Asian Development Bank Lending in India - Boon or Bane?

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Vivekananda Journal of Research
July - December 2020, Vol. 9, Issue 2, 115-127
ISSN 2319-8702(Print)
ISSN 2456-7574(Online)
Peer Reviewed Refereed Journal

http://www.vips.edu/vjr.php

Abstract

Finance is the life-blood for facilitating and accelerating the process of any country's economic development. Since developing countries like India are not and have never been financially self-sustaining, they constantly depend on international financial institutions like the Asian Development Bank (ADB) for financial assistance. The present paper entails an attempt to study the impact of the ADB's lending on India's economic growth. The paper also analyzes the nature and sector wise pattern of lending of the bank to India over the period of 28 years, i.e., 1991-2018. Statistical tools like, mean, coefficient of Variation (C.V.), compounded annual growth rate (CAGR), correlation and multiple regression have been employed for the purpose of analysis. While the correlation between aid and India's economic growth was found to be positive, strong and significant, the impact of the former on the latter was perceived as positive but insignificant.

Keywords: *Economic Growth, Foreign aid, Development, economy.*

Introduction

It is rightly said that finance is the lifeblood for any country's development. Just as the human body malfunctions where there is a lack of adequate amount of blood, the economy also suffers considerably if satisfactory supply of finance is not universally maintained. It is a herculean task for any country, especially the developing countries, to be able to hold up and bear its process of economic development independently, without any

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external assistance. Financial aid influences the process of growth by reducing the saving investment gap, increasing productivity and transferring the modern technology (Khan and Ahmed 2007). One widely used source of aid is international financial institutions like The World Bank, IMF and The Asian development Bank, which provide assistance in different forms to the nations worldwide. These institutions provide assistance in different forms as per the needs of the recipient country and the terms of lending also vary not only from country to country but also from project to project.

India has never been a self-sufficient nation as far as finance is concerned and thus has been taking financial assistance from major international financial institutions for different projects pertaining to different sectors of the economy. This paper is an attempt to study the relationship between India and the Asian Development Bank (ADB). India was a founding member of ADB in 1966, has been ADB'S top borrower since 2010 and is now the bank's fourth largest shareholder.[1]

Review of Literature

Effectiveness of foreign aid has always been a debatable topic. Some studies have shown it to be effective and instrumental in economic growth of country while some others have proven to be the contrary.

Kargbo (2012) conducted a study for a period 1970-2007 to find out the impact of foreign aid on economic growth in Sierra Leone. The results showed a positive and significant impact of foreign aid on economic growth in non-war times while the impact was found to be weak or non-existent during the time of the war, indicating, that the impact of aid may change with time.

Hossain (2014) scrutinized the impact of foreign aid on economic growth in Bangladesh for a period of 33 years, from 1982 to 2012, and found out that although the proportion of foreign aid has been declining over the period of years in Bangladesh, but it has a positive impact on the economic growth of the country. The author concludes that the government should overcome the capacity constraints and ensure political stability in order to gain maximum utilization of aid.

According to the study carried for the period 1994-2011 by Girma (2015) to find

1 https://www.adb.org/countries/india/overview#:~:text=India%20was%20a%20founding%20member,the%20bank's%20fourth%2Dlargest%20shareholder.&text=India%20has%20been%20ADB's%20top,the%20country's%20inclusive%20economic%20transformation.

out the impact of foreign aid on economic growth in Ethiopia, foreign aid has positive impact on the economic growth only if it is augmented with stable macroeconomic policy environment. In the absence of the latter, a negative impact of foreign aid was witnessed on economic growth.

Giri, Mohapatra, and Sehrawat (2016) analyzed the impact foreign aid has on the economic growth in India. The data was used for the period 1970-2014. The results affirmed that in both, long and short run, foreign aid has positive and significant impact on the economic growth in India. The study also concluded that the effectiveness of foreign aid in economic growth is dependent on macroeconomic policy environment in India.

Kasour and Masood (2017) carried out a study on South Asian economies to investigate the factors that promote foreign aid dependence and to check their nature of their relationship with foreign aid. A positive and significant relation was found between the Gross Domestic Investment and foreign aid, in both, long and short run. The study also revealed that Gross Domestic Savings reduces the dependence on foreign aid.

Sothan (2017) attempted in his study to find out the growth impact of foreign aid in Cambodia. The study was conducted for the period 1980-2014. The results showed that although, aid had a positive impact on growth in the long run, but in the short run, its impact was found to be negative on both investment and growth. The author suggested a shift from aid contingence to promoting domestic investment for sustainable development.

Objectives

The objectives of the study are as follows:

- To study the pattern of nature of lending by the Asian Development Bank to India over the period of years;
- To study the pattern of sectoral lending by the Asian Development Bank to India over the period of years;
- To study the impact of the Asian Development Bank lending on the economic development of India.

Research Methodology

The study is completely secondary in nature. Data for a period of 28 years, from

1991 to 2018, has been considered. The data has been made available from various issues of the Asian Development Bank's Key Indicators for Asia and Pacific. For studying the patterns of lending, both nature wise and sector wise, statistical tools of Mean, Coefficient of Variation (C.V.) and the Compounded Annual Growth Rate (CAGR) have been computed. For the purpose of assessing the impact of Asian Development Bank's lending, Correlation and Multiple Linear Regression have been employed. GDP per capita has been taken as the proxy of economic growth (GDP) and the dependent variable as well. Aid (Financial aid by ADB), Gross Domestic Savings as a % of GDP (GDS) and Consumer Price Index (annual % change) (CPI) has been taken as independent variables. Statistical software, SPSS 16 was used for the purpose of analysis.

Analysis and Findings

Table 1 the details of ADB's lending to India over the period of 28 years, i.e., from 1991 to 2018, which is also reflected in Figure 1. As is evident from the table, India has received funds from the bank via its Ordinary Capital Resources (OCR) operations only. The Asian Development Bank.

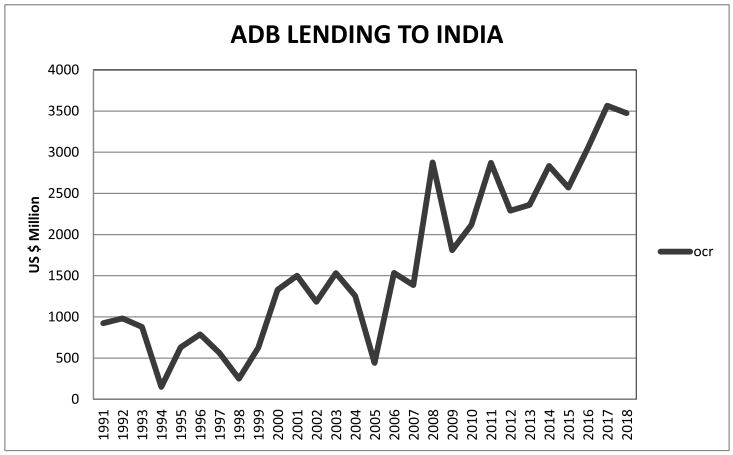
Table 1 : Nature of ADB's Lending to India - 1991-2018 (US$ Million)

YEAR	OCR	ADF	TOTAL
1991	924	0	924
1992	982	0	982
1993	877.7	0	877.7
1994	150	0	150
1995	630	0	630
1996	788	0	788
1997	563	0	563
1998	250	0	250
1999	625	0	625
2000	1330	0	1330
2001	1500	0	1500
2002	1183.6	0	1183.6
2003	1532	0	1532
2004	1254.4	0	1254.4
2005	440.31	0	440.31

2006	1535	0	1535
2007	1386.39	0	1386.39
2008	2876.89	0	2876.89
2009	1811	0	1811
2010	2119.6	0	2119.6
2011	2872.9	0	2872.9
2012	2290	0	2290
2013	2359.9	0	2359.9
2014	2834.7	0	2834.7
2015	2571	0	2571
2016	3053	0	3053
2017	3565.1	0	3565.1
2018	3475.2	0	3475.2
	45780.69	0	45780.69
Mean	1635.025		
C.V. (%)	61.41873		
CAGR (%)	5.028629		

Source: Key Indicators of Asia and Pacific, ADB.

lent a total of US $ 45780 million to India over the period, i.e., from 1991 to 2018. The highest amount of lending by the ADB to India was in the year 2017, as high as US $ 3565 million followed by in the year 2018 which was US $ 3475 million. On the other hand, the least amount lent by the bank to India was in the year 1995 (US $ 150 million) followed by in the year 1998 (US $ 250 million). The table reveals that over the period of study the amount of foreign aid provided by the Asian Development Bank has increased, with occasional dips. On an average, the analysis indicates, the ADB has lent US $ 1635 million from the year 1991 to 2018. Coefficient of variation (C.V.) was 61.42% indicating wide year on year disparities in the amount of loans. CAGR explains that the ADB lending grew at the rate of 5.03%.



The Sector wise distribution of the loans given by the ADB to India over the period of time is entailed in Table 2. A perusal of the table reveals that over the period, the largest amount of sum was lent to the Energy sector (US $ 13910 million) followed by the Transport and Communication sector (US $ 13749 million) and the Banking systems and the Finance sector (US $ 4570 million). The Education sector has received the least amount of lending, US $ 515 million from the ADB, followed by the Industry and Trade sector (US 890 million).

Table 2 : Sectoral Pattern of lending by ADB to India- 1991-2018 (US $ Million)

Year	Agriculture, Fishery and Forestry	Banking Systems and Finance	Energy	Industry and Trade	Social Sector	Transport and Communication	Law, Economic Management and Public Policy	Water and Sanitation	Education	Multi	Others
1991	0.00	0.00	699.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
1992	0.00	300.00	397.00	0.00	0.00	285.00	0.00	0.00	0.00	0.00	0.00
1993	0.00	60.00	560.00	0.00	0.00	257.70	0.00	0.00	0.00	0.00	0.00
1994	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995	0.00	250.00	275.00	0.00	0.00	0.00	105.00	0.00	0.00	0.00	0.00
1996	0.00	0.00	125.00	0.00	0.00	113.00	0.00	0.00	0.00	300.00	250.00
1997	0.00	0.00	150.00	0.00	300.00	113.00	0.00	0.00	0.00	0.00	0.00
1998	0.00	0.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	0.00	0.00	0.00	0.00	0.00	0.00	375.00	0.00	0.00	0.00	250.00
2000	0.00	0.00	600.00	0.00	300.00	180.00	0.00	0.00	0.00	0.00	250.00

2001	0.00	0.00	350.00	0.00	0.00	450.00	0.00	0.00	0.00	700.00	0.00
2002	0.00	0.00	150.00	0.00	20.00	813.60	0.00	0.00	0.00	0.00	200.00
2003	0.00	40.00	312.00	0.00	0.00	980.00	0.00	200.00	0.00	0.00	0.00
2004	0.00	0.00	454.40	0.00	0.00	400.00	150.00	0.00	0.00	250.00	0.00
2005	46.11	73.00	0.00	0.00	0.00	0.00	221.20	0.00	0.00	100.00	0.00
2006	0.00	1050.00	225.00	0.00	0.00	180.00	0.00	80.00	0.00	0.00	0.00
2007	0.00	75.00	506.19	0.00	0.00	370.00	0.00	42.20	0.00	393.00	0.00
2008	47.20	0.00	1167.40	150.00	38.64	1017.65	100.00	71.00	0.00	285.00	0.00
2009	0.00	100.00	516.00	0.00	0.00	485.00	100.00	180.00	0.00	430.00	0.00
2010	176.10	50.00	498.90	0.00	0.00	837.20	0.00	229.40	0.00	328.00	0.00
2011	24.30	0.00	1537.00	0.00	0.00	774.80	0.00	215.80	0.00	321.00	0.00
2012	0.00	0.00	768.00	0.00	0.00	852.00	400.00	270.00	0.00	0.00	0.00
2013	18.40	0.00	752.00	0.00	0.00	926.20	0.00	163.30	100.00	400.00	0.00
2014	31.00	725.00	200.20	0.00	0.00	820.00	200.00	758.50	100.00	0.00	0.00
2015	120.00	550.00	1048.00	0.00	300.00	473.00	0.00	80.00	0.00	0.00	0.00
2016	100.00	425.00	808.00	370.00	0.00	1150.00	0.00	200.00	0.00	0.00	0.00
2017	65.50	274.90	1409.70	370.00	0.00	870.00	300.00	275.00	0.00	0.00	0.00
2018	675.20	598.00	252.00	0.00	0.00	1176.00	0.00	459.00	315.00	0.00	0.00
Total	1303.81	4570.90	13910.79	890.00	1208.64	13749.15	1951.20	3224.20	515.00	3507.00	950.00
Mean	46.56	163.25	496.81	31.79	43.17	491.04	69.69	115.15	18.39	125.25	33.93
C.V. (%)	280.66	165.86	82.52	313.45	236.85	80.06	174.03	151.45	346.64	153.99	250.65
CAGR (%)	22.93	2.69	-3.71	10.55	0.00	6.32	4.89	5.69	25.79	1.71	-2.45

Source: Key Indicators of Asia and Pacific, ADB, Manila.

Following are the sector wise details of the ADB lending to India:

- A total of US$ 1303 million were lent to the projects in the **Agriculture, Fishery and Forestry** sector from the year 1991 to 2018. However, no amount was lent to this sector from 1991 to 2004, in 2006-2007 and in the years 2009 and 2012. The highest amount of sum lent to this sector was US$ 675 million in the year 2018 and the least was US$ 18 million in 2013. On an average US$ 46 million were lent to this sector and as revealed by CAGR the lending grew at the rate of 22.93%.

- **Finance sector** in India received a total of US$ 4570 million from the bank, which on an average was US$ 163 million. This sector did not receive the aid from the ADB on a regular basis. In the year 2006, this sector received US$ 1050 million from the bank which was the highest amount received by the sector over the period of study. The least amount received by the sector was in the year 2010 (US$ 50 million). The coefficient of variation (C.V.) was found to be 165.86% indicating

huge year on year disparities in the amount of loans received by this sector. CAGR indicated the lending grew at the rate of 2.69%.

- **Energy sector** has received the most share of the total lending by the ADB. A total of US $ 13,910 million were lent to this sector over the period of study, the highest being in the year 2011 (US $ 1537 million) and the least in the year 1996 (US$ 125 million). In the years 1998, 1999 and 2005, this sector did not receive any aid. On an average, US $ 496 million were lent to this sector. Coefficient of variation (C.V.) was 82.52% and CAGR revealed that the lending to this sector witnessed a negative growth at the rate of 3.71%.

- **Industry and Trade** sector received a total of US$ 890 million from the ADB during the period of study. However, this sector received the lending only for three years, i.e., in 2008, 2016 and 2017. The analysis reveals that the sector, on an average, received US$ 31 million. C.V. was found to be as high as 313% justifying the disparities on a year-on-year basis. CAGR indicated that the lending to this sector grew at the rate of 10.55%.

- During the period of study, i.e., 1991-2018, a total of US$ 1208.64 million was received by the **Social sector** from the ADB. However, this sector received funds only for a few years. The largest amount (US$ 300 million) was received in the years 1997, 2000 and again in 2015 and the least amount (US $ 20 million) in the year 2002. The mean lending came out to be US$ 43.17 million. While the C.V. was found be enormous (236.85%), the lending to this sector did not grew at all over the period of study as CAGR came out to be 0%.

- The sector which received second highest amount of loans from the bank was that of **Transport and Communication** (US$ 13,749.15 million). Except for five years in between, this sector had been receiving regular loans from the bank, highest being in the year 2018 (US$ 1176 million) and the least in the year 1996 and 1997 (US$ 113 million). The lending showed a growth rate of 6.32% with US$ 491.04 million being the average. The coefficient of variation (C.V.) for this sector, although was high (80.06%), but was the least amongst all sectors.

- Sector of **Law, Economic Management and Public Policy** received a total of US$ 1951.20 million from 1991-2018, with US$ 69.69 million being the average. This sector, again, received funds from the bank only for a few years in between the study period. The highest amount received was US$ 400 million in the year 2012

and lowest was US$ 100 million in the year 2009 and 2009. Like other sectors, this sector also showed wide fluctuations in the year-on-year lending, as the C.V. was 174.03%. The loans to this sector grew at the rate of 4.89%.

- A total of US$ 3224.20 million was received by the **Water and Sanitation sector** over the period of time, although no loan was sanctioned to this sector during the period 1991-2002 and again in 2004 and 2005. The paramount amount of money received by this sector was US$ 758.50 million, in the year 2014 and the lowest was in US$ 42.2 million in the year 2007. On an average this sector received US$115.15 million. C.V. of 151.45% revealed wide variations in the lending, although CAGR revealed a growth rate of 5.69% in the lending.

- The **Education sector** received loans only for three years, i.e., in 2013, 2014 and 2018. This sector received least amount of aid from the bank (US$ 515 million). The mean aid came out to be US$ 18.39 million. This sector also showed the highest C.V. (346.64%). CAGR revealed a growth rate of 25.79% in amount of lending to this sector.

- The **Multi sector** projects in India received a total of US$ 3507 million from the ADB, the highest amount in the year 2001 (US$ 700 million) and the lowest amount in the year 2005 (US$ 100 million). On an average, a sum of US$ 125.25 million had been lent to this sector. C.V. was reported to be 153.99%, indicating again, wide fluctuations in year-on-year lending to this sector. A growth rate was found to be 1.71%.

- **Others sector** refer to the loans given to the miscellaneous projects. A total of US$ 950 million were lent to this sector over the period of study, with mean lending being US$ 33.93 million. CAGR revealed a negative growth of 2.45% in the amount of lending to this sector.

Impact of Asian Development Bank lending on India's Economic Growth

To find out the impact of World Bank lending on India's economic growth correlation and regression analysis was done. the results of the same are given as follows:

Correlation Analysis:

Table 3: Results of Correlation of Independent variables with GDP

	AID	GDS	CPI
Pearson Correlation	0.909**	0.669**	0.993**
Sig. Value	0.000	0.000	0.000
N	28	28	28
Result	Positive, strong and significant	Positive, moderate and significant	Positive, strong and significant
** Correlation significant at 0.01 level (2-Tailed)			

A correlation analysis was conducted to find the degree of association of GDP per capita with the rest of the independent variables, i.e., Aid (lending by the Asian Development Bank), Gross Domestic Saving (GDS) and Consumer price index (CPI). The results of the same that have also been tabulated in Table 4, are as follow:

A strong positive correlation ($r(26) = .909$, $p < .005$) was found between GDP and Aid, indicating a significant linear relationship between the two variables.

There exists a significant linear relationship between GDP and GDS as a positive moderate correlation ($r(26) = .669$, $p < .005$) was found between the two.

A strong positive correlation ($r(26) = .993$, $p < .005$) was found between GDP and CPI, indicating a significant linear relationship between the two variables.

Regression Analysis

To find out the impact of World Bank lending on the economic growth of India a regression analysis was carried out using the following model:

$$\mathbf{Y = c + \beta_1 AID + \beta_2 GDS + \beta_3 CPI}$$

Where,

Y = GDP Per Capita

AID = Lending by Asian Development Bank to India

GDS = Gross Domestic Savings (as a % of GDP)

CPI = Consumer Price Index

Table 4: Results of Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995[a]	.990	.989	48.12525071

a. Dependent Variable: GDP

b. Predictors: (Constant), AID, CPI, GDS

Table 4 contains the summary statistics of the regression analysis. R square value is 0.990, meaning thereby, that 99% of the variations in the dependent variable (GDP per capita) can be explained by the chosen regression model.

Table 5: Results of ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5464823.065	3	1821607.688	786.518	.000[b]
Residual	55584.954	24	2316.040		
Total	5520408.019	7			

a. Dependent Variable: GDP

b. Predictors: (Constant), AID, CPI, GDS

As depicted by Table 5, the ANOVA resulted in F = 786.518 and F is significant at less than 0.001 level indicating that the relationship between dependent and independent variables as modeled in this paper is statistically significant

Table 6: Coefficients of the Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	107.587	72.448		1.485	.151
AID	.30	.021	.066	1.390	.177
CPI	9.083	.505	.886	17.989	.000
GDS	8.302	2.920	.075	2.843	.005

a. Dependent Variable: GDP

b. Predictors: (Constant), AID, CPI, GDS

It can be observed from Table 6 that AID has a positive but statistically insignificant effect on GDP. On the other hand, a positive and statistically significant impact of GDS and CPI can be seen on the economic growth of the country. The results of the estimated model are, thus, as follows:

GDP = 107.587 + 0.30(AID) + 9.083(CPI) + 8.30(GDS)

Where,

Y = GDP Per Capita

AID = Lending by Asian Development Bank to India

CPI = Consumer Price Index

GDS = Gross Domestic Savings (as a % of GDP)

Conclusion

It's a contentious matter whether foreign aid assists or hinders the economic growth. In order to get an insight into this disputable matter, the present study was conducted. Effectiveness of aid in the form of lending by the Asian Development Bank to India was judged. Data was assessed for a period of 28 years, from 1991 to 2018. A positive, strong and significant correlation was found between India's economic growth and ADB's lending. Further multivariate regression analysis revealed that aid had positive but insignificant effect on economic growth of India. In order to ensure maximum utilization of foreign aid, effective policy making and implementation of the same is vital.

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