

Foreign Capital, Market Mechanism, and Economic Growth in Developing Countries

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Introduction

The Economist (May, 1994) reports that a total of \$1.4 trillion (in 1988 dollars) has been transferred from developed countries to less developed countries (LDCs) as foreign aid since 1960. Yet, many LDCs have practically nothing to show for these resources received. As a matter of fact, many of these countries are worse off today economically than in the 1960s. Despite these realizations, the clamor for foreign aid continues unabated. Recognizing that foreign aid may not be contributing much to development, many of those involved in the aid business are calling for a shift in the orthodox ways of aiding LDCs. A popular alternative that seems to be gaining widespread acceptance is foreign direct investment (FDI). However, it seems logical that before we discard all manner of foreign aid for FDI, a careful examination of the relative impact of both alternatives is warranted. Currently, there is a dearth of studies on this issue. This paper, therefore, attempts to fill this void by empirically examining the contributions of foreign aid vis-a-vis FDI in the economic development of LDCs. Furthermore, the study improves on previous studies by utilizing a more extensive data set covering 74 countries over a ten-year period (1981-1990).

Literature Review

Schmitz (1996) provides an elaborate discussion on the fact that the impact of foreign aid on economic development is still unclear. As Schmitz's study reports, while some people call for a termination of all foreign aid, those still in support of aid agree that aid as currently administered does not reach those who need it the most. Without much ado, the study goes on to say that aid has not

significantly changed the lives of LDCs. The consensus, even among those involved in the "aid business," appears to be that a shift in the orthodox means of giving aid is long overdue.

Clad and Stone (1993) state categorically that the American public is completely disenchanted with the nation's foreign aid program. They clearly state that this disenchantment does not result from the feeling that aid is taking resources away from domestic programs. Rather, the disenchantment is deeply rooted in the belief that foreign aid has failed to achieve desired results. Currently, America devotes less than 0.3 percent of her gross national product to foreign aid, ranking only ahead of Ireland among all aid-donor nations. The consensus, it seems, is that America needs to refocus and redefine its aid program.

Islam (1992) examines the impact of foreign aid on the economic growth of Bangladesh, one of the poorest countries in the world. In total, between 1971 and 1989, Bangladesh received about \$18.9 billion in foreign aid. His results indicate that foreign resources in aggregate did not significantly impact economic growth. Mbaku (1993), in his examination of the impact of foreign aid on economic development in Cameroon, concurs with Islam. Islam's and Mbaku's studies support the findings of earlier studies by Griffin and Enos (1970) and Papanek (1973). Along the same lines, Snyder (1996) reveals that the relationship between aid and private investment is negative. In other words, foreign aid probably crowds out private investment.

Supporting the view that foreign aid is beneficial to economic growth, Bowen (1995) argues that previous studies, contending an ambiguous aid-growth relationship, have fundamental methodological limitations, hence their findings. Bowen's study reveals, indeed, that a clear and significant aid-growth relationship does exist depending on the economic development stage of the recipient countries. Bowen's results reveal a negative aid-growth relationship for countries with per capita annual income of less than \$987, whereas a positive relationship was observed for countries with per capita annual income above \$987. Snyder (1993), Dhakal, Upadhyaya, and Upadhyay (1996) provide support for Bowen's findings.

Foreign direct investment (FDI) has increased significantly in recent years. According to the *World Investment Report* [UNCTAD, 1996], investment flows in 1995 rose by 40 percent to an unprecedented \$315 billion. In the same year, the stock of FDI climbed to \$2.7 trillion. While developed countries have been the main force behind the FDI flows, developing countries also received a record \$100 billion. For many developing countries, FDI has replaced foreign aid as the main source of long term capital inflow. This has been good news for the LDCs that traditionally relied on foreign aid, which is declining both as an absolute amount and as a ratio of gross domestic product (GDP), to fund development activities.

Not long ago, multinational corporations were seen as villains and FDI as a means to exploit developing countries. Now multinational corporations are seen as key vehicles to create employment, obtain foreign technology, earn foreign currency, integrate into the world economy, improve international competitiveness and economic performance (Hasnat, 1998; for empirical studies, see Scaperlanda and Mauer, 1969; Hultman and Mcgee, 1993; and Kasibhatla and Sawhney, 1996). Sales and assets of some multinational corporations (MNCs) are higher than the GDP of many countries. One-third of the private sector assets is under the governance of MNCs, and two-thirds of all international transactions are associated with MNCs (UNCTAD, 1996). These statistics indicate that the FDI has emerged as the driving force in the global economy.

Model and Data

We rely on three related areas of development economics to develop our model. The standard neoclassical growth literature (Solow, 1956; Barro, 1991) postulates that capital accumulation, population growth, and technological progress have positive effects on economic growth. The conventional wisdom suggests that, by adding to domestic savings of a recipient country, foreign aid should stimulate economic growth in the recipient nation (Chenery and Strout, 1966, Congressional Budget Office, 1997). In recent years, FDI has emerged as a new factor that can play a positive role and contribute to economic growth (Kasibhatla and Sawhney, 1996 and

UNCTAD). We incorporate features from these three related areas to develop our model. The model we estimate is of the following general form:

Economic growth = f (economic, technological, and political factors)

Our data consist of annual data for a cross-section of 74 developing countries during the 1981-1990 period. The time period was selected to cover a consistent set of latest data. This is also a time when the developing countries' view about the FDI changed from the one that has a detrimental effect on their economies to the one that may have a beneficial effect. The number of countries selected reflects the largest number of countries on which we could gather data on the variables we are interested in. The data are from the Penn World Table 5.6 (Summers and Heston, 1995; World Bank, 1997; United Nations, 1997; and Gastil 1989).

Since there is no widely accepted structural model of economic growth (Levine and Renelt, 1992), our empirical analysis is conducted with an ad-hoc equation that includes investment, the labor force growth rate, foreign aid, FDI, openness, the initial level of real GDP per capita in 1980, and the political freedom of countries as the basic determinants. Based on the specifications of past studies, we estimate the following semi-logarithmic equation:

$$GDP_{gr} = a + b_1 \ln GDP80 + b_2 \ln FDI + b_3 \ln FAID + b_4 \ln INV + b_5 LAB + b_6 POL1 + b_7 POL2$$

where

GDP_{gr} = gross domestic growth rate; \ln = the natural log; FDI = foreign direct investment as a percentage of GDP; FAID = foreign aid as a percentage GDP; INV = gross capital formation as a percentage of GDP; LAB = labor force growth rate between 1981-1990;

GDP80 = GDP in U.S. \$ in 1980; POL1 = 1 if the country's political freedom is partly free, 0 otherwise; and POL2 = 1 if the country's political freedom is not free, 0 otherwise (the omitted variable is countries that are politically free).

In the actual estimation we examine the relationship after controlling for cyclical fluctuations and unusual changes. For this we create a sample covering the 10-year period 1981-1990. All data used in the estimation are a simple average of this 10-year period. We believe that the average should eliminate any cyclical fluctuations and unusual changes as well as enable us to examine the underlying relationship.

Results

The ordinary least-squares (ols) regression results are shown in Table 1. The *F-statistic* reveals that the null hypothesis that the regression coefficients are jointly equal to zero can be rejected at the .002 level of significance. The adjusted R^2 is .213. Multicollinearity is not a problem because all variance inflation factors are low (Neter, Wasserman, and Kutner, 1990). Autocorrelation does not present a problem, the Durbin-Watson statistic is close to 2. In addition, a plot

**Table 1: Regression Results of the Effects of Foreign Capital on
Economic Growth in Less Developed Countries, 1981-1990**

PREDICTOR	COEFFICIENT	T-VALUE	P-VALUE	VIF
CONSTANT	6.641	1.81	.075	
LAB	0.6493	1.69	.096	1.2
FAID	-0.00047	-0.01	.992	1.5
FDI	0.8436	3.35	.001	1.2
POL1	1.3663	2.14	.036	1.7
POL2	-0.1845	-0.25	.805	2.4
GDP80	-2.655	-2.41	.019	2.5
INV	1.442	1.42	.160	1.7

s = 2.004
 $R^2 = 28.9\%$
Adjusted $R^2 = 21.3\%$
n = 74 $F = 3.82$

of the residuals shows that there is no evidence of heteroscedasticity (not shown). Turning to individual estimates, the coefficient of initial gross domestic product (ln GDP80) is negative and significant. This means that an increase in initial per capita real GDP is negatively associated with the rate of economic growth. In other words, countries with lower levels of economic development tend to grow faster (Barro, 1991). Relative to countries that are politically free, partly-free political countries have a higher growth rate (POL1 is positive and significant). This tends to support Olson's claim that Amature democracies may likely to suffer a slowdown in growth because of a slow buildup in the powers of special interest groups whose successful claims for special treatment reduce the growth of the economy as a whole@ (Helliwell, 1994). Labor force growth (LAB) is positive and significant. According to neoclassical growth theory, labor force growth should have a positive effect on the economic growth rate (Kormendi and Meguire, 1985).

Foreign Aid (FAID) does not have a direct influence on economic growth. In fact the coefficient is negative, but is not significantly different from zero. Foreign direct investment (FDI), however, is positive and significant. A 1% increase in FDI increases economic growth by .34%. This finding provides support for the assertion that MNCs play an ever-increasing role in the economic growth of countries. This means that in an environment of relative political freedom the private sector, rather than the government sector, provides a better source for economic growth.

Summary and Conclusions

Using an eclectic model of economic growth, we found that foreign direct investment is more important than foreign aid in explaining economic growth in LDCs. In fact, several regressions were run on models that included additional variables that the literature deems important for economic growth (the results are not shown here). Foreign direct investment was consistently positive and significant at the .05 level and above in all of the said models, while foreign aid was never significant. Our results provide support for the critics of foreign aid who contend that aid to LDCs is hardly enough to make any significant impact on economic growth.

Our results, however, need to be viewed with caution. Foreign aid does not appear to have a direct impact upon economic growth; however, Bowen (1995) shows that foreign aid may have an indirect effect on economic growth. Furthermore, we need to examine the role of export growth at the same time that we examine the effects of FDI and FAID upon economic growth of LDCs. In results not shown, the human capital variables were either not significant or were of the wrong sign and significant. This was because the human capital variables were highly correlated with initial per capita GDP. Despite these usual shortcomings, our results imply that less developed countries should allow private sectors to operate in a politically free environment for long-term economic growth.

Appendix

A. Countries included in the study:

Algeria, Angola, Argentina, Bangladesh, Benin, Bolivia, Botswana, Brazil, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Chile, Columbia, Congo, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Gabon, Gambia, Ghana, Guatemala, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Ivory Coast, Jamaica, Kenya, Lesotho, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Mozambique, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Rwanda, Senegal, Sierra Leon, Somalia, Sri Lanka, Sudan, Syria, Tanzania, Thailand, Togo, Trinidad & Tobago, Tunisia, Turkey, Uganda, Uruguay, Venezuela, Zaire, Zambia, and Zimbabwe.

B. Data Sources:

INV, GDP80 from Summers and Heston (1995).

AID from the World Bank, *Global Development Finance* (1997).

LAB from the World Bank, *World Development Report* (1997).

HDI from United Nations Development Programme, *Human Development Report* (1997)

POL1 and POL2 from Gastil (1989).

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