

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

1.1.1 Foreign Aid:

Foreign aid is an ambiguous term which is alternatively called as “economic aid” or “external assistance” or “development assistance”. It is called ‘foreign’ because it originates outside the national boundary of the recipient country; it is called ‘aid’ because it is not determined by the same principles, which governs the autonomous flows of trade and capital. Foreign aid is foreign resources minus foreign private investment (profit motive in commercial term). Foreign aid can be defined as the form of grants and loans on concessional terms (Misra and Puri, 2006). However, the standard definition of foreign aid comes from the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD), which defines foreign aid (or the equivalent term, foreign assistance) as financial flows, technical assistance, and commodities that are (1) designed to promote economic development and welfare as their main objective (thus excluding aid for military or other non-development purposes); and (2) provided as either grants or subsidized loans.

The huge success of Marshall Plan (USA) in the reconstruction of European countries immediately after II World War, rapidly developed industrialization (late 1940s to early 1950s); so, it is perceived that, it will be revisited under developing countries. Poor countries are poor because of lacking huge investment which is not backed by huge amount of domestic savings and foreign exchange (required to purchase foreign capital) or both. Therefore, it is said that foreign aid plays a vital role to supplement the domestic savings which would increase investment and hence turns the higher growth rate of the aid receiving countries. After a period, self- sustaining growth stops the foreign aid that ultimately raises living standard in the country.

In the early literature on aid and growth in less developed countries, foreign aid was perceived only as an exogenous net increment to the capital stock of the recipient country. Later, It was assumed by pro-aid development economists such as Rosenstein-Rodan (1961) that each dollar of foreign resources in the form of aid would result in an increase of one dollar in total savings and investment. Similarly, The British Department for International Development (2000), quoted in Easterly, has noted that aid is necessary because “finance itself is vital for countries with very low resources of their own.” Now, there is no debate on the requirement of foreign aid for developing countries to bridge the huge level gaps like S-I gap and hence the growth and development. But, only the debate is on the effectiveness of foreign aid.

On the contrary, it continues to fail to promote human development for the eradication of poverty based on the core values of human rights, democracy, gender equality and

environmental sustainability. This is despite the appearance of progress in the form of high-profile debt cancellations, new aid pledges, and the signing of the Paris Declaration on aid effectiveness (Reality of Aid, 2008).

The Kenyan economics expert (Shikwati, 2005) opines that aid to Africa does more harm than good. The avid proponent of globalization spoke with SPIEGEL about the disastrous effects of Western development policy in Africa, corrupt rulers, and the tendency to overstate the AIDS problem. Such intentions have been damaging our continent for the past 40 years. If the industrial nations really want to help the Africans, they should finally terminate this awful aid. The countries that have collected the most development aid are also the ones that are in the worst shape. Despite the billions that have poured into Africa, the continent remains poor.

Huge bureaucracies are financed (with the aid money), corruption and complacency are promoted, and Africans are taught to be beggars and not to be independent. In addition, development aid weakens the local markets everywhere and dampens the spirit of entrepreneurship that we desperately need. As absurd as it may sound: Development aid is one of the reasons for Africa's problems. If the West were to cancel these payments, normal Africans wouldn't even notice. Only the functionaries would be hard hit. This is why they maintain that the world would stop turning without this development aid (ibid).

It is pointed in executive summary that aid fails to fill the gap in Africa and elsewhere. Aid does not finance additional investment for which the recipient countries failed to marshal domestic resources. It simply frees central government resources for spending on current consumption-which in turn fuels corruption. He further proved that overall in Asia; aid has not had a significant and positive effect on economic development. Millions of poor people live in India and China, but their economies are growing despite the insignificant role that aid plays in their investment (Erixon, 2005).

It is estimated that about half of the foreign aid goes back to donor countries in the form of consultancy or expatriate costs. This is not to mention politicians, bureaucrats and project staffs who take away big shares of total budget of the projects. Consequently, such aid hardly reaches the needy and poor people (Basnyat 2008).

In most South Asian countries, foreign aid under the benign guise of helping various kinds of development project has been aggravated. There is no proper accounting system for recording the movement of foreign aid (ibid).

1.1.2 Gross Domestic Savings:

Empirically, Gross Domestic Savings is the sum of public savings and private savings. Public savings is equal to the difference between total revenue and current expenditures of the consolidated public sector. Private savings is derived as a residual from the following: private savings = gross national savings - foreign savings - public savings. Where as gross national savings = gross domestic investment; foreign savings = current account deficit.

There are three broad groups in the society that save i.e. the house hold sector, the business sector and the government. On the basis of nature of saving, it has three types i.e. Voluntary, Involuntary and forced saving. Voluntary saving arises by curtailing consumption out of disposable income. Both household and the business sector may be a source of voluntary saving; Involuntary saving through involuntary reductions in consumption (by all forms of taxation) and forced saving is the form of high prices (Thirlwall, 1999).

Classical views suggest that saving is the virtue of an economy since the all-round increase in individual's thriftiness increases capital formation and it will lead to immediate increase in investment and hence income and output in the economy. But Keynes has rejected this view and said that saving is virtue only in micro economic views and it is vice for the macro economic views. He argues that saving for an individual is fruitful because it fulfills his desires and precautionary expenses during his lifetime but if all are starting to save in the economy, it will decrease the aggregate demand since expenditure of one is income of the other in an economy. Decrease in aggregate demand leads to depression in the economy as it happened in 1930s.

There is a great debate that saving is good or bad for the economy, however, economists agree that saving for underdeveloped country is a virtue if it is diverted towards investment which will ultimately increase growth and development in the economy. It is because underdeveloped country is known as capital shortage economy for the desired level of investment whose main determinant is gross domestic saving of the economy. Gross domestic saving is the growth enhancing factor or key factor for stable growth and development. Higher the growth rate higher is the capital formation for investment and hence increases the growth and development into the economy. According to IBRD 1972, Net capital flow may have three possible effects on domestic savings: a) It may be substitutive b) it may be complementary and c) it may be additive.

Saving rates and long-term income growth move together, suggesting a virtuous cycle in which high rates of saving lead to greater prosperity, this in turn leads to even higher rates of saving. Countries with low saving may be caught in a poverty trap. In these countries, a low rate of saving leads to stagnation which further reduces the rate of saving, dooming the country to poverty (WB Bulletin, 1999).

Higher savings and investment rates eventually help in boosting GDP. This perhaps another reason that why GDP is growing faster in the emerging world than in the developed world. It is proved by commonly known growth models Harrod-Domar model, Solow model and endogenous model in the economic literature. On the Contrary, higher saving leads to faster growth in Solow model, but temporarily. An increase in the rate of saving raises growth only until the economy reaches the new steady state. If the economy maintains a high saving rate, it will maintain a large capital stock and a high level of output, but it will not maintain a high rate of growth forever because it will trap by "level effect" (Mankiw, 2008). Due to the World War II, Germany and Japan initially had low

capital stocks but their steady state capital stocks were high because of their high saving rates. So, they achieved rapid growth in 1950s and 1960s (ibid).

In addition to financing development, domestic savings can also provide better security and stability following economic and financial shocks in two major ways. Firstly, a high level of domestic savings ensures that at least a broad segment of the economy is not over-leveraged and, therefore, would not be severely affected by these shocks. Secondly, these surplus resources, if made available to the financial system, could assist in ensuring stability and liquidity during crisis periods. These savings also provide an avenue and capacity to finance the rebuilding and the cost of reforms arising from the crisis (Bank Negara Malaysia).

Global emerging economies are experiencing record savings at a time when the developed world has been witnessing a decline in gross domestic saving rates. What's more, these savings are finding their way into capital investments, having a positive impact on the investment climate in countries like India and China (Chakravarti, 2005).

The majority of emerging economies have higher gross domestic saving and gross capital formation rates compared to their developed counterparts. Higher savings and investment rates eventually help in boosting GDP. This is perhaps another reason why GDP is growing faster in the emerging world than in the developed world (ibid).

Saving provides the wherewithal for capital formation, which in turn, is essential for economic development. If a country has a low rate of saving over a long period of time, the country's economy would be entrapped in a vicious circle of low investment, low growth, low productivity and low real per capita income. Thus, every country would like to have a higher rate of domestic saving (P.J. Kumarasinghe).

National savings are critically important to maintain a higher level of investment which is a key determinant of economic uplift. Thereby, necessitating the analysis of saving-investment behaviour and its determinants for policy implications; this is a demanding area because of continuing debate on the potential role of their determinants (Shahbaz Nasir and Mahmood Khalid).

Saving and investment are two key macro variables with micro foundations which can play a significant role in economic growth, inflation stability and promotion of employment especially if seen in the context of a developing country (ibid).

Higher saving rates tend to accompany higher income growth-suggesting virtuous cycles of saving and prosperity, along with poverty traps of under saving and stagnation (Prem Notes, 1999 AD).

Singapore has one of the world's highest saving rates. The extensive mobilization of domestic resources has been an important part of the country's development, although foreign capital mainly in the form of direct investment has also played a key role. Gross national saving (GNS) rates in Singapore have seen a trend-like increase since

independence for four decades. Its GNS rate rose steadily from -3% in the early 1960s, to an average of 28% in the 1970s, 41% in the 1980s, and reached 49% in the 1990s. Even though it came down slightly in 2001, it remained at 45%. Our internal estimates show that private saving grew rapidly since the early 1980s, while public saving increased markedly after 1988 (Monetary Authority, Singapore).

It is seen that the saving and investment rates over 1980-98 has been in the range of 7-25 percent for the South Asian countries while they were in the range of 30-40 percent for the East Asian countries. Furthermore, in the 1960s, the savings and investment rates were comparable in South and East Asia but then East Asia has gradually forged ahead beginning in the 1970s. Regarding the private savings also, the performance of the East Asian countries is superior, with India, Pakistan and Sri Lanka showing relatively better performance among the South Asian countries. In public savings rates, while East Asian countries average rates of over 5 percent, Sri Lanka and Pakistan average about zero percent, with India and Bangladesh doing marginally better and averaging about 2 percent. Nepal's public savings rates rival those of East Asia, but this is primarily due to the high levels of foreign aid it receives (Agrawal, 2000).

Nepal's GDS has always been very low. The highest GDS was in 2000 AD i. e. 15.17% of GDP. It is lowest in South Asia and it is almost one third of Bhutan and it is interesting to note that GNI per capita increased by more than fifty percent from the year 1995 to 2006 (WDB, 2008) but gross domestic saving decreased from 14.8% in 1995 to 9.4% in 2006 indicating the fact that low domestic saving rate is one of the major constraints for growth of Nepal (Pyakuryal, 2008).

“Out of the total development outlay almost 71 percent was expected to be contributed by foreign assistance. For the 8th, 9th and 10th plan, the expected contributions were assumed as 65.5%, 58.8% and 57.5% respectively. Such an ad-hoc practice not only pays little attention on the possibilities of augmenting internal resource mobilization; it also provides more leeway or freedom to the donors in fixing aid in their terms during the plan implementation period. (Knanal and et al. 2008)”

1.1.3 Aid, Savings and Growth:

“The debate of foreign aid effectiveness is not a current problem; it has been questioned since 1950s. Supporters like Jeffrey Sachs, Joseph Stiglitz, Nicholas Stern and others have argued that although aid has sometimes failed, it has supported poverty reduction and growth in some countries and prevented worse performance in others. They believe that many of the weaknesses of aid have more to do with donors than recipients, and point to range of successful countries that have received significant aid such as Botswana, Indonesia, and Korea or more recently in Mozambique and Tanzania (Radelet, 2006).”

“Economists like Milton Friedman, Peter Bauer, and William Easterly are levelled stinging critiques, charging that aid has enlarged government bureaucracies, perpetuated bad governments, enriched the elite in poor countries, or just been wasted. They cite widespread poverty in Africa and South Asia despite three decades of aid, and point to

countries that have received substantial aid yet have had disastrous records such as the Democratic Republic of Congo, Haiti, Papua New Guinea, and Somalia. In their eyes, aid programs should be dramatically reformed, substantially curtailed, or eliminated altogether (ibid).”

The various forms of inflow of foreign capital (loans, FDI, grants and portfolio) was welcome in developing countries to bridge the gap between domestic saving and domestic investment and therefore, to accelerate growth (Cheneray, and Strout 1966; quoted in Mohsin and et al). It is quoted in different articles that Rosenstein 1961, Chenery and Bruno 1962, and Chenery and Strout 1966 and others analyzed that foreign aid supplement the domestic saving (saving supplementary hypothesis). On the other hand, some macro econometric models suggested by Giffen and Enos (1970), Donald Snyder (1990), Larson (2001) and Duc Minch Vu (2006) etc that foreign aid substitute the gross domestic savings.

“The first thing to note is that the saving ratio is much lower in poor countries than rich ones, but that the savings ratio does not continue to rise for ever as countries grow richer. It tends to level off in the middle income group of countries and then stabilize. The weighted average saving ratio in the low income countries excluding China and India is only 10 percent of GDP compared with 25 percent in the middle income countries and 21 percent in high income countries. Some countries in the low income category dissave, for example Tanzania, Burundi, Chad and Rwanda. Most of the low income countries also have investment ratios that are higher than their domestic savings ratios, indicating that they are net capital importers. The average investment ratio is 20%, compared with a savings ratio of 10 % (Thirlwall, 1999).”

Economic growth is positive when investment exceeds the amount necessary to replace depreciated capital, thereby allowing the next period’s cycle to recur on a larger scale; it expands in this case; otherwise, it is stagnant or even shrinks. This is why the volume of savings and investment is an important determinant of the growth rate of an economy (Ray 1998).

The Solow model shows that the saving rate is a key determinant of the steady-state capital stock. If the saving rate is high, the economy will have a large capital stock and a high level of output in the steady state. If the saving rate is low, the economy will have a small capital stock and low level of output in the steady state (Mankiw, 2008).

Saving is very important for growth and development. It is seen by the economic status of two emerging super economic powers India and China. India’s gross domestic savings and gross domestic product in 2000 AD was 23.7 and 5.4 and in 2006 AD it is 32.4 and 9.7 respectively. Likewise in China, the GDS to GDP was 34.5 in 1984 and it is 44.9 in 2004. On the other side, the GDP during 1984-94 was 9.4 and in 2004 it was 9.5. These indicators suggest that GDS of the country is more powerful tool for the growth and development of a country. If it is comparing to Nepal, in 2000 AD gross domestic saving was 15.2 and gross domestic product was 6.1 but it is decreasing to 11.1 and 2.8 respectively (Economic Survey, 2007). It proves the Harrod –Domar model that higher

the GDS higher the capital formation and investment which ultimately leads to growth of the country. The case of Nepal is very horrific since it has very low GDS followed by the low GDP growth.

1.1.4 Diminishing Returns of Aid:

Amid controversies surrounding aid effectiveness, an increasing number of empirical studies find support for the idea that aid can spur growth and that the aid–growth relationship is nonlinear. Lensink and White propose a model to illustrate the possible existence of what has been labelled an “aid Laffer curve”.

Most studies using this specification indeed find support for a negative effect of aid on growth after a certain threshold level (Durberry et al., 1998; Dalgaard and Hansen, 2001; Hansen and Tarp, 2001; Hudson and Mosley, 2001; Lensink and White, 2001; Islam, 2002; Lu and Ram, 2001; Dalgaard et al., 2004). This threshold level of aid to GDP varies between 5 to 45 per cent (Feeny, 2003). The decreasing returns of aid can be explained by pointing at the limited absorptive capacity of countries to take up large inflows of foreign capital and the problem of Dutch disease effects. Only two studies do not find support for the decreasing returns of aid hypothesis (Mark McGillivray*, Simon Feeny, Niels Hermes and Robert Lensink, 2006).

“This paper investigates the relationship between foreign aid and growth using recently developed sample splitting methods that allow us to simultaneously uncover evidence for the existence of heterogeneity and nonlinearity. It also addresses model uncertainty in the context of these methods. It finds some evidence that aid may have heterogeneous effects on growth across two growth regimes defined by ethno linguistic fractionalization. However, when it accounts for model uncertainty, it finds no evidence to suggest that the relationship between aid and growth is nonlinear. In fact, our results suggest that the partial effect of aid on growth is likely to be weakly negative. In this sense, our findings suggest that aid is potentially counterproductive to growth with outcomes not meeting the expectations of donors (Kourtellos et.al. 2007).”

In the study of Côte d’Ivoire, during the period of 1975 to 1999, found the result that project aid flows are associated with decreases in public savings, whilst the financial program aid has a neutral effect. In contrast, technical assistance grants and program food aid are associated with increases in public savings (Ouattara 2007).

The gap model of saving, is based on the Harrod-Domar growth model, rule out the possibility of diminishing returns and place little or no emphasis on the role of institutions and technological progress, however, diminishing returns are a defining component of Solow growth models. Saving in the Solow model is only important in the short run, when a country is catching up to the capital-output ratio of wealthy countries. In the long run the (steady state) growth rate in national income only depends on the rate of population growth and the rate of technological progress (Shields, 2007).

Lavy and Sheffer (1991), quoted in Lensink Robert and White Howard, examine the cases of Egypt, Syria and Jordan which are now worse off, after years of very high aid inflows,

than they were in the early 1970s. The story of why this is so is as follow. High aid inflows exceed those which can feasibly be used in profitable investment and some aid must be consumed. This consumption usually takes the form of consumer subsidies (and perhaps highly subsidized government services). When aid slackens, these policies are not readily reversible (a notion economist's call hysteresis).

A country can get too much aid; can be captured in the idea of an aid Laffer curve. The benefits from aid increase with initial inflows but after a certain level begin to decline, so that the country would actually be better off with less aid. Griffin (1970) gives a possible reason for the existence of an aid Laffer curve. Likewise, contributions to the aid effectiveness literature have also pointed to problems of absorptive capacity, which may suggest the inverse relationship between aid and productivity which underlies the theoretical rationale for an aid Laffer curve. He argues that aid would reduce the productivity of investment so that, if this effect were sufficiently large, then aid would reduce growth. It is found some evidence that an inflow of aid, above a certain level, starts to have negative effects. However, the results are sensitive to the countries considered as well as the exact specification. Moreover, the turning point above which aid starts to have a negative effect on growth seems to be much higher than assumed in the background calculations for Assessing Aid. In this study it is empirically tested the nonlinearity of foreign aid (diminishing of foreign aid) on gross domestic savings of Nepal.

1.2 Statement of the Problem:

One of the central issues in the aid effectiveness literature is the impact of foreign aid flows on domestic savings. The issue raised is that of supplementary (complementary) and substitutability (displace) of foreign aid flows to domestic savings. The early views Rosenstein Rodan 1961, Chenery and Bruno 1962, and Chenery and Strout 1966 were frequently quoted in different Literature that developing countries lack savings to finance investment requirements and, therefore, foreign aid will act as a supplementary to help bridge the savings-investment gap. However, this was challenged by later economists like Griffin 1970, Griffen and Enos 1970, Weisskopf 1972, Gupta and Islam 1983 and Reichel 1995 and argued that foreign aid inflows would displace domestic savings and thus act substitutes rather than complementary.

The explanation with the longest history is that aid largely goes to consumption, crowding out domestic savings and investment. The extent of crowding out, if it exists, should be an important consideration in determining the net benefits from foreign aid in terms of whether it increases the rate of economic growth or not (Shields, 2007).

The World Bank Economists David Dollar, A.Craig Burnside and Paul Collier, quoted in Easterly that aid can help, but it should be concentrated on countries with good macroeconomic policy and government genuinely committed to improving public services and infrastructure, and stamping out corruption. Easterly (2003) argues that economic research on foreign aid effectiveness and economic growth frequently becomes a political football. But when a regression result is passed from one source to the next,

context is often stripped away so that what the result means in public discussion is different than what the original research actually demonstrated. Empirical analysis suggested that the effect of foreign aid on savings is different in different countries; therefore, it is equally questionable in Nepalese context.

Foreign aid has jeopardized the self-esteem of Nepal and its people. The dependency syndrome pervades the Nepali psyche to such an extent that no mainstream political parties and public officials can conceive of national development without foreign aid (Acharya 2000).

There may be increasing or decreasing or neutral effect of foreign aid to gross domestic savings of Nepal. Critics are arguing that foreign aid is decreasing the growth, savings and investment of Nepal. On the other hand, followers of foreign aid are arguing just the opposite. In addition, critics are arguing that foreign aid has jeopardized the self-esteem of Nepal and its people and they say that foreign aid substitutes the domestic savings. They further argue that it is not just doing well but also the country might fall in debt trap and deficit in balance of trade (BOT) through demonstration effects. So, it all requires the need of thoroughly research to look upon the effects of foreign aid on gross domestic savings.

In Nepal, Foreign aid does not come under the circle of auditing. In Nepal, more than one third of total aid outside the orbit of auditing (Khanal and et. Al 2008). Nepal's aid dependency is still very high, despite more than five decades of development efforts. The contribution of foreign aid in total development outlay is almost two thirds as envisaged in the periodic plans (ibid). It shows that foreign aid lacks transparency, accountability and good coordination with aid givers according to our development paradigm and other specified objectives and strategies.

Therefore, the natural question is that, is foreign aid increasing gross domestic savings and GDP growth rate of Nepal? In this context, it is a problem for all individuals, organizations, government and foreigners (who give aid) to know the real effectiveness on major macro economic variables (growth rate, savings and investment) of the country. This study only discusses a cointegration analysis of effectiveness of foreign aid to gross domestic savings by including major explanatory variables of the country.

1.3 Importance of the Study:

The concept of foreign aid is certainly not a new phenomenon. It has been discussed since 1950's and still it is equally valuable for the study of its effectiveness. It is also known as a great debatable subject matter in economics. Some of the developing countries are not able to shift the country from the vicious circle to virtuous circle of poverty. It is because of low real GDP growth or per capita income. The stable growth depends on huge amount of capital accumulation, capital accumulation requires huge amount of investment which ultimately requires the huge amount of domestic savings into the economy. So, domestic savings is a great matter for under developing countries like Nepal and it is thought to be a crucial source of economic growth. The background

of indispensable of gross domestic saving for the growth and development of the country are the Harrod Domar growth model, Solow short run model and Endogenous growth model. The Harrod Domar gap model, some empirical analysis mostly suggests that foreign aid fills the S-I gap or supplements the domestic savings. The basic idea is that aid will augment domestic savings and, hence, increase the rate of investment, which will lead to a higher growth rate. According to the H-D model ($G = s/c$), the growth of a country is directly proportionate to the saving ratio, at given the capital output ratio of the country. Suppose, a country wishes to grow at 5% per annum, and the capital output ratio is 3, it can be seen from above formula that it must save and invest 15% of its national income. If it saves less, growth will be slower, unless the country can somehow reduce the incremental capital output ratio (c) or raise the productivity of investment.

The most famous model of aid induced growth is based on a simple version of the Harrod-Domar growth model. It is clearly seen from two gap models; if the required savings ratio is 15% and the actual ratio is 10%, the saving-gap is 5%. This needs to be fulfilled if the target growth rate is to be achieved. This can be done either attempting to raise the domestic savings ratio or by borrowing from abroad i.e. foreign savings (Thirlwall, 2003).

One of the central issues in the aid effectiveness literature is the impact of foreign aid flows on domestic savings. The issues raised are that of supplementary and substitutability of foreign aid flows to domestic savings. There are many reasons for giving foreign aid; a major argument for such aid is that this assistance will increase the rate of economic growth in recipient countries, however, the growth in recipient countries have often disappointed (Shields, 2007).

To achieve the targeted growth rate, government must increase the level of savings or increase productivity of capital. Due to the low level of savings, the targeted growth of developing countries are mostly volatile in nature so the desired level of savings for investment and sound growth rate will be fulfilled by foreign aid. It is found in the literature that one dollar of foreign aid will increase savings and investment by one dollar and therefore leads to increase in growth (Rodan, 1961).

Economists are arguing that foreign aid has substitution, supplementary and neutral effect on gross domestic savings. So, it requires testing the situation of Nepal. Foreign aid is continuously flowing since fiscal year 1951/52 but the country is facing the problem of capital formation or low gross domestic savings. Nepal's Gross National Income Per Capita is US \$ 320 (2006); it remains the poorest country in South Asia and ranks as the twelfth poorest country in the world (WB, 2008). In addition, the total aid received by the country Rs. 268674.18 Million up to FY 2004/05 AD but the performance of aid inflow comparing to major three gaps investment-saving, import-export and expenditure-income of the country is not satisfactory ; these three gaps have become more widened every year. Foreign aid dependency is increasing in the development expenditure which is in the range of 60-80 % of the total budget. So, it is important to know the empirical analysis of the impact of foreign aid on Nepalese capital formation or simply on gross domestic savings.

This study also shows how foreign aid is affecting to gross domestic savings of Nepal? It is further important since there is a controversy that foreign aid is diminishing returns to growth rate of the Nepalese economy. Nepalese economists are also divided into two groups regarding the impact of foreign aid into the country (**Chapter IV**).

Again, Studies have shown that foreign aid is both decreasing and increasing for the major macro economic variable growth of the country. Most of the studies found the support for a negative effect of aid on growth after a certain threshold level (aid Laffer curve); growth rate is directly proportional to saving ratio at the given capital output ratio. This study will test the negative returns or increasing returns of foreign aid on GDS of the economy (Similar to negative effect of FA to Growth rate). It will be a new study because this type of analysis has not found in Nepal during my literature review; which includes most of the related explanatory variables affecting to the gross domestic savings. Therefore, this study will be a corner stone for the readers, researchers, professionals, students, aid givers and others.

1.4 Objective of the study:

1. The general objective of this study is to find out the effects of total foreign aid on gross domestic savings including the major explanatory variables (monetary and fiscal policy variables) affecting Nepalese economy. And, it also investigates the foreign aid dependency (decrease in the domestic savings) into the country.
2. To find out the nonlinearity of foreign aid (diminishing of foreign aid) on gross domestic savings or aid Laffer curve of Nepal. It also tries to find out the maximum point of FA.
3. Forecasting trend of 10 years of dependent variable immediately after the study period.
4. To Provide major policy recommendations under the effective utilization of total foreign aid on domestic savings.

1.5 Limitations:

The effect of foreign aid is very vast and broad because it is very difficult to grasp the direct and indirect effect in one empirical analysis. So, it has many limitations. The major limitations of this study are given below:

- 1) Foreign aid means here is excluding the technical assistances and only disbursed amount of official development aid (ODA) is included. It is not discussed about the tied aid, commitment and disbursement of aid. It further does not include the aid through INGOs.
- 2) This study will not deal about the reverse effect of Growth to GDS.

3) It is assuming that higher gross domestic saving increases higher investment and hence higher income, output and employment into the country. This study further assumes that there is a strong causal relationship between foreign aid and savings of the country, however, some economists are questioning on its casual relationship.

4) This study does not discuss the other effects of foreign aid except the effect of gross domestic savings like the effects of foreign aid on government fiscal behavior, the possibility of debt problems and the relationship between foreign aid and the exchange rate (Dutch disease).

5) This study covers the time series data (secondary data) in between FY 1974/75 to 2005/06. It is because the flow of foreign aid has been started massively from FY 1974/75, after the establishment of aid group in Nepal.

6) This study does not cover quantitatively immeasurably effects of foreign aid on gross domestic savings.

7) This study includes major explanatory variables which are affecting Nepalese gross domestic savings and excludes other variables such as interest rate, inflation, FDI, trade variables, lagged variables. Whereas gross domestic product is taken at constant price (1994/95) and gross domestic savings is taken as current market prices.

CHAPTER - II

LITERATURE REVIEW

Reviewing the literatures of several books, articles, journals regarding the foreign aid, growth and savings, this section is better dividing into three parts i. e. it works camp or Supplementary between Foreign aid and Savings; it does not work camp or Substitution between Foreign aid and Savings and Indifferent or Neutral Camp. The important literatures related to this study are shown as follows:

2.1 It works camp or Supplementary between Foreign aid and Savings:

Rosenstein Rodan (1961) suggests a gap model, where foreign assistance would close the gap between savings required to achieve a targeted rate of growth and the rate of growth that would occur without the aid.

The various forms of inflow of foreign capital (loans, FDI, grant and portfolio) were welcome in developing countries to bridge the gap between domestic saving and domestic investment and therefore, to accelerate growth, **Chenery and Strout (1966)**.

In comparison to a no-aid pattern of growth, post-aid growth rates can be higher or lower depending upon three factors (i) initial poverty of country (ii) additional rise of government consumption as percentage of aid received and (iii) the term of aid. *Ceteris paribus*, a given amount of aid tends to increase post-aid growth if domestic savings ratio is higher, the percentage of aid fungible into government consumption is lower and the term of aid is longer. The critical assumptions are that government replaces portions of its savings with aid then allocates this freed money to other programs, which can not be cut back once started (**Dacy, 1975**).

According to **Earl Grinols and Jagdish Bhagwati (1976)** “even if substantial crowding out does occur, foreign aid would still increase growth in the short run. A higher growth rate would itself increase domestic savings, to rise above the level it would reach without foreign aid.”

White (1992b) argues in his survey that there is no agreement as to the positive or negative relationship between aid and savings and suggests that the relationship may be positive.

Burnside Dollar (Sep. 2000) concluded that aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies. Good policies are ones that are themselves important for growth. The quality of policy has only a small impact on the allocation of aid. Our results suggest that aid would be more effective if it were more systematically conditioned on good policy. In our sample the mean of the policy index reached a nadir of 1.0 in the 1982-1985 periods, and then climbed to a peak of 1.8 in the most recent period, 1990-1993. Our OLS results suggest that the effect of aid was significantly positive for a policy

level of 2.4: by 1990-1993, 15 of our 40 poor countries had attained that level. They further argue that reallocating aid flows to poor countries with a good economic policy environment would reduce the number of poor people by an extra 18 million per year as compared to the number of people that are helped out of poverty based on the existing allocation of aid flows.

According to **Henrik Hansen and Finn Tarp (2000)**, “We have surveyed three generations of empirical work: early Harrod-Domar models, reduced form aid- growth models, and new-growth-theory reduced form models. We find a consistent pattern of results. Aid increases aggregate savings’ aid increases investment; and there is a positive aid-growth link in a robust result from all three generations of work.”

The saving rate positively affects growth and the population growth rate does so inversely. Saving raises capital stock and helps improve social and economic infrastructure (**Todaro and Smith, 2003**).

According to **Sigdel Bamdev (2003)**, there is a significant gap between savings and investment in Nepal. A substantial portion of Nepal’s development expenditure is met by foreign aid. The empirical findings reveal that the role of foreign aid to meet ever growing resource gap is immense. The regression model shows that there is a significant relationship between resources gap and foreign aid during the last twenty one years; the flow of Foreign aid in Nepal has been faster than increase in resource gap. The foreign aid supplement more than 60% of the total resources gap and the remaining is met by remittances and foreign currencies earned from tourism sector.

Mohamed Abdel-Wahed Mohamed (2003) The substitute or complementary hypothesis was empirically examined using time series data by using 26 years data (1970-95) of Egypt’s economy has found no evidences to support this argument of substitute hypothesis (foreign aid substitute domestic savings) when O LS technique was executed. It was not established that the inflow of foreign capital is the cause of low savings. He further concluded the failure of the traditional substitution hypothesis of foreign aid substituting domestic savings in Egyptian economy.

According to **Ramesh Durbarry (2004)** although results from fungibility models are far from conclusive, recent developments in fiscal response models have found small impact of aid inflows on public sector fiscal behaviour. Foreign aid supplements savings and hence promotes growth.

Michael P. Shield (2007) examines the relationship between foreign aid and savings using annual data for 119 countries with separate regression for each developing economy using annual data confirms a positive relationship between foreign aid and savings inclusive of the aid so that substantial crowding out does not appear to be a common phenomenon. Only nine countries have crowding out to such an extent that aid reduces net savings and hence the economic growth rate.

Pyakuryal Bishwamber (2008) foreign assistance accounted for over 10% of GDP and was contributing 60 to 80 % of the annual development budget of Nepal in 1990s. The sluggish rate of growth in revenue and the low rate of public and private sector savings as % of GDP indicate that foreign aid is indispensable to the country for sustained economic growth in the foreseeable future.

Rahman Khan (2008) “Assistance to well managed countries increases private sector confidence and supports important public services. So, financially aid works in a good policy environment and financial assistance must be targeted to low income countries with sound economic management. He confirms that aid works, aid did not fail, if fails both donor and recipient are responsible. But aid works.”

2.2 It does not work camp or Substitution between Foreign aid and Savings:

Griffin and Enos (1970), they held a skeptical view of aid and argued that "The association is loose, but the general tendency is that the greater the capital inflows from abroad, the lower the rate of growth of the receiving country" The particular attention was paid to the observation that aid leads to lower domestic savings.

John S.Henley, Vassilis Droucopoulos and Mohamed A.Ibrahim, (1980) (Cited in foreign capital inflows, domestic savings and the Price of Political Stability in the Sudan: Weisskopf Revisited) ; Rahman, testing Haavelmo’s hypothesis, demonstrated a statistically negative relationship between the saving ratio and the capital inflow ratio by taking a cross-section of 31 developing countries.

Foreign aid has a strong positive impact on economic growth in less developed countries (LDCs) for both periods 1960-1970 and 1970-1980 when state intervention is not taken into account. When the state intervention variable is included in the regression, the effect of foreign aid gets statistically weak over time. Moreover, foreign aid negatively affects the domestic savings rate whereas per capita income, country's size and exports positively affect it, **Singh (1985)**.

According to **Donald Snyder (1990)**, Aid is found to have relatively little influence on domestic savings. Previous findings of a strong negative relationship appear to be explainable in terms of a combination of factors: failure to control for omitted variables (especially per capita income), use of an unsuitable aid proxy (foreign capital inflows), and problems with sample size and composition.

Boone (1996) quoted by Easterly found that aid financed consumption rather than investment (Financing consumption of a few people is not so bad, but proponents of aid hoped for the kind of society-wide transformation that would come from aid financing investment and growth). So, the main result of aid seems to be an increase of the size of government. This paper was notable for introducing political determinants of aid as instruments to address problems of reverse causality.

Henley, Droucopoulos and Ibrahim, worked Weisskopf’s analysis of the impact of foreign capital inflows on domestic savings in 44 developing countries using time series

data abstracted from United Nations Year book in the case study of Sudan found that saving by public sector was negatively correlated with official loans and grants. Undoubtedly in the case of Sudan, the government has been purchasing short run political advantage by financing an expansion of the state apparatus with foreign loans and relaxing its saving efforts.

Mohsin Hasnain Ahmad and DR. Qazi Masood Ahmed applied three variants of cointegration techniques to time series data for the 1972-2000 period of Pakistan in titled “foreign capital inflows and domestic savings in Pakistan: “Cointegration techniques and error correction modelling” found inverse relationship between saving rate and foreign capital inflows and short run relationship between these two variables was also found to be negative.

Larson (2001) “on the title of savings-dependency issue, the success of foreign aid to developing nations remains questionable at best. With a mix of all-to-often corrupt authoritative governments and a seemingly endless flow of foreign aid, the advancement of many developing nations was hindered from the start. I contend that although there has been a very steady flow of aid payments to the developing world over the past 20 years, the intended effects of this aid (the “reward”) have patently failed to materialize. If this was otherwise, and the rewards had materialized, we would have seen widespread improvements in the areas of either GNP growth or domestic savings relative to the foreign aid inflow.”

In this scenario, national income would have increased by the amount of the inflow of foreign capital, thereby raising the proportion of total savings to national income. This, in turn, would have brought about a higher savings ratio and hence increased domestic savings. This does not appear to have happened though (*ibid*).

Duc Minh Vu (2006) using cross-country data, “I have investigated several questions regarding the relation between foreign aid and economic growth in developing countries over the period from 1975 to 2000. Overall foreign aid is found to be significantly and negatively correlated with growth. There is a number of underlying causes, such as the fungibility of aid, aid dependency, bad economic management, corruption and poor coordination and cooperation among aid agencies. However, foreign aid to inland countries as well as to South Asian countries during the period of 1992-2000 is found to have positive impact on growth. The results suggest that (i) there may be problems in the present aid providing system, where aid hinders growth of developing countries (ii) the successful experience of some inland countries and South Asian nations during the period of 1992-2000 could be a good lesson for other developing countries.”

Paul and Sakthivel (2007) have attempted to test for the relationship between foreign savings and domestic savings. Harnessing time-series data for 50 years, culled out from various sources, the series is put to stationarity test; the series became stationary at first difference and subsequently and carried out Johansen’s Maximum Likelihood Tests for cointegration of variables. Results emerging from error correction model suggest that foreign capital is negatively related to domestic savings and found to be significant.

Malik Girijasankar (2008) has selected the six poorest and highly indebted countries (HIPC) of Sub-Saharan Africa whose real per capita GDP is the lowest in the world. The empirical result shows that in five out of the six countries, the natural log of foreign aid as a percentage of real GDP has a significant negative long run effect on the natural log of real GDP per capita. In the short run, aid growth has no significant effect on economic growth per capita for most of the countries except for Niger. These negative results appear on the surface to indicate the long-term deleterious effect of international aid on living standards in these countries.

2.3 Indifferent or Neutral Camp:

Papanek (1972) has said that there are no good answers to the questions “what would have happened with less or more foreign resources inflows? In some circumstances, foreign inflows undoubtedly stimulated savings, so that each dollar of inflows led to more than a dollar of investment, while in other cases they discouraged savings and a dollar of inflows may have led to much less than a dollar of investment. However, as long as both savings and inflows are substantially affected by third factors, the negative correlation between the two found in many studies sheds little or no light on their causal relationship.

Rati Ram (1984) considering the comprehensive coverage of the sample and the care taken to assess the sensitivity of the basic estimates to sample coverage, treatment of outliers, variations in the reference period, and the method of estimation, it would seem that the results reported in my earlier paper are more reliable than those of others, and it appears reasonable to believe that empirical evidence is lacking to support the view that higher dependency rates depress aggregate savings in the LDCs. Nevertheless, there is nothing infallible or final about these results. Further evidence may well warrant a different inference.

Mark Mc Gallery, Simon Feeny, Niels Hermes and Robert Lensink (2006) have surveyed 50 years of empirical research on aid effectiveness, highlighting various controversies that have arisen. Its main focus was on research on links between aid and growth. The paper argued that for most of this period the literature was, at best, ambiguous in its conclusions about aid and growth or related variables. Some studies concluded that this relationship was negative; others concluded it was positive and others found no relationship at all. Aid either worked, or it didn't, it seemed. More generally, there seemed to be a micro-macro paradox, with evidence suggesting that aid clearly worked at the micro level but no evidence, at the macro level, relating to the macro level.

Mohammad S.Hassan (2006) has investigated the nature of stationary, cointegration properties, and the direction and pattern of Granger Causality between domestic savings and aid inflows in the context of a vector autoregressive model in 27 developing countries. The KPSS unit root test results indicate that for the majority of countries aid inflows, domestic savings and income variables share a dissimilar trend. Both ADF and KPSS unit root tests supplemented with Johansen-Juselius Cointegration test indicate that, in the cases of Bolivia and Korea aid inflows, domestic savings and income

variables share a similar trend with a valid cointegrating vector. Similarly, the causal implications of various trivariate models suggest that the causal direction and causal lag vary markedly across countries. In more than half of the 27 countries, time series data do not indicate any causal relationship between aid inflows and domestic savings. However, in the remaining countries, the direction and pattern of causality is mixed. We have observed a positive causality from aid inflows to domestic savings in five countries, which indicates that aid inflows have a beneficial impact on domestic savings. The result is supportive of the recent research findings based on panel studies which find a positive relationship between aid and growth. The study also documents a unidirectional negative causality from aid inflows to domestic savings only in two countries, which appears to support Griffin's "dependency hypothesis" while a unidirectional negative causality from domestic savings to aid inflows is evident in two countries, which lends support to Papanek's "reverse causality hypothesis."

Bazoumana Ouattara (2007) has examined the public savings response to aid flows and the extent to which foreign aid affects the recipient country's dependence on it, in the context of Côte d'Ivoire during the period 1975–99, using the fiscal response framework. The results, based on the reduced-form equations, indicate that project aid flows are associated with decreases in public savings, whilst the financial programme aid has a neutral effect. In contrast, technical assistance grants and programme food aid are associated with increases in public savings. With respect to the public savings gap, which measures the recipient country's dependence on aid, the results indicate that project aid tends to worsen Côte d'Ivoire's dependence on aid. Financial programme aid also appears to increase aid dependence, but B.Ouattara to a lesser scale than compared with project aid. Technical assistance grants and programme food aid, in contrast, did not appear to worsen the country's dependence on aid. Based on these findings, one could argue that aid disaggregate matters in improving our overall understanding of aid effectiveness.

2.4 Conclusion:

The above literature shows that there are three aspects of foreign aid effectiveness on gross domestic savings and growth rate. Nobody can strongly say that the effect of foreign aid on gross domestic saving has always unidirectional (single directional) either positive or negative or inconclusive to all countries. Economists like Rosenstein Rodan, Earl Grinols and Jagdish Bhagwati, White, Henrik Hansen and Finn Tarp, Burnside and Dollar, Todaro and Smith, Bamdev Sigdel, Mohamed Abdel-Wahed Mohamed, Ramesh Durbarry, Rahman, Michael P. Shield, Pyakuryal Bishwamber are in favour of positive effect of foreign aid on domestic savings and growth of developing countries. In the contrary, economists like Griffin and Enos, Droucopoulos and Mohamed Albrahim, Singh, Donald Snyder, Boone, Droucopoulos and Ibrahim, Mohsin Hasnain Ahmad and DR. Qazi Masood Paul, Larson, Duc Minch, Malik Grijasankar and Sakhivel are opposing the effect of foreign aid on gross domestic savings and growth. On the other hand, some economists like Papanek, Rati Ram, Easterly, Mark Mc Gallery and et al, Bazoumana Ouattara have given insignificant or mixed results.

Studying several books, articles, journals and other text materials, this study includes only 30 numbers of literatures. Out of 30 literatures, 14 are in supplementary camp; 11 are in substituting camp and 5 are neutral camp. Therefore, the effect of foreign aid on gross domestic saving and growth may go either way in a specific country. The discussion of foreign aid effectiveness regarding with growth and savings has still inconclusive and it requires further research.

CHAPTER - III

METHODOLOGY

3.1 Introduction:

The major study investigates the effects of foreign aid on gross domestic saving of the country during the study year 1974/75 to 2005/06. It further tries to test the diminishing returns of foreign aid on savings aid Laffer curve) of Nepal.

Different empirical studies have suggested that foreign aid has three conclusions. Foreign aid has a positive or supplementary effect on savings; foreign aid has a negative or substitution effect on savings; foreign aid has inconclusive or neutral effect on savings. So, this study is also going to examine the effects of foreign aid especially on Nepalese gross domestic savings including the major determinants of savings of Nepal. It will further examine the negative of foreign aid on savings (turning point of foreign aid on savings of Nepal).

The economic literature on savings provides so many factors which affect the saving ratio. Economic and demographic factors are important determinants of saving behaviour (Rehanna 1993a, quoted in Nasir and Khalid). Saving can be promoted by ensuring the security of banking system and improving excess of small savers (WB 1993). Empirical studies suggest that increases in real interest rate provide an incentive to private household to save more include corporate sector to generate its own savings due to high cost of borrowing, therefore, overall saving increases (Iqbal 1993). Iqbal found a positive relationship between domestic real interest and savings. Domestic savings can be categorized into three types- Voluntary, involuntary and forced. Voluntary saving depends on the ability and willingness to save. The ability to save depends primarily on the level of per capita income, the growth of income and the distribution of income. The willingness to save depends (potentially) on the rate of interest, the level of financial deepening and the rate of inflation. Involuntary saving depends mainly on tax effort and forced saving is the result of inflation induced monetary expansion (M_2) (Thirlwall, 2003).

The research project identified eight factors that drive savings: income, growth, fiscal policy, pension reform, financial liberalization, external borrowing and foreign aid, demographics, and uncertainty. It yielded a rich set of empirical results on the effect of each of these factors on private (and national) saving rates during the past three decades which includes a set of related savings and consumption determinants, such as income growth rates, interest rates, monetary aggregates, and demographic indicators (WB Bulletin 1999).

Focusing the Malaysian economy, the main explanatory factors we have examined are income, inflation, public savings, financial factors and the current account (to proxy foreign savings), (Bank Negara Malaysia).

3.2 Sources of Data:

This study is totally based on secondary data which has been published by several institutions of Nepal i. e. Economic Survey of Ministry of Finance (MOF), Pocket book of statistics of Central Bureau of Statistics (CBS) and 50 year's of NRB, Inflation in Nepal, A hand book of government finance statistics and Quarterly economic bulletin of Nepal Rastra Bank (NRB). It will also be taking consultations from different books, magazines, various journals and getting further suggestions from professors, lecturers and other researchers.

3.3 Model Specification:

To analyze the effects of foreign aid on gross domestic savings of Nepal; it is based on time series data for 32 years (1975-2006) which has been published by MOF, CB and NRB. The main objective of the study is analyzing of long run effect of foreign aid on gross domestic savings instead of saving function so that single equation model including major determinants of gross domestic saving of Nepal as explanatory variables (RGDP, M_2 , RM, FL, POP, GCE) are selected. However, some economists are using other models like recursive model, simultaneous equation model and dynamic model.

The first model which will taste the foreign aid is not increasing the gross domestic savings of Nepal or increasing the consumption. This model will also result further dependency of the aid recipient country to the aid-giving country. The model is as follows:

The First Model

$$GDS = B_0 + B_1FA + B_2RGDP + B_3M_2 + B_4RM + B_5FL + B_6POP + B_7GCE + U_t \text{-----} (1)$$

Explanations of the Variables are as follows:

GDS = Gross Domestic savings at current price is the dependent variables of this study which is the summation of individual savings, private sector savings and government sector savings.

FA= It is a total foreign aid which is the disbursed aid of summation of grants and loans excluding the technical assistances or non quantifiable assistances. It is the major explanatory variable or variable of interest of this study. From the Two- Gap model, foreign aid is growth productive for low developing countries.

RGDP= Real Gross Domestic Product (RGDP) which is the monetary value of all final goods and services which produces inside the territory of the country in a year in real terms. It would be the relevant variable according to Modigliani's life cycle hypothesis as well as Houthakker's dynamic savings functions; Deusenberry's relative income hypothesis, Keynesian current income and Friedman's permanent income hypothesis. The GDP is constant at 94/95 price. According to Keynes, as income increases, consumption and saving also increases but less than that of income increases.

M_2 = Broad Money Supply (M_2) to GDP where M_2 means currency with public and demand deposits in commercial banks (M_1) plus time deposits held in commercial banks. It includes measurement of financial sector development because it affects the access to appropriate saving instruments.

RM= Remittances which means an official income of the people from abroad through foreign employment. Gilani (1981) and Amjad (1986) found that almost 35% to 40% of remittances are saved and invested in case of Pakistan. In Nepal, remittance is more than 1 billion each year. The study assumes that remittance is increasing GDS in the economy.

FL= In order to examine whether financial liberalization improved savings rate; this study uses financial liberalization as a dummy variable. 1990 is taken as a basis of before and after liberalization.

Where, $D_1 = 0$ before Liberalization and $= 1$ for after liberalization

A positive coefficient for this variable will suggest that liberalization improves gross domestic savings of Nepal and opposite is true for negative coefficient.

POP: It is a proxy variable of age dependency ratio. According to life cycle model, individual will have negative savings when they are young (under 15) and have low or zero income, positive savings during their productive or working age (15 to 64 years) and negative saving when they are old and retired. Therefore, if the share of inactive of dependent population is high, the saving ratio will be low and vice versa. The expected sign of the coefficient of population is negative.

GCE= It is a government capital expenditure which is the proxy of fiscal policy variable. It is the total expenditure minus recurrent expenditure, principal repayment and freeze account.

U_t = Error terms

Validity of model: Many theoretical and descriptive approaches have been developed and justified with the argument that foreign capital inflow (FA) could be used to increase consumption rather than investment. To give the full foundation of the above given model, it is good to know the following related models used by different economists in different empirical studies.

Economic model used by **Mark McGillivray et al** is as follows:

$(S/Y)_i = \alpha_0 + \alpha_1 Y_i + \alpha_2 (A/Y)_i + \mu_i$, Where,

S= Domestic savings of recipient i,

Y= Gross National Product

A= Foreign Capital inflow /aid

α_0 = Constant term

α_1 = Regression (slope) coefficient

μ = Error term

This econometric model was usually estimated for a sample of developing countries using OLS. It concluded that foreign capital flows could have a negative impact on

domestic savings. However, this model was faced number of criticism of omitting explanatory variables.

Mohamed Abdel-Wahed Mohamed suggested a single equation model which is as follows: $S_t = \alpha_0 + \alpha_1 A + \alpha_2 F + \alpha_3 Y + \alpha_4 G_{t-1} + \alpha_5 S_{t-1} + \alpha_6 R + \alpha_7 N + \epsilon_t$, Where,

S= savings/GDP ratio

A=Foreign Aid/GDP ratio

F= Foreign direct Investment/GDP ratio

Y = Real Percapita GDP

G_{t-1} = Real economic growth of income lagged one year

S_{t-1} = savings/GDP ratio lagged one year

R= Real saving interest rate

N= Inflation rate

ϵ_t = Stochastic error term

α_0 = Intercept term

α_1 to α_7 are called coefficient of each explanatory variables

This model concludes that the theoretical argument is that increase in income increases the individual propensity to save but empirically there is no agreement on the contribution of foreign capital (aid and FDI) on savings.

Shahbaz Nasir and Mahmood Khalid provides the following saving function:

$NSG = a + bBDG + cGCEG + dGIG + eGDPG + fRIR + gTOT + hRMTG + \epsilon_t$, Where,

NSG= National saving growth rate

BDG= Budget deficit as percentage of GDP

GIG = Government investment as percentage of GDP

GDPG= Growth rate of gross domestic product

TOT= Terms of trade index

RIR = Real interest rate

GCEG = Government current expenditure as percentage of GDP

RMTG = Remittances growth

ϵ_t = Error term

a = Intercept term

b, c, d, e, f, g, h are coefficients of each explanatory variables

This single equation model concludes that increase in government current expenditure raises savings and its effect is highly significant, which means that government current expenditures mainly contribute towards the income of people and thereby increases savings.

Pradeep Agrawal (June 2000) has included the following variables that might be relevant in South Asian context (such as the bank offices per capita and the 14 financial liberalization dummy model):

$GNS/GNP = \alpha_0 + \alpha_1 \text{growth} + \alpha_2 \text{Depend} + \alpha_3 \text{FS/GNP} + \alpha_4 \text{M}_2/\text{GDP} + \alpha_5 \text{RD} + \alpha_6 \text{URBAN} + \alpha_7 \text{FLIB} + \epsilon_t$, Where,

Growth= growth rate of real GNP

DPEND= Age dependency ratio

FS= Foreign savings

M₂ = broad money supply

RD= Real interest rate

URBAN= Population living in urban areas

FLB = Dummy variables for post liberalization years

This model concludes that the effect on savings rate of greater availability of foreign savings is found to be significantly negative.

Micheal P. Shieds (2007) has given a reduced form OLS model is estimated separately for 119 countries, which is as follows:

$S_{it} = \alpha_i + \beta_1 Aid_{it} + \beta_2 Labor_{it} + \beta_3 AG_{it} + \epsilon_i$, $i=1, \dots, 119$, Where,

S= Gross National Savings as percentage of Gross National Income

Aid= Official development assistance (ODA) and official aid as percentage of gross national income

Labour = the percentage of total population that is in the age group 15 to 64

AG = Value added in agriculture as percentage of gross national product

This model concludes the mixed result that 72% countries have aid increases net savings and others have aid reduces domestic savings with no significant impact on net savings and significant with negative impact on net savings.

MAHUA PAUL and SAKTHIVEL (2007) have introduced lag structure into the model which is as follows:

$S_t = a_1 + b_1 FC_t + b_2 FC_{t-1} + b_3 GDP_t + b_4 GDCF_t + e$

As per the above model, one can hypothesize that savings (S_t) in the current period respond to foreign capital in the present (FC_t) and past years (FC_{t-1}), with the overall output of the economy (GDP) and investment (GDCF).

This model concludes that foreign capital is negatively related to domestic savings and found significant result.

The second model will test the diminishing returns of foreign aid to gross domestic savings and investment directly and indirectly to the growth rate of the country. This model is as follows.

The second model:

This model is used to capture the maximum point the effect of FA to GDS of the Nepalese economy. Among others methodology, it is used the simple aid square methodology to indicate the threshold of FA. Now, the modified model 1 is given as follows:

$$GDS = \alpha_0 + \alpha_1 FA + \alpha_2 FA^2 + \alpha_3 RGDP + \alpha_4 M_2 + \alpha_5 RM + \alpha_6 FL + \alpha_7 POP + \alpha_8 GCE + U_t \quad (2)$$

Now, Taking in equation (2) with respect to FA we get

$$GDS = (\alpha_1 + 2\alpha_2 FA) FA \quad (3) \text{ (Expecting coefficient that } \alpha_1 > 0 \text{ and } \alpha_2 < 0).$$

3.4 Econometric Methodology:

First of all, the analysis is focused on the relationship on table and graph of FA, GDS and RGDP during the study period. And, it will observe the correlation analysis of dependent variable on independent variables individually. Since it gives the conclusion how the dependent variable GDS is correlated to all explanatory variables (FA, RGDP, M2, FL, RM, Pop, GCE), it will not show the cause and effect relationship so that this study further analyzes the multiple linear regression.

Regression of one non-stationary time series on the other non stationary series generating a spurious regression even if the sample size is very large because a non stationary time series will have a time varying mean or a time varying variance or both. In other words, regression estimators are not unbiased and efficient. Forecasting in such a time series may be of little practical value. Therefore, firstly the time series data is tested for stationary (or unit root problem) by using Augmented Dickey Fuller (ADF) test for both variables in level and first difference with trend -intercept and intercept cases in 1 and 2 lags. And if the individual series has unit root problem say I (1). Then after, it will test Engel Granger cointegration for long run equilibrium or cointegrating all variables. Since cointegrating all variables mean the regression will not be spurious further. It will accept the OLS properties of unbiased and efficient estimators. The variables are still not cointegrating the model need to revise by first difference of each variable which are mostly stationary. The linear regression used by OLS method will observe major classical linear regression assumptions of normality, autocorrelation, heteroscedasticity of the residuals. This study will not test multicollinearity problem since one of the remedy of it is “do nothing.”

It will further test Granger Causality test which shows the short run causality of variables. It is because there may be single causality between independent variable to dependent or dependent variable to independent variable or both individually.

In the second model, one simple way to capture the diminishing returns is to add a quadratic term to a linear relationship (Wooldridge; 2008) so that the model is arranged accordingly.

3.5 Hypothesis:

There are basically two types of hypothesis among the economists. Some are hypothesizing that foreign aid is substituting national savings and other are hypothesizing that foreign aid is supplementary for domestic savings. So, this study is also hypothesizing that foreign aid is substituting gross domestic savings in Nepal. It is because many theoretical and descriptive approaches have been developed and justified that foreign capital inflow could be used to increase consumption rather than investment in the economy which ultimately decreases the growth rate, employment and output in under developing countries. The strong foundation of hypothesis is that Nepal has been receiving huge chunk of foreign aid since 1950's but the productivity of foreign aid seems to be very low. It is shown by our mass poverty, low saving, low growth rate, low employment, low investment, and underutilization of natural and mineral resources.

Therefore, it is an urgency to test the hypothesis; the major question is that is foreign aid moving towards consumption or savings in Nepal? The statistical hypotheses are as follows:

H₀: Foreign aid is not increasing the gross domestic savings of Nepal or increasing the government consumption.

H₁: Foreign aid is increasing the gross domestic savings of Nepal or decreasing the government consumption.

And,

H₀: Foreign aid has diminishing returns (Negatively sloped) after certain level of threshold.

H₁: Foreign aid has increasing returns (positively sloped) after certain level of threshold.

This study is expecting the coefficient of $\beta_1 > 0$ and $\beta_2 < 0$ in the second model.

CHAPTER - IV

FOREIGN AID IN NEPALESE PROSPECTIVE

4.1 History of Foreign Aid:

Foreign aid came for the first time in Nepal in the fiscal year 1951/52 under the “Point Four Programme” of the US. The neighboring country India had also followed this. Nepal’s membership in Colombo Plan in 1952 also contributed to the increased bilateral aid inflow in Nepal. India, Canada, Australia, Japan and United Kingdom provided aid under this plan. However, the size of the aid rapidly increased after the beginning of planned development (1956/57) in Nepal.

During the 1950s, many Nepalese received scholarships through the Colombo Plan to go to different countries for studies in technical and professional areas. Also during that time, all other aid was in the form of grants. The bulk of assistance was directed toward developing agriculture, transportation infrastructure and power generation. Other areas targeted for assistance were communications, industry, education and health.

Before the restoration of democracy (1990 AD), Nepal accepted all and any form of aid, as provided. Gradually, it was realized that the impact of aid in Nepal had been less effective. Strong voices were raised regarding the misuse of foreign aid in this country and also critics had blamed foreign aid for increased socio-economic inequalities. Against this background, Nepal had formulated its first official foreign policy in 2002. The main goal of the FAP 2002 was to maximize the benefits of aid and enhance effectiveness of aid in terms of better outcomes and achievements and also internal resource mobilization.

In 1991, Nepal was receiving external assistance in the form of project aid, commodity aid, technical assistance, and program aid. Project aid funded irrigation programs, hydroelectric plants and roads. Commodity assistance targets included fertilizers, improved seeds, and construction materials provided by donor aid agencies. Technical assistance covered services of experts to advise the government in training indigenous personnel to perform research in technological fields and resulted in the development of skilled labor. Program aid supported various projects, in particular the agricultural and health fields (Wikipedia, the free encyclopedia).

Nepal relies heavily on foreign aid, and donors coordinate development aid policy through the Nepal Development Forum, whose members include donor countries, international financial institutions (such as the World Bank), and inter-governmental organizations (such as the United Nations). Japan is Nepal’s largest bilateral aid donor, and the World Bank and Asian Development Bank are the largest multilateral donors. Donors have reported as losing confidence in Nepal as a result of political interference and corruption in poverty relief efforts as well as the country’s apparently poor capacity to utilize aid (ibid).

“The structure of foreign aid in Nepal as of FY 2007/08 reflects that foreign grants constitute 61 percent, while foreign loan accounts for 39 percent of the total foreign aid during FY 2007/08. The extent of foreign aid comprising both grants and loan provided by ADB (21.9%), and IDA (22.9%) is highest followed by EFA – Donors’ organization (8.7%), Japan (8%), Germany (6.5%) and India (6.2%). The contribution of DFID, UNDP, USAID, Denmark, Norway, Global Development Fund, IFAD, OPEC Fund, Saudi Development Fund, Swiss Development Cooperation, Finland, European Union (EU), and China is ranged between 0.2 percent and 5.3 percent of total foreign aid available to Nepal (Dahal Madan, 2008).”

The Nepal Aid Group was created in 1976, under the auspicious of World Bank, then after, the bulk of foreign aid contributions after 1976 came from this group. However, the growth and per capita income of the country have not seen appreciable performance having the continuous flow of 56 years of aid into the country.

The inflow of huge amount of the foreign aid into the country has not increased the GDP growth rate and gross domestic savings in Nepal proportionately, however, it is said that foreign aid increases the gross domestic product and saving rate and reduced the poverty rate in the country. It does not highly materialize in Nepal so that country has been facing three major gaps i.e. saving-investment, income-expenditure and export-import gaps. Saving investment gap was 9.6% (1986/90), 9.8 (1991/95), 11.70(1995), and 11.20 (2003/04) (Pakuryal 2008 and MOF 2005/06). It again shows that the gap between saving and investment is not decreasing in the country for a long time. Looking on the data, the foreign aid has been usually in an increasing trend but not the growth and saving of the country has increased similarly.

4.2 Aid Dependency of Nepal:

The Nepalese economy, generally public sector economy, is excessively dependent on foreign aid. The dependency is an outcome of slow economic growth, lower savings ratio and widespread poverty. On the other hand, liberalization in the external sector has greatly accelerated imports with consequent depreciation of the external value of the Nepali rupee. This has further widened the magnitude of trade and current account imbalances.

The dependence of Nepal on foreign aid has increased to such levels that the government shamelessly accepts aid as low as a thousand US dollars (UNDP, Development cooperation Report, 1996 quoted by Dahal)

“Foreign aid has jeopardized the self-esteem of Nepal and its people. The dependency syndrome pervades the Nepali psyche to such an extent that no mainstream political parties and public officials can conceive of national development without foreign aid. There is foreign aid for observation, for preparing feasibility studies, for its scrutiny, for construction, for O & M and also for the project’s destruction. So Nepal has now accepted foreign aid to manage foreign aid in Nepal (Acharya and shrestha, nov.1998:17-22, quoted by Acharya)”.

“Nepal with the launch of its First Five-Year Plan, (1956-61) joined the league of aid-recipient countries for its development financing. A substantial portion of development expenditure, averaging about 55% per year, has since been financed through foreign aid. In terms of sectoral distribution, agriculture and forestry have been the largest recipients of aid followed by energy, transport, health, social services and human resource development (Foreign Aid Policy, 2009).”

During 1980's the foreign aid (grants and loans) was average Rs.3942.47 million which was increased to average Rs.12989.39 million in 1990's period; about 3 times greater. Whereas, the real growth rate (1994/95 price) had minor increased from 4.86 % to 5.1 % during the same period. It was further reduced the growth rate from 2000 A.D (Economic Survey 2000/01 to 2005/06). Likewise, the foreign aid to percentage of development expenditure was not decreasing less than nearly 40% (FY 1975/76 to 2004/2005); it showed the high dependency on foreign aid for developmental work in the country. For example, Nepal's gross domestic investment to GDP is 25.83 and gross domestic saving to GDP is 11.59 (Economic Survey 2005/06), which shows that investment is more than double of gross domestic savings, means Nepal is known as the net capital importer country.

4.3 Impact of FA on Nepalese Economy:

There is no unidirectional view of impact of FA on Nepalese economy. Some economists are arguing about the positive impact of FA and others are against it. Anyway, there is no evidence found that FA has neutral effect into the economy during the literature review. It is a debatable question that foreign aid is working or not in Nepal.

It is very difficult to derive the exact figure of aid because of numerous sources (government and donors) and various forms. Likewise, the much serious problem is that the differences in calculation due to different exchange rates are used so that government documents and OECD is separately presented (Khanal, Acharya and Upreti 2008).

Foreign aid has been the mainstay of Nepalese economy ever since Nepal entered the era of planned development. It has been contributing more than 60 percent of the development budget and around 30 percent of the total budget. A savings-investment gap has been one of the major reasons for resorting to foreign loans. The economic survey of the fiscal year 2008/09 shows that its gross domestic savings is 11.5 percent while the gross domestic investment is 32 percent, widening the gap between savings and investment to 20.5 percent of the GDP. However, gross national savings is 32 percent of the GDP implying openness of Nepalese economy (Bhattarai Bishal, Foreign aid revisited).

In Nepal, as in many other developing countries, the aid agencies increasingly see themselves as 'partners' and not as donors. The term 'partnership' assumes symmetrical relationship. However, Nepal continues to remain a highly aid dependent country and Nepal's relationship with the donors continues to be highly asymmetric. For instance, in

1999 foreign assistance contributed a little less than half the development expenditure, made up almost 6.7 percent of the country's gross national income, while per capita aid hovered around US\$18. Despite the decreasing trend, the aid that Nepal receives is still the highest in South Asia in relative per capita terms and one of the highest in the world (Sharma and et al, 2003).

“It is not that aid has not contributed a single penny to national development. Comparing to 1951, when Nepal first received foreign aid, in 1998 the length of roads had increased by 43 folds to nearly 12 thousand KMs, electricity generation increased 230 folds to 252.6 MW. Similar progress is recorded in expansion of health and education services, and in irrigation and communications (Acharya, 2000).”

“There is no debate on whether Nepal needs foreign aid or not, the prime concern is of raising its productivity through effective utilization of foreign aid. In recent years, the major issues like ownership of donor-driven projects in recipient countries, engagement of national experts in lieu of foreign consultants to ensure cost effectiveness, transparency and aid conditionalities have dominated the central-stage of development drama orchestrated through foreign aid (Dahal, 2008).”

“Developing countries all over in Asia, Africa and Latin America heavily embarked on foreign aid in the form of Official Development Assistance (ODA) in the aftermath of World War II. Since then, voices have been raised against its mis-performance and non-performance from donors and recipients alike it has led to dependency, eroded self-reliance, bred corruption, promoted inequality and “intoxicated” people with its short-term, myopic and unsustainable deliveries. Many of such criticisms in many instances have proved valid, strongly suggests the need for a critical re-look into its current concept, scope, motive, quality, utility and mobilization instruments (Foreign Aid Policy, 2009).”

It has found the most striking finding that about a quarter of a dollar received as foreign aid in Nepal has been spent on government consumption and the rest on development expenditures. This is the exact opposite of what Feyzioglu et al. (1998), quoted in Tiwari, have found the study of 14 developing countries that two thirds of a dollar in aid was used for government consumption in their sample(Tiwari, 2007).

“Foreign aid has failed to address the continuation of social injustice, class and gender discrimination, unequal distribution of means and resources and corrupt governance. We are gravely concerned towards the fact that the faulty implementation of foreign assistance has contributed to further marginalization of the disadvantaged sections of the society (Nepal Civil Society Development Forum, 2004).”

We vehemently oppose the national and international experimental development policies that have reinforced derailed governance, economic stagnation, growing poverty and environmental degradation, and to bring about further sufferings, exploitation and violent conflicts on women, children, *dalits*, nationalities, indigenous peoples, the disabled, the

Terai people and disadvantaged communities who have been systematically ignored and denied development for decades (ibid).

Foreign aid has aggravated corruption. Patric Meagre, Kumar Upadhyay and Betty Wilinson (1998) in *Combating Rural Public Works Corruption: Food for Works Program in Nepal*, a study prepared for the World Bank, found between 40% to 50 % of the project budget being siphoned out by politicians, bureaucrats, and project staff (quoted by Acharya).

4.4 Saving-Investment Gap:

The resource gaps are the trade gap, the saving –investment gap and the revenue and expenditure gap. Saving-Investment gap is one of the components of resource gap of developing economy. A very low rate of saving is a common feature of developing countries like Nepal. The low saving rate and high investment has resulted in widening saving –investment gap into the economy which is generally fulfilled by foreign aid so it thinks that foreign aid has played important role in the Nepalese economy.

“The share of domestic saving was 14.03 % of GDP in 1985. It decreased rapidly and reduced to 7.9% of GDP in 1990. Thereafter there was some rise in saving rate because of robust exports. As a result, domestic saving increased to 14 % of GDP in 1997. Again from the beginning of 2001 domestic saving started decelerating. Nonetheless, low saving rates amidst steady rise in gross investment has resulted in widening saving investment gap, particularly during the period of 2002 to 2005. During the period of 1985 to 1997, the contribution of foreign aid in meeting the saving investment gap was considerably high. (Khanal and et. al 2008)”

The growth output of any economy depends on capital accumulation, and the capital accumulation requires investment and an equivalent amount of saving to match it. Two of the most important issues in development economics, and for developing countries, are how to stimulate investment, and how to bring about an increase in the level of saving to fund increased investment.

The famous Harrod’s formula for the actual rate of growth is $g = S/C$, where g is growth rate ($\Delta Y/Y$); S is savings ratio (S/Y) and C is incremental capital output ratio ($I/\Delta Y$) i. e. the amount of investment or increase in the capital stock required to increase the flow of output by one unit. The Harrod formula for the actual rate of growth is by definition true since in the national accounts (ex-post) saving (S) and investment (I) are always equal (Thirlwall 2003). If there is a difference between the actual savings ratio that requires achieving a target rate of growth, there is said to exist a savings-investment (S-I) gap. The condition of savings-investment gap of Nepal is shown by the following table:

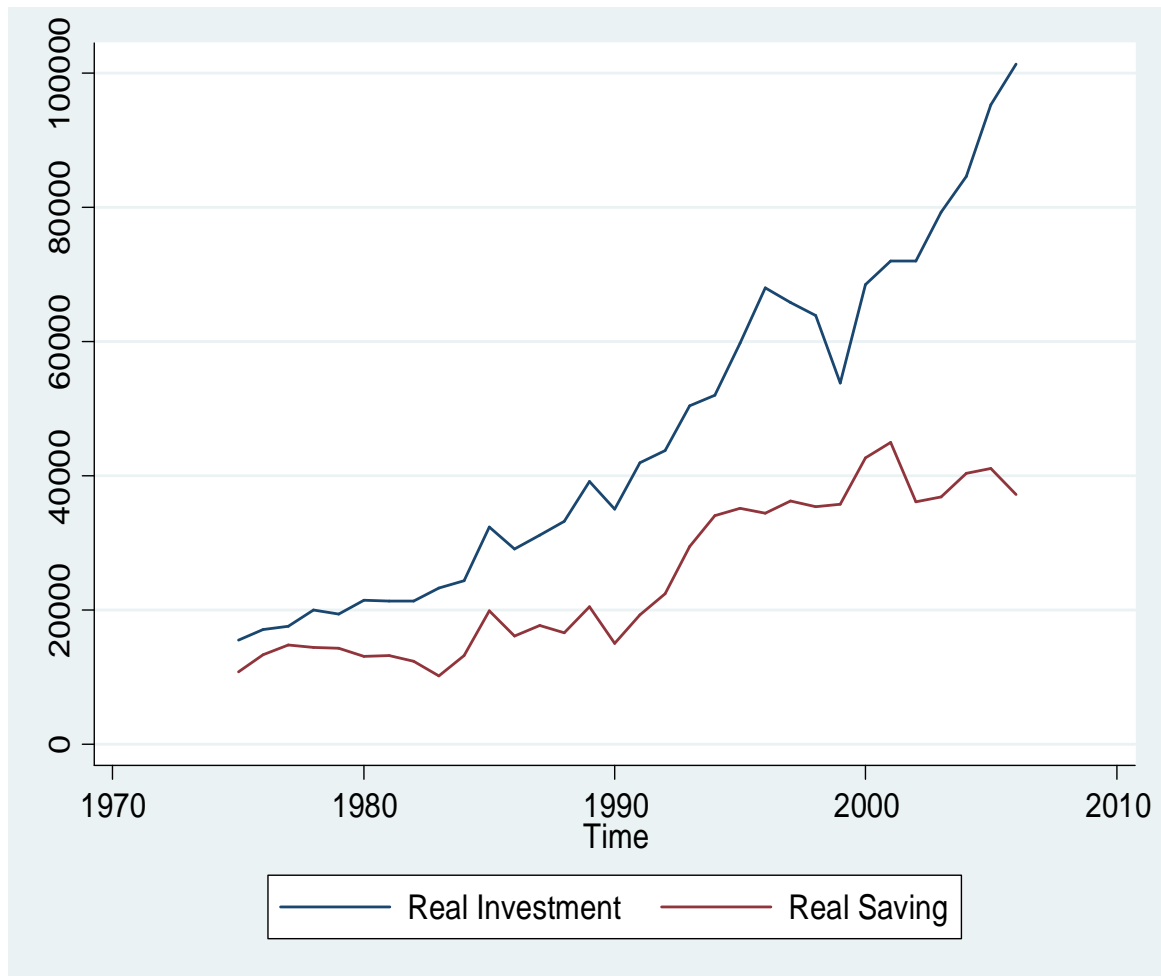
Table No 1: Real Saving- Real Investment gap:

Year	Real Saving	Real Investment	GDS/RGDP	GDI/RGDP
1974/75	10722.58065	15496.77419	11.75243475	16.98516743
1975/76	13246.75325	17090.90909	13.90676848	17.94245815
1976/77	14759.49367	17518.98734	15.04172149	17.8539816
1977/78	14431.81818	19926.13636	14.08762922	19.45091169
1978/79	14203.2967	19307.69231	13.54348519	18.41075705
1979/80	13020.1005	21457.28643	12.70954282	20.94548354
1980/81	13159.29204	21274.33628	11.85623277	19.1677092
1981/82	12352	21256	10.72417715	18.45475304
1982/83	10129.82456	23256.14035	9.064306292	20.80991413
1983/84	13188.11881	24260.72607	10.75969801	19.79342845
1984/85	19806.34921	32330.15873	15.21551024	24.8364732
1985/86	16128.76712	29038.35616	11.83850482	21.31413497
1986/87	17683.57488	31154.58937	12.72908431	22.42586114
1987/88	16566.4488	33196.07843	11.16299909	22.36857143
1988/89	20422.53521	39064.38632	13.05137796	24.96477864
1989/90	14941.2844	35001.83486	9.116487223	21.35651606
1990/91	19255.85284	41929.76589	11.00913214	23.97246889
1991/92	22385.35912	43672.65193	12.20768776	23.81655329
1992/93	29406.09137	50321.06599	15.57691036	26.65593071
1993/94	34016.29802	51972.06054	16.64226873	25.42701729
1994/95	35097.2973	59709.18919	16.71490899	28.43619708
1995/96	34426	68017	15.51209841	30.64795206
1996/97	36227.56707	65757.63182	15.54564327	28.21731541
1997/98	35386.84885	63815.54227	14.69455885	26.49971026
1998/99	35707.82209	53727.76074	14.18339123	21.34103414
1999/00	42681.24537	68400.29652	15.97973963	25.6088809
2000/01	44908.03765	71905.1412	16.05297522	25.70344888
2001/02	36087.96622	71902.88529	12.94180565	25.78569159
2002/03	36788.44862	79261.24916	12.84154169	27.66728887
2003/04	40301.03359	84620.80103	13.59413396	28.54384621
2004/05	40998.76391	95260.81582	13.43145049	31.20803678
2005/06	37126.21916	101252.4383	11.88037112	32.40072842

Note: This real values of saving and investment is adjusted from NCPI, Source: Inflation in Nepal (NRB)

The above table shows that due to high targeting of investment and low gross domestic savings every year, the saving investment (total) gap is increasing in the country. Before the restoration of democracy (1990 AD) it was below 6% but it has been increasing rapidly than after. In FY 2000/01 AD, the gap reaches to 13% and in FY 2005/06 AD it is about 36% which is 6 times larger than FY 1974/75 and about 5 times than FY 1990AD. This needs to be filled if the target growth rate is to be achieved. This can be done by either attempting to raise the domestic savings ratio or by borrowing from abroad i.e. by foreign saving. The graphical relationship between saving and investment is as follows:

Fig 1: Relationship between Real Gross Domestic Saving and Investment:



The above figure shows the total investment is always greater than the GDS of the country in study period. In the period of 1990 AD only the total investment went down and GDS went up although there is clearly seen a huge gap between GDS and total investment. Both table and graph have proved that there is a gap between savings and total investment of Nepal.

As other developing countries, Nepal has also huge ratio of saving-investment gap. If the country is to achieve the targeted level of growth, it is required to bridge the gap either by

domestic savings ratio or by borrowing from abroad (foreign saving). Unless the gap is fulfilled, the country's growth will be less targeted and it can not correct current macro economic problems of the country like high poverty, high general price level, low output, low income and low employment. However, foreign borrowings are uncertain and high degree of conditional, increase in domestic resources mobilization (GDS) will be the panacea for the sustained economic growth and development of the country.

4.5 Conclusion:

It is concluded that foreign aid is indispensable for the growth and development of developing country that have shortage of capital formation. The huge gap of S-I, income-expenditure and foreign exchange demands the FA in the country. Nowadays, every year about 60 to 80 percent of development expenditure is based on FA. Instead of high importance of FA, it is equally needed to be serious concern about the effectiveness of FA in the country. Critics are raising voices against the foreign aid since it may have high chance of misuse through corruption and government consumption in the country. Moreover, it may increase dependency, losing national unity, sovereignty, raising inequality, decreasing gross domestic saving and investment.

Foreign aid to Nepal is essential not only for sustaining development activities like poverty reduction, improving efficiency to enhance competitiveness of both government, filling the gap of S-I; Income-expenditure; Export-import and the private sector, which would maximize the benefits from the current phase of globalization and liberalization in the country. But the bulging questions about the foreign aid are transparency, accountability, effectiveness and responsiveness to the country.

CHAPTER - V

QUANTITATIVE ANALYSIS AND ITS EFFECTS OF FOREIGN AID ON GROSS DOMESTIC SAVINGS

5.1.1 Study of FA, GDS and RGDP:

The whole study period is divided into two parts i.e. before 1990 AD and after 1990 AD. The date 1990 AD is chosen because it had turned the politics (restoration of democracy) and economy (massive liberalization) of Nepal. Both parts have equal number of observation too.

Table No 2: Relationship of GDS, FA and RGDP

Year 1974/75 to 1989/90

Variable	Observations	Mean	Std.dev	Min.	Max.
GDS	16	4502.43	2644.13	1662	10150
FA	16	2753.27	2413.65	386.76	7935
RGDP	16	49921.69	53902.08	16571	163893

Year 1990/91 to 2005/06

Variable	Observations	Mean	Std.dev	Min.	Max.
GDS	16	43328.44	17659.88	11515	66336
FA	16	15227.07	4443.66	8421.5	23657.3
RGDP	16	246175.2	45585.75	174908	312500

Source: Appendix A

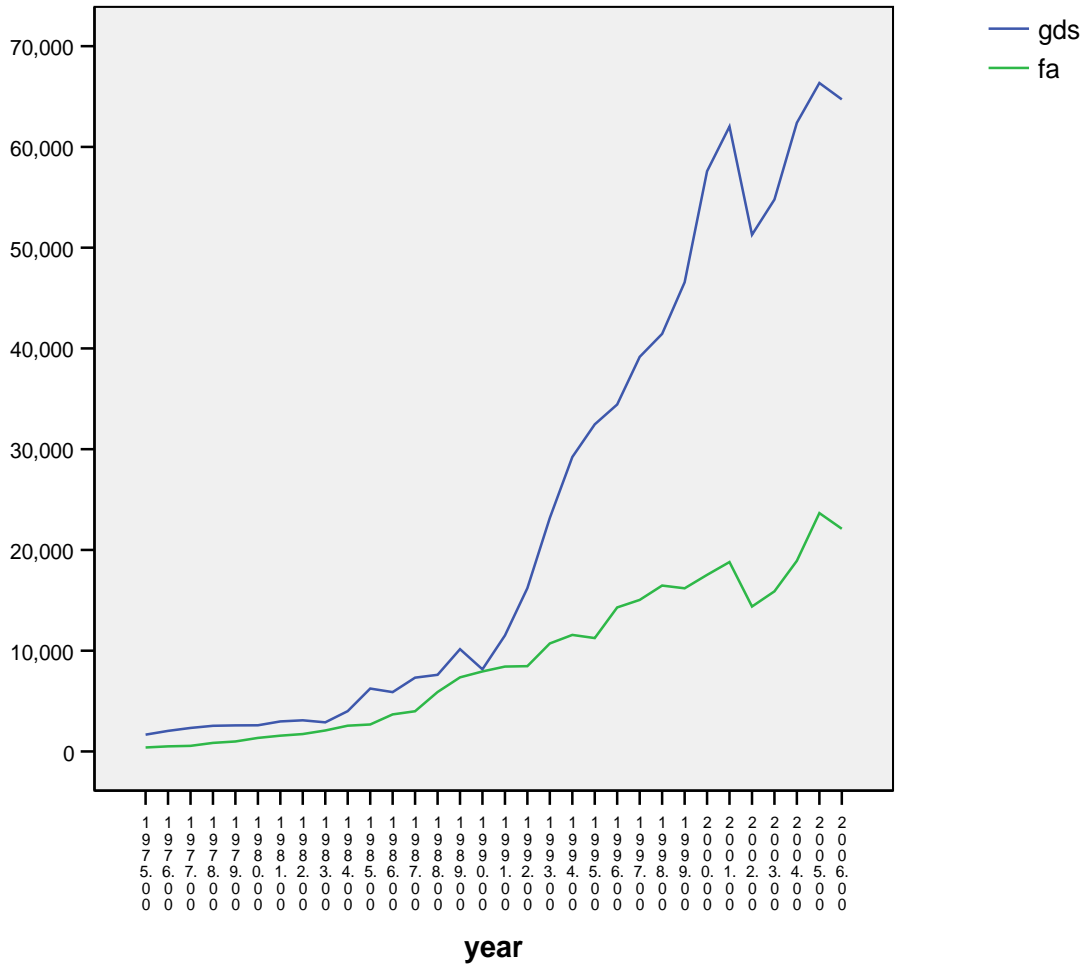
Observing the above table, both variables GDS and FA are about to increase 10 times and 6 times respectively after the period of 1990 AD but highly volatile trend. The minimum of GDS before 1990 was Rs 1662 m which was increased to RS 11515 m after the period of 1990 AD and maximum ranges from Rs 10150 m to Rs 66336 m at the same period of time. Likewise, the minimum of FA before 1990 is Rs 386.7 m which is increased to Rs 8421.5 m after the period of 1990AD and maximum ranges from Rs 7935 m to Rs 23657.3 m after the same period.

GDS is increasing from average 4502.43 m to 43328.44 m and FA is increasing from average 2753.27 M to 15227.07 M after 1990 AD. Moreover, RGDP has increased in average from 49921.69 m to 246175.2 m. From the above information, it is concluded that GDS, FA and RGDP all are in increasing trend in Nepal.

5.1.2 Relation between GDS and FA:

By the Harrod Domar growth model and Solow (in short) saving is indispensable for the growth and development of any country. Now, the graphical relationship between GDS and FA is shown below:

Fig 2: Relationship between GDS and FA



The above figure shows that the gross domestic product (GDS) is always higher than the foreign aid during the study period. It can be concluded that foreign aid is increasing GDS; but, it can not confirm that the whole increment of GDS is made by foreign aid. Anyway the wide gap of foreign aid and GDS prove that foreign aid is not decreasing GDS of the country. FA is supplementing GDS of the country or the gap between GDS and GDI is filled by FA into the Nepalese economy. However, it is not scientific approach.

According to the graph, both foreign aid and gross domestic savings were moving closely and GDS is just above to FA up to the period of 1990 AD. It means that FA is highly supporting to GDS of the country. But after the restoration of democracy, there is a wide

gap between FA and GDS. FA is not required in the long run since there is continuous widening of gap between them. Likewise, FA is not highly increasing to GDS of the country after liberalization.

5.1.3 Correlation between Variables:

Before moving into the cause and effect relationship of GDS to foreign aid and other including explanatory variables, it would be better to know about their association or strength of relationship between variables.

The mathematical approach of relationship between variables is shown by Karl Pearson correlation coefficient. In correlation coefficient the dependent variable is GDS and FA, RGDP, M_2 , RM, FL, POP, GCE are explanatory (independent) variables. It is using the computer software named as STATA through which the following results are found.

Table No 3: Correlation coefficient between variables

Independent Variables	Dependent variables (GDS)
FA	0.96
RGDP	0.92
RM	0.70
M_2	0.96
FL	0.85
POP	0.95
GCE	0.95

Source: Appendix A

From the above table, it is highly significantly correlated on all independent variables FA, RGDP, RM, M_2 , FL, Pop and GCE with dependent variable GDS. Table shows that more than 50% correlation is seen i.e. high degree of correlation. Therefore, inclusion of all explanatory variables in regression model is significant. The high degree of relationship does not mean the cause and effect result so that it requires testing the regression analysis to know the cause and effect of explanatory variable to dependent variable.

5.1.4 Stationary Test:

Individual time series data must be stationary before regression analysis otherwise the regression will be spurious or nonsense regression whose nature will be explored shortly. Augmented Dickey-Fuller test is used to test the time series properties of the individual data either stationary or not both in level and difference with lag 1 and lag 2 which are shown below:

Table No 4: Stationary Tests for Level

Variable	Lag	Mackinon P-value for Z(t)	Intercept and trend	P-value for Z(t)	Intercept
GDS	1	0.5710	-	0.6615	-
GDS	2	0.6863	-	0.8782	-
FA	1	0.1412	-	0.6618	-
FA	2	0.2765	-	0.7401	-
M2	1	1.0000	-	0.9994	-
M2	2	1.0000	-	0.9980	-
RM	1	1.0000	-	0.9999	-
RM	2	1.0000	-	1.0000	-
RGDP	1	0.5710	-	0.66	-
RGDP	2	0.68	-	0.87	-
POP	1	0.9966	-	0.9857	-
POP	2	0.9941	-	0.9803	-
GCE	1	0.6139	-	0.3137	-
GCE	2	0.644	-	0.3069	-

*Note: *, ** and *** are 1%, 5% and 10% level of significance respectively (But all are insignificant)*

Table No 5: Stationary Tests for Difference

Variable	Lag	Mackinon P-value for Z(t)	Intercept and trend	P-value for Z(t)	Intercept
DGDS	1	0.0000	*	0.0000	*
DGDS	2	0.0567	***	0.0044	*
DFA	1	0.0002	*	0.0000	*
DFA	2	0.0003	*	0.0001	*
DRGDP	1	0.011	*	0.0002	*
DRGDP	2	0.33	-	0.0083	*
DM2	1	0.3522	-	0.5506	-
DM2	2	0.6559	-	0.7338	-
DRM	1	0.7421	-	0.2894	-
DRM	2	0.9961	-	0.9352	-
DPOP	1	0.6143	-	0.5163	-
DPOP	2	0.6385	-	0.6493	-
DGCE	1	0.0050	*	0.0001	*
DGCE	2	0.2114	-	0.0047	*

*Note: *, ** and *** are 1%, 5% and 10% level of significance respectively*

The above ADFT for unit root problem shows the result that in level test all variables are insignificant but in stationary difference GDS, FA, RGDP and GCE are significant at lag 1 and lag 2 both in intercept and intercept trend. Variables are significant in 1% level 5% and 10% level. But the variables DM2, DRM and POP are insignificant.

5.1.5 Cointegration Test:

The regression of a non stationary of time series on another non stationary time series may produce a spurious regression but if model is cointegrated, the regression analysis will be significant (Gujarati 2007). Economically, dependent and independent variables are cointegrated if they have long term or equilibrium relationship between them. According to C.W.J. Granger (1986), “A test for cointegration can be thought of as a pre-test to avoid ‘spurious regression’ situation (Quoted in Gujarati 2007).”

Table No 6: Engel Granger Cointegration test

Condition	Lag	P-value for Z(t)	Z(t)
Trend and intercept	1	0.03 **	-3.58
Intercept	1	0.0005 *	-3.68
Trend and intercept	2	0.04 **	-3.48
Intercept	2	0.0007 *	-3.58

*Note: * and ** shows 1% and 5% level of significance respectively.*

Source: Appendix B

Observing the above table 6, the dependent variable GDS is cointegrated with all independent variables of the given model. The high value of $Z(t)$ statistics for both in lag 1 and lag 2 have higher negative value and also the p-value is significant in trend-intercept at 5% level and intercept case at 1% level and also highly significant P-value (0.0000) of Johansen Normalization Test (Appendix B) indicate that regression analysis of the model will not be spurious and that gives the long run equilibrium (i.e. Cointegrated).

5.2 Regression analysis:

A simple correlation may suggest that there is high linear relationship between two variables either positive or negative or no relationship (zero relationship). So, correlation indicates to what extent the variables are associated to each other. It does not give any cause and effect relationship between variables. To know the cause and effect relationship between variables is given by regression analysis. The result of regression analysis is given in the standard form as below (**Source: Appendix B**):

GDS=	12184.31	+1.39FA	- 0.41RGDP	+0.18M ₂	- 0.22RM	+4099.56FL	-
t	(1.42)	(4.28)	(-2.25)	(7.32)	(-3.12)	(2.23)	
P	(0.16)	(0.00)	(0.03)	(0.00)	(0.00)	(0.035)	

849.55POP+0.54GCE+U_t
 (-1.40) (1.86)
 (0.17) (0.075)

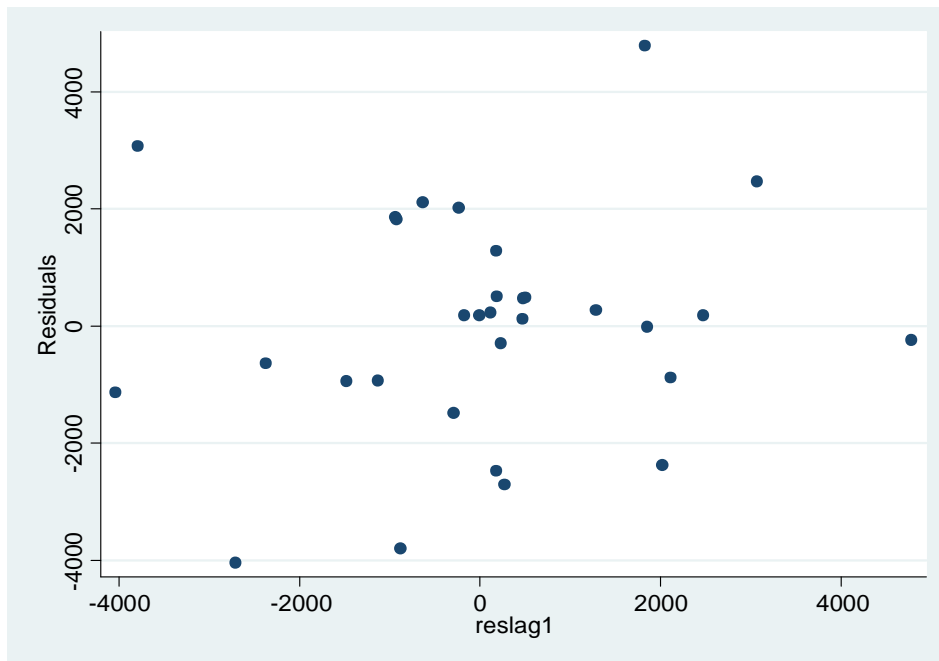
F (7, 24) = 509.54; Prob.>F= 0.0000;R²= 0.99; Adj-R² =0.99; d=1.67

5.2.1 Autocorrelation Test:

It is called as serial correlation in the errors. In other words, the disturbances (deviations) follow the systematic patterns it is called autocorrelation or serial correlation. The term autocorrelation is defined as “correlation between members of series of observations ordered in time (time series and cross-sectional data) (quoted in Gujarati and Sangita 2007).” OLS is no longer BLUE in the presence of serial or auto correlation. Likewise, the usual OLS standard errors and test statistics are not valid, even asymptotically.

Graphical detection of autocorrelation plotted U_t hat against U_{t-1} hat (U_t is the population error which is not possible) has no linear or quadratic or random relationship. The two way scatter diagram of e_t hat and e_{t-1} hat is given below:

Fig 3: Detection of Autocorrelation



By inspection, the two way graph shows the positive autocorrelation. For further confirm it is tested d-statistics; the value of d- statistic is 1.67 which lies in inconclusive or indecisive region i.e. d_L (=0.972) < 1.67 < d_u (=2.004). Because the rule of the thumb is

that near to the d-value with two, higher the chance of no first order positive autocorrelation and vice versa. Due to the reference of graph and inconclusive d-statistics this study indicates the positive autocorrelation so that Cochrane-Orcutt iterative process (**Appendix B**) is used to improve the autocorrelation problem and it has found the following results.

$$\text{GDS} = 11886.88 + 1.37\text{FA} - 0.035\text{RGDP} + 0.19\text{M}_2 - 0.24\text{RM} + 3854.90\text{FL} -$$

t	(1.23)	(4.20)	(-1.76)	(7.20)	(-3.46)	(1.92)
P	(0.23)	(0.00)	(0.09)	(0.00)	(0.00)	(0.06)

$$829.92\text{POP} + 0.45\text{GCE} + \text{U}_t$$

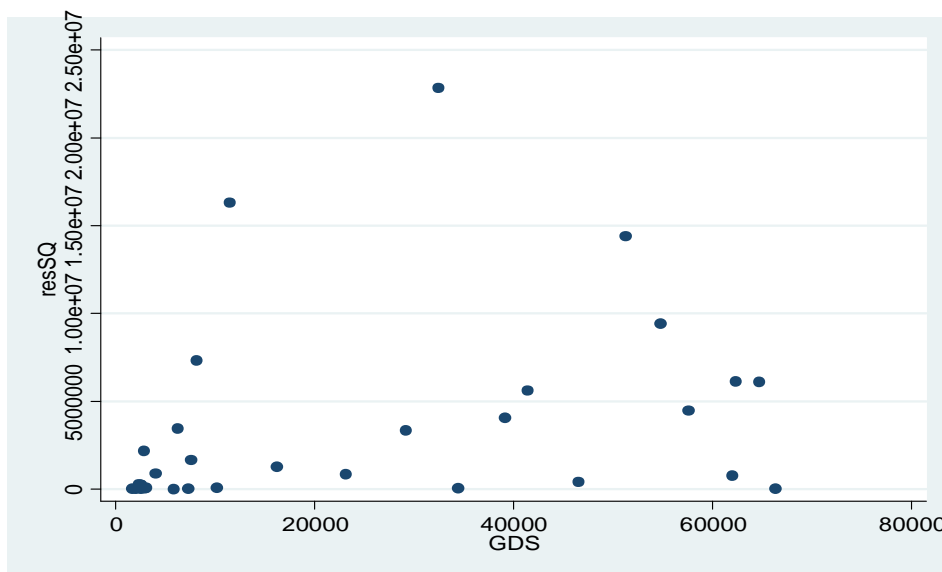
(-1.21)	(1.72)
(0.23)	(0.09)

$$F(7, 23) = 350.60; \text{Prob.} > F = 0.0000; R^2 = 0.99; \text{Adj-}R^2 = 0.98; d = 1.85$$

5.2.2 Heteroscedasticity Test: The disturbances appearing in the population regression function are homoscedastic or same variance so that heteroscedasticity problem means the differences in variance of each error term in sample regression function. As autocorrelation, OLS is no longer BLUE in the presence of heteroscedasticity in sample regression function. In other words, it invalidates the usual standard errors, t-statistics and F-statistics.

It is one of the great problems in the assumption of CLRM. Estimating the parameters by the OLS method will be biased and inefficient if there is lack of constant variance of the error terms (σ_u^2) i.e. lack of homoscedasticity in the error term. It is tested by both graphical and mathematical approaches. Graphical approach is given as follows:

Fig 4: Detection of Heteroscedasticity



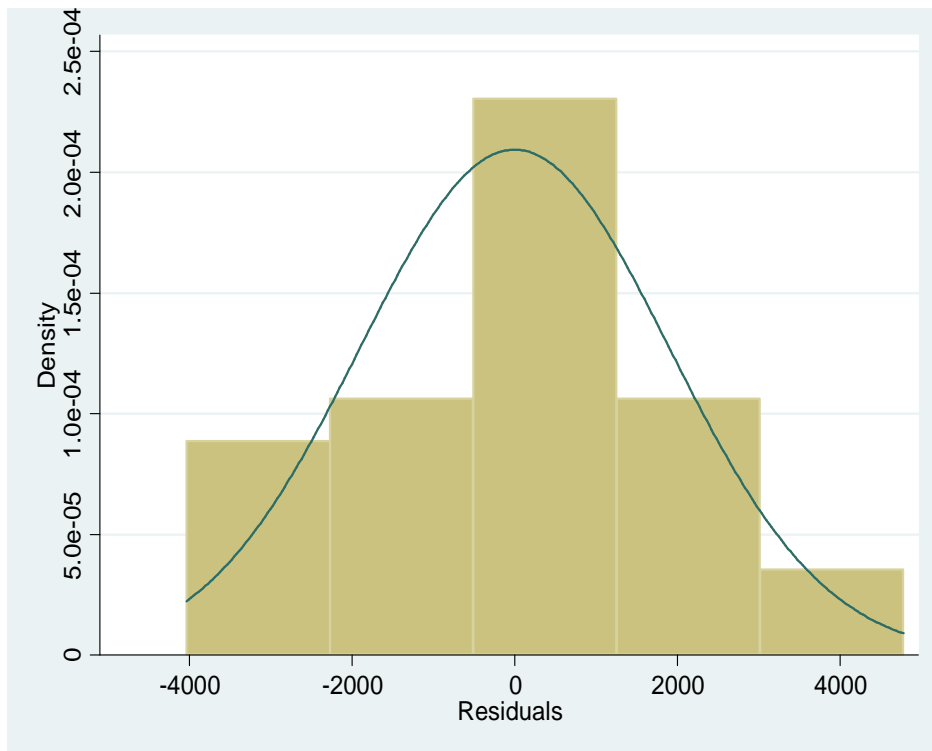
Observing the two way graph of U_t square and GDS shows no heteroscedasticity problem. It has not seen any systematic pattern of the error terms. It means variance is

constant or no change as variable increases. Mathematically, it is proved by the p-value of Cameron and Trivedi's decomposition of IM-test as well as Breusch Pagan test gives the values 0.4167 and 0.05 (**Appendix-C**) respectively. Due to the graphical and IM test result it is concluded that there is no heteroscedasticity problem or constancy in the variance of error terms.

5.2.3 Normality Test:

To make the given model unbiased and efficient, it should test statistical test of F-test and t-test. To test these statistical test the error term must be normally distributed so that one of the CLRM assumptions is normality test of error term (stochastic or random variables) with i.e. zero mean and constant variance ($U_i \sim N(0, \sigma_u^2)$). Detecting the normality test this study uses both graphical (Histogram) and mathematical approaches (J-B test) are used. The histogram is shown as follows:

Fig 5: Detection of Normality Assumption (Histogram)



Observing the graph of histogram, it concludes that error terms are normally distributed because the graph is looking about the bell shaped curve. Likewise, the high p-value 0.6465 (Appendix C) represents the further confirmation of the normality on error terms.

5.3 Analysis of Estimated Results (Model 1): There is constant term and one of the explanatory variables (Population) becomes insignificant in the result (Appendix B). Population is the proxy variable of age dependency ratio. However, the model is highly significant because the R^2 and $AdjR^2$ -square value are high. Under these circumstances the estimated result is analyzed as follows:

From the above result the coefficient of foreign aid (FA); $B_1=1.37$ means that one unit increase in FA increases the GDS by more than one unit. In other words, one million rupees increase in foreign aid increases GDS by more than one million rupees in Nepalese economy. This result is supported by high value of t-statistic (4.20) and 1% level of significance (99% confidence estimator) given by p-value 0.000. The result suggests that it works camp or foreign aid is supplementing to GDS of Nepal. It highly supports to the result of Rosenstein Rodan (1961) and Chenery and Strout (1966), Henrik Hansen and Finn Tarp (2000), Mohamed Abdel-Wahed Mohamed (2003), Ramesh Durbarry (2004), Michael P. Shield (2007).

This result strongly accepts to alternative hypothesis (H_1) that foreign aid is increasing gross domestic savings of Nepal in the study period. This also proved that foreign aid does not decrease further gross domestic savings (additional foreign aid increases the gross domestic savings) and growth so that in the long run dependency on foreign aid will decrease in the economy. No extra foreign aid is required to develop Nepalese economy; it means that government will be self-reliant in the long run. Therefore, FA is indispensable in the country.

The coefficient of real gross domestic product (RGDP); $B_2= -0.035$ means one unit increase in RGDP decreases GDS by 0.035 unit. This value is statistically significant at 10 % level, p-value is 0.09. This result is surprising against hypothesis that GDP is increasing to GDS, however, the result shows there is minor decrease in GDS. It means that there is high level of Consumption in the economy ($Y= C+S$). This result is quite similar to marginal propensity of saving i.e. 0.365 of economic review occasional paper of NRB (Shrestha, 2008). So, the economy has high rate of consumption i. e. 0.78 (78%) and low rate of saving 0.22 (22%). It also suggests that Nepal has further rises the gap between GDS and GDI.

The coefficient of variable broad money supply (M_2), $B_3=0.19$ and statistically significance at 1% level which is given by p-value 0.00. The meaning of coefficient is that one unit increase in money supply will increase GDS by 0.15 unit (15%). In other words, Rs. one million increase in M_2 increases GDS by Rs. 190000 million.

The remittance coefficient $B_4=-0.24$ means that one unit increase in remittance will decrease GDS with minimum rate in Nepalese economy. It is also statistically significance at 1 % level, p-value is 0.00. This result indicates that remittance is spending on consumption. Looking on high inflow of remittance, it is assumed that the sign of the coefficient will be positive but interesting thing is that the sign of remittance is negative in this study. It may be because of consumption of imported goods. This result is supporting to NRB that remittance money is highly spending on consumption in Nepal.

The financial variable is a dummy variable whose coefficient is positive in value it means that the GDS is increasing further after the financial liberalization as compared to before financial liberalization (1990). It was expecting the sign of the coefficient will be negative. Financial liberalization is fruitful for the increment of GDS in Nepal. The result is similar to the conclusion derived from table 2. The mean GDS before liberalization was 4502.43 million and it is increased by 38826.01 million and it reaches to 43328.44 million.

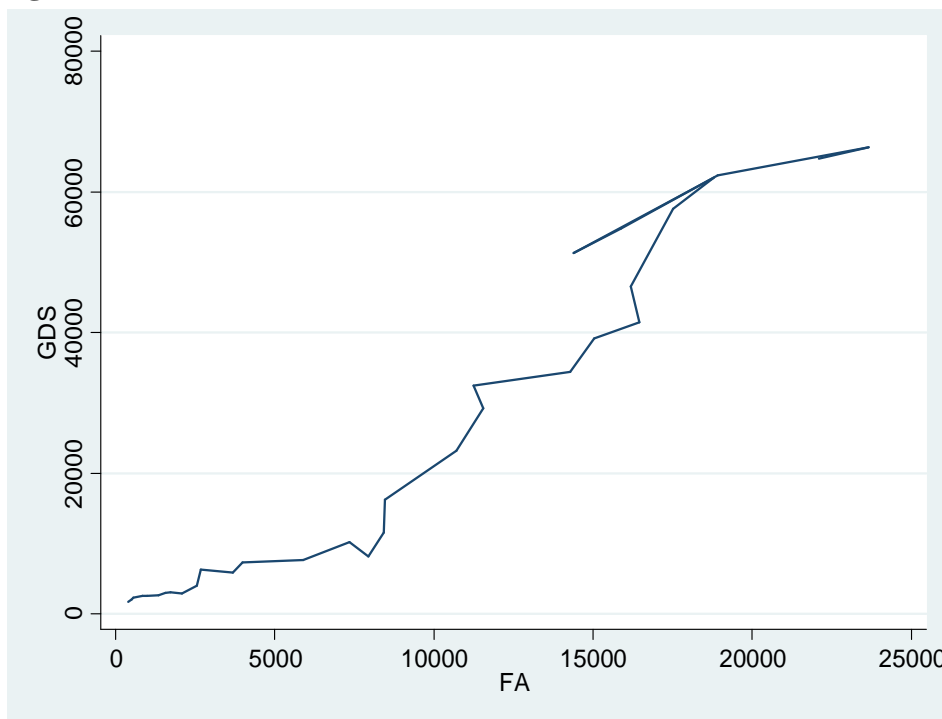
The coefficient of variable GCE, $B_7=0.45$ means one unit increase in government capital expenditure will also increase GDS by 0.45. It shows that GCE is very important variable for GDS (45% influence). But, the p-value 0.075 suggests that the coefficient is statistically significant (significant at 5% level). This variable is taken as a proxy variable for budget surplus.

The very high value of $adj-R^2=0.98$ ($R^2=0.99$) means that 98% GDS is explained by all explanatory variables given in the model. Likewise, the F-value is also very high i.e. 350.60 and very low p-value (0.000) is implying the over all model is statistically significant.

5.4 Negative returns of foreign aid:

To capture decreasing or increasing marginal effects of FA to GDS of Nepalese economy the simple aid square methodology is used (Model II) and expecting that coefficient of the models are $\beta_1 > 0$ and $\beta_2 < 0$. According to theory, If $\beta_1 > 0$ and $\beta_2 < 0$ it gives turning point (maximum of the function) and if $\beta_1 < 0$ and $\beta_2 > 0$, it captures an increasing effect of the function (minimum function) (Wooldridge 2008; PP 200- 204).

Fig 6: The Effect of FA on GDS:



This figure (The Effect of FA on GDS) is fascinating to look on non linearity relationship between FA and GDS. The FA is increasing to GDS; however, it is fluctuating several times. The curve initially has shown increasing and convex to the origin, except the minor decreased in GDS, during the study period. So, foreign aid is increasing to GDS. No maximum point of FA (threshold) is clearly found in graph. In other words, it does not clearly depict the aid Laffer curve in the study period. However, after the FA Rs. 15000 m, the concavity of curve shows the symptom of negative returns of foreign aid to GDS in Nepalese economy. Therefore, the interesting thing of elongated GDS is that GDS is moving towards the maximum point.

5.4.1 Analysis of Estimated Results (Model 2): Among the mathematical methodologies, to capture the effects of maximum point of FA, the aid-square methodology has used. And, the STATA result shows that $\beta_1 (1.85) > 0$ and $\beta_2 (-0.0000131) < 0$ (Appendix: C) so that the result has shown inverse U-shaped curve or aid Laffer curve. In this study, a negative effect (aid Laffer curve) of aid on GDS after a certain threshold level is clearly proved in Nepalese economy however the coefficients are statistically insignificant. This result has satisfied the expected null hypothesis that Foreign aid has found diminishing returns (Negatively sloped) after certain level of threshold.

Calculation of Finding Maximum point (Turning point of GDS):

From the Third model:

$$GDS = (\beta_1 + 2\beta_2 FA) FA$$

Again, the first differential (GDS with respect to FA) is equal to zero, we get

$$\text{Or, } 0 = \beta_1 + 2\beta_2 FA$$

$$\text{Or, } FA = -\beta_1 / 2\beta_2 \quad (\text{Wooldridge 2008; pp 201})$$

$$\text{Or, } FA = \text{Rs. } 70610.687 \text{ million}$$

The output of model 3 indicates that the maximum point of FA for Nepal is Rs. 70610.687 million. It means that GDS increases with increasing of FA only before FA = Rs. 70610.687 then onwards, GDS starts to decline as FA increases. This feature is also captured by fig 6 (The Effect of FA on GDS). Statistically, both coefficients β_1 and β_2 are insignificant (Appendix D).

Interpretation of the second model:

a) The 1 unit increase in FA will increases GDS by 1.85 units in the Nepalese economy in the study period. But, it is statistically insignificant even at 10 % level.

b) The 1 unit increase in FA^2 will change in GDS at negatively insignificant amount or it has change a negligible effect in Nepalese economy in the study period. It is also statistically insignificant at 10% level.

5.5 Granger Causality test:

Although regression analysis dealt with the dependence of one variable on other variables, it does not necessarily imply causation. In other words, the existence of a relationship between variables does not prove causality or direction of influence. The outcome of Granger causality test is very sensitive to the number of lags introduced in the model, however, due to the time constraints it only observes for lag 1 and regarding other lags, this study left to the researcher to analyze further. It also assumes that all the variables are stationary. The null hypothesis (H_0) of this test is that there is no Granger causality between the variables or no direction of causality shown by the arrow (). The summary of the test is given in the table below:

Table No 7: Granger Causality Test

Direction of causality	F-value (1,28) _{.05} (=4.20)	P-value	Decision (H_0)
GDS → FA	56.71	0.0000	Reject
FA → GDS	2.1499	0.1499	Accept
GDS → M2	74.55	0.0000	Reject
M2 → GDS	0.28	0.6226	Accept
GDS → RM	562.72	0.0000	Reject
RM → GDS	0.15	0.7056	Accept
GDS → RGDP	132.92	0.0000	Reject
RGDP → GDS	6.08	0.02	Reject
GDS → POP	71.06	0.0000	Reject
POP → GDS	5.33	0.0286	Reject
GDS → GCE	72.79	0.0000	Reject
GCE → GDS	0.87	0.3596	Accept

Now, observing the above table of the Granger causality between variables with no lag, it is suggesting an interesting causality relationship that FA does not show the direction of causality but GDS Granger Cause to FA. Likewise, other independent variables M2, RM and GCE do not Granger Cause to GDS but GDS Granger Cause to M2, RM and GCE respectively. The two ways Granger Causality between GDS to RGDP and RGDP to GDS; GDS to POP and POP to GDS are seen. The result is losing the theoretical and practical foundation of direction of influence in Nepalese economy. It may be because of lag 1 variable test because Granger Causality test is very much sensitive to higher lag values. In addition that the Granger Causality test is accepted only for short run analysis. It is left to the researchers to test of causality on higher lag variables.

5.6 Forecasting:

This study includes 10 years of forecasting trend and table of dependent variable GDS after the fiscal year 2005/6. In forecasting table is prepared by the use of both STATA software and extrapolation method. The table and trend of GDS is given below:

Table No: 8 Forecasting Table by Using STATA software:

Ftime	fgds	ffa	frgdp	fm2	frm	fdvfl	fpopulationinm	fgovcapitalexp
2007	80354.33	24803.03	341823.7	378743	86007.26	1.469925	26.503182	16980.906
2008	76806	26960.03	333610.4	421768.1	116400.5	0.937566	27.139734	19941.783
2009	86654.76	26915.96	354957.4	462161.2	122394.5	1.458025	27.780169	17578.262
2010	90132.48	29730.36	356665.4	506879.3	145836.7	1.182549	28.465974	17895.594
2011	96516.19	30725.75	368184.2	555555.6	163188.7	1.356351	29.155912	17678.943
2012	102322.8	32932.02	375954.4	604462.9	183420.4	1.331038	29.882583	16234.338
2013	107844.2	34526.24	382634.2	660112.6	208401.6	1.349415	30.623698	16248.42
2014	115543.7	36694.1	393024.8	716203.8	229615.2	1.426184	31.398466	14672.104
2015	121076.7	38805.59	398028.2	778015.8	258298.2	1.375238	32.197506	14152.851
2016	129211.8	40868.8	407786.1	842523.5	284101.9	1.474988	33.025074	12640.549

Fig 7: Table and Trend Line of GDS from STATA Software:

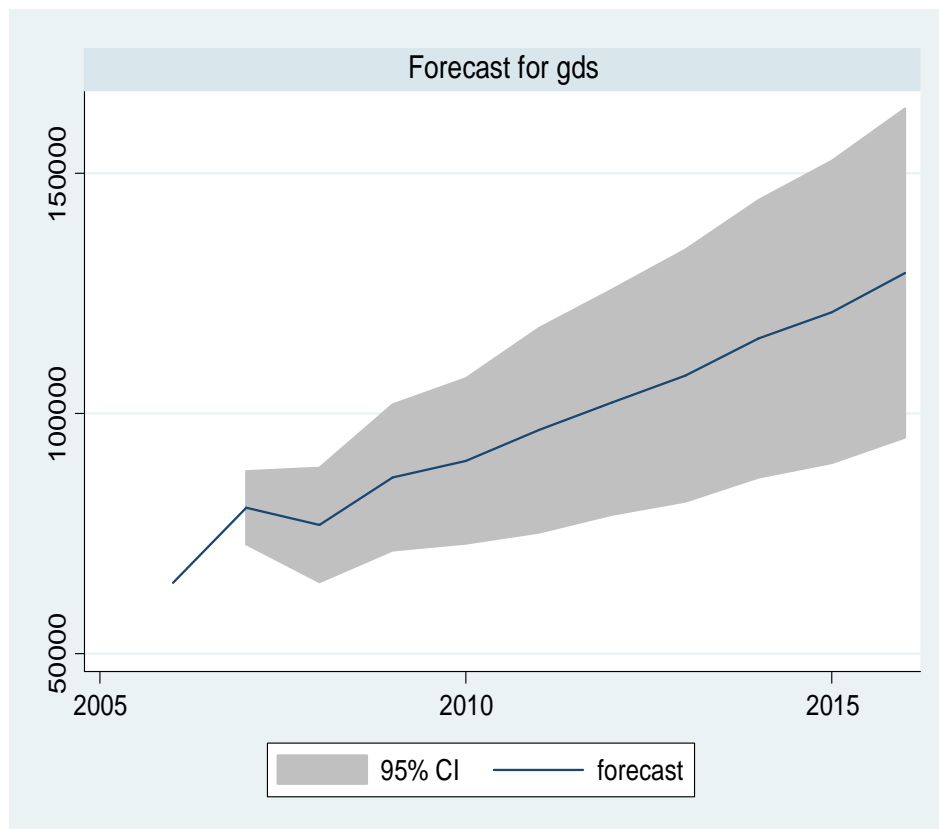
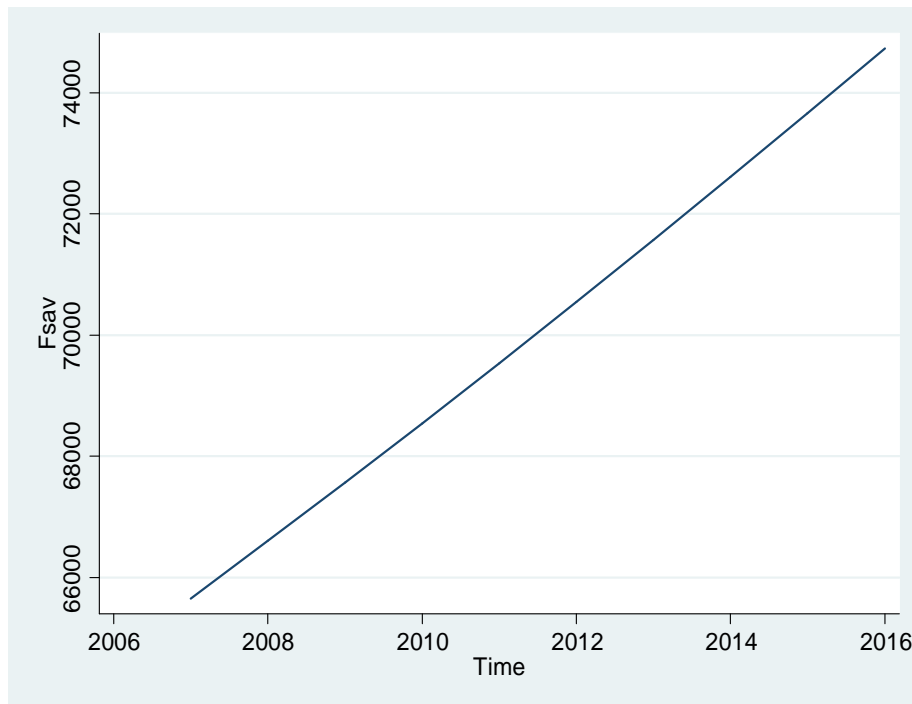


Table No: 9 Forecasting Table by Using Extrapolation method:

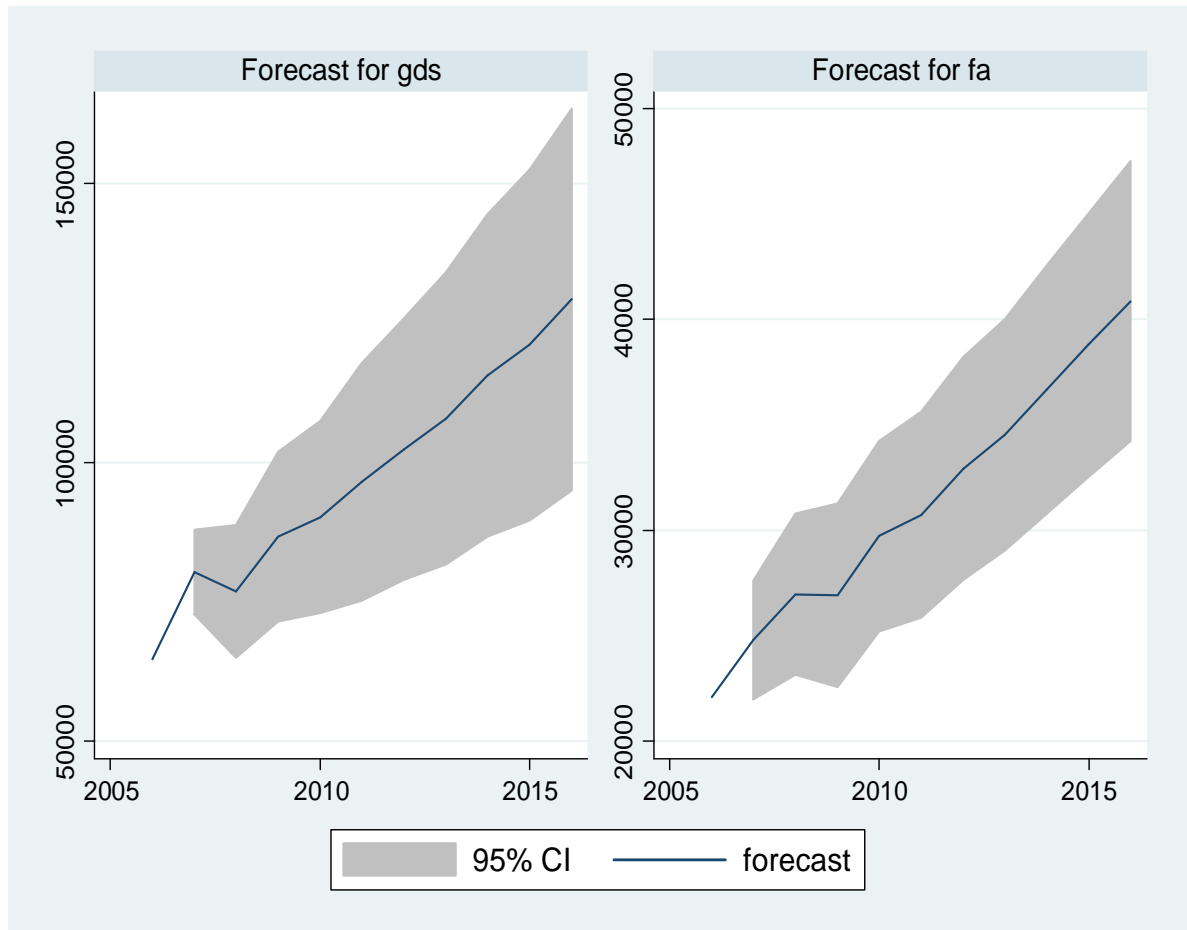
Time	FSav	F FA	FRDP	FM2	FRM	FPop	FGCE
2007	65649.31	23184.89	319500.5112	382824.1	153415.4593	26.4623	20144.56
2008	66601.22	24320.95	326657.3227	421833.9	253764.5112	27.0577	19810.16
2009	67566.94	25512.68	333974.4467	464818.7	419751.8779	27.6665	19481.31
2010	68546.66	26762.8	341455.4743	512183.8	694311.5813	28.289	19157.92
2011	69540.59	28074.18	349104.0769	564375.3	1148460.787	28.9255	18839.9
2012	70548.93	29449.81	356924.0082	621885.1	1899668.987	29.57632	18527.15
2013	71571.89	30892.85	364919.106	685255.2	3142242.471	30.24179	18219.6
2014	72609.68	32406.6	373093.294	755082.7	5197583.272	30.92223	17917.16
2015	73662.52	33994.53	381450.5838	832025.6	8597322.49	31.61798	17619.73
2016	74730.63	35660.26	389995.0769	916809.1	14220831.13	32.32938	17327.25

Fig 8: Table and Trend Line of GDS from Extrapolation Method:



Observing the above table and graph of dependent variable GDS, it is concluded that GDS will rise in the forecasting years (2007 to 2016). Both method (STATA and extrapolation) method gives the approximately the same result on GDS. So, country should not worry to take FA till year 2016 AD. It will consequently increase RGDP and fill the gap between GDS and GDI.

Fig 9: Forecasting of GDS and FA:



Observing the above graph, it is concluded that both GDS and FA are sloping upward in the forecasting years. It means that both GDS and FA rising in the 10 years of estimation ranges from FY 2007 to FY 2016 AD.

CHAPTER -VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary:

Is foreign aid virtue or vice for development? This is a major headache question among the economists, politicians and policy makers. Economists are also divided into in favor and against of working of foreign aid in the development of underdeveloped economy so it is still a debatable question. Foreign aid, in some countries, is failed to capture the path of growth and development and in the contrary, it is successful.

Supporters like Jeffrey Sachs, Joseph Stiglitz, Nicholas Stern and others have argued that although aid has sometimes failed, it has supported poverty reduction and growth in some countries and prevented worse performance in others. They believe that many of the weaknesses of aid have more to do with donors than recipients, and point to range of successful countries that have received significant aid such as Botswana, Indonesia, and Korea or more recently in Mozambique and Tanzania (Radelet, July 2006). Economists like Milton Friedman, Peter Bauer, and William Easterly are levelled stinging critiques, Charging that aid has enlarged government bureaucracies, perpetuated bad governments, enriched the elite in poor countries, or just been wasted. They cite widespread poverty in Africa and South Asia despite three decades of aid, and point to countries that have received substantial aid yet have had disastrous records such as the Democratic Republic of Congo, Haiti, Papua New Guinea, and Somalia. In their eyes, aid programs should be dramatically reformed, substantially curtailed or eliminated altogether.

It is quoted in different articles like Rosenstein Rodan 1961, Chenery and Bruno 1962, and Chenery and Strout 1966 and others analyzed that foreign aid supplement the domestic saving (saving supplementary hypothesis). On the other hand, some macro econometric models suggest that foreign aid substitutes the gross domestic savings. It is quoted in different articles like Griffen 1970, Grififn and Enos 1970, Weisskopf 1972, Gupta and Islam 1983, Reichel 1995 and other analyze regarding substitutes of saving (saving substitute hypothesis).

Foreign aid has been increasing since Rana Regime; however, it is still increasing every year and no sign of decreasing it. Nowadays, it is becoming the major part of development of Nepal. In the view of continuous rising of savings-investment gaps, income-expenditure gap, foreign exchange gap and increased regular development make that foreign aid is indispensable in the economy. It is said that foreign assistance accounted for over 10 % of GDP and was contributing 60% to 80 % of the annual development budget of the country in 1990's.

Nepalese economy is receiving the continuous flow of foreign aid after FY 1951/52; however, the country is not full of success in the reduction of poverty, unemployment and the problem of infrastructure development so that every year the dependency of foreign aid to development budget is increasing. Being an underdeveloped, low level of capital formation and high level of consumption country, it is a serious problem, if it is not corrected in the right time; it is further raising the gap between S and I.

Therefore, the genuine problem is to know about the effectiveness of foreign aid to Nepalese economy is important or not. So, this study tries to solve the impact of foreign aid to GDS of Nepalese economy, dependency of foreign aid, negative returns of foreign aid to savings through the cointegration analysis. And at last but not least, forecasting of dependent variable (GDS).

After introducing the topic and problem this study is putting the general objective that the impact of total foreign aid (sum of loans and grants) on the gross domestic saving of Nepalese economy during the FY 1975/76 to 2006 AD. Side by side it has subsidiary objectives that of the foreign aid dependency, the negative returns of foreign aid to GDS and 10 years of forecasting. Focusing these objectives, the study reviews several literatures of journals, books, articles and internet information and then the literature review is divided into three headings i.e. It works camp or supplementary between foreign aid and savings; it does not work camp or substitution between foreign aid and savings and inconclusive or neutral camp. Among the several literatures 30 numbers are included and out of 30 literatures, this study includes 14 in supplementary camps, 11 are in substitute camps and 5 are in Neutral camps.

This study totally analyses the secondary data (1974/75 to 2005/06) taken from relevant organizations like NRB, MOF, CBS and other agencies. Seven explanatory variables affecting to gross domestic savings of Nepal are included in the model which is verified from different literature reviews. Chapter 3 has given several models (model specifications) deriving from the literature review which are equally supported to identify the well developed model of this study.

It is analyzed that the correlation between the dependent variable GDS with all explanatory variables individually and got the high correlation. The relationship between GDS and FA is shown both tabular and graphical method and has got also positive relationship.

Empirically, the common problem of time series data has unit root problem I (1) which is not statistically valid so that the regression analysis is individually tested the unit root test both level and difference by ADFT in lag 1 and lag 2 case, with the help of STATA software. The result is found that all variables are insignificant i. e. variables have unit root problem in level case but with the stationary difference case only GDS, FA, RGDP are significant but RGDP (lag 2 Mackinon P-value) M_2 , RM, POP and GCE are insignificant. However, the given model is cointegrated so the regression analysis becomes statistically accepted or no more spurious regression. It is tested both by Engel Granger Cointegration test and Johansen normalization tests.

The multiple regression analysis of 32 years of data (1974/75 – 2005/06) is observed and found the result that the effect of foreign aid on gross domestic saving, including monetary and fiscal policy variables which is affecting to GDS of Nepal. The result found that there is more than proportional effect of foreign aid to gross domestic savings; in other words, one unit change in foreign aid will increase approximately more than one unit change in gross domestic savings of Nepal. It means that there is no sign of dependency of foreign aid from this cointegrated analysis. This result is further tested by violation of major CLRM assumptions; tests are of normality test, autocorrelation test, heteroscedasticity test. And the autocorrelation is corrected by the Cochrane-Orcutt iterative process.

From the results (Appendix-B), it is seen that constant term and Population are statistically insignificant variables on GDS. Remaining other explanatory variables are highly significance.

This study also tested the negative returns ($\beta_1 > 0$ and $\beta_2 < 0$) of foreign aid to gross domestic savings of Nepal and found the negative returns of foreign aid to GDS of Nepal after the FA Rs. 70610.68 m. It suggests that there is a sign of Aid Laffer curve in this study period.

6.2 Conclusion:

This study tries to search the impact of foreign aid on gross domestic savings of 32 years in Nepal. The impact of foreign aid on Nepalese GDS, to what extent there is a dependency on foreign aid, is the major findings of this study. To make it more realistic, it includes important monetary and fiscal policy variables in right hand side of the model which are used by several economists in different time periods. The other subsidiary objectives of the study are to find out the dependency of foreign aid and the negative returns of foreign aid on GDS of Nepalese economy. In addition that it tries to 10 years of forecasting trend of GDS.

According to this study the foreign aid is highly efficient. The cointegration result of coefficient of foreign aid is 1.37; it means that one unit increase in FA increases the GDS by equal amount. In other words, one million rupees increase in foreign aid increases GDS by one million rupees in Nepalese economy. This result is supported by high value of t-statistic and 99% confidence estimator is found. It supports to “it works camp or supplementary camp” of foreign aid on GDS of Nepal. This is supporting to the conclusion of Rosenstein-Rodan (1961) that each dollar of foreign resources in the form of aid would result in an increase of one dollar in total savings and investment. The graph of FA and GDS suggests that FA no longer is supporting to GDS of the country however, the econometric model is supporting that direct or positive relationship between FA and GDS.

This study also observed the negative returns of foreign aid on gross domestic savings of Nepal. Among the methodology of showing negative returns of foreign aid, it is used aid square methodology. The result shows that there is a sign of negative returns of foreign

aid to gross domestic savings i.e. decreasing gross domestic savings and this study has found maximum point of FA at Rs.70610.68 m. It means that FA is increasing GDS up to the maximum point of FA and then after it starts to fall.

In addition that the econometric study suggests that FA is a supplementary factor to increase the gross domestic savings and investments of the country which proves that the country will not face the long run dependency problem in future. In other words, no extra foreign aid is required to develop Nepal after certain period of time i.e. government will be self-reliant in the long run.

This study equally proved that FA is the engine of growth. It helps to bridge the gap between S-I and hence backing up to the development of the country. This is nothing but supporting to the Harrod Domar model and should take saving as the growth enhancing factor for the Nepalese economy.

This study suggests that Money supply is not very much influential determinant to increase the GDS of Nepal i.e. it is very minimal (18%) influence on GDS. Likewise, Government capital expenditure as a fiscal policy proxy variable is (54%) influence on GDS of the economy.

The negative sign of the coefficient of remittance suggests that it is not fruitful to change in GDS of Nepal. This result shows the minimal decrement of GDS by the inflow of remittance in the economy which is opposite result what this study assumes. It may be possible that remittance money is used to consume from imported goods. This result is also supporting to NRB conclusion of high rate of consumption of remittance money.

A positive sign of the coefficient of FL means that comparing to before and after 1990; after the restoration of democracy (1990 AD) the GDS is increasing in the economy. Statistically, the liberalization policy is showing fruitful to increase in GDS of the country.

It is considered that foreign aid is the most debatable subject in economic policy which is equally valid in Nepal. It is because the inflow of foreign aid is channeled by unofficial ways and it has also different forms in Nepal. Economists are divided basically into three headings i.e. foreign aid is supplementary; foreign aid is substituting and foreign aid is neutral to gross domestic savings, investment and growth of the recipient country. Anyway, this study supports to supplementary hypothesis and found negative returns (Aid Laffer curve) in FA to GDS. Therefore, further study left to the researchers to rigorous study in this field and get additional conclusions.

6.3 Recommendations:

Based on the above econometric analysis, the following recommendations are given to the concerned department of the country, NGO's, INGO's, policy makers' planners, professors and researchers of the Nepalese economy.

1) The total foreign aid has positively contributed to the GDS of the country. It further argues that foreign aid is supplementing to GDS, investment and growth of the country. FA is filling the gap between saving and investment in the economy. It means that FA is good to receive by the country. Likewise, on the basis of the above result, it is recommended to the concerned offices to formulate economic policies towards encouraging greater FA. Higher savings tends to be associated with higher investment and higher economic growth which is very important for the low savings and poor country like Nepal.

2) It is important to support saving- investment gap of the country. Likewise, the econometric results do not support to show any sign of foreign aid dependency into the country, however, the graphical analysis depicts the wide gap between FA and GDS. So, it may increase aid dependency and may not mobilize internal resources into the country later. It may support to economists that in the short run, FA is indispensable. It does not guarantee that it will be equally important in the long run. Therefore, it may require further research in this area.

3) The second model shows aid Laffer curve or maximum point of positive effects of FA in Nepal. Now, it rings the bell of precaution of bad effect of FA after the maximum level of FA at Rs.70610.68m. It supports to the general sayings that FA should not be more than absorptive capacity of the country otherwise; it goes to corruption and further government expenditure. In other words, FA should be demand driven instead of supply driven. The concern offices of Nepal government should be serious on the point of aid Laffer curve (Threshold of FA)

4) The negative coefficient of RGDP shows that RGDP is decreasing to GDS or there is a high rate of consumption expenditure (government and private consumption) in Nepal. It is a serious concern to the government and other concerned authorities of the country because consumption is not growth enhancing, misuse of FA, into the economy. It equally needs to be careful that FA should not be accepted and used to contribute for the regular expenditures and unnecessary expenditures. The concern government offices and donors should focus on the use of aid to increase the GDS of the recipient country which is the key factor of development.

5) Money supply is less fruitful to change in GDS of the economy. According to this study, money supply is affecting around 19 % on GDS. So, it is recommended that M_2 is less influencing factor for increasing GDS of the economy.

6) It is seen that Nepalese policy makers, only think about to increase in remittances, however, no matters of its effect in the domestic country. An econometric result of this study shows that the negative coefficient of remittance which means remittance is decreasing GDS into the country. It clearly shows the high rate of consumption of remittance money. This result is further supporting to NRB results. So, Planners and

policy makers should turn their head regarding the high rate of consumption of remittance money in the economy and they need to be very serious to find out the ways of curtailing the high level of consumption of remittance income into the economy. Curtailing consumption means saving more and which fills the gap of GDS and GDI and hence the high level of growth and development into the country.

7) Financial liberalization is looking fruitful to increase the GDS of the economy however this result is significant at 10% level only. It is recommended that further moving into the liberalization may raise the GDS and hence growth and development into the economy.

8) GCE is also influencing GDS by 45%, however, the result is also significant at 10 % level. It is recommended that GCE is positively increasing the GDS into the economy. To increase the GDS, government should further rise in GCE.

9) The 10 years of forecasting result also favors to FA. Both FA and GDS are increasing by FY 2016 AD. So, it is recommended that FA will help to fill the gap between GDS and GDI up to the forecasting years.

Last but not least, there is a lack of general acceptance of the effectiveness of foreign aid, however, in Nepal it is dispensable to bridge the S-I gap. More development work depends on foreign aid so the general problem is to handle the foreign aid rather than rejecting it. On the contrary, FA is not ever the panacea of growth and development of the country since it has also limitations. By international experience; after the certain volume of total aid, its effect becomes negative. Nepalese economy also presents aid Laffer curve which is very sensitive part for researchers and donors who are working in FA to Nepal. Moreover, some are raising the genuine questions regarding the effectiveness of foreign aid. How could it be more accountable and transparent? How could it be more effective? How could it reduce its dependency (self reliant) in the long run? And, how could it be more utilize for the increment of GDS, I and RGDP of the economy, etc.? Therefore, these are genuinely raised questions on the effectiveness of foreign aid which is left to the researcher for further subjects to study.

References

Achary Keshav P. (2000). "Review of Economic Policies and economic Reforms Undertaken by the Government", Development Challenges For Nepal, Part II, Nepal Foundation for Advanced Studies (NEFAS) Embassy of Finland, Kathmandu.

Agrawal Pradeep (June 2000). "Savings, Investment and Growth in South Asia", Indira Grandhi Institute of Development Research, Gen.A.K. Vaidya Marg, Goregaon (E), Bombay-400 065, India.

Ahmad Hasnain Mohsin and Dr Ahmed Masood. Quazi. "Foreign Capital Inflows and Domestic Saving in Pakistan: Cointegration techniques and Error Correction Modeling."

Burnside, C. Dollar, D. (2000). "Aid, Policies and Growth", American Economic Review, Vol. 90, No. 4, PP.847-68.

Bank Negara Malaysia. "Improving the Allocation of Domestic Savings for Economic Development: Case Study for Malaysia", Economics Department.

Chakravarti Shivom (Thursday, October 6, 2005). "Higher savings, investment push India", The Economic Times.

Chenery, H.B., Strout, A.M. (1966). "Foreign Assistance and economic Development", American Economic Review, Vol.56, No. 4, PP. 679-733.

Chakravarti Shivom (Thursday, October 6 2005). "Higher savings, investment push India", Published in 'The Economic Times'.

Dahal Madan Kumar (April 2008). "Foreign Aid in Nepal: The Changing Context", The paper presented at a symposium on Organized by Central University of Sikkim in Co-operation with Nepal-India BP Koirala Foundation Gangtok, India.

Dahal K. Madan, Acharya P. Keshav, Dahal Raj Dev, Bhattachan B. Krishna and Nepal K. Mani (December 2000) "Development Challenges for Nepal" Nepal Foundation for Advanced studies (NEFAS) Embassy of Finland, Kathmandu.

Droucoulos and Ibrahim (Sep 1980). "Foreign Capital Inflows, Domestic Savings and The Price of Political Stability in the Sudan: Weisskopf Revisited", managerial and Decision Economics Vol. 1, No.3 PP 138-149.

Duc Minh Vu (Mar 17, 2006)." Foreign Aid and Economic Growth in the Developing Countries – A Cross-country Empirical Analysis", Version 1.2, US/Central.

Easterly William (Nov 2003). “Can Foreign Aid Buy Growth?” Journal of Economic Prospective, Vol. 17, No. 3, pp. 23-48.

**Economics Department, Monetary Authority of Singapore Improving the Allocation of Domestic Savings for Economic Development: Case Study of Singapore, Executive Summary: Savings in Singapore.
<http://www.banxico.org.mx/tipo/publicaciones/seminarios/Singapore.pdf>**

Fredrik Erixon (2005). “Aid and Development: will it work this time?,” International Policy Network.

**Foreign Aid Policy (2009) A Draft for Discussion at the Nepal Development Forum Stakeholders’ Consultation Meeting Ministry of Finance Government of Nepal.
http://www.mof.gov.np/ndf2009/pdf/paper/Foreign_Aid_Policy_Eng.pdf**

Grinols Earl and Bhagwati Jagdish (Nov. 1976). “Foreign Capital, Savings and Dependence”, The Review of Economics and Statistics, Vol. 58, No. 4, PP 416-424, MIT Press.

Gujarati, D.N. and Sangeetha (2007). “Basic Econometrics”, Mc Graw-Hill Publishing Compony Limited, New Dilhi.

Ghimire Kapil Dev (2009), “Foreign Aid Policy”, Nepal Development Forum Stakeholders, A Draft for Discussion at the Consultation Meeting by Ministry of Finance Government of Nepal.

Hansen Henrik and Tarp Finn (2007). “Aid and Growth Regressions”, Center for Research in Economic Development and International Trade, University of Nottingham, Credit Research Paper No. 00/07.

Hansen Henrik and Trap Finn (2000). “Aid Effectiveness Disputed”, Policy Arena, Journal of International Development, Vol.12 No.3, pp. 375-98.

Hasan Mohammad S. (2006). “Concessional Foreign Capital Inflows and Domestic Savings Across Countries (Dependency Hypothesis Revisited)”, Journal of Economic Studies 29, 6,388.

Jeffrey M. Wooldridge (2006). “Introductory Econometrics A Modern Approach, Third Edition”, Cengage Learning India Private Limited, 56-Janpath, New Delhi.

Khanal Dilli Raj, Acharya Laxman and Upreti Dilli Ram (2008). “Role and Effectiveness of Foreign Aid Under PRSP in Nepal” Action Aid Nepal and Institute for Policy Research and Development (IPRAD).

Kourtellos Andros, Tan Ming Chih, and Zhang Xiaobo (March 2007). “Is the Relationship Between Aid and Economic Growth Nonlinear?” International Food

**Policy Research Institute, Development Strategy and Governance Division , IFPRI
Discussion Paper 00694**

Larson Jean-David (2001). “An Updated Analysis of Weisskopf’s Savings-Dependency Theory”, Review of Development Economics, 5(1), 157–167.

Loayza Norman, Schmidt-Hebbel Klaus, and Serven Luis (2000). “Saving in Developmig Countries: An Overview, World Bank economic Review, Vol.14, and No.3: 393-414.

Lensink Robert and White Howard. “Are There Negative Returns To Aid?”

Mankiw N. Gregory (2008). “Macroeconomics”, Worth Publishers Reprinted, 41 Madison Avenue, New York, NY 10010.

MCGillivray Mark, Feeny Simon, Hermes Ntels and Lensink Robert (2006). “Controversies Over The Impact Of Development Aid: It Works; It Does Not; It Can,But That Depends...”Journal of international Development J. International Development 18, 1031-1050.

Ministry of Finance (2001). “Economic Survey”, 2000/01, GON: MOF.

Ministry of Finance (2006). “Economic Survey, 2005/06”, GON: MOF.

Misra S.K. and Puri V.K. (2006). “Economics of Development and Planning”, Himalayan Publication House, Mumbai.

Mohamed Abdel-Wahed Mohamed (2003). “The Impact of Capital inflow on savings, investment and economic growth in Egypt: An econometric Analysis”, College of Management Science And Planning King Faisal University, Scientific Journal of King Faisal University Vol.4 No.1 1424H, 279.

Malik Girijasankar (Sep 2008). “Foreign Aid and economic Growth: A Cointegration Analysis of the six Poorest African Countries”, Economic Analysis & Policy, Vol. 38 No. 2, School of Economics and Finance Western Sydney,

Nepal Civil Society Development Forum (2004). “National Sovereignty, People’s Pride: Foreign Aid, A Universal Right”, Civic Declaration We, the 400-plus delegates of Nepal Civil Society Forum for NDF-2004 assembled in Kathmandu from May 3-4, 2004 from all 75 districts.

Nasir Shahbaz and Khalid Mahmood. “Saving-Investment Behaviour in Pakistan: An Empirical Investigation”, Institute of Development Economics and Accounts of Pakistan.

Ouattara Bazoumana (March 2007). “Foreign Aid, Public Savings Displacement, And Aid Dependency In Co[^]te D’ivoire: An Disaggregating Approach”, Oxford Development Studies, Vol.35, No.1.

Ouattara Bazoumana (March 2007). “The Impact of Project Aid and Program Aid inflows on Domestic Saving: A case study of Co[^]te D’ivoire, School of Economic Studies, University of Manchester, UK.

P. Boone (Dec 1995). “Politics and the Effectiveness of Foreign Aid” Centre for Economic Performance Discussion Paper No: 272.

Papanek Gustav (Jan-Feb 1973). “Aid Foreign Private Investment, Savings and Growth in Less Developed Countries”, The Journal of Political Economy, Vol. 81, No.1.

Papanek Gustav (Sep 1972). “The effect of Aid and Other Resource Transfer on Savings and Growth in Less Developed Countries”, The economic Journal, Vol.82, No.327, PP 934-950, Blackwell Publishing for the Royal Economic Society.

Paul Mahua and Sakthivel...S (2007). “Has Domestic Savings Been ‘Crowded Out’ By foreign savings in India?-An Emperical Investigation, Institute of Economic Growth University of Dilhi Enclave North Campus Delhi-110.

Pyakural Bishwambher, Dadhi and Dhakal (2008). “Is Foreign Aid Working?”, Mandala Book Point, Kathmandu Nepal.

Pyakural Bishwambher (2008). “Removing Growth Constraints: investigating the role of NRN”, Global Nepali in Local Transformation, Janakpur 12th and 13th October, 2008.

**P. J. Kumarasinghe. “Behavior of Saving in Major South Asian Countries”,Ritsumeikan Asia Pacific University,Beppu-Japan
<http://cube.ritsumei.ac.jp/bitstream/10367/207/1/List%20of%20Contents%20Abstract%20and%20Acknoldegment.pdf>**

Radelet Steven (July 2006). “A Primer on Foreign Aid” A Working Paper Number 92, Center for Global Development.

Ram Rati (Mar. 1984). “Dependency Rates and Savings: Reply”, The American Economic Review, Vol. 74, No. 1, PP 234-237, American Economic Association.

Ray DevRaj (1998). “Development Economics”, Oxford University Press, New Dilhi.

Rodan Rosentein (1961). “International Aid for Underdevelopment Countries”, Review of economics and Statistics, Vol.43, No.2, 107-138, Harvard University Press, Massachusetts, USA.

Rahman Khan Azizur Md (2008). "A Paper on- Aid Effectiveness Reconsidered", International Research Journal of Finance and Economics, ISSN1450-2887, Issue 13.

Sharma Sudhindra, Koponen Juhani and Hansen Annette Skovsted (February 24, 2003)." Preliminary Proposal on "Partnership' of Nordic and Japanese Aid in Nepal"

Shield Michael P. (2007). "Foreign Aid, and Domestic Savings: The Crowding Out Effect", Monaash University, Business of ISSN 1441-5429; Discussion Paper 35/07.

Shrestha Rajendra Prasad (2008). "Private Savings Behaviour in Nepal: Long – term Determinants and short-run Dynamics", Economic Review of NRB, Occasional Paper, ISSN 1608-6627, No.20.

Sigdel Bamdev(2004). "Nepalese Econoy", Foreign Aid in Nepal, Central Department of Economics, Tribhuvan University and ,New Hira Books Enterprises, Kathmandu Nepal.

Singh, Ram, D., (1985). "State Intervention, Foreign Economic Aid, Savings and Growth in LDCs: Some Recent Evidence,"Kyklos,Vol. 38(2), pp.216-32.

Shikwati James (March 11, 2005). "For God's Sake, Please Stop the Aid!" Press release No. 05/59.

Snyder Donald (Oct. 1990). "Foreign Aid and Domestic Savings: A Spurious Correlation?" Chicago Journal, Economic Development and Cultural Change, Vol.39, No.1, PP 175-181.

The Reality of Aid (2008). "Aid Effectiveness: Democratic Ownership and Human Rights", An Independent Review of Poverty Reduction and Development Assistance.

Thirlwall A.P. (1999). "Growth and Development With Special Referance to Developing Economies",Macmillan Press LTD, Houndmills, Basingstoke, Hampshire RG 21 6xs and London.

Thirlwall A.P. (2003)."The Mobilization of Savings for Growth and Development in Developing Countries", University of Kent, U.K.

Todaro, Michael P. and Smith, Stephen C (2003). "Economic Development Pearson Education Asia, Eight Editions.

Tiwari Sailesh (2007). “Putting Money Where the Mouth Is: Does Aid To Nepal Finance What the Donors Say They Want To Finance?” Himalayan Journal of Development and Democracy, Vol. 2, No. 1.

WB (August 1999). “Saving-What Do We Know, and Why Do We Care? Prem Notes Economic Policy Number 28.

WB (Mar. 1999). World Bank Policy and Research Bulletin Vol. 10, No.1.

WB (June 2008). “Nepal Country Overview”.

White, H. (1992). “What do we know about aid’s macroeconomic impact? An overview of the aid effectiveness debate”, Journal of International Development, Vol.4, No.2, pp.121-37.

Wikipedia, the free encyclopedia.

http://en.wikipedia.org/wiki/Foreign_aid_to_Nepal

Appendix A

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Statistics/Data Analysis

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Notes:

1. (/m# option or -set memory-) 10.00 MB allocated to data
2. (/v# option or -set maxvar-) 5000 maximum variables
3. New update available; type -update all-

Relationship of GDS,FA and RGDP Before 1990:

```

. edit
(10 vars, 16 obs pasted into editor)

. summarize gds fa rgdp9495

```

Variable	Obs	Mean	Std. Dev.	Min	Max
gds	16	4502.438	2644.138	1662	10150
fa	16	2753.27	2413.658	386.76	7935
rgdp9495	16	49921.69	53902.08	16571	163893

Relationship of GDS,FA and RGDP After 1990:

```

. summarize gds fa rgdp9495

```

Variable	Obs	Mean	Std. Dev.	Min	Max
gds	16	43328.44	17659.88	11515	66336
fa	16	15227.07	4443.662	8421.5	23657.3
rgdp9495	16	246175.2	45585.75	174908	312500

Correlation Coefficient between Variables:

```

. correlate gds fa rgdp9495 rm m2 dvfl populationinm govcapitalexp
(obs=32)

```

	gds	fa	rgdp9495	rm	m2	dvfl	popula~m	govcap~p
gds	1.0000							
fa	0.9686	1.0000						
rgdp9495	0.9299	0.9710	1.0000					
rm	0.7011	0.6705	0.5930	1.0000				
m2	0.9612	0.9180	0.8698	0.8549	1.0000			
dvfl	0.8462	0.8743	0.8971	0.4352	0.7402	1.0000		
population~m	0.9597	0.9772	0.9663	0.6946	0.9313	0.8564	1.0000	
govcapital~p	0.9596	0.9529	0.9483	0.5324	0.8750	0.8711	0.9479	1.0000

Appendix B

Cointegrating equations:

Equation	Parms	chi2	P>chi2

_ce1	7	2881.583	0.0000

Identification: beta is exactly identified
 Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]

_ce1					
gds	1	.	.	.	.
fa	-7.417414	.2871699	-25.83	0.000	-7.980257 -6.854572
rgdp9495	.1208466	.0060941	19.83	0.000	.1089024 .1327907
m2	-.2941907	.018117	-16.24	0.000	-.3296994 -.258682
rm	1.067587	.0542828	19.67	0.000	.961195 1.17398
dvfl	-4866.348	626.4104	-7.77	0.000	-6094.089 -3638.606
population~m	2646.492	207.4465	12.76	0.000	2239.905 3053.08
govcapital~p	2.945316	.2428881	12.13	0.000	2.469264 3.421368
_cons	-85426.46	.	.	.	.

Cointegrating equations

Equation	Parms	chi2	P>chi2

_ce1	6	1681.911	0.0000

Identification: beta is exactly identified
 Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]

_ce1					
gds	1	.	.	.	.
fa	-1.896631	.4006226	-4.73	0.000	-2.681837 -1.111425
rgdp9495	.0543013	.0096098	5.65	0.000	.0354664 .0731362
m2	-.2419216	.0228113	-10.61	0.000	-.2866309 -.1972123
rm	.8677396	.0766734	11.32	0.000	.7174625 1.018017
dvfl	-10638.5	864.2563	-12.31	0.000	-12332.42 -8944.594
govcapital~p	1.184651	.3516822	3.37	0.001	.4953664 1.873935
_cons	1865.996	.	.	.	.

. reg gds fa rgdp9495 m2 rm dvfl populationinm govcapitalexp

Source	SS	df	MS	Number of obs =	32
-----				F(7, 24) =	509.54
Model	1.6730e+10	7	2.3900e+09	Prob > F	= 0.0000
Residual	112572993	24	4690541.37	R-squared	= 0.9933
-----				Adj R-squared	= 0.9914
Total	1.6843e+10	31	543309935	Root MSE	= 2165.8

gds	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]

fa	1.390677	.3249796	4.28	0.000	.7199519 2.061402
rgdp9495	-.0416829	.0185111	-2.25	0.034	-.0798879 -.0034779
m2	.1874315	.0255973	7.32	0.000	.1346012 .2402618
rm	-.2283773	.0731207	-3.12	0.005	-.379291 -.0774636
dvfl	4099.569	1837.187	2.23	0.035	307.8023 7891.337
population~m	-849.5579	608.3707	-1.40	0.175	-2105.173 406.0575
govcapital~p	.5484739	.2951269	1.86	0.075	-.060638 1.157586
_cons	12184.31	8601.971	1.42	0.169	-5569.282 29937.91

. estat dwatson

Durbin-Watson d-statistic(8, 32) = 1.674404

Autocorrelation Test By Cochrane-Orcutt iterative process

. prais gds fa rgdp9495 m2 rm dvfl populationinm govcapitalexp

Iteration 0: rho = 0.0000
Iteration 1: rho = 0.1434
Iteration 2: rho = 0.1779
Iteration 3: rho = 0.1867
Iteration 4: rho = 0.1890
Iteration 5: rho = 0.1896
Iteration 6: rho = 0.1898
Iteration 7: rho = 0.1898
Iteration 8: rho = 0.1898
Iteration 9: rho = 0.1898
Iteration 10: rho = 0.1898

Prais-Winsten AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs =	32
Model	1.1215e+10	7	1.6021e+09	F(7, 24) =	350.60
Residual	109667636	24	4569484.83	Prob > F	= 0.0000
				R-squared	= 0.9903
				Adj R-squared	= 0.9875
				Root MSE	= 2137.6
Total	1.1324e+10	31	365296761		

gds	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
fa	1.374985	.3275329	4.20	0.000	.69899	2.05098
rgdp9495	-.0357696	.0202797	-1.76	0.090	-.0776248	.0060856
m2	.1910604	.0265471	7.20	0.000	.1362699	.2458509
rm	-.2411504	.0696635	-3.46	0.002	-.3849288	-.0973719
dvfl	3854.908	2011.203	1.92	0.067	-296.0102	8005.826
population~m	-829.929	683.817	-1.21	0.237	-2241.258	581.4001
govcapital~p	.4583243	.2667843	1.72	0.099	-.0922914	1.00894
_cons	11886.88	9698.474	1.23	0.232	-8129.782	31903.55
rho	.1898434					

Durbin-Watson statistic (original) 1.674404
Durbin-Watson statistic (transformed) 1.857538

Appendix C

Heteroscedasticity Test:

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of gds

      chi2(1)      =      3.61
      Prob > chi2  =      0.0576

. estat imtest

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	32.00	31	0.4167
Skewness	3.30	7	0.8561
Kurtosis	0.31	1	0.5777
Total	35.61	39	0.6254

Normality Test:

```
sktest residual

Skewness/Kurtosis tests for Normality
----- joint -----
Variable | Pr(Skewness)  Pr(Kurtosis)  adj chi2(2)  Prob>chi2
-----+-----
residual |      0.897      0.367           0.88      0.6454
```

Result of Negative returns of foreign Aid:

```
reg gds fa fasquare rgdp9495 rm m2 dvfl populationinm govcapitalexp

Source |      SS      df      MS      Number of obs =      32
-----+-----
Model | 1.6730e+10      8  2.0913e+09  F( 8, 23) = 428.24
Residual | 112319882     23  4883473.12  Prob > F      = 0.0000
-----+-----
Total | 1.6843e+10     31  543309935  R-squared     = 0.9933
                                           Adj R-squared = 0.9910
                                           Root MSE     = 2209.9

-----+-----
gds |      Coef.   Std. Err.   t   P>|t|   [95% Conf. Interval]
-----+-----
fa | 1.850845   2.048295   0.90  0.376   -2.386375   6.088066
fasquare | -.0000131  .0000575  -0.23  0.822   -.000132   .0001058
rgdp9495 | -.0494325  .0389289  -1.27  0.217   -.129963   .0310981
rm | -.2355692  .0810217  -2.91  0.008   -.4031753  -.0679631
m2 | .1997202   .0599647   3.33  0.003   .0756738   .3237666
dvfl | 3973.869   1954.211   2.03  0.054   -68.72381  8016.462
population~m | -1119.767  1339.416  -0.84  0.412   -3890.559  1651.026
govcapital~p | .480579    .4238177   1.13  0.269   -.3961548  1.357313
_cons | 15724.58   17856.54   0.88  0.388   -21214.49  52663.65
-----+-----
```

Appendix D

Year	GDS	FA	M2	DV(FL)	RM	Population In M	Gov. Capital exp.	RGDP (94/95)
1974/75	1662	386.76	2064.4	0	90.7	12.84	631.3	16571
1975/76	2040	505.66	2524	0	97.7	13.18	784.5	17300
1976/77	2332	556.9	3223	0	125.4	13.53	967.8	17822
1977/78	2540	848.4	3772.1	0	120	13.89	1074.2	18607
1978/79	2585	989.4	4511.4	0	146.3	14.26	1174.8	19048
1979/80	2591	1340.5	5285.3	0	150.3	14.64	1240.1	18606
1980/81	2974	1562.2	6307.7	0	216.8	15.02	1555.8	20158
1981/82	3088	1723.2	7458	0	205.5	15.33	2451.3	20920
1982/83	2887	2075.9	9222.4	0	292.5	15.65	3232.7	20297
1983/84	3996	2547.5	10455	0	280	15.98	3307.6	22262
1984/85	6239	2676.4	12297	0	275.4	16.31	3541.4	44441
1985/86	5887	3674	15159	0	346.7	16.65	3511.4	46512
1986/87	7321	3990.9	17498	0	478.7	16.99	4819.3	47427
1987/88	7604	5892.6	21423	0	589.8	17.35	5448.9	148405
1988/89	10150	7347	26605	0	602.1	17.71	7649.7	156478
1989/90	8143	7935	31552	0	676.8	18.08	7409.3	163893
1990/91	11515	8421.5	37713	1	549.7	18.49	6584.9	174908
1991/92	16207	8460.7	45671	1	423.6	18.91	8264	183371
1992/93	23172	10714.2	58323	1	549.7	19.33	11666.4	188780
1993/94	29220	11557.2	69777	1	223	19.77	13353.6	204397
1994/95	32465	11249.3	80985	1	2906.7	20.21	13063	209976
1995/96	34426	14289	92652	1	2660.2	20.67	15599.7	221930
1996/97	39162	15031.9	103721	1	2938	21.13	16138.1	233040
1997/98	41438	16457.1	126463	1	4084.2	21.61	18710.7	240816
1998/99	46563	16189	152800	1	6520.6	22.09	19166.8	251758
1999/00	57577	17523.9	186121	1	6031.4	22.59	21196.8	267096
2000/01	62018	18797.4	214454	1	9797.6	23.15	25264	280106
2001/02	51281	14384.8	223988	1	14860	23.67	21772.3	279169
2002/03	54778	15885.5	245911	1	41630	24.2	16953.3	287689
2003/04	62386	18912.4	277310	1	56630	24.75	21391.3	298023
2004/05	66336	23657.3	300440	1	61785	25.34	16439.8	305244
2005/06	64711	22101.9	347422	1	92749	25.88	20484.6	312500