
FOREIGN AID AND ECONOMIC GROWTH: EVIDENCE FROM NIGERIA

Anthony I. Monye-Emima and Samson E. Edo

Abstract

The influx of foreign aid to developing economies around the world has been viewed from different and varying perspectives. While some experts support foreign aid as an instrument for local economic growth, other do not. This study, therefore, examined the implications of foreign aid on the Nigerian economy against the backdrop of the raging controversy regarding its role in economic growth. A model consistent with the neoclassical and endogenous framework was specified and estimated with data from 1980 to 2009. The predictive ability of the model was also examined. The finding of the study supports the position that there exists a positive relationship between foreign aid and economic growth in Nigeria.

Keywords: foreign aid, economy, economic growth, Nigeria

Introduction

At the dawn of this millennium, foreign aid assumed a vanguard position in the global concern to promote growth, boost living standards and eliminate poverty in the developing world. Well-endowed countries proposed to boost aid flows to developing countries. This action is suggestive and may well be an affirmative answer to a most enduring and important question as to whether foreign aid leads to economic growth. This is because there is no basis to explain the poverty in many countries, if a relatively small

Anthony I. Monye-Emima and Samson E. Edo

Department of Economics and Statistics, University of Benin, Nigeria

amount of resource transfer from rich countries could set them on the path to economic prosperity (Rajan and Subramanian, 2005).

However, empirical studies on the role of foreign aid in economic growth are inconclusive and enmeshed in controversy (O'Neil, 1997; Rajan and Subramanian, 2005). There is also a dearth of country-specific studies. This study examined the aid-growth nexus with a country-specific study of Nigeria. The paper is structured as follows. Section 2 discusses foreign aid and economic growth: issues, debate and evidence. Sections 3 and 4 consist of the model and empirical analysis. The final section is the summary and conclusion.

Foreign Aid and Economic Growth: Issues, Debate and Evidence

a) Issues in Foreign Aid and Growth

There are a number of issues in the aid-growth nexus, some of which are considered here. The issues border on the desirability of aid, volume of flows, volatility, donors' commitment, and surge in aid flows as well as the role of reforms, among others.

There is a controversy on the desirability of foreign aid for growth and a number of positions exist. One line of thought posits that it has no effect on growth and may actually undermine it. Reasons adduced for this include its possible waste on frivolous expenses, promotion of corruption, undermining of incentives for private sector production and causing currency appreciation with implications for tradable goods' profitability in the recipient country (Radelet et al. 2005). Another proposition is that it promotes growth but with diminishing returns. In other words, as aid flows increase, it will induce a diminishing increase in the output of the recipient economy. There is also the contention that a conditional relationship exists between aid and growth for the former to impact positively on the latter. The required conditions relate to both the recipient and the donor. For the recipient, the conditions require the existence of a stable and honest government, strong civil liberties, market-oriented and outward-looking policies, and willingness to undertake reforms among others. The donor, on the other hand, must be wary of the size of its bureaucracy, which must not be too large, in addition

to not having an ineffective monitoring and evaluation system, and so on. (O'Neil, 1997; Radelet et al, 2005).

On the volume of foreign aid flows from the affluent countries, two schools of thought exist which Miskel (1997) classified as 'crusaders' and 'infidels'. The former argues that the economically advanced West spends too little on aid. For example, only the Scandinavian countries spend more than 1% of their GDP on foreign aid. The United States spends only 0.12% while Germany and Japan spend less, about 0.4% of same. The 'infidels' position is that these countries spend too much on foreign aid, arguing that it has even further involved and amounted to economic advice and technical assistance. Aid recipients have limited indigenous resources, poor infrastructures and ill-educated or un-educated workforce to utilize optimally the aid flows. This latter group is supported by another contention that 'big push' in aid flows is not the answer to the developmental needs of the developing world. What is required is a 'broader push' including concessional trade policy, boost in private capital flows, knowledge and technology transfer, improved security and environmental protection.

The various initiatives by the developed world to boost aid flows to Africa in particular constitute another issue. There is the Blair's Commission on Africa for UK, the Millennium Challenge Account of USA and introduction of taxes on financial transactions and other items to finance foreign aid flows to Africa by France. The European Union pledged to raise its contribution by up to \$7 billion annually by 2006. In addition, individual countries proposed to raise their contributions to 0.39% of their Gross National Income (Burnell, 2004). The United Nations called on rich countries to increase their foreign aid to 0.7% of their GDP by 2015. The World Bank advocated a doubling of the US \$50 billion ODA worldwide, according to the CATO Institute.

Aid volatility precipitates instability which developing countries have to contend with. Foreign aid flows have been more volatile than domestic fiscal revenues, and they tend to be pro-cyclical, thus economic planners have to contend with uncertainty in aid receipts. The volatility may be due to external forces (change in donor sentiments) or domestic factors (governance and macroeconomic

management) and may likely increase due to conflicting signals from donors. Moreover, the pattern of aid allocations has changed with significant concentration of aid on a small number of recipients. Thus there is heightened anxiety among donors and potential recipients that this development or initiative may harm their economies. Indeed volatility in the flow of foreign aid can also have consequences for aid-dependent nations (Adam and Bevan, 2003; Eifert and Gelb, 2005; Fielding and Mavrotas, 2005).

The proposed and actual surge in aid flows could engender some macroeconomic challenges to recipients. The surge in resources inflow has implications for the exchange rate, domestic price level, export of tradable goods, and so on. Thus recipients may have to contend with the additional task of adapting their fiscal and monetary policies. There is also the matter of absorptive capacity constraint and diminishing returns to aid (Fielding and Mavrotas, 2005). Aiyar et al. (2005) examined five countries with increased net aid flows and concluded that their experience underscored the need to scale-up aid. It was observed that the countries have strong institutions, no macroeconomic disorder, no misgovernance and no post-conflict reconstruction. These countries may not be typical of poor countries and the number is quite small for generalisation.

The issue of reform is worth mentioning here as most aid flows, especially in the 1990s, were tied to or granted to support reform programmes in sub-Saharan Africa. Unfortunately there is hardly any country that completed the reform programme with success and experienced sustained growth. Out of the 15 countries identified as 'core adjusters' by the World Bank in 1993, only three of them were classified as 'strong performers'. These are Lesotho, Nigeria and Uganda (Ayodele et al. 2005). Even with these so-called 'strong performers', growth was not as impressive as expected. Moreover, the propriety of the recommendations of the reform programme in addressing the developmental needs of the reforming countries remains in doubt (See, Zaghera et al. 2006).

The lack of interest in evaluating the effectiveness of aid disbursed by donors themselves is another issue. Their disposition in this regard seems to suggest that their mission does not relate to the economic growth of recipients. They appear to be more

concerned with committing resources, that is, the 'moving of money' and making so much noise about it. In other words, the volume of aid is stressed rather than the changes it ought to induce in the recipient country (Easterly, 2003).

b) The Debate and Evidence

Economic growth process depends on a complex set of interdependent factors. Evidence from the literature suggests that capital is an essential input, the dearth of which is a problem to poor and developing countries. The problem is compounded for them by savings-investment and foreign exchange gaps among others. Aid, as a foreign resource, attempts to bridge these gaps thus enabling developing countries to attain their development goals. However foreign aid's effectiveness in bridging the gaps and thus promote economic growth is enmeshed in debate. There are two major distinct groups emerging. One group posits that it promotes growth while the other's disposition is that aid hinders it. To the first group, foreign aid can fill resource gaps and raise productive capacity by subsidising local resources thereby promoting growth with the resulting benefits widely spread. In other words, foreign aid represents an injection of resources into the economy such that it promotes investment and hence growth. New ideas are also transited along with aid, according to the optimistic group. The pessimistic group, on the other hand, argues that aid can hinder growth, especially on a number grounds including fungibility. That is, if it is diverted or used for another purpose such as consumption or inappropriate capital as opposed to technology replacing intensive use of labour. It does the same thing if it is spent on irrelevant infrastructures that damage the environment and have little impact in raising living standards. It can also promote dependency rather than self-reliance while at the same time supporting corrupt governments. One other position on the role of aid in promoting growth holds that it is positively associated but depends on the existence of certain conditions. In other words, in the absence of these conditions, its effectiveness in promoting growth is in doubt. Yet another position is that there is no correlation between aid and growth.

Radelet et al. (2005) reiterated the existing divided views on aid's role/effectiveness in promoting economic growth. According to them, critics of aid argue that widespread poverty in Africa and South East Asia has vindicated their position despite over three decades of aid to the regions. Such aid flows were alleged to have been used to enlarge bureaucracies, enrich the elite, and so on. They thus suggested that all aid programmes should be reformed, curtailed substantially or eliminated outright. The supporters of aid, while noting the failure of aid, insist that it has supported poverty reduction, as poverty indicators have fallen, particularly in the 1960s and promoted growth in some countries. The weaknesses associated with aid have to do with donors who are inclined to give aid to political allies rather than support development programmes. They however drew attention to the fact that all aid inflows are not alike and not all of them are directed at growth. Besides, they observed that some of the existing researches on the impact of aid flows on growth are flawed both in substance and timing.

Ayodele et al. (2005), using Africa as an example, concluded that aid has not promoted growth and development but dependence. More aid to Africa has been accompanied by decline in the standard of living, as GDP per capita declined over the years. They hold the view that foreign aid has been used to feed corrupt and bloated bureaucracies, underwrite misguided policies, and even looted outright.

The contention that foreign aid provides a basis for a takeoff into sustained growth is not justified with the experience of African and Asian countries. Africa's case showed a collapse in the GDP growth rate even with increase in aid between 1970 and 2000. Asia showed that aid does not have a significant positive impact on growth. The experience of China and India calls for particular attention. Aid to China decreased to a trivial amounts at the start of its rapid growth in the early 1990s. The same phenomenon replicated itself in India which even rejected aid from bilateral donors. Aid therefore does not seem to be capable of improving the economic fortunes of recipient countries. It is even worse if there is increased spending on aid without an idea of how to make it useful in the recipient countries (Erixon, 2005).

According to Gomance et al. (2005), evidence from sub-Saharan Africa seems to challenge the contention that aid contributes to economic growth. The reason is that the region has been a major recipient of aid yet growth performance remains dismal. They however drew attention to the existence of an indirect relationship between aid and growth as the former operates via transmission mechanisms such as investment or government spending. They nevertheless reiterated the need to maintain the flow of aid while identifying and addressing the factors that explain the region's poor growth performance. Their reason for this position is that the potential contribution of aid to growth has not been fully realised.

Rajan (2005) acknowledged that the debate about aid's effectiveness has settled little in the literature. Even some efforts at separating aid inflows in order to examine their impact on short and long-term basis are seen as unnecessary and uncalled for. While cautioning against 'Dutch disease', he drew attention to the tendency for the 'law of unintended consequences' to operate. This tends to underscore the need for experimentation, monitoring, evaluation and sharing of best practices. Some growth conditions were identified, which he thinks should be made necessary conditions for aid by donors, but he cautioned against too many detailed prescriptions on this account due to the lessons of the past.

Available empirical evidence on the aid-growth relationship include: Adam and Bevan (2003), Easterly (2003) and Moreira (2003). Others are Rajan and Subramanian (2005), Islam (2005), McGillivray et al. (2005), and Duc (2006). Arndt, Jones and Tarp (2010, 2011), Juselius, Moller and Tarp (2011), Makasha and Tarp (2011) are among the most recent empirical studies. All of these reiterate the controversy in the aid-growth nexus.

Adam and Bevan (2003) developed a simple model of aid and public expenditure in which public infrastructure capital generates an intertemporal productivity spillover for both the tradable and non-tradable goods sectors. A calibrated extended version of the model was used to simulate the effect of a steep increase in net aid flow to Uganda. The result showed that beyond the short run 'Dutch disease' effects are present. The relationship between enhanced aid

flows, real exchange rates and welfare is less straight forward than the simple model of aid suggests, according to the study.

Easterly(2003) considered issues relating to foreign aid and growth such as the empirical evidence on the links from aid to economic growth, aid-growth theory, attitude of aid institutions, selectivity, conditionality, and evaluation and proposed a realistic vision for foreign aid. He reiterated the inconclusive state of empirical aid-growth literature. Illustrating with an extension of an earlier study by Burnside and Dollars, he declared that the conclusion that aid promotes growth in a good policy environment is fragile. One of the probable reasons for this, he pointed out, is the absence of a clear theoretical model used in explaining the relationship between aid and growth that could be used to pin down empirical specifications.

Evaluating the impact of foreign aid from a cross-country perspective, Moreira (2003) estimated an aid-growth equation using a large panel data set and the generalized method of moments (GMM). He contended that the inconclusive nature of the empirical aid-growth literature may be as a result of the approaches used. Micro-level studies, which mainly used cost-benefit analysis, yielded positive results while cross-country macro-level studies, using regression technique, turned out ambiguous results. This is the basis of the contradiction in the literature, which Mosely called the 'micro-macro paradox'. Attention was drawn to an earlier survey by Hansen and Tarp who contended that empirical support of a positive aid-growth relationship outweighs the negative, and as such the paradox does not exist. The result of the empirical work from this study is consistent with the findings of micro studies which suggest a positive relationship between foreign aid and growth. In other words, foreign aid is beneficial to economic growth in less developed countries. Thus the 'micro-macro paradox' should be given less importance in appraising the effectiveness of foreign aid.

Rajan and Subramanian (2005) found little evidence of a robust impact of aid on economic growth. They also did not find any evidence that aid works well in better policy, institutional or geographical environments or that certain kinds of aid work better than others. This position seems to support the contention that studies on the impact of aid on growth remain inconclusive.

Islam (2005) examined the veracity of the claim of a conditional relationship between foreign aid and economic growth in a cross-sectional study. The findings of the study are consistent with that of similar earlier studies. On the average, aid did not have a significant impact on economic growth. There was, however, evidence of a robust positive relationship between aid and growth only in a politically stable environment regardless of the quality of economic policies. The study also found a tentative support for the existence of an aid-Laffer curve in politically stable countries with aid yielding increased negative returns at higher levels of aid inflows, especially beyond 5.8% of aid/GDP ratio (See McGillivray, et al. 2005).

Duc (2006) used cross-country data and found aid to be significantly and negatively correlated with growth in developing countries as a whole. But for inland and South Asian countries a positive relationship existed. He also found a strong divergence trend in data set thus suggesting that there may be problems in the present aid system. If this divergence is not improved upon, the less developed countries would experience further income dispersion in the future. He, therefore, submitted that the successful experience of the inland and South Asian countries could serve as a good lesson for the rest of the less developed countries.

Some of the most recent studies found evidence of a positive and significant relationship between foreign aid and economic growth. Among these recent studies are Arndt, Jones and Trap (2010, 2011). The first study assessed the literature and re-examined key hypotheses. It found aid to positively and significantly impact on growth over the long run with confidence intervals conforming to levels suggested by growth theory and concluded that aid remains a key tool for the development prospect of poor countries. In the latter study, they used a structural model of the main relationships and estimated the impact of aid on a range of final and intermediate outcomes in addition to quantifying a simplified representation of the full structural form where aid impacts on growth through key intermediate outcomes. The study generated a coherent picture and concluded that foreign aid stimulates growth and poverty reduction through physical capital and improvement in health.

In a study on the long-run effect of foreign aid on a set of macroeconomic variables in 36 sub-Saharan African countries from mid-1960 to 2002, Juselius, Moller and Trap (2011), used the Cointegrated VAR methodology. The study found evidence of a positive long-run impact of foreign aid on the variables, including investment. Evidence of harmful effect was not found. Rather inadequate accounting and imposition of invalid data were identified as factors responsible for econometrically unsatisfactory results.

In assessing the disposition of meta-analysis on the effectiveness of foreign aid in promoting economic growth, Mekasha and Trap (2011) found a positive and significant relationship between both variables. The study stressed the genuineness of the significant effect. Mekasha and Trap also showed why their results differed from others.

The Model

As indicated in the preceding section, there is no clear theoretical model explaining the relationship between foreign aid and economic growth. Thus for this study, a growth model consistent with both neoclassical and endogenous models is specified to enable us to determine the impact of foreign aid on economic growth in Nigeria. The growth model is given as:

$$RGDP = \acute{a}_0 + \acute{a}_i X_i + U_1 \quad (1)$$

$$i = 1, 2—5.$$

The expanded natural log form of equation 1 is:

$$\ln RGDP = \acute{a}_0 + \acute{a}_1 \ln FA + \acute{a}_2 \ln OPN + \acute{a}_3 \ln OXR + \acute{a}_4 \ln MS + \acute{a}_5 \ln RGDP_{-1} + U_1 \quad (2)$$

Where RGDP = Real Gross Domestic Product (proxy for economic growth), X_i = row vector of factors determining economic growth, including the lag of GDP. While \acute{a}_0 and \acute{a}_i are the parameters to be estimated and U = error terms. The growth determinants considered here are foreign aid, degree of openness of the economy, crude oil export revenue and money supply and the lag of the dependent variable.

The above model states that economic growth in Nigeria is dependent on foreign aid and three other variables including the level of economic growth in the preceding period. The signs attached to the coefficients indicate the existence of a positive relationship between the endogenous variable and all the exogenous variables. In other words, all things being equal, all the variables are expected to positively impact on growth of the economy.

Data Span and Method of Analysis

Data covering the period 1980 to 2009 were used for this study and E-views 7.0 econometric software was used to estimate the model. The model was estimated and its predictive ability was tested.

The estimated values of the diagnostic statistics as shown in Table 1 indicate that they are within acceptable range. All the exogenous variables account for about 97% of economic growth in Nigeria, as the value of the R^2 indicates. The F value is significant at 5% level, thus explaining the impact of all the explanatory variables on the economy. The values of the other diagnostic statistics, SEE and DW, indicate the minimisation of the problems associated with empirical estimation of this nature.

For the coefficient of the exogenous variables, those of foreign aid, degree of openness and money supply satisfy the 'a priori' expectation of a positive relationship and also pass the significance test at 5%. The remaining explanatory variables, oil export revenue and the lag of real GDP, reported negative signs and also failed the significance test. The estimated result suggests that the Nigerian economy gained from the inflow of foreign aid, the variable of interest.

Table 1: Estimated Results

<i>Dependent Variable</i>	<i>Regressor</i>	<i>Coefficient</i>	<i>t-value</i>	<i>Diagnostics</i>
lnRGDP	INPT	11.68	19.87*	$R^2 = 0.97$
	lnFA	0.05	3.42*	SEE = 0.10
	lnOPN	0.02	4.05*	F = 16.69*
	lnOXR	-0.06	-1.72	D.W. = 1.85
	lnMS	0.12	2.49*	
	lnRGDPL	-0.03	-0.59	

* Significant at 5% level.

Predictive Ability of the Model

For policy-making implications, the predictive power of the model was tested. The fitted values of the model were compared with the actual values of the dependent variable for the period considered. The result is shown in Table 2 and Figure 1 below.

An examination of the residuals, difference between the actual and fitted values, show that there are 12 years of under-prediction and 16 years of over-prediction. The values of the residuals are not significantly large. The values of the summary statistics, MAE and RMSE, indicate that the predictive ability of the model is significant, as both of them are within the range of 5%.

Table 2: Actual and Fitted Natural Log Values of Real GDP

Year	Actual	Fitted	Residual
1981	12.2000	12.1540	0.04603
1982	12.2000	12.1174	0.08265
1983	12.1000	12.1620	-0.06199
1984	12.1000	12.1495	-0.04951
1985	12.2000	12.1606	0.03942
1986	12.2000	12.2488	-0.04883

1987	12.2000	12.2457	-0.04575
1988	12.3000	12.3296	-0.02960
1989	12.4000	12.3764	0.02362
1990	12.5000	12.3764	0.12544
1991	12.5000	12.4220	0.07799
1992	12.5000	12.4678	0.03218
1993	12.5000	12.5433	-0.04328
1994	12.5000	12.5556	-0.05563
1995	12.6000	12.6018	-0.01083
1996	12.6000	12.5987	0.00131
1997	12.6000	12.6445	-0.04452
1998	12.7000	12.7340	-0.03405
1999	12.7000	12.7514	-0.05144
2000	12.7000	12.8394	-0.13942
2001	12.8000	12.8703	-0.07032
2002	13.0000	12.8934	0.10665
2003	13.1000	13.1198	-0.01979
2004	13.2000	13.0281	0.17194
2005	13.2000	13.2789	-0.07894
2006	13.3000	13.3289	-0.02885
2007	13.4000	13.3402	0.05984
2008	13.4000	13.4393	-0.03931
2009	13.5000	13.4150	0.08501

MAE = 0.05876

RMSE = 0.06986

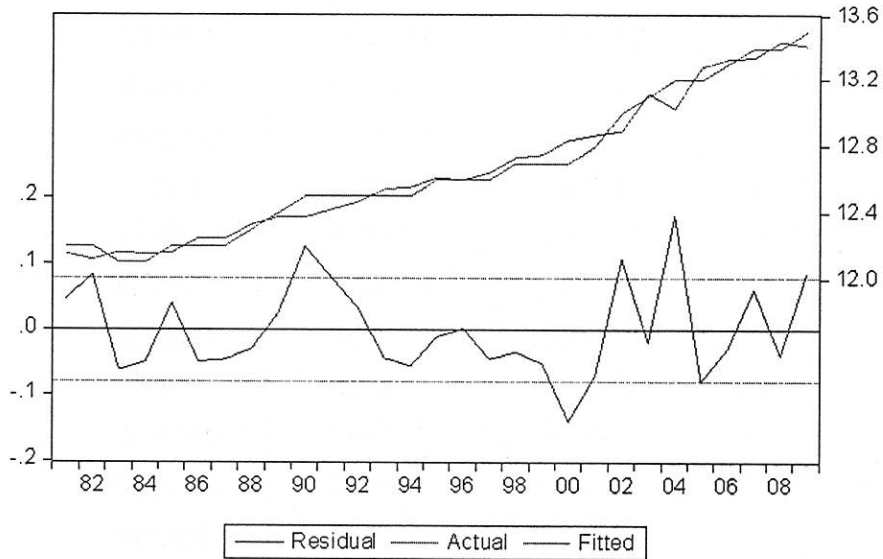


Figure 1: Plot of Actual and Fitted Values

Summary and Conclusion

This study examined economic growth in Nigeria, especially to determine the impact of foreign aid. A growth model incorporating other exogenous variables was specified and estimated. The predictive ability of the models was also tested. Some of the exogenous variables, including foreign aid, impacted positively on the growth of the economy. The finding indicates the relative important role foreign aid can play in the economic progress of the country. The imperative is for the country to attract more inflow of foreign aid as it serves the purpose of bridging resource-gap for economic growth.

References

- Adams, C.S. and D.L. Bevan, (2003) "Aid, Public Expenditure and Dutch Disease", Centre for the Study of African Economies, Wps/2003-02, February.

- Aiyar, S. et al (2005) "The Macroeconomic Challenge of More Aid", *Finance and Development*, Vol. 42, No. 3, Sept.
- Arndt, C., S. Jones and F Trap (2011) "Aid, Growth and Development: Have We Come Full Circle?" *Journal of Globalisation and Development*, Vol. 1, Issue, 2
- Arndt, C., S. Jones and F Trap (2011) "Aid Effectiveness: Opening the Black Box", *UNU-WIDER Working Paper*, No. 2011/44
- Ayodele, T. et al. (2005) "African Perspective on Aid: Foreign Assistance Will Not Pull Africa Out of Poverty", CATO Institute, *Economic Development Bulletin*, www.cato.org/pubs/edb/edb2.html.
- Burnell, P. (2004) "Foreign Aid Resurgent: New Spirit or Old Hangover", *UNU-WIDER, Research Paper* No. 2004/44, July.
- Duc, M. V. (2006) Foreign Aid and Economic Growth in Developing Countries; A Cross-Country Empirical Analysis, www.cnx.org/content/M13519/latest.
- Easterly, W. (2003) Can Foreign Aid Buy Growth? *Journal of Economic Perspective*, Vol. 17, No. 3, summer.
- Eifert, B. and A. Gelb (2005) "Coping With Aid Volatility", *Finance and Development*, Vol.42, No.3 Sept.
- Erixon, F. (2005) Aid and Development: Will it Work This Time, International Policy Network, Fielding, D. and G. Mavrotas, (2005); "The Volatility of Aid", *UNU-WIDER Discussion Paper*, No. 2005/6.
- Gomance, K. et al. (2005) "Aid and Growth in Sub-Saharan Africa", *UNU- WIDER, Research Paper*, No. 2005/06, Sept.
- Islam, M. N. (2005) Regime Changes, Economic Policies and the Effect of Aid on Growth, *The Journal of Development Studies*, Vol. 41, No. 8, November.
- Juselius, K., N.F Moller and F Trap (2011) "The Long-Run Impact of Foreign Aid in 36 African Countries: Insight from

- Multivariate Time Series Analysis”, *UNU-WIDER Working Paper*, No. 2011/51.
- McGillivray, M. et al. (2005) “It Works; It Doesn’t; It Can; But That Depends...50Years of Controversy Over the Macroeconomic Impact of Development Aid”, *UNU-WIDER, Research Paper No. 2005/54*, August.
- Mekasha, T.J. and F. Trap (2011) “Aid and Growth: What Meta-Analysis Reveals”, *UNU-WIDER Working Paper*, No. 2011/22
- Miskel, J. F. (1997) “The Debate about Foreign Aid”, www.jha.ac/articles/ao16.htm.
- Moreira, S. B. (2003) Evaluating The Impact of Foreign Aid on Economic Growth: A Cross-Country Study (1970-1998), Paper to Be Presented at the 15Th Annual Meeting on Socio-Economics, June, 26-28, (Session B/D), Aix-en-Provence, France.
- O’Neil, J. E. (1997) “The Role of Foreign Aid in Development”, www.cbo.gov/showdoc.cmf?index=8&sequence=0
- Radelet, S. et al. (2005) “Aid and Growth”, *Finance and Development*, Vol. 41, No3.
- Rajan, R. (2005) Aid and Growth: The Challenge, *Finance and Development*, Vol. 42, No. 4, December
- Rajan, R.G. and A. Subramanina (2005) “Aid and Growth: What Does the Cross-Country Evidence Really Show”, *IMF Working Paper*, wp/05/127.
- Zagha, R. et al. (2006) Rethinking Growth, *Finance and Development*, Vol.43, No. 1, March.