Asian Economic and Financial Review

journal homepage: http://aessweb.com/journal-detail.php?id=5002

POLICIES AND EFFECTIVENESS OF FOREIGN AID: THE CASE OF SRI LANKA

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ABSTRACT

This empirical study investigates foreign aid's effectiveness in stimulating growth by considering economic policies and the factors that influenced aid flow in Sri Lanka during the period of 1980-2008. For both analyses, a single-equation instrumental variable estimation method is employed. The results derived from this study suggest that aid is positively associated with growth in a good policy environment in Sri Lanka. Regarding determinants, in terms of trade openness and budget deficits the results suggest that aid was transferred into Sri Lanka under a conditional policy environment. Inflation is positively associated with aid flow. Unrest in the country and per capita growth negatively influenced aid, whereas commercial interests, natural disasters, political stability, and poverty are positively associated with aid inflow.

Keywords: Aid, Policies, Growth, Sri Lanka

JEL classification code: F 35

INTRODUCTION

Because the debate in the literature on the effectiveness of foreign aid remains inconclusive and the promise of the millennium development goals for a better world has proved elusive for policymakers studies on aid effectiveness have been revived recent years (Mavrotas, 2005; Ouattara, 2006). Aid is a voluntary transfer of resources by individuals, private organizations and governments to support the recipients' economic development. Foreign aid plays an essential role in relieving savings gap, in enabling the accumulation of physical and human capital stock and in the development of infrastructure (McGillivray, 2009). In this manner, foreign aid promotes economic growth in recipient countries. Although the aid transfer is important for poor countries, it may or may not result in growth. The effectiveness of aid depends on how it is used: is it invested, so that domestic output can accelerate, or is it consumed? (Burnside and Dollar, 2000). For example, aid for humanitarian relief has a week relationship with growth (Neanidis and Varvarigos, 2009).

There is a wide literature that examines the effectiveness of aid in terms of growth. Most studies that analysed the growth effect of foreign aid in developing countries during the 1970s found no correlation between growth and aid (Doucouliagos and Paladam, 2008). However, some researchers found that aid was associated with increased savings or increased growth during the 1960s and 1970s (McGillivray *et al.*, 2006). More recent studies have come to various conclusions regarding the effect of aid on growth. Gounder (2001) found that, in the case of Fiji, total aid flows and the various forms of aid, i.e., bilateral aid, grant aid and technical cooperation grant aid had a significant impact on economic growth. McGillivray *et al.* (2006) surveyed 50 years of empirical research on aid effectiveness and the link between aid and growth. Based on that literature, they reached the partial conclusion that growth in the recipient countries would be lower in the absence of aid. Lending support to that conclusion, Minoiu and Reddy (2010) found that development aid has a positive, large and robust effect on growth, whereas non-development aid is largely growth neutral and is occasionally negatively associated with growth. Using panel root tests, mean group estimation techniques and pooled mean group estimation techniques on cross-country panel data, Asteriou (2009) found a positive relationship between aid and GDP growth in South Asia. In their meta-study, Doucouliagos and Paladam (2008) concluded that the aid-growth effect is strong in Asian countries. Islam (1992), using time series data on Bangladesh, concluded that foreign resources do not show any significant contribution to the growth rate. Morrissey *et al.* (2006) analyzed whether loans and grants to poor countries have differing effects and found that aid loans have a negative impact on long-term growth, whereas grants have a positive impact.

In contrast, Rajan and Subramanian (2005) argued that aid could damage the growth rate because it reduces the competitiveness of the traded goods sector and reallocates resources towards the non-traded goods sector. The findings of McGillivray and Ouattara (2005) and Arellano *et al.* (2009) also support the conclusion that the relationship between aid and growth will be weak if most of the aid is used for debt and consumption rather than for investment. Mbaku (1993) tested the relationship between foreign aid and economic growth in Cameroon and suggested that domestic resources have a stronger impact on economic growth than foreign resources. Some studies on aid effectiveness have employed different methodological and ideological perspectives to discuss aid effectiveness in terms of growth while considering the economic policies of the developing countries. The economic growth of developing countries is highly dependent on these countries' economic policies. The policies that have been come examined by these studies include trade openness, budget surplus and inflation. These policies are important to the growth of their economies, but there is also a separate debate in the literature concerning aid effectiveness under different policy environments. For instance, Burnside and Dollar (2000), Hansen and Tarp (2000), Tan (2009) and Eaterly *et al.* (2004) discussed aid effectiveness in relation to policy variables in terms of whether aid is successful when associated with good policies in the recipient countries. Burnside and Dollar (2000) created a growth model that incorporated aid, the interaction terms of aid and some other potential variables and concluded that aid is only effective in a good policy

environment. Further, the authors suggested that for aid to work its allocation should be conditional on good policy. However, Dalgaard and Hansen (2001) reassessed this work and argued that good policy is more likely to reduce the growth effect of aid because aid and policy act as substitutes. They further argued that results that show an enhanced impact of aid on growth in a good policy environment are not robust results and suggested that aid stimulates growth regardless of the policy environment. Eaterly *et al.* (2004) used a new data set to perform estimations on the sample countries studied by Burnside and Dollar (2000). In contrast, to the earlier study, they found that aid-policy interaction terms have no effect on growth. Hansen and Tarp (2000) surveyed three generations of empirical work: early Harrod-Domer models, reduced form aid-growth models and new-growth theory reduced form models. They concluded that aid increases aggregate saving and investment, so there is a positive relationship between aid and growth. They further suggested that there is a robust aid-growth link even in countries that are hampered by an unfavourable policy environment. (Tan, 2009) concluded that aid and good policy have a significant long-term impact on growth but that conditioning aid on good policy reduces the long-term growth rate. Rajan and Subramanian (2005) concluded that there is no evidence that aid is effective in good policy environment. Thus, the findings reported above show that there is no consensus in the literature as to the effect of aid on growth in good policy environment: some studies find that aid accelerates growth only in countries with good policies, while others find that aid does not necessarily promote growth or that aid promotes growth regardless of and the policy climate. Therefore, the debate over the effectiveness of aid can only be enhanced by further empirical studies on the topic.

Sri Lanka which is the country studied by the current paper, was also included in Burnside and Dollar's (2000) analysis. For each developing country they studied, Burnside and Dollar (2000) measured its policy index, which included trade openness, budget surplus and inflation. However, the current study on aid's effectiveness in stimulating growth considers these three policies individually, rather than as an index, following the hypothesis that aid is positively associated with growth in good policy environments. Using time series data from the period of 1980-2008, I found that when aid interacts with trade openness and budget deficits, it is positively associated with growth in Sri Lanka. Further, aid has negative effects on growth in the country when it interacts with inflation. Taking together these findings imply that aid is effective in stimulating growth in good policy environment in Sri Lanka. Our findings are supported by the conclusions of Burnside and Dollar's (2000) study. However, one may pose the question of whether budget deficits are good or bad policy. In our initial study, budget deficits are positively associated with growth in Sri Lanka. From this, I conclude that budget deficits can be classified as good policy with respect to the growth rate in the case of Sri Lanka. In addition to its objective of helping recipient countries develop, aid is widely understood to have other functions as well: aid may be given as a signal of diplomatic approval, to strengthen a military ally, to reward a government for ensuring political and human rights and minimizing social unrest, to provide infrastructure needed by the donor for resource extraction from the recipient country, to gain commercial access, or to secure a

conditional policy environment. In addition, humanitarianism and altruism are also significant motivations for the giving of aid (Chauvet, 2003; Round and Odedokun, 2004; Doucouliagos and Paladam, 2008). Therefore, in addition to presenting a discussion of aid effectiveness, policies and growth, I also examined whether aid is transferred under a conditional policy environment in Sri Lanka. Adding with some socio-economic and political variables in a separate model, I examined how far policy variables influence aid transfer into the country and found that in terms of trade openness and budget surplus, the results suggest that aid is transferred to Sri Lanka under a conditional policy environment. One of these policies, inflation, is indeterminate in its effects on aid flow. Foreign aid flow is positively associated with inflation in the case of Sri Lanka because aid transfers stimulate cost inflation in the country. Regarding other factors, unrest and per capita growth negatively influence aid while commercial interests, natural disasters, political stability and poverty are positively associated with aid flow. The remainder of the paper is organized as follows. Section II describes the empirical models and the data used in the analyses. Section III presents the empirical findings and discusses the results. Finally, section IV summarizes the main results and offers some conclusions.

DATA AND METHODS

Data

The dataset used in this study consists of time series data on Sri Lanka during the period from 1980 to 2008. The data on aid, policy variables and development indicators are drawn from the Organization for Economic Cooperation and Development (OECD), the World Bank database and the World Resource Institute (WRI) database, respectively. The data on natural disasters are drawn from the Centre for Research on the Epidemiology of Disasters (CRED). In this empirical study, I adopt three models to investigate the effectiveness of aid in stimulating growth and the factors that influence aid flow. In first model, aid and the interacted term of aid with important policy variables are incorporated with socio-political variables that are likely to negatively impact on growth in Sri Lanka. In the second model, aid and aid-policy interaction terms are incorporated with some development indicators. In the third model, I include policy, socioeconomic and political variables to investigate their influence on aid flow in Sri Lanka. Because some variables enter into the models with endogenous characteristics, I employ a single-equation instrumental variable estimation method (2sls) to analyse the data. I also use the instrumental generalised method of moment (GMM) to explore additional robust results. Based on the prior Hausman test, I adopt instrumental variables that are uncorrelated with the error term but correlated with identified endogenous variables. As instruments, I use one year lag of the endogenous variables and other instrumental variables. The p-values of the Sargan test and the Durbin-Wu-Hausman (DWH) test are displayed in tables to address the over-identifying restriction and endogeneity in the models, respectively. The main conclusion of the empirical investigation relates to the statistical significance of the aid-policy interaction terms and the association between policies and aid flow,

which are used to argue whether aid is effective with respect to the growth rate in Sri Lanka's policy environment and transferred under a conditional policy environment.

Aid and Growth

To investigate aid effectiveness in terms of growth, I employ the following two models. The first model incorporates aid, aid-policy interaction terms and socio-political variables. In the second model, development indicators replace the socio-political variables, but the aid and aid-policy interaction terms remain to investigate whether policy variables influence aid effectiveness in the presence of development indicators. The specifications of the empirical models take the following form:

$$g_t = \alpha_0 + \alpha_1 a_t + \alpha_2 P_{ht} + \alpha_3 E_{it} + \varepsilon_t \quad (1)$$

where g_t denotes the growth rate of GDP per capita at time t, and a_t indicates aid as a percentage of GDP. P_{ht} is a vector of policy variables interacted with aid that includes trade openness, inflation and budget deficits before the grant. E_{it} is a vector of other explanatory variables that includes lagged arms import expenditure and lagged battle-related death, two variables that indicate that the country has experienced civil war. The vector also includes lagged assassination and level of freedom index, which captures social unrest, and a level of freedom index, captures political stability. These variables are all expected to affect growth negatively in the case of Sri Lanka. According to neo-classical models, social unrest, riots and thievery destroy part of the production by a firm and are therefore inversely related to the level of consumption. However, consumption can be increased by a transfer of foreign aid (Dalgaard et al. 2001; Burnside and Dollar (2000). Finally, u_t denotes the error term.

$$g_t = \beta_0 + \beta_1 a_t + \beta_2 P_{ht} + \beta_3 D_{kt} + \nu_t \quad (2)$$

where g_t denotes the growth rate of GDP per capita at time t, and a_t indicates aid as a percentage of GDP. P_{ht} is a vector that includes policy variables interacted with aid. D_{kt} is a vector of development indicators that includes telecommunication per capita as a proxy for infrastructure development and the literacy rate and average life expectancy as proxies for human capital development. I include these variables in this model because if a country intends to develop human capital and infrastructure and the aid is disbursed for that purpose, there will be a positive association between growth and aid (Gong and Xiaoyong, 2008; Selaya and Sunesen, 2008). Finally, v_t is an error term.

Determinants of Aid

In this section, I present the empirical investigation of how economic and socio-political variables influence aid allocation in Sri Lanka. I specify the simple empirical equation as:

$$a_t = \gamma_0 + \gamma_1 Y_{lt} + \eta_t \quad (3)$$

where a_t is aid as a percentage of GDP at time t, Y_{lt} is a vector of explanatory variables that influence aid flow, and η_t is an error term. The vector includes the lag of military expenditure,

which proxies whether the country is experiencing civil or guerrilla war, and policies of trade openness, budget deficit and inflation. The vector also includes the per capita growth rate, the percentage of population living at or below the poverty level of $1.25 a day (PPP), the population, people affected by natural disasters, lag of the political freedom index, the assassination index and merchandise imported from high income economies as a percentage of total imports.

EMPIRICAL FINDINGS AND DISCUSSIONS

Aid and Growth

Table –I. Summary Statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
GDP per capita growth	29	3.72	1.87	-2	8
Aid as a percentage of GDP	29	3.68	0.98	2.10	5.29
Arms imports in $ US million	27	53.78	59.66	0	274
Battle-related deaths	28	2779.71	2516.60	0	11144
Political freedom index	29	3.28	0.53	2	4
Level of freedom index	24	5.21	0.41	5	6
Assassination index	28	1.21	0.63	0	2
Trade openness index	29	73.07	7.97	59	89
Budget deficit before the grant as a percentage of GDP	29	-12.98	3.48	-24.42	-9.28
Inflation	29	11.24	4.93	1	21
Telecommunication per capita	29	3.14	4.08	0	17
Literacy rate	29	88.10	1.82	87	91
Life expectancy	29	70.48	1.90	68	74
Military expenditure as a percentage of GDP	21	3.34	0.91	2	5
Merchandise imports as a percentage of total import	29	64.07	7.04	48	79
People effected by natural disasters	29	1255.55	6568.26	0	35405
Percentage of population at or under the poverty level of $1.25 a day (PPP)	24	16.21	2.36	14	20

Table-2. Growth Effect of Aid-Policy and Socio-Political Factors

Variable	*2sls (1)*	*GMM (1)*	*2sls (2)*	*GMM (2)*	*2sls (3)*	*GMM (3)*	*2sls (4)*	*GMM (4)*
Aid	-2.0546*** (0.005)	-2.0618*** (0.004)	-2.7013** (0.023)	-2.7605*** (0.003)	-0.5386 (0.727)	-0.4580 (0.723)	-0.4705 (0.776)	-0.3555 (0.797)
Log of GDP			4.0726** (0.021)	3.8387** (0.023)	2.0093* (0.085)	1.7474* (0.112)	1.9686* (0.115)	1.5043 (0.199)
Arms imports (lagged)	-0.0177*** (0.007)	-0.0176*** (0.002)	-0.0157** (0.018)	-0.0160*** (0.006)	-0.0116** (0.069)	-0.0127** (0.018)	-0.0111* (0.105)	-0.0142*** (0.011)
Battle-related death-lagged	-0.0005* (0.116)	-0.0005* (0.135)	0.0001 (0.739)	0.0000 (0.889)	-0.0000 (0.489)	-0.0000 (0.669)	-0.0000 (0.845)	-0.0000 (0.883)
Political freedom	1.4012* (0.138)	1.4008* (0.104)	0.7123 (0.453)	1.1312* (0.112)	0.9538* (0.183)	0.8717* (0.101)	0.6920 (0.395)	0.7791* (0.184)
Level of freedom	-1.8329* (0.167)	-1.8421* (0.152)						
Assassination (lagged)	-0.5967 (0.393)	-0.0569 (0.392)	-0.6845 (0.335)	-0.9229* (0.185)	-0.2376 (0.730)	-0.1256 (0.838)	-0.1770 (0.811)	-0.0948 (0.886)
Aid x Trade openness			0.0728*** (0.007)	0.0709*** (0.004)	0.0483*** (0.002)	0.0438*** (0.008)	0.0576*** (0.003)	0.0491*** (0.008)
Aid x Inflation			-0.0437* (0.145)	-0.0440** (0.056)			-0.0189 (0.330)	-0.0139 (0.261)
Aid x Budget deficit					0.1940** (0.070)	0.1905** (0.060)	0.2133** (0.067)	0.2036** (0.054)
Constant	17.5769** (0.064)	17.6068** (0.059)	-43.7224** (0.035)	-41.9868** (0.032)	-22.4855** (0.081)	-19.1909* (0.099)	-22.6703* (0.100)	-17.3535* (0.163)
Wald chi^2	14.75	57.93	25.60	31.35	40.22	23.99	36.05	26.61
R-square	0.3356	0.3338	0.2291	0.2680	0.5096	0.5281	0.4386	0.4908
Prob.	0.0223	0.0000	0.0012	0.0001	0.0000	0.0023	0.0000	0.0016
Sargan test	0.9007	-	0.6469	-	0.3170	-	0.5546	-
DWH- test	0.0000		0.0000		0.0001		0.0000	

Notes: *, ** and*** denote significance at the 10%, 5% and 1% level, respectively. Numbers in parentheses are p-values.

Table I presents a summary of statistics, and the Table II provides the results from equation (1). First, I run the model without aid-policy interaction terms and the findings, which are depicted in column (1), reveal that aid is negatively associated with growth. With the exception of political freedom, all other explanatory variables are found to have a negative effect on growth rate. Subsequently, I include aid-policy interaction terms in the analysis. Then aid is interacted with trade openness and inflation enters into the model. The results, which are shown as specifications (2), demonstrate that aid is positively associated with the growth rate when it is interacted with trade openness and that aid has a negative impact when it interacts with inflation. As a third step, I exclude inflation from the model and include budget surplus. The results, which are shown as specification (3), reveal that aid positively impacts growth when it is interacted with budget

deficits. Finally, all aid-policy interaction variables are included in the model, and the results are depicted in column (4). The association presented by these results present is similar to that of earlier specifications, but the aid-inflation interaction terms are not significant. In each test, the aid variable is negatively associated with the growth rate. However, when aid is interacted with trade openness and budget deficit, it becomes insignificant.

Table-3. Growth Effect Of Aid-Policy And Development Factors

Variable	*2sls (1)*	*GMM (1)*	*2sls (2)*	*GMM (2)*	*2sls (3)*	*GMM (3)*
Aid	-2.2722** (0.032)	-2.2460** (0.019)	-1.0889 (0.234)	-0.7674 (0.371)	-1.0744 (0.255)	-0.7344 (0.427)
Telecommunication per capita	0.3630* (0.102)	0.3713** (0.041)	0.2540** (0.080)	0.2793** (0.034)	0.2766* (0.187)	0.3082** (0.087)
Literacy rate	-0.9656** (0.050)	-1.0142** (0.062)	-0.9213** (0.020)	-1.1076*** (0.009)	-0.8673* (0.113)	-1.0321** (0.022)
Life expectancy	0.7109 (0.303)	0.7337 (0.194)	0.6097 (0.267)	0.6949* (0.106)	0.5189 (0.535)	0.5721 (0.343)
Aid x Trade openness	0.0557** (0.032)	0.0555** (0.017)	0.0437** (0.011)	0.0422** (0.010)	0.0464** (0.082)	0.0457** (0.034)
Aid x Inflation	-0.0198 (0.427)	-0.0198 (0.400)			-0.0048 (0.838)	-0.0057 (0.744)
Aid x Budget deficit			0.1255* (0.095)	0.1402** (0.010)	0.1326 (0.211)	0.1509** (0.077)
Constant	32.0964* (0.184)	34.6651* (0.154)	37.6135** (0.054)	47.5474** (0.037)	38.8521** (0.065)	49.0210** (0.077)
Wald chi^2	22.73	29.29	34.26	42.98	34.34	42.43
R-square	0.3261	0.3230	0.5586	0.5516	0.5586	0.5505
Prob.	0.0009	0.0001	0.0000	0.0000	0.0000	0.0000
Sargan test	0.8549	-	0.3890	-	0.3691	-
DWH test	0.1438		0.3195		0.3239	

Notes: *, ** and*** denote significance at the 10%, 5% and 1% level, respectively. Numbers in parentheses are p-values.

Turning to the equation (2), to test effectiveness of aid, I adopt development indicators with aid-policy interaction terms. The results are shown in Table III. The aid-trade openness interaction variable is significant at the 5%, whereas in the previous model, it is significant at 1% level only when inflation enters the model. Further, none of the aid-inflation coefficient values are significant in this model. Otherwise, the results concerning the aid and aid-policy interaction variables have a similar association with growth as in the previous model.

The findings of this section suggest that aid is negatively associated with growth in Sri Lanka but that when it is interacted with policies, these effects become positive. This implies that aid

effectiveness dependent on the policy environment in Sri Lanka. However, it should be emphasized that although Sri Lanka has experienced budget deficits over the past three decades, when aid is interacted with this policy, it is positively associated with the growth rate. My initial study shows that there is a positive association between growth and budget deficits in Sri Lanka and that the effect of budget deficits on the growth rate is ambiguous: deficits can either decrease or increase output (Taylor, 1985). In addition, the moderate version of neo-classical theory, as seen in Blinder and Solow 1973, for example, allows that unemployment may exist in the short term, so budget deficits may have a positive impact on growth rate. In the case of trade openness, although Sri Lanka has been experienced trade deficits, Sri Lanka was the first country to implement trade liberalization policies in South Asia in the late 1970s. Trade liberalization reflects the degree of an economy's openness, and there is a positive relationship between growth and trade openness in Sri Lanka (Paudel and Perera, 2009). Therefore, the results regarding aid-budget deficits and aid-trade openness interaction terms suggest that aid positively affects the growth rate in Sri Lanka. Finally, Sri Lanka has been experiencing high inflation (as high as 16% in 2008), which has negative association with growth when it interacts with aid. All individuals are concerned about inflation it makes people poorer unless their income increases faster than inflation in an economy. Relatively, rich people are able to avoid become poorer due to inflation by getting their income to rise faster than inflation. But, this is not the case of poor and also inflation thwarts the government's objective of attaining continues long term economic growth. Therefore, when the foreign aid is transferred in this environment, it will not be effectiveness in improving quality of life of the poor. In contrast, it will hinder people's ability and willingness to save, invest and commence business that bring then long term returns. Further, inflation of domestic cost escalates and spills over into the rest of the economy, as aid flow increases expenditure on local non-tradable factors in Sri Lanka (Jayasuriya *et al.*, 2005).

The findings from equation (1) and (2) permit us to conclude that the major policies that affect the growth rate also determine aid effectiveness in Sri Lanka. Thus these findings suggest that aid affects the growth rate positively in a good policy environment. The findings regarding the effect of policies are supported by the conclusion of Burnside and Dollar (2000) that aid has a positive impact on growth in developing countries with good fiscal, monetary and trade policies. However, these findings also contradict Burnside and Dollar's (2000) initial argument that aid has a positive impact on growth in the absence of policies. Additionally, I make the critical argument that budget deficits are good policy in the case of Sri Lanka because they are positively associated with growth. However, this claim is limited to the policy's effects with respect to aid effectiveness: any other effects of budget deficit on the Sri Lankan economy are beyond the scope of this study.

Determinants of Aid

Table-4. Factors Influence On Aid Flow

Variable	*2sls (1)*	*GMM (1)*	*2sls (2)*	*GMM (2)*	*2sls (3)*	*GMM (3)*	*2sls (4)*	*GMM (4)*
Military expenditure-lagged	-0.7368*** (0.000)	-0.7283*** (0.000)	-0.5676*** (0.000)	-0.5065*** (0.000)	-0.6142*** (0.000)	-0.6133*** (0.000)	-0.7521*** (0.001)	-0.7826*** (0.000)
Trade openness	0.0726* (0.151)	0.0815** (0.031)	0.0277 (0.347)	0.0254** (0.056)				
Inflation	0.0660* (0.184)	0.0802** (0.087)						
Budget deficit			-0.2461*** (0.005)	-0.2772*** (0.000)				
Merchandise imports					0.0433** (0.051)	0.0433*** (0.028)		
Real GDP per capita growth							-0.3656** (0.056)	-0.3481** (0.035)
Natural disaster (lagged)	0.0000* (0.097)	0.0000** (0.013)	0.0000** (0.015)	0.0000*** (0.000)	0.0000*** (0.011)	0.0000*** (0.000)	0.0000** (0.050)	0.0000*** (0.001)
Political freedom (lagged)	0.4593** (0.073)	0.3535* (0.096)	0.5230*** (0.006)	0.5903*** (0.000)	0.4776** (0.034)	0.4763** (0.019)	0.6046** (0.070)	0.6045** (0.033)
Assassinations (lagged)	-0.3735 (0.299)	-0.3550 (0.205)	-0.4660** (0.076)	-0.4632** (0.020)	-0.2135 (0.313)	-0.2144 (0.258)	-0.0164 (0.958)	-0.0057 (0.985)
Poverty	0.1287** (0.069)	0.1447** (0.079)	0.1108** (0.034)	0.1269*** (0.002)				
Constant	-3.5593 (0.289)	-4.3466** (0.027)	-1.8499 (0.383)	-2.6377** (0.016)	1.2552 (0.398)	1.2591 (0.406)	5.1758*** (0.002)	5.2119*** (0.000)
Wald chi^2	58.81	245.31	110.31	828.98	61.25	228.66	29.72	113.06
R-square	0.7155	0.6853	0.8398	0.8377	0.7548	0.7548	0.4597	0.4965
Prob.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sargan test	0.6282	-	0.5589	-	0.9807	-	0.5116	-
DWH test	0.0476		0.0456		0.2566		0.0627	

Notes: *, ** and*** denote significance at the 10%, 5% and 1% level, respectively. Numbers in parentheses are p-values.

Regarding the findings of the determinants, I have mixed results. The results of equation (3) are presented in Table IV. I include policy variables to investigate whether aid is disbursed under a conditional policy environment, which means that donors only transfer aid when the country has a

good policy environment. The results, shown as specification (1), suggest that aid has a positive association trade openness and inflation, whereas it is negatively associated with budget deficit. In case of trade openness it gives positive sign to aid inflow. Sri Lanka has been experiencing trade liberalization policy since 1977. Further, the country is a signatory to several regional trade agreements such as the Comprehensive Economic Partnership Agreement (CEPA), the Trade and Investment Framework (TIFA) with the USA. But regarding inflation, our results suggest that there is positive association between inflation and foreign aid. Because in Sri Lanka, domestic cost inflation is often observed whenever there is a large inflow of foreign fund. The cost inflation observed in construction sector is reflected as Dutch dieses effects associated with absorption of capital flows into an economy. This rapid inflation of domestic cost spills over into the rest of the sectors and whole economy (Jayasuriya *et al.*, 2005). Budget deficit in Sri Lanka negatively influence on donor's interest in transferring aid. Round and Odedokun (2004) pointed out that tight budgets and the need to reduce fiscal deficits have sometimes been offered as explanation for the falling aid efforts. Therefore, considering trade openness and budget deficit, the results permit me to conclude that aid is transferred into Sri Lanka under a conditional policy environment.

Military expenditure, assassinations, the political freedom index, and the percentage of population living under the poverty line and the real GDP per capita are deployed to consider the effects of donors' attitudes towards political stability and quality of life in Sri Lanka on aid transfers. Military expenditure and assassination, which are shown in specification (1), negatively influence aid whereas natural disasters, political freedom and poverty are positively associated with aid. The coefficient values of military expenditure, political freedom index and assassinations are relatively higher than that other variables, which indicate that donors have more interest in transferring aid, considering political stability in Sri Lanka. Military expenditure in Sri Lanka has been high for the past three decades in Sri Lanka due to the war against separatist. The coefficient values of natural disasters are very low but significant. The percentage of population living under the poverty line has positive association with aid flow which was 20% of total population before 1990s and has decreased to 14% in 2008. This indicates that aid effort of donors is a positive function of poverty alleviation. In the specifications (3) and (4), I include merchandise imports and real GDP per capita, respectively. Tests on merchandise imported from high-income economies suggest that donors' commercial interests have a positive impact on aid flow. Because about 63% of total merchandise imports of Sri Lanka are accounted from high-income countries. The real per capita GDP has negative association with aid, indicates that donors restrict aid in terms of per capita growth in the country.

There is a limitation with respect to the analysis on the determinants of aid flow in this study. I exclude some variables that are likely to influence aid flow in Sri Lanka. This is due to the availability and accuracy of the data, and also my objective is to examine aid effectiveness and determinants in terms of policy variables.

CONCLUSION

The objective of this paper was to investigate the growth impact of aid in terms of the policy environment in Sri Lanka during the period from 1980 to 2008. Adding some socio-political and economic variables, I also investigated how far policies influence aid flow into the country. First, using a single-equation instrumental variable estimation method (2sls) and the generalized method of moment (GMM), I tested the growth impact of aid using aid-openness, aid-budget deficit and aid-inflation interaction terms as well as other socio-political variables. Secondly, some development indicators were adopted to replace socio-political variables with aid and so-called aid interaction terms in the second model. These models' findings suggest that aid can have a positive impact on the growth rate when it is interacted with trade openness and budget deficits whereas it has a negative impact when interacted with inflation. Although Sri Lanka has been experiencing budget deficits, the aid-budget deficit association had a positive effect on growth rate. Not surprisingly, numerous studies argue that budget deficits can have positive or negative on the growth rate. In this study, in terms of the effects of the aid-budget interaction, budget deficits appear to be good policy. Therefore, the findings of these two models allow me to conclude that aid positively associated with the growth rate in a good policy environment in Sri Lanka.

Finally, by investigating the factors that influence on aid, I found a positive association between trade openness and aid transfer but a negative association between aid and budget deficits. Further, the influence of inflation on aid is positive due to the association between aid flow and cost inflation in Sri Lanka. Therefore, the findings regarding trade openness and budget deficits allow me to conclude that aid transfers are considered in a conditional policy environment. One of these policies, inflation, is indeterminate in its effects on aid flow. Foreign aid flow is positively associated with inflation in the case of Sri Lanka because aid transfers stimulate cost inflation in the country. Moreover, aid flow in Sri Lanka is also positively influenced by the commercial interests of high-income countries, the occurrence of a natural disasters, the poverty level and political freedom, but it is negatively associated with civil or guerrilla war and assassinations. Therefore the results suggest that donors'-aid transfers to Sri Lanka are influenced by their attitudes towards socio-political stability, quality of life and commercial interest.

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