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TRADE AND DEVELOPMENT: AN ANNOTATED BIBLIOGRAPHY

A Research Project for the Agency for International Development

by

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Preface

A bibliography on the role of trade in development seems bound to be large, and this one is. Because of the enormity of the relevant literature, we felt that some explanation of our approach was in order so that readers might better understand both how we defined our focus and why we chose to do this in the way we did.

The bibliography has four sections. The first, "Trade and Development," covers the issues we consider "standard" in the literature. The second, "Domestic Finance," reflects recent interest in the supply-side of LDC economies, especially as it is affected by the degree of development in the financial markets. While this may not appear to be a trade-related topic at first glance, the recent emphasis on the contractionary effects of standard monetary and exchange rate policies and the comprehensive economic liberalization programs such as those in Korea or Chile emphasize the important link between trade policy and domestic financial policy.

Section III, "Commercial Policy, Exchange Rates, and Balance of Payments Crises," covers the causes and consequences of exchange crises in LDCs. A variety of policy responses are reviewed, as are some suggestions for avoiding such crises. Finally, Section IV, "International Capital Flows to LDCs," covers three main sources of capital: foreign bank lending, foreign direct investment, and IMF loans. This section reviews the recent literature relevant to the debt crises of countries like Mexico and Brazil and also covers the debates over the IMF's role in aiding crisis countries.

Each of these sections contains a brief introduction to the major issues and developments in each field, followed by annotated references for that section. We have tried to keep the annotations brief, reporting only the major issues and conclusions of each work.

Our "search strategy" was three-fold; we began with the references we were familiar with and felt to be significant. We then searched all recent volumes (roughly 1979 to the present) of major economics journals for material that seemed important. Finally, we searched the bibliographies of these references.

We used two criteria in determining whether to include an article or book. One was a bias toward more recent literature, though older seminal work was included. The other was a preference for "empirically relevant" work; but here again, several important theoretical works are included, particularly those aimed at specific (and relevant) "stylized facts."

Although this work was a joint enterprise, Yoon Je Cho had the primary responsibility for sections II and IV A and B, Stephen L. S. Smith for sections I and IV E, and Stephen D. Younger for sections III and IV C and D. We hope that the results of our effort will be a useful guide to the current status of the literature on trade and development.

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I. Trade and Development

Introduction

Readers of this bibliography will not need to be convinced of the intimate and important link between trade and development. The difficulty arises, rather, of explicating the relationship systematically, given the interdependence of many of the issues. Toward that end, but somewhat arbitrarily, this section has five parts.

Part A, the largest, deals with the nature of national trade regimes, on the one hand, and efficiency, growth, and employment, on the other. These are perhaps the most fundamental concerns of LDCs, and understanding of them conditions understanding of subsequent issues. Part B of this section is entitled "LDC and the Institutions of International Trade" and has to do with the international institutions and conventions of trade, rather than national trade policy. The remaining parts each address a single issue of some importance: Part C, "Technology in Trade and Development"; Part D, "The Terms of Trade Debate", and Part E, "Instability of Export Earnings and Commodity Prices".

A. Trade Regimes and Development

1. Trade Regimes, Economic Efficiency, and Incentive Effects

What is the optimal set of trade policies for fostering economic development? LDCs are faced with many types of regime from which to choose. The relationships between kinds of trade regimes, on the one hand, and growth and employment, on the other, are dealt with later; this sub-section will focus on a regime's potential impact on static economic efficiency, and the nature of the incentives it engenders. Before proceeding, however, it should be noted that some LDCs' need for revenue from tariffs continues to constrain their choice of trade regime; Kostecki and Seck (1982) provide some recent statistics on the fiscal importance of tariffs to LDCs.

Krueger (1978) introduced the concept of bias, which can provide a tractable means of defining different trade regimes. The bias (B) of a regime is defined as the ratio of import prices to export prices, domestically, relative to the ratio of the international prices of those goods. Thus, with free trade and perfect markets, $B = 1$. When $B < 1$, a regime is "export promoting" (EP); when $B > 1$, it is biased toward import substitution (IS). It is important to note that there is a difference between the degree of <u>bias</u> of a regime and its degree of <u>liberality</u>, in the sense of relying on the price system rather than on quantitative measures to regulate trade. In principle, biased regimes can be quite liberalized, while unbiased regimes can be highly restrictive. In actuality, of course, biased regimes have tended to be highly illiberal as quantitative controls are easily used as part of IS policies.

In the decades immediately following World War II most LDCs pursued IS strategies of providing high rates of effective protection for industry. (By the end of the 1960s, their general level of protection appeared to be significantly higher than that which obtained in the now-developed countries a century earlier.) The disappointing results of these policies, in terms of growth rates, general development goals, or even in terms of reducing LDC dependence on imports and vulnerability to foreign exchange crises, are well known. Little et al (1970) remains a classic work in detailing the problems of IS regimes and the reasons for their poor performance. Taking a general equilibrium approach, they explained that the high effective protection given to domestic industry via tariffs and quantitative restrictions necessarily resulted in the unprotection of both the agricultural sector and the exportables sector. This is the core of the problem with IS regimes, and has been taken up by many subsequent authors. To put it in Krueger's terms, the fundamental problem with IS regimes has been their high bias.

Specifically, the artificially high factor incomes in the protected sector pull resources away from other sectors, raise the price of factors to the other sectors, and raise the prices of input to the non-protected sectors. Exports are doubly punished, for not only do the general equilibrium effects work against them, but the exchange controls which invariably accompany an IS regime serve to keep them over-priced on world markets. This, of course, exacerbates balance of payments troubles. Aside from Little et al, Corden (1980) provides an excellent overview of the general equilibrium effects of many kinds of trade protection. Corden's analysis has the virtue of pointing out the distortions that could arise out of EP regimes, as well as those of an IS regime.

Liberalization appears to be very important, too. In theory, any given quantitative control can be expressed in tariff-equivalent form. In practice, the administration of complex quantitative controls seems to lead inexorably to efficiency losses greater than those of tariffs. For instance, the allocation of import licenses on the basis of existing capacity has led to the installation of much capacity that is subsequently underutilized. This, plus the fact that firms often need to stockpile inputs to protect against sudden administratively-caused supply cut-offs, serves to drive LDC capital-output ratios very high. The first five chapters of Bhagwati (1978) are a taxonomic review of the static effects on efficiency of quantitative controls, and in the ten countries he surveys he finds these effects to be strongly negative. Liberalization has dynamic aspects, but for now it will suffice to say that Krueger and Little et al both strongly support liberalization, in part because of the static gains that can be had.

The conventional wisdom is thus unambiguously to the effect that IS policies are not optimal for LDCs: high bias without liberalization is extremely costly, and high bias with liberalization--IS without quantitative controls--is virtually unattainable. There remains the question of what is best to do. Bhagwati argues that a liberalized economy with equal effective exchange rates for importing and exporting would be optimal (and he labels such a regime "export promoting" even though it is so only in comparison to an IS regime). Krueger, and Westphal (1981), argue that it would be best for LDCs to be slightly biased in favor of exports ($B < 1$); Kruegers' arguments in this regard will be taken up in the next section. Westphal suggests that selective export promotion of a few industries, within a basically liberalized environment, might be a good way to confer infant industry protection on deserving industries.

Thus far, this analysis of trade regimes has ignored the potential muddying effect of foreign, rather than LDC, ownership of capital (as, in fact, have Little et al, Bhagwati, and Krueger). To take a relevant example, if a large portion of an LDC's exports are produced by multinational corporations, export promotion could be harmful. Katrak (1981) and Brecher and Choudri (1982) provide theoretical analyses of this possiblity--which, however, appears remote. (See also Section IV. D.)

Finally, it is interesting to note that empirical studies of tariff costs have concentrated almost exclusively on developed countries. This is probably because in most LDCs, the effects of quantitative controls overwhelm those of the nominal tariff system. However, as LDCs liberalize themselves, the costs of the tariff system in and of itself will become more important. Easton and Grubel's paper

(1982) is interesting in this regard, for they argue that in a growing economy the deadweight loss of tariff is significantly higher than is usually estimated--that the loss is well over 1% of GNP.

Bhagwati, J.N., 1978, Anatomy and Consequences of Exchange Control Regimes (Cambridge: Ballinger Press).

This book, along with Krueger (1978), represents the culmination of the NBER's study of foreign trade regimes and economic development. It summarizes and synthesizes the analysis of ten independent country studies. Bhagwati's volume focuses on a description of the sorts of foreign exchange restrictions found in LDCs and an analysis of both the static and dynamic effects of these restrictions on their economies.

Brecher, R.A. and Choudri, E., 1982, "Immiserizing Investment from Abroad: The Singer-Prebisch Thesis Reconsidered", Quarterly Journal of Economics, 97(1).

This theoretical paper analyzes the welfare effects of MNC investment in an LDC's capital intensive, primary product export sector. If the foreign-owned capital receives the full local value of its marginal product, the LDC's welfare will unambiguously fall. However, even a very small profits tax may reverse the result. Full employment is assumed.

Corden, W.M., 1980, "Trade Policies", Chapter 2 in Cody, J., Hughes, H., and Wall, D, eds., Policies For Industrial Progress in Developing Countries (New York: Oxford University Press).

This is a remarkable paper: in lucid prose Corden lays out a detailed taxonomy of the general equilibrium effects of tariff policies, import quotas, exchange controls, export subsidies, and export taxes. If he has one general theme, it is that any form of protection for certain industries necessarily implies the relative contraction of others, and that higher real incomes in protected sectors imply reduced real incomes for factors in other industries. Thus, for instance, he categorizes tariffs and quotas as the fourth best means of encouraging employment in manufacturing. The paper also contains good discussions of the difficulty of establishing uniform effective protection, and the undesirability of export-promoting regimes.

Easton, S.T., and Grubel, H.G., 1982, "The Costs and Benefits of

Protection in a Growing World", Kyklos, Vol. 36.

The first part of this paper is a good review of previous studies which have tried to estimate the cost of protection. These costs typically have been placed at less than one percent of GNP per year. Easton and Gruble proceed to argue that the actual costs of protection are much larger than this because they grow at the rate at which international trade itself grows. However, they provide no estimates of the net present value of these costs. It is interesting to note that while Easton and Grubel's arguments apply equally to DCs and LDCs, the bulk of the empirical work on the question has been done on DCs.

Katrak, H., 1981, "Multinational Firms' Exports and Host Country Commercial Policy", The Economic Journal, 91: 454-465.

Katrak uses a simple geometric model of MNC exports to argue that far from it being desirable for LDCs to subsidize MNC production in their countries (as part of export promotion plans), LDCs actually would do best to impose both export and profits taxes on MNCs. (The ideal combination would be a high profits tax and a low export tax.) His crucial assumption is that given foreign ownership, the only benefit to the LDC from MNC production for export is the tax revenue. In other words, he ignores employment considerations or possible externalities.

Kostecki, M.M., and Seck, D., 1982, "Treasury Revenue and Foreign Trade Taxation", Weltwirtschaftliches Archiv, 118.

This is a straightforward empirical paper that confirms several widely-held beliefs about LDC government revenue and import taxation. Over the 1970s, around 28% of LDC government revenue was derived from trade taxes of all kinds, and 22% from import taxes alone. These are, therefore, important sources of revenue. However, reliance on trade taxes diminishes as per capita income increases; other forms of taxation become more practical, which is as expected.

Krueger, A.O., 1978, Liberalization Attempts and Consequences (Cambridge: Ballinger Press).

This is the second summary/synthesis volume of the NBER's study of foreign trade regimes and economic development. Krueger focuses on attempts to liberalize restrictive regimes, discussing their effects on the balance of payments, growth, and inflation. Careful attention is paid to the determinants of a successful liberalization attempt, and several policy recommendations are made.

Little, I.M.D., Scitovsky, T., and Scott, M., 1970, Industry and Trade in Some Developing Countries: A Comparative Study (London: Oxford University Press).

This major empirical study, drawing on data from seven large LDCs, has been very influential. The authors' main point is that LDCs would do best--compared to the IS regimes of the 1950s and 1960s--to adopt "a more decentralized approach with greater use of the price mechanism; and, in particular, given that there are good prospects for exports, a more open approach to foreign trade with less protection and the use of controls." The book is notable for its thorough explication of the ways in which a controlled economy with a protected manufacturing sector actually will be unduly biased against agriculture and exports. Their figures are dated, but their argument that there is greater scope for increasing LDC manufactured goods exports has proven prescient. Their arguments for adopting low levels of protection and subsidization (Chapter 4) remain very good reading.

Westphal, L.E., 1981, "Empirical Justification for Infant Industry Protection", World Bank Staff Working Paper no. 445.

Given that there are industries which deserve infant industry protection, and that authorities do not want to discriminate against infant industries that are not being selectively promoted, Westphal argues that the best policy is one of selective export promotion within a liberalized trade regime. Drawing extensively on Korean data, he maintains that the discipline of world markets forces the pace of learning and technological development, and increases the scale of the promoted industry, such that this promotion does not impose great costs on domestic consumers.

2. Trade and Growth

What kind of trade regime is best for growth? The standard answer, in the early 1980s, is that some kind of EP regime is best for fostering LDC growth. This is not to say that imports are unimportant. Naturally, LDCs will be importing many manufactured goods, especially capital goods, and these are necessary inputs to development. But there have been few models of 'import-led growth', and no recent studies of the contribution of capital goods imports to growth. Instead, attention has focused on the relationship between exports and growth, on the assumption that a regime that can export well will be able to meet its import needs--for not only will it have more foreign exchange, but it also will have easier access to credit. (However, Bautista (1980) provides estimates of demand equations for capital goods imports for the Philippines, and finds that such demand is very inelastic with respect to price. Also, Hanson's (1982) discussion of import-led growth in eastern Europe is probably relevant to some LDCs.)

Numerous empirical studies have appeared recently which confirm the widely-held impression that countries which export successfully experience the fastest growth rates. Michaely (1978), Heller and Porter (1978), and Tyler (1981) all have found high and significant correlation between export and growth performance. The important questions, of course, are whether there is a causal link between the two and which way the causality runs.

Theoretically, there are several possible links between exports and growth. The first is that increases in exports represent a pure <u>sui generis</u> increment in effective demand which then has Keynesian-style multiplier effects on domestic income--that 'export-led growth' is really 'foreign-demand-led growth'. For this to be the case there would have to be significant underutilization of factors in LDCs, for otherwise foreign demand merely would substitute for domestic demand.

Lewis has been a prominent exponent of the view. In his Nobel lecture (1980) he argues that it is DC demand for primary products which drives LDC growth. But the argument is commonly made for DC demand for manufactures from LDCs as well (for instance, see the World Bank's World Development Report 1980). Reidel (1983), however, demonstrates that LDC exports surged in the 1970s precisely as DC demand cooled off, so a link between LDC exports and growth via DC demand cannot be as simple as has been imagined. Reidel's work makes clear that supply factors internal to LDCs have made crucial contributions to their successes of the past decades.

A second possible link between exports and growth is through the effect of exports on savings and capital formation. If, for instance, the savings rate out of export earnings is higher than that out of other kinds of income, increased exports could accelerate capital accumulation. Or, the simple reinvestment of the increment to national income of adopting a free trade policy could raise the long run growth rate. Bhagwati (1978) spends a chapter looking exhaustively at these questions and finds no evidence for this kind of linkage.

Finally, there could be positive externalities associated with production for export such that high export growth rates help growth. Krueger (1980, 1981) has made these arguments most forcefully. Among the most important of these externalities is that in producing for the international market firms can attain scale economies greater than if they were limited by the extent of the domestic market, which allow the economy to grow faster than it otherwise would. Also, competition on international markets has beneficial learning and efficiency effects. According to Morawetz (1981) and Keesing (1983) this kind of learning is quite important. Furthermore, under an EP policy an LDC can avoid the opportunity cost of not specializing in the direction of its comparative advantage. Another, essential, part of Krueger's argument is that pursuing an EP strategy leads to 'better policy', in the sense that policy cannot deviate too much from a static free trade optimum (B = 1). This is be ... the costs of an EP regime are readily apparent and are therefore controllable; she points out that it is much harder to give an industry a 300% subsidy than to provide it with a 300% rate of effective protection. And, perhaps more important, a genuinely export promoting regime will not be able to maintain quantity restrictions on capital and intermediate good imports, as exporters will need quick and certain access to them.

It is very difficult to test the validity and relative importance of the arguments about the 'externalities' of export production. Feder (1982) constructs one such test, however, on the assumption that externalities as large as postulated by Krueger should be revealed by marginal factor productivity in export industries higher than the marginal factor productivity in non-export industries. Using a large sample of semi-industrialized LDCs, he estimates that the marginal factor productivity in exports is fully 75% higher that that in other sectors. Salvatore (1983) advances a simultaneous equations model of trade and growth--an advance over the single-equation approach of all previous studies, including Feder's--and finds that exports do not make much difference to LDC growth. It is possible that computational general equilibrium models could illumine the matter, but as yet they cannot handle increasing returns.

All in all, the literature appears at an impasse: certain aspects of exporting are thought to be crucial to LDC development, yet it is intrinsically very difficult to demonstrate precisely how crucial they are.

Bautista, R.M., 1980, "Import Demand for Capital Equipment in the Philippines", Weltwirtschaftliches Archiv, 116.

Bautista presents a refinement of previous estimates of LDC demand functions for capital equipment, by deriving them as the result of a partial stock adjustment process. He finds that the short run income elasticity of demand is quite high for most types of capital goods, while demand is strongly inelastic with respect to price changes. These results cannot be expected to hold in the long run, for his model assumes that there is no substitution between domestic and foreign capital goods.

Bhagwati. J.N., 1978, op. cit., see Section I.A.1 for annotation.

Feder, G., 1982, "On Exports and Economic Growth", World Bank Staff Working Paper no. 508.

In this empirical analysis, Feder develops a production function with exports as an argument to test the hypothesis that the marginal factor productivity of the export sector is greater than that of the non-export sector. The hypothesis is confirmed, with a difference of around 75%. Although his results are liable to be biased due to omitted variables--all sources of growth other than capital and labor are lumped together and their effects attributed to exports--he does provide a theoretical rationale for putting exports into an LDC's production function.

Hanson, P., 1982, "The End of Import-Led Growth? Some Observations on Soviet, Polish, and Hungarian Experience in the 1970s", Journal of Comparative Economics, 6:130-147.

Although Hanson is concerned with eastern European economic history, this paper contains a discussion of a possible 'import-led' growth strategy: the initial import of advanced capital goods and technology, and then the export of the goods produced by that technology. Hanson's method of correlating the import of capital goods with the (lagged) exports of the same sector, to see if the imports were 'successful', is applicable to LDCs, and could provide some sense of the importance of imports to LDC exports.

Heller, P.S. and Porter, R.C., 1978, "Exports and Growth: An Empirical Reinvestigation", Journal of Development Economics, Vol. 5.

Writing in response to Michaely (1978) Heller and Porter argue that within the realm of simple correlation analysis, the significance of exports is best indicated by the correlation between the growth rate of exports and the growth rate of non-export domestic production. Using data from 41 LDCs (1950-1973) they obtain a Spearman rank correlation between export and non-export production growth rates of 0.452 (statistically significant). The coefficient is 0.568 for the 'rich' countries in the sample, and 0.097 for the poorer group.

Keesing, D.B., 1983, "Linking up to Distant Markets: South to North Exports of Manufactured Consumer Goods", American Economic Review, Vol. 73, no. 2.

Finished consumer goods are an important and interesting component of LDC exports of manufactures--important, because these goods make up more than half of total LDC manufactures exports, and interesting, because these are goods which are shipped pre-packaged and ready for immediate retail sale. Thus, LDCs have "succeeded remarkably in linking up their production with the needs and fast-changing demands of stores and customers thousands of miles away." Two salient reasons for this success are that the "outward-looking" LDCs face no regulatory or institutional barriers to responding quickly to buyers' orders, and that the firms in such LDCs are able to adapt their output as they learn about buyers' needs. That is, learning from buyers has been very important.

Krueger, A.O., 1978, op. cit., see Section I.A.1 for annotation.

_______________, 1980, "Trade Policy as an Input to Development", American Economic Review, Vol. 70, no.2.

Asserting that there can be little doubt about the link between export performance and growth rates, Krueger brings together in this paper a variety of reasons why she thinks EP policies have succeeded where IS policies failed. These reasons can be grouped roughly into two categories: technological-economic factors which make EP work (such as increasing returns to scale, and production indivisibilities), and the fact that "policy is better" under EP.

______________, 1981, "Export-led Industrial Growth Reconsidered" in Hong, W., and Krause, L.B., eds., Trade and Growth of the Advanced Developing Countries of the Pacific Basin (Seoul: Korea Development Institute).

This article reiterates and amplifies Krueger's 1980 arguments that export promotion fosters growth. She develops in greater detail her belief that EP opens firms to beneficial foreign and domestic competition. The article includes a thorough summary of the long run costs of IS policies.

Lewis, W.A., 1980, "The Slowing Down of the Engine of Growth", American Economic Review, Vol. 70, no.4.

Originally Lewis' Nobel lecture, this article covers several of his favorite themes. In particular, Lewis contends that for more than a century the growth of industrial production in developed countries has been the driving force of LDC exports and growth. However, Lewis believes that as DC production growth slows in the future, LDCs will have to turn to intra-LDC trade to provide an "engine of growth."

Michaely, M., 1978, "Exports and Growth: An Empirical Investigation", Journal of Development Economics, Vol. 4, no. 2.

This paper reports a test for correlation between the rate of growth of the share of exports in GDP to the rate of growth of per capita income. For 41 LDCs, from 1950 to 1973, the Spearman rank correlation of the two growth rates was 0.38 (significant at the 1% level. However, the correlation was found to be greater (0.523) for the wealthier LDCs, and "practically zero" for the others (-0.04).

Morawetz, D., 1981, Why the Emperor's New Clothes are not Made in Colombia (New York: Oxford University Press).

A detailed and well-written study of all the problems faced by potential Colombian clothing exporters, with special reference to their poor performance compared to producers in the Far East. Morawetz felt that the major obstacles to export growth were an overvalued exchange rate and the tariff protection afforded to the textile inputs of the apparel industry, yet non-price factors bulked very large as well. For instance, graft and red-tape resulted in two- to six-week delays in clearing tradables through customs, virtually locking out Colombia from buyers' twelve-week fashion season. Also, buyers were risk-averse and tended to avoid all Colombian firms after a bad experience with one.

Reidel, J., 1983, "Trade as the Engine of Growth in Developing Countries: A Reappraisal", World Bank Staff Working Paper no. 555.

Reidel directly challenges the common perception--given explicitly by Lewis (1980)--that prosperity in developed countries stimulates exports and growth in underdeveloped countries. Far from there being a constant relationship between DC growth and LDC exports over the past 100 years, Reidel shows that the surge in LDC exports of the 1970s took place in the face of a slowdown in DC income growth. He argues that the "trade as an engine" metaphor be dropped in favor of Kravis' "trade as a handmaiden" metaphor: LDCs which grow will experience rapid increases in exports, and vice versa; interdependence between trade and growth means that LDC growth is not constrained by slow income growth in DCs.

Salvatore, D., 1983, "A Simultaneous Equations Model of Trade and Development with Dynamic Policy Simulations", Kyklos, Vol. 36.

This empirical paper offers a simultaneous model of trade and development, and tests it on data from more than 50 LDCs. The strength of this analysis is that it has moved beyond the exclusively single-equation empirical studies of the past decade; its weakness is that the estimated equations are not derived from any explicit behavioral model. In a dynamic policy simulation, a 25% increase in the rate of growth of the export share of GDP proves to have a very small, but positive, effect on the growth rate of per capita income. Salvatore concludes that increased trade is not harmful to LDCs, but neither does it lead the development process: it is a handmaiden, not engine, of growth.

Tyler, W.G., 1981, "Growth and Export Expansion in Developing Countries: Some Empirical Evidence", Journal of Development Economics, Vol. 9.

Tyler seeks to improve upon previous findings of a correlation between exports and growth by estimating a production function with exports as an argument (included for the usual externalities kind of reasons). He finds that for a large sample of middle-income LDCs, the elasticity of output with respect to exports is approximately 0.06. Although this could be thought of as low, the production function with exports fits much better than one without; Tyler concludes that "appropriate price incentives for exports appear to take on a central importance in the economic growth of developing countries." (See Feder (1982).)

3. Trade and Employment

The major work in this area is the NBER project, Trade and Employment in Developing Countries, conducted under the direction of Anne Krueger. The main theoretical issues and empirical results are taken up concisely in Volume 1 of the NBER report (Krueger, et al (1981)) and Krueger (1978). Volume 3 of the project (Krueger (1983)) presents the results and the underlying theory in a very comprehensive manner.

The project actually focused on various trade strategies' effects on the demand for labor, rather than on employment per se. This was because it is hard to analyze how employment will respond to changes in labor demand given particular domestic factor market distortions. A trade regime influences labor demand in three ways. First, economic growth in and of itself stimulates labor demand; trade policies can affect labor demand through their effect on growth. Second, a trade regime affects labor demand through its effect on the composition of output. Third, there is the effect that a trade regime has on employment through factor prices. The NBER study considered only the second and third possibilities.

Among the main empirical findings was that LDC exports to developed countries are indeed labor-intensive, despite th. fact that most LDCs experience significant factor price distortions, which foster excessive capital use. Krueger argues that labor demand can be greatly increased by EP policies, or a re-alignment of domestic factor market incentives, or both. She also argues that the observed high labor content of LDC exports confirms the theoretical presumption that labor-abundant LDCs' comparative advantage lies in producing labor-intensive goods. Employment generation through EP policies will not work at cross-purposes with growth and efficiency objectives, but will instead be consonant with them. The "dual" of this set of arguments, of course, is that IS policies cannot be expected to absorb as much labor as a well-designed EP policy.

Aside from the obvious income distribution implications of increased employment, one implication of the NBER project is that LDCs need not be overly concerned about intra-LDC trade. For the medium run, at least, their welfare is served best by trade in labor-intensive goods with the developed nations.

Krueger, A.O., 1978, "Alternative Trade Strategies and Employment in LDCs", American Economic Review, Vol. 68, no.2.

Krueger lays out concisely some of the results of the NBER's study of trade and employment in LDCs. Data from the individual country studies is collected in several summary tables, from which Krueger argues that export oriented trade strategies positively affect demand for labor by changing the composition of output toward labor-intensive products.

_______________, 1983, Synthesis and Conclusions, Volume 3 of Trade and Employment in Developing Countries (Chicago: University of Chicago Press).

As the title indicates, in this volume Krueger brings together most of the empirical results of the ten individual country studies (and data from two unpublished cases) of the NBER project, and includes a thorough overview of the theoretical background of the analysis. Compared to the earlier publications in the series, this treatment emphasizes the costs of factor market distortions and details the model of international trade which underlies most of the analysis.

______________, Lary, H.B., Monson, T., and N. Akrasanee, eds., 1981, Individual Studies, Volume 1 of Trade and Employment in Developing Countries (Chicago: University of Chicago Press).

This contains ten individual country studies and a brief introduction covering the methodology of the project.

4. Trade Regimes and the Future

This section will not pursue specific predictions about the size, growth, and direction of LDC trade in the future. (Such predictions, under a variety of scenarios, can be found in the World Bank's World Developement Report 1983.) Instead, this section will consider several general issues concerning the long run feasibility of EP regimes. The long run problems of IS regimes have already been touched upon, and indeed, there is a wealth of country experience which speaks eloquently of these problems.

The first issue is whether countries can, if they desire, raise their export shares much beyond the limits prescribed by each nation's comparative advantage. In a paper that reflects upon the past two centuries of economic history, Kindleberger (1980) concludes that the answer is no. This is congruent with Krueger's argument that the nature of EP policies is such that the regime can never get far from unbiasedness, although Kindleberger makes a simpler argument: exports cannot be forced upon unwilling importers.

A second issue is whether broadly-adopted EP policies would trap LDCs in a fallacy of composition. That is, it might not be possible for all LDCs rapidly to increase their exports. It is almost certainly true that not all LDCs could increase their exports at the same rate as experienced by the East Asian countries in the 1960s and 1970s, as examined by Cline (1982). On the other hand, large numbers of LDCs could be expected to do very well with their exports; Havrylyshyn and Alikhani (1982) show that a dozen 'newly exporting countries' did extremely well in exporting manufactures in the 1970s--better even than the well-known exporters such as Korea, Brazil, and Singapore. Anderson and Baldwin (1981), in a broad discussion of the determinants of developed country protectionism, conclude that there is substantial room in DC economies for LDC export growth. Keesing (1981) is guardedly optimistic about Latin America. A more fundamental consideration than the potential exports of LDCs is that the success of jointly-pursued EP policies actually depends upon the nature of gains to be had from this kind of policy. If the major stimulus to growth of an EP policy were its reduction in the bias of a trade regime, or in the externalities associated with greater export production, it would be possible for all countries to benefit from EP even if their export growth rates were far below the previous levels of 'star' performers.

Finally, does the direction of LDC trade matter? Krueger argues that LDCs will find their natural trading opportunities to be with the developed nations, and therefore LDCs should not be concerned with regional trading arrangements and other plans to encourage intra-LDC trade. However, the clear implication of her theory of trade is that as factor accumulation takes place in individual LDCs and they specialize in producing goods which use factors in the same relative proportion as they are found in each LDC, opportunities for trade with other LDCs (with different factor proportions) should increase. Balassa (1979) advances this proposition explicitly in his 'stages of comparative advantage' theory, which is completely consistent with Krueger's theory. Other authors have argued that intra-LDC trade has benefits for LDCs above and beyond the standard gains from trade, and should therefore be encouraged. Havrylyshyn and Wolf (1981) explore these arguments and the theory of intra-LDC trade, and provide a wealth of empirical detail on trends in this kind of trade.

Anderson, K. and Baldwin, R.E., 1981, "The Political Market for Protection in Industrial Countries: Empirical Evidence" World Bank Staff Working Paper no. 492.

The bulk of this paper, the title notwithstanding, is a review of the <u>theory</u> of protectionism. Viewing protection as an economic good--for the protected sector--the authors develop and confirm a set of hypotheses about the supply and demand for protection: among other things, that industries will receive increasing protection the more labor-intensive they are and the lower are their shares of GNP. Their evidence also suggests that import protection is triggered by high rates of increase in an industry's level of import penetration, especially if the level of import penetration is already high. At the same time, the authors suggest that LDCs have great potential for increasing exports of manufactures in sectors for which DC demand and output levels are rising and import penetration ratios are still low.

Balassa, B., 1979, "The Changing Pattern of Comparative Advantage in Manufactured Goods", <u>Review of Economics and Statistics</u>.

Balassa writes that as LDCs accumulate human and physical capital they will produce goods of increasing capital intensity, and their exports will move "up the chain of comparative advantage" of increasing capital intensity. He confirms this hypothesis in a test of data from 32 DCs and LDCs. One conclusion: there would be high costs if this natural progression were ignored by policy makers eager to jump ahead. Balassa also concludes that the progression makes it possible for successive generations of LDCs to compete for DC markets without facing a demand constraint.

Cline, W.R., 1982, "Can the East Asian Model of Development be Generalized?" World Development, Vol. 10, no. 2.

In this counterfactual exercise, Cline asks what the LDC import penetration ratio in DC markets in 1976 would have been had all LDCs experienced export growth as vigorous as that of Hong Kong, Korea, Singapore, and Taiwan. Not surprisingly, these penetration ratios are impossibly high, in the sense that they probably would have provoked a strong protectionist response. Unfortunately, this particular counterfactual does not really test the susceptibility of EP policies to the fallacy of composition, for the real issue is what happens when large groups of LDCs reduce the bias of their trade regimes. EP is not synonomous with rapid growth of exports *per se*.

Havrylyshyn, O. and Alikhani, I., 1982, "Is There Cause For Export Optimism? An Inquiry Into the Existence of a Second-Generation of Successful Exporters" World Bank, International Trade and Capital Flows Division, Division Working Paper no. 1982-1.

The authors believe there are grounds for export optimism in the 1980s, because fully one dozen LDCs outperformed the infamous 'Newly Industrializing Countries' in the 1970s, despite all of the decade's problems. Among the successful 'newly exporting countries' are Thailand, Malaysia, Indonesia, and the Philippines. Each of these countries experienced a manufactured exports growth rate significantly greater than that of the NICs and appeared to be following a similar pattern of concentration on industrial market destinations and a product mix dominated by textiles, clothing, and miscellaneous manufactures.

_______________, and Wolf, M., 1981, "Trade Among Developing Countries: Theory, Policy Issues, and Principal Trends" World Bank Staff Working Paper no. 479.

The first portion of this paper is a thorough review of the theory of trade among developing countries; the authors summarize various opinions well but draw no conclusions about whether the direction of LDC trade matters. The remainder of the paper is a detailed empirical study of intra-LDC trade. Among their most interesting findings are that LDCs trade more with each other than their relative GNP in the world economy would lead us to believe, and that while intra-LDC trade has had a stable share of their total trade in the 1960s and 1970s, the share of manufactures exported to LDCs has fallen sharply and the primary commodities share (excluding oil) has risen.

Keesing, D.B., 1981, "Exports and Policy in Latin American Countries: Prospects for the World Economy and for Latin American Exports, 1980-1990" Quartely Review of Economics and Business, Vol. 21 no.2.

Keesing argues that most Latin American economies would grow much faster than they did in the 1960s and 1970s, and would grow very well even in the face of slow and erratic DC growth, if they were to foster "a better use of resources and a more efficient pattern of growth..." The major obstacle to this end has been the effect of Latin America's resource riches, which foster "high wage costs, easygoing standards, and inferior policy regimes." Having made this point, however, Keesing maintains that liberalization and bias reduction should be phased in slowly, with an initial policy emphasis on increasing exports without necessarily liberalizing the import of inputs and without removing any quantitative restrictions.

Kindleberger, C.P., 1980, "Government Policies and Changing Shares in World Trade" American Economic Review, Vol. 70, no. 2.

Kindleberger reviews many of the plans and policies governments have used over the past two hundred years to increase exports and enlarge a country's competitive position, and concludes that "except when a country can dictate the trade policy of the importing country, government policies have a negligible effect." Instead, he argues, national export shares are fundamentally determined by comparative advantage (although national policy can, of course, restrict trade).

Krueger, A.O., 1983, Op. cit., Chapter 4; see Section I.A.3 for annotation.

B. LDCs and the Institutions of International Trade

This section will provide an overview of the most recent thinking on this topic. However, discussion of institutions dealing with commodity price stabilization will be postponed until Section I.E.

The paramount concern for LDCs over the next decade will be maintaining their current degree of market access in developed countries. Whether or not there recently has been a slight increase in the trade barriers faced by LDCs, there has been a slow-down in the process of liberalization. This is of some concern to LDCs, as it is commonly thought that trade liberalization is like riding a bicycle: if it is not going forward it is falling down. Good discussions of LDC concerns are given in Frank (1980) and Cline and Bergsten (1983).

By all accounts LDCs were disappointed with the outcome of the most recent round of multilateral trade negotiations (the Tokyo round). One complaint is that tariffs fell less than average on products of prime importance to them, while MFN tariff cuts undercut the margins of preference they enjoy on goods covered by the GSP. Balassa (1980) argues, however, that net gains to LDCs of the MFN tariff cuts will actually be very large. Frank (1980) argues more generally that the rule changes on non-tariff barriers, and official exemption of LDCs from reciprocity and non-discrimination rules, mean that LDCs actually did very well at the MTN. At this point it is unclear what would be the impact of a further round of MTN tariff reduction, or even tariff elimination. Deardorff and Stern (summarized in Cline and Bergsten) feel that LDC exports would not increase; Balassa argues the opposite on the grounds that the current level of protection by developed countries on LDC manufactured exports is roughly twice as high as the aggregate data suggests, and that the export supply elasticities used by Deardorff and Stern are too low.

Whether or not there is an 'MTN for the 80s' the question of safeguards--actions taken to protect domestic producers under undue pressure--will have to be dealt with. Article XIX of GATT allows safeguards under carefully defined circumstances, and demands that any such actions be strictly non-discriminatory. However, developed countries have increasingly employed orderly market agreements and 'voluntary' export restraints (VERs) to circumvent both the legal process of GATT deliberations and the non-discrimination requirement. VERs are not well-understood theoretically (see the article by Murray, Schmidt and Walter (1983)) although it is clear that by giving some of the rent from trade restriction to the exporting country VERs might not prove as harmful to the importing country as quotas. Their danger, from the point of view of LDCs, is that they allow DCs to obtain protection without risking the retaliation that would be incurred if the protection was obtained in a non-discriminatory way. So far, the LDCs have managed to prevent adoption of a GATT safeguard code which would have allowed selectivity; however, this has left the LDCs with <u>no</u> code to regulate the profusion of VERs. Another danger of VERs, according to Bhagwati (1977), is that the mere <u>threat</u> of their imposition causes LDCs to under-invest in export industries.

One fundamental problem for LDCs in international trade negotiations has been their lack of bargaining power, which arises from their unwillingness to offer trade concessions. This in turn stems from the fact that they are constrained in many cases by balance of payments considerations, and by the feeling that--since they are not hoarding foreign exchange--most of the earnings from increased LDC exports due to DC trade concessions will flow back to DCs in the form of demand for their exports. Both Cline and Bergsten, and Frank, argue that if LDCs were willing to offer substantial liberalization to DCs they could in exchange obtain substantial DC liberalization of sectors of importance to them, especially agriculture and textiles. Perhaps these authors are too sanguine, but it is hard to see what could be lost from negotiations toward this end. (See also McCullogh (1981).)

Finally, there is the question of graduation. Frank (1979) argues strongly that an explicit graduation system (much as used by the World Bank to determine loan eligibility) is needed to preserve the fairness of the international trade system. LDC concessions on graduation could be used as a further quid pro quo in extracting liberalization from DCs, and could be used by the 'newly industrializing countries' to defuse the potentially very damaging demand in the the U.S. for 'reciprocity.'

Balassa, B., 1980, "The Tokyo Round and the Developing Countries", World Bank Staff Working Paper no. 370.

LDCs have complained that the Tokyo round MFN tariff cuts reduced the margins of preference they enjoyed under the GSP. However, Balassa argues that the gains to LDCs of trade creation due to the MFN tariff reductions on non-GSP products are greater than the losses, through trade diversion, attributable to reductions in preference margins.

Bergsten, C.F., and Cline, W.R., 1982, "Trade Policy in the 1980s" Policy Analyses in International Economics, 3, Institute for International Economics, Washington, D.C..

The first part of this paper is a synthesis of the findings of a conference of the same name held in June 1982. The conference papers themselves have been published as Cline, W.R., ed., Trade Policy in the 1980s (Washington, D.C.: I.I.E.). The second part delivers the authors' own policy recommendations. Although written with developed countries in mind, primarily, the authors' proposals for the strengthening of GATT, launching a new MTN, liberalizing existing DC import regimes for textiles and apparel, and eliminating all existing tariffs on industrial products, would be of great use to LDCs.

Bhagwati, J.N., 1977, "Market Disruption, Export Market Disruption, Compensation, and GATT Reform", Chapter 6 in Bhagwati, J.N., ed., The New International Economic Order: The North-South Debate (Cambridge: MIT Press).

Bhagwati reviews various forms of market disruption imposed by DCs on LDC exports, including some data on the incidence of such measures. He proposes a number of reforms for GATT that, among others, would provide LDC governments (as opposed to producers) automatic compensation for the threat of, or imposition of, VERs.

Frank, I., 1979, "The 'Graduation' Issue in Trade Policy Toward LDCs", World Bank Staff Working Paper no. 334.

Frank makes a strong plea for establishment of some system whereby advanced LDCs would be brought into compliance with regular GATT and IMF requirements for DCs. His rationale is simply that an international trade system cannot survive when "the rules apply to one group of about twenty OECD countries while all other countries, regardless of their stage or rate of development, are substantially and indefinitely free of such international constraints." He argues that graduation not only is in the interests of the DCs, but also is in the best interests of the least advanced LDCs.

______________, 1980, "Trade Policy Issues for the Developing Countries for the 1980s", World Bank Staff Working Paper no. 478.

This paper is a wide-ranging assessment of the institutional issues LDCs face in the post-Tokyo round era. Frank argues that the fundamental problem facing LDCs in this regard is that of maintaining and increasing access to world markets in the face of the increased use of extra-GATT safeguard actions. Specifically, he proposes a safeguard code within GATT with provisions for ex post review. He also argues that with concerted action, and in exchange for some liberalization, LDCs could obtain DC liberalization of hitherto highly protected sectors; furthermore, he maintains that unilateral liberalization on the part of the advanced LDCs would be in their own best interests.

McCullogh, R., 1981, "Gains to Latin America from Trade Liberalization in Developed and Developing Nations", Quarterly Review of Economics and Business, Vol. 21, no. 2.

McCullogh argues that although international institutions of trade have not had a decisive influence on the past growth and direction of Latin American trade, if the Latin American nations were willing to enter into negotiations as a block and offer reciprocal concessions some very beneficial innovations could be made. Specifically, DC constraints on textile trade could be eased, she asserts. At the same time, she argues that Latin America is its own best alternative market, and should be encouraged to grow by vigorous MFN liberalization (rather than by further regional integration) in order to gain bargaining power for future negotiations with DCs.

Murray, T., Schmidt, W., and Walter, I., 1983, "On the Equivalence of Import Quotas and Voluntary Export Restraint", Journal of International Economics, Vol. 14.

This is one of the few theoretical analyses of VERs. It is quite possible for quotas and VERs to be non-equivalent: this usually will be the case when export supply is monopolized, leading to higher import prices and lower volumes than under the nominally equivalent quota. On the other hand, the authors demonstrate that quotas and VERs can be equivalent if the elasticity of alternative (non-restricted) producers' supply is low.

C. Technology in Trade and Development

Over the past fifteen years the technological differences between developed and underdeveloped nations have been identified as among the essential aspects of underdevelopment. As LDCs are in the position of importing much of the technology and information they use in production, and as LDC-produced goods embodying these technologies are often traded, technological issues have surfaced very naturally in discussions of trade and development. Much discussion of the "technology gap" has been both politicized and, at times, sloppy. Magee (1977) points out that if developed nations do have a comparative advantage in creating technology, the mere fact that developing nations import it is no more worrisome than the fact that there is a "banana gap" between North and Central America. (Indeed, Hamilton and Soderstrom (1981) have extended the Heckscher-Ohlin model to explain trade in technology as the result of differences in factor endowments.) The feeling that lies behind most LDC-inspired studies in the literature is precisely that the current world-wide system for creating and trading technology and information is biased against LDCs. Lall (1981b) and Stewart (1979) offer general reviews of the issues and the literature.

Two broad issues have emerged. The first has to do with the distribution of financial gains from trade in, and use of, technology. Under this heading come questions of possible immiserizing growth due to the presence of foreign technology; optimal tax rates for goods produced by multinational corporations (MNCs); the nature of optimal commercial licensing and patent arrangements; the relative bargaining power of developed countries and LDCs, and the like. It's hard to discern any grand insights from the literature in this area; it is almost entirely theoretical. See Brecher (1982), Helleiner (1977), Irvin (1981), Krugman (1979), Magee (1977), and Lall (1981b).

The second broad set of issues have to do with the "appropriateness" of transferred technology. Appropriateness has two aspects; the first, common, understanding is that a technology is appropriate if it is relatively absorbtive of an LDC's relatively abundant labor. Stewart (1972) remains a good analysis of the labor-using potential of technologies, especially with respect to the interaction between techniques of production, the nature of the pre- and post-production processes, and the nature of the goods themselves. Numerous empirical studies exist which all basically attempt to ascertain whether MNCs adapt their technologies and factor-use in response to LDC factor prices. The short answer appears to be "yes" (Lipsey, et al (1982), and Courtney and Leipziger (1975)) but that other factors such as a firm's degree of risk-aversion and experience can over-ride factor price considerations and lead to the adoption and import of inappropriate technology (Lecraw (1979)).

The second aspect of appropriateness is the nature of a technology with respect to fostering indigenous innovation and learning. The seminal work it that of Rosenberg (1976) who brought to light the unique role played by the capital goods sector in aiding growth and technological development. Stewart (1976) addresses the role of the capital goods sector with specific reference to LDCs and takes up several of Rosenberg's themes--especially that the value of the sector lies as much in the externalities that are associated with it as in its actual capacity. Fransman (1983) takes up the question of the effect of trade regimes on the capital goods sector, while Stewart (1979) contains many policy suggestions.

Brecher, R. A., 1982, "Optimal Policy in the Presence of Licensed Technology From Abroad" Journal of Political Economy, Vol. 90 no. 5.

This theoretical paper deals with optimal commercial policy in a standard two-by-two model of a country which imports foreign-owned technology. Brecher demonstrates two propositions. First, that when the LDC is a net exporter of the good not produced by the licensed technolgy in the LDC, optimal policy requires the LDC to tax exports and to tax either production or consumption of the exportable. Second, that when the foreign country is a net exporter of this commodity, the LDC should tax its import and subsidize its production or consumption--but the LDC's welfare is lowered by the importation of the technology. That is, the LDC loses welfare when it improves the technology, via licensing, in its export industry. The model is purely static, and assumes that foreigners collect in royalties the full value of the extra production made possible by the technology.

Courtney, W. H., and Leipziger, D. M., 1975, "Multinational Corporations in LDCs: The Choice of Technology", Oxford Bulletin of Economics and Statistics, Vol 37.

This is an empirical study using 1970 cross-section data of U.S.-owned manufacturing affiliates in DCs and LDCs. The authors found that no systematic differences were evident, *ex ante*, in the technologies exported by the MNC parents to their affiliates in LDCs and DCs. However, firms appeared to respond to lower wage-interest ratios in LDCs by employing more labor per unit of capital than in DCs, *ex post*.

Fransman, M., 1982, "Learning and the Capital Goods Sector Under Free Trade: The Case of Hong Kong", World Development, Vol. 10 no. 11.

Fransman finds that compared to other Third World nations at a similar industrial level, the capital goods sector in Hong Kong contributes less to manufacturing value added and is characterized by small and medium-sized firms. He attributes this to Hong Kong's perfect lack of government protection for the sector. The surveyed firms themselves strongly favored the policy of free trade--they have easy access to high quality inputs, information, and second-hand equipment--and did not think that they would gain much from protection. Yet Fransman argues that in order for firms to continue to improve their design capability and production processes, government assistance in the form of tariff protection and information gathering will be necessary. Such assistance, besides helping the capital goods sector, would allow the economy as a whole to benefit from increased inter- and intra-firm learning within that sector.

Hamilton, C., and Soderstrom, H.T., 1981, "Technology and International Trade: A Heckscher-Ohlin Approach" Chapter 5 in Grassman, S., and E.Lundberg, eds., The World Economic Order; Past and Prospects (New York: St. Martin's Press).

Defining technology as a produced intermediate good, the authors develop a model of trade in technology in which comparative advantage in technology production is determined by factor endowments. The output of technology will be unequally distributed across countries when there is trade, but there should also be a tendency towards equalized technology input across countries. The authors conclude with a good discussion of the merits of their concept of technology.

Helleiner, G. K., 1977, "International Technology Issues: Southern Needs and Northern Responses" Chapter 12 in Bhagwati, J. N., ed., The New International Economic Order: The North-South Debate (Cambridge: MIT Press).

This article surveys both LDC efforts to lower the cost of imported technology and efforts to ensure that such technology is appropriate. It is most useful as a survey of the former, viewing LDCs as consumers who are naturally interested in lowering the cost and increasing the supply of the technology they import. Helleiner supports revisions of the Paris Convention governing patents, trademarks and other industrial property which would shorten the duration of patent privileges and limit them to local production. He also offers qualified support for an international code of conduct on the transfer of technology; he feels it will give the poorest LDCs a firm basis for negotiating with MNCs.

Irvin, G. W., 1981,"Bargaining Asymmetry in Technology Transfer; A Games Theoretic Approach", Journal of Development Studies Vol. 18, no.1.

A purely theoretical paper with one practical point: even when LDC

governments and private (foreign) investors are equally knowledgeable about technologies, the division of the taxable surplus that arises from using the technology in the LDC can favor the firm. This occurs (in a version of Nash's classical cooperative game solution) whenever the benefits of the project which accrue to the government--determined via cost-benefit analysis--exceed the benefits accruing to the firm--the pure financial surplus. In such a situation, only the financial surplus can be taxed, but there is an external payoff to the government contingent upon merely concluding the bargain, which encourages a firm-biased distribution of profits.

Krugman, P., 1979, "A Model of Innovation, Technology Transfer, and the World Distribution of Income", Journal of Political Economy, Vol. 87, no. 2.

Krugman presents an elegant and simple model of North-South macroeconomic interaction in which innovation, in the form of new products, takes place only in the North. The welfare of Northern workers is seen to depend positively on the rate of innovation, while the welfare of the South depends positively on the rate of diffusion (as in Vernon's product cycle) of new products. Essentially, the model highlights the role of economic rent: both regions gain as consumers of new products, but as only the North can produce them it gains both as a consumer and a producer.

Lall, S., 1981a, "Technology and Developing Countries: A Review and an Agenda for Research", Chapter 5 in Lall, S., Developing Countries in the International Economy (London: MacMillan Press).

A thorough review of the literature and issues in this area, including an extensive bibliography. Little empirical detail is provided, nor is there much emphasis on the possible relationship between trade regimes and technological development. Lall feels that high technology exports by LDCs offer great potential for growth in income and in technological learning, and calls for greater research in this area.

_______________, 1981b, "The Patent System and the Transfer of Technology to LDCs", Chapter 6 in Lall, S., Developing Countries in the International Economy (London: MacMillan Press).

Lall argues that the desirablility to LDCs of being a part of the current international patent system depends upon whether a particular LDC is capitalist or socialist. Socialist countries need not join the system, he argues, for "domestic innovation can be promoted by 'stealing' foreign technology", while capitalist LDCs should be part of the system in order to "facilitate their integration into the developed capitalist world"--and also because the costs to an LDC of the patent system have been exaggerated.

Lecraw, D. J., 1969, "Choice of Technology in Low-Wage Countries: A Non-neoclassical Approach", Quarterly Journal of Economics, 93(4).

Lecraw makes a useful distinction between technology that is inappropriate in terms of prevailing factor prices, an technology that is inappropriate technically, in the sense of being off the production possibility frontier. In a large survey of Thai data, he concludes that new investment in Thailand is characterized by a lot of both kinds of ineffeciency. This he explains as the result of firms not behaving in a strict neo-classical cost-minimizing manner: the higher were projected profits, the higher were both price and technical inefficiency. The statistical analysis also shows that firms producing for export, and firms in competitive industries, make the least inappropriate technological choices; finally, there does not appear to be any difference in the choices made by foreign-owned as opposed to domestic-owned firms.

Lipsey, R. E., Kravis, I. B., and Roldan, R. A., 1982, "Do Multinational Firms Adapt Factor Proportions to Relative Factor Prices?", Chapter 6 in A. O. Krueger, ed., Trade and Employment in Developing Countries, Vol. 2 (Chicago: University of Chicago Press).

Do multinational firms respond to differences among countries in the price of labor by using more labor-intensive methods of production in low wage countries? Using data on the capital per worker of U. S. and Swedish multinationals in 1966 and 1970, Lipsey et al answer this question in the affirmative. The major way in which such adaptation took place was by producing in a labor-intensive way (as opposed to, say, selecting small-scale operations for which only labor-intensive techniques were available or selecting labor-intensive sub-industries for placement overseas).

Magee, S. P., 1977, "Information and the Multinational Corporation: An Appropriability Theory of Direct Foreign Investment", in J. Bhagwati, ed., The New International Economic Order (Cambridge: The MIT Press).

This is an interesting essay concerning the motivation of MNCs in making foreign direct investments. Magee's theory hinges on the MNCs' attempt to appropriate as much of the rent to information which they develop as possible. This demands large firm size and expanding markets. It also tends to direct MNCs' research and development toward complex rather than simple processes since they are more appropriable.

Rosenberg, N., 1976, Perspectives on Technology (Cambridge: Cambridge University Press).

Technical change does not come "from anywhere and everywhere," argues Rosenberg. Rather, the capital goods sector has a strategic role in the introduction and diffusion of technology, for it serves as a transmission center for the transfer of new skills to the entire machine-using sector. Any cost reduction in the capital goods sector is a capital-saving innovation for the economy as a whole; yet LDCs are at a disadvantage in moving in a capital-saving direction because limited market size is a serious stricture on the capital goods sector. Thus it might be worthwile to take a seemingly labor-saving path, at least until a substantial stock of capital and capital goods industry is built up.

Stewart, F., 1972, "Choice of Technique in Developing Countries", Journal of Development Studies, Vol. 9.

Stewart criticizes as unhistoric and unrealistic the neo-classical understanding of technological choice--the selection of a particular technique from a number of techniques which, a priori, allow extreme substitutability of capital and labor, with the relative price of the factors adjusting to balance supply and demand. She explicates the inter-relation of goods, processes, factor availabilities, and scale, which all have a bearing on the appropriateness for LDCs of particular technologies.

_______________, 1976, "Capital Goods in Developing Countries" in Cairncross, A. and M. Puri, eds., Employment, Income Distribution, and Development Strategy: Problems of the Developing Countries (London: MacMillan Press).

Historically, developing nations often have tried to build up the capacity of their capital goods sector. Stewart argues that this is justified only when it is indeed the lack of capital goods capacity which is constraining the growth rate. Rather, she justifies a build-up of capital goods industries on the grounds that only in a domestic capital goods sector will technical innovation be responsive to LDC needs. However, policies should encourage small machine makers and the like rather than the expansion of capacity per se.

_______________, 1979, "International Technology Transfer: Issues and Policy Options" World Bank Staff Working Paper no. 344.

Stewart has fairly strong views and argues them forcefully in this overview of the issues in LDC technology. Her basic thesis is that as technical innovation is concentrated in advanced country techniques, "unless developing countries undertake research and development in alternative directions, the choice of technology available in the future will be increasingly circumscribed and

irrelevant to the needs of the world's poorest." (Perhaps this is so for the reason given by Magee (1977)--Stewart does not explain.) Since technology also has the nature of a public good, LDC governments are fully justified in initiating conscious strategies of technological development--policies which allow selective import of foreign technology and contain positive measures to promote local innovation. Specifically, she favors national registration of technology contracts so that LDCs can avoid duplicative imports, and some kind of limitation on the use of foreign-owned trademarks in LDCs.

D. Terms of Trade Debate

Heatedly controversial in the 1950s, interest in the terms of trade has cooled off considerably even though the main points of contention remain unresolved. Initiated by Prebisch's classic article (1950) the early literature and today's have concentrated on two main issues:

a) Empirically, is there a long-term trend in the net barter terms of trade between developed and developing countries, and/or between manufactured and primary goods?

b) What is the significance of a change in a country's terms of trade?

The early literature is well summarized by Findlay (1981).

Considering the empirical issue, the most recent work has been by Spraos (1980). This comprehensive piece of research reaches the qualified conclusion that the net barter terms of trade between developing countries' primary products and developed countries' manufactured goods has not deteriorated (from the 1930s through the 1970s).

Few would deny that short-run deterioration in an LDCs' terms of trade is costly. But the significance of long-term changes, if they exist, is ambiguous. Prebisch viewed the putative decline in the terms of trade as the means by which technical progress in the developed countries was retained there, while the technical progress of LDCs was transferred to DCs in the form of lower prices. These price movements, in turn, were explained as the result of producer and worker monopoly power in developed countries, and as due to a difference in the timing of the business cycle in LDCs and DCs. But Maneschi (1983) shows that a change in the terms of trade sufficient to transfer all the gains from technical progress to DCs is extremely unlikely to occur in practice. Bacha (1978) shows that under conditions of full capital mobility a deterioration in the terms of trade will <u>help</u> workers in LDCs. Findlay (1980) is able to generate the Prebisch result (with no capital mobility) but finds that <u>employment</u> can increase in LDCs even as per capita income falls.

This most recent crop of theories has explicated the terms of trade while assuming perfectly competitive markets, and in that sense is distinct from the earlier literature which usually assumed some kind of imperfection in DC markets. Findlay (1981) notes that while tastes, technology, and factor endowments are the neo-classical determinants of the terms of trade, demand factors have typically been ignored in non-neoclassical modelling. Beyond this, there are few obvious generalities to be made about the literature; particular theoretical results appear to be very sensitive to assumptions about the structural nature of LDC and DC economies.

Bacha, E., 1978, "An Interpretation of Unequal Exchange From Prebisch-Singer to Emmanuel", Journal of Development Economics, 5:319-330.

Bacha presents a very simple general equilibrium model of the world economy which he uses to illustrate the large qualitative differences in the effects of technical change that emerge depending upon how one specifies the class structure of North and South. In the "Emmanuel" case full capital mobility is assumed,

pitting all capitalists against all workers, whether of the North or South, in which case a deterioration in the South's terms of trade is a necessary intermediate step for an improvement in the welfare of Southern workers.

Findlay, R., 1980, "The Terms of Trade and Equilibrium Growth in the World Economy", American Economic Review, Vol. 70 no.3.

Findlay has constructed a dynamic model of the world economy in which the North is characterized as the one-good economy of Solow's growth model and the South as a labor-surplus economy. There is no capital mobility. Naturally, growth in the North is given by its exogenously determined population growth rate; the South's growth rate becomes endogenous, and depends positively on its terms of trade. Furthermore, technical change in the South--in primary production--lowers the South's terms of trade and therefore does transfer the fruits of innovation to the North as Prebisch theorized, despite perfect competition in Northern markets. Employment in the South can increase in this case, however, if import elasticities of demand are sufficiently high.

Findlay, R., 1981, "The Fundamental Determinants of the Terms of Trade", Chapter 12 in Grassman, S. and E. Lundberg, eds., The World Economic Order: Past and Prospects (New York: St. Martin's Press).

The first part of this paper is a brief synopsis of the evolution of neoclassical thought on the determinants of the terms of trade, from Mill to Johnson, and of non-neoclassical thought on the matter, from Prebisch to Bacha. The second part of the paper explicates his own model of the terms of trade--virtually the same model as in Findlay (1980). The main differences between his model and the earlier neoclassical ones are that in his formulation technology and tastes enter asymmetrically in North and South, and that the long-run terms of trade of LDCs are positively related to the rate of growth of effective labor supply in the North.

Maneschi, A., 1981, "The Prebisch-Singer Thesis and the 'Widening Gap' Between Developed and Developing Countries", Canadian Journal of Economics, Vol. XVI no. 1.

Maneschi defines the "Prebisch-Singer thesis" as the belief that technical progress in LDCs is transferred to DCs in the form of lower prices for primary products. In a simple model, she demonstrates that it is highly unlikely for DC and LDC trade elasticities to be such as to allow the terms of trade to deteriorate enough to accomplish such a transfer. However, her model does imply that under reasonable assumptions (that the rate of technical progress in DCs exceeds that in LDCs, and that LDC exports have a lower output elasticity of demand that those of

DCs), per capita income will not grow as fast in LDCs as in DCs.

Prebisch, R., 1962, "The Economic Development of Latin America and its Principal Problems", Economic Bulletin for Latin America, Vol. 7. (First published in 1950.)

The starting point and standard reference.

Spraos, J., 1980, "The Statistical Debate on the Net Barter Terms of Trade Between Primary Commodities and Manufactures", Economic Journal, Vol. 90, pp. 107-128.

This is a very thorough survey of all the statistical work done the terms of trade prior to 1980, with a good discussion of the problems inherent in trying to measure the change in the relative prices of the manufactures imported, and the primary products exported, by LDCs. He examines developments through the late 1970s and conlcudes that a 'deteriorating tendency...is open to doubt.'

E. Instability of Export Earnings and Commodity Prices

The establishment of a commodity price stabilization scheme was one of the central topics of the recent NIEO discussions, and indeed, international stabilization agreements now exist for five commodities: coffee, sugar, rubber, cocoa, and tin. Nevertheless, there never has been a theoretical presumption that these schemes will 'work'. Not only have their goals been contradictory at times (as in stabilizing <u>and</u> raising prices), but there is great uncertainty that an official agency could do a better job than private speculation at keeping prices where they 'should' be.

Johnson (1977) and Corden (1979) cogently explicate the problems faced by price stabilization agencies. Using simple theoretical models, both Johnson and Nguyen (1980) demonstrate that when the commodity market is disturbed by supply side shocks, price stabilization can destabilize producer earnings. Nguyen is the more optimistic, however, and argues that <u>partial</u> price stabilization <u>can</u> stabilize earnings. The actual experience of the international stabilization agreements in 1981 and 1982 has not been one of success: except for coffee, all the commodities experienced large price declines. No studies have appeared in the literature analysing this in light of the theory of price stabilization.

A separate issue is commodity diversification and its relation to the instability of total export earnings. It seems a reasonable idea that the more diversified an LDC's exports, the more stable its total export earnings will be; but this has not been proven the reality of the matter. MacBean and Nguyen (1980) and Love (1981) discuss the reasons.

Concern about instability of total export earnings, in turn, has arisen out of fear that such instability would have harmful effects on growth rates, perhaps by depressing savings and investment. Here, too, the most recent empirical studies--Moran (1983) and Tan (1983)--have been unable to find any link between earnings instability and GDP growth, or even the growth of exports themselves. However, an alternative, theoretical, view is presented by Green (1983) who argues that optimal compensatory finance schemes that loan money to LDCs to cover export earning shortfalls should finance 100% of the shortfall (as the IMF's CFF does).

Corden, W.M., 1979, The NIEO Proposals: A Cool Look, Thames Essay no. 21 (London: Trade Policy Research Center).

In the first part of this essay Corden succinctly assesses the case for commodity buffer stocks in general and the Common Fund in particular. Basically he feels that very little can be expected from such institutions--that is, official 'speculation' will do no better than private speculation at lessening price and earnings fluctuations for LDC producers. At their best, however, they could smooth very short-run price fluctuations.

Green, C., 1983, "Insulating Countries Against Fluctuation in Domestic Production and Exports; An Analysis of Compensatory Financing Schemes", Journal of Development Economics, Vol. 12.

This paper is a theoretical analysis of the IMF's compensatory financing schemes which let LDCs borrow on concessionary terms in order to make good temporary and 'exogenous' shortfalls in their export receipts. Although CF plans hold out the promise of improving global welfare--they are insurance policies--it is not always clear how to determine the correct level of compensatory finance based on national trade statistics alone, given interaction between domestic production and quantities traded. Green argues that the optimal CF for export shortfalls is always

100% of the shortfall, as is the case in the IMF's facilities.

Johnson, H.G., 1977, "Commodities: Less Developed Countries' Demands and Developed Countries' Responses", Chapter 9 in Bhagwati, J.N., ed., The New International Economic Order: The North-South Debate (Cambridge: MIT Press).

In a paper which is less than diplomatic at times, Johnson lays out his arguments against the Integrated Program for Commodities proposed by UNCTAD (in 1975) as part of the call for an NIEO. He presents arguments at every level: economic--that the proposed Common Fund is inherently unworkable, and is an inefficient means of raising LDC income; political--that UNCTAD is deliberately misusing concepts of fairness and justice in pressing its case; and moral--that DCs have no obligation to solidify tax earnings of LDC governments unwilling and incapable to help the majority of their populations. The paper concludes with an ingenious appendix analyzing the effects of price stabilization on producer income under a variety of supply and demand conditions.

Love, J., 1981, "Commodity Diversification: A Market Model", Journal of Development Studies, Vol. 18, no. 1.

In this empirical analysis of LDC export earnings instability Love decomposes instability into a "market-related" (i.e. demand side) factor and a "producer-related" (supply side) factor. He finds that for half of the LDCs in his sample of 28, more than 50% of their instability is explainable by supply side factors such as weather, disease, the rate of technical progress, and management ability. He concludes that, for many cases, it is inappropriate to focus on external factors as causes of instability.

MacBean, A.I., and Nguyen, D.T., 1980, "Commodity Concentration and Export Earnings Instability: A Mathematical Analysis", Economic Journal, Vol. 90.

In this article MacBean and Nguyen present a simple statistical explanation of the lack of observed correlation between commodity concentration and the instability of export proceeds. Traditionally, this lack of correlation is explained by the fact that export proceeds from individual commodities move together, or by the fact that countries with highly concentrated exports have concentrated on commodities with stable proceeds. The authors demonstrate that there is a third possibility: the wide dispersion of individual commodities' instability. To put it another way, the greater is dispersion of the commodities' degrees of instability, the less likely a positive relationship between concentration and total export earnings instability.

Moran, C., 1983, "Export Fluctuations and Economic Growth: An Empirical

Analysis", Journal of Development Economics, Vol. 12.

Economists have been able to supply arguments both that export earnings instability will hamper growth, and that it will not. Moran now concludes, on the basis of cross-section analysis, that no clear empirical relation between instability and growth can be established, either. Results were highly sensitive to the period of analysis, but over the long run no general conclusion could be made. The analysis included several possible links between instability and growth--domestic savings, investment, and non-export output--but did not use an explicit macro-model.

Nguyen, D.T., 1980, "Partial Price Stabilization and Export Earning Instability", Oxford Economic Papers, Vol. 32.

Nguyen considers a buffer stock which operates on a partial adjustment rule, changing demand by some fixed proportion of the deviation of the actual price from the 'expected' or average price. Much like Johnson, who analyzed the case of complete price stabilization, he concludes that authorities can stabilize both prices and earnings except when the market instability is on the supply side and price elasticity of demand is high. However, there is no discussion of how the authorities determine the 'average' price.

Tan, G., 1983, "Export Instability, Export Growth, and GDP Growth", Journal of Development Economics, Vol. 12.

This empirical analysis covers data from Pacific Basin countries, and concludes there is no significant correlation between export instability and either export expansion or the growth of GDP. Unlike Moran (1983), Tan uses only correlation coefficients to make his points. The results are very sensitive to the choice of index of export instability, and this index itself is sensitive to assumptions about the linearity or nonlinearity of the trend in exports. (C. Gklezakos, in an article in the same journal issue but not annotated here, makes exactly the same points as Tan.)

II. Financial Repression, Liberalization, and Domestic Capital Markets in LDCs

Though the role of money and finance in economic development has been examined by economists (Gurley and Shaw (1967), and Patrick (1966)) from different angles and with various degrees of emphasis since the 1950's, it is only recently that economists have started to extend their formal theoretical analysis to less developed countries.

In two important books, published in the same year, Shaw (1973) and McKinnon (1973) both underline the critical importance of financial deepening for LDCs. In their view, most stagnant LDC economies suffer from "shallow finance" or "financial repression," characterized by slow growth or even contraction of financial assets and market structures. This has been caused mainly by inappropriate policies that impose ceilings on nominal interest rates and maintain fixed exchange rates which overvalue the domestic currency. In contrast, they argue, financial liberalization and deepening enable interest rates and exchange rates to reflect relative scarcities, stimulate savings, and discriminate more efficiently between alternative investments. This in turn leads to higher economic growth.

Following Shaw's and McKinnon's lead, there has been an accelerated research effort into the workings of financially repressed economies and their liberalization. The theoretical models have been formalized to explain the effect of higher interest rates on economic growth through higher savings rates (Fry (1978, 1980, 1982), Kapur (1976), Mathieson (1980), and Spellman (1976)) and increased allocational efficienty (Galbis (1977), Krugman (1978), and Fry (1978)). The origins and effects of financial repression in relation to the reserve requirement, budgetary deficit, selective credit subsidies, and inflation are studied in McKinnon (1973, 1981), and the consequences of interest rate ceilings and concessionary loan terms on the distribution of credit (specifically agricultural credit) have been analyzed by Gonzalez-Vega (1975).

Complementing this research, there have been empirical tests and international comparisons of effects of financial repression and liberalization on economic growth (Cheng (1980), Fry (1980, 1982, 1983), Galbis (1979) , Jao (1976), McKinnon (1981), Roe (1982), and Yoo (1977)). There have also been some efforts to study the capital market outside of the organized financial systems in LDCs--the so-called "curb market" (Wai (1977)) and the group principle (Leff (1976)).

In a slightly different line of research, there have been several studies of selective credit controls as instruments of development policy (Johnson (1976), Khatkhate and Villanueva (1978)) and the role of central banks in the development of financial systems (Bhatt (1974).

All these studies try to describe the characteristics of financial markets in developing countries and seek the financial policies which would achieve the highest economic growth possible given those characteristics.

The question which naturally arises from these studies is how to succesfully implement a financial liberalization which will allow the capital market to work more efficiently. With regard to this question there have been papers emphasizing the role of higher nominal interest rates in economic stabilization (Kapur (1976), Fry (1982) and Mathieson (1980)), the role of fiscal control in stabilizing the price level (Brock (1982), and McKinnon (1981, 1982)), and the optimal liberalization strategy (Kapur (1983)). There have also been suggestions about how to manage the repressed economy in which political constraints make full liberalization infeasible (McKinnon and Mathieson (1981)) and about the order of economic liberalization in both the domestic capital market and the foreign sector, covering trade, the exchange rate, interest rates, and fiscal policies (McKinnon (1981, 1982)).

Finally, there are some different views concerning the techniques of financial liberalization. Van Wijnbergen (1982) and Bruno (1979) emphasize the role of curb markets as an important source of firms' working capital. Roe (1982) discusses the institutional circumstances of investment in LDCs.

Balassa, Bela, 1982, "Disequilibrium Analysis in Developing Economies: An Overview," World Development, Vol. 10, no. 12.

This paper explains the disequilibrium which is pervasive in both product markets and factor markets in most developing countries. Protection discriminates among domestic products, and between domestic and foreign sales of any given commodity. Capital markets frequently are distorted by interest rate ceilings and credit rationing. The author reviews the techniques developed to analyze product and factor market disequilibrium and the empirical evidence measuring the economic costs of policy distortions.

Bhatt, V.V., 1974, "Some Aspects of Financial Policies and Central Banking in Developing Countries," World Development, Vol. 2, nos. 10-12.

Bhatt attempts to delineate broadly a set of financial policies consistent with any sound strategy of development. He emphasizes the evolution of a sound, well-integrated financial system from the point of view of both resource mobilization and efficient allocation. He also argues that "what needs special emphasis at an international level is the rationale and urgency of evolving a sound financial structure through the efficient performance of the twin inter-related functions--as "promoters" and as "regulator" of the financial system--by central banks." He refers to the Japanese case as a model for developing countries.

Brock, Philip L., 1982, "Optimal Monetary Control During an Economic Liberalization: Theory and Evidence From the Chilean Financial Reforms," Ph.D. dissertation, Stanford University.

This thesis contains five chapters on the effect of government's inflationary finance on capital accumulation, trade, the exchange rate, and the liberalization process. Using the Chilean economic liberalization process as an example, Brock argues that fiscal controls are an important condition for successful financial liberalization.

Bruno, Michael, 1979, "Stabilization and Stagflation in a Semi-Industrial Economy," in R. Dornbusch and J. Frenkel, eds., International Economic Policy (Baltimore: Johns Hopkins).

This paper presents a model with a "finance constrained" supply side: credit is rationed so that firms are forced to the curb market for marginal credit. In such an economy, restrictive monetary policy and/or devaluation may increases firms' cost of capital, driving up costs (and prices) and reducing output. This is a difficult paper, but it addresses an important topic for policy-makers in LDCs with fragmented capital markets.

A.G. Chandavarkar, 1971, "Some Aspects of Interest Rate Policies in Less Developed Economies: The Experience of Selected Asian Countries," IMF Staff Papers, Vol. 18, no. 1.

The author first discusses the problems of selecting criteria for assessing interest rate policies and the limitations of interest rate statistics. He then reviews the interest rate levels in both organized and unorganized markets in Asia. Finally, he divides the countries into those with "conventional" interest rate policies (ceilings, etc.) and those with rates that are closer to market rates to compare the effects of high interest policies on saving and economic stabilization.

Cheng, Hang-Sheng, 1980, "Financial Deepening in Pacific Basin Countries," Federal Reserve Bank of San Francisco Economic Review.

Cheng presents an overview of the financial deepening process in eleven Pacific Basin countries (Australia, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, Taiwan, Thailand, and the U.S.) during the inflationary period of the past two decades. For any nation, he argues, "financial deepening" represents an increase in the extent of financing of production and investment through specialized, organized markets. In developing countries, the process is identified with increases in the activity of financial intermediaries because of general lack of other capital markets. To measure and compare financial deepening, Cheng provides a cross-section view of the degree of financial intermediation in each country in 1978, plus a comparison of the eleven countries' financial growth over the entire 1960-1978 period. He argues that the real deposit interest rate played a critical pacesetting role in each nation's financial growth.

Christian, James W. and Emilio Pagoulatos, 1973, "Domestic Financial Markets in Developing Economies: An Econometric Analysis," Kyklos, Vol. 26.

This paper attempts to quantify domestic financial structure's role in mobilizing savings for economic development, through the introduction of a saving function having specific relevance to developing economies. The paper's empirical analysis supports the hypothesis that the level of domestic financial development is a significant constraint on the rate of capital formation and, hence, on the rate of growth of output.

Coats, W.L., and D.R. Khatkhate, 1980, Money and Monetary Policy in Less Developed Countries (London: Pergamon Press).

This book contains about 50 articles on the role of money and monetary policy in LDCs and includes a critical survey of the literature by the editors. The book is organized as follows: I. Survey of the Issues and Evidence; II. Money, Finance, and Economic Development; III. Implementation of Monetary Policy: Instruments and Techniques; and IV. Econometric Policy Models.

________________________, 1980, "Money and Monetary Policy in Less Developed Countries: Survey of Issues and Evidence," in Coats and Khatkhate, op. cit.

The authors review the changes in perspectives on money's role in the development process, then critically survey the literature on monetary policy objectives, the money supply, interest rate policy, selective credit controls and econometric policy models. They conclude that "while the dethronement of money during the 1950s was followed by its restoration, there is a lot of ground

still to be covered." They suggest research in the definition of money in LDCs and the relative efficacy of monetary policy in small LDCs which are fairly open to outside influences.

Fry, Maxwell, 1978, "Money and Capital or Financial Deepening in Economic Development?" Journal of Money, Credit, and Banking, Vol. 10, no. 4.

This paper presents an empirical test of the models of finance in economic development developed by McKinnon and Shaw. It also tests their alternative theories of the way in which financial conditions affect saving and economic growth. The results of pooled time series analysis using seven Asian LDCs support the view that financial conditions do influence saving and growth. However, the author argues that the demand for money estimates do not support McKinnon's complementarity hypothesis, which assumes that investment is, in the main, self-financed, and money is the predominant financial repository of domestic savings in these countries.

__________________, 1980, "Saving, Investment, Growth, and the Cost of Financial Repression," World Development, Vol. 8, no. 5.

This paper presents a quantitative estimate of the cost of financial repression in developing countries. (Here, financial repression is interpreted as the technique of holding institutional interest rates below their market equilibrium levels.) Estimates of saving and growth functions lead to the conclusion that the cost of financial repression appears to be around half a percentage point in economic growth foregone for every point the real deposit rate is set below its market equilibrium rate.

__________________, 1982, "Models of Financially Repressed Developing Economies," World Development, Vol. 10, no. 9.

This paper is a survey of models of financial repression and liberalization. This includes both closed and open economy models such as those developed by Kapur, Galbis, Mathieson, and the author. Fry concludes that the real interest rate appears to exert an effect on the saving rate, the quantity and quality of investment, inflation (through real money demand), and the rate of economic growth in financially repressed LDCs.

__________________, 1983, "Inflation and Monetary Policy in Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand, 1960-1982," Paper presented at the conference on inflation in East Asian countries, Chung-Hua Institution for Economic Reserch, Taiwan.

This paper investigates the growth strategies and the degree of government involvement and intervention in this group of eight countries within the last two decades. Inflation in the eight countries is described, and its effect analyzed. Also, the interaction between inflation and administratively fixed nominal interest rates in the group of countries is discussed.

Galbis, Vincente, 1977, "Financial Intermediation and Economic Growth in Less-Developed Countries: A Theoretical Approach," The Journal of Development Studies, Vol. 13, no. 2.

This paper shows, within a two-sector model, that high real interest rates are growth promoting, even if total real saving is interest insensitive, because they bring about an improvement in the quality of the capital stock. This happens because higher interest rates will increase investment in the higher productivity sector.

______________, 1979, "Inflation and Interest Rate Policies in Latin America, 1967-76," IMF Staff Papers, Vol. 26, no. 2.

This paper attempts to reconstruct policy measures and data on interest rates on savings instruments in 19 Latin American countries during the decade 1967-1976 and to assess likely effects of those policies in the light of a theoretical financial framework. It discusses the extent of financial repression, the relationship between financial repression and "dollarization," and the relationship between these phenomena and capital movements. It concludes that the trend toward liberalizing interest rates in Latin America was more recent and more successful than indexation.

Gonzalez-Vega, Claudio, 1975, "The Iron Law of Interest Rate Restrictions," Ph.D dissertation, Stanford University.

The author discusses the features of agricultural credit markets and the distribution of credit among various size farms. He criticizes the short-comings of concessionary interest rate policies in agricultural credit which are popular in many LDCs. He strongly argues for a free interest rate policy to increase the amount of credit and improve its distribution in agricultural sectors.

Gurley, John G., and E.S. Shaw, 1967, "Financial Structure and Economic Development," Economic Development and Cultural Change, 15, no.3.

This paper describes the financial accumulation which usually occurs as countries rise along the scale of wealth and income, as well as the relationship of this financial accumulation to real accumulation. The authors demonstrate that substantial differences in financial accumulation persist between countries

and several reasons for those differences are described. They suggest a "Law of Financial Development": each economy begins its development by intensive exploitation of saving-investment technology that is chosen for historical, political, social or perhaps economic reasons, and then, as this technology produces a diminishing net yield, experiments with alternative technology are undertaken.

Jao, Y.C., 1976, "Financial Deepening and Economic Growth: A Cross-Section Analysis," Malayan Economic Review.

This paper tests the hypothesis that economic growth is positively related to financial deepening (as represented by the growth rate of per capita real balances and the degree of intermediation). The result shows that for both developed and less developed countries, the relationship is indeed positive and highly significant, as far as the real balance effect is concerned. The relationship between output growth and intermediation is, however, less clear. Jao asserts that as far as the intermediation effect is concerned, the empirical evidence tends to support the view which regards the narrowly defined version of money as a poor indicator of financial development; economic growth is related to the accumulation of financial assets defined in the widest sense.

Johnson, O.E.G., 1974, "Credit Controls as Instruments of Development Policy in the Light of Economic Theory," Journal of Money, Credit, and Banking, Vol. 6, no. 1.

Johnson examines credit controls as attempts to equate private and social profitability and as tax-cum-subsidy schemes, and concludes that there is no logical basis for them. He also discusses the distribution effects and welfare costs of credit control. As alternatives to credit control, he suggests explicit tax subsidies and/or the establishment of institutions that specialize in the servicing of loans to sectors considered to be "high-priority."

Kapur, Basant, 1976, "Alternative Stabilization Policies for Less Developed Economies," Journal of Political Economy, Vol. 84, no. 4.

Kapur argues that there are advantages in raising deposit interest rates as a first step in a stabilization program. He constructs a model in which output varies directly with real money balances as a result of assuming that (1) capacity is utilized in proportion to working capital, which, in turn, is closely linked to the value of the money stock; and (2) there is unutilized capital. If policy makers reduce money growth and inflation before raising deposit rates, real money balances would decline. As output is determined directly by the behavior of real money balances, his stabilization prescriptions follow directly.

______________, 1983, "Optimal Financial and Foreign Exchange Liberalization of Less Developed Countries," Quarterly Journal of Economics, Vol. 48, no. 1.

This paper models a highly inflationary LDC economy in which monetary forces are the result of three policy determinants: the rate of monetary expansion, the deposit rate on bank accounts, and the rate of depreciation of the real exchange rate. The task confronting policy makers is to reduce the equilibrium inflation rate without undue transitional sacrifice of growth objectives. The author demonstrates that this optimally requires the precise coordination of all three instruments, with high but declining money growth and deposit rates being adopted initially and with the exchange rate being modulated so as to forestall excessive capital inflows and to influence favorably the relative input prices.

Khatkhate,D.R., and D.P. Villanueva, 1978, "Operation of Selective Credit Policies in Less Developed Countries: Certain Critical Issues," World Development, Vol. 6, nos. 7/8, reprinted in Coats and Khatkhate, op. cit.

This paper reviews the work in this field, and points out the critical issues of selective credit controls. It discusses the preconditions necessary for the successful operation of selective credit policies, the relationship between the allocative credit policies and inflation, the real and financial effects of these policies, and their impact on the process of financial intermediation. It concludes that financial intermediation is highly necessary in hastening the development of an economy and that selective credit policies, if properly designed and executed, strengthen the process of financial intermediation by improving its allocative aspects.

Krugman, Paul, 1978, "Interest Rate Ceilings, Efficiency, and Growth: A Theoretical Approach," unpublished mimeo.

This paper develops a simple model of the effects of interest rate restrictions. Following McKinnon's "Fisherian" model of the loan market (1973), it argues that interest rate restrictions distort the economy in three ways: they bias consumption plans toward current and away from future consumption; they lead lenders to engage in low-productivity direct investment instead of making loans which are socially more productive; and they lead to excessively capital-intensive investments by borrowers.

Leff, Nathaniel H., 1976, "Capital Markets in Less Developed Countries: The Group Principle," in R.I. McKinnon, ed., Money and Finance in Economic Growth and Development (New York: Marcel

Dekker).

This paper draws attention to an institutional feature whose existence has not been widely noted, and analyzes its effect in mitigating the distortions that the weakness of a formal capital market would imply. Leff argues that "the group principle's" operation greatly reduces the allocation losses that would occur if capital markets in LDCs were, in fact, as deficient as often is alleged.

Mathieson, Donald J., 1979, "Financial Reform and Capital Flows in a Developing Economy," IMF Staff Papers, Vol. 26, no. 3.

This paper maintains that if capital inflows are properly anticipated with financial liberalization they can be made a beneficial part of a stabilization program. The author argues that stabilization programs which incorporate capital inflows not only will generate a less disruptive financial reform program, but also yield more rapid reduction in inflation and a higher rate of growth than programs which attempt to eliminate these inflows. Capital inflows will have this beneficial effect, however, only if exchange rate and interest rate policies are carefully coordinated.

McKinnon, Ronald I., 1973, Money and Capital in Economic Development (Washington: Brookings Institution).

This book, along with Shaw (1973), is one of the first theoretical works emphasizing the role of the financial sector in economic growth and development. The author argues that fragmentation and repression of capital markets, along with poorly developed financial intermediation, retard the growth of an economy. He proposes a "complementarity hypothesis" between money and real physical assets. This leads to the conclusion that high interest rates will increase capital accumulation. This is an important book for anyone interested in LDCs' financial policy.

______________, ed., 1976, Money and Finance in Economic Growth and Development: Essays in Honor of Edward S. Shaw (New York: Marcel Dekker).

This book is composed of four parts and an introduction. Part I, "Money and Finance in Economic Development" contains three papers that extend and formalize Shaw's work on domestic financial processes as they influence private propensities to save and invest. Part II, "Alternatives to Financial Intermediation," contains three papers that are more critical in the sense of not assigning the same primacy to organized finance based on the domestic monetary system. Part III, "Inflation and Deflation: The Short-Run Dynamics," addresses the short-run problem of what happens when deflation is imposed by alternative policy measures. Part IV, "Aspects of International Economic Integration," contains four papers that make interesting points on how the international economy impinges on domestic fiscal and monetary policies.

__________________, 1981, "Financial Repression and the Liberalization Problem within Less Developed Countries," in Grassman, S., and E. Lundberg, eds., The World Economic Order:Past and Prospects (New York: St. Martin's Press).

In this paper, McKinnon hypothesizes that misguided financial policies--"financial repression"--have actively repressed the flow of loanable funds rather than passively reflecting underdevelopment itself in most LDCs. He criticizes selective credit subsidies since they can make control over the monetary base almost impossible, besides being expensive to administer. He also demonstrates that, with reserve requirements, inflation will reduce real deposit rates of interest and increase real lending rates even when usury restrictions are absent. Hence, he argues, the co-ordinated removal of both interest ceilings and substantial reserve requirements are essential in overcoming financial repression, particularly in the face of significant price inflation.

__________________, 1982, "The Order of Economic Liberalization: Lessons from Chile and Argentina," Carnegie-Rochester Conference Series on Public Policy, Vol. 17, pp.159-186.

This paper reviews Chile's and Argentina's attempts to liberalize their economies in the 1970s, Chile's attempt being relatively successful while Argentina's failed. Several significant insights are gained, including the importance of first controlling uncovered fiscal deficits so that the inflation tax is not necessary; many capital market reforms are shown to be counter-productive in the presence of the inflation tax.

__________________, and Donald Mathieson, 1981, "How to Manage a Repressed Economy," Princeton Essays in International Finance, no.145.

This paper describes repressed economies, and presents several policy suggestions for running these economies as best as possible given that a fiscal deficit must be paid for with the inflation tax. The necessity of maintaining exchange controls in a repressed economy is also discussed.

Patrick, Hugh T., 1966, "Financial Development and Economic Growth in Underdeveloped Countries," Economic Development and Cultural Change, Vol. 14.

Patrick argues that financial intermediaries have an important function in providing a market mechanism for transference of claims on real resources from savers to the most efficient investors. The more perfect are financial markets, the more nearly optimum is the allocation of investment. In this way, he argues, the financial system accommodates economic growth; on the other hand, to the extent that the financial system is underdeveloped and/or inefficient, it restricts growth below what optimally could be achieved.

Roe, Alan, 1982, "High Interest Rates: A New Conventional Wisdom for Development Policy? Some Conclusions from the Sri Lankan Experience," World Development, Vol. 10, no. 3.

This paper addresses the proposition that high interest rates paid to savers can contribute significantly to the long run development of LDCs as well as to stabilization of their economies in the short run. By relating this general proposition to some simple theories about the behavior of imperfect financial markets (transaction costs, imperfect information, etc.) as well as to specific institutional circumstances in Sri Lanka, Roe argues that the case for higher interest rates reflecting the scarcity price of capital is not a great deal of help to policy makers in an LDC like Sri Lanka. This is because local interest rates are relevant for only a very small part of the investment which is being undertaken. Most investment is funded either by the government budget (for public corporations) or foreign capital (for MNCs).

Shaw, Edward, 1973, Financial Deepening in Economic Development (New York: Oxford University Press).

This book, along with McKinnon (1973), has been influential in the work on the financial sector in developing economies. The author argues that financial growth permits unification of the capital market and is conducive to more discriminating choice between investment opportunites. Taking the debt-intermediation view, the author argues that financial deepening through financial liberalization will increase the growth rate of the economy.

Spellman, Lewis J., 1976, "Economic Growth and Financial Intermediation," in R.I. McKinnon, ed., Money and Finance in Economic Growth and Development (New York: Marcel Dekker).

The author compares an economy completely dependent on self-finance to the same economy that becomes fully financed where savers hold claims on depository institutions. This financial innovation has positive effects on growth through higher stock demand for wealth by increased asset liquidity, and through improved investment allocation by reducing the dispersion in real yields.

Tun Wai, U., 1977, "A Revisit to Interest Rates Outside the Organized Money Markets of Underdeveloped Countries," in Coats and Khatkhate, op. cit.

This paper outlines the size, sources of credit, and demand for unorganized money markets with data on developing countries. It also discusses the high rate of interest in unorganized money markets, and its causes. The author argues that is higher because of risk factors, monopoly profit, inadequate collateral, shortage of capital, and other factors. He concludes that links between the two money markets--organized and unorganized--appear to be closer than they were two or three decades ago. He also argues that despite these developments, the links between the unorganized and organized money markets are not as close as those between the organized money market in LDCs and international money markets.

Van Wijnbergen, S., 1982, "Stagflationary Effects of Monetary Stabilization Policies: A Quantitative Analysis of South Korea," Journal of Development Economics, Vol. 10, no. 2.

This paper presents a quarterly macroeconomic model that explicitly incorporates stylized facts about LDC economies' financial structure. The model focuses on the linkage between financial and real sectors and incorporates the transmission channel of monetary policy into the supply side of the economy via the real costs of working capital, especially in the curb market. The simulation results show, the author argues, that both export prices and domestic prices show a significant sensitivity to cost of financing working capital. He concludes that this credit/supply-side link gives a stagflationary bias to restrictive credit policies.

Yoo, Jang H., 1977, "The Role of Money as a Conduit of Savings and Investment in the UDCs," Kyklos, Vol. 30, no. 3.

This paper tests the significance of money's role in LDCs' investment and savings functions. Yoo argues that one of the objectives of money holdings in LDCs has been found to be financing productive needs or accumulating capital. Hence, he recommends that the LDCs expand the system of financial intermediaries rapidly, offering an attractive rate of return on money holdings so that a large part of net savings can be channeled to the productive sector.

III. Comm ..ial Policy, Exchange Rates, and Balance of Payments Crises

A. Introduction

Balance of payments crises--situations in which a country cannot earn enough foreign exchange through exports or loans to pay for its imports--are a common macroeconomic problem in many LDCs. This section is addressed to these crises and covers their causes, the various policy responses to them, and the effects of these responses. (One topic, the huge debt of such countries as Mexico and Brazil, is sufficiently novel and complex to be set aside in another section, section IV.)

The two most important references in this area are the volumes of Krueger (1978) and Bhagwati (1978) which summarize the findings of an extensive NBER study, Foreign Trade Regimes and Economic Development. This study focused on the experiences of 10 countries with various commercial policies, balance of payments crises and responses to them over the post-war period. McKinnon (1979) has reviewed these volumes in an article that also adds his own insight into the structure of trade regimes in LDCs.

Bhagwati, Jagdish N., 1978, Anatomy and Consequences of Exchange Control Regimes (Cambridge: Ballinger Press). See Section I.A.1 for annotation.

Krueger, Anne O., 1978, Liberalization Attempts and Consequences (Cambridge: Ballinger Press). See section I.A.1 for annotation.

McKinnon, Ronald I, 1979, "Foreign Trade Regimes and Economic

Development: A Review Article," Journal of International Economics Vol. 9, pp.429-452.

This article reviews the NBER volume of Bhagwati (1978) and Krueger (1978) and is a good starting place for the issues raised in those volumes. McKinnon also offers his own partial equilibrium analysis of devaluation in the presence of quotas (later expanded by Aizenman (1981)) and suggests a rationale for the surprising preponderance of quotas, rather than tariffs, in LDCs, based on imperfections in the capital market.

B. Causes of Balance of Payments Crises

This is an area in which the literature is a little vague. There is a tendency to focus on the "straw that broke the camel's back"-- specific events which immediately precede a crisis such as a crop failure, changes in major export prices, sudden capital flights or bursts of import demand, etc., rather than longer term, fundamental factors. Because there are so many particular events that could cause a balance of payments crisis, it is useful to organize them into more general groups, which we do here. The sorts of problems we consider are: excessively expansionary monetary policy, reductions in demand for a key export, increases in the price of key imports, and internal supply shocks such as a crop failure.

Expansionary monetary policy is probably the single most important fundamental cause of balance of payments crises. The importance of this source of balance of payments problems is stressed by Krueger (1978, ch.2, 7, and 10) and McKinnon (1973, ch.10 and 11) and is most obvious in the inflationary economies of Latin America.

We should also note that a common source of expansionary monetary policy in LDCs comes from the government's requirement that uncovered fiscal deficits be paid for by printing money (using the inflation tax). This topic is discussed by Harberger and Edwards (1978), Aghevli and Khan (1978) and Rodriguez (1978).

In addition to these monetary considerations, there are a variety of real factors which can cause balance of payments crises. The first is a reduction in (foreigners') demand for a country's exports. This problem tends to be most severe for countries that depend on a single export in a volatile market, usually a primary commodity. Leith's NBER study (1974) of Ghana, for example, cites shifts in the terms of trade between cocoa and Ghana's imports as crucial in explaining Ghana's payments position. Another example can be found in the most recent world recession, which has complicated the payments problems of many LDCs. Also, Krueger (1978, ch.2) notes that several of the NBER countries' first experiences with payments crises came in the wake of the Great Depression.

The second sort of real shock to be considered is an increase in the price of a key import. The oil price increases of 1973 and 1978-79 have focused attention on this issue, yet surprisingly little has been written about the effects on LDCs' balance of payments. (Katseli-Papaefstratiou (1980) has references to several papers concerning the effects on developed countries with floating exchange rates.) One paper which addresses itself to a stylized LDC economy is Katseli-Papaefstratiou (1980). One of the main results of this paper is that the type of import whose price increases is important; if the world price of a final (consumption) good which is a gross substitute for domestic final goods increases, the balance of trade will actually <u>improve</u> due to expenditure switching toward home goods. But in the case of imported intermediate inputs, like oil or capital goods, a price increase will cause a deterioration in the trade balance and may well cause domestic stagflation as well. Benavie's (1978) results are similar to these.

De Grauwe's (1976) paper also discusses the effects of oil price increases on LDCs in the context of a three country world economy model with DCs, LDCs, and OPEC. An important point of this article is that in the wake of an oil price increase an LDC may face not only higher input costs, but also lower demand for its exports as developed countries go through a recession in response to the oil price hikes. This fact, plus LDCs' high level of trade dependence, makes the effects of such shocks more severe for LDCs than for DCs.

The final real shock which could cause balance of payments problems is an adverse domestic supply shock, the most common example being a reduction of agricultural output. Such a shock requires increased imports and may also reduce exports if the commodity in question is a net export. Bhagwati and Srinivasan's (1975) NBER study of India cites such a shock as an important element in India's 1966 exchange crisis.

Aghevli, Bijan B., and Mohsin S. Khan, 1978, "Government Deficits and the Inflationary Process in Developing Countries," IMF Staff Papers, Vol. 25, pp.383-416.

This paper develops and tests a model in which inflation leads to government deficits as expenditures rise faster than revenues. This deficit is then monetized, leading to further inflation. Using Granger causality tests, the authors find support for "two-way" causation between government deficits and inflation.

Benavie, Arthur, 1978, "Foreign Prices and Income in a Macromodel with Two Domestic Sectors," International Economic Review, Vol. 9, pp.611-631.

This paper presents a Keynesian model (without wealth effects) of an economy that has intermediate and final goods. Benavie studies the effects of changes in the foreign prices of intermediate and final goods, finding the former more deleterious for the home economy. This paper can be read as a complement to Katseli-Papaefstratiou (1980).

Bhagwati, Jagdish, and T.N. Srinivasan, 1975, Foreign Trade Regimes and Economic Development: India (New York: Columbia University Press).

De Grauwe, Paul, 1976, "The Oil Price Increase, Stabilization Policies, and Less Developed Countries," in Danny M. Leipziger, ed., The International Monetary System and the Developing Nations, (Washington: Agency for International Development), pp.127-146.

This paper discusses the effects of oil price increases on both developed and less-developed countries. De Grauwe argues that LDCs will face two shocks--one being the oil price increase and the second being a fall in demand from DCs--which make the effects of OPEC much more severe for them. The model has some ad hoc aspects, which are pointed out in Peter Clark's comment following the article.

Harberger, Arnold C., 1978, "A Primer on Inflation," Journal of Money, Credit, and Banking, Vol. 10, no. 4.

The author demonstrates the existence of world inflation with many countries sharing experiences that are closely similar within given periods, but that differ markedly from one period to another. The notion of a "world money supply," in which different currencies are linked by fixed (or nearly fixed) exchange rate is introduced, and the various types of inflationary experience are examined with reference to the degree of reliance by governments on financing their budget deficit, or to the expansion of credit to the private sector. Harberger argues that the underlying cause for world inflation was bound to rest not in any massive increase in deficit financing but rather in changes in the rate at which world reserves were expanding.

Harberger, Arnold C., and Sebastian Edwards, 1980, "Indicators of Performance in Monetary Policy in Open Economies: The Historical Record," mimeo, University of Chicago.

This paper presents evidence that expansionary monetary policy is often the result of the need to finance fiscal deficits with the inflation tax. A substantial amount of raw data is presented, but the analysis is tentative and often incomplete.

Katseli-Papaefstratiou, Louka T., 1980, "Transmission of External Price Disturbances and the Composition of Trade," Journal of International Economics, Vol. 10, pp.357-375.

This paper studies the effects of import price shocks on a small

open economy. The author finds that the type of import--final or intermediate good--is significant in determining the effect of an import shock on the economy. Only intermediate input price increases affect the balance of trade, and also domestic prices and income, adversely.

Krueger, Anne O., 1978, op.cit., see Section I.A.1 for annotation.

Leith, J. Clark, 1974, Foreign Trade Regimes and Economic Development: Ghana (New York: Columbia University Press).

McKinnon, Ronald I., 1973, op.cit., see Section II for annotation.

Rodriguez, Carlos A., 1978, " A Stylized Model of the Devaluation-Inflation Spiral," IMF Staff Papers, Vol. 25, pp.76-89.

This paper offers a simple monetary model in which Rodriguez shows that, while a devaluation appears to be inflationary, it is in fact a response to inflationary monetary (and fiscal) policy. The fixed exchange rate is shown to suppress domestic inflation, but only at the cost of ongoing balance of payments deficits which eventually force a devaluation.

C. Responses to Balance of Payments Crises

One of the most surprising findings of the NBER studies is that, despite the traditional arguments about the relative merits of protection vs. free trade, the high levels of protection so often observed in LDCs are usually implemented not in an effort to reallocate resources (a la the infant industries argument, for example), but in response to a balance of payments crisis. The typical first response to balance of payments problems in the countries studies was to impose (or tighten) across-the-board quota restrictions (QRs) on imports, to reduce the demand for foreign reserves and defend the (over-valued) exchange rate. Bhagwati and Krueger term this a "phase I" foreign trade regime.

The NBER authors go on to show that "phase I" regimes usually evolve rapidly into "phase II" regimes, where the commercial policy becomes much more differentiated both in terms of the type and level of protection for various goods. (Bhagwati (1978, ch.2) goes into considerable detail in reviewing the amazing variety of trade restrictions found in LDCs.) It is in this second phase that officials attempt to affect the allocation of resources by using differential rates of protection. But it is still important to note that this more traditional approach to commercial policy is superimposed upon a general need to defend the exchange rate.

The effects of these restrictive commercial policies are quite varied. In most instances, the NBER studies found that the phase I and II controls were successful in stemming the demand for foreign reserves by reducing imports; these regimes have been sustained in several countries for long periods of time. But, of course, there are a variety of "side effects" from these policies, and Bhagwati's (1978) book is dedicated to a discussion of both the static and dynamic distortions that these policies introduce.

The most frequently discussed response to a balance of payments crisis is, of course, a devaluation of the exchange rate. The standard theoretical references are Alexander (1952) for the absorption approach, and Dornbusch (1973) for the more recent monetary approach to the balance of payments. A good treatment of the theory can be found in Dornbusch (1980). Turnovsky (1981) is interesting because it introduces the role of expectations of devaluations in the analysis of the actual devaluation. Finally, the book edited by Cline and Weintraub (1981) provides several good essays on devaluation in LDCs.

The major empirical work on devaluations in LDCs is found in Krueger (1978) and Cooper (1971a). Cline and Weintraub (1981) also has several relevant articles. Krueger synthesized the NBER studies, while Cooper studies many of the same devaluation episodes as well as some in other LDCs. Krueger (1981) is an interesting "afterthought" to her 1978 book. It is useful to follow these authors' approach and split the discussion into the effects of devaluations on the balance of payments, output, and inflation. Both the basic theoretical arguments and the empirical results of Krueger and Cooper will be considered.

Devaluation and the Balance of Payments

Despite the conventional propositions of both Keynesian and monetarist models, it is commonly believed in LDCs that devaluation does not improve the balance of payments significantly. (This may explain countries' apparent preference for import restrictions as a response to foreign exchange problems.) The standard theoretical explanation for this involves the "J-curve" effect (see Magee, (1973)).

Finally, it is important to note that devaluations in LDCs are frequently part of import liberalization packages; import restrictions are frequently relaxed along with the devaluation. These policies are directed either at rationalizing the commercial policy by making the protection more uniform or at allowing a greater flow of imports to the economy. This, of course, will tend to work against a devaluation and lead to greater balance of payments deficits, highlighting the importance of calculating changes in the <u>effective</u> exchange rate rather than the nominal exchange rate (see Krueger, (1978, ch.5)).

The empirical evidence gathered by Cooper (1971a) and Krueger (1978, ch.8, 9, and 10) suggests that the medium to long run responses of the balance of trade to a devaluation is positive, conforming to the standard theoretical predictions. But in the short run, roughly less than one year, the response of the balance of trade is less clear; some "J-curve" problems do seem to exist.

Devaluations and Recession

Just as policy makers have been skeptical about a devaluation's ability to improve the balance of payments, they have often argued that a devaluation will cause a domestic recession. This, too, flies in the face of conventional theory. In a typical Keynesian model, the increased relative price of foreign goods switches demand toward home goods, increasing output. (The monetary approach isn't too useful in this context since it assumes output is always at the full employment level.) Nevertheless, several papers have offered theoretical explanations of contractionary effects of a devaluation. Cooper (1971b) and Kmgman and Taylor (1978) present models in which an adverse income effect might work to reduce aggregate demand. If a country devalues from a deficit balance of trade position, then the value of its export receipts goes up (in domestic currency), but the value of its import bill goes up more, since imports are greater than exports. Thus, the country suffers a real income loss due to the devaluation. This will tend to reduce aggregate demand and therefore output.

Two other types of contractionary income effects are discussed by Diaz-Alejandro (1963) and Krugman and Taylor (1978). Each involves a transfer of real income from low savers to high savers, contracting aggregate demand.

A different sort of contractionary effect--one coming from the supply side--is addressed by Bruno (1979), Taylor (1981), and van Wijnbergen (1982). These authors model a situation in which credit markets are repressed: the interest rate is pegged at a below-market rate and credit must therefore be rationed (see section II above). This problem will be exacerbated if the money supply is contracted (as is often encouraged by the IMF) since that will further dry up available working capital.

This problem emphasizes the importance of the complementarity between liberalizing the foreign trade regime and the domestic capital market. Devaluation will give exporters an incentive to produce, expanding aggregate supply, but they must have access to the requisite working capital to do so. On this point, see McKinnon (1973) and McKinnon and Mathieson (1981), and also McKinnon's comment following Bruno's paper. Problems of managing these broad-based liberalizations are discussed in Blejer and Mathieson (1981), Brock (1982), and Rodriguez (1981). Diaz-Alejandro (1981) offers a critical analysis of these policies.

With so many theoretical possibilities outlined, it's not surprising that the available empirical results are inconclusive. The two major empirical works, Cooper (1971a) and Krueger (1978), both point out that it is difficult to sort out the effects of the devaluation from those of the contractionary monetary and fiscal policies which often accompany them (at the IMF's behest). But they disagree as to the effect of the devaluation itself; Cooper feels that it does have a significant contractionary effect and encourages temporary expansionary monetary policies to offset this while Krueger downplays the potential problem that a devaluation poses.

Devaluation and Inflation

At first glance it seems obvious that a devaluation should be inflationary since the price of all tradable goods will increase by the amount of the devaluation. In addition, if there is expenditure switching toward home goods, their prices may rise as well. We should be careful, however, in blaming the devaluation for the inflation. If the devaluation is necessitated by an expansionary monetary policy, as it often is, then the devaluation simply "releases" the inflation that has been suppressed by the fixed (but unsustainable) exchange rate. The devaluation, then, is merely the proximate cause of the inflation. For a model of this type, see Rodriguez (1978).

Both Cooper (1971a) and Krueger (1978) point out that if quota restrictions are eased along with the devaluation, then import prices may actually fall with the increased supply (domestically) of the restricted goods. And even if the quota remains constant, the price increase on QR goods will not be passed through; instead, the value of the rent associated with the license will fall by the amount of the devaluation. (See McKinnon (1979) or Aizenman (1981) for an analysis of devaluation in the presence of quota-restricted goods.)

Aizenman, Joshua, 1981, "Devaluation and Liberalization in the Presence of Tariff and Quota Restrictions," Journal of International Economics, Vol. 11, pp.197-206.

This is a general equilibrium analysis which demonstrates the effects of non-price (quota) restrictions on the outcome of a devaluation. Quota-restricted imports are shown to behave as non-tradable goods do, their price being affected by a devaluation only through expenditure switching rather than directly as is the case for tariff-protected or free trade goods.

Alexander, Sidney, 1952, "Effects of a Devaluation on the Trade Balance," IMF Staff Papers, pp.263-278.

This is the classic reference for the absorption approach to devaluation, a marked improvement over the elasticities approach in that it includes income effects as well as price effects in a general equilibrium model.

Bhagwati, Jagdish, 1978, op.cit., See Section I.A.1 for annotation.

Blejer, Mario, and Donald Mathieson, 1981, "The Preannouncement of

Exchange Rate Changes as a Stabilization Instrument," IMF Staff Papers, Vol. 28, pp.760-792.

This paper presents a model and discussion of the problems liberalizing economies have had in choosing an exchange rate policy. The advantages of a preannounced, "active crawl" are shown to be (i) a solidification of expectations of inflation at the announced rate of crawl, and (ii) some discouragement of massive capital inflows which expand the money supply. The disadvantage is a loss in policy flexibility that comes from a commitment to a certain exchange rate path. In the turbulence following a liberalization, choosing the wrong path could lead to balance of payments problems, and varying from the announced path hurts credibility, one of the goals of the preannouncement policy.

Bruno, Michael, 1979, op.cit., see Section II for annotation.

Cline, William R. and Sidney Weintraub, eds., 1981, Economic Stabilization in Developing Countries (Washington, D.C.: Brookings Institution).

This volume contains several useful papers on stabilization policies, including: a paper by Anne Krueger which can be read as a follow-up to her 1978 NBER book; a paper by C.F. Diaz-Alejandro on the radically free-market policies of the "Southern Cone" countries; and case studies of more traditional IMF-style programs in Mexico, Peru, Tanzania, Pakistan, and South Korea. There is also a theoretical paper by Lance Taylor. The editors' introduction is quite useful in reviewing the major issues in the current literature on stabilization policy.

Cooper, Richard N., 1971a, Currency Devaluations in Developing Countries, Essays in International Finance, no. 86, International Finance Section, Princeton University.

This is an important survey of the effects of devaluations in LDCs. It is a good complement to Krueger's (1978) volume since it covers many of the same devaluation episodes, but Cooper has a more "Keynesian" bias while Krueger tends to be more "monetarist". The authors agree on several issues, but certainly not all.

________________, 1971b, "Devaluations and Aggregate Demand" in J. Bhagwati, Trade, Balance of Payments, and Growth (Amsterdam: North-Holland Press).

This is a theoretical paper inspired by Cooper's (1971a) empirical research. The model is a Keynesian general equilibrium model that shows how adverse income effects could cause a devaluation from a trade deficit position to be contractionary.

Diaz-Alejandro, Carlos, 1963, "A Note on the Impact of Devaluation and the Redistributive Effect," Journal of Political Economy Vol. 71, pp.577-580.

A brief argument showing the possibility of a contractionary income effect following a devaluation.

Dornbusch, Rudiger, 1973, "Devaluation, Money, and Nontraded Goods," American Economic Review, Vol. 63, pp.871-880.

This is a key reference in the development of the monetary approach to the balance of payments, emphasizing that the exchange rate is a nominal variable (price) and should not be able to generate long-run effects.

________________, 1980, Open Economy Macroeconomics, (New York: Basic Books).

A recent advanced text by the field's foremost theorist. An excellent reference for the "state of the art" in international macroeconomics, including a readable exposition of the monetary approach and the importance of asset markets in determining the exchange rate.

Krueger, Anne O., 1974, "The Political Economy of the Rent-Seeking Society," American Economic Review, Vol. 84, June, 1974.

This article presents the theory that quota restrictions give rise to a rent on import licenses, equal in value to the difference between the domestic and foreign prices, which private agents have an incentive to pursue. Use of resources in this pursuit is clearly wasteful from a social welfare perspective. Krueger also presents empirical evidence from Turkey which suggests that this is a significant problem in that country.

Krueger, Anne O., 1978, op.cit., see section I.A.1. for annotation.

________________, 1981, "Interactions Between Inflation and Trade Regime Objectives in Stabilization Programs" Chapter 3 in Cline, W.R., and S. Weintraub, eds., Economic Stabilization in Developing Countries (Washington, D.C.: Brookings Institution).

This is a theoretical paper, laced with policy insights, on the interrelation of the price level, the exchange rate, and the trade regime. Krueger pays particular attention to the tradeoffs inherent in a liberalization process, and concludes by examinig the implications of liberalization for donor-country aid strategies.

Krugman, Paul, and Lance Taylor, 1978, "Contractionary Effects of Devaluation'" Journal of International Economics, Vol. 8, pp.445-456.

This article presents a Keynesian-type model of three possible income effects which could make a devaluation contractionary. It has good summaries of Cooper (1971b) and Diaz-Alejandro (1963).

Leith, J. Clark, 1980, "Import Quotas and Macroeconomic Balance in a Simple Dynamic Model," Canadian Journal of Economics, Vol. 13, pp.280-295.

This paper presents a model in which the existence of import quotas leads to a supply-side contraction in an LDC economy. The economy may be dynamically unstable if the government responds to this contraction with increased (and monetized) deficits that further fuel domestic inflation and thus increase the severity of the quota restrictions. The paper can be read as a complement to Krueger (1974).

Magee, Stephen, 1973, "Currency Contracts, Pass-through, and Devaluation," Brookings Papers on Economic Activity.

This paper provides a clear explanation of the determinants of the "J-curve effect." While the discussion is couched in terms of the 1971 dollar devaluation, the theory presented is general and appropriate to any devaluation episode.

McKinnon, Ronald I., 1973, op.cit., see Section II for annotation.

________________, 1979, op.cit., see Section III.A for annotation.

________________, 1982, "The Order of Economic Liberalization: Lessons from Chile and Argentina," Carnegie-Rochester Conference Series on Public Policy, 17, (Amsterdam: North-Holland), pp.159-186.

This paper reviews the attempts of Chile and Argentina to liberalize their economies in the 1970s, Chile's attempt being relatively successful while Argentina'a failed. Several significant insights are gained, including the importance of first gaining control of uncovered fiscal deficits so that the inflation tax is not necessary; many capital market reforms are shown to be counter-productive in the presence of the inflation tax.

Miles, Marc A., 1979, "The Effects of Devaluation on the Trade Balance and Balance of Payments: Some New Results," Journal of Political Economy, Vol. 87, pp.600-620.

This is an empirical paper aimed at testing the effect of a devaluation on the trade balance and balance of payments. Miles pools data from 101 devaluations in many countries (a questionable statistical practice) and finds that devaluation doesn't seem to improve the trade balance, but does improve the balance of payments. Miles concludes that devaluation is a monetary phenomenon, involving only portfolio adjustments.

Rodriguez, Carlos A., 1981, "Managed Float: An Evaluation of Alternative Rules in the Presence of Speculative Capital Flows," American Economic Review, Vol. 71, pp.256-260.

Rodriguez presents a very simple model showing the dilemma of policy makers in an economy attempting to liberalize. On the one hand, a devaluing exchange rate encourages trade liberalization and exports, but on the other, excessive devaluation also sets up the expectation that the (real) exchange rate will revalue sometime in the future. This encourages speculative capital inflows, which fuel domestic inflation. Such capital inflows have plagued several liberalizing economies. See also McKinnon (1973, ch 11 and 12).

Taylor, Lance, 1981, "IS/LM in the Tropics: Diagrammatics of the New Structuralist Macro Critique" Chapter 13 in Cline, W.R., and S. Weintraub, eds., Economic Stabilization in Developing Countries (Washington, D.C.: Brookings Institution).

In this ambitious paper, Taylor lays out an IS/LM model of the standard semi-industrialized country beset with inflation and balance of payments problems. Using comparative statics, he presents a taxonomy of the effects of standard stabilization policies and is generally critical of their application. He concludes with a discussion of policy alternatives for the middle-run.

Turnovsky, Stephen J., 1981, "The Effects of Devaluations and Foreign Price Disturbances Under Rational Expectations," Journal of International Economics, Vol. 11, pp.33-60.

This article is an important advance in the theory of devaluation, incorporating the role of expectations into the model in a "rational" way. (Prior to this work, all theory implicitly assumed that all devaluations were complete surprises, which is not very realistic, especially for LDCs suffering exchange crises.) The model also considers the effects of foreign price changes, both expected and unexpected.

van Wijnbergen, S.,1982, "Stagflationary Effects of Monetary Stabilization Policies: A Quantitative Analysis of South Korea," Journal of Development Economics, Vol. 10, pp.133-169.

This paper presents empirical evidence which supports the arguments of Bruno (1979) and many LDC policy makers that stabilization programs can have significant contractionary effects coming through the supply side as well as traditional reductions in aggregate demand.

D. Ways of Avoiding Balance of Payments Crises

Most of the real shocks discussed in section III.A--changes in international prices or demand for an LDC's exports--are entirely out of that country's control and they must simply suffer them as best they can. To the extent that the country needs temporary financing to adjust to these shocks, IMF loans are entirely appropriate.

But the cause of many, probably most, balance of payments crises is expansionary monetary policy. This should be under the control of the government and, consequently, an obvious solution presents itself: monetary (and fiscal) "discipline"--refusing to let the money supply expand faster than world inflation (plus any domestic growth). This is the approach favored by the IMF and is also a cornerstone of McKinnon-style liberalized economies. And while there is some doubt about the wisdom of monetary discipline immediately after a devaluation (see Cooper (1971b)), it is certainly good long run policy.

Nevertheless, many LDCs do not follow this policy. It appears that they must use the inflation tax. Some recent work has taken this as a "given" and asked how best to run an economy when the inflation tax is in use. McKinnon and Mathieson (1981) point out that free currency convertibility cannot be allowed in such an economy since it would allow people to flee the tax base (domestic money) by buying foreign exchange. Brock (1982) elaborates on this theme, proposing more broadly-based inflation tax schemes.

With the foreign exchange market strictly controlled, one possible solution to the differential rates of domestic and foreign inflation--a floating exchange rate--is ruled out; the free flow of short-term capital necessary to support a floating exchange rate is prohibited by the strictures of the inflation tax policy. But a proxy for a floating rate, a crawling peg, has been used successfully by several LDCs. The idea is straightforward: by indexing the exchange rate to domestic inflation, authorities can gradually depreciate the currency, keeping the exchange rate roughly in line with purchasing power parity. This prevents the chronic overvaluation of the exchange rate which leads to balance of payments crises.

The theoretical underpinnings of this approach are discussed in McKinnon (1981) and McKinnon and Mathieson (1981). The book edited by Williamson (1981) contains some theoretical discussions as well as several studies of countries which have employed a crawling peg. We should also note that Krueger (1978) comes out in favor of a crawling peg for economies with chronic inflation.

Brock, Philip, 1982, "Government Deficits and the Composition of Inflationary Finance," Center for Research in Economic Growth, memo #254, Stanford University.

This paper discusses the optimal use of both reserve requirements and expansion of the monetary base in maximizing revenue from the inflation tax; it expands on the traditional inflation tax literature which assumes that the government controls only the rate of growth of the monetary base.

Cardoso, Eliana, 1980, "Minidevaluations and Indexed Wages: The Brazilian Experience in the Seventies," Journal of Development Economics, Vol. 7, pp.453-466.

This paper presents a theoretical model of Brazil's crawling peg, emphasizing its interactions with indexed wages in the Brazilian economy. The paper also provides insight into the political economy of the "Brazilian miracle" and a brief analysis of ways to handle Brazil's large and growing foreign debt.

McKinnon, Ronald I., 1982, "Monetary Control and The Crawling Peg" in J. Williamson, ed., Exchange Rate Rules, (London: MacMillan Press).

This paper discusses the use of two sorts of crawling pegs: one which is "passively" adjusted to the domestic price level and one which is "actively" adjusted according to a predetermined schedule. The former is useful for inflationary economies. The latter can be used by liberalizing economies like a fixed exchange rate, but with the added advantage that it may discourage the overwhelming capital inflows that liberalizing countries have experienced by reducing the rate of return on domestic assets for foreigners due to the steady depreciation of the currency.

________________ and Donald Mathieson, 1981, "How to Manage a Repressed Economy," Princeton Essays in International Finance, no.145, International Finance Section, Princeton University.

This paper contains a description of repressed economies and a presentation of several policy suggestions for running those economies as best as possible, given that a fiscal deficit must be paid for with the inflation tax. The necessity of maintaining exchange controls in a "repressed" economy is also discussed.

Williamson, John, 1981, Exchange Rate Rules, (London: MacMillan Press).

This volume contains both theoretical and empirical papers on the crawling peg. The empirical papers are particularly useful for getting a feel for how crawling pegs have worked in the several LDCs that have employed them.

IV. International Capital Flows to LDCs

A. Statistics

The following are among the major sources for statistics on international capital flows:

Bank for International Settlements, Annual Report (Basle: BIS).

International Monetary Fund, Balance of Payments Statistics Yearbook (Washington, D. C.: IMF).

World Bank, World Debt Tables, published periodically by the External Debt Division, Economic Analysis and Projections Department (Washington, D. C.: World Bank).

World Bank, World Development Report, 1983 (Washington, D.C.: World Bank).

B. International Bank Lending, Debt Capacity, and Default Risk

The 1970s, compared with the 1950s and 1960s, witnessed significant changes in the capital flows to developing countries. Within debt creating flows, there was a large decline in the share of net capital inflow from bilateral official sources, a marginal decrease in the share from multilateral institutions, and a large increase in the proportion of loans from private creditors--especially from private banks.

The oil price rises of the 1970s caused debt service crises in some developing countries. This raised concerns about the external indebtedness of developing countries and generated efforts to extend the theoretical work on financial transactions to borrowing by foreign sovereign countries in international private capital markets.

The literature on this issue can be classified into three categories. These are

a) Individual country risk analysis (debt capacity)

b) Analyses of lender and borrower behavior in the presence of default risks, and the search for equilibrium

c) Suggestions of institutional re-arrangements to stabilize international financial markets.

Regarding country risk analysis, there have been studies of checklist systems (Thornblade (1978))--lists of quantifiable variables with which banks can check the creditworthiness of borrowing countries--and studies of quantitative analytic techniques (Dhonte (1975), Sargen (1977), Feder and Ross (1981)). The latter examine cases of past debt rescheduling and derive estimates of individual countries' debt capacity. McDonald (1982) provides a general survey of the literature on debt capacity. Aliber (1982) suggests that, in assessing any nation's debt capacity, we make a distinction between solvency risk and liquidity risk.

While the above literature examines only borrower characteristics, the second category of literature considers the effect of default risk on both borrower and lender behavior. Though derived under various assumptions, these studies generally conclude (and provide empirical evidence) that in the presence of default risk lenders establish a credit ceiling and borrowers face credit constraints. (See Eaton and Gersovitz (1980, 1981a, 1981b), Sachs and Cohen (1982).) These studies also suggest that the IMF could play a key role in guiding creditors and debtors to reach cooperative solutions (see especially Eaton and Gersovitz (1981b) and Sachs (1982).)

For the third category, several pieces on the role of international banking in the 1970s express basically optimistic views on the future growth and stability of the system (Cheng (1977), Hope (1981).) Three articles (Economist (1982); Euromoney (1982) and Hardy (1982)) extensively review past and current debt renegotiations, their causes, and possible future situations. Others search for solutions. There have been discussions of the role of the IMF (Killick (1982), Eaton and Gersovitz (1981b), and Sachs (1982)), and suggestions for the establishment of alternative banking regulations and new institutions such as international deposit insurance (Dean and Dufey (1980)). Feldstein (1983) says a workable international monetary order in the 1980s is possible only with the cooperation of all involved parties, including international financial institutions.

Aliber, R. Z., 1982, "A Conceptual Approach to the Analysis of External Debt of the Developing Countries", World Bank Staff Working Paper no. 421.

Criticizing the traditional analysis of country debt servicing capacity, Aliber emphasizes the distinction between solvency considerations and liquidity considerations. He also presents a conceptual approach to forecasting debt crises and considers the usefulness of alternative approaches. An appendix summarizes some of the past empirical analyses of debt crises.

Cheng, Hang-shen, 1977, "Commercial Bank Financing of World Payment Imbalances", <u>Federal Reserve Bank of San Francisco Economic Review</u>

The author asks if the system of commercial bank financing is as inherently unstable as is frequently alleged. His claim is that "balance of payments developments and debt accumulation should be viewed in the context of a growing but inflation-prone world economy. When proper account is taken of output, trade and price changes, the world economy has been more successful in approaching financial stability than is generally realized." He finds little evidence to support the argument that balance of payment loans are inappropriate for banks. In particular, he notes the role played by banks as a consequence of a major shift of international payments--from the earlier build-up of payments surpluses by industrial nations to the present build-up of surpluses by OPEC nations, and offsetting debt accumulation by LDCs.

Dean, J. W., and Giddy, I. H., 1980, "Coping with International Banking Crises", Research Working Paper no. 357A, Graduate School of

Business, Columbia University.

This paper reviews the theory and practice of bank crisis prevention in a domestic context, as a prelude to extending domestic practices to the international banking sphere. The authors examine the international banking crisis of 1974 and the subsequent evolution of prudential regulation of international banking. They evaluate several alternative ways to achieve stability, and favor the use of penalty interest rates and central bank collateralized loans in the event of a crisis.

Dhonte, P., 1975, "Describing External Debt: A Roll-over Approach", IMF Staff Papers, Vol. 22, no. 1.

Dhonte looks at the rescheduling experience in two ways. The first approach relates the likelihood of default to the ratio of one measure of indebtedness to another economic variable. He attempts to overcome the weakness of the first approach by combining several indicators to explain rescheduling. He stresses two dimensions of indebtedness: debt outstanding and the terms of debt.

Eaton, J. and Gersovitz, M., 1980, "LDC Participation in International Financial Markets--Debt and Reserves", Journal of Development Economics, Vol. 7, no. 1.

This paper analyses LDC borrowing and reserve holding behavior as part of a general equilibrium portfolio problem. Estimates of LDC debt and reserve demand, and credit supply, suggest that debt, along with reserves, serves a transactions role. The authors argue that most LDC borrowers are credit constrained and that defaults are independent and uncorrelated with exports from LDCs.

__________, 1981a, "Debt with Potential Repudiation: Theoretical and Empirical Analysis", Review of Economic Studies, XLVIII no. 152.

This paper assumes that a crucial characteristic of LDC borrowing is the absence of explicit penalties for non-payment, although borrowers who repudiate their debt face future exclusion from capital markets. Working with the assumption that this exclusion is permanent, the authors show that lenders will establish a credit ceiling whose height depends upon their perception of the borrower's disutility of exclusion. Using this theoretical framework, they estimate the relation between loan demand and supply and a set of country characteristics.

__________, 1981b, "Poor-Country Borrowing in Private Markets and the Repudiation Issue", Princeton Studies in International Finance, no. 47.

This paper examines the notion of credit limits and their determinants. It argues that "to the extent that various sanctions deterring default are enhanced or undermined under alternative institutional arrangements for lending, these limits will rise or fall." It argues that private banks, reinforced by present government institutions, can credibly impose sanctions in the event of default; also, that present proposals to involve the IMF more directly in the lending process can be seen as an attempt to ensure greater coordination among lenders and a more assured set of sanctions, so that country debt limits can be raised. The authors add that this outcome could be very beneficial to developing countries.

The Economist, 1982, "Living With a Nightmare: International Banking Survey", March 20-26.

This survey, edited by Tim Hindle, is an extensive review of the current state of international banking. It looks at the questions of rescheduling, the future growth of international lending, the role of the World Bank and the IMF, and the political aspects of rescheduling. It also provides many valuable statistics on international lending and borrowing.

Euromoney, 1982, "The Year of the Rescheduling", August.

The "rescheduling special" in this issue is composed of five papers. They try to identify the probable causes of the need to reschedule, emphasizing the factors that are pushing LDCs into short-term borrowing, and investigating Costa Rica's rescheduling as an example. Potential roles for the IMF are also discussed.

Feder, G., and Ross, K., 1982, "Risk Assessments and Risk Premiums in the Eurodollar Market", Journal of Finance.

This paper uses a recent country-by-country risk assessment by lenders to show that a systematic relationship exists between these assessments and interest rates in the Euromarket. The relationship is derived from an underlying model developed in the paper. The estimated parameters verify a number of hypotheses, providing insights on the loss rates lenders expect to incur in the case of default.

Feldstein, M., 1983,"Coping with the International Debt Problem", remarks to the International Management and Development Institute, March 7th.

Feldstein argues that it would be wrong to underestimate the seriousness of the international debt problem, but that it should nevertheless be manageable with the active cooperation of debtor countries, commercial banks, and international financial institutions. He notes that no individual institutions or even whole nations can abandon their responsibilities without jeopardizing the success of the entire program and thus the financial stability of the world economy.

Hardy, C. H., 1982, Rescheduling Developing Country Debts, 1956-1981: Lessons and Recommendations, Overseas Development Council Monograph no. 15 (Washington, D.C.: ODC).

This slim volume examines past debt reschedulings to see what lessons can be learned from them. The first chapter looks at why countries ran into debt-servicing difficulties. The second details the response of official creditors to requests for relief. The third reviews the experience of the few countries which have publicly renegotiatied private bank debt. The final chapter recommends reforms of existing practices for resolution of debt-servicing problems.

Hope, C. N., 1981, " Developments in Prospects for the External Debt of the Developing Countries: 1970-1980 and Beyond", World Bank Staff Working Paper, no. 488.

This paper addresses a common perception that because of their earlier heavy borrowing, developing countries as a group are significantly less well placed in the early 1980s to finance adjustment with growth than they were in the mid-1970s. Hope concludes that there is no evidence of systematic deterioration in the external position of developing economies during the past decade, despite the fact that some countries have experienced debt-management difficulties. He also notes the changes in the composition of borrowed and of other capital inflows to developing countries, i.e. a heavy shift to private bank lending.

Johnston, R., 1977, "International Banking, Risk, and U. S. Regulatory Policies", Federal Reserve Bank of San Francisco Economic Review.

Johnston argues that official regulators as well as commercial bank analysts must cooperate in maintaining the health of the international financial community. He notes that banks have established a good record of international operations through diversification, and improved information systems. However, banks' collective risk assessment may still result in a banking system that is too risky from the viewpoint of society, and therefore bank supervision is necessary to keep risk exposure within reasonable boundaries. He emphasizes that to the extent that official international lending represents a form of insurance, banks may tend to take greater risks, and international supervision must act to counteract that tendency.

Killick, T., ed., 1982, Adjustment and Financing in the Developing World: The Role of the International Monetary Fund (Washington, D. C.: IMF).

This is a collection of papers presented at a joint IMF-Overseas Development Council seminar. The participants span a broad political spectrum, and many issues are debated, including: IMF conditionality, especially the relative merits of demand-side vs. supply-side target variables; issues of world monetary reform such as SDR issue and substitution accounts; and the source of LDCs' current payments problems. Killick and Mary Sutton provide a useful overview chapter at the beginning of the book which highlights the issues discussed and reviews the seminar's seven papers.

McDonald, D., 1982, "Debt Capacity and Developing Country Borrowing: A Survey of the Literature" Processed, Exchange and Trade Relations Department, IMF.

The first section of this paper looks at the issue of debt capacity in the context of growth models. The second section covers attempts to identify empirically those circumstances under which countries have experienced debt-servicing difficulties, and the third section surveys discussions related to the supply side of the international financial market. Finally, the paper suggests that increased effort be directed to improving the environment for development of appropriate financial instruments.

Sachs, J., 1982, "LDC Debt in the 1980s; Risk and Reforms", NBER Working Paper no. 861.

This paper offers a theoretical and historical analysis of international capital markets in the presence of default risk. The theoretical model suggests a possible prisoner's dilemma in the loan market, in which a country's dominant noncooperative strategy is a default, though a welfare-improving cooperative strategy is available. The author argues that the historical analysis suggests that the IMF may play a key role in guiding creditors and debtor nations to cooperative solutions.

____________, and Cohen, D., 1982, "LDC Borrowing With Default Risk", NBER Working Paper no. 925.

This paper presents a theoretical model describing the effects of default risk on international lending to sovereign LDC borrowers. The threat of default in international lending is seen to give rise to many characteristics of a syndicated loan market: quantity rationing, LDC policies designed to improve creditworthiness, the prevalence of short maturities, and the prevalence of bank lending as opposed to bond market lending.

Sargen, N., 1977, "Economic Indicators and Country Risk Appraisal", Federal Reserve Bank of San Francisco Economic Review.

The author notes that major international banks strongly discount the possibility of widespread defaults or rescheduling of LDC loans. A more likely situation would be occasional repayment difficulties, requiring refinancing. He argues that more information and improved analytical techniques are therefore necessary to detect potential default situations. He discusses ways of improving country risk appraisal through the use of several types of economic indicators, and argues that the debt-service ratio and the inflation rate are particularly good indicators of an LDC's ability to repay its creditors.

Thornblade, J., 1978, "A Checklist System, a First Step in Country Evaluation", in Goodman, S., ed., Financing Country Risk in Developing Countries (New York: Praeger).

The search for objective criteria for rating different countries has led banks to develop checklist systems. This paper describes one such system. Countries are ranked on a scale of 1 through 7 with respect to several variables, and the rank ordering of country risk is then derived as the simple average of the scores.

C. The Role of the IMF in International Capital Flows

The IMF and its role in the flow of capital to LDCs has received an increasing amount of attention in the professional literature recently. There are several reasons. First, many more LDCs have had balance of payments problems in the 1970's due to dramatic increases in oil prices and shifting terms of trade. Many of these countries have had to go to the IMF for assistance in the wake of these shocks. Second, while the IMF has always been the subject of criticism from the political left, several more moderate analysts have been unhappy with the Fund's handling of the problems of the 1970s. And finally, the IMF no longer remains closed-mouthed about its critics. It has begun to respond to them, both in the academic literature and also, some would claim, in its policies.

The discussions of the Fund revolve around several issues which we will divide into three groups: the proper role of the Fund in assisting LDCs with payments problems, the appropriateness of the conditions the Fund usually requires borrowing countries to meet, and the effectiveness of the policy programs which countries institute at the Fund's behest. Probably the best general reference on the IMF is the recent volume edited by Williamson (1983).

The Proper Role of the Fund in Aiding LDCs

One of the most frequently debated issues concerning the IMF's proper role in the world economy is whether it should be strictly an "adjustment institution" or an "aid institution." The IMF itself clearly sees itself in only the former role. (See, e.g., Nowzad (1981) or Dale (1983).) The view of the IMF staff is that it should be in the business of providing relatively short-term assistance to countries with payments problems and that it should insist that those problems be overcome by the borrowing country as quickly as possible. This has led critics to claim that the Fund's interests are too narrowly based on the balance of payments and that it often forces domestic recessions in order to achieve external balance. Such critics, e.g. Dell (1981), claim that the Fund should give greater weight to the development objectives of the borrowing nations, which usually means accepting longer adjustment periods, allowing the countries to solve their payments problems without recessions.

A second issue in this area is the extent to which the Fund should involve itself in the policy-making of its borrowing countries. Member countries have frequently complained that the IMF meddles excessively in the domestic workings of their economies when it establishes an adjustment program. Bacha (1983) argues that this discourages countries who should be receiving assistance from approaching the Fund; they feel the loss in autonomy is too costly.

With the remarkable increase in international capital mobility of the past decade, many countries now have access to loans from sources other than the IMF. As we know from the recent rescheduling episodes in several countries, they have used these facilities extensively. For these middle-income countries, the role of the Fund has changed from being the "lender of last resort" to being the "Good Housekeeping Magazine of the financial markets." Typically, the Fund makes a loan to the troubled when it is convinced that the country is adopting policies that will correct its payments problems, but the loan is only a small fraction of the capital needed. However, once the Fund offers its "seal of approval," commercial banks then roll over their loans, which account for much of the necessary capital inflow. While this arrangement allows for assistance well beyond the resources of the Fund itself (to say nothing of members' quotas), it does present a situation in which the Fund may be subject to pressure to bail out banks who make bad loans rather than countries which have temporary balance of payments problems.

A final issue concerning the proper role of the Fund has only recently been addressed, by Williamson (1983). Williamson notes that the Fund's lending over the last six or so years has been highly pro-cyclical--relatively free during the boom of 1978-79 and much more restrictive during the recent recession. He then argues that the Fund could help stabilize world business cycles by doing exactly the opposite, just as a country's central bank can "lean against the wind" in a local business cycle.

Conditionality

Undoubtedly the hottest issue concerning the IMF is conditionality. Most everyone now agrees that the Fund should attach conditions to its loans which it feels are sufficient to insure that the borrowing country's payments position will correct itself (though this hasn't always been the case; see Dell (1981)). What those conditions should be, however, is quite a point of contention. Critics argue that the IMF is too prone to a monetarist interpretation of every payments crisis: payments problems are always the result of expansionary monetary and fiscal policies and therefore require both a devaluation to re-align the real exchange rate and limits on the expansion of domestic credit and the government's share of that credit. (See, e.g. Taylor, (1981).) Several authors, e.g. Schydlowsky (1982) and Williamson (1983), have argued that the Fund should pay more attention to supply-side indicators, especially in LDCs where "structural" factors are frequently important to balance of payments adjustment.

A second criticism of the Fund is that it does not differentiate between the various causes of balance of payments problems, tending to view any economy with a crisis as "mismanaged." But there is no sense in which borrowing countries are responsible for OPEC or the recent shifts in their terms of trade, and critics of the IMF have argued that such countries should be allowed more sympathetic conditions. (See Killick and Sutton (1982) and Dell (1981).) The IMF disagrees, however, arguing that countries must adjust regardless of the source of their problems and that the Fund must impose conditions it feels are sufficient to insure this adjustment. Countries that have experienced adverse terms of trade shifts are in the unfortunate position of facing a loss of real income, but they must face it nevertheless. (See Nowzad (1981) or Dale (1983).)

Finally, there is the issue of the flexibility of the IMF's conditions. Critics have argued that the Fund is far too inflexible in enforcing the conditions set down in their agreements with borrowing countries, refusing to alter the various stipulations even in the face of changes in the country's economic situation which are both unpredictable and beyond the country's control. One solution, suggested by Williamson (1983), is that Letters of Intent should include predictions of relevant international prices, interest rates, etc., which can be compared to actual variables in the future. If countries are then faced with adverse changes in the international environoment, the Fund would ease its conditions.

Effectiveness of Fund Programs

Because the liberalization attempts discussed in Section III above are for the most part Fund programs, the discussion there of the effectiveness of the various policies is also appropriate in this section. In addition to the work cited in Section III we should point out three "in house" studies done by the Fund's staff: Reichmann and Stillson (1978), Donovan (1981) and Donovan (1982). As one might expect, they are rather positive. And while the statistical techniques used are questionable, they do provide a wealth of data concerning IMF-sponsored adjustment programs.

Bacha, Edmar L., 1983, "Vicissitudes of Recent Stabilization Attempts in Brazil and the IMF Alternative," in John Williamson, ed., IMF Conditionality (Cambridge: MIT Press).

This paper is a case study of Brazil's recent stabilization attempts. One of Bacha's main points is that Brazil has gone to great lengths to avoid going to the IMF for assistance because of the anticipated conditionality which they felt would be too severe for their economy.

Dale, William B., 1983, "Financing Adjustment of Payments Imbalances," in John Williamson, ed., IMF Conditionality (Cambridge: MIT Press).

This brief essay sets out Dale's view of the proper role of the IMF, which he feels is limited to that of an "adjustment institution" in the business of financing short-term balance of payments problems. Dale is an officer of the IMF.

Dell, Sidney, 1981, "On Being Grandmotherly: The Evolution of IMF Conditionality," Princeton Essays in International Finanace, no. 144.

This paper presents both a history and a criticism of IMF conditionality. The history is brief, but useful in showing the constancy of the conditionality issue: the "North-South" debate of today is quite similar to the "U.S.-Europe" debate at the time of Bretton-Woods. Dell's critique is based on (i) the fact that IMF quotas have fallen from 16% of total (world) imports in 1948 to 3% in 1980, forcing countries with imbalances of the same relative size into higher credit tranches, and (ii) the IMF refuses to consider the source of balance of payments crises in its policy on conditionality. Especially in the light of recent external shocks, this seems an important issue.

Donovan, Donal J., 1981, "Real Responses Associated with Exchange Rate Action in Selected Upper Credit Tranche Stabilization Programs," IMF Staff Papers Vol. 28, pp.698-727.

This paper reviews the effectiveness of 12 upper tranche stand-by agreements between 1970 and 1976. The author simply compares average growth in exports, imports, GDP, and inflation in these countries with LDC averages. He concludes that exports and imports are responsive to the IMF programs, but only after a year or so. He argues that GDP growth rates were not adversely affected, but inflation did not abate and frequently worsened.

_______________, 1982, "Macroeconomic Performance and Adjustment Under Fund-Supported Programs: The Experience of the Seventies," IMF Staff Papers, Vol. 29, pp.171-203.

This is a second, broader, review of the evidence on the success or failure of IMF stabilization policies (see also Donovan, 1981). Using the same (rather crude) technique of comparing average values of relevant variables for the program countries to those of other LDCs, Donovan concludes that IMF programs are usually successful in improving the balance of payments while avoiding reduction in GDP growth. He finds that consumption does fall in many cases, and inflation remains unaffected.

Helleiner, G.K., 1983, "Lender of Early Resort: The IMF and the Poorest," American Economic Review, Vol. 73, pp.349-353.

This paper criticizes recent IMF policy regarding the disbursement of low-conditionality adjustment assistance to extremely poor countries. Helleiner argues that in terms of (i) availability of other sources of liquidity, (ii) the relative size of the recent terms of trade shocks, and (iii) capacity to adjust to those shocks, the poorest countries deserve a much larger share of IMF assistance than they have received. Indeed, the IMF has reduced low-conditionality credit to these countries in recent years despite higher variability in their terms of trade.

Katseli, Louka T., 1983, "Devaluation: A Critical Appraisal of the IMF's Policy Prescription," American Economic Review, Vol. 73, pp.359-363.

This paper argues that the IMF takes an essentially monetary approach to the balance of payments, an approach which Katseli argues is far from adequate for many LDCs, especially those which import mostly intermediate inputs and export agricultural products. The author also points out the role of the exchange rate in (export) tax policy and also savings behavior in LDCs; development policy does not begin and end with balance of payments equilibrium and the exchange rate affects policy targets other than the foreign accounts.

Killick, Tony, ed., 1982, Adjustment and Financing in the Developing World: The Role of the International Monetary Fund (Washington: International Monetary Fund).

This book is a collection of papers presented at a joint IMF-Overseas Development Council seminar. The participants span a broad section of the political spectrum, and many issues are debated, including IMF conditionality, especially the relative merits of demand-side vs. supply-side target variables, issues of world monetary reform such as SDR issue and substitution accounts, and the source of LDCs' current payments problems. Killick and Mary Sutton provide a useful overview chapter at the beginning of the book which highlights the issues discussed and reviews the seminar's seven papers.

Nowzad, Bahram, 1981, "The IMF and Its Critics," Princeton Essays in International Finance, no. 146.

In this paper the author, a member of the Fund's staff, presents several of the most frequently voiced criticisms of the Fund, ranging from its "philosophy," purpose, and general (monetarist) approach to economic analysis to specific issues of conditionality such as those raised by Dell (1981) and Helleiner (1983), for example. In many cases, the author presents brief refutations to the criticisms made.

Reichmann, Thomas M., and Richard T. Stillson, 1978, "Experience with Programs of Balance of Payments Adjustment: Stand-By Arrangements in the Higher Tranches, 1963-72," IMF Staff Papers, Vol. 25, pp.293-309.

This paper provides a generally optimistic analysis of IMF stabilization policies. It reviews 79 cases between 1963-72 and judges 76% of them to be "successful," where successful is defined to mean that major policy targets set at the time of the IMF intervention are in fact met. The authors note that their results may be biased by considering only upper tranche programs.

Schydlowsky, Daniel M., 1982, "Alternative Approaches to Short-Term Economic Management in Developing Countries," in Tony Killick, ed., Adjustment and Financing in the Developing World (Washington: International Monetary Fund).

This paper argues that the IMF has been remiss in not paying enough attention to the supply side of economies in need of balance of payments assistance. Schydlowsky presents several policies designed to elicit export response from industries with elastic supply curves while not radically altering prices in industries which are price insensitive. These policies include differential devaluations by industry or import/export subsidies and taxes.

Taylor, Lance, 1981, op.cit., see Section III. C for annotation.

Williamson, John, ed., 1983, IMF Conditionality (Cambridge: MIT Press).

This book is the result of a recent conference on IMF conditionality. It contains some 24 papers from prominent academics and policy makers, including ranking IMF staff members. The papers cover most of the issues raised in the past several years about the proper role and policies of the IMF. There are also eleven case studies of IMF programs. This volume is probably the best place to wade into the expanding literature on the IMF, both because it is comprehensive and current, and because several of the papers are updated versions of work previously appearing in the literature. Williamson's summary chapter (ch.24) is actually a good introduction to this lengthy volume; his appendix B gives a concise and helpful explanation of the jargon surrounding IMF lending policy.

D. The Role of Multinational Firms and Foreign Direct Investment in LDC Capital Flows

The literature on multinational firms (MNCs) and foreign direct investment is huge, and we will not pretend to span it here. Instead, we will cover only the capital flows to LDCs associated with foreign direct investment. For readers interested in pursuing further information on these topics, we'll note that Hood and Young (1979) and Lall and Streeten (1977) are good places to start.

As it turns out, the capital flow aspect of foreign direct investment is not as significant as one might think. Lall and Streeten (1977) found that U.S. MNCs imported only 12% of the capital for their direct investments between 1966-70, the rest being raised locally in the host country's capital markets. This result is consistent with Feldstein and Horioka's (1980) finding that investment capital still does not seem to be highly mobile internationally. It is also consistent with some of the more recent theories of foreign direct investment which focus on certain competitive advantages held by MNCs which encourage them to invest directly, advantages having to do with superior technology or information. Magee (1977) takes a particularly interesting approach to this issue, but also see Hood and Young (1979) for a general overview of the more traditional arguments about the motivation for foreign direct investment.

As for the effects of foreign direct investment in LDCs, quite a bit has been written from the political left, particularly by third world authors, including the dependency theorists. (Stein (1979) reviews these theorists critically and contains references to the major works in this tradition.) In addition, some empirical work has been done by Weisskopf (1972) and Bornschier (1980) which suggests that MNCs do not contribute much capital to their host economies.

Among more mainstream theorists, Bhagwati and Brecher (1980, 1981) have begun to explore the modifications of traditional Heckscher-Ohlin-Samuelson trade models when foreign-owned factors of production are present in the domestic economy. Burgess (1978) addresses similar issues in the context of a specific factors model of trade.

Bhagwati, Jagdish N. and Richard A. Brecher, 1980, "National Welfare in an Open Economy in the Presence of Foreign-Owned Factors of Production," Journal of International Economics, Vol. 10, pp.103-115.

This article, along with the authors' 1981 JPE paper, are the most general of the recent analyses of foreign-owned factors in a standard Heckscher-Ohlin-Samuelson trade model. While the model is highly abstract, the results are suggestive. Bhagwati and Brecher show that several standard propositions need to be altered when foreign-owned factors are present; specifically, they show that autarky may be preferable to free trade under limited circumstances.

Bornschier, Volker, 1980, "Multinational Corporations and Economic Growth," Journal of Development Economics, Vol. 7, no. 2.

This paper is an empirical test of the "decapitalization hypothesis," i.e. the argument that MNCs tend to take more capital out of host countries than they import. The author finds that a distinction between MNC penetration of an economy and MNC investment is significant. MNC penetration (roughly, the total capital value of MNC subsidiaries in host countries) is negatively correlated with growth while MNC investment (additions to that stock) is positively related.

Brecher, Richard A. and Jagdish N. Bhagwati, 1981, "Foreign Ownership and the Theory of Trade and Welfare," Journal of Political Economy, Vol. 89, pp.497-511.

This paper is an extension of the authors' 1980 JIE paper. They consider the welfare implications of standard transfer, growth, and tariff problems and find that the results depend on fairly complex inter-relations between relative factor intensities and terms of trade effects. They also note that their model generalizes to the theory of customs unions.

Burgess, David F., 1978, "On the Distributional Effects of Direct Foreign Investment," International Economic Review, Vol. 19, pp.647-664.

This paper presents a specific factors model with non-traded goods where foreign investment is allowed in the traded goods sector, but not in non-traded goods. The author finds the unusual result that domestic labor may be worse off after a capital inflow, while domestic capitalists benefit.

Feldstein, Martin, and Horioka, Charles, 1980, "Domestic Savings and International Capital Flows," Economic Journal, Vol. 90, pp.314-329.

This paper tests the hypothesis of perfect international capital mobility by comparing domestic rates of saving and investment in OECD countries. The authors find that other than short term assets, capital is not perfectly mobile internationally. While their data is for OECD countries, we'd expect this result to hold a fortiori for LDCs with much less perfect capital markets. The authors suggest that foreign direct investment is motivated not so much by equalization of rates of return as by industrial organization and information advantages inherent to the MNCs.

Hood, Neil, and Stephen Young, 1979, The Economics of Multinational Enterprise (New York: Longman Inc.).

This is a textbook which is both comprehensive and relatively current. It is a good starting point in the large literature on foreign direct investment and multinational firms. Each chapter contains a useful summary of issues discussed and an excellent list of references for readers interested in pursuing any particular issue.

Lall, Sanjaya, and Paul Streeten, 1977, Foreign Direct Investment, Transnationals, and Developing Countries (Boulder: Westview Press).

This book gives a good introduction to both the theory and evidence concerning transnational corporations' investment in LDCs. The authors cover both economic and organizational theories of transnational firms, discuss the issue of host-country welfare, and provide several case studies. Effective host-country policy is also considered.

Magee, Stephen P., 1977, *op.cit.*, see Section I.C for annotation.

Nayyar, Deepak, 1978, "Transnational Corporations and Manufactured Exports from Poor Countries," *Economic Journal*, Vol. 88, pp.59-84.

In the past decade an increasing number of multinational firms have invested in production for export (rather than the local market) in LDCs. Nayyar presents a wealth of data concerning this phenomenon and discusses what tends to cause and promote it. Cheap labor is obviously key, and political stability of the host nation is also found to be significant.

Stein, Leslie, 1979, "Dependency Theories and Underdevelopment," *Journal of Economic Studies*, Vol. 6, pp.64-82.

This paper is a brief, critical review of the major dependency theorists. It contains references to the most important works of Dos Santos, Cardoso, Gunder Frank, and others.

Weisskopf, Thomas E., 1972, "The Impact of Foreign Capital Inflow on Domestic Savings in Underdeveloped Countries," *Journal of International Economics*, Vol. 2, pp.25-38.

Weisskopf uses a two-gap model to estimate the effect of foreign capital inflows on domestic savings. He finds that when the "savings gap" is binding but the trade gap is not, then foreign capital inflows tend to reduce domestic savings. This result does not hold, however, in the opposite case.

E. Foreign Aid

In this brief section, the annotations will speak for themselves. Five recent additions to the literature have been selected. Compared to the 1960s and 1970s, little empirical or theoretical material has appeared recently in the journal literature about the effect of foreign assistance on LDCs. To the extent that it is analyzed, however, aid tends to be viewed as a homogenous chunk of foreign exchange, and little attention is turned to questions of restrictions on aid or project-specific requirements. Ironically, compared to the 1960s, this assumption may be increasingly appropriate: Mosley (1980) presents evidence that aid is generally less tied now than before.

Krueger, A.O., 1981, op. cit., see Section III. C for annotation.

Leipziger, D.M., 1983, "Lending Versus Giving: The Economics of Foreign Assistance" World Development Vol. 11, no. 4.

> Using a simple theoretical model, Leipziger demonstrates that because of variations in the opportunity cost of capital in DCs and LDCs, it would benefit both donors and recipients if grants and concessional loans were made under more flexible terms. In some cases a change in terms on a concessional loan is equivalent to an increase in the grant element of the loan, and can be provided at no additional cost to the lender. More generally, he suggests a methodology for more accurately ascertaining the grant element in concessional loans.

Michaely, M., 1981, "Foreign Aid, Economic Structure, and Dependence" Journal of Development Economics Vol. 9.

> This article develops a two-sector, small open economy model of the effect of aid on an LDC's production structure. Several interesting points emerge. First, aid will lower the relative price of tradable to non-tradable goods, and induce a decline in

the output share of tradables. Second, if "dependence" is defined as the ratio of a country's import surplus to its total available resources (national product plus the import surplus), then aid's effect on relative prices complicates the job of calculating the country's dependence. Michaely provides some empirical examples.

Mosley, P., 1980, "Aid, Saving, and Growth Revisited", Oxford Bulletin of Economics and Statistics Vol. 42.

Mosley covers a lot of ground in this short paper. He reviews the literature on aid and growth in LDCs (criticizing it for omitted variable bias); develops a two-stage least squares approach to analzing aid and growth empirically (and applies it to a large up-to-date sample); and tests several hypotheses of why countries' aid experiences differ. Among his conclusions is that there is a positive link between aid and growth for the poorest LDCs. He also concludes that the seeming negative link between aid and savings is spurious, caused by the fact that the poorest countries both attract a lot of aid and save little.

Yeats, A.J., 1982, "Development Assistance: Trade vs. Aid and the Relative Performance of Industrial Countries" World Development Vol. 10, no. 10.

While trading is thought to have many benefits, this paper assumes that trade and aid are equivalent in that they both supply foreign exchange to an LDC. It asks how much development assistance DCs provide, when the contributions of aid and trade are summed. Yeats finds that, measured as a share of GNP, most DAC members' contributions improve significantly when trade is included. However, there seems to be a negative correlation between the size of the direct aid contribution and the trade contribution. Yeats concludes that uniform aid-to-GNP targets for the DAC countries may be inappropriate.