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Effectiveness of Aid Modalities on Government Financing: with Reference to Tanzania

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A B S T R A C T

This study empirically tests the effectiveness of two main aid modalities, conventional project-type aid and modern program-type aid, on a country's economic growth and its budget expenditures. With respect to growth, neither type of aid showed a significant positive effect. In terms of fiscal response, however, both modalities indeed appeared to increase public expenditures in partner countries. This study specifically examines the case of Tanzania, among the countries where program-based approach (PBA) is most active. Tanzanian data support the above-mentioned empirical findings; the country's PBA, a specifically results-based approach (RBA) as an advanced version of PBA, is indeed positively related to government expenditures.

Keywords: Aid Modality, Aid Effectiveness, Program-Based Approach, Results-Based Approach, Panel Data

1 . Introduction

A significant amount of money has been poured into developing countries in the name of foreign aid. However, whether the foreign aid has been working is questionable and a number of studies examined its effectiveness, which are categorized as Aid Effectiveness Literature (AEL). Doucouliagos and Paldam (2007) viewed the literature into three waves (see Figure 1). The first wave started in the 1970s and emphasized the role of accumulation through savings and improving the balance of payments as important factors in growth and the objective of aid. The second wave of AEL focused on the direct effects

of aid on growth by examining cross-country growth models. The third wave has, in contrast, focused on a conditional model that argues that aid may work only in certain cases (see, e.g., Burnside & Dollar, 2000, and Hansen & Tarp, 2001, for more information).

Whether aid is effective is a topic that has been debated during the past half-century with no unified conclusion, which led to the beginning of fiscal response studies in which research explored "how aid flows affect public sector behavior in developing countries" (Mavrotas & Ouattara, 2007). Since Heller's (1975) seminal piece, many researchers have delved into the macroeconomic impact of aid on the recipient governments that are the main decision bodies in terms of allocating and spending foreign aid, particularly official development assistance. Fiscal response research has come to be regarded as a new approach that can open the "black boxes of the aid-growth

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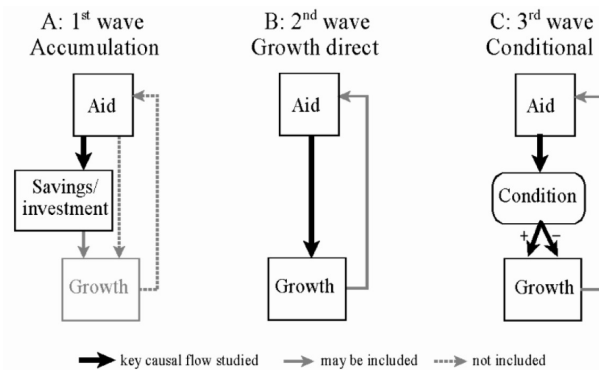


Figure 1. The Three Families of Models in the AEL
Source: Doucouliagos & Paldam (2007)

nexus” (Mavrotas, 2005).

This study is influenced by traditional AEL, which addresses the links between aid and economic growth, as well as fiscal response to the aid - i.e. the effects of aid on recipient governments’ budget spending behavior. To be more specific, the paper empirically tests the effectiveness of two main aid modalities, conventional project-type aid and the modern approach of program-type aid, on both a country’s economic growth and its budget expenditures. Technically speaking, this brings two dependent variables with two major explanatory variables.

Project aid has been a major modality in aid history for quite a long time. According to Baum and Tolbert (1985: 8), project-based aid is “a discrete package of investments, policy measures, and institutional and other actions designed to achieve a specific development objective (or set of objectives) within a designated period.” The amount of aid disbursed by the OECD’s Development Assistance Committee (DAC) as project-type intervention is still the largest among all types of aid in 2017 - about 52.8%¹⁾ (OECD, 2018a). Here, project-type intervention means “a set of inputs, activities and outputs, agreed with the partner country, to reach specific objectives/outcomes within a defined time frame, with a defined budget and a defined geographical

area” (OECD, 2018b). Table 1 distinguishes project, program, and other aid approaches.

Although project aid was historically prevalent, it became known as not delivering expected results. Accordingly, the international community began to seek new ways to improve aid effectiveness, and one of the main alternatives was program-based approach (Canadian International Development Agency, 2010) which is the second independent variable in this study (project-based aid is the first). Program-based approach (PBA) is “a way of engaging in development cooperation based on the principle of coordinated support for a locally owned program of development, such as a national poverty reduction strategy, a sector program, a thematic program or a program of a specific organization” (OECD, 2006). The OECD DAC and European Union recognize PBA as an exemplary practice because it reinforces ownership of partner countries, strengthens accountability of partner countries by utilizing their internal systems, increases aid predictability, reduces transaction costs, and so on (Oh et al., 2018).

PBA has four characteristics according to Lavergne and Alba (2003)²⁾, and if an aid modality exhibits

1) Gross disbursements of official development assistance from DAC member countries in 2017 were 117,694.959 million USD (constant prices). Among that total amount, project-type interventions, reported as 62,179.739 million USD (constant prices), accounted for 52.8%.

2) 1) Leadership by the host country or organization; 2) a single comprehensive program and budget framework; 3) a formalized process for donor coordination and harmonization of donor procedures for reporting, budgeting, financial management, and procurement; and 4) efforts to increase the use of local systems for program design and implementation, financial management, monitoring, and evaluation.

Table 1. Differences among Three Aid Approaches

	Project Approach³⁾	Program-based Approach	Macroeconomic Approach
Results and Accountabilities	Specific to the project	Program-wide	Macroeconomic policy reforms and economic adjustment
Targeting or Earmarking of Funds	May involve detailed targeting of funds in the pursuit of project objectives	May still involve targeting, but the intent is to move away from project targeting toward program targeting	Funds not targeted
Local Ownership and Division of Responsibilities	Projects may have a high degree of local ownership, or they may not, but most involve a high level of donor control	Emphasizes the importance of local ownership but includes a role for donors at the program level	Local ownership often limited
Donor Collaboration	Limited donor coordination	Seeks donor coordination and the harmonization of donor procedures under host-country leadership	Moderate to high level of donor collaboration

Source: Lavergne & Alba (2003)

Table 2. PBA Modalities

	Category	Explanation
Budget Support	General Budget Support	Focusing on partner country’s national development program and budget priorities
	Sectoral Budget Support	Operating within specific sub-sectors of a national development program such as health or education
Pooled Arrangement	Basket Funding	When multiple donors simultaneously support PBA or Sector-Wide Approach (SWAp), they finance a partner country based on coordination among donors over a common framework and procedure
	Pooled Technical Assistance	Technical support that is coordinated on the basis of a platform approach
	Project	Not stand-alone projects, but projects that are integrated toward recipient countries’ development programs

Source: adapted from Oh et al. (2018) and Rhee (2010)

these features, it qualifies as PBA. According to Rhee (2010), modalities that support PBA can be summarized into three groups: budget support, pooled arrangements, and projects (Table 2). For this study, the first two groups were chosen and added to create the PBA variable because data on projects were not disaggregated into stand-alone versus PBA projects.

As the cases of increasing numbers of countries have highlighted the shortcomings of donor-driven

approaches to development aid, the effectiveness of aid from the partner country side has become critical. In this regard, PBA has been an accepted practice that has officially been emphasized since the Second High Level Forum on Joint Progress toward Enhanced Aid Effectiveness, held in Paris in 2005.

Despite PBA’s potential and its emergence as a trend, very few researchers have empirically examined its effectiveness. Öhler (2017) presented the case of a single country, Cambodia, and Nunnenkamp, Öhler, and Thiele (2013) addressed multiple countries, but their dependent variable was the degree of fragmentation. Using comprehensive panel data covering 124 countries for 11 years (from 2006 to 2016), this study contributes

3) In the Canadian International Development Agency (CIDA) context, “this includes the use of regular independently-managed projects, stand-alone technical assistance, Canada Funds projects, and projects funded using the Counterpart Funds approach” (Lavergne & Alba, 2003).

to the AEL by combining the two approaches (adding fiscal response to the traditional approach with growth rates) with two aid modalities, project-type interventions and PBA.

The rest of the paper is organized as follows: Data and methodology come in the next section, and empirical results and findings follow next. Tanzanian cases will be discussed for in-depth research, and the last section concludes.

II. Data and Methodology

The basic specification used in this study is as follows:

$$\begin{aligned} L.GPC_{it} \text{ or } \ln GGFC = & \beta_0 + \beta_1 \ln PTI_{it} + \beta_2 \ln PBA_{it} \\ & + \beta_3 iGPC + \beta_4 \ln POP_{it} + \beta_5 \ln FDI_{it} \\ & + \beta_6 \ln EXP_{it} + \beta_7 \ln INF_{it} + D_i + \epsilon_{it} \end{aligned}$$

where PTI_{it} and PBA_{it} are project-type intervention and program-based approach, respectively, such that a developing country i receives aid in a given time t from the OECD DAC members⁴⁾. The OECD releases aid data on its Creditor Reporting System (CRS) where the project-type intervention in the CRS is denoted as PTI_{it} in this study and pooled arrangement⁵⁾ and budget support are denoted as PBA_{it} . As explained in the previous chapter, there is no official statistics on PBA, thus, this paper creates a proxy of PBA by combining these two variables. In addition, $iGPC$, POP_{it} , FDI_{it} , EXP_{it} , INF_{it} are control variables that,

respectively, stand for initial GDP per capita growth, population, foreign direct investment net inflows, exports of goods and services, and inflation in each recipient country. ϵ_{it} is an error term.

For the dependent variables, $L.GPC_{it}$ refers to lagged GDP per capita growth in developing country i in a given time t . GDP is frequently used as a macroeconomic indicator of a country and as a lagged variable to deal with endogeneity issues (Mustafa & Rahman, 2015; Choi et al., 2017; Chung & Choi, 2018). $\ln GGFC_{it}$ is the logarithm of final general government consumption expenditures, which is a representative variable from fiscal response studies. All the variables except for GPC_{it} , which is already measured as a rate, are log-transformed. Then, this study employs a second set of analyses where dummy variables are added: A regional dummy based on geographic continent and an income dummy based on countries' income levels. Finally, based on Burnside and Dollar (2000)'s approach, this study adopts interaction terms to consider governance, or government effectiveness, denoted as GE , collected from the World Bank's Worldwide Governance Indicators project⁶⁾.

The estimation method is panel fixed and random effects, with more weight on the former, based on the Hausman test. Random effects are used only when fixed effects are not applicable due to time-invariant variables. In addition, in order to avoid heteroscedasticity-related issues, the White heteroscedasticity-consistent standard errors are addressed in all the regressions.

In fact, Mavrotas and Ouattara (2007) previously used project-type aid and PBA as explanatory variables and Ouattara and Strobl (2008) tested four main aid modalities (project aid, financial program aid, technical assistance grants, and food aid) based on three other studies - Burnside and Dollar (2000), Hansen and Tarp (2001), and Dalgaard and Tarp (2004). This study is in line with those studies but with an up-to-date

4) The DAC has 30 members, including the European Union. The data was gathered from 29 DAC countries, except European Union: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom, and United States.

5) The exact name of the data used for PBA is 'core contributions and pooled programs and funds', which includes 1) core support to NGOs, other private bodies, public-private partnerships, and research institutes; 2) core contributions to multilateral institutions; 3) contributions to specific-purpose programs and funds managed by implementing partners; and 4) basket funds/pooled funding.

6) This is one of the six factors of governance. Others include voice and accountability, regulatory quality, political stability and absence of violence, rule of law, and control of corruption. According to World Bank Group (2019), GE variable "reflects perceptions of the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."

Table 3. Summary Statistics for Variables

Variables	Observations	Mean	Std. Dev.	Min	Max
L.GPC	1,213	2.734301	6.438188	-62.2251	122.9683
lnGGFC	1,284	21.82779	1.889303	17.76618	28.10248
lnPTI	1,327	4.405158	1.886618	-4.96973	8.317048
lnPBA	1,314	2.537217	2.191238	-5.43712	7.636645
iGPC	1,342	4.622576	5.496578	-6.99095	38.68357
lnPOP	1,359	15.96643	1.880788	9.904087	21.04438
lnFDI	1,309	20.26926	2.116824	10.36072	26.39634
lnEXP	1,320	3.379705	0.701535	-2.30795	4.720155
INF	1,334	7.237635	11.97687	-36.5159	273.352
GE	1,357	34.76871	21.64782	0	91.26214

dataset⁷⁾ of 11 years (from 2006 to 2016) of panel data for 124 countries using actual disbursements⁸⁾ and the relatively new concept of PBA. The list of countries is provided in Appendix 1, categorized by the two dummies. Table 3 shows the summary statistics for every variable used in this paper, and detailed explanations including data sources and units of each variable are in Appendix 2.

III. Results and Findings

For each dependent variable, a table with four columns is provided. The estimation models are selected based on Hausman test results. For example, Column (1) in Table 4 shows the coefficients produced by fixed effects model because the result of Hausman test prefers fixed effects ($\chi^2(2)=30.06$, $\text{Prob}>\chi^2=0.0000$). Regarding dummy variables, the East Asia & Pacific dummy in Column (3) and the high-income dummy in Column (4) are deleted due to multi-collinearity.

Table 4, based on the conventional AEL, shows how a country's growth is affected by different aid

modalities. To state the conclusion upfront, both project-type aid and program-based aid, controlled by other external factors, turn out to be ineffective promoting a country's growth; their coefficients are mostly negative and sometimes even significant. The fact that aid modality may not be effective is not actually a surprising finding and consistent with the findings from the previous studies (e.g. Easterly, Levine & Roodman, 2004; Rajan & Subramanian, 2008; Roodman, 2008). Regarding region dummy, Latin America and Caribbean, Middle East and North Africa, and Sub-Saharan Africa are particularly vulnerable to statistically negative growth coefficients. On the other hand, income level dummy turns out to be not statistically significant.

Table 5 summarizes the results based on the fiscal response studies of the relationship between aid modalities and government expenditure. Unlike the results from the previous table, both project-type intervention and PBA seem to work better; their coefficients are significantly positive in all cases. Throughout all the columns, the coefficients for both independent variables are positive and significant at 0.1% except for lnPBA in Column (2), which was significant at 1%. The fact that both project and program aid affected government expenditures positively and significantly is consistent with the findings of Mavrotas and Ouattara (2007) and confirms the effectiveness of both these aid modalities. Although growth itself is too big for the aid modality variables to contribute,

7) The data set used in the previous studies covers only up to 2001.

8) The authors of the previous studies adopted commitment or calculated disbursement based on their own criteria, whereas this study focuses on gross disbursement reported officially to the OECD DAC.

Table 4. Lagged GDP Per Capita Growth

L.GPC	(1) FE	(2) FE	(3) RE	(4) RE
lnPTI (project-type intervention)	-0.640*** (-3.60)	-0.545** (-2.80)	-0.327* (-2.31)	-0.305* (-2.13)
lnPBA (program-based approach)	-0.191 (-1.24)	-0.0954 (-0.59)	0.101 (0.86)	0.0390 (0.36)
iGPC (initial GDP per capita growth)		0 (.)	0.154*** (3.84)	0.177*** (3.88)
lnPOP (population)		-6.457 (-1.97)	0.237 (1.43)	0.171 (0.92)
lnFDI (foreign direct investment)		0.618* (2.31)	0.284* (2.03)	0.340* (2.04)
lnEXP (export)		0.511 (0.64)	0.344 (0.65)	0.264 (0.50)
INF (inflation)		-0.0412 (-1.16)	-0.0124 (-0.47)	-0.0171 (-0.63)
Europe & Central Asia			-0.276 (-0.39)	
Latin America & Caribbean			-1.409* (-2.35)	
Middle East & North Africa			-1.944** (-3.04)	
South Asia			1.152 (1.38)	
Sub-Saharan Africa			-0.972* (-1.98)	
Low income				0.821 (1.02)
Lower middle income				1.195 (1.46)
Upper middle income				-0.0870 (-0.13)
R-sq within	0.0140	0.0235	0.0148	0.0170
R-sq between	0.0397	0.0908	0.4191	0.3326
R-sq overall	0.0001	0.0071	0.0584	0.0506
Constant	6.225*** (6.93)	95.49 (1.86)	-6.470** (-2.78)	-7.665** (-2.88)
Observations	1175	1119	1119	1119

Note: *t* statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) and (2): Fixed effects. Columns (3) and (4): Random effects. The East Asia & Pacific dummy in Column (3) and the high-income dummy in Column (4) are regarded as references and are thus automatically deleted due to multi-collinearity.

a smaller-scale factor such as final government consumption expenditures *is* affected by those aid modalities. Previous studies also addressed the positive relationship between aid and government expenditures. For example, through research on the relationship between aid and public expenditure in Kenya, Njeru

(2003) concluded that “[a]t the aggregate level, a shilling increase of aid leads to about 88 cents in additional spending [...] These results do concur with the finding by other country specific studies that on the aggregate, foreign aid leads to increased government spending.”

Table 5. Final General Government Consumption Expenditures

lnGGFC	(1) FE	(2) FE	(3) RE	(4) RE
lnPTI (project-type intervention)	0.141*** (6.94)	0.0663*** (3.65)	0.104*** (5.77)	0.103*** (5.78)
lnPBA (program-based approach)	0.0659*** (5.08)	0.0275** (3.02)	0.0404*** (4.12)	0.0426*** (4.26)
iGFC (initial GDP per capita growth)		0 (.)	0.0236 (1.58)	-0.00402 (-0.40)
lnPOP (population)		2.441*** (8.31)	0.718*** (11.89)	0.802*** (21.51)
lnFDI (foreign direct investment)		0.0703** (3.26)	0.106*** (4.39)	0.0911*** (3.99)
lnEXP (export)		-0.0494 (-0.62)	-0.0788 (-0.92)	-0.101 (-1.09)
INF (inflation)		-0.00264 (-1.80)	-0.00554*** (-3.35)	-0.00523*** (-3.31)
Europe & Central Asia			0.317 (1.03)	
Latin America & Caribbean			0.668* (2.11)	
Middle East & North Africa			0.685* (2.00)	
South Asia			-0.870* (-2.23)	
Sub-Saharan Africa			-0.693* (-2.16)	
Low income				-3.347*** (-16.11)
Lower middle income				-2.182*** (-11.62)
Upper middle income				-0.982*** (-5.67)
R-sq within	0.3074	0.5174	0.4563	0.4652
R-sq between	0.1669	0.6341	0.7554	0.9148
R-sq overall	0.1609	0.6292	0.7535	0.9039
Constant	21.04*** (212.22)	-19.12*** (-4.05)	7.860*** (8.46)	8.897*** (15.53)
Observations	1238	1192	1192	1192

Note: *t* statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) and (2): Fixed effects. Columns (3) and (4): Random effects. The East Asia & Pacific dummy in Column (3) and the high-income dummy in Column (4) are regarded as references and are thus automatically deleted due to multi-collinearity.

Regarding the control variables, while the coefficients of lnPOP and lnFDI are mostly positive and significant at 0.1%, lnEXP produced negative and insignificant results. Regarding the dummy variables, in this study, South Asia and Sub-Saharan Africa have lower expenditures than countries in other regions, and poorer

countries spend less than richer countries; that is, the coefficient for low-income countries is lower than those for lower and upper middle-income countries.

Table 6 and Table 7 summarize the results associated with interaction term on governance. Unlike Burnside and Dollar (2000), this study does not show dramatic

Table 6. Interaction with Government Effectiveness

L.GPC	(1) FE	(2) FE	(3) RE	(4) RE
lnPTI (project-type intervention)	-0.545** (-2.80)	-0.347 (-1.07)	0.00487 (0.02)	-0.101 (-0.39)
lnPBA (program-based approach)	-0.0954 (-0.59)	-0.286 (-0.78)	-0.108 (-0.49)	-0.0667 (-0.32)
iGPC (initial GDP per capita growth)	0 (.)	0 (.)	0.148*** (3.75)	0.175*** (4.01)
lnPOP (population)	-6.457 (-1.97)	-6.154 (-1.78)	0.271 (1.57)	0.204 (1.07)
lnFDI (foreign direct investment)	0.618* (2.31)	0.579* (2.16)	0.266 (1.72)	0.310 (1.83)
lnEXP (export)	0.511 (0.64)	0.485 (0.60)	0.299 (0.57)	0.215 (0.40)
INF (inflation)	-0.0412 (-1.16)	-0.0382 (-1.08)	-0.0132 (-0.48)	-0.0161 (-0.59)
GE (government effectiveness)		0.0483 (1.01)	0.0288 (1.73)	0.0363 (1.70)
lnPTI # GE		-0.00517 (-0.91)	-0.00843* (-2.08)	-0.00650 (-1.39)
lnPBA # GE		0.00404 (0.66)	0.00451 (1.14)	0.00252 (0.62)
Europe & Central Asia			-0.426 (-0.60)	
Latin America & Caribbean			-1.645** (-2.70)	
Middle East & North			-2.151** (-3.22)	
South Asia			0.870 (1.07)	
Sub-Saharan Africa			-1.102* (-2.17)	
Low income				1.517 (1.77)
Lower middle income				1.774* (2.05)
Upper middle income				0.360 (0.50)
R-sq within	0.0235	0.0248	0.0134	0.0171
R-sq between	0.0908	0.0839	0.4128	0.3130
R-sq overall	0.0071	0.0059	0.0594	0.0521
Constant	95.49 (1.86)	89.93 (1.66)	-7.314** (-3.24)	-9.037*** (-3.44)
Observations	1119	1118	1118	1118

Note: *t* statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) and (2): Fixed effects. Columns (3) and (4): Random effects. The East Asia & Pacific dummy in Column (3) and the high-income dummy in Column (4) are regarded as references and are thus automatically deleted due to multi-collinearity.

differences between with and without the governance variable, which is more consistent with Doucouliagos

and Paldam (2007) who demonstrated that good policy does not always bring better results.

Table 7. Interaction with Government Effectiveness

lnGGFC	(1) FE	(2) FE	(3) RE	(4) RE
lnPTI (project-type intervention)	0.0663*** (3.65)	0.0699 (1.75)	0.119** (3.03)	0.114** (2.95)
lnPBA (program-based approach)	0.0275** (3.02)	0.0265 (1.34)	0.0506* (2.51)	0.0471* (2.34)
iGFC (initial GDP per capita growth)	0 (.)	0 (.)	0.0203 (1.59)	-0.00401 (-0.36)
lnPOP (population)	2.441*** (8.31)	2.538*** (8.25)	0.734*** (13.60)	0.799*** (21.87)
lnFDI (foreign direct investment)	0.0703** (3.26)	0.0638** (3.12)	0.0968*** (4.24)	0.0861*** (3.93)
lnEXP (export)	-0.0494 (-0.62)	-0.0448 (-0.61)	-0.0803 (-1.00)	-0.102 (-1.14)
INF (inflation)	-0.00264 (-1.80)	-0.00177 (-1.24)	-0.00459** (-2.90)	-0.00466** (-3.02)
GE (government effectiveness)		0.0107* (2.35)	0.0144*** (3.30)	0.00890* (2.16)
lnPTI # GE		-0.000212 (-0.28)	-0.000574 (-0.77)	-0.000403 (-0.54)
lnPBA # GE		-0.0000306 (-0.08)	-0.000300 (-0.79)	-0.000141 (-0.36)
Europe & Central Asia			0.283 (1.02)	
Latin America & Caribbean			0.543 (1.92)	
Middle East & North			0.640* (2.08)	
South Asia			-0.914** (-2.84)	
Sub-Saharan Africa			-0.616* (-2.03)	
Low income				-2.985*** (-12.33)
Lower middle income				-1.905*** (-9.63)
Upper middle income				-0.776*** (-4.22)
R-sq within	0.5174	0.5336	0.4657	0.4768
R-sq between	0.6341	0.6568	0.7979	0.9167
R-sq overall	0.6292	0.6505	0.7947	0.9072
Constant	-19.12*** (-4.05)	-20.93*** (-4.26)	7.331*** (8.14)	8.478*** (14.07)
Observations	1192	1191	1191	1191

Note: *t* statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Columns (1) and (2): Fixed effects. Columns (3) and (4): Random effects. The East Asia & Pacific dummy in Column (3) and the high-income dummy in Column (4) are regarded as references and are thus automatically deleted due to multi-collinearity.

IV. Program-Based Approach: The Case of Tanzania

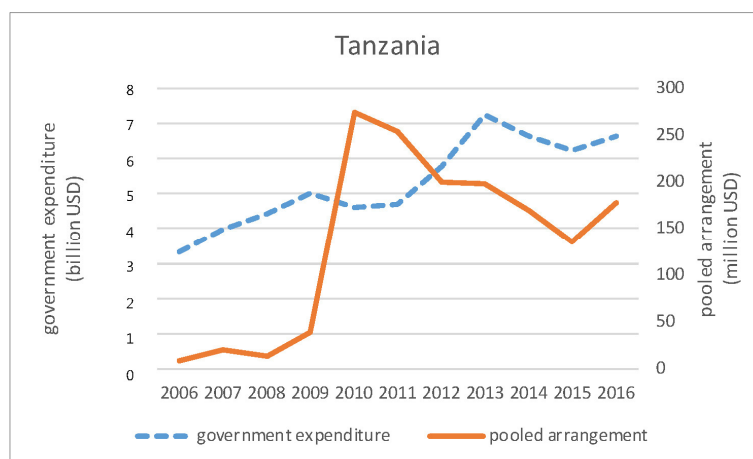
This section provides supporting examples for the

empirical findings in the previous section, particularly for PBA, using Tanzanian cases. Tanzania is a good example for discussing this because it is one of the countries that most actively applies PBA to its aid system and it is even known to be “a laboratory

Table 8. Trends in the Use of Aid Modalities in Tanzania

	2007/2008	2008/2009	2009/2010	2010/2011
General Budget Support	45%	40%	50%	34%
Basket Funding	17%	17%	17%	21%
Project Support	38%	43%	33%	45%
Total	100%	100%	100%	100%

Source: Janus & Keijzer (2015)

**Figure 2.** Government Expenditure and Pooled Arrangement in Tanzania

Source: adapted from OECD (2018a) and World Bank Group (2018)

for innovative approaches” (Janus & Keijzer, 2015). A harmonized framework for aid was established as the fruit of the Tanzanian government’s consistent efforts, and the share of general budget support and basket funding has been always greater; as shown in Table 8, project support has been always less than 50%, which is quite unusual. Receiving a large amount of budget support is one of the representative characteristics of Tanzania, and this has been studied and reported by different organizations (European Centre for Development Policy Management, 2006; Lawson & Kipokoa, 2013; Ministry for Foreign Affairs of Finland, 2014). Development Partners Group (2015) said that “Tanzania has been one of the largest recipients of Budget Support in the world.”

In line with this, Tanzania shows the increasing trend of government expenditures, which rose from approximately 3.3 billion USD in 2006 to 6.6 billion USD in 2016, almost a twofold increase for the past

11 years (World Bank Group, 2018). During the same period, the amount of PBA, especially core contributions and pooled program funding, grew from 8.6 million USD in 2006 to 248.2 million USD in 2016 (OECD, 2018a) (See Figure 2). Although there was a decrease from 2010 to 2015, PBA gained momentum beginning in 2016; the amount that year was nearly 4.7 times more than that in 2009.

The active implementation of pooled arrangements in Tanzania is in conjunction with the so-called result-based approach (RBA) as an advanced version of PBA. Even though PBA has some merits such as strengthening ownership and accountability of partner countries and reducing donor transaction costs, it also carries associated risks including unachieved objectives and misused funds (Cant, Carter & Lister, 2008). To minimize these risks, RBA emphasizes results: Funding is provided as an incentive only when a goal is at least partially achieved.

Table 9. Disbursement-Linked Indicators in the EPforR

1	1.1 Approve a Schools Quality Assurance Operations Manual
	1.2 Approve an updated Primary Teacher Deployment Strategy
	1.3 Approve a new National Strategy for Inclusive Education
	1.4 Approve a Schools Infrastructure Strategy
2	2.1 Release total level of funding against agreed EPforR budget
	2.2 Treasury releases total level of Capitation Grant (CG) to all schools
	2.3 Primary schools have an adequate supply of textbooks
3	3.1 Release Annual Summary Education Performance Report (ASEPR)
	3.2 Make available annual school level Education Sector Management Information System (EMIS) data set by all LGAs
4	4.1 Meet annual target or no. of LGAs achieving acceptable primary Pupil-Teacher Ratio (PTR) range
	4.2 LGAs meet annual target for no. of schools achieving acceptable primary PTR range
5	5.2 Meet annual target for no. of schools receiving School Incentive Grants (SIG)
6	6.2 Meet biennial target for improvement in average words per minute in 3R assessment
	6.3 Meet biennial target for improvement in average score on addition and subtraction level 2 in 3R assessment
7	7.1 LGAs improve their primary and lower secondary survival rates
	7.2 LGAs improve girls' transition rates from primary to secondary schools
8	8.1 Meet annual target for conducting Whole School Quality Assurance (QA) Visits
	8.2 LGAs improve their overall school quality scores
9	9.1 Meet annual target for number of commissions awarded for capacity building in policy, planning and innovation

In Tanzania, RBA in the education sector has been implemented since 2014. The World Bank, the UK Department for International Development (DFID), and the Swedish International Development Agency (SIDA) jointly initiated the first pilot program, called the Education Program for Results (EPforR), with a total of 252 million USD (122 million from the World Bank, 100 million from the DFID, and 30 million USD from SIDA). As of 2018, the total budget is approximately 440 million USD for between September 2014 and December 2020. Because EPforR is performance based, disbursement is linked by several mutually agreed-upon results measured by specific disbursement-linked indicators, as shown in Table 9 (United Republic of Tanzania, 2018). By the end of 2017, 44% of the funding had been disbursed to local government authorities (LGAs), which certainly have worked as a contributing factor in increasing government expenditures.

V. Conclusion

This study examines the impact of aid modalities on a country's growth as well as governments' final consumption expenditures; Tanzania was also discussed to draw implications. The paper contributes to AEL literature by combining conventional AEL with fiscal response studies with up-to-date dataset, analyzing two main aid modalities (project aid and program aid).

Neither modality exerted a significant positive effect with respect to growth, which shows from aid to growth is a long and complex way, but in terms of fiscal response, both appeared to increase public expenditures in partner countries. In line with this, Canadian International Development Agency (CIDA) (2010)⁹ found that increased public expenditures by

9) "In the case of General Budget Support, besides the added financial resources, contributions through it are allowing CIDA and other donors to influence the shape of needed national-level reforms of governance and financial systems that strengthen public financial management (PFM). This has led to resource allocation

foreign aid result in poverty reduction if the aid is aligned with the partner country's strategies and priorities. This can be seen in Tanzania, where the country's public expenditures soared proportionally when the PBA-related budget increased through the achievement of predesigned objectives, and the Human Development Index improved as well (from 0.448 in 2005 to 0.538 in 2017).

Regarding aid effectiveness, the role of partner country's government should be important, as well. Table 5 shows aid affects government behavior significantly and positively, especially on expenditure. However, at the same time, when it comes to interaction term on government effectiveness, it turned out that good policies are not panacea.

It will be desirable to include more variables, particularly on aid volatility. It would also be desirable if data could be broken into several sectors - health, education, agriculture, etc. - and measure each sector-specific effect. Last but not the least, sharing lessons of PBA with emerging donors with small budgets will be very important. For example, South Korea is considering joining the abovementioned EPforR in Tanzania with a smaller budget (7 million USD, which is far less than what World Bank, DFID, and SIDA provide; Korea International Cooperation Agency, 2019). With this budget, South Korea can still have a spillover effect across the entire country because the funding is jointly used as a big part of the project. This type of leverage effect can lead to cost efficiency and donor countries with smaller funding can benefit from it. All of these will be reserved as a further study.

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shifts towards anti-poverty expenditures. Benefits also include capacity strengthening and enhanced effectiveness of partner country institutions" (CIDA, 2010).

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Appendices

Appendix 1. The List of 124 Countries¹⁰⁾

Category ¹¹⁾	High Income	Low Income	Lower Middle Income	Upper Middle Income
East Asia & Pacific	Palau		Cambodia, Indonesia, Lao People's Democratic Republic, Mongolia, Myanmar, Philippines, Solomon Islands, Timor-Leste, Vanuatu, Vietnam	China (People's Republic of), Fiji, Malaysia, Marshall Islands, Thailand, Tonga
Europe & Central Asia	Croatia	Tajikistan	Georgia, Kosovo, Kyrgyzstan, Moldova, Ukraine, Uzbekistan	Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Kazakhstan, Montenegro, Serbia, Turkey, Turkmenistan
Latin America & Caribbean	Argentina, Barbados, Chile, Panama, Uruguay	Haiti	Bolivia, El Salvador, Honduras, Nicaragua	Belize, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Paraguay, Peru, Suriname, Venezuela
Middle East & North Africa	Oman	Syrian Arab Republic, Yemen	Djibouti, Egypt, Morocco, Tunisia, West Bank and Gaza Strip	Algeria, Iran, Iraq, Jordan, Lebanon, Libya
South Asia		Afghanistan, Nepal	Bangladesh, Bhutan, India, Pakistan, Sri Lanka	
Sub-Saharan Africa	Seychelles	Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, South Sudan, Tanzania, Togo, Uganda, Zimbabwe	Angola, Cabo Verde, Cameroon, Congo, Côte d'Ivoire, Ghana, Kenya, Lesotho, Mauritania, Nigeria, Sudan, Zambia	Botswana, Equatorial Guinea, Gabon, Mauritius, Namibia, South Africa

10) Due to data availability, the number of countries is reduced to 124. If a country had no data for one of the variables, the country was excluded. Thus, the selected 124 countries have at least one data point during the given period (from 2006 to 2016) for each variable used in this study.

11) Based on the June 2018 World Bank list of economies.

Appendix 2. Detailed Information on Variables

Variables	Full Name	Unit	Source	Note
GPC	GDP per capita growth	Annual %	World Bank Open Data	-
GGFC	General government final consumption expenditure	Current USD		log-transformed
PTI	Project-type intervention	Million USD, 2016	OECD Creditor Reporting System (CRS)	log-transformed
PBA	Program-based approach			Two variables ¹²⁾ are added to create PBA and then log-transformed.
iGPC	Initial GDP per capita growth	Annual %	World Bank Open Data	-
POP	Population, total	The number of people		log-transformed
FDI	Foreign direct investment, net inflows	BoP, current USD		log-transformed
EXP	Exports of goods and services	% of GDP	World Bank's Worldwide Governance Indicators project	To make a comparable variable with POP and FDI, EXP is also log-transformed, even though the unit is % of GDP.
INF	Inflation, GDP deflator	Annual %		-
GE	Government effectiveness	Percentile rank ¹³⁾		-

12) Budget support + Core contributions and pooled programs and funds

13) Percentile rank among all countries (ranges from 0 (lowest) to 100 (highest) rank)