution of capital between specifications a and b is from 78% to 44% and in Robinson's it is from 60% to 31%.)

(ii) The differences between the sources of growth estimated for developing and developed countries were quite significant where they were both studied. In general structural variables contributed little to the explanation of growth in the advanced countries, in contrast to the 20 to 30% that is typical of developing countries.

(iii) The main effect of dropping the assumption that factors are paid their marginal products is to cast doubt on the equilibrium estimates of labour's contribution to growth in developing countries. Not only is the share attributed to labour lower in most of the structural specifications, but in a number of them the regression coefficient is not statistically significant. These results tend to support Lewis' surplus labour hypothesis. For the developed countries on the other hand, the cross-country results are not substantially different from the average of the equilibrium estimates.

Although the importance of capital formation is reduced in the structuralist specifications of Table 1, it remains the most important explanatory factor, accounting for 30% or more of the aggregate growth in virtually all specifications, time periods, and country samples. The cross-country findings thus coincide with similar conclusions of Christensen, Cummings and
Jorgensen (1980) for the advanced countries. Finally, the structuralist specifications of Table 1 explain the performance of the rapidly growing countries of group C in Figure I quite well. None of them appears as an outlier from these equations.

4. CONCLUDING SPECULATIONS

The results of empirical studies of growth over the past 25 years illustrate the advantages of analysing developed and developing countries in a common framework while allowing for differences between them. The neoclassical model has proven to be a useful starting point even though it seems to require more extensive adaptation to fit the developing countries. Further explanation of the factors underlying the differences between the two groups will clearly require a less aggregated analysis that can incorporate some of the constraints on resource allocation that characterize the structural transformation.

The desirability of pursuing the feedback from development studies to mainstream economics is evident in the several fields cited in this paper. Instead of regarding the newly industrializing countries in group C of Figure I as outliers to be dealt with on an ad hoc basis, they may turn out to be illustrative of policies by which developing countries can complete the transformation more rapidly and catch up to the presently advanced group. Extending the boundaries of conventional economics would seem to be more rewarding than limiting it to the special case of the already developed countries.

The distinctive features of development economics have been somewhat exaggerated by the rather crude techniques and limited data available for the analysis of the structural transformation. Until recently the only multi-sectoral framework that could be utilized empirically has been some form of input–output analysis, which exaggerates the inflexibility of economic systems and only incorporates price effects in the exogenous elements of the model. This model is now being replaced in studies of resource allocation by computable general equilibrium models, which allow for the effects of substitution in final demand and trade as well as factor inputs. This more flexible approach can accommodate neoclassical formulations for advanced economies as well as more structural assumptions for the study of transitional countries. In this framework the distinction between developed and developing countries can be largely reduced to observable differences in initial conditions, price and income elasticities, and lags in adjustment. Once hypothetical assumptions about these elements are replaced by empirical estimates, the controversy between neoclassical and structural approaches to development should be reduced.

Finally, one can hope that the rapid accumulation of both data and computing algorithms will reduce the dependence of the economist on the properties of a particular analytical technique. What is now lacking, in my view, is the ability — or willingness — to generalize about ‘second best’ situations and thus to broaden the range of underlying assumptions to fit a wider range of economic behaviour.

NOTES

4. For example the CES production function was derived by Arrow, Chenery, Minhas and Solow (1961) from observations on a number of developed and developing countries.
5. See Nerlove (1967).
6. Little (1982, p. 6) suggests the following test as being acceptable to most liberal economists: ‘Economic development (or economic progress or real economic growth) occurs if there is a rise in the present value of average (weighted) consumption per head.' This measure is consistent with my suggestion (1977, p. 6) that ‘the transition from a traditional to a developed economy can be defined in general terms as the set of changes required to sustain a continued increase in income and social welfare'. Both proposals leave open the properties of the social welfare function to be used in weighting the growth of consumption.
7. In a later assessment, Lewis (1972) points out that there are three separate versions of this theory, treating dualism in closed and open economies. These were also elaborated by Fei and Ranis (1964).
8. Comparisons between neoclassical and struc-
turalist analyses of development are given by Chenery (1975) and Little (1982).

9. This section is based on Chapter 2 of Chenery, Robinson, and Syrquin (1983).

10. Assumptions underlying this equation and alternative formulations are given by Nadiri (1970) and Branson (1979).


12. The data are given in Chenery, Robinson and Syrquin (1983), Ch. 2.

13. Nadiri (1972) gives a comparison based on earlier data.

14. The advanced countries are all taken from Christensen, Cummings and Jorgensen (1980), who use a methodology that raising the weighted growth of capital and hence reduces the estimate of total factor productivity. Kendrick's (1982) estimates for the same period, using the Denison methodology, show TFP accounting for about two-thirds of aggregate growth in 9 developed countries compared to the average of 50% shown here.

15. I have omitted the seven centrally planned economies studied by Balassa and Bertrand (1970) because the data cover only manufacturing, but their results fit with the Brazil-Turkey pattern of high capital growth and relatively low productivity.

16. Cross-country estimation has its own problems, including the need to assume the same production relations and other effects in all countries.


18. The coefficient $a_i$ for the investment term can only be identified with the marginal productivity of capital to the extent that capital-output ratios are the same in all countries, since $I/Y$ is used as a proxy for $I/K$. In Feder's formulation $X_4$ and $X_5$ are replaced by more complex terms.

19. These differences are explored more fully by Chenery, Elkington and Sims (1970).

20. A global view of this phenomenon is given in Chenery (1977).

21. Empirical multisectoral general equilibrium models are descended from the pioneering Norwegian study of Johansen (1960). The Hudson-Jorgensen (1974) model of the US is of this general type. Applications to developing countries are discussed by Dervis, de Melo and Robinson (1982).

22. This proposition is argued in Chenery and Raduchel (1971). Little (1982) holds that structuralist views are maintained by economists who mistrust the price system because of a preference for government controls and that there is 'no such thing as a structuralist theory of growth'.

REFERENCES


Hirsch, S., 'Hypotheses regarding trade between developing and developed countries', in H. Giersch (ed.), The International Division of Labor (Tubingen, 1974).


At the time of writing, the author was Senior Advisor, Economics and Research Staff of the World Bank.

This article is based largely on comparative studies prepared under the Bank's research program. Opinions are those of the author and not necessarily of the World Bank. H. Chenery


No. 274. Ron Duncan and Ernst Lutz, "Penetration of Industrial Country Markets by Agricultural Products from Developing Countries," World Development


No. 276. Sweder van Wijnbergen, "Interest Rate Management in LDCs," Journal of Monetary Economics


No. 278. Oli Havrylyshyn and Martin Wolf, "Recent Trends in Trade among Developing Countries," European Economic Review


No. 280. Walter Schaefer-Kehnert and John D. Von Pischke, "Agricultural Credit Policy in Developing Countries," translated from Handbuch der Landwirtschaft und Ernährung in den Entwicklungsländern (includes original German text)

No. 281. Bela Balassa, "Trade Policy in Mexico," World Development


No. 283. Anne O. Krueger, "Trade Policies in Developing Countries," Handbook of International Economics


Issues of the World Bank Reprint Series are available free of charge from the address on the bottom of the back cover.
THE WORLD BANK

Headquarters:
1818 H Street, N.W.,
Washington, D.C. 20433, U.S.A.
Telephone: (202) 477-1234
Telex: WUI 64145 WORLD Bank
RCA 248423 WORLD Bank
Cable address: INTBAFRAD
WASHINGTON DC

European Office:
66, avenue d'lena
75116 Paris, France
Telephone: (1) 723-54.21
Telex: 842-620628

Tokyo Office:
Kokusai Building
1-1, Marunouchi 3-chome
Chiyoda-ku, Tokyo 100, Japan
Telephone: (03) 214-5001
Telex: 781-26838

The full range of World Bank publications, both free and for sale, is described in the Catalog of Publications; the continuing research program is outlined in Abstracts of Current Studies. The most recent edition of each is available without charge from:

PUBLICATIONS SALES UNIT
THE WORLD BANK
1818 H STREET, N.W.
WASHINGTON, D.C. 20433
U.S.A.

ISSN 0253-2131