



EFFECTIVENESS OF FOREIGN AID IN FACILITATING FOREIGN DIRECT INVESTMENT: EVIDENCE FROM FOUR SOUTH ASIAN COUNTRIES

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ABSTRACT

This empirical study investigates whether foreign aid is effective in facilitating foreign direct investment inflows into the selected South Asian countries during the period of 1995-2012. Using panel data, the fixed-effects estimator is employed. The results derived from this study suggest that infrastructure aid is effective in facilitating FDI into the South Asian countries of which aid for social infrastructure is relatively more effective than that of other types of aid. In the donor side, aid from UK has significant effect on FDI whereas aid from USA, Germany and Netherlands has marginal effect. The aid from Japan does not facilitate FDI flow into these recipient countries.

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Contribution/ Originality

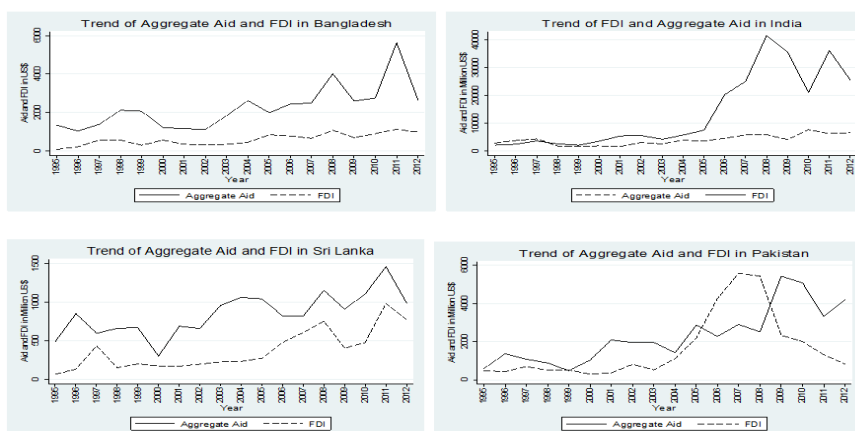
This study is one of very few studies which have investigated the relationship between disaggregated foreign aid and foreign direct investment. The findings of this study would be helpful to the policy makers to recognize the effectiveness of particular aid components which serves as complementary in attracting foreign direct investment.

1. INTRODUCTION

Aid effectiveness is generally seen as the effectiveness of development aid in achieving growth and development through various channels in the recipient countries. There are several concrete attempts that donors pursue to make aid effective, and achieve Millennium Development Goals (MDGs). Further, a number of studies have employed different methodological and ideological perspectives to discuss this issue. However, a 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, and therefore studies on aid effectiveness have been revived in recent years, [Ouattara \(2006\)](#), [Mavrotas \(2005\)](#). This paper contributes to the analysis on the

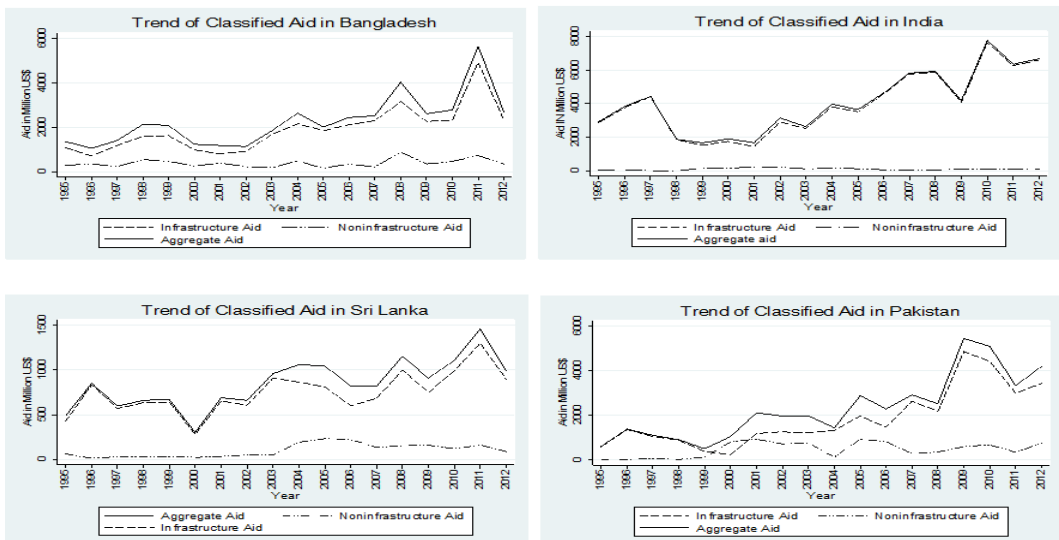
effectiveness of aid investigating how far foreign aid is effective in facilitating foreign direct investment flows into the recipient countries. A core objective of this paper is to explore whether foreign aid indirectly promotes growth and economic development by attracting FDI into the recipient countries. It is presumed that if aid for a particular country is structured for infrastructure development, such as education, health, transport, telecommunication, that country will be able to improve its pulling capacity towards foreign direct investment. Thus, foreign aid will be able to promote growth and economic development by serving as a complementary factor to FDI because FDI is identified as a vital requirement factor for sustain growth in developing economies, which is mostly transferred capital from developed and emerging economies to these countries. FDI can accelerate growth in the ways of generating employment in the host countries, fulfilling saving gap and huge investment demand, and sharing knowledge and management skills through backward and forward linkage in the host countries, [Frenkel et al. \(2004\)](#). Foreign direct investment also plays an extraordinary and growing role in global business. For a host country it can provide a firm with new markets and marketing channels, cheaper production facilities, and access to new technology, products, management skills and financing, and as such can provide a strong impetus to economic development. According to [United Nations \(2002\)](#), foreign direct investment contributes sustain growth over the long-run but a central challenge is to make an environment to attract FDI into the developing countries. However, official development assistance (ODA) plays an essential role in developing education, health and public infrastructure in the recipient countries through which recipient countries can develop an environment for private investors which encourages them to transfer their investments. On the other hand, if the foreign aid structured for non-infrastructure development which consists commodity aid, aid for budget support, aid related to debt relief and assistance during and aftermath of disasters, then the argument related to FDI likely to be weak. In this study, considering four selected South Asian countries; Bangladesh, India, Sri Lanka and Pakistan, this study classifies foreign aid into three groups and investigate how far each type affects FDI inflows into the recipient countries.

Figure-1. Trend of FDI and Aggregate Aid in the South Asian Countries



Since the key objective of this study is to investigate whether foreign aid is effective in facilitating FDI into the South Asian countries, it is necessary to discuss the trend of FDI and the structure of foreign aid related to these countries. Hence this study presumes that the structure of foreign aid and the trend of FDI are related in appearance in the case of four South Asian countries during the period 1995-2012. Fig.1 demonstrates an increasing trend in FDI inflows and the transfer of foreign aid into the selected countries in South Asia. Even though the countries in South Asia remain a less attractive destination for FDI compared to other Asian countries, FDI is seen as an important source of growth and development. Therefore, most of the countries in South Asia are concentrating on national policies in terms of allowing more FDI. The findings of Asteriou (2009) witnessed there is a positive and significant correlation between FDI and GDP growth rates in these economies. Further, according to the Asian Development Bank (2008), most of the South Asian countries are exhibiting strong and healthy macroeconomic performance in recent years. Economic growth is strong, which is one of the principal factors supporting the strong potential for FDI, with savings and investment rates high, inflation moderate, and trade expanding. Moreover, integrated global environment, supportive institutions and liberalization policies during 1990s and early 2000s also support more FDI flow into the region. As a result, recent years have seen a rise of FDI in South Asia. In addition to these, this study proposes that foreign aid for infrastructure development is also one of the factors that response for the increasing trend of FDI. Foreign aid inflows from the major donors have also increased during the same period, which gives a positive sign to an argument in this study. Aggregate aid for Bangladesh increased from \$1355.13 million in 1995 to \$ 5633.83 million in 2011, and declines in 2012. In case of India, aid amounted from \$ 2931 million to \$ 6670.43 million during the same period. The aid for Sri Lanka increased from \$ 488.16 million to \$ 1457.43 million in 2011 while the amount increased in Pakistan from \$ 606 million to \$ 4185.05 million in 2012.

Figure-2. Trend of classified aid in the South Asian countries



In addition, the structure of aid likely becomes more supportive to attract FDI into the countries. Fig.2 shows the trend of disaggregated aid flows in each country appears closely similar and explores that high percentage of the foreign aid has been transferred for infrastructure development where as, excluding Pakistan, non-infrastructure aid is rather low. Table A.1 in appendix shows more detail in percentage of disaggregated aid for each country. According to OECD database and [Asian Development Bank \(2008\)](#), USA, UK, Netherlands, Germany, and Japan are the major donors of aid, and these countries are among the leading sources of FDI as well. Therefore, this study assumes that the foreign aid for the South Asian countries from the major donors is transferred for the purpose of promoting FDI flow into these countries. However, though there are some other countries that are among the leading sources of FDI to the South Asian countries, this study takes these five countries into account in order to investigate individual donor's effect on FDI flow because these five countries play major role in transferring foreign aid as well as sending private investment into the South Asian countries.

The remainder of the paper is organized as follows. Section 2 briefly reviews the literature. Section 3 discusses theoretical relationship between FDI and foreign aid. Section 4 describes the data and methodology while Section 5 presents the empirical findings. Section 6 summarizes the main results and offers some conclusions.

2. LITERATURE REVIEW

In the recent past, a few studies have addressed the relationship between foreign aid and foreign direct investment. [Kimura and Todo \(2009\)](#) investigated whether and how foreign aid facilitates foreign direct investment flows into less developed countries. Conducting gravity equation-type method, the authors found that either aid for infrastructure or for non-infrastructure has no significant impact on FDI. The authors further suggested that Japanese aid promotes FDI from Japan but does not attract FDI from other countries this is what the authors refer "vanguard effect". Supporting this conclusion to a certain extent, by investigating Japan's official development assistance in promoting foreign direct investment inflow in the case of China, [Severine \(2005\)](#) concluded that Japanese aid flow have significant positive impact on private investors location choice in China. [Asiedu et al. \(2009\)](#) theoretically and empirically examined the link between FDI, foreign aid and expropriation risk in 38 low-income countries, and suggest that under certain condition foreign aid mitigate the risk of FDI in the receiving countries. The violation on contractual agreements, changes in laws and regulations or the right out nationalization of foreign-owned property can be mitigated by receiving foreign aid that could be either from the countries that owned FDI or other donors.

By contrast, [Karakaplan et al. \(2005\)](#) empirically investigated the effect of aid on foreign direct investment in view of the hypothesis that receiving aid also become more likely to receive FDI, and concluded that the countries that receive aid do not necessarily become more likely to receive FDI, but aid and former FDI flows effect on the maintaining the FDI flows happen especially in case of good governance and financial market development. [Harms and Lutz \(2006\)](#)

investigated whether aid pave road for private investment or it discourage private initiative by diverting resource towards unproductive activities considering regulatory and political environment. The authors suggest that on average, higher aid has no effect on FDI, but the effect is strongly positive when investors face a substantial regulatory system.

According to Caseli and Feyrer (2007) the marginal product of capital is roughly same across countries, and increasing aid flows to developing countries will lower the marginal product of capital in these countries and tend aid and FDI to be substitute rather than being complements. Kosack and Tobin (2006) found that aid and FDI are unrelated in world's poorer countries, further emphasizing that foreign aid flow in developing countries mainly in the form of supporting government budget, humanitarian activities and human capital development; it makes sense that foreign aid unlikely crowd out FDI.

By contrast, Selaya and Sunesen (2008) showing an open economy Solow model theoretical relationship between foreign aid and FDI, suggested that aid may raise the marginal productivity of capital by financing complementary inputs, such as public infrastructure projects and human capital investment. On the other hand, it crowds out productive private investments if it comes in the shape of physical capital flow.

3. THEORETICAL ARGUMENTS

Basically, the relationship between FDI and foreign aid is ambiguous. In development economics, the endogenous growth theory posits the relationship between FDI and human capital development, and it has become a topic of growing interest in recent empirical studies. Endogenous theory also emphasized that the countries should focus national policies with respect to the human capital investment. But, if the countries are not capable to invest on human capital due to a saving gap then foreign capital flow can fulfill this gap. Especially, the role of FDI serves as an engine of human capital formation. On the other hand, the countries that have lack of human capital become unsuccessful in attracting foreign investors. Therefore, formulating policies in developing human capital in developing countries is necessary to attract FDI, Youssef *et al.* (2001), Wheeler and Mody (1992), Coughlin *et al.* (1991), Cheng *et al.* (2000).

Since FDI and human capital are simultaneously depending on each other, there is a critical argument that how a country that has lack of human capital and in infant stage in receiving FDI can promote both. Which should be done first? At this juncture, foreign aid flow for human capital development fulfills this gap and can play vital role in developing human capital which may help countries to pull in foreign private investments, Harms and Lutz (2006). In addition, the economic infrastructure aid which included in the infrastructure aid is also seen as another encouraging factor for private investors. For instance, aid for transportation, telecommunication development becomes a motivation for private investors to be run their firms smoothly. However, aid for economic infrastructure may increase demand for non-tradable goods such as skill labors, in the recipient country, will lead cost inflation. This rapid inflation of domestic cost spills over into the rest of the sectors and whole economy, Jayasuriya *et al.* (2005).

Further, foreign aid may reduce marginal product of capital of the recipient due to a massive increase in unproductive rent-seeking activities of the private firm. The easy availability of grants results preventing recipient governments from undertaking necessary reforms leads to less FDI inflows to the recipient countries, [Harms and Lutz \(2006\)](#). In case, the foreign aid structured for non-infrastructure, there will be a weak relationship between FDI and non-infrastructure aid. However, as non-infrastructure aid includes budget support, the budgetary support to a country will be able to reduce tax burden. This will give more incentive to private investors and attract FDI into the country. Adding to these existing arguments on the relationship between FDI and foreign aid, it is suggested subject to the outcome of this study that a structure of foreign aid plays crucial role in recipient country in facilitating FDI inflow. More specifically, infrastructure aid can serve as a complementary factor to the FDI in the developing countries.

4. DATA AND METHOD

4.1. Data

The panel data used in this study is composed from time series data on four selected South Asian countries during the period from 1995 to 2012. The data on aid and other explanatory variables are drawn from the Organization for Economic Co-operation and Development (OECD) and the World Bank development indicators (WDI) databases, respectively. The data on FDI are taken from the United Nations Conference on Trade and Development (UNCTAD) database. It is necessary to acknowledge that the data which is used in this study is on aid commitment because the classified dataset on aid disbursement is limited in the OECD database.

One could then argue that aid commitments do not necessarily follow aid disbursement. However, a test was done on the correlations between aid commitments and disbursement and then decided to use aid commitment instead of aid disbursement. Interestingly, correlation between these two types of aid was at acceptable level to be used for our study¹. Further, the authors [Kimura and Todo \(2009\)](#), [Neanidis and Varvarigos \(2009\)](#) also used aid commitments instead of disbursement due to this limitation, referred to as a stock of foreign aid in the studies.

4.2. Classifications of Aid

It is essential that studies investigating effectiveness of aid in the case of developing countries address the effectiveness of classified aid because aid is not homogeneous, [Kilby \(2010\)](#). Further, different types of aid may have different implications in terms of their impact on the recipients' economy, [Neanidis and Varvarigos \(2009\)](#). [Selaya and Sunesen \(2008\)](#) split aid into aid invested in complementary factors and aid invested in physical capital. Aid invested in complementary factors contains aid for human capital and infrastructure development. [Neanidis and Varvarigos \(2009\)](#) disaggregated aid into short-impact aid, long-impact aid and humanitarian aid. Short-impact aid consists of aid used for infrastructure, industry, trade, services and budgetary support purposes. Long-impact aid contains aid financing for health, education and social infrastructure programme

whereas humanitarian aid is the aid in the shape of emergency food, reconstruction and relief during and after natural disaster.

Long-impact aid and humanitarian aid are also mentioned as productive aid and pure aid in this study, respectively. Kimura and Todo (2009) classified aid into infrastructure aid and non-infrastructure aid. Infrastructure aid is sum of aid for social infrastructure, economic infrastructure, production activities and multi-sector/cross-cutting as classified in creditor reporting system (CRS) data base. Aid for social infrastructure includes aid related to education and health whereas aid for economic infrastructure comprises aid for transport, energy, and financial services. Non-infrastructure aid includes commodity aid and general programme assistance, action relating to debt and humanitarian aid.

In this study, first aid is classified into infrastructure aid and non-infrastructure aid following Kimura and Todo (2009). Secondly, infrastructure aid classified further into aid for social infrastructure, aid for economic infrastructure and aid for production activities to perform more specific study. Finally, aid is disaggregated with respect to the selected donor countries; USA, UK, Netherlands, Japan and Germany to test individual country effect in the issue.

4.3. The Empirical Model

This study uses balanced panel data and employs fixed-effects estimator with robust standard errors, which is used to overcome heteroskedasticity issue. Initially, a hausman test was used to compare the coefficient estimates from the random effects to those from the fixed effects estimators. The idea underlying Hausman's test is that both the random effects and fixed effects estimators are consistent if there is no correlation between error components and the explanatory variables. This test allows the fixed effects estimators because random effects estimator is inconsistent in this study. The specification of the empirical models in this study takes the following form:

$$\ln FDI_{it} = \beta_0 + \beta_1 \ln GPC_{it-1} + \beta_2 \sum_{j=1}^m \ln A_{ijt} + \beta_3 \sum_{l=1}^n V_{ilt} + \lambda_i + \varepsilon_{it}$$

where $\ln FDI_{it}$ denotes the log of foreign direct investment in country i at time t , $\ln GPC_{it-1}$ indicates one year lagged log of per capita GDP growth, A_{ijt} indicates a vector of log of classified aid variables which incorporates three groups of disaggregated aid for three sets of analyses, and V_{ilt} is a vector of development indicators used as more control variables including total tax revenue as a percentage of GDP, trade openness, inflation and telecommunication per capita. Lag of GDP per capita growth is expected to have positive impact on FDI because several studies have used growth in host countries as a pulling factor to FDI. The trade openness index (also often called the trade dependence index) is a measure of the importance of international trade in the overall economy. It can give an indication of the degree to which an economy is open to trade and expected positively associated with FDI. Inflation is used as an indicator for economic stability and expected to have negative association with FDI. It is assumed that tax revenue inversely related

to the FDI because tax relief gives incentive for private investors. Telecommunication per capita represented as a proxy for infrastructure development considered as a pulling factor in recipient countries. λ_i represents country effects. Finally, ε_{it} denotes the error term.

5. EMPIRICAL FINDINGS

Table-1. Summary statistics

Variables	Mean	Std. Dev	Min	Max	Obs
Foreign direct investment (log)	6.78	1.45	4.17	10.63	72
Aggregated aid (log)	7.36	0.68	5.71	8.68	72
Aid for infrastructure development (log)	7.18	0.74	5.44	8.67	72
Aid for non-infrastructure development (log)	4.88	1.19	2.20	6.83	72
Aid for social infrastructure development (log)	6.31	0.97	3.73	8.17	72
Aid economic infrastructure development (log)	5.93	0.95	1.73	7.85	72
Aid for production sector development (log)	4.93	1.09	2.50	7.16	72
Aid from USA (log)	4.30	1.25	2.01	7.04	72
Aid from UK(log)	4.60	1.53	0.40	7.04	72
Aid from Japan(log)	5.53	1.45	-0.29	7.92	72
Aid from German(log)	4.04	1.12	1.88	6.33	72
Aid from Netherlands(log)	3.23	1.19	0.74	5.42	72
Trade openness index	44.77	19.91	22	89	72
Telecommunication per capita	29.18	30.65	2.5	177.7	72
Total tax revenue as a percentage of GDP	10.32	3.23	5.9	17.9	72
Inflation	7.43	4.17	2	25	72
GDP per capita growth (log)	1.34	0.48	0	2.07	72

Table 1 presents summary statistics of the variables incorporated in this study. Tables 2 and Table 3 summarises the results. Starting with Table1, it shows the effect of aggregate aid on FDI with other explanatory variables. The first column shows the results of this bench mark specification. This suggests that aid is significant and effective in facilitating FDI inflows into the South Asian countries. Secondly, aid is disaggregated into infrastructure aid and non-infrastructure aid and applied in the equation. The results, depicted as specifications (2) and (3), show that the coefficient of infrastructure aid is significant at the 1% level whereas non-infrastructure aid appears insignificant. These results suggest that infrastructure aid is effective in facilitating FDI inflow into the South Asian countries while non-infrastructure aid has no effect on FDI in these countries. Finally, in order to test individual country effect, dummies are used allowing intercepts to vary between the recipient countries. The dummy variables express each country effect of India, Sri Lanka and Pakistan. Bangladesh is captured by constant term. Lag of GDP per capita growth has positive effect on FDI. Effects on FDI of trade openness and telecommunication per capita as a proxy for existing infrastructure development in the recipient countries are positively associated with FDI and significant at the 1% level. Total tax revenue appears to have negative effect on FDI. Except in column (1), the coefficients of inflation are positively associated with FDI but appear to be insignificant.

Table-2. Effects of infrastructure aid and non-infrastructure aid on FDI Dependant Variable: Foreign Direct Investment (log)

	(1)	(2)	(3)	(4)
Aggregate aid (log)	0.5696*** (0.002)			
Aid for infrastructure(log)		0.5663*** (0.000)	0.5673*** (0.000)	0.6487*** (0.000)
Aid for non-infrastructure (log)			0.0031 (0.972)	0.0130 (0.849)
Lag of GDP per capita growth (log)	0.2903* (0.115)	0.2850** (0.083)	0.2827* (0.115)	
Trade openness	0.0566*** (0.000)	0.0562*** (0.000)	0.0561*** (0.000)	0.0621*** (0.000)
Tax	-0.1314* (0.187)	-0.1702** (0.074)	-0.1683* (0.119)	-0.1543** (0.039)
Inflation	-0.0173 (0.497)	0.0017 (0.926)	0.0017 (0.923)	0.0051 (0.751)
Telecommunication per capita	0.0119*** (0.000)	0.0113*** (0.000)	0.0113*** (0.001)	0.0138*** (0.000)
D_India				1.8005*** (0.000)
D_Sri Lanka				- 2.3490*** (0.000)
D_Pakistan				1.3822*** (0.001)
Constant	0.9761 (0.434)	1.3956* (0.183)	1.3621 (0.233)	0.2204 (0.842)
R-square	0.6369	0.6646	0.6646	0.9038
F-test	13.95	15.14	13.48	59.50
Prob>F	0.0000	0.0000	0.0000	0.0000

*, ** and*** denote significance at the 10%, 5% and 1% level, respectively. Numbers in parentheses are p-values. The values of R-square in first three columns indicate R-square (within).

Turning attention to Table 3, first infrastructure aid is disaggregated into aid for social infrastructure, aid for economic infrastructure and aid for production activities. Test was carried out to study the effect of each type individually, shown as specifications (1)-(3) and then the combined effect which is shown as specification (4). The results suggest that aid for social infrastructure and production activities have significant effect whereas aid for economic infrastructure has marginal effect on FDI inflows. Further, comparing the coefficient values of aid for social infrastructure and aid for production activities, the previous one has strong contribution in facilitating FDI inflows into the countries. Finally, the five OECD countries are selected to test individual donor's contribution in case of facilitating FDI, and whether the countries those that are major donors grant aid for the purpose of sending investment to the South Asian countries because these OECD countries are the major donors as well as being among the leading sources of FDI to the South Asian countries. The results, shown as specification (5), explore that the aid from UK is significant at the 5% level whereas the significant level for aid from USA, Germany and Netherlands is at the

10% level. The coefficient value for Japan reveals that aid from Japan does not facilitate FDI inflows. However, it is necessary to notify that Japan plays important role among the major donors. During the period of 1995-2012, aid flows from Japan in average covers approximately 46% of total aid and which is approximately 24%, 15%, 10% and 5% from UK, USA, Germany and Netherlands respectively. Thus, the study considers comparing the structure of aid of Japan and UK that are reported to have insignificant and significant affects on FDI, respectively. Among the five donor countries, Japan focuses economic infrastructure development whereas UK concentrates on social infrastructure development in the recipient countries. Out of total aid transferred from Japan to the selected South Asian countries during the period 1995-2012, approximately 21% has been

Table-3. Effects of more disaggregated aid on FDI Dependant Variable: Foreign Direct Investment (log)

	(1)	(2)	(3)	(4)	(5)
Aid for social infrastructure (log)	0.4193*** (0.016)			0.2782*** (0.013)	
Aid for economic infrastructure (log)		0.1576* (0.170)		0.0706 (0.545)	
Aid for production and services (log)			0.2471*** (0.003)	0.1528** (0.061)	
Aid from USA (log)					0.1218* (0.160)
Aid from UK (log)					0.2646** (0.031)
Aid from Japan (log)					0.0297 (0.497)
Aid from Netherlands (log)					-0.0998* (0.165)
Aid from Germany (log)					0.1762* (0.106)
Trade openness	0.0638*** (0.000)	0.0670*** (0.000)	0.0759*** (0.000)	0.0675*** (0.000)	0.0391*** (0.009)
Tax	-0.1914** (0.059)	-0.1927** (0.082)	-0.1686** (0.045)	-0.1636** (0.035)	
Lag of GDP per capita (log)	0.2850* (0.204)	0.4470*** (0.017)			
Telecommunication per capita	0.0101*** (0.004)	0.0124*** (0.000)	0.0199*** (0.000)	0.0150*** (0.000)	0.0181*** (0.000)
Inflation	-0.0120 (0.667)	-0.0118 (0.656)	-0.0026 (0.887)		
Constant	2.8196*** (0.015)	4.1734*** (0.000)	3.3402*** (0.000)	2.0800** (0.025)	2.2020*** (0.004)
R-square	0.6325	0.6022	0.6284	0.6716	0.6511
F-test	11.73	11.80	20.33	19.05	17.78
Prob>F	0.0000	0.0000	0.0000	0.0000	0.0000

*, ** and*** denote significance at the 10%, 5% and 1% level, respectively. Numbers in parentheses are p-values. The values of R-square in all columns indicate R-square (within)

transferred for social infrastructure, 59% for economic infrastructure and 20% for production activities. By contrast, during the same period, 69.60% for social infrastructure, 23% for economic infrastructure and 7.4% for production activities have been transferred from UK. Table A.2 in appendix shows the percentage of disaggregated aid transfer for each selected South Asian country from these five major donors.

The overall findings derived from these analyses permit to conclude that foreign aid for infrastructure development in selected South Asian countries facilitates FDI inflows. Further, among the three elements of the infrastructure aid, aid for social infrastructure is relatively effective than aid for economic infrastructure and aid for production activities. Moreover, despite the Japan is major donor for this recipient country, its aid structure differs from the aid that other donors transfer, and does not supportive in facilitating FDI into these countries.

Results of this study are consistent with [Asiedu et al. \(2009\)](#) in a view that foreign aid facilitates FDI in recipient countries, and also have opposite findings to [Caseli and Feyrer \(2007\)](#) that there is no evidence of crowding out effects between aid and FDI as aid serve as complementary factor. In addition, to some extent, findings of this study with respect to Japan is inconsistent with the findings of [Kimura and Todo \(2009\)](#) because the authors concluded that infrastructure aid from Japan only promote FDI from Japan. Further this study finds that aid from Japan does not support any FDI flows into the South Asian countries. However, Japan's aid process is extremely complex and its aid policy has been clearly different from what is practice in the rest of the Western countries [Severine \(2009\)](#).

6. CONCLUSION

The objective of this paper was to investigate whether foreign aid is effective in facilitating foreign direct investment inflow into four selected South Asian countries during the period of 1995-2012. This study used balanced time series panel data with fixed-effects estimator incorporating foreign direct investment as dependent variable and three groups of aid variables with some more control variables as determinants. First, aid was disaggregated into infrastructure aid and non-infrastructure aid, and found that infrastructure aid is effective in facilitating FDI into the South Asian countries whereas non-infrastructure has weak relationship with FDI. Secondly, further infrastructure aid was disaggregated into aid for social infrastructure, aid for economic infrastructure and aid for production activities to investigate the more specific structural effect of aid. This study found that aid for social infrastructure and aid for production activities play a crucial role in attracting FDI whereas aid for economic infrastructure has marginal effects on FDI. Among these three elements of aid, aid for social infrastructure has strong effects in facilitating FDI inflows. Finally, in order to investigate specific donor country effect, aid was disaggregated with respect to the major donor countries that are USA, UK, Japan, Netherlands and Germany. This study further found that aid from UK has significant effect on FDI whereas aid from USA, Germany and Netherlands has marginal effect. The aid from Japan does not facilitate FDI flow.

The overall findings in this study permit to conclude that aid transferred to the selected South Asian countries is effective in facilitating FDI into the countries.

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Footnote

1 Correlations between aid commitments and disbursements are 0.8508, 0.6883, 0.7656, and 0.7868 in Bangladesh, India, Pakistan and Sri Lanka, respectively.

Appendices

Table-A.1. Percentage of disaggregated aid transferred to the selected South Asian countries during the period 1995-2012.

	Bangladesh	India	Sri Lanka	Pakistan
Infrastructure aid				
Aid for Social infrastructure	37.73	46.88	32.33	38.50
Aid for Economic infrastructure	28.06	26.93	36.83	21.32
Aid for Production and services	7.67	15.79	12.53	8.65
Aid for Multi-sector/cross- cutting	9.03	4.8	6.57	6.38
Non-infrastructure aid				
Aid for Commodity aid and general programme assistance	4.94	2.98	2.19	9.19
Aid for Action relating to dept	7.77	0.67	1.93	9.47
Humanitarian aid	4.80	1.88	7.62	6.49

Source: OECD

Table-A.2. Disaggregated aid flow as a percentage of total aid from major donors during 1995-2012.

	Bangladesh	India	Pakistan	Sri Lanka
Japan				
Aid for Social infrastructure	21.61	20.13	16.01	25
Aid for Economic infrastructure	70.58	58.43	65.04	59
Aid for Production Services	7.81	21.44	18.59	16
Germany				
Aid for Social infrastructure	45.79	34.47	37.38	34.44
Aid for Economic infrastructure	52.94	43.23	61.62	59.62
Aid for Production Services	1.27	20.31	1	5.94
USA				
Aid for Social infrastructure	83.64	80.05	81.70	67.05
Aid for Economic infrastructure	7.42	15.62	14.47	19.73
Aid for Production Services	8.94	4.33	3.83	13.22
Netherlands				
Aid for Social infrastructure	77.87	64.01	77.88	41.76
Aid for Economic infrastructure	13.68	19.40	5.11	44.42
Aid for Production Services	8.45	16.59	17.01	13.83
UK				
Aid for Social infrastructure	56	73.68	81.47	71.73
Aid for Economic infrastructure	32	21.50	11.47	16.77
Aid for Production Services	11	4.81	7.06	11.50

Source: OECD