EFFECT OF THE GOVERNMENT EXPENDITURE ON PRIVATE INVESTMENT EVIDENCE FROM ASIAN COUNTRIES

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CERTIFICATE OF APPROVAL

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Dedication

This thesis is dedicated to my great father, beloved mother, my elder brother, teachers and all those friends who have supported me since the beginning of this thesis. I thanks my father and all my family for the interest they showed in my studies and the motivation they gave me during those trying times when I had doubts about my abilities.

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Abstract

The study examines the effect of the government expenditure on private investment. Period of the study is from 1995 to 2014.Asian countries were selected for analysis purpose which included Pakistan, China, India, and Bangladesh. Panel data analysis is used in this study. Finding of this study reveal that infrastructure and social development is positively and significantly related to private investment. Whereas health and agriculture is negatively and significantly affect the private investment, while education, total debts do not effect private investment.

Key word: Government Expenditure, Private investment, Asian country.

Chapter 1

Introduction

1.1 Introduction

Investment is key factor that differentiate the developed and developing countries. Higher private investment will to higher level growth the countries investment will be high, while low investment leads to lower growth rate, low production capacity and favorable opportunity for the poor people to improve their living style. Investment is a solution for economic growth and extension in any developed country. Investment is the part of capital for a positive time period to get the future profits. This is common opinion of the researchers that investment has positive effect on economic growth.

Private investment inflow of countries is to make potential state revenue. Second benefit arise from private investment is that improve the tax income into countries. Tax income from private investment and individual profit with in state has potential effect and improvement in particular fiscal position of countries. Private investment is important for developed and developing countries. Private investment play important role in business opportunity and employment opportunity. kopiaboon (2008), kim (2007) argued that private investment is major concern with policy maker and researchers, that effect private investment in economic policy debate and crisis-effected in south Asian countries.

In fiscal policy the effect of public expenditure on private investment is important issue. That's why many studies have provided insight on this problem, which has main focus on the theory of substitutability and complementary hypothesis perfect link among public expenditure and private investment.

Kanashiro (2013) suggested that the theory of substitutability between environment, society and economy effect the private investment. Increase in government expenditure decreases the private investment. Whereas the complimentary hypothesis emphasizes that

increase in government spending increase the private investment. The effect is for the theoretical controversies, there are many studies have been conducted on this area.

Monadj (1993) study and find the basic support the theory of substitutability hypothesis and complementarily hypothesis. Some previous studies have shown strong supports for either the crowding out or crowding in effects. Crowding in and crowding out effect means if the government expenditures decrease then crowding in and if the government expenditure increases the crowding out effect explanation of crowding in and crowding out taken from the research article.

Laopodis (2001) find the strong evidence of crowding- out effect and some countries have crowding- in effect. The main issue discussed by the financial literature is that government spending crowed out or crowed in with private investment. In earlier studies examine the effect of government spending on private investment theoretically two views is discussed. First argued is that if government expenditure increases then two penalty occur on private investment. Increase in government spending will be financed that inflict a higher demand of funds and might indirect taxes influence the public in capital market segment. The result of this act is that the interest rate will be increased. The sum of financial saving will reduce for private investment and the small anticipated gain of personal funds lead crowd out private investment.

Other expenses of the government create new problem about private expenses to provide advertising related infrastructures like international airport, sewerage system, highways, and streets. The reality of infrastructure facilities may increase the production of non government sectors i.e. the private sectors, which is beneficial for better overall infrastructures. So the result will show the crowding in effect on private investment. Private investment play basic role in economic development and growth of developed and developing countries. The common opinion of the researcher is that economic growth has significant positive impact on private investment. So it is not clearly defined that whether one (public expenditure or private investment) has higher influence on economic

growth and development. Empirically and financially support that Private investment is the major determinants of economic growth, and development of the countries.

Global Private investment is the gross fixed asset capital formation of a private sector, where PI private investment or gross fixed asset capital formation is expenditure on gaining of fixed asset including spending on machinery, building, construction, equipment and other related goods like roads, dams, tunnels, transport, ports and other communication equipment. It also includes the capital maintenance and fixed asset sale in separate market segment.

Public expenditure refers to government expenditure or government spending which is passed by the central state and home government of any countries to pay attention and influence the mutual and social needs of the people of the country.

The result of the study show that Public expenditure and private investment are complementary with one another and public expenditure component effect the private investment in the economy and promote the private sector. The progress of real credit in private sector had significant and positive impact on private investment. This is supported by the results and suggestion that credits is an issue and remains a problem for a private investment. The question of the finance must be addressed in order to ensure continues participation of the private investment in public expenditure. Government expenditure some time positively private investment and some time negatively affect private investment.

Importance of private investment for economics progress and development in developing countries is well known fact. Private investment is regard as important part to promote international and continuous growth that rotate and help in reducing the poverty .Similar response of private investment to change the economics policy or fiscal policy of the government. Many developing countries faced the economic difficulties in the 1980s (current account, deficits rising interest rate, debt burdens, and inflation rates) to point out the policy maker and shift the development strategies, utilizing the resource, along with important role of private investment. Reinhart (1989) study examines and conduct the result that private investment in growth process as compared to the public investment.

The quantity of financial saving for non-public investor means that private investor reduces and the expected rate according to the return of private capital have substituted effect on private spending.

There has been extensive work carried out in the area of public expenditure and private investment .But although the wide theoretical and empirical work passed out in various areas, in

The research the effect of government expenditure and the component variable of government spending on private investment have low attention in past especially in Asian countries like Pakistan, India, china, and Bangladesh. In further vocabulary in proportion change in government expenditure is greater than impartial change in GDP. The growing share of public expenditure in developing countries including India is on the revenue account and largely non-development in nature. These expenditures include subsidies, interest payments, defense and administrative expenditure. However on the development side, the expenditure on social service accounts for growing proportion.

Government spending component has two effects on private investment. One is favorable crowding in and the second is crowding out. In crowding in the government expenditure component decrease the private investment and crowding out the component of the government expenditure increase the private investment. On the positive term component government expenditure improve the private investment. Which in turn stimulate the economic growth. The second point that government spending may mass out the private investment, that whys enhance the financial growth of the countries. It is important to identify in which the government spending boost the private investment in four selected Asian countries.

The main issue of Pakistan and the other Asian countries like India, china, and Bangladesh is economic growth and private investment which is declining for all the time. This study is conducted for the effect of government expenditure on private investment in Asian countries the study result may be helpful to make fiscal policy and revival plan for the Asian countries.

1.2 Theoretical Background

The effect of public spending on private investment is well documented in the previous studies government expenditure focus on financial market and economic growth of the countries. Private sector investment in Pakistan is important when Pakistan work at this policy to growth the economy. Financial shortages were control by the reducing of development expenditure. Fiscal policy analysis support their action and crowed-out private investment. Small amount of resources for private sector investment direct to compete, rate of interest will be up, and the private investment will crowed in.

There are three different view exist in this research the effect of government expenditure component on private investment relates with Neoclassical school, Keynesian model, and Ricardian Equivalence Approach which is explained in details, and give strong support for this study.

1.2.1 Neoclassical School

Neoclassical school MarshallSmith (1996) argues that government expenditure have an adverse crowding-out effect on private investment.increased in government spending is financed with debt and taxes ,decrease the people purchasing power of goods, services and saving, and the intrest rate go up which make the credit expensive for private sectore that's why private investment in neoclassical school theory croweding out. Monadjemi (1993) and Aschaurer (1985) provide stronge evidence to support the neo classical school theory.

1.2.2 Keynesian Model

Keynesian theory however component of government expenditure for both the purpose to promote the economic growth and private investment. Keynes (1936) argued that government expenditure has multiple effects on the economy. Decrease in government spending promotes economic activity and crowding in private investment. When the economic resource is useless then crowed in private investment occurs. Government should take up the funding of the project to promote the private investment.

The individual earning money and increase the buying power of people effect the private consumption and has postive impact on private investment. The school of thought is supports by Erenburg and Wohar (1995), Karras (1994), effect of component government expenditure on aggregate private investment Olaniyan (2000).

1.2.3. Ricardian Equivalence Approach

The theory of Ricardo's Equivalence fall out that there is no matter that government chooses to increase spending, in tax financing, or in debt financing there is no changed the outcome will be same and demand will be unchanged. That why public saves the excess money to pay the future taxes increase and pay off the debt. The theory says that customer save money rather than spends. Tax will be cut from income, and this will be lead to an equivalent increase in savings. Government spending is raised by debt financing and private spending should reject the unit of money with higher regular public consumption. Ricardian (1890) Start the equivalence theory. David Ricardo in nineteenth century (1990) is the first who propose the possibility give the in the form of the equivalence theory.

1.3 PROBLEM STATEMENT

Private investment play important and basic role in economic growth, and necessary for economist in fiscal policy maker but the question arise that how the government policy impact on private investment. Government spending component like expenditure on health, infrastructure is positive and favorable effect on private investment in this point of view the government have not only economic growth directly but indirect promote private investment. Some past study show that government spending component crowding in and crowding out private investment. So the different policy conclusion leads about the public expenditure. It is very important as well as problem which motivate the empirical exam, and result of the government expenditure on private investment in south Asian countries. The study examines the main problem. The effect of government expenditure on private investment in Asian courtiers like Pakistan, India, china, and Bangladesh.

1.4. RESEARCH QUESTION

- Does government expenditure effect private investment in Asian Countries?

1.5. Objective of the study

The major objective of the current study is

- To examine the effect of government expenditure on private investment into Asian countries.

1.6. Significance of the Study

This study is conducted to check the effect of government expenditure and the variable of government expenditure and private investment. This importance of the study is limited for south Asian countries. Today in selected Asian courtiers the private investment grooming is weak to boost up the private investment there is necessary to make an appropriate policy to improve the private investment and this is the requirement of time, to maximize the benefit and reduce the possible threats arise in private investment and improve the economic progress and financial development. Many study have been conducted to investigate the relationship between government expenditure and private investment in Pakistan and in other countries but this study is conducted to examine the effect of government expenditure on private investment evidence from Asian countries. Asian courtiers include the

- Pakistan
- China
- India
- Bangladesh

1.7 Scheme of the Study

The study is planned as follows:

Chapter two present related literatures to the government expenditure and the effect on private investment in Asian countries. Chapter three explains methodology and data description. Chapter four includes analysis, result and finding. And chapter five reports conclusion, recommendations, and future research direction.

Chapter 2

Literature Review

The literature reviews provide previous many studies of the different scholar who examined the effect of government spending on private investment. The study of government expenditure and private investment start in US nineteen century this period of study the researcher concluded the result that private investment and government expenditure have positive relationship.

Olison (1984) explain that government expenditure directly enter in to private sector production, infrastructure, and education. Government may indirect influence the private sector production and the resource allocation of input and production actions. That,s why the government expenditure makes guarantees property rights, corrects the markets failure, and provides essential goods.

The theatrical study is concerned with government expenditure and private investment with crowding in and crowding out effect. The degree of sustainability and effect of government expenditure on private investment matching between expenditure and private investment may crowed in / crowed out in private investment. Gupta and khan (1984), find strong negative relationship among government investment and private investment using the method of TSLS Two stage Least Squares estimation methods, OLS on least squares method respectively. In other hand Villanueva & Greene study and suggest that public investment crowding on in private investment, for example low private transaction cost via infrastructure provision.

Oshikoya(1994), study and find the strong evidence that government expenditure on infrastructure is positively affect the private investment, while non-infrastructure investment has negative effect on private investment. While there is some difference over the direction of the effects, there is large identification that public investment is very important to private investors. Therefore this variable is correct for the private investment equation. And we use the ratio of government investment to gross domestic product or GDP as regressed.

The purpose of public investment infrastructure term in private investment conclusion has been studied in a number various equation of investment is used for developing countries.Also the study include Greene & Villanueva (1991) Blejer and Khan (1984), Galbis (1979), Gupta (1984), and Oshikoya (1994). The level of public investment is financed by domestic credit, the saving fund will be available for private sector to reduce that why government invest and private investment crowding out.

Aschauer, (1989) examines the data from1953-1985 and differentiate that government expenditure on private investment have some specific effect depend on the type of government expenditure being considered. Positive relation of government expenditure on private investment is crowding out. While negative or insignificant relation crowed in private investment. The results of this article indicate that this not enough to consider the all level of government expenditure is same.When assess the effect of fiscal policy on economy rather it is important to differentiate the categories of public spending.

Khan and Reinhart (1990) study the private investment in developing countries and concluded the empirical result that how those courtiers have many economics issue such as inflation, growth rate, foreign debt, deficit in trade, and low level of living. The result show that public and private investment complement with each other not compete each other. The researcher fined that private investment had larger effect then public investment on economic development or economic growth of any countries.

Khaled (1993) studies the private investment in Pakistan with special focus on public spending with private investment. After the analysis he found that private investment have positive and significant relation with GDP with growth, with credit to extend the private sector and government.

Devarajan (1993) explore the relation between government expenditure and economic growth.The study finds that how government expenditure effect economic growth, and show that increase in production expenditure lead to higher continues growth rate of the economy. Period of the study is from 1970 to 1990 in 69 developing countries. Determined which government expenditure are productive or unproductive expenditures. Government expenditure component includes capital and current defense expenditure,

education, and health to access the spending is more productive and this all expenditure effect positively per capita growth rate, only the current expenditure has positively effect, while expenditure on health, education, and defense have negative effect2. The current expenditure is consider to persistent spending, spending on consumed items such as stationary, drugs for health service, wages of labor, and salaries etc. on the other hand capital expenditure is spending on fixed asset building, roads and machinery. Cofficient and insignificant result of this model is not appropriate. Such a model is miss specified and poor data. The result will be not clearly defined, the model is more complicated by further and more research spending on education, health, and infrastructure is more productive.

Fredriken (1997) explore the effect of public expenditure with private investment induced or crowed out private investment. From the result the private investments show that there is positive and continues trend. Focus on government expenditure or investment shift to large size manufacturing company to energy private sector. This is helpful to attract private investment in the country.

Akpokodje (1997) studies the private investment and conclude the result that private investment play central role to develop the economic condition and recover the economic growth of any country. Governments want to influence the level of private investment in developing countries. Government expenditure component separately one to one effect the private investment in developing countries.

Argimon (1997) examine the relationship among government expenditure and private investment. Using panel data of for ten 14 OECD countries. They found the existence positive crowding in effect of government spending on private investment. Positive and significant impact of infrastructure on private investment productivity. That why government expenditure appear to crowed out private investment.

Erenburg (1995) examine the relationship among private investment and government expenditure of public capital. Test applied granger causality using annul data of USA from 1954 to 1989, 35 years period. In this study the special focus to influence the provision of public capital infrastructure on private investment and including activity of

public sector investment. Public capital with specified variable in the major theoretical private investment models. Government expenditure and private investment share mutual relationship. Adding to their finding existence of opinion effect between public expenditure and private investment.

Oshikoyo (1994) studies the determinant of domestic private investment. Period of the study was 1970 to 1988 include eight African countries. Result conducted that government spending on infrastructure had positive significant impact while non infrastructure had negative impact on private investment. The expected effect of domestic inflation and private investment performance in middle class income countries is positive insignificant.

Hyonseng (1998) studies the relationship for three OECD countries; government expenditure has significant and positive response to the private investment only in Australia not in other two countries. The response in Britain of private investment to shock the government investment was negative over the 20 quarters.

Seven (1998) study that differentiate the government spending is focused to analyzed the impact of government expenditure on private investment. He differentiates government infrastructure investment and non-infrastructure expenditure. The result is concluded that increase in public infrastructure rise the private capital for long run by falling in private sector. But on other side rise in non-infrastructure capital, expending capacity decrease and private investment depend to close the substitutes are final goods supplied by the public and private sector. Higher degree of sustainability growth in public non infrastructure spending will result crowding out private investment. The examiner focused on the private investment and government expenditure in out in factor market.

Associate (1999) the following studies is based on series of individual country that is both of quality and quantity of investment is reduce due to a multiple factor including range on private agents, access to foreign saving, and excessive wrongly directed public expenditure.

Government expenditure in regular macro investment model was first to be consider by Aschauer (1989) he check the neoclassical school theory where government expenditure impact on private investment is hidden and the rate of return on non-financial capital study is to be estimated to find out the effect of various type of public expenditure on private investment.

Furceri and Sous (2011) observed the impact of public expenditure on private sector investment. Data is panel used in Period of study is from 1960-2007 and countries include 145, result of the public expenditure produce crowded- out effects and insignificant negative for private investment and private consumption. The second point is to be cleared of this article is that the effect of public expenditure on sector vise private investment and consumption based on the sequence of production cycle but it is totally different from region to region due to sustainability.

Wang (2005) observed the effect of public consumption expenditure on private investment in china. They divide the public expenditure into infrastructure, capital, and protection of property, education, defense, social development, health, and debt charges. The finding of this study is that expenditure on services, expenditure on debt charges has no significant effect on private investment. From other side government spending on health and education has significant positive crowded in effect on private investment. While the government spending on capital and infrastructure has negative crowded-out effect with private investment.

Patrick (2006) examines the determinant of private investment bostwana and gets a significant positive effect of gross domestic product on private investment. Government spending has negative effect on private investment depending on the bases of their location which is infrastructure and non-infrastructure public investment in the countries. Patrick fined insignificant effect of inflation rate with private investment for short run and long run.

Bazomna (2004) studies determinants of private investment in Africa country Senegal. They Conformed the result that there is positive relation among private investment and explicative variables. Infrastructure investment was positive relationship with private

investment GDP. Private investment has negative effect on credit in private sector and trade has significant positive effect with private investment.

Similar studies of Bello (2010) find the stated relationship for Nigeria, using data from the periods 1975 to 2009, and find that government spending crowding- out private investment.

Also the era under kuptel (2005) examined the efficiency of economic policy in expenditure is crowding out the theory for long term in turkey. Raise in public expenditure are found to crowding in with private investment. But boost in government shortage crowding-out private investment in long term. The results verify both the neoclassical and Keynes view for turkey, as for crowding out and crowding in effect.

Ozdemir (2006) examined and find that there is negative relation between government spending and private investment.co integration analysis of panel data is be used from the period of 1967 to 2001.

Holcombe (2006) study include 19 developing countries observed the relation between public spending with private investment where he calculated the causal collision of public spending on private sector investment. For long term he justified that one 1 % raising of government spending will result to about 0.5 % increase in private investment. Notably, the short run impact is positive but half as large.The public expenditure hypothesis using panel data analysis by several researchers, whether using panel countries, economic sector, and industries.

Also the previous studies of panel relate to public spending hypothesis by Evans and Karras (1994) the study used panel data for OECD countries. Expenditure on education Is more productive while capital expenditure reduces productivity. They disaggregate the public spending and various component of public expenditure such as health and hospital, police and fire, highways, education, and sewer and sanitation services.

This model provides a reasonably compressive idea of role is used to determine the productivity Expenditure. At all the time the will be focus on the manufacturing output and government spending on the production or manufacturing. The point is clear that

most of the government expenditure are UN productive capability the does not means that we should eliminate them.

If we do not that what is the alternative is .especially the government is assuming a non-market role and procedure. Their result showed that government expenditure has negative influence the private investment.

ZugastiAvilés (2001) studies public infrastructure effect on the performance of private investment in Spain at the industry level. The sample of studies consist 14 industries chosen for six selected sector which include construction, restaurant and hotel, transport and communication, manufacturing and other financial services. The result of panel analysis showed that public infrastructure is different across industries, where the values of parameter show that public infrastructure provide benefits for chemical industries and lowest for non metallic and mineral.

The result showed that public capital effect on private investment is diverse, dependable on sector.

Valadkhani (2004) examined the determinant of private investment in Iran economic system They conclude the results that there is negative relation among inflation rate of any country and private investment and he say that increase in inflation rate one percent in the long term make the result 1% decline in short term in investment.

Ahmad (2008) study the effect of macroeconomics uncertainty and public expenditure on private investment in service sector in Pakistan from the period of 1972 to 2005.used panel data co integration analysis, they find that raise in the government expenditure down the rate of interest and private investment and similar micro economic uncertainty and instability negatively affect the private non developed sector. Further they suggest that increase in non development government expenditure may enhance the taxes and budget shortfall. Economic shortfall is cause of depreciation in home countries currency and effect the foreign investor, non developmental public spending economically encouraged the private investment. Interest rate is to be considered the investment climate to undertake sector of the economy to encourage the private investment activities.

Mamatazakis (2001) examines the long term relationship between private investment and different variable of government expenditure using co integration analysis of multivariate system. He found that government spending assert a positive effect on private investment. The capital accumulation process is supporting by this way. And the other side that government consumption participates with similar resource with government investment and the private investment effect negatively.

Laopodis (2001) study the effect of government expenditure categorized as military and non-military on private investment, using the ECM and co integration analysis. Along with the non-military public expenditures were expenditures on infrastructure, consumption and other general spending by the government. Empirical study of Greece, Portugal, Ireland and Spain shows that government capital spending stimulates investment in some cases. There is a argument about military spending and its economic effects and as per this study military spending had no influence on private investment.

A study by Wang (2003) for Canada during the period 1961- 2000 sought to establish long term effects of government spending on gross private investment. Government spending was on education, health, capital, and infrastructure and on charges on debt. Using ECM and Co integration, he found that government spending on health and education have crowding-in effects whereas government spending on debt charges, infrastructure and capital has crowding-out effect on private investment. Other expenditures on consumption, social services and protection of persons and property had no statistically significant long-run effect on private investment.

Narayan (2004) studied the impact of public investment on private investment for Fiji using the ECM. He divided the sample into two where he found co integration involving government expenditure and private investment over the period 1950-75 and no co-integration in the period 1976-2001. There was crowding-in of private investment by government spending for the first period while in the second period, a statistically weak relationship existed.

Pereira and Sagales (2001) Study the effect of public investment on private sector performance in Spain. The study focused at aggregated as well as disaggregated sector

levels where he found that in the overall level of public investment crowds in private capital accumulation and stimulates private sector production. The real result show that the disaggregated level of the public investment promoted private capital accumulation. Service sector was the most important gainer in absolute terms with all other sectors but agriculture having some benefit. The benefits were distributed such that service sector benefitted in terms of private investment, while construction, and manufacturing benefits in terms of output and employment. The observation from the study was that public investment made manufacturing more labor-intensive while service sector becomes more capital-intensive.

Lensink and Morrissey (2001) examined the two categories development (Developmental and non-developmental). Developmental expenditures are focus on infrastructure and the degree of infrastructure to go it up, and hence positive effect on private investment. But non developmental

Public expenditures component affect positive because of the demand channel, in term of budget deficit also effect negatively, for future the taxes has no opposite effect on private investment. In age of privatization the government expenditure of develop countries consistently expend on develop as well as none develop heads .Miller, study undertaken to examine both the developing and developed countries. Sample of countries data is 39 from the period of 1975 to 1984,applying random and fixed effect model the result conclude that expenditure on transport and communication is stimulate to crowding-in effect in developing countries while government expenditure welfare shrink private investment for both the country developed and developing.

Wang (2005) in Canada the past literature has been extended for the year of 1960 to 200. Using the co-integration analysis and error connection model, he found that government expenditure, debt charges, government spending on social services, person property and protection has not significant effect on private investment. But spending on health and education has significant positive crowding in effect with private investment. On the other view, the public spending on infrastructure and capital has crowding-out negative connection with private investment.

Rashid (2006) examine the relation among government spending and private investment in pak.they found that government expenditure crowded- in private investment. They suggested that government expenditure and private investment is complement with each other based on the public investment. The finding of this study suggested that government expenditure on infrastructure increase private investment.

Zhang (2016) examine three study of government spending that is government consumption, government transfer, and government investment. Panel data co integration analysis is used. The government expenditure crowed-out private for short term In Asian countries the public spending on transfer and consumption in private investment. But the effect of government expenditure on private investment is not significant.

Atukeren (2010) examine the economic and political determinants of the crowding in affect of government investment in cross 35 developing countries using profit analysis. Hisresults indicate that public investment is productive and fixed capital investments may crowd in private investment. On these finding he suggested that the effect of developments is the governance factor and the all situation for individual countries.

Neumann (2001) approved away the study evaluate the self-motivated relationship among government investment in six developed countries included France, Japan, Netherlands, Canada, and UK. The study periods is count from 1955 to1994 applied model VAR. depend on their finding and conclude, between the other countries crowding out impact on dominants.Government spending rise in private investment 3 out of six of these countries.

Adugna (2013), Ouattara (2004), Jalloh (2002), Hailu and Debele (2015) government spending directly affect the private investment. Public spending on basic infrastructure such as energy, education, total debt, and social development create helpful environment for private investment. Government expenditure is important variable that effect the private investment. Public saving is two functions. On one side the public spending is complement to private investment and sponsor the private sector development. On other side public expenditure is competent of private sector investment and decrease the fund present for them.

Dong (2006) studies the effect of government spending on private investment in china the result show that government spending crowed out private investment in short run, and for long term crowed in private investment.

Nicolaou (2001) examine three different periods of time using the VAR analysis and unit root test in Africa. Period of time is 1946 to2005, 1965 to 2006, 1965 to2005. The find that public spending does not crowed in nor crowed out private investment, but it generate in direct effect on private investment.

Moff (2007) studies and notes that evaluating the effect government spending on private investment that is important to measure the growth. Government spending does not rise the budget deficit and do not reduce the positive impact of government spending rise in private investment.

Kandilb (2009) provides fundamental insights on the possible private investment crowding-out possibility. The researcher suggest the result that in developed countries rise the government spending crowed-out private investment but the government expenditure in developing countries crowed in private investment. The author argued that in developed state the possible and accessible resource is fully utilized, that why increase in public expenditure lead to constraints of private sector financial resource to fund the activities. Economic condition of developed countries is dependent on private investment decision. Government expenditure provides the important incentive to attract the private investment.

Souse (2011) studies panel data of 145 developed and developing countries from the period 1960 to 2007.To find the effect of public spending on private investment. The result of this finding is related that government spending creates crowding out effect negatively both the private investment and private consumption. The test effect of government spending among various regions is depending on economic cycle phase. The convenient affect of public spending different among countries it does not base one the economic cycle. But base on the observed result, and all the empirical result sure statistically and economically significant and healthy for econometric method.

Afonso & Sousa (2011) examine the effect of public spending on private investment using the data of Portugal period covered 1979 to 2007 quarterly, use method SVAR analysis. The finding of this study is that public spending crowed out private investment.

Başar and Temurlenk (2007) using the same method and same finding for turkey in the period of 1980 to2005 that government expenditure crowding out the private investment, another Study Afonsa in (2009) find the same result in two studies using data of four developed countries and using the same model of study. Countries included Germany,United kingdom's,United State of America and Italy. Such as herald uhlig (2005): Wolff)2006), Alali(2013) also the same observation that public spending crowed out the private investment.

Adnan hussen (2009) observed the lung correlation among public spending and private investment used the yearly data period of study form 1975 to 2008 applied johen co integration technique.The conclude the result that present expenditure such as debt servicing and defense cause the crowding out effect on private investment. But the development expenditure health, education, and infrastructure create crowding in effect on private investment.

Mitra (2006) Voss (2002) the crowding out effect of public expenditure on private investment in Canada. Used VAR analysis model along with quarterly data and conduct that government expenditure has crowding out effect with private investment .at the last we find this study interested.

Teixeira (1999) studies the effect of government expenditure on private investment for the period of 1947 to1990 in Brazil. It concludes the result that private investment is crowded out by the government investment in short run but in long run compete each other.

Atukeren (2005) studies the relationship among public expenditure and private investment twenty five 25 developing countries from the period of 1970 to 2000 for this aim he applied separate test such as co integration test, Granger causality, and probit analysis. As the result he fined that the superior the share of public participation lower the

business in the countries. Restriction on the foreign currency, stability, and development of monetary and fiscal policy is higher the public investment may crowed out private investment .any way empirical observation present mix result. Crowding in/out effect differ from state to state. He reached that 13 out of 14 and 10 out of 11 case of no crowding out effect.

2.1 Hypotheses of the Study

H_5: Government expenditure on Infrastructure On the basis of the above literature the following hypothesis is drawn.

H_1: Government expenditure on agriculture and rural development positively affects private investment.

H_2: Government expenditure on health positively affects private investment.

H_3: Government expenditure on total debt positively affects private investment.

H_4: Government expenditure on social development positively affects private investment. positively affects private investment.

H_6: Government expenditure on education positively affects private investment.

Table 2.1
Summary of Literature Findings

Paper	*Category of Spending*	*Effect*
Landau (1983)	G/GDP	Negative
	Education	Positive
Landau (1986)	Other	Negative
	Education	Positive
	Transfers	Positive
	Capital	Positive
Aschauer (1989)	Infrastructure	Positive
Devarajan (1993)	Current Expenditure	Positive
	Capital Expenditure	Negative
	Defense	Negative
	Health	Negative
	• Public Health	• Positive
	Education	Negative
	• Educational Infrastructure	• Positive
Evans & Karas (1994)	Education	Positive
	Current Expenditures	Positive
	Capital Expenditures	Negative
Baffes & Shah (1998)	Human Capital	Positive
	Defense Capital	Negative (in dvlpg countries)
	Infrastructure	Positive
Hansson & Henrekson (1994)	Government Consumption	Negative
	Government Investment	Negative
	Social Security	Negative
	Education	Positive
Wyatt (2005)	Defense	Positive (not significant)
	Education	Negative
	Health	Positive (not significant)
	Economic	Positive
	Administrative	Positive (not significant)

Chapter 3

Data Methodology and Description

These segments talk about data methodology, variable collection and variable explanation used in current study.

3.1 Data Description

Three types of data available for investigate the current issue at hand. These types are time series, cross sectional, and pooled/panel data. For this study, panel data is collected from the period of twenty years that is from 1995 to 2014.

The study emphasizes on government expenditures component in Asian countries. The following Countries are selected on the basis of data availability in the developing countries.

- Pakistan
- China
- India
- Bangladesh

3.2 Sources of data

The data is collected from website of World Bank and Pakistan statistical books (federal bureau of statistics). http://data.worldbank.org/indicator/ http://data.worldbank.org/

3.3 Variables under study

Variables	Measurement (Proxy)
Government expenditures Health, Education Total Debt, social Development. Infrastructure Agriculture and development	Directly measured as % of GDP(Arusha2009) As % of GDP Taking natural of this four variable Ln(log)
Private investment ln(log)	Gross fixed capital formation is taking natural log to measured the fixed asset, like machinery and equipment building etc.

3.4. Variables definition

This study is taken to find out the government expenditure that strongly determines the private investment in Asian countries like Pakistan, china, India, and Bangladesh. The studies support by some previous literature and topic in different years. The researchers take private investment as dependent variables in this study. And government expenditure as in dependent variable includes component variable agriculture & rural development, Infrastructure, education, health total debt and social development as variables.

3.5 Variables Description or explanation

3.5.1 Private Investment

Private investment is nonprofit agencies in addition its fixed domestic asset are machinery which is fixed not changed. Private investment is nongovernmental expenditure. For private investment fixed asset capital formation is used as proxy.

3.5.2 Government expenditure:

Public spending or government expenditure is all those expenses which the local government expend on his project for example i.e. government school, hospital, tunnel, dams, road other expenses military expenditure, these all are the government consumption. It includes public acquisitions of goods & service, transfer and payment to generate the benefits for future. Spending is classified on two type final consumption and gross capital formation to make the major one GDP.

Public expenditure is to be financed by borrowing the government fund, tax, age, and seignior.The main of economic policy usage to stable the macroeconomic business cycle change in government spending.

3.5.3.2.1 Agriculture and rural development expenditure:

Federal and provincial governments' expenditure, Agriculture expenditure consist the following fishing, hunting, as well as live stock production, farm houses, forestry, hunting, and cultivation of crops to improve the rural area of the countries.

3.5.2.2 Total debt expenditure:

Total debt in government point of view is complex. Total debt comes from nation and from local government. Total debts include long term and short term liabilities or debt. Long term debt is more than one year but short term debt is less the one year. Countries total debt is affected by adding all the liabilities that government take from other nation are from IMF and paid with interest to IMF

3.5.2.3 Health expenditure:

Public expenditure on health is spending on hospital, care center, dispensary, and preventive services available for countries a person which is helpful to prevent the life of our nation from different type of diseases.

3.5.2.4 Education expenditure:

Public expenditure component Education include spending on school collages university and other institution of education which helpful in education. Public spending on education administrates subsidies/ transfer, student and other education services.

3.5.2.5 Social Developments expenditure:

Social development is society welfare concept which is beneficial for society. Although they all provide basic needs provision for the needy and poor, families. Provide medical facility and any other related work with society.

3.5.2.6 Infrastructure expenditure:

Infrastructure is very important and fundamental facility serving in city, country and anywhere this service is necessary to run the economy function. Infrastructure include structure is such as roads, supply, sewers, electrical grids, telecommunications, brigades, tunnels, and so on it is interrelated with system to provide necessary services and commodities to sustain societal living.

Model selection is depend on previous literature but in this study we first test the co integration analysis that is used in many research article included best paper of this research thesis but after the analysis the result is show that there is not positive and negative relation that why the researcher reached at this point that on panel data and previous study of literature we use the panel data regression used and final model of the study fixed and fixed effect model.

To find out the relationship between variables we use the regression analysis. In the regression we use two variables one is dependent variable to which we denoted by <Y>

and the second variable is independent and denoted by <X> in this study we use normally the panel data regression for analysis.

We would like to calculate the value of Y for different values of the descriptive variables X.

We assume that X and Yare linked by a simple linear relationship:

We assume that X and Yare linked by a simple linear relationship:

E (Yt) =a+βXt…….. (3.1)

3.5.9 General equation of the study

$$\mathbf{PI_{it} = \alpha + \beta_1 AGR_{it} + \beta_2\, EDU_{it} + \beta_3\, HE_{it} + \beta_4 SD_{it} + \beta_5\, INF_{it} + \beta_6 TD_{it} + \mu_{it}}$$

Where **PI** is the Private investment, **α** is the constant and ***β*** are coefficients of relevant variables. **i** is for individual country and **t** is for time period and Ln(**log)** is taken of those variable whose values is not present As % GDP . **Pub** is public expenditure, and the other variable is component of government expenditure.

- **PI**= Private Investment is fixed asset include machinery, land building, non-government sector investment, we used proxy for private investment (fixed asset capital formation). As taken log.
- **EDU** = Education Expenditure (public and private learning institutions, schools, universities) (measured as "EDU= Government expenditures on Education Total % of GDP.
- **HEA** = Health Expenditure (medical care, hospital care, physician, preventive services and other clinical services measured as "HEA= Government expenditures on Health total % of GDP.
- **AGR**= Agriculture Expenditures (construction of flood control; Irrigational & drainage systems, crop inspection grading services measured as spending on agriculture total % GDP.

- **SD** = social development Expenditure (, social security, financial assistance, Welfare programs, and other social work measured as SD =Government expenditures on Community services taken log.
- **INF**=Infrastructure expenditure basic objective system of business or nation transport and communication, water, sewage, and electric system) measured as INF= Government expenditure on infrastructure taken log.
- **TD** = Debt Charges Expenditure (liabilities and borrowing fund, debt charges, loan) (measured as TD =Government expenditures on Debt charges taken log.

3.5.10 Panel Data Regression

The following study is conducted to find out the effect of public spending on private investment. Special statistical technique is used to test the effect of government spending on private investment. The data consist time series as well as cross section, thus it is a panel data. Panel data consists observation names N entities at two or more time periods T or repeating cross sections of the same individual. The most important feature of panel data is to observe the same phenomena in different form. To test the model the following panel data techniques were applied the following models.

- **Common Effect Model (CEM)**
- **Fixed Effect Model (FEM)**
- **Random Effect Model (REM**)
- **Redundant fixed likely hood Test**
- **Hausman Test**

3.5.11. Common Effect Model

Common effect model technique is used in panel data. In CEM coefficient are kept back stated that is not changeable t slope and intercept of the variables.

A common panel data regression model looks like

$Yit = \alpha i + \beta 1 Xit + uit$ .....(3.2)

Where, Y_{it} is the dependent variable of the study, X_{it} = independent variable, α_i= intercept, β_1= coefficient, u_{it}= error term, i is for individual and "t" is for time period.

3.5.12 Fixed Effects Model

The panel data analysis consist three form of model i.e. fixed effect model, common effect model, and the last one is random effect model. In the fixed effect model the intercept (β_0) is fixed. In the fixed effect model the intercept is group specific, which means that each unit has own intercept. So this model is called least squires dummy variable model because for each units or group it consist dummy variable for the functions to allow the different intercept (constant) to each or group.

. $Y_{it} = \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + u_{it}$.....(3.3)

Where, Yit = dependent variable, $\beta 1$ = coefficient, X_{it} = independent variable, i = 1, ...,N of observations, t = time period 1,..... ,T

3.5.13 Random Effect Model

Random effect model is also called a variance components model. REM is one of the kind of hierarchical linear models. The assumption of this model is to analyzed hierarchy of differ populations whose differences relates to that hierarchy. In case of REM, there is no relation between variation across entities and independent variables. The essential benefit of REM is that it can attract the time invariant effect.

$Y_{it} = \alpha_i + \beta_1 X_{it} + V_i + u_{it}$.....(3.

where,Y_{it} is dependent variable, X_{it} is independent variable, V_i is between the entity error

$u_{it}$is error term

3.5.14. Hausman Test

To choose whether to use fixed effect model or random effect model Housman test is used. Housman test basically test whether the error term correlated with regresses. The decision criteria is that if the P-value of cross-section is significant than we will use REM while if the P-value of cross-section is insignificant than FEM is used.

Chapter 4

Results and Conclusion

Empirical Finding

We first performed the Descriptive statistic test to know about the panel data behave dependent variable and independents variable and results of this variables. The results of descriptive statistic ware presented in below Table1.

Table1 Descriptive statists

	AGR	EDU	HEA	INF	PRI	SD	TD
Mean	2.93700	2.48271	3.61405	4.43941	3.31591	4.06840	2.30690
Median	2.97543	2.20300	3.37761	4.45725	3.30431	4.12103	2.35232
Maximu	3.30725	4.34744	3.54822	4.55176	3.86463	4.98313	3.7028
Minimu	2.20386	1.62468	2.250	4.27805	2.64763	3.54076	0.72731
Std. Dev.	0.30834	0.64022	0.93277	0.07137	0.36074	0.25714	0.72248
Skewness	-1.02886	1.08969	0.19325	-0.51634	-0.17072	-0.65789	-0.24165
Kurtosis	3.09588	3.36273	1.61396	2.19404	1.79057	2.59423	2.35455
Jarque-Bera	13.7912	15.8642	6.72906	5.57705	5.13268	6.16180	2.11312
Probability	0.00101	0.00035	0.03457	0.06151	0.07681	0.04591	0.34764
Sum	229.086	193.652	281.896	346.274	258.64	317.335	179.938
Sum Sq. Dev.	7.32070	31.5611	66.9947	0.3926	10.0203	5.09148	40.1933

In above table Descriptive statistic the mean value of agriculture and rural development is 2.93 and its maximum value is 3.30 and minimum value is 2.97. The skewness value of agriculture and development is -1.028, it indicates that data are negatively skewed, and the kurtosis value of agriculture and development is 3.09. The mean value of education is 2.482 it is the high value of education in result its max-value is 4.34 and its mini-value is 1.62 this means the data is normal and positively skewed because the value of skewness is 1.06 and the value of kurtosis is

3.36, its show that data is in peak. The infrastructure mean value is 4.43 this is the average of Infrastructure data, the maximum value is 4.55 and its minimum value 4.27. Skewness value is -0.55, its represent that data are negatively skewed and the kurtosis value show the data is in peak at 2.79. The private investment mean value is 3.31 this is the average of private investment, the maximum value is 4.55 and its minimum value is 2.64. Skewness value is -0.170, its represent that data are negatively skewed and the kurtosis value show the data is normal at 1.79. The social development mean value is 4.06 this is the average of social development, the maximum value is 4.12 and its minimum value is 4.98. Skewness value is -0.17, its represent that data are negatively skewed and the kurtosis value show the data is in peak at 1.79. The health mean value is 3.61 this is the average of health, the maximum value is 3.37 and its minimum value is 3.54. Skewness value is 0.19, its represent that data are positively skewed and the kurtosis value show the data is in normal at 1.61.

The total debt mean value is 2.30 this is the average of total debt, the maximum value is 2.35 and its minimum value 3.70 Skewness value is -0.24, it's represent that data are negatively skewed and the kurtosis value show the data is in peak at 2.35.

Panel Regression Model

Table2 Common Coefficient Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.078055	3.988156	-2.276254	0.0272
AGR	-0.455343	0.246885	-1.844355	0.0712
EDU	0.028757	0.021744	1.322520	0.1921
HEA	-0.071165	0.033980	-2.094306	0.0414
INF	1.695539	0.798255	2.124056	0.0387
TD	-0.045639	0.039072	-1.168079	0.2484
SD	1.596500	0.424655	3.759526	0.0005
Fixed Effects (Cross)				
BAN…C	-0.170542			
CHI….C	0.835499			
IND…C	0.225724			
PAK…C	-0.890681			
Fixed Effects (Period)				
1995—C	-0.084328			
1996—C	-0.073276			
1997—C	-0.091457			
1998—C	-0.107306			
1999—C	-0.124039			
2000—C	-0.109544			
2001—C	-0.089626			
2002—C	-0.084158			
2003—C	-0.040207			
2004—C	0.018652			
2005—C	0.064618			
2006—C	0.074061			
2007—C	0.108211			

2008—C	0.097910
2009—C	0.105130
2010—C	0.092974
2011—C	0.078017
2012—C	0.087574
2013—C	0.071709
2014—C	0.078547

Effects Specification
Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.765975	Mean dependent var	3.315918
Adjusted R-squared	0.792246	S.D. dependent var	0.360742
S.E. of regression	0.070093	Akaike info criterion	-2.199279
Sum squared resid	0.240740	Schwarz criterion	-1.323067
Log likelihood	114.7719	Hannan-Quinn criter.	-1.848515
F-statistic	71.09065	Durbin-Watson stat	1.334037
Prob(F-statistic)	0.000000		

Table 2 shows that intercept of the model is common across the cross sectional and time series, so common private investment of four selected country is C = 9.0780.and significant p-value 0.0272 , infrastructure is significant having p-value is 0.0387, education having also p-value is insignificant 0.1921, agriculture also have a significant p value which is 0.0712 and have negatively coefficient. Also total debt having insignificant p value which is 0.2484 and also has a negative coefficient. health which also has significant p- value 0.0414 and have negative coefficient. Social development is significant and p-value is 0.0005 and is positively affect private investment but

significant relationship with private investment. government show negative but significant relationship with private investment.. R-square value is 0.7659 which shows that only 7 % the dependent variable (DPR) is explained by the independent variables. Probability of F-stat is .00 which shows model fitness, Durbin-Watson stat tells about auto correlation, if the value of Durbin- Watson is greater than 1, shows that there is issue of auto correlation in the data.

Cross Sectional Fixed and Period None

Table no 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.589439	3.078795	-1.815463	0.0739
AGR	-0.491976	0.157560	-3.122466	0.0026
EDU	0.001874	0.016884	0.110986	0.9120
HEA	-0.076307	0.032630	-2.338525	0.0223
INF	1.481158	0.523446	2.829627	0.0061
TD	-0.116773	0.029143	-4.006957	0.0002
SD	1.060694	0.203108	5.222305	0.0000
Fixed Effects (Cross)				
BAN…..C	-0.162046			
CHI…..C	0.578769			
IND……C	0.299684			
PAK……C	-0.686439			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.767144	Mean dependent var	3.315918
Adjusted R-squared	0.822796	S.D. dependent var	0.360742
S.E. of regression	0.069581	Akaike info criterion	-2.373428
Sum squared resid	0.329228	Schwarz criterion	-2.071285
Log likelihood	102.5637	Hannan-Quinn criter.	-2.252474
F-statistic	222.4056	Durbin-Watson stat	1.691853
Prob(F-statistic)	0.000000		

In the above table3 the Fixed Effect Model is tested for the purpose to test than the F test for the selection of model between Common coefficient Model and Fixed Effect Model if the result is significant it means used Fixed Effect Model if insignificant than Common Coefficient Model is used.

Redundant Fixed likely Hood ratio

Table 4

Effects Test	Statistic	d.f.	Prob.
Cross-section F	65.902957	(3,68)	0.0000
Cross-section Chi-square	106.305695	3	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.979197	1.304675	7.648799	0.0000
AGR_	-0.546295	0.207790	-2.629073	0.0105
EDU_	0.068502	0.029914	2.289960	0.0250
HEA_	0.237389	0.038585	6.152342	0.0000
INF_	-1.580702	0.264702	-5.971619	0.0000
TD_	-0.118363	0.046819	-2.528089	0.0137
SD_	0.295848	0.288162	1.026672	0.3081

R-squared	0.871617	Mean dependent var	3.315918
Adjusted R-squared	0.860767	S.D. dependent var	0.360742
S.E. of regression	0.134607	Akaike info criterion	-1.087457
Sum squared resid	1.286451	Schwarz criterion	-0.875958
Log likelihood	49.41083	Hannan-Quinn criter.	-1.002790
F-statistic	80.33845	Durbin-Watson stat	1.413508
Prob(F-statistic)	0.000000		

In the above table4 the Redundant Fixed Effects Test is tested to check the F test. The results showed that the F value is significant so it means that the Fixed Effect Model is fit for this study rather than Common Coefficient Model. We can use fixed effect model because chi-square value is significant. So our final model of study is fixed effect model.

Cross Sectional none and Period Fixed

Table 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.02198	2.411413	4.985452	0.0000
AGR…..	-0.682046	0.282464	-2.414629	0.0193
EDU…..	0.082756	0.036383	2.274565	0.0271
HEA…..	0.240886	0.046139	5.220894	0.0000
INF……	-2.066257	0.542120	-3.811438	0.0004
TD…….	-0.066475	0.078567	-0.846096	0.4014
SD…….	0.380345	0.361451	1.052273	0.2975
Fixed Effects				
(Period)				
1995—C	-0.029144			
1996—C	-0.017635			
1997—C	-0.026111			
1998—C	-0.060059			
1999—C	-0.078990			
2000—C	-0.078446			

2001—C	-0.051773
2002—C	-0.082935
2003—C	-0.030659
2004—C	0.032782
2005—C	0.031854
2006—C	0.008024
2007—C	0.090872
2008—C	0.052802
2009—C	0.022215
2010—C	0.027438
2011—C	0.009247
2012—C	0.033762
2013—C	0.051941
2014—C	0.083120

Effects Specification

Period fixed (dummy variables)

R-squared	0.821727	Mean dependent var	3.315918
Adjusted R-squared	0.864865	S.D. dependent var	0.360742
S.E. of regression	0.150967	Akaike info criterion	-0.682305
Sum squared resid	1.185140	Schwarz criterion	0.103265
Log likelihood	52.60988	Hannan-Quinn criter.	-0.367827
F-statistic	15.50645	Durbin-Watson stat	1.371102
Prob(F-statistic)	0.000000		

In the above table5 the Fixed Effect Model is tested for the purpose to test than the F test for the selection of model between Random Effect Model and Fixed Effect Model if the result is significant it means used Fixed Effect Model if insignificant than Random Effect Model is used.

Redundant Fixed Likely Hood Ratio

Table 6

Effects Test	Statistic	d.f.	Prob.
Period F	0.233959	(19,52)	0.0095
Period Chi-square	6.398107	19	0.0068

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.979197	1.304675	7.648799	0.0000
AGR_?	-0.546295	0.207790	-2.629073	0.0105
EDU_?	0.068502	0.029914	2.289960	0.0250
HEA_?	0.237389	0.038585	6.152342	0.0000
INF_?	-1.580702	0.264702	-5.971619	0.0000
TD_?	-0.118363	0.046819	-2.528089	0.0137
SD_?	0.295848	0.288162	1.026672	0.3081

R-squared	0.771617	Mean dependent var	3.315918
Adjusted R-squared	0.660767	S.D. dependent var	0.360742
S.E. of regression	0.134607	Akaike info criterion	-1.087457
Sum squared resid	1.286451	Schwarz criterion	-0.875958
Log likelihood	49.41083	Hannan-Quinn criter.	-1.002790
F-statistic	80.33845	Durbin-Watson stat	1.113508
Prob(F-statistic)	0.000000		

In the above table the Redundant Fixed Effects Test is tested to check the F test. The results showed that the F value is significant so it means that the Fixed Effect Model is fit for this study rather than Random Effect Model. We can use fixed effect model because

chi-square value is significant. So our final model of study is fixed effect model. Model is to be taken on the basis of Housman test.

Time Period Hausman Test

Table 7

Correlated Random Effects - Hausman Test

Pool: MUSTAFA

Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	3.941092	6	0.0206

** WARNING: estimated period random effects variance is zero.

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
AGR_?	-0.682046	-0.546295	0.025476	0.3950
EDU_?	0.082756	0.068502	0.000198	0.3112
HEA_?	0.240886	0.237389	0.000256	0.8270
INF_?	-2.066257	-1.580702	0.205759	0.2844
TD_?	-0.066475	-0.118363	0.003415	0.3746
SD_?	0.380345	0.295848	0.026197	0.6016

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.02198	2.411413	4.985452	0.0000
AGR_?	-0.682046	0.282464	-2.414629	0.0193
EDU_?	0.082756	0.036383	2.274565	0.0271
HEA_?	0.240886	0.046139	5.220894	0.0000

INF_?	-2.066257	0.542120	-3.811438	0.0004
TD_?	-0.066475	0.078567	-0.846096	0.4014
SD_?	0.380345	0.361451	1.052273	0.2975

Effects Specification

Period fixed (dummy variables)

R-squared	0.881727	Mean dependent var	3.315918
Adjusted R-squared	0.824865	S.D. dependent var	0.360742
S.E. of regression	0.150967	Akaike info criterion	-0.682305
Sum squared resid	1.185140	Schwarz criterion	0.103265
Log likelihood	52.60988	Hannan-Quinn criter.	-0.367827
F-statistic	15.50645	Durbin-Watson stat	1.371102
Prob(F-statistic)	0.000000		

As the probability value of Housman test is significant, it reflect that fixed effect model is to be use in time period and also in cross section.

Final Model Fixed Effect Model

Table 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.078055	3.988156	-2.276254	0.0272
AGR	-0.455343	0.246885	-1.844355	0.0712
EDU	0.028757	0.021744	1.322520	0.1921
HEA	-0.071165	0.033980	-2.094306	0.0414
INF	1.695539	0.798255	2.124056	0.0387
TD	-0.045639	0.039072	-1.168079	0.2484
SD	1.596500	0.424655	3.759526	0.0005
Fixed Effects (Cross)				
BAN—C	-0.170542			
CHI—C	0.835499			
IND—C	0.225724			
PAK—C	-0.890681			
Fixed Effects (Period)				
1995—C	-0.084328			
1996—C	-0.073276			
1997—C	-0.091457			
1998—C	-0.107306			
1999—C	-0.124039			
2000—C	-0.109544			
2001—C	-0.089626			
2002—C	-0.084158			
2003—C	-0.040207			
2004—C	0.018652			
2005—C	0.064618			
2006—C	0.074061			
2007—C	0.108211			

2008—C	0.097910
2009—C	0.105130
2010—C	0.092974
2011—C	0.078017
2012—C	0.087574
2013—C	0.071709
2014—C	0.078547

Cross-section fixed (dummy variables)

Period fixed (dummy variables) s

R-squared	0.675975	Mean dependent var	3.315918
Adjusted R-squared	0.642246	S.D. dependent var	0.360742
S.E. of regression	0.070093	Akaike info criterion	-2.199279
Sum squared resid	0.240740	Schwarz criterion	-1.323067
Log likelihood	94.7719	Hannan-Quinn criter.	-1.848515
F-statistic	71.09065	Durbin-Watson stat	1.724037
Prob(F-statistic)	0.000000		

In the above table 8 the results show that the p-value of public expenditure component infrastructure is significant with 0.0387 and has positively affect private investment. , the p-value of Education is insignificant with 0.1921, and the p-value of Agriculture and rural development is significant with 0.0712 and has negative coefficient. The value of p is significance for Health is 0.0414 and has negative coefficient with private investment. The p value of total debt is also insignificance 0.2484 and the p-value of social development is 0.0005 insignificant. And the R Square value is 0.67 which explain the dependent variable that 6% effect private investment and F Statistics values is 0.000 that

show model fitness. From the above result we concluded that only infrastructure, Agriculture social development and health the four variables component of government expenditure effect private investment in Pakistan, china, India and Bangladesh. And other variables like Total debts and Education cannot affect private investment in these four selected South Asian countries. From the hypothesis the four hypotheses is accepted and two hypotheses is rejected.

From the above discussion the result of this study is there is positive significant relations exist among component of government expenditure infrastructure and private investment. The result is conformed from some previous studies and match with pervious study Aschaver (1989), and Monadjemi (1995), examine the effect of Government expenditures component such as a infrastructure, electricity, tunnel, dames, roads, power station, and bridges explore the production of private investment. There is also significant relation existing among Agriculture and privet investment, also in case of health and private investment relationship exists. Mohib, IrfanUllah (2015**)** found the result and conclude that in short run Agriculture spending is positively related with private investment. Government expenditure in health, debt charges, infrastructure have positive impact on private investment, however their relation is insignificant. The role of the Social development Education Defense Expenditure toward the private investment is found negative in short run. In case of Education; total debt, there are no relationship was found. And finally the results goes in line with the existing literature reviewed as most of the relationship of the study expenditure on Total debt, Education has no effect on private investment .Epko,(1996) that government expenditure and private investment ware mainly concerned with crowding out effect government expenditure increase and crowding in effect government expenditure decrease on private investment as out lined by both the Keynesian and neoclassical theory.

Chapter 5

Conclusion and Recommendation

The study is carried out to find the effect of the of the government expenditure on private investment in Pakistan, China, India, and Bangladesh. Here six variables are used named Private investment (PRI), proxy of fixed asset capital formation is the dependent variable. Whereas public expenditure is independent variable of government expenditure includes agricultural and rural development (AGR), education (EDU), health (HEA), infrastructure (INF), Social development (SD) and total debt (TD).

The finding of this study is that infrastructure; social development is positively and significantly related to private investment. Whereas health and agriculture is negatively and significantly related to private investment, while education, total debts have no significant positive and negative relationship to private investment.

The results also concluded in fixed cross section that in Pakistan and Bangladesh, public expenditure has negative relationship with private investment but in china and India this relationship is positive. It means that only in china and India public expenditure effect the private investment. Public expenditure component social development, infrastructure, health and agriculture influence the private investment in these two countries. From the result but in Pakistan and Bangladesh the private investment is not effective in the entire sector. This result is supported by some previous paper of china that Effects of government expenditure on private investment Dingyu (2003) and also from Pakistan, India and Bangladesh the following result is support.

Some past study literature and conclusion support our study and similar result obtained. Miller 2000, Goodwin 2000, khan 1984 used same data and model and found government spending is stimulus for private investment and result is same positive effect on private

investment. The result of this study is also supported by previous literatures and similar results are obtained.

The past studies result match with our studies Holcombe & Erden in 2005 examine the effect of government spending in developing countries. Panel data is for 19 developing countries using four methods which are explore fixed and random effect method OLS and 2 SLS. Data is from 1980 to1997 the result is that government spending is complement to private investment.

Some actual studies expose that some time the affect of government spending component on private investment positive and some time the effect is negative significant and insignificant results is some reason, different type of cause time period of study, model implementation, specification of countries on spending.

The previous studies of (zhang& Wu 2009) concluded the result that government spending crowding-out private investment for short period of time and crowding-in private investment for long time periods in china.

Resource allocation point of view that rise in public spending the private investment get less resource and crowding out private investment for short term. Government spending on education and infrastructure significant positive increase the marginal production of private investment and health expenditure is decrease affected insignificant for long term.

Recommendation and future research direction

The study is aimed to investigate the effect of the of government expenditures on private investment in India, Pakistan, China, and Bangladesh.

It is good to attempt but the study has some limitation and results. From which we recommend that government expenditure in following four selected Asian countries is effect positively are negatively.

Recommendation based on the results of the current study .results suggests that fiscal policy maker consider that government should spend on infrastructure, social development that improves the private investment in Asian countries.

Government should expend on that sector where the area is positively effect and improve the private sector private sector if government spends on health, education, agriculture and rural development where the fiscal policy lay out increase in the private investment.

Future research direction of the research depend on the sample size of the study but however there may be some other component of government expenditure like expenditure on

- Transport and communication.
- Expenditure on research and development.
- Expenditures on economic condition.
- Law and order .defense,

And administrations, which may determine the private investment. The sample size may

Increase the results more applicable and also the may increase the period of the study ehich may affect the private investment.

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