

Volume 33, Issue 4**Aid Flows and Growth Diagnosis: Empirical Evidence for A Panel of ECOWAS Countries**

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Abstract

This article investigates if the stability of aid flows has an impact on investment and economic growth for the Economic Community of West African States (ECOWAS) countries using pooled panel regression from 1970-2008. The results suggest that foreign aid has a positive and significant impact on investment, but a negative impact on economic growth. The uncertainty variable has a negative and statistically significant impact on both economic growth and investment

1. Introduction

This article investigates if the stability of aid flows has an impact on investment and economic growth for the Economic Community of West African States (ECOWAS) countries. Aid receipts in these countries have been particularly volatile, which may have played a role in determining investment decisions and economic growth. From a theoretical standpoint, foreign aid may increase investment in physical and human capital, hence leading to economic growth. It may also increase the capacity to import capital goods or technology (Morrissey, 2001). Existing theories on uncertainty, investment and economic growth, on the other hand, (see Abel, 1983; Caballero, 1991; Dixit and Pindyck, 1994) suggest that uncertainty, in a broad sense, has a negative impact on investment and economic growth.

Although there exists a rich literature on the relationship between foreign aid and economic growth (see Dollar and Easterly 1999; Burnside and Dollar 2000; Collier and Dollar 2001, 2002; Dalgaard et al 2004; Gomanne et al. 2002; Lensink and Morrissey 2000; Hatemi-J and Irandoust 2005; Sakyi 2010; Karras 2006; Chatterjee and Turnosky 2005; Feeny 2005; and Doucouliagos and Paldam 2009). There exist two strands of literature on the role of foreign aid on economic growth. The first proponents of foreign aid (Chenery and Strout (1966); Papanek (1973); Gulati (1975); Gupta (1975); Over (1975); Levy (1988); Islam (1992)) assert that there exist a positive relationship between aid and economic growth because aid complements domestic resources and also supplements domestic savings. The second proponents (Griffin (1970); Griffin and Enos (1970); Weisskoff (1972a, b); Boone (1994); (1996); Easterly (1999)) asserted that external capital exerts significant negative effects on the economic growth of recipient countries.

However, in the existing empirical literature (see, Mercieca 2010, for a review of the literature), Lensink and Morrissey (2002) is the only study to date which examines the impact of uncertainty on investment to the best of our knowledge. The authors use a pooled data set countries consisting of multiple regions. The present article offers a similar contribution to the literature but deviate from Lensink and Morrissey (2002) by using a longer time span as well as focusing specifically on the case of ECOWAS countries.

2. Data and Methodology

Data used in the analysis is annual and has been obtained from United Nations Statistics online database and the World Development Indicator online database for the period 1970-2008. Four models are estimated following the work of Lensink and Morrissey (2002). In Model 1, impact of uncertainty on investment is measured. In the remaining models, impact of investment and uncertainty on economic growth are investigated. In Model 2, investment is not included; In Model 3, uncertainty is not included; and In Model 4, both uncertainty and investment are included. These models are estimated using pooled panel regression (N=10):

$$\text{invest}_i = \psi_{10} + \psi_{11}\text{trend}_i + \psi_{12}\text{pcgdp}_i + \psi_{13}\text{openx}_i + \psi_{14}\text{aid}_i + \psi_{15}\text{aidu}_i + \psi_{16}\text{gcon}_i + \mu_{1i} \quad (1)$$

$$\text{pcgdp}_i = \psi_{20} + \psi_{21}\text{trend}_i + \psi_{22}\text{openx}_i + \psi_{23}\text{aid}_i + \psi_{24}\text{aidu}_i + \psi_{25}\text{gcon}_i + \mu_{2i} \quad (2)$$

$$\text{pcgdp}_i = \psi_{30} + \psi_{31}\text{invest}_i + \psi_{32}\text{trend}_i + \psi_{33}\text{openx}_i + \psi_{34}\text{aid}_i + \psi_{35}\text{gcon}_i + \mu_{3i} \quad (3)$$

$$\text{pcgdp}_i = \psi_{40} + \psi_{41}\text{invest}_i + \psi_{42}\text{trend}_i + \psi_{43}\text{openx}_i + \psi_{44}\text{aid}_i + \psi_{45}\text{aidu}_i + \psi_{46}\text{gcon}_i + \mu_{4i} \quad (4)$$

where i denotes country specific or cross-section [1,2,3,...,10], t denotes time series

dimension [1970-2008], invest denotes investment, which is proxied by gross fixed capital formation as percentage of GDP, pcgdp denotes per capita GDP, aid denotes the ratio of foreign aid to GDP, gcon denotes government consumption, and trend is time trend, used as a proxy for the labour force and to capture technological improvements during the period (Feeny, 2005), openx captures trade openness measured by export plus import as ratio of GDP and aidu denotes the proxy of foreign aid uncertainty, which is estimated based on auto-regressive estimates to capture deviations from an expected trend by taking the standard deviation in a rolling window technique (see Lensink and Morrissey, 2001):

$$\text{aid}_t = \theta_1 + \theta_2 \text{aid}_{t-1} + \theta_3 \text{aid}_{t-2} + \theta_4 \text{aid}_{t-3} + \varepsilon_t \quad (5)$$

where aid denotes foreign aid as a share of GDP and ε_t is an error term with standard properties. The standard deviation of the residuals of Equation 5 is used to capture aid uncertainty.

3. Empirical Results

Results summarized in Table 1 suggest that foreign aid played a significantly positive role in influencing investment decisions when uncertainty is controlled for in the ECOWAS region.

Table 1: Results of the Estimated Models

Regressors	Model 1	Model 2	Model 3	Model 4
<i>C</i>	15.01 (7.35)*	331.65 (6.03)*	282.22 (4.84)*	246.39 (4.11)*
<i>pcgdp</i>	0.0065 (3.28)*			
<i>openx</i>	-0.004 (-0.17)	-0.15 (-2.33)**	-0.15 (-2.45)**	-0.14 (-2.26)**
<i>aid</i>	0.09 (1.62)***	-8.989 (-6.43)*	-6.92 (-7.07)*	-9.12 (-6.61)*
<i>aidu</i>	-0.86 (-4.44)*	-8.15 (-1.54)***		-12.05 (2.25)*
<i>gcon</i>	0.09 (0.81)	16.25 (5.65)*	16.25 (5.65)*	15.36 (5.38)*
<i>invest</i>			4.05 (2.86)*	4.17 (3.34)*
<i>trend</i>	1.02 (1.21)	1.28 (1.01)	1.26 (1.02)	1.37 (1.11)
R2	0.12	0.22	0.23	0.24;
F-Statistic	9.5*	18.7*	20.16	17.8*

Note: * denote 1% level of significance; T-statistics are in parenthesis

** denote 5% level of significance

*** denote 10% level of significance

The uncertainty variable was found to negatively and significantly affect investment decisions in line with Lensink and Morrissey (2000). Results further suggest that aid has a negative and significant effect on growth in all the estimated models. This is highly significant with or without uncertainty in the model. The results also show that uncertainty played a negative role on growth though this is not significant. The investment variable was found to positively and significantly influence growth in the model while openness was found to impact negatively on growth. The result of a negative effect of aid is not surprising because most of these countries divert aid for unproductive consumption uses and such aid flow also facilitates corruption and undermines domestic revenue. The negative effect of openness might also be as a result of high dependency on importation influenced by aid flow that might undermine growth and the more reason that the export

base of these countries are primary product oriented and the demand for primary product is inelastic. So if aid has a negative influence on exchange rate then this result is not surprising. In the model 2 where investment is not included, R2 is slightly lower than that in Model 3 and Model 4, where investment was included.

4. Conclusion

The results of the present article suggest that foreign aid has a positive and significant impact on investment, but a negative impact on economic growth. The uncertainty variable has a negative and statistically significant impact on both economic growth and investment. The negative impact of aid inflow is not surprising as increasing aid has the tendency to undermine domestic revenue thereby making budget planning difficult. These countries are faced with several weaknesses in governance such as low tax revenue as a result of widespread tax exemptions for powerful interest groups, weak tax compliance and inefficient institutions thus diverting attentions from addressing these weaknesses. Aid inflow also appreciates the currencies of these countries thereby making their export less competitive and leading to increased import which invariably undermine growth. It is therefore imperative for these inefficiencies to be addressed. Aid agencies should also try to monitor the proper use of aid disbursed so as to curtail the diversion of aid to unproductive consumption uses and corruption in the region that might undermine aid effectiveness. Proper control of economic cum political or policy uncertainty matter for investment decisions in the region, therefore efforts should be made to eliminate dynamic inconsistencies with regards to policy announcement and implementation in the region.

References

Asher, R.E (1966), "Grants, Loan and Local Currencies: Their Role in Foreign Aid". Washington D.C. The Brookings Institute.

Burnside, C. and D. Dollar (2000), "Aid, policies, and growth," *American Economic Review*, 90,847–868.

Boone, P. (1994), "The impact of foreign aid on savings and growth," Center for Economic Performance, Working Paper 1265, London.

Chatterjee, S and S.J. Turnosky (2005), " Foreign Aid and Economic Growth: The Role of Flexible Labour Supply". A Paper Presented at the Annual Conference of the royal Economic Society in Swansea.

Chenery, H.B., and A. Strout (1966), "Foreign assistance and economic development," *American Economic Review* 56, 679-733.

Collier, P. and D. Dollar(2001), "Can the World Cut Poverty in Half? How Policy Reform and Effective Aid Can Meet International Development Goals", *World Development*,29,111,1787–1802.

_____, (2002),"Aid Allocation and Poverty Reduction", *European Economic*

Review, 46, 1475–1500.

Dalgaard, C , H. Hasen and F. Tarp (2004), “On the Empirics of Foreign Aid and Growth”. *The Economic Journal*, 114, F191-F216

Dollar, D. And W. Easterly (1999), “ The Search for the Key: Aid, Investment and Policies in Africa”. *Journal of African Economies*, 8, 4, 546-577.

Doucouliaagos, H. and M. Paldam (2009), "Conditional aid effectiveness: a meta-analysis," *Journal of International Development*, 21, 7, 1582-1601.

Easterly, W. (1999), “The Ghost of financing gap: Testing the growth model used in international financial institutions,” *Journal of Development Economics* 60, 423-438.

Feeny, S. (2005), “ The Impact of Foreign Aid on Economic Growth in Papua NEW Guinea”. *Journal of Development Studies* 4, 6, 1092-1117

Feeny, S. and M. McGillivray (2008), "Aid allocation to fragile states: absorptive capacity constraints," *Journal of International Development*, 20, 7, 1031-1050.

Gomanee, K., S. Girma and O. Morrissey (2002), “Aid, Investment and Economic Growth in Sub-Saharan Africa”. A paper Presented at the 10th General Conference of EADI, Ljubljana, 19-21 September.

Griffin, K.B. (1970), “Foreign capital, domestic savings and economic development,” *Oxford University Institute of Economics and Statistics* 32, 99-112.

Griffin, K.B., and J.L. Enos (1970), “Foreign assistance: Objectives and consequences,” *Economic Development and Cultural Change* 18, 313-327.

Gulati, U. (1975), “Effect of capital imports on savings and growth in less developed countries,” *Economic Inquiry* 13, 563-569.

Gupta, K. (1975), “Foreign capital inflows, dependency burden and savings rates in developing countries: A simultaneous equation model,” *Kyklos* 28, 358-374.

Hansen, H and F. Tarp (2000), “Aid and Growth Regressions”. DERG, University of Copenhagen. Denmark.

Hatemi-J. A and M. Irandoust (2005), “ Foreign Aid and Economic Growth: New Evidence from Panel Cointegration”. *Journal of Economic Development*, 30, 1, 71-80.

Iyoha, M.A (2001), “ Review of EU Aid and Strategies for Africa’s Development”. Processed.

Islam, A. (1992), "Foreign aid and economic growth: An econometric study of Bangladesh," *Applied Economics* 24, 541-544.

Jones, C.I., (1998), "Introduction to Economic Growth", New York: W.W. Norton & Company.

Karras, G (2006), "Foreign Aid and Longrun Economic Growth: Empirical Evidence for Panel of Developing Countries". *Journal of International Development* 18, 15-26

Lensink, R and O. Morrissey (2001), "Aid Instability as a measure of Uncertainty and the Positive Impact of AID on Growth". *Journal of Development Studies*, 36,3,31-49.

Lensink, R and O. Morrissey (2002), "FDI Flows, Volatility and Growth". University of Nottingham: *CREDIT Research Paper 01/06*.

Levy, V. (1988), "Aid and growth in the Sub-Saharan Africa: The recent experience," *European Economic Review* 32, 1777-1795.

Morrissey, O. (2001), "Does aid increase growth?," *Progress in Development Studies*, 1,1 37-50.

Over, M. (1975), "An example of the simultaneous equations problem: A note on foreign assistance: Objectives and consequences," *Economic Development and Cultural Change* 24, 751- 756.

Papanek, G.F. (1973), "Aid, foreign private investment, savings and growth in less developed countries," *Journal of Political Economy* 81, 120-130.

Sakyi, D. (2010), "Trade Openness, Foreign Aid and Economic Growth in Post Liberation Ghana: An Application of ARDL Bounds Test". *Journal of Economic and International Finance*, 3,3, 146-156.

Weisskoff, T.E. (1972a), "An econometric test of alternative constraints on economic growth of underdeveloped countries," *Review of Economics and Statistics* 54, 67-78.

_____ (1972b), "The impact of foreign capital flow on domestic savings in underdeveloped countries," *Journal of International Economics* 2, 25-38.

Bradshaw, Y.W., (1985) "Dependent Development in Black Africa: A Cross National Study', *American Sociological Review*. Vol 50, pp 195-207

Burnside, C., and Dollar, D. (2000) "Aid, Policies, and Growth." *American Economic Review* 90: 847-68

Devarajan, S. & Swaroop, V. (1998). "The Implications of Foreign Aid Fungibility for Development Assistance", World Bank Policy Research Working Paper 2022.

Feyzioglu, T., Swaroop, V. and Zhu, M. 1998. "A panel data analysis of the fungibility of foreign aid." *The World Bank Economic Review*, 12 (January): 29-58

- Griffin, K. and J. Enos (1970) "Foreign Assistance: Objectives and Consequences," *Economic Development and Cultural Change*, 18, 313–327.
- Gulati, U.C., 1978. Effects of capital imports on savings and growth in less developed countries. *Economic Inquiry* 16, 563-69.
- McGowan, P., and D. Smith. 1978 . "Economic Dependence in Black Africa: A Causal Analysis of Competing Theories." *International Organization* 32:179-235.
- Mosley, P., J. Hudson and S. Horrell, [1987] "Aid, the Public Sector and the Market in Less Developed Countries," *Economic Journal*, 97, 616–641.
- Mosley, P., (1980), "Aid, Savings and Growth Revisited", *Bulletin of the Oxford University Institute of Economics and Statistics*, 42, 79-95
- Pack, H. and J.R. Pack (1990) "Is Foreign Aid Fungible? The Case of Indonesia," *The Economic Journal*, 100, 188–194
- Pack, H. and J.R. Pack (1993) "Foreign Aid and the Question of Fungibility," *Review of Economics and Statistics*, 75, 258–265.
- Pesaran, H., Shin, Y., & Smith, R. J. (2001) Bounds testing approaches to the analysis of level relationships, *Journal of Applied Econometrics*, 16, 289-326.
- Stoneman, C., (1975), "Foreign Capital and Economic Growth", *World Development*, 3, 11-26