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PUBLIC INVESTMENT STATUS IN BANGLADESH

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ABSTRACT: *This paper endeavors to formally establish a link between public investment and economic growth. Public investment is one of the key factors of economic development. It is often seen as important ingredient for economic growth in developing countries like Bangladesh. The main purpose of the study is to investigate the impact of public investment on economic growth in Bangladesh. I also examine the public investment of Bangladesh. We consider ADP is the main proxy for public investment in Bangladesh. We also consider the gross capital formation for more reliable results. In our country, ADP traditionally holds the central place in our national economic planning. ADP regularly promotes economic growth, ensures infrastructural development, reduces poverty and improves the environment. The link among GDP, PI and GCF are analyzed by our regression model. From our study, we have seen that PI has positive effects on GDP in Bangladesh. So, in the light of that result, increases in public investment should have a positive net impact on economic growth which augments our economic development in future. This thesis concludes with a number of policy recommendations arising from the research findings.*

KEYWORD: Public Investment, Economic Growth, ADP, GCF, GDP

INTRODUCTION

Investment is one of the main components of aggregate demand. It plays an important role on economic growth. Public investment is fully conducted by the government. By public investment, the government can improve economic situation of the country. Recently we have observed that public investment is necessary like private investment. Both the public and private investments are required for increasing real GDP but public investment is more reasonable than private investment.

The economy of our motherland is growing with some random behaviour in macroeconomic indicators. Some indicators are clearly ahead, although the maximum indicators show the equivocate result. By observing them, it is difficult to draw a simple conclusion on 'Is Bangladesh developing or not'. To answer to this question we have to look up our macroeconomic variables. If the maximum variables from both demand and supply sides show their positive attitude we can say we are developing. Mainly, after 1990, we have seen, Bangladesh ameliorates on some macroeconomic variables including economic growth, investment, savings, foreign direct investment, poverty reduction, reducing infant mortality, literacy etc. On the other side, deteriorating situation is also observed such as ensuring equity, distributing wealth and income, controlling the amount of population, incidence of absolute poverty, ceaseless increasing discrimination of allocating recourses etc.

Bangladesh is small country but over populated. Its economy is rapidly improving based on market. Most of the indicators of development show their positive reaction since 1971. According to Wikipedia, Bangladesh has made significant strides in its economic sector performance since independence in 1971. The economy has improved vastly after 1990s.

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Stable political situation is main reason behind it. The economic activity is directly related with some non economic factors. After 1990s, we have experienced an average growth rate above 4% per year. Though we have improved a lot but the vicious circles of underdevelopment remain alive.

Defining the Investment

Most common definition of investment is provided by Dornbush, Fischer and Startz. According to them, Investment means additions to the physical stock of capital (i.e. building, machinery, construction of factories additions to firm's inventories). According to Mankiw, investment consists of goods bought for future use. In the view of Eric Doviak, investment consists of goods that firms and household purchase for future use as opposed to present use. More precisely investment covers followings- Purchased with the hope that it will augment income. Purchase of goods that are not consumed today but are used next time and will create wealth. Bought for the future with it will be sold at a higher price. Investment goods are those goods which are used for further and future production. John Keynes refers that investment implies the production of new capital goods, plants and equipments.

Definition of Public Investment

Unique definition of public investment is inadequate. Public investment will be defined broadly to include all government spending in the 'core' infrastructure sectors which enhance the productivity of physical capital, land, transportation, power sectors, human infrastructure or those services that raise the productivity of labour(health, education, nutrition), rather than just capital expenditures as traditionally defined in official statistics (Emmanual Jimenz, 1995). Public investment is one kind of government expenditure. Edward Anderson, Paolo de Renzio and Stephanie Levy (2006) define public investment as public expenditure that adds to the public physical capital stock. This would include the building of roads, ports, schools, hospitals etc. This corresponds to the definition of public investment in national accounts data, namely capital expenditure. Public investment relates to mainly infrastructural expenditure. By the United Nations (2009) Public investment takes the form of infrastructural outlays – for roads and rail networks, ports, bridges, energy-generating plants, telecommunications structures, water and sanitation networks, government buildings- which can have a productive life of several decades. Although Xiaobo Zhang and Shenggen Fan (2000) do not define public investment directly but they describe the public investment goods are roads, education, irrigation, electrification, rural telephones and agricultural R&D capital generated by government investment. Sometimes public investment can mix with private investment. That's why Andreas Kappeler and Timo Valila(2007) define the public investment as infrastructure investment. But infrastructure investment is not always public.

Most of the time roads, water and sanitation networks and municipal swimming pools are publicly funded and provided. Adds directly to public capital is also known as public investment (Pantelis Kalaitzidakis and Sarantis Kalyvitisy, 2003). That kind of investment is known as public investment which is conducted by the government for the people. Investments undertaken by all public administrations are known as public investment. In other words, investment in highways and roads, hydraulic infrastructures, urban structures, ports and airports are the productive public investment (Roberto Leon Gonzalez and Daniel Montolio, 2011). On the other side, according to Eric peree and Timo Valila(2008) only investment directly financed from budget of the government- at the central or sub-national level- qualifies as public investment. They have enlisted public investment into four classes on the basis of their economic characteristics. The four classes are-

1. Traditional infrastructure most notably communications networks in both transportation and telecommunications.
2. Human capital infrastructure including investment in schools (education) and hospitals (health).
3. Public goods including functions such as defense, order and safety, public administration and environment.
4. Redistribution including social housing and protection as well as recreational facilities.

Characteristics of Public Investment

By the definition, public investment contains some features given below-

1. Finance by the government
2. Invest in public goods with all public utilities
3. Infrastructure is main sector
4. No direct return like private investment
5. Having positive influence on economy
6. It may be financed from debt, tax etc
7. It may depend on national income
8. Most of the time it is known as productive investment
9. More broadly, public investment is one kind of public expenditure
10. Size of public investment in transportation infrastructure dominates the other types of public investment
11. It has positive externalities
12. Return from public investment is not fully measurable
13. It has crowding in impact on others investment
14. Market fail occurred due to inefficiencies and no direct return
15. Less competitiveness compare to private investment
16. Difficult to assess with cost-benefits formula
17. Public investment goods contains all characteristics of public goods
18. Sometimes it may mix with private investment under PPP

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19. It increases government borrowing

Fact and Rationale of the Study

Public investment is the most important and fundamental potential factor of economic growth. It can play a vital role to ameliorate the economic situation and level of economic development of Bangladesh like other countries. Public investment influences economic growth in different ways. Recently, the spontaneous impact of public investment is lively discussed topic because of its positive impact on economic growth and other indicators of economic development. Public investment can influence positively the different sectors of an economy which aggregately augment the economic growth. Theoretically, we can say public investment multiplier increases national income of a nation in different levels with different ways. Public investment can reduce the evil effect of different negative factors of an economy like poverty, inequality, discrimination and so on. On the other hand, public investment has a positive impact on different positive sector of an economy such as income, private investment, infrastructure, science, technology, savings and others. To solve the problems of basic human needs (food, shelter, cloth, health and education) of a country, public investment can play a long term vital role. Public investment is fully organized by government, that's why it always on the favour of mass population. Public investment always highlights the welfare of public which is fully absence in private investment.

In Bangladesh perspective, the importance of public investment is impossible to deny. Due to different reasons like low infrastructure, the return of public investment is not satisfactory and still not clear. If we observe the developed countries, we can say the return of public investment is much higher compare to the third world. In Bangladesh it is possible to consider the development budget as a public investment. Generally public investment is invested in those sectors where private investment is not effective.

The idea that public investment should have a positive effect on economic growth is intuitively appealing. A number of prominent authors have argued that the link between public investment and economic growth is weak or nonexistent and the question as to whether public investment should be given preference in government budget is a controversial decision. On the other hand, a lot of researchers conclude that there is a strong tie between public investment and economic growth. It is very important to know whether public investment and economic growth are related to each other especially in Bangladesh perspective.

Increase in public investment increases the public expenditure and it leads to increase aggregate demand in the economy. Demand for developed infrastructure being a derived demand also increases, raising the level of employment and productivity. Higher effective demand and productivity lead to two ways. One leads a rise of physical infrastructure and thus contributing to private investment and the other leads to in a large economy.

The main purpose of public investment in the process of economic growth has been the subject of enquiry of a growing body of both theoretical and empirical literature. The starting point for both strands of literature is the notion that actions taken by governments have considerable effect on macroeconomic performance. For example, the level of public investment many effect both private investment and the long term rate of economic growth. The fact that public investment is largely non-excludable and non rival in consumption suggests spillover effects. This is emphasized by the endogenous growth models including Romer(1986) and Barro and Salai-i-Matin(1999). If we observe the different type of growth model then we can say the most

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of the model include the acknowledgement of investment although public investment (fiscal policy) does not affect the steady state growth rate in neoclassical growth models.

In Bangladesh perspective, a few researches are done on the impact of public investment on economic growth. But no research is done only find out the public investment impact on growth. Such as Ahmed et al (2011) find out the link among public investment, private investment and economic growth but they did not separate the impact of public investment on economic growth. Another research is done by G. M. Hasan (2007) on public investment of Bangladesh but it figure out the combined impact on employment and poverty. So it is important to know the impact of public investment separately. Due to limitation of some previous research, we are going to find out the link between public investment and economic growth in Bangladesh perspective.

On the other side, we have already finished about forty years since our independence but we failed to establish us as a middle income country. We think, we have to wait a long time to become a middle income country. Exactly now we should take necessary steps to be a middle income country. According to a reputed institution, our per capita income is about \$685 and total GDP is about \$90 billion. Considering the purchasing power parity (PPP) among largest economies, the position of Bangladesh is 48th in the world and from commercial point of view this position is 77th. Up to 1990 we got a growth rate of less than 4 percent and then in 2009 we enjoyed a modest growth rate that is 5.8 to 6 percent, where the latter is ceaseless. If we consider a report on Bangladesh economy published by the Asian Development Bank (ADB) ensuring correct management in Dhaka and Chittagong Economic Corridor (DCEC) only, it will supply 1% additional GDP. Only Dhaka and Chittagong cover 65% economy of our country. So if we can ensure modern communication with infrastructural development as well as power and gas in at least two cities, we will improve our growth rate to 8% easily. In 2009 investment to GDP ratio was about 24.2%. The present government has fixed the target on increasing investment is 30 to 32% to ensure 8% growth rate within 2013 (10 April 2011, The Daily Ittefaq).

According to the International Monetary Fund, Bangladesh ranked as the 43rd largest economy in the world in 2010 in PPP terms and 57th largest in nominal terms, among the next eleven or N-11 of Goldman Sachs and D-8 economies with a GDP of US \$ 269.3 billion in PPP terms and US \$ 104.9 billion in nominal terms. Considering the whole situation, the chronological stage of Bangladesh economy is not satisfactory level. So if we ignore the pressure from different sides and will try to increase public investment then it is possible to enjoy the double digit growth rate though it is not easy. We can examine this possibility in our dissertation paper. Investment is the main driven force of an economy like Bangladesh.

In history of economic development of any country, it is not possible to say that without investment they improve themselves. In real term, public investment is the real investment of any economy which has direct impact on all over the macroeconomic factors. From both side theoretically and pragmatically public investment can play vital role to augment the economic growth of any country. Benefits of public investment are not ignorable. Simply, public investment in transport plays a much bigger role than others. It permeates all aspects of our society and still represents the major arteries of modern economic activity, playing a crucial role in our local, regional and national economies. Public and private use of it underpins our ability to participate in employment, shopping, recreation and social activities, making access to it not just of economic importance but an important equity issue (Benefits of public investment in the nations road infrastructure, Australian Automobile Association). For any

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economy, investment in public sector is the basis for development. Low implementation rate of public investment may be lead to inevitably low percentage of economic growth rate. Based upon the economic theory, the actual investment rates are the basic condition for realizing the targeted growth rates and show interrelation between growth rates and actual investment expenditure through relationship with GDP. Formation of new investment is crucial in determining economic growth rates in order to overpass population growth rates and improving living conditions.

Therefore, investment is important as it is the basic condition for realizing quick economic growth rates which are necessary conditions to increase per capita income rate, although it is not the only condition to realize a balance economic development (Public Investment, Draft Paper, Public Investment Development Committee, Republic of Iraq). In developing country like Bangladesh, public investment can play a vital role on economic performance. Budget deficit is tightly packed with our economy.

In balanced budget economy, Mustafa Ismihan and F. Gulcin Ozkan(2006) ensure that, under a balanced budget rule the contribution of public investment to future output plays a key role in determining its effects on macroeconomic performance. More specifically, they show that public investment enhances overall performance under a balanced budget rule when a unit of public capital spending today raises future output by more than one unit. To promote economic growth of an economy, we need to extend and strength the area of public investment. Although public investment in amount, management system, implementing rate vary from one country to another but basic goals are the same in everywhere. By the definition of any kind of investment, it must have return. This return may be low or high. The recent literature has reinforced the point that human and physical infrastructures are critical elements for economic growth and for the reduction of poverty. There is also a continuing recognition that, because of externalities, scale economies, other public goods characteristics and because of distributional objectives, the government has a key role to play in financing and supplying infrastructure (Emmanual Jimenz,1995). Public investment is that kind of investment which has social return as well as monetary return.

We know the economic growth is the main and rudimentary indicators of any economy. We can measure the level of development of any country by the increasing rate of GDP. Public investment can affect economic growth by complementing private capital, crowding in private investment, increasing market integration, increasing aggregate demand, increased national savings, employment and the real exchange rate. On the other side, in micro level public investment can influence the quality and quantity of public capital on firm's profits, household welfare, price of goods and services, disposable income etc (Edward Anderson, Paolo de renzio and Stephanie Levy,2006).

In Bangladesh perspective, the flow of public investment increased dramatically in recent years. It is expected that public investment has positive influence on development of the economy of Bangladesh. A limited research work is done on the topic of public investment of Bangladesh. It is important to know that whether public investment influences our economic growth at all or not. According to a blogger of www.blog.worldbank.org argues that a one percent increase in public investment to GDP ratio contributes 0.33 percent of GDP growth with a one year lag. However this estimate is so imprecise that it is not statistically significant. (Zahid Hussain, 2009) But he is not able to answer this question properly that, whether we get public investment properly or not.

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John Maynard Keynes's argument for public investment focuses on the composition of government and does not imply that government expenditures as a proportion of gross national expenditures should eventually monopolize the process of capital accumulation in the economy. His argument is that these public expenditure should be significant enough to stabilize aggregate investment spending over the business cycle and that, in the long run, they should be "maintained at a level which will allow the growth of capital to the point where it ceases to be scare." As Keynes had argued, even burying old bottles filled with bank notes so that private firms could dig them out, "would be better than (doing) nothing." action is better than inaction. In much the same way, public investment that bestows social capital on future generation is preferable to the disinvestment and large-scale wastage of existing private and public capital stocks. Public investment in developing countries especially in Bangladesh may take a vibrant part to augment GDP. Empirically, public investment enriches public sectors that enhance growth rate and infrastructure development as well as employment generating programs. The study about public investment can assess the economic situation.

In fine we can say that there is clearly a need for studying the relationship between public investment and growth in the context of Bangladesh using the most recent data and employing the econometric technique.

In Bangladesh perspective we can consider the ADP as public investment. The main feature and common matters discussed below.

What is ADP?

ADP is the development budget of Bangladesh. It is an organized planning list of projects in various sectors in a fiscal year. It is prepared on the basis of a year's development budget and approved by parliament then implement by government. Projects under ADP in different sectors of different ministry set the priorities to implement the development budget. There are two approaches are namely programme approach and project approach. These two practices are not always applicable since limitation. It is very much rational that a system is not fit everywhere and any time. So, approaches are not fixed. Many countries implement their development through projects. On the other hand, some countries implement their development budget as programme approach. In our country, we follow the both approaches to implement development budget ADP. There are lots of development base activities that are proposed to be implemented by the government. Planning is the well practices from 1930. In modern time, every country practice it as regular basis. To ensure the optimum use of resource planning is very important. In Bangladesh, the plans are transformed into programmes and projects under annual development programme. This ADP is an integral part of planning processes through implementation of plan with projects and programmes from time to time.

Why ADP Considered as Public Investment?

Most of the characteristics of public investment are present in ADP. So we can consider ADP as public investment. If we consider the maintenance system of ADP then we can say ADP is fully handled by government. We know that ADP is fully conducted by government. In the same way ADP is also conducted by government controlling, supervising, allocating, organizing system of ADP follow the same procedure of public investment system. Actually ADP and public investment are not different. Public investment is directly familiar in developed countries. They mainly conduct the different types of public investment for different sectors. On the other side, some developed countries conduct public investment without doing

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differentiate. Though public investment is organized in different ways but the aim and objects are the same for all countries. In this view, public investment in other countries and ADP in Bangladesh are the same matter or same thing. Both are played similar role on development process of any country. Therefore, by comparing and contrasting both public investment and ADP, we can conclude both are same. The tiny difference of public investment and ADP is ignorable due to size and economic culture of an economy. In Bangladesh perspective, we consider the ADP is the main proxy of public investment. Finally, we can come to infer that ADP is the public investment in our country.

How ADP is Implemented?

We know that, ADP is mainly known as development budget of our country. Although there are bit difference between programme approach and project approach but the basic process and objectives of both approaches are same. Most of the time, we cannot differ in different approaches. Actually ADP is an organized list and allocation of projects or programmes for a fiscal year. The theoretical base of project approach is mostly similar to our ADP. In project approach, project cycle is a path of viewing the different steps of project. The project cycle holds the six stages or steps namely- identification, appraisal, financing, implementation, evolution and programming. These steps are related to each other. If we consider our ADP implementing style then we can find out the different controllers, influencers, responsibilities person from our government, donors and society. When we observe the project implementation style under ADP, then we get different stages which are given below with a flexible framework.

Stage Structure of ADP in an Eye View

Table-1: Stage Structure of ADP (Self Compiled)

Stage of Project	Doers	Instruments	Outcomes
Plan of project Preparation (identification)	Government Donors Policy makers Ruling party Bureaucrats	Need base Demand of people Political aspect Interest of politician and bureaucrats	Planning paper
Project approval	Government Donors	Political pressure Attitude of bureaucrats Bidding of donors	Accept
Financing style	Government Donors	Interest of donors Interest of ruling party Interest of bureaucrats Wellbeing of people	Sometimes inefficiency emerge
Monitoring of project (implementing period)	Officials of government Local administration Officials of different ministry	Lack of efficient monitoring No action according to IMED report	Delaying project Time consuming
Project evaluation	Government Consultant Donors NGOs Research organization	Donor driven Lack of plagmatism Absence of public interest	Poor evaluation
Re-template of past plan(programming)	Government Donors	Walk to future	Decision and decision Increase cost

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By considering the different stages of ADP, we can conclude an overall public investment implementing style of Bangladesh. This figure shows us a week process of implementing a project under ADP. As a result our economic development gradually delayed.

Recent ADP Trends

If we assess the recent ADP trend, then we can evaluate it as followings-

Recent ADP Allocation (taka in crore)

Table-2: Recent ADP Allocation (Self Compiled)

Fiscal Year	Number of Projects	Allocation			Expenditure		
		Total	Taka	Project Aid	Total	Taka	Project Aid
2006-07	1098	21600	13650	7950	17916(83%)	11709(86%)	6208(78%)
2007-08	1058	22500	13550	8950	18455(82%)	11480(85%)	6975(78%)
2008-09	1040	23000	12800	10200	19701(86%)	11873(93%)	7828(77%)
2009-10	1100	28500	17200	11300	25917(91%)	16405(95%)	9512(84%)
2010-11	1193	35880	23950	11930	32855(92%)	23045(96%)	9810(82%)

Considering the table, we can say allocation of money is gradually increased as well as expenditure. In last five years number of project under ADP is increased. In 2006-2007, number of project was 1098 and in 2010-2011, the number of project was 1193. The increased number of project in last five year is 95 and it is about 8.65% increased. Total allocation of money is 21600 crore and 35880 crore for year 2006-07 and 2010-11 respectively. The rate of increase is about 66.11%. it is must be a significant change but in the mean time project aid is also increased. 7950 crore and 11930 crore are the project aid for the session 2006-07 and 2010-11 respectively. The percentage of project aid is positive and it is about 50.06%. For an independent nation it is not satisfactory that project aid is gradually increased. In this table, according to expenditure of total money is increased that is also a positive sign. It indicates that, our skill and efficiency are improving. 83% and 92% are the total expenditure of money in the year of 2006-07 and 2010-11 respectively. This improving rate is 10.84%.

Internal vs. Donors' Contribution (taka in crore)

Table-3: Internal vs. Donors Contribution (Self Compiled)

Year	Internal resource	External resource
2006-07	11480(53%)	10120(47%)
2007-08	7973(35%)	14527(65%)
2008-09	10010(44%)	12990(56%)
2009-10	12000(42%)	16500(58%)
2010-11	20450(57%)	15430(43%)

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According to this graph, in 2006-2007 the donor's contribution was 10120 crore BD taka which is 47%. On the other side, the donors contributions are gradually increase in 07-08, 08-09, 09-10 which are 65%, 56% and 58% respectively. But, in 10-11dependency on donors is reduce about 14% than previous year. Comparatively the internal resource is increased but it is not satisfactory (53%-57%).

Main vs. Revised ADP (taka in crore)

Table-4: Main vs. Revised ADP (Self Compiled)

Year	Main ADP	Revised ADP	Change%	Main Project Number	Revised Project Number	Change%
2006-07	26000	21600	4400(-17%)	886	1098	212(+24%)
2007-08	26500	22500	4000(-15%)	931	1058	127(+14%)
2008-09	25600	23000	2600(-10%)	904	1040	136(+15%)
2009-10	30500	28500	2000(-7%)	886	1090	214(+24%)
2010-11	38500	35880	2620(-7%)	916	1193	277(+30%)

If we compare the total expenditure with ADP allocation then we have seen that the percentage of main allocation is increased that is 69% to 85% in last five years and revised is also increased that is 83% to 92%. Another interesting matter is although both types of percentages are increase but the gap among main, revised and expenditure are remaining satisfactory which indicate our inefficiency. Revised ADP is not always welcome. Some time it occurred due to unavoidable situation but most of the time we do it. It is the bad sign for our economic situation. Basically revised ADP is not matter at all but the gap between main and revised ADP is the main concern. The large gap indicates the bigger inefficiency that's why it becomes our headache.

Main Sector of ADP

Annual Development Programme (ADP) expenditure (%) by major sectors

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Table-5: Main Sectors of ADP (Self Compiled)

Year	Agriculture, Water Resource, Rural Development & Institution	Industry & Energy	Physical Infrastructure	Education & Religion	Health & Population	Others
1990-91	22.80	15.90	18.60	3.30	8.70	30.70
1991-92	21.20	19.70	21.80	5.00	6.80	25.50
1992-93	20.70	23.80	20.60	8.10	7.50	19.30
1993-94	17.40	18.80	26.70	10.20	7.70	19.20
1994-95	18.20	18.40	28.00	14.20	8.20	13.00
1995-96	16.90	19.30	27.60	13.00	6.90	16.30
1996-97	21.60	19.30	29.70	13.20	7.90	8.30
1997-98	20.80	16.60	26.40	12.90	9.10	14.20
1998-99	22.00	17.50	26.10	13.50	8.20	12.70
1999-00	23.80	18.90	27.50	12.80	8.10	8.90
2000-01	22.80	18.00	30.70	13.30	7.30	7.90
2001-02	20.90	17.10	32.60	14.20	7.90	7.30
2002-03	18.12	18.84	25.39	13.88	6.72	17.05
2003-04	21.91	25.19	26.18	12.28	8.27	6.17
2004-05	20.33	29.20	21.23	13.70	8.17	7.37
2005-06	24.25	19.48	24.68	13.83	9.59	8.17
2006-07	25.30	15.85	23.98	15.48	9.97	9.42
2007-08	24.04	16.49	19.68	13.46	10.85	15.48
2008-09	26.99	14.83	22.56	15.99	10.71	8.92
2009-10	24.49	14.83	24.84	16.61	10.01	9.22
2010-11	23.50	22.08	21.95	14.85	8.72	8.90

If we compare the main sector of ADP, then we can conclude it almost remaining same. There is no significant change but it is sure that the composition of ADP is changeable. The expenditure in main sector is remaining unchanged from year to year. It is helpful for future plan that the main sector of ADP is known.

Problems related with ADP

There are a lot of problems related with our development budget. When we try to implement our annual development plan then we have to confront different types of difficulties. All of the problems are inter-related each other. Some problems are mention below with their stage.

General Problems

1. Corruption
2. Inadequate fund
3. Low infrastructure
4. Political pressure
5. Bureaucratic interest
6. Conditions given by donors

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7. Adverse natural activities

Pre-stage Level

1. Delay in submission of project plan
2. Weak preparation of DPP
3. Lack of risk management issues in DPP
4. Time lag in project approval

Related with Resources

1. Inadequate of fund
2. Delayed release of fund
3. Improper allocation of fund
4. Delayed in reimbursement of foreign aid
5. Delayed decisions/ agreement with donors
6. Misappropriation of fund
7. Devaluation of local currency
8. "Token allocation" in inclusion of project
9. Scarcity of skill workers
10. Lack of building tools and quality materials
11. Long import process
12. Official structural problem
13. Restrictions on constructing infrastructure in particular region due to natural impediment as well as misuse of political power

During Implantation

1. Delay in procurement processing
2. Lengthy custom clearance process of needed equipment
3. Difficulties in land acquisition
4. Unsuitable selection of project site
5. Complex procedure of utilization of released fund
6. Long time for applying implementing decision
7. Lack of proper supervision

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8. Haphazard coordination and cooperation among departments
9. Revision of project content
10. Delay in architectural and structural design approval
11. ADP revision due to fund and time
12. Delaying one project impact another project
13. Improper way of resource allocation and mobilization
14. Weather situation and natural calamities

Way of Recovery

1. Due time approval of project
2. Proper modify of DPP
3. Proper modify of different stage of project
4. Adequate allocation of fund
5. Release of fund in time
6. Ensuring proper use of foreign aid
7. Make a proper priority list
8. Ensure the necessary equipment in proper time
9. Proper and timely decision
10. Supervision of higher authority
11. Ensure the cooperation among different departments
12. Strengthening the planning section of government
13. Create awareness to bureaucratic people
14. Uproot the corruption from top to bottom of ADP
15. Improve the managerial know-how and technology
16. Make a strong plan to recover natural bad impact

LITERATURE SURVEY

Effect of public investment on economic growth is recently a sound topic for developing countries as well as others. Separately public investment and growth are lively discussed economic topics. Growth mainly depends on public investment. We are going to find out the relation between growth and public investment. In previous time, a large of consonant inquiry has done on that theme. Here we try to eclectic delineate some of them.

William E. Cullison (1993) ensures that there is a positive influence of government programs to promote the economic growth. Government sponsor programs are important because Robert Kuttner (1992) think that, the proper remedy of economic slowness is to restore investment by relying primarily on public expenditure. An IMF working paper prepared by Benedict Clements, Rina Bhattacharya and Toan Que Nguyen (2003) examined there is likely to be a positive relationship between openness and public investment ratio. M. Emranul Haque and Richard Kneller (2008) examine the growth effects of public investment in the presence of corruption in developing countries. And corruption reduces the hyper development rate of any economy. Ejoz Ghani and Muslehud Din (2006) try to find the impact of public investment on economic growth. They are using the vector autoregressive (VAR) approach with the help of data (1973-2004) Pakistan. Pooloo Zainah (2009) recently discusses the role of public investment in promoting economic growth in an African island country Mauritius over the period 1970-2006. Alfredo M. Pereira and Maria de Fatima Pinho (2006) address the positive effect of public investment on economic performance in Portugal.

Era Dabla-Narris, Jim Brumby, Annette Kyobe, Zac mills and chiris Papageorgiou (2011) analyze 'investing in public investment' under IMF, covering 71 countries including 40 low income countries, arguments for significantly boosting in physical and social infrastructure to achieve sustained growth rest on the high returns to investment in capital scarce environments and the pressing deficiencies in these areas.

Subarna Pal (2008) addresses on 'does public investment boost economic growth?' And answer is very positive. Richard H. claria (1993) presents a neoclassical model of international capital flows, public investment and economic growth. Eduardo Cavallo and christion Daude (2008) test empirically the linkages between public and private investments using a dataset for a large sample of developing countries over almost three decades and find that a strong and robust crowding out effect.

Syed Adnan Haider Ali shah Bukhari, Liaqat Ali and Mahpara saddaqat (2007) have been studied to investigate whether there exists a long-term dynamic relationship between public investment and economic growth with heterogeneous dynamic panel data from Singapore, Taiwan and Korea. Wadud saad and Kamel kalakech (2009) inquired the growth effects of government expenditure in Lebanon over a period from 1962-2007, with a particular focus on sectoral expenditures using a multivariate cointegration analysis.

Pedro Brinca (2006) analyzes the impact of public investment in Sweden with the help of VAR approach mainly, solo model production function and granger causality analysis. This econometric result suggests the existence of an indirect of the growth rate of public investment in GDP through the growth rate of private investment as well as a feedback mechanism between the growth rate of GDP and private investment.

Growth VS ADP: An Empirical Overview

For empirical analysis, we consider the following model because of economic significance.

$$GDP_t = \beta_0 + \beta_1 ADP_t + \beta_2 GCF_t + u_t$$

This study proceeds with the OLS method.

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Descriptive Statistics of All Variables

With the help of E-views, the descriptive statistics of ADP, GCF, GDP are as follows:
Table-1

	ADP	GCF	GDP
Mean	2023551417.11	8029994335.12	38726349794.91
Median	1421188630.49	5115856784.60	32010406325.13
Maximum	7131782945.73	24353431450.07	88507817580.73
Minimum	99582588	498060373.68	1586254341.02
Std. Dev.	1786098874.03	6733854274.00	20478926960.04
Skewness	0.891632	0.922952	0.905424
Kurtosis	3.039959	2.661811	2.732600
Jarque-Bera	5.170143	5.722821	5.444839
Probability	0.075391	0.057188	0.065716
Sum	78918505267.34	313169779069.79	1510327642001.72
Sum Sq. Dev.	1.21E+20	1.72E+21	1.59E+22
Observations	39	39	39

All data are in US dollars

From the table we consider that the frequency distributions of all variables are not normal. Skewness is a measure of a distribution about its mean. The skewness values of all variables are less than unit and nearest to zero. The kurtosis values of all variables are closed to 3 which indicate that the distributions of all variables are normal. Kurtosis measures the peakedness or flatness of a distribution. Kurtosis value of ADP indicates that it is leptokurtic distribution and the other two variables (GDP and GCF) are platy kurtic distribution.

Table-2

	Coefficient	Std. Error	t-Statistic	Prob.
C	14439454875.46	275460712.81	52.41929	0.0000
ADP	1.292874	0.575230	2.247576	0.0308
GCF	2.698719	0.152575	17.68781	0.0000

By considering the whole analysis of results, we can conclude that there is a long run relationship between public investment and economic growth. Coefficient of ADP and GCF indicate that the 1 unit increase of ADP and GCF ensure the GDP also increase by 1.292874 and 2.698719 unit respectively. At last we can say public investment has positive impact on GDP of Bangladesh. So, we can enhance our economic growth by ensuring adequate public investment.

Recommendations for policy makers

The government should consider some necessary steps to prevent the problems which described before because we find the effective relation between public investment and Economic growth. Political institutions and actors should be more compromising and consolidate democracy with stable situation for the economic development of the country. The administrative structure should be more accountable and transparent to achieve a good

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governance system that restrains corruption. The government should enforce monitoring and evaluation procedures in establishing the infrastructures that can ensure more implementation status of ADP. We should also emphasize human resource development through practical education and training programs. We believe that if government considers it then economic growth will enhance.

Research Limitations

Limitations are common phenomena in all type of research. As with every research, some limitations should be acknowledged. Specially, there are limitations in our research inherent in all quantitative analysis. The use of modelling restricts inputs and the selection of model inevitably shapes outputs. It is noted throughout that quantitative researchers use a variety of models; this study used a model which was considered capable of generating simulations from Bangladesh perspective data. The main limitations are followings-

Firstly- Used dataset not contain the original form. We transfer it to ensure same unit of all variables. This is done to make easy and improve the empirical test but nevertheless it is not hold the ideal shape of research.

Secondly- Due to constraints, it was not possible to test all the determinants of economic growth all well as all type of public investment. This resulted in the exclusion of some of independent variables. Although public investment under Bangladesh bank is one of the most important determinants of economic growth, this variable is excluded from our analysis. The main reason for this is unavailability of data. This data is available for only few years but it is not reliable for analysis. That's why we exclude this variable. There is a possibility to improve estimation process if we could include this variable.

Thirdly- When we discuss the impact of public investment then we should consider the impact of private investment since there is a possibility of crowding out or crowding in effects. Nexus between public investment and private investment is also important to find out the relation between public investment and growth. But here we completely ignore it due to test the direct impact of public investment though partial impact is also necessary. Due to preserve unique impact of public investment we exclude discussion about private investment.

Direction for Future Research

In the future, data collection in Bangladesh will be able to support monthly time-series. It would be interesting to pursue a similar but another study using monthly time-series data instead of annual data.

Moreover, this thesis focused on Bangladesh as representative of developing economies. Further work could apply the methodologies developed for this study to a range of other developing countries. However, the estimation equations should be constructed to fit the specific public finance structure in each country. Further studies using different conditions for public investment, for example, different types of dummy could add significant insight on the effects of economic growth in our country. Here we do not include the data of Public Investment organized by Bangladesh Bank due to lack of whole data. So, in the future any one can try with it. Moreover, from the review of the literature, public investment can *crowd in* private investment. Therefore, further research is necessary to prove the estimation of private investment captures the relationship between output growth and public investment.

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CONCLUSION

This study examines the relationship between public investment and economic growth of Bangladesh. We applied appropriate econometric test, process into the data from 1972 to 2011 to show the relationship. The results indicate that public investment (mainly we consider ADP as a proxy of public investment) has significant effects on economic growth of Bangladesh. So, the government's action and policies are necessary to unleash economic growth by way of implementing ADP properly. Here it should be mentioned that the political stability, transparency guarantee to abolish corruption, skilled workforce, and developed infrastructure are essential to maintain the standard rate of implementing ADP as well as growth of ADP. If the government can ensure these necessary steps, ADP will impact more positively in our economic growth.

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NOMENCLATURE

ADB- Asian Development Bank
ADP- Annual Development Progrmme
DCEC-Dhaka and Chittagong Economic Corridor
DPP- Development Project Proforma
ECNEC- Executive Committee of National Economic Council
GCF- Gross Capital Formation
GDP- Gross Domestic Product
IMED- Implementation Monitoring and Evaluation Division
IMF- International Monetary Fund
OLS- Ordinary Least Squares Method
PEC- Project Evaluation Committee
PI- Public Investment
PPP- Purchasing Power Parity

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