

**Have Foreign Capital Inflows Adversely
Affected Agriculture in Developing Countries?**

By

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Abstract

The impact of foreign capital inflows on developing country agriculture is examined for 73 developing countries for the period 1973-83. It is concluded that further borrowing by debt-burdened countries is unlikely to solve their basic problems unless accompanied by the appropriate economic policy changes necessary for long-term economic growth.

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Introduction

Inflows of foreign capital have traditionally been viewed as beneficial for developing countries, but the current international debt problems facing many developing countries have called this view into question. The present paper does not, however, focus on repayments crises, but rather on the impact of capital inflows themselves on the agricultural sectors of developing countries. Until the 1970s, resource transfers from developed to developing countries were largely through foreign assistance; commodity assistance, such as food aid, in some cases and foreign exchange assistance in other cases. Both forms of assistance have been used since World War II to transfer large amounts of resources to developing countries in an effort to promote economic development in general and often agricultural development in particular. The view that more foreign assistance is always better than less has prevailed throughout the post-war period, and foreign assistance expanded at particularly high rates during the 1960s and 1970s [Larson and Vogel].

During the 1970s, private international capital markets became more open to many developing countries, and capital transfers on commercial terms increased substantially. Borrowers included not only private sector firms in developing countries, but also public sector enterprises and governments themselves. It was not until the international debt crises of the early 1980s that developing country borrowers and their creditors began to question seriously the belief that more capital transfers, including foreign assistance, were always better than less. As strong world markets for exports together with growing economies and low

real interest rates during the 1970s changed to weak world markets, stagnant economies and high real interest rates in the early 1980s, many developing countries began to experience serious difficulties in servicing their external debt, much to the dismay of their external creditors. Several of the largest developing country borrowers have reached the verge of default, sending shock waves throughout international financial markets. One indication of this problem is that the number of formal debt reschedulings for World Bank members increased from an average of four per year in 1975-80 to a high of 31 involving 21 countries in 1983.

One approach to solving the repayment problems of developing countries involves some combination of additional capital inflows and more generous repayment terms. However, foreign debt cannot continue to grow indefinitely relative to gross national product. At some point more appropriate economic policies must be carried out by developing countries themselves in order to expand exports of goods and services or reduce imports and thereby curtail the growth of foreign debt relative to gross national product. Because agriculture is a major sector for most, if not all, developing countries, the impact of economic policies on agricultural output, and especially on imports and exports, cannot be ignored. If inflows of foreign capital had adverse impacts on developing country agriculture when they originally occurred, additional such transfers from developed to developing countries are unlikely to be an appropriate solution to current problems without substantial policy changes.

Foreign Capital Inflows

The main purpose of the present paper is to examine whether foreign capital inflows may have adversely affected agricultural performance in a significant number of developing countries. Foreign capital inflows

create opportunities for developing countries to allocate additional resources to promote more rapid growth, possibly within the agricultural sector, and to earn more foreign exchange to service the debt incurred. However, such opportunities may be wasted if increased capital inflows enable developing countries to delay making policy changes that could be more appropriate for the longer run. For example, exchange rate policies together with agricultural price policies can stimulate growth in the agricultural sector or can contribute to its stagnation. Policies that maintain over-valued exchange rates can contribute to low agricultural prices thereby discouraging farm production and exports while encouraging food imports [Bale and Lutz, Schuh].

Foreign capital inflows may under certain circumstances be associated with declining agricultural exports and increasing agricultural imports. The increased foreign exchange made available through capital inflows may resolve problems of foreign exchange scarcity for the borrowing country in the short run and thereby allow foreign debt to be serviced and imports to continue. At the same time, the increased availability of foreign exchange may permit an over-valued exchange rate to develop or to be maintained. Most developing countries fix the value of their currency in relation to the currency of a major trading partner (e.g., the U.S. dollar). If significant amounts of foreign currency loans can be obtained, such exchange rates can be maintained substantially above the value that would be determined in a free market. If the exchange rate is thus over-valued, revenues received by producers for export sales are accordingly reduced in terms of the domestic currency, so that incentives for producers to export, or even to produce those products which might be exported, are reduced. In a similar way the

domestic currency costs of imported goods are reduced, so that incentives to import are increased. Furthermore, the attractiveness of low cost imports discourages the production of domestic import substitutes even when such import substitutes may reflect international comparative advantage.

The net effect of an over-valued exchange rate is to tax exports and subsidize imports, thereby not only failing to correct the underlying cause of foreign exchange scarcity but also possibly exacerbating the problem. A country that fails to adjust its policies in order to expand exports and curtail imports will need to continue foreign borrowing in the future to cover its foreign exchange gap, and this gap is likely to grow because of interest payments on a growing foreign debt. A country's foreign debt cannot, moreover, continue increasing without limit relative to its output, but can only delay the ultimate need to adjust - most probably through a move to a more appropriate exchange rate. In the meantime, an over-valued exchange rate impacts adversely on agricultural output, with repercussions throughout the economy since in most developing countries agriculture is a relatively large sector and agricultural exports represent a major source of exchange earnings [Chambers and Just].

A country's exchange rate can initially become over-valued because of an adverse shift in the terms of trade or, more commonly in recent years, because of differential rates of inflation; that is, the exchange rate will tend to become over-valued as a country's rate of inflation exceeds the rates of inflation experienced by its major trading partners. Domestic costs and prices will increase faster than the costs and prices of the goods produced in foreign countries, making the latter relatively

less expensive, and thereby retarding exports and encouraging imports [Frankel]. Protective trade policies such as import tariffs and quotas and export taxes and quotas can also lead to an implicit over-valuation of the exchange rate by raising the domestic prices of protected goods and lowering the prices in domestic currency of exported goods. The structure of protection in developing countries typically raises the prices of industrial goods, many of which serve as inputs into agricultural production, while agricultural output is left relatively unprotected so that farmers producing both exports and import substitutes are penalized.^{1/}

In summary, capital inflows allow an over-valued exchange rate to develop or to be maintained, at least in the short run. This over-valuation of the exchange rate acts as an implicit tax on the agricultural sector in developing countries that export agricultural goods. At the same time, consumers of food and other users of agricultural goods are subsidized indirectly through the low domestic currency prices of these imports, particularly those which are unprotected. Depressed prices reduce the incentives for domestic agricultural production, and this can be especially pronounced for exports and import substitutes. [Larson and Vogel]. In such a situation developing countries often tend to export less and to import more and may thus become increasingly dependent on capital inflows as a source of foreign exchange rather than on the production of commodities sold in international markets. When inflows come in the form of foreign assistance, especially food aid, the adverse impact on the agricultural output of a developing country can be even more direct. Foreign aid in the form of low interest loans for agriculture can also directly disrupt agricultural production by reducing

savings mobilization and causing credit outflows from rural areas that actually reduce resources available for agriculture.

Agricultural Trade of Developing Country Borrowers

In order to evaluate the impact of foreign capital inflows on developing country agriculture, the present paper examines the ratio of foreign debt to gross national product in seventy-three developing countries as compared to the ratios of agricultural imports and exports to gross national product for these same countries. Figures for foreign debt outstanding and disbursed are taken from the World Bank's World Debt Tables and may be understated for some countries because short-term debt (under one year) is not included and because private sector debt without government guarantee may not be fully reported. Foreign debt is defined as debt that has an original maturity of over one year (long-term debt) and that is owed to nonresidents and repayable in foreign currency, goods, or services. The World Debt Tables also report figures for gross national product in U.S. dollars converted at the official exchange rate and are thus subject to the usual problems of such conversions. Agricultural imports and exports are taken from the Food and Agriculture Organization's Trade Yearbook. Data are from the years 1973 through 1983, which covers the period of major growth in the foreign debt of developing countries. The seventy three developing country borrowers selected for this analysis includes all the countries with over 500 million dollars of total debt outstanding and disbursed in 1983.

If inflows of foreign capital are in fact damaging agricultural output in general and the production of agricultural exports and import substitutes in particular, an increase in foreign debt relative to gross national product should be associated with increasing imports and

decreasing exports relative to gross national product. Thus, for each of the seventy three developing countries in the sample, the change in the ratio of foreign debt to gross national product from one year to the next has been correlated with the changes in the ratios of agricultural imports and exports to gross national product. In addition, because of substantial year-to-year variations in debt and gross national product, and especially in agricultural production and hence imports and exports, three year averages have also been used. That is, the ratios of foreign debt, agricultural imports and agricultural exports to gross national product have been averaged for the first three years of the period, 1973-1975, and subtracted from the same ratios averaged over the last three years of the period, 1981-83. This can be seen as providing a longer term, and probably more appropriate, view of the impact of capital inflows on developing country agriculture.

The evidence for the seventy three developing country borrowers in the sample is shown in Table 1. As expected, the change in the three year average ratio of foreign debt to gross national product from 1973-75 to 1981-83 is positive for sixty-two of the seventy-three countries which means that the large majority of the countries were relatively deeper in debt at the end of this period than at the beginning of it. The most striking cases are Costa Rica, Guyana, Mauritania, Togo and Peoples Republic of Yemen; countries that nearly doubled their foreign debt relative to gross national product in this period. Only eleven countries reduced their foreign debt to gross national product ratio from the average of 1973-75 to the average of 1981-83. Pakistan achieved the largest reduction in its foreign debt relative to gross national product in this period.

Changes in the average value of agricultural imports relative to gross national product and agricultural exports relative to gross national product from 1973-75 to 1981-83 are shown in Table 1. For thirty-eight of the countries, the results are totally consistent with the expected relationship between changes in foreign debt relative to gross national product and agricultural imports relative to gross national product. Increasing foreign debt leads to increasing agricultural imports and decreasing debt leads to decreasing agricultural imports. The results are even better for the relationship between foreign debt and agricultural exports. In forty-seven of the countries, increases (decreases) of the foreign debt to gross national product ratio are associated with decreases (increases) of the agricultural exports to gross national product ratio.

Table 1 shows the results of the correlation coefficients between the yearly changes in the ratio of foreign debt to gross national product and the yearly changes in the ratio of agricultural imports to gross national product. The correlation coefficient for fifty of the seventy-three countries is positive indicating that increasing debt is associated with increasing agricultural imports. These results are also consistent with the expected relationship between these two variables. When the yearly changes in the ratio of foreign debt to gross national product are correlated with the yearly changes in the ratio of agricultural exports to gross national product, the results are not as consistent with the expected relationship. Changes in the foreign debt ratio are negatively correlated with the agricultural export ratio for only twenty-three of the seventy-three countries.

Conclusions

Foreign capital inflows appear to affect adversely the performance of developing country agriculture, especially the production of agricultural exports and import substitutes. Foreign borrowing apparently permits over-valued exchange rates to develop or to be maintained, thereby reducing incentives to export and increasing incentives to import. The evidence for seventy three developing country borrowers indicates that an increasing ratio of foreign debt to gross national product is closely associated with an increasing ratio of agricultural imports to gross national product, but the relationship of foreign debt to gross national product with the ratio of agricultural exports to gross national product is less clear. The lack of a close association may be due to the concentration of agricultural exports of most developing countries in a few main crops which are subject to substantial fluctuations in prices and quantities produced. In any case, the fact that the relationship between increasing debt and decreasing agricultural exports is less clear than the strong relationship of increasing debt to increasing agricultural imports undercuts the argument of reverse causation - that decreased agricultural exports can lead to increased capital inflows. In fact, if there is any reverse causation it may be the opposite - that increased agricultural exports lead to increased credit worthiness in international capital markets and hence increased capital inflows.

Large inflows of foreign capital during the 1970s appear to have been ill-advised for many developing countries, not only because of subsequent payments crises but also because of adverse impacts on the agricultural sector performance. Further foreign borrowing, especially

to rescue countries with debt repayment problems, is unlikely to resolve the basic problems that led to debt crises, unless such borrowing is accompanied by significant changes in economic policy with respect to exchange rates and other possible distortions. In fact, foreign capital inflows that rescue countries from debt problems in the short run may thereby delay the policy changes necessary for long-term economic growth and development. This does not mean, however, that foreign capital inflows can never be a complement to basic policy changes. For example, as mentioned above, exchange rates can become implicitly over-valued through the structure of protection, and protection is often tightened and turned further against the agricultural sector in response to international payments crises. Foreign capital inflows thus can sometimes help to assist in import liberalization, or at least reduce the threat of increased protection. Capital inflows, especially in the form of foreign aid, can also provide developing country governments with resources that can be used to compensate losers in the process of trade and financial liberalization and thereby allow the liberalization process to continue.

Footnote

1/See Balassa and Associates for a full discussion of effective protection and for estimates of effective protection for several developing countries. More recent estimates of effective protection for selected countries can be found in Bale and Lutz.

Table 1: Foreign Debt, Agricultural Imports, and Agricultural Exports
Relative to Gross National Product and Correlations Among These
Variables for Seventy-three Developing Country Borrowers,
1973-1983

Borrower	Correlations of Annual Change in:		Change in Three-Year Average From 1973-75 to 1981-83		
	FD/GNP With Change in Ag IM/GNP	FD/GNP With Change in Ag EX/GNP	Foreign Debt to GNP	Agr'l Imports to GNP	Agr'l Exports to GNP
Algeria	- 0.31	0.23	2.1	- 0.01	- 0.01
Argentina	0.14	0.69	17.7	- 0.01	0.02
Bangladesh	- 0.02	0.19	28.8	- 0.03	0.01
Benin, P.R.	0.12	0.26	40.3	0.32	- 0.05
Bolivia	0.16	0.29	6.7	- 0.01	- 0.03
Brazil	0.23	0.64	11.3	- 0.01	- 0.01
Burma	- 0.02	- 0.07	24.2	0.01	0.02
Cameroon	0.44	0.22	15.7	- 0.01	- 0.10
Chile	0.28	0.84	- 13.0	- 0.02	0.02
Colombia	- 0.38	- 0.16	- 2.1	- 0.01	- 0.02
Congo, P.R.	0.58	0.27	23.3	- 0.01	- 0.04
Costa Rica	0.53	0.76	92.1	0.01	0.08
Cyprus	- 0.39	0.08	18.6	- 0.02	- 0.01
Dominican Rep.	0.38	- 0.48	9.8	- 0.02	- 0.09
Egypt	0.59	0.26	18.6	0.03	- 0.05
El Salvador	- 0.18	- 0.57	12.5	0.01	- 0.04
Ecuador	0.47	- 0.01	26.3	- 0.01	- 0.05
Ethiopia	- 0.42	- 0.41	12.8	0.01	- 0.01
Gabon	0.67	0.36	- 12.9	0.02	- 0.04
Ghana	0.68	0.79	- 14.3	- 0.03	- 0.13
Greece	0.71	0.63	7.4	0.01	0.01
Guatemala	- 0.17	- 0.49	8.7	0.01	- 0.05
Guinea	0.36	0.57	19.6	0.01	0.01
Guyana	0.44	- 0.77	88.8	0.02	- 0.03
Honduras	- 0.31	0.14	34.1	- 0.01	0.02
India	0.46	0.44	- 2.4	- 0.01	- 0.01
Indonesia	0.80	0.45	- 5.7	- 0.01	- 0.03
Israel	0.05	0.77	17.3	- 0.01	0.01
Ivory Coast	0.70	0.10	44.9	0.01	- 0.05
Jamaica	0.38	- 0.19	36.2	0.01	- 0.02
Jordan	0.03	- 0.20	11.9	- 0.01	0.01
Kenya	0-35	0.24	20.8	- 0.02	- 0.01
Korea, R.P.	0.50	0.79	2.2	- 0.03	- 0.02
Liberia	0.31	0.15	34.1	0.03	0.02
Madagascar	0.59	- 0.72	45.6	0.01	- 0.02
Malawi	- 0.04	- 0.23	12.6	- 0.01	- 0.01
Malaysia	- 0.13	- 0.44	20.1	- 0.02	- 0.03
Mali	0.60	0.87	- 14.0	- 0.10	0.01

Borrower	Correlations of Annual Change in:		Change in Three-Year Average From 1973-75 to 1981-83		
	FD/GNP With Change in Ag IM/GNP	FD/GNP With Change in Ag EX/GNP	Foreign Debt to GNP	Agr'l Imports to GNP	Agr'l Exports to GNP
Mauritania	0.17	0.48	99.0	- 0.03	0.10
Mexico	0.04	0.75	21.4	0.01	- 0.01
Morocco	- 0.01	0.22	44.7	- 0.01	- 0.02
Nicaragua	0.25	0.29	56.5	0.01	- 0.07
Niger	0.48	0.04	26.4	0.01	0.01
Nigeria	- 0.12	0.62	7.6	0.02	- 0.02
Oman	0.22	0.45	- 3.1	- 0.01	0.01
Pakistan	- 0.11	- 0.21	- 23.9	- 0.02	- 0.01
Panama	- 0.42	- 0.06	33.6	- 0.01	- 0.02
Papua, N.G.	0.16	0.12	10.7	0.02	0.02
Paraguay	0.07	0.41	2.2	- 0.03	- 0.07
Peru	0.06	0.69	18.9	0.01	- 0.02
Philippines	- 0.09	0.09	16.4	- 0.01	- 0.06
Portugal	- 0.24	0.46	34.9	0.01	0.01
Senegal	0.70	- 0.19	33.1	0.01	- 0.04
Singapore	0.17	0.73	- 1.1	0.04	0.01
Somalia	0.15	0.20	58.4	0.07	0.01
Sri Lanka	0.42	0.66	21.0	- 0.04	- 0.01
Sudan	0.36	0.59	41.5	- 0.01	- 0.07
Syria	- 0.37	0.47	1.2	- 0.03	- 0.05
Tanzania	0.07	0.41	5.9	- 0.03	- 0.05
Thailand	0.12	- 0.20	12.7	0.01	0.01
Togo	- 0.09	0.18	86.4	0.10	0.01
Trinidad & Tobago	0.21	- 0.50	1.3	- 0.01	- 0.04
Tunisia	- 0.19	0.12	14.6	- 0.01	- 0.03
Turkey	0.09	0.49	18.3	- 0.01	0.01
Uganda	0.59	0.66	- 0.5	- 0.01	- 0.08
Uruguay	0.05	0.86	11.9	- 0.01	0.02
Venezuela	0.01	- 0.13	10.9	0.01	- 0.01
Yemen, Arab	0.05	0.26	8.2	0.02	- 0.01
Yemen, Peoples	- 0.22	- 0.32	78.4	0.01	- 0.02
Yugoslavia	0.20	0.76	4.1	- 0.02	- 0.01
Zaire	0.55	- 0.02	31.5	- 0.03	- 0.02
Zambia	- 0.07	- 0.21	33.1	- 0.01	- 0.01
Zimbabwe	- 0.31	0.03	13.4	0.01	0.02

a/ Foreign debt is defined as public and publicly guaranteed debt outstanding and disbursed. Public and publicly guaranteed debt does not include data for: (a) transactions with the International Monetary Fund, with the exception of Trust Fund Loans; (b) debt repayable in local currency; (c) direct investment; and (d) short-term debt (that is, debt with original maturity of a year or less).

Source: World Debt Tables: External Debt of Developing Countries. The World Bank. Washington, D.C. 1983-84 and 1984-85 editions and calculations by the authors.

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