Analysis of Inter-Relationship between Debt to GDP Ratio and Human Development Index – A Comparative Analysis of South Asian Countries

By

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF PHILOSOPHY IN GOVERNANCE AND PUBLIC POLICY
TO
DEPARTMENT OF GOVERNANCE AND PUBLIC POLICY
FACULTY OF MANAGEMENT SCIENCES

NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

NATIONAL UNIVERSITY OF MODERN LANGUAGES

FACULTY OF MANAGEMENT SCIENCES

THESIS/DISSERTATION AND DEFENCE APPROVAL FORM

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Thesis/ Dissertation Title:

Analysis of Inter-Relationship between Debt to GDP Ratio and Human Development Index – A Comparative Analysis of South Asian Countries

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Masters of Philosophy
Degree name in full

Governance and Public Policy
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Candidate of **Master of Philosophy** at the National University of Modern Languages, do hereby declare that the thesis **"Analysis of Inter-Relationship between Debt to GDP Ratio and Human Development Index – A Comparative Analysis of South Asian Countries"** submitted by me in partial fulfillment of M.Phil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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This thesis has been read by me and has been found to be satisfactory regarding content, English usage, format, citation, bibliography style, consistency, thus the fulfill of qualitative requirement of the study. It is ready for submission to the Department of Governance and Public Policy, Faculty of Management Sciences for internal and external evaluation.

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CERTIFICATE

It is certified that the research work contained in this thesis titled: "**Analysis of Inter-Relationship between Debt to GDP Ratio and Human Development Index – A Comparative Analysis of South Asian Countries",** has been carried out and completed by **Mr. Arif Karim** under my supervision during this M.Phil in Governance and Public Policy at the Department of Governance and Public Policy, Faculty of Management Sciences National University of Modern Languages Islamabad.

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In the name of Allah,
The most Gracious, The most merciful.

ACKNOWLEDGEMENT

First and foremost, I duly appreciate the Almighty Allah for His Grace and Strength, because without His Grace and Blessings, I would not have got to this level. My sincere appreciation goes to my respected teachers in the Department of Governance and Public Policy, for their kind support during the course work and research work. Also, I would like to acknowledge my supervisor, Dr. Abdul Wahid, for his patience and valuable advices to ensure that this thesis becomes successful. Finally, I am grateful to my family for their encouragement, support to me and their tolerance in the course of this research. Thank you.

DEDICATION

This work is dedicated to my family and my mother as without their patience, understanding, support and most of all love, the completion of this work would not have been possible.

Abstract

This study assesses the impact of increase in debt of South Asian countries on the Human Development Index (HDI) of the South Asian countries. I built stance in my study that when the governments fail to perform well on the part of fiscal policy, they fall in budget deficit crisis. The authorities then seek help from different financial institutions, in the form of debt. But once the country gets trap in the debt circle, it poses heavy responsibility on them for effective utilization of the borrowed amount. However, the debt is to be paid by the borrowing country sooner or later along with the interest payment. The country already facing fiscal crisis often finds it difficult in repayment process. Hence, by using econometric analysis I tested the theory that how economic crisis lead to social crisis for the country fallen in debt trap. For this purpose, I took Human Development Index of South Asian countries over a period of 1990-2018 and estimated the impact of increasing debt to GDP ratio on HDI. In addition to this, I employed Fixed Effects Model (FEM), regression analysis and Extreme Bound Analysis (EBA) to empirically test my hypothesis, that there exists the effect of the debt to the GDP ratio on Human Development Index. Fixed Effects Model regression results indicate negative and statistically significant effect of the debt to GDP ratio on HDI. In a nutshell, "ceteris paribus" the estimation of beta coefficient indicates that one (1)-unit increase in the debt to the GDP ratio causes Human Development Index, to fall by 15-units, and vice versa. In simple words, the more the debt to GDP ratio, the more the negative impact on HDI. However, debt is not always a curse; countries often borrow from different sources for smooth functioning. But the debt must be utilized properly and in effective manner. Moreover, there must be an optimal level of obtaining debt after which debt becomes curse. I employed EBA to find the threshold for debt. Thus, my results indicate that if debt of South Asian countries goes beyond 20%, it will start negative impact on their economies. The results of EBA with regard to other dimensions of HDI indicate that the debt to GDP ratio when exceeds from 50%, it starts causing negative effect on life expectancy. Likewise, when this limit exceeds to 30 %, it starts affecting the education and when it exceeds to the ratio of 20% it starts effecting income per capita. Thus, on the basis of these findings the study connotes different policy suggestions implacable to all South Asian countries.

Key Words: South Asian countries, Human Development Index, Debt to GDP ratio.

Contents

Acronyms

AD	Aggregate Demand
ADB	Asian Development Bank
BoP	Balance of Payments
CAD	Current Account Deficit
CaD	Capital Account Deficit
CAB	Current Account Balance
CoP	Cost of Production
EBA	Extreme Bound Analysis
EI	Education Index
FBR	Federal Board of Revenue
FDI	Foreign Direct Investment
FEM	Fixed Effects Model
GDP	Gross Domestic Product
GNI	Gross National Income
GoP	Government of Pakistan
HDI	Human Development Index
IDB	Islamic Development Bank
IMF	International Monetary Fund
LER	Life Expectancy Rate
NNI	Net National Income
REM	Random Effects Model
SA	South Asia
WB	World Bank
LIT	Literacy Rate
ENR	School Enrollment Rate

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CHAPTOR 1

1.1. Introduction

Generally, South Asian (SA) countries are known as developing countries in the world. Countries in South Asian region include Pakistan, India, Afghanistan, Sri Lanka, Bangladesh, Maldives, Nepal and Bhutan. It's the one of important regions of the world. It has an area of 46,37,469 Sq Kms and population of around 24% of the world. South Asia is considered as the most populous geographical region and second largest growing region of the world but besides this it is also housing largest number of people living in abject poverty and also facing under nutrition and health related degradation. The developing countries are categorized as those countries which are trying to become strong economically and socially. As the economic growth defines the health of a country and social growth defines the welfare of the country, the social growth is as important as the economic growth. Fiscal policy is an important tool utilized by the central government of a country, which is responsible for collection of revenues and spending the earned income. Usually, the extent of efficiency in managing fiscal policies of countries in South Asia is relatively low. With deprived fiscal policies, the collection of taxes is not sufficient to fulfill the financial needs of the Governments. As a result, the governments of such countries have to rely on some internal and external sources of finance (foreign countries and many international financial institutions) to pursue debt facilitation (Vudayagiri N Balasubramanyam, 2019) .

The ultimate source of income for each nation depends on the country's tax system, as it's the main source of its revenue collection. Taxes can be either direct or indirect and tax revenues are government expenses spent on developing, improving and protecting the general population. Such investment, in short, increases the quality of life of the citizens and the living conditions of the population. In this way, fiscal policy and procedures are closely connected and have a direct effect on the efficiency of a country's economy and the overall quality of the society. In South Asian region countries, however, there are several gaps between their current fiscal policies. The region's tax collection process is adversely affected by the problems such as arbitrary powers of the Government functionaries in tax collecting departments, high and deep rooted corruption, exhaustive judicial process, favoritism, restricted legislation, poor compliance, accountability and transparency, in this South Asian region.

When tax proceeds or revenue are less than the expenditure, such situation is known as Budget deficit. On the other hand, if revenue exceeds expenditure, this leads towards Budget surplus. As a result of low revenue, the expenditure needs of South Asian countries are mostly met by taking loans (Barkat, *et.al,* 2019). In addition to weak fiscal policy, limited GDP expansion, limited foreign direct investment (FDI) flows, existennce of high subsidies and currency value declines are some other factors that could reduce government earning capacity and ultimatly compeling the government to rely on internal and foreign loans and debts (Dabwor & Abimiku, 2016).

Debt acquisition is considered as one of the main components of the economic cycle of each country; hence debt itself is not always a curse. However, the ineffective utilization of obtained debt is where the problem arises. Debt is usually obtained by every country regardless of the fact that either they belong to the developed or the developing category. But the quality and health of the economy of a country are influenced by the length, form and nature of the loan obtained. Debt is acquired to fill gap between revenue and expenditure, to increase the volume and amount of money in the country and to provide the requisite financing for many sectors of business and industries.

The existence of high levels of poverty, a constant decrease in the value of currency, inflation and unemployment induce the country to acquire debt and inject vast quantities of base money into the economy to increase the competitiveness and efficiency of the economy (Kheng,2017). In short, debt is obtained to meet the necessary expenditure that must be met by the government. Furthermore, as debt is acquired, it impacts the government's vision for developing society and economic base improvements.

The two ultimate dimensions of the economic growth level of a nation are GDP (Gross Domestic Product) and HDI (Human Development Index). GDP can be calculated by different dimensions, such as Net National Income (NNI), level of employment, level of inflation, production of goods and services, export value, volume of imports, and many other main economic dimensions in a specific period of time, which is generally a year. GDP is a measure of economic wellbeing of country, whereas, HDI is mainly concerned with social well-being of members of country. Human Development Index is calculated by means of the expected life year, quality of living conditions and certain basic education facilities available in a country for the school year and per capita income in a country. These three dimensions help to calculate the HDI level directly and its ranking keeps a nation in the world as a whole

(Uttama, 2015). The relation between the Debt obtained by a country, its GDP and HDI are interrelated and affect each other in a way or another.

1.2 Debt

Due to lack of resources, the developing countries often seek foreign assistance in the shape of goods, capital or technical to promote their social and economic development. Foreign aid can be obtained bilaterally or multilaterally from various countries or Institutions. Sometimes it is sought to bridge the gap of Balance of Payments (BoP). Sometimes it is sought in the shape of food or commodity and sometimes in the shape of money. The developing countries have to provide public goods and civic amenities like portable water, schools, hospitals, sewerage systems, and infrastructure and transportation systems. And these facilities are prerequisite for development and private investment is not available, then foreign assistance is sought as substitute.

Usually, countries can acquire debt from two ultimate outlets i.e internal and external sources. Firstly, internal financial institutions such as banks and other money lending institutions operating within a country can provide the debt. Most of the country's commercial and central banks provide the operating government with short-term or long-term lending facilities, on the basis of a pre-decided interest rate. Likewise, they can borrow debts and loans from external sources which include, International Monetary Fund (IMF), World Bank, Asian development bank (ADB), Islamic Development Bank or form other foreign countries etc on long and short term basis at the pre determined interest rates, to meet their financial needs. It is important fact that usually these foreign loans are attached with some strings requiring the borrowing countries to impose strict economic policies, which include widening the tax bases, increase in tax rates and control of government expenditures. In addition, the payment of such loans includes interest as well as the principal sum. These foreign loans come in the form of international currency loans (Barkat et al., 2019) .

Social and economic developments are equally important for the development as they are interlinked, because, if an economy is progressing, then there would be enough amounts available to spend on social development as well. However, when around 40/50 percent of budget is spent on debt servicing and a major chunk on defense and other government requirements, then there is very less portion available for social and human development, which results into the decline of growth in the economy as well.

1.3 Gross Domestic Product (GDP)

GDP refers to the Gross Domestic Product, which means the cumulative output over a particular period of time of goods and services produced by a country within its geographical boundaries. When ample financial sources are available, both investment ability and investment patterns increase. Contrary to this, as less capital is available, people's saving capacities decline and they are unable to invest in different sectors of the economy (V. N Balasubramanyam, 2019). Low savings leads to fewer investments which further leads towards lower level of production and as a result low level of employment and the trend/cycle goes on in the country.

1.4 Human Development Index (HDI)

GDP per capita was commonly used in the 1950's, to calculate human development in any region. But it was acknowledged in the late 1970s and early 1980s that only economic metrics do not assess the multidimensionality of human growth. Dr. Mahboob ul Haq, Senior Advisor to the United Nations Development Program (UNDP), has developed the Human Development Index (HDI), which is recognized as an orthodox sign of the country's regional and national growth and is often used as a multidimensional measure of welfare. In 1990, UNDP released the first report on human development (HDR). In this document, it was considered that the nature of human development cannot be completely captured by economic measures because human decisions are infinite and change over time. But for everyone to lead a safe and long life, knowledge / awareness in terms of education and a decent standard of living, three essentials are required. If these basic criteria (education, health and decent living standards) are not met, many other possibilities would remain unavailable to the masses. These three aspects affect the life of a person or a family, who is consuming for its survival, saving and investing for earning life amenities or growing/producing for earning through trade.

1.5 Problem Statement

It is generally presumed that taking debt leads towards neglect of social and human development in the country, as due to non availability of resources, the countries borrow funds. A high debt-to-GDP ratio is undesirable for a country, as a higher ratio indicates a higher risk of default. Various economists have strong belief that if debt to GDP ratio exceeds from 60% of the GDP, it leads towards a negative penetration in socio-economic well-being

of society at large. Some economists like (Herndon, 2014), have given different level of threshold of debt to GDP ratio, beyond of which it starts creating problems. Mostly these economists linked it with the growth rate. However, no significant empirical evidence has been found with regard to its linkage with the Human Development Index. So, to fill this gap I would like to relate the theoretical to a practical view of the literature. First, I will estimate the position of the South Asian countries in terms of obtaining debt and their debt to GDP ratio. Then I would like to relate the debt to GDP of these South Asian countries with the Human Development Index and estimate that does debt to GDP ratio have a relationship or it can affect HDI of South Asian region? Afterwards, I will build a threshold for the debt, which is the line after which the debt would turn into problematic area in this region. In short, I would find the optimal level of debt for countries under study and analyze its impact on human development. Keeping in backdrop to this discourse, current study deliberates upon to find out nexus between debt to GDP ratio and human and social development in Pakistan and other South Asian countries. This will also develop a policy discourse on optimal level of debt to GDP for the audience such as financial managers of the country like Ministry of Finance and the Planning Commission.

1.6 Research Objectives

Objectives of this research are as follows:

(i) To measure the interplay between debt to GDP ratio and Human Development Index in Pakistan as well as in South Asian Region.

(ii) If the accumulation of public debt considers a normal activity in an economy, then what could be its optimal level, from which it starts affecting the economy and become problem.

(iii) To find out the threshold level of overall HDI and its components individually in the context of South Asian countries.

1.7 Research Questions

Research questions of this study are as under:-

i. What is the relationship between debt to GDP ratio and Human development Index in the context of South Asian Region?

ii. What is the impact of public debt on the Human Development Index of the countries in the South Asian Region?

iii. What are the negative implications for the economies of the region, if the debt problem persists?

iv. What is the level of debt to GDP ratio, after which it starts creating problems for the HDI and its individual dimensions in the South Asian Countries.

v. What policy measures may be taken for proper debt management and improving HDI in the South Asian region?

1.8 Significance of Research

The debt crises in the developing countries has become a serious challenge as it has put their economies under stress and they are unable to spend much resources on the human development, as a major part of their resources are diverted towards their debt servicing. A number of studies have been carried out by the researchers to find out the impact of public debt on the economic growth, economy or GDP. Though there is no specific magic number which I may exactly specify, beyond of that it starts causing negative effect on the human development of any country. However, some researchers find out the limit of 40% of debt to the GDP ratio for the developing countries and 60% for the developed countries. However, some find out this limit up to the level of 77%, 90% or 96%, where it starts impacting negatively on the economic growth and Human development. Here in this research study, initially I will try to establish any relationship between public debt to the GDP ratio and the HDI. Later, I will find out the situation of debt crises in the South Asian Region countries. During this study, I will try to use various tools and methodologies in the contemporary research arena and after employing them on the data of HDI and public debt to GDP ratio of the South Asian countries, try to find out an optimum level of debt where the debt to GDP ratio starts negative effect on the HDI and its individual dimensions and starts towards a declining trend. This study is also different in terms of bringing South Asian countries in to focus and study impact of debt to GDP ratio on Human Development Index. Moreover, this research is quite relevant with the Governance and Public Policy, as fiscal policy and other economic policies which are basically public policies and they have direct bearing on the economic conditions of the country and without strong economy, there would be no room for improvement in the human development index and its various components.

1.9 Debt Profiling and Position of HDI of South Asian Countries

Debt Profiling and position of Human Development Index of South Asian Countries during the year 2018 as per HDI Report are given in the below mentioned

Table 1
Human Development Index (HDI) ranking & debt profiling of South Asian Countries

	Human Development Index				Debt Profiling		
Country	**HDI (value)**	**LER at Birth (years)**	**Mean Years of Schooling[1] (years)**	**GNI 2011 PPP $)**	**Ranking**	**Debt**	**Debt to GDP Ratio**
Sri Lanka	0.780	76.8	11.1	11,611	72	2.48	07.10
Maldives	0.719	78.6	6.8	12,549	105	33.11	27.90
India	0.647	69.4	6.5	6,829	129	2.642	110
Bhutan	0.617	71.5	3.1	8,609	134	557.400	69.62
Bangladesh	0.614	72.3	6.1	4.057	136	1.389	24.80
Nepal	0.579	70.5	4.9	2,748	148	3.100	30.20
Pakistan	0.560	67.1	5.2	5,190	151	106.312	84.80
Afghanistan	0.496	64.5	3.9	1,746	170	55.469	86.80

Source: *HDI report (2019) and Trading Economics (Dec 2019).*

1.10 Research Gap

Majority of the researchers and economists observed the impact of debt to GDP ratio on economic growth rate and various other economic dimensions and determine a threshold limit of debt to GDP ratio, beyond of which the debt turns from good to bad. (Reinhart & Rogoff, 2010), while reviewing historic data of 44 developed and developing countries, found that high levels of debt to GDP ratios of 90 % and above debt to GDP ratio are correlated with substantially lower growth outcomes in both industrialized countries and emerging markets. Furthermore, (Baaziz, 2015) while interrogating, the condition of debt impacting economic

[1] Mean/average year of schooling which a person of age 25 years or more receives.

growth in South African countries, sets a threshold of 31.37% debt to GDP ratio and observes that this is a point up till which the debt has positive affiliation with the economic growth rate. (Grennes, 2010), sets the threshold level for the GDP growth at the level of 77%, for the developed and 64% for developing countries and if it crosses this limit then it brings negative impact on the economy and GDP. As it's evident from these examples, the researchers mostly studied the debt to GDP ratio's impact on economic growth but no serious attempt was made to see its impact on the Human Development Index. This research study is an attempt to observe the impact of debt to GDP ratio on Human Development Index.

1.11 Organization of Thesis

This research study is consists of five main chapters, the details of which are given below:-

Chapter 1: Introduction

This chapter gives a brief introduction to the main relevant topics like, South Asian region's profile, debt, GDP, Debt to GDP Ratio, Human Development Index, problem statement, research objectives, research questions, significance of research, rational of the study, debt profiling and position of HDI of South Asian Countries and organization of thesis.

Chapter 2: Literature review

A literature review discusses published information on the economy of the South Asian Region, debt, reasons to obtain debt, high poverty and unemployment, grant of subsidies to the low income groups of society, less foreign direct investment, failure of economic policies, effects of obtaining debt, unfavourable balance of current account deficit, high cash outflows, less public welfare, GDP, Human Development Index, debt to GDP ratio and Human development index report 2019.

Chapter 3: Research Methodology,

This chapter of my research explains the Theoretical Framework and Methodology, how the Human Development Index (HDI) and GDP are calculated, what their variables are, what the sources of data are and what if estimation technique used.

Chapter 4: Findings and Analysis

This chapter of my research is based on the findings and analysis explaining the descriptive statistical analysis of overall HDI and its components of South Asian Countries and overview of each South Asian countries. On the basis of empirical

evidences from South Asian Economies, the real GDP of South Asian countries was discussed in detail along with their HDI and its constituent components, South Asia's **g**eneral Government Overall Fiscal Balance (Percent of GDP), Debt and Debt to GDP ratio of South Asian Countries in 2019**.** In results and discussion portion of this chapter, the results of tests were discussed in detail on the basis of regression and sensitivity analysis by using OLS and Extreme Bound Analysis (EBA).

Chapter 5: Conclusion

On the basis of my research study, in this chapter, conclusion of the study has been given along with policy recommendations. The last part of the research study is the references and the various appendixe.

CHAPTER 2

REVIEW OF THE LITERATURE

In this chapter, I review the literature concerning the economies of South Asian countries and their fiscal policy. The topic of my interest is when the governments fail to operate fiscal policy effectively it creates wide gap which is called as deficit. The deficit later is bridged by the debts/loans from external sources; it poses greater challenges for the home country. The unproductive utilization of debts leads to slow growth in GDP and poor HDI performance. For better understanding, it is significant to study the results of the accessible literature; it will help in understanding the topic under review.

2.1 Economy of South Asian Region

For developing countries such as the African region and the South Asian region, receiving debt has become a permanent everlasting crisis to bridge their financial gaps. The countries in South Asia are India, Pakistan, Nepal, Maldives, Bhutan, Afghanistan, Sri Lanka, and Bangladesh. All eight of these countries fall under the category of developing countries and have been facing serious economic crises since their establishment. Debt in this developing area has now become one of the most critical problems facing by these countries. This is a region with a lower HDI rate and higher debt to the GDP ratio. The share of population of this region is one fifth of total world's population, i.e., 1.62 billion people lives in this area. One of the major reasons of growing rate of population is that these countries typically devote less than 5% of its all combined GNP on their people. Therefore, the main debt issue needs to be recognized in order to increase the debt to the GDP ratio and should therefore be discussed by all of the South Asian countries. As South Asian countries are one of the poorest areas in the world, where the majority of people live in total poverty, hence human suffering is also one of the greatest challenges. According to a report prepared by the World Bank, around 40 % of people here live in utter poverty and live on less than one dollar ($1) a day (Salikha, 2019).

The level of government debt is extremely high in South Asia. Afghanistan has 7.5% of debt to GDP ratio. The landlocked nation Bhutan is also at really high risk in term of debt to GDP ratio. However, Bangladesh is at moderate risk from many years. Sri Lanka and India are at lower level of high-risk debt ratio. Maldives and Pakistan are at moderate risk from long time

but now these economies have arrived into tremendously high risk levels. The reason might be, because these countries have lower levels of production since 2018. When economic wheel is not operative, production and output is low, hence earning is less, so there is need to borrow from different sources to fill the gap. If I talk about China, an immediate neighbor of Pakistan, she is at lower risk of debt to GDP ratio in the year 2016. But after global financial crisis, rise can be seen in its debt to GDP ratio. In short, the overall debt to the GDP ratio of South Asia is at the level of moderate risk (Griffiths & Kuss, 2017)

The economies of this region predominantly have inadequate growth rate, low level of HDI, and high levels of debt (both internal and external). Due to the existence of developing countries in South Asia, the region's economic crisis is very understandable. By the end of financial year 2018, the total unemployment level in this South Asian area had hit 30 percent. In the whole Middle East and European countries, the inhabitants of such areas work as an expatriate, even at the lowest labor rate and for long working hours, because of economic crisis and rampant unemployment in their own countries. So, the deprived currency value along with high rate of inflation and unemployment has triggered trends of brain drain from such countries. Because people of this region desire to get themselves settled, in some other foreign country, where there is job security and income (Serrano *et al*., 2018)

If I see the main cause behind restricted revenue collection and low level trends of GDP in South Asia, is inadequate focus on the services sector and its further growth. In this area, ultimate emphasis is made on the activities focused overproduction of goods and manufacturing base activities. This region primarily exports raw materials for a variety of items and imports finished goods from other foreign countries. Because of this, exports performance remains poor and imports performance remains high. This allows the current account balance of the nation to have an unfavorable or negative balance. This raises the burden of payments on the country. In addition, a strong deficit balance is triggered by irrational government use of resources with higher spending and lower revenues. After the Middle East base of royal government spending, this region holds the second highest level of government spendings in the entire world. This condition creates a shortfall in the financial capital available and compels the government to seek loans from different other sources (Barakat, *et al.*, 2019).

In South Asian countries, the ultimate reason behind the economic crisis and less economic development is due to inadequate educational facilities and a more rural population base. In

such a situation, there is still little understanding of the tax system, its value, importance and its benefits. Moreover, the residents of such countries continue to follow such deceptive tactics and methods by which it is difficult to reveal their real income before the authorities.

Among all of the South Asian countries, the level of corruption in Government departments is high. All eight countries in this area are on the International Transparency list in the high corruption base countries category. None of the countries in the International Transparency Index and ranking have a score lower than 100. As a result, financial resources are not generated according to standards and set targets and are used by officials rather than the whole population for their interest. This situation gears up trends for getting loans in this South Asian region (Haron, 2018).

As the availability of resources is much lower in this country, Pakistan is recognized as the preferred debtor country. Most of amount obtained in form of debt and loans was utilized unwisely; as a result the outcome of these loans turned out to be low, but demand rose again for loans and aid, in Pakistan. Significant sums of funds generated by the international donors and financiers go directly into the personal accounts of this country's elite rulers. Pakistan is thus, in short, ranked as one of the world's heavily indebted low income countries (Sanabria, *et.al,* 2020)

2.2 Debt

(Dahal, 2016**)** states that its not an easy process to run complete economy of a country. Any uncertain factors either internal or external have the potential to affect the entire economy up to a great extent. I can call these internal and external factors as endogenous and exogenous factors as well. In order to run an economy, there rises demand for sufficient amount of financial resources. For collection of finances the government makes fiscal policies. These fiscal policies are also defined and determined the scale, type and kinds of taxes that the government plans to impose on general consumers. These taxes are ultimate sources of collection of money or I can say generation of revenue for government of a country. These taxes collected are later used for the welfare and advancement of society as a whole. Government expenses and other country-based expenses such as social security and welfare work, grant of subsidies, tax relief to the tax payers, provision of educational facilities, transportations, medical and health facilities and many others measures are accommodated by the tax revenue collected. The taking of loans would set off some kind of deficit in the income earned and the need for expenditures

(Kousar *et al.,* 2019) observe that the debt also represents the amount due, payable or outstanding. Debt is gained by countries in order to deal with the financial budget deficits and to efficiently and adequately conduct all the required government functions. Debt can be got under various terms and conditions from internal and external sources of financing, and in any currency. When the debt is received, the amount of liabilities retained by a country is increased and the financial output and the economy is adversely affected.

Debt borrowing or debt creation is not bad for any economy, if it is also enhancing its debt utilization capacity. Borrowing domestically or externally is a normal part for any economy. Countries often run into complications because the funds borrowed are diverted towards low economic output return projects or on wasteful or political projects. Moreover, the debt is considered as good for an economy but after reaching a certain level, it turns problematic for economy.

Increased debt volume directly raises a country's cash outflow, largely in the form of repayments to lending institutions. Whenever the amount of debt grows, the government levies strict tax collection policies and increases product prices to raise the overall government revenue. Such steps or measures are taken to repay the long-term and short-term loans that the government has received in order to operate its economy in a certain or desired direction. Such conditions adversely decrease the amount of per capita income and the general public's earnings. Through this, the capacity of an individual or citizen of the country in question to spend and save is badly reduced.

The world's two leading financial institutions are the International Monetary Fund (IMF) and the World Bank (WB). These two bodies control and monitor the movement of finance and money amongst all the countries and States of the United Nations Organization (UNO). Long-term base loans from the IMF & WB may be accessed by the developing countries under negotiated terms and conditions. South Asian nations also able to receive debt from the Asian Development Bank (ADB) and the Islamic Development Bank, besides IMF and the WB. These financial authorities are working in partnership with each other and are ready to provide the deserving countries with the requisite financial assistance. Such financial aid makes it possible for countries to solve the economic crisis (Kheng et al., 2017)

(V. Balasubramanyam, 2019) while commenting upon certain terms and conditions with the external loans observs that the external international money lending financial institutions get willing to provide facility of long-term debt to the developing countries. These terms and

conditions include high taxes on the need to increase the amount of tax revenues, to increase the prices of luxury and manufactured products, to increase consumer savings, to limit the amount of subsidies and to restrict various business activities, which may also be a cause for an increase in the outflow of cash from the country. The extent of inflation in a country increases through such policies and then it takes a long period to recover from the segment of the debt base depression. Because of involvement of high cost in obtaining debts from external sources, outflow of cash and the cash equivalents rises in an economy. Through this process, circulation of money gets effected in an economy and then contracted or contractionary monetary policy is adopted to limit expansion trends of general public and to make repayments of debt attained. This all limits scope of the per capita income level up to an excessive degree.

Foreign aid is considered beneficial, if it is utilized properly. Because it generates productive output and a country is in a position to repay the debt and its interest. But if it is utilized in the non-productive sectors or ways and use to meet current account deficit (CAD), without corresponding increase in revenue, then such a debt turns bad and becomes burden. Because government has to set aside major part of budgetary resources for debt servicing and this debt affects routine government expenses. In this situation the countries face the financial crises and caught up in debt traps, which result in to allocation of their major chunk of resources for debt servicing and force them to acquire more borrowings to meet their obligations. This situation leads them to a vicious debt circle and culminated into the default and loss of sovereignty. Resultantly, public debt increases and instead of reducing poverty, the miseries of the people increases. Because a major chunk of their resources is diverted to pay the public debt liabilities and a little amount is left to spend on social sector development. In this way, the developing countries entangled in the debt trap and their growth suffers.

(Akram, 2014) observes that as per traditional growth theories, the external debt is an important growth factor for the developing countries. But they could not achieve the objective of growth possibilities because they fell in the trap of heavy indebtness and incidence of poverty, as the developed countries siphoned off a significant share of their resources.

(Dahal, 2016) states that the South Asian countries are on upward trend in terms of obtaining debt. This means high debt is not only a problem of Pakistan but also for other countries in the Region. The total level of external outstanding debt of the South Asian countries has

reached $668 trillion by end of the financial year 2019. Resultantly, the external debt burden of South Asia went up swiftly. Afghanistan and the India are those two countries of the South Asia region, which have negative cash flows with regard to the payment of the external debt.

Debts have been a hallmark of Pakistan's economy. Since independence, they are continuously on a rising trend because of macroeconomic instability, like balance of payments crisis, snail-paced economic growth, lack of resources, rising population, poverty and unemployment. This situation directly affects the ordinary man as he must face the consequences. As per State Bank of Pakistan, by the end of March 2019, the total external debt and liabilities of Pakistan accounts for $105,841 Million (Roth & Wohlfart, 2018).

Debt-to-GDP ratio has also continuously been increasing for the last ten years in Pakistan. The Government of Pakistan in early 2000's enacted a Law namely "Fiscal Responsibility and Debt Limitation Act (FDRL), 2005. The key elements of this Act were public debt should not be more than 60% of GDP by 2012-2013and it should be reduced 2.5 percentage points of GDP each year and revenue deficits must be reduced. It was amended in 2016 as a part of "Finance Bill" and stipulates that debts must not exceed from level of 64% of the country's GDP. The FRDL has been breached, as debt to the GDP ratio has been reached at 77.7% by end of June 2019, which was 65% in 2012-13 (Roth & Wohlfart, 2018). Now it is s at the level of 87.2% (Javaria & Masood, 2020).

(Shah & Pervin, 2012) while evaluating the effects of external debt and servicing on the Bangladesh economy for the period 1974-2010 were unable to find any evidence of debt overhang but discovered the crowding effect that emerges from the fact that debt servicing has a negative effect on growth over the period.

2.3 Reasons to obtain Debt

It's a general observation that the developing countries do not have enough resources to meet their budget deficits as they fail to collect enough resources. They are forced to borrow funds from domestic and external lending agencies and financial institutions, to meet their budgetary requirements to fund their development activities. Resultantly, public debt increases and instead of reducing poverty, the miseries of the people increase, as a major chunk of their resources is diverted to pay the public debt liabilities and a little amount is left to spend on social sector development. In this way the developing countries entangled in the debt trap and their growth suffers.

(Akram, 2014) observes that as per traditional growth theories, the external debt is an important growth factor for the developing countries, but they could not achieve the objective of growth possibilities because they fall in the trap of heavy indebtness and incidence of poverty, as the developed countries siphoned off a significant share of their resources. The specific reasons why countries receive debt from either internal banking channels or the international monetary institutions are listed below:

2.3.1 High Poverty & Unemployment

(Akram, 2014) states that the need for debt obtaining among South Asian countries is evident because of the prevalence of extreme poverty and a high level of unemployment. One of the largest beneficiaries of the UNSECO and UNICEF Base Poverty Reduction Plan is the South Asian region. The quality of life and living standards among the population of this area are adversely affected by the high poverty rates. The poverty rate of South Asian countries reached to the level of 20.45 percent by the end of the financial year 2018, which is the fifth highest in the world

Such a high rate of poverty directly reduces the production and spending power of the local consumers and to a large degree, increases the level of inflation. Such adverse inflation also restricts the investment and purchasing behavior of general consumers and the government's ultimate tax collection capabilities. The need to acquire debt from internal and external funding sources is evident and necessary to address the growing pattern of poverty and unemployment (Kheng et al., 2017)

2.3.2 Grant of Subsidies to the low income groups

Due to the low earning level and the existence of low savings, the production potential of individuals is directly constrained. In such a case, the cost of production goes up and the revenue-generating capabilities of companies go down. The rise in the cost of production directly raises costs, which is the ultimate burden on the general customer. Government raises the amount of subsidies and offers relief in various taxes and duties in order to reduce the cost of production and to attract entrepreneurs into business activities. As a consequence, government spending in the form of subsidies is growing and the amount of government revenue to be spent on other sectors is reduced. In such a situation, some business sectors are expanding to a large extent and some are becoming too small. This creates an economic imbalance within the region which adversely affecting the country's demand and supply

flows. Thus, the need for debt is evident to resolve such a condition (Dabwor & Abimiku, 2016)

2.3.3 Less Foreign Direct Investment

(Vudayagiri N Balasubramanyam, 2019) states that the volume and size of local production and the number of jobs would naturally increase through foreign direct investment (FDI). Foreign investors come and invest in a specific sector of economy, resulting in the inflow of foreign currency into the region. Through this, the number of companies in the country increases and finally, through gathering the idea from international investors, local investors often enter into related markets more passionately. Such a condition often raises the demand for local labor and other requirements for raw materials for production purposes. Therefore, the need for debt acquisition is removed as the growing number of companies directly increases the amount of tax collection as well

2.3.4 Failure of Economic Policies

Because of the existence of instability and poor circulation of money in the region of South Asia, the economic policies are being designed, planned and implemented by every Government. They will strengthen their current financial role and can also offer stability to different economic dimensions. In recent decades, the Indian Government's adverse economic decisions about the cancellation of high-value currency notes have contributed to a serious depression in the Indian economy. The same is taken by the Government of Pakistan where limits are imposed on the limit of withdrawal of money and decrease in the limit of taxable income as well. Through this, a period of depression occurs in Pakistan's economy which disrupts the entire economy for more than one to two years **(**Bradshaw,*et.al,* 2004**).** Such a failure of weak economic policies has a negative effect on the supply of money and cash in the economy, as a result of which the demand for a loan or foreign debt is evident.

There are many internal environmental factors and demographic factors as well, considering the factors listed above. This might convince a country to receive loans from internal or external finance sources. Such other variables may include the occurrence of an epidemic, any natural disasters like earthquake or floods, circumstances such as civil conflict, and the prevalence of high corruption, favoritism, and prejudices in the country's internal structure and this all results in the exploitation of the general population by the authorities concerned.

2.4 Theoretical Background, Debt to GDP Ratio and HDI

Today world is a global village and every third world country try its best to accelerate economic development which strongly rely on external funds and sources to supplement the shortages of domestic investable capital resulting from poor domestic savings (Panizza, 2008). It is thus expected that developing countries need financial support (such as aid, soft loans, etc) from outside their countries to increase domestic savings (Pattillo, et.al, 2002). Moreover, (Cartwright, 2007) stated that underdeveloped countries encounter weak and slow growth due to low savings that is not sufficent to fulfil inveatment in private and public owned sectors. As a result, low savings and low investment, whereas, these both are important to susain economic growth. Hence, borrowing from external sources becomes a need because of the idea of financial gap between savings and investments. The external debt is simply and straight forwardly borrowing from abroad. The role that foreign borrowing plays are that is allows or helps developing countries to raise their investment levels, which they couldn't raise due to deficits in internal savings (Dubois, 2012; P. Krugman, 1993)

There are different theories which support my research, as under:-

2.4.1. The Dual Gap Theory

According to (Cartwright, 2007), underdeveloped economies face low and weak growth rates due to the chronic low savings which is unable to provide financial support for investment in both private and public sectors of their economies. In other words, savings and investment supports, sustains boost up economic growth.

(Dubois, 2012) has showed that economic growth cannot be sustained and maintained unless the level of capital reaches a certain threshold point. Growth in capital and investment boost up with foreign loans will stimulate automatic economics growth resulting from an increase in savings over time. The foregoing illustrates the concept of the dual gap theory.

The dual-gap concept refers to the function of foreign capital in the economic development process. The role of foreign capital here is that it permits developing countries to invest more than they can save domestically; which is a necessity resulting from deficits in internal savings (P. R. Krugman, 1988)

2.4.2. The Financing Gap Theory

Financing gap is fundamentally the difference between the funds that are available from domestic sources and the total investment requirement and one way of closing this gap is by

borrowing from abroad. (Easterly, 2006) informed that the idea originated when Domar (1946) in a publication entitled "Capital Expansion, Rate of Growth, and Employment" where it was postulated that there would be a proportionate relationship between investment spending and the total growth of gross domestic product (GDP). The financing gap idea regenerate in the work of (Jwa, 2017) "The Stages of Economic Growth" predicate that for any country to move from being a less developed to a developed economy it needs to pass stages. There exists a proportionate association between such investment and economic growth and development. (Rostow, 1960) Concludes that the necessary condition for take off is that investment increases from 5% to 10% of profits which means that if a developing country does not have enough domestic resources for investment it must fill the gap with foreign aid or external debt. Some scholars observed that the model has proved to be amongst those generally employed theories in explaining growth phenomenon in economics (Effendi, 2001) and equally used in reaching at all financing requirements decisions by International Finance Institutions (IFIs) (Easterly, 1999)

2.4.3. The External Debt Effects Theories

Many studies were of the view that developing countries engaging in reasonable levels of borrowing are likely to improve their economic growth (Wang, 2011). Studies have also confirmed that foreign loans result into positive results especially as it affects economic growth but to a certain level only. After reaching a certain threshold level, the effects of additional debt on the economy will gradually drop. Capital in underdeveloped economies is limited and especially that these nations see an encouragement to sign for foreign loans meant for investment in as much as the return on capital is above their cost of funds (Ajayi & Oke, 2012). According to the traditional neo-classical model, debt increases transitional growth, since the model permits capital mobility and the ability to involve foreign sources in both borrowing and lending. This provides capital-scarce countries with an incentive to get loan and invest since the marginal output of capital is greater than the global interest rate (Ajayi & Oke, 2012).

2.4.4. The Debt Overhang Theory

(P. R. Krugman, 1988) observes that the debt overhang, under which the future debt of a country, if greater than its repayment capacity, then the expected debt's servicing cost, has potential to depress investment. Likewise, crowding out effect takes place, if large share of external resources is used in external debt servicing, a small portion remains available to

finance growth and investments. The irrational obtaining loans and debt can affect the country and its economy through various parameters and dimensions. Several scholars have supported the theoretical case for debt overhang. Some of the studies include (Borensztein, 1990) and (P. R. Krugman, 1988). Others like (Deshpande, 1997), (Ogunmuyiwa, 2011) and (Hameed, *et.al,* 2008) reaffirmed this by coming up with ample proof that backs the debt overhang phenomenon. Economic growth slows down because these countries lose their pull on private investors. Additionally, servicing of debts exhausts up so much of the indebted country's revenue to the extent that the potential of returning to growth paths is abridged (Olaoye, 2019). They suggested that even if structural adjustment programs are put in place by governments of these countries, adverse effects can still be felt on development of general economic performance. It should however, be noted that debt overhang does not occur only when a country accumulates too much debt, it can also arise when country's circumstances change, making it difficult to manage and discharge its stocks of debts. Such conditions may emerge because of adverse economic shocks or poor economic policies (Sen, *et.al,* 2007).

2.4.5. The Crowding Out Effects Theory

Crowding out effects usually occurs due to excessive real interest charges while the terms of trade of an overly indebted country become worsen while foreign credit markets may no longer be available. (Frimpong *et.al,* 2006) identified the decline in investment as being the effect of decrease in a country's available assets for financing investment and macroeconomics activities. Reduction in nation's capability of maintaining its debt resulting from the crowding out effect; and therefore, as it strives to meet some of its obligations, leaving little capital for domestic investment (Abdullahi, 2016). (Abdullahi 2016) concluded that debt caused liquidity restraints is a resultant effect of decline in government expenditure due to the continuous servicing of outstanding debt stocks in excess of what the economy can contain. (Karagol, 2006) showed that there is much interest from developing countries in the link between external loan and economic development since debt overhang has an impact on investment and thus economic growth. However, the cause and effect is not a simple matter to establish because clearly, debt overhang has a substantial influence on the rate of investment.

2.5 Effects of Obtaining Debt

While referring to the neoclassical model (Akram, 2014) states that at initial stage of their economic development, the countries rely on borrowed resources and if these resources are

used in some productive investment, they don't face macroeconomic problems, but rising level of debt creates hostile implications for the economic growth and investment. Most important effects of obtaining or attaining the debt are given as under:

2.5.1 Unfavourable Balance of Current Account (CAD)

The country has less income or money to make payments against imports when imports exceed exports. Less revenue raises the level of inflation, which reduces the value of the local currency. The burden of import payment in CAD may probably be equalized by such a situation. Therefore, such a balance becomes unfavorable and raises the country's liabilities. (Barkat et al., 2019).

2.5.2 High Cash Outflows

To make repayments of the acquired debt, a country also has to make payment of interest along with the principle amount. Due to repayments of loan amount, the outflows of cash from that country rises. In such situation, cash availability in that country for consumption purpose and circulation purpose goes down too. Hence, burden grows and then adversely affects the economy, its growth, and the performance level in long run. (Kheng et al., 2017)

2.5.3 Less Public Welfare

In order to obtain debt payments, the country must also make interest payments against the amount received. The cash outflow from the country goes up by paying the loan sum. In such a case, the cash available for consumption and circulation purposes in the country and economy is limited. Thus, in the long run, the burden increases and adversely impacts the economic situation, its development and the level of performance and Government is unable to invest more for the general public welfare and in provision of facilities to them. (Kheng et al., 2017)

2.6 Gross Domestic Product (GDP)

(Dabwor & Abimiku, 2016) state that GDP refers to the total production produced during a given period of time by the individuals of a country, irrespective of their nationality and origin. A price rise makes the raw material costly, in addition to the low buying power of the consumers, which significantly restricts the trade and business activities to a considerable extent. Price rises deter entrepreneurs from entering and carrying out a variety of production operations in the manufacturing and service sectors, as there is less demand of goods and

products. As a result, the amount of GDP is starting to decrease to a critical degree. (Ghorbani Dastgerdi, 2018) observes that the rate of GDP growth is regarded as a symbol of economic growth. The growth rate of GDP also has a direct relationship with economic growth and its level of success.

The magnitude of unemployment rate, the inflation rate, low currency value and the decrease in exports (due to an increase in the local raw material prices) are the main factors that can effectively calculate a country's GDP growth. These dimensions also contribute to the identification and study of the impact of debt on a country's GDP. At the end of 2019, the overall GDP of the South Asian region was $ 31.58 trillion. In comparison to other countries in Asia, the GDP growth rate in this region is moderately lower and slower. The South Asian region's GDP growth rate indicates a declining pattern from the 2018-2019 financial year of 0.7% to 0.9%. Hence, it can be presumed that the ultimate cause behind this restricted GDP growth rate in this area is growing debt volumes and weak economic policies (Dahal, 2016). Because these debts come with austerity policies mainly, whose main objective is to curtail aggregate demand and contractionary monetary policy which limits the growth and slows down economic wheel of country.

Every government is trying to lower the debt to the GDP ratio, but during the era of economic recession and also due to some climate change, it may be difficult. During such times, the governments pursue borrowing to stabilize the economy, in order to improve aggregate demand and to stimulate economic growth (Jawaid & Saleem, 2017). Later in the 1980s, the rate of accumulating debt in many developing countries increased, which is considered to be one of the major factors influencing the country's economic development. This is therefore regarded as one of the key reasons why many nations, including South Asian countries, have lost their competitiveness in the international market, as a result of lower exchange rate changes. This is a factor that weakens trade and its basic conditions, decreasing economic management, so that a lower rate of growth can be seen.

Bhutan and Nepal are the countries with the lowest GDP ratio in the South Asian countries, with the service sectors, the industrial sectors and the manufacturing sectors being the key economic activities that directly increase South Asian countries' GDP. All these sectors directly increase the GDP of every country, which will minimize the country's debt in exchange. The Human Development Index has a relationship with GDP that is directly proportional. Whenever, Human Development Index increases, the GDP will also

automatically increases, and hence overall economic wealth or prosperity of the country will also be upgraded (Suri, 2011).

Moving forward, (Akram, 2014) attempts to define and build a relationship between the economic growth of South Asian region countries Bangladesh, India, Pakistan and Sri Lanka, with public debt, for the period of 1975 to 2010, by using standard panel data model for estimation purpose. While examining the increase in the debt and its impact on the economic growth and poverty in these countries, he concludes that negative relationships exist between debt and economic development, the rise in debt would cause the economic growth to decline. He also estimated that many other partnerships had a relationship with income disparity, such as either public external debt or external debt servicing. However, the domestic debt has a significant relationship with growth of economy, whereas negative relationship prevails for GINI coefficient. So that indicates that when countries borrow from domestic sources, that kind of debt is pro-poor.

Economists presume that if a country attains more debt it means they'll be worse off. This assumption seems naturally correct. However, taking debt only as "negative wealth" may lead to thoughtful conceptual problems. It is a good thing to have more resources, but getting more debt is not necessarily evil. It can distort our view of injustice because debt is not often a burden by conceptualizing debt as the negative image of assets as something to be subtracted from assets to determine net worth. If it is the right kind of debt, deployed by the right person, it can also provide substantial benefits (Charron-Chénie, 2018)

Furthermore, we would like to take a look into how the government spending has an effect on the welfare and social development. (Ali, 2012) discusses in his paper, the role of Fiscal policy, which is dealt by government, in running or managing the human development. He applied Auto regressive distributed lag model known as ARDL model, for estimation purposes. He took data of Pakistan from 1972 to 2010 and his results indicate that when the income per capita increases as well as the education it causes positive and statistically significant impact on the human development or human welfare. However, the current expenditure has a negative impact; this needs concern of policy makers.

2.7 Is there a threshold of debt to GDP ratio, where it turns bad

(Reinhart & Rogoff, 2010) discuss the relationship among debt levels, inflation and growth level on a multi country data set. They gathered data from 44 developed and developing

countries covering up to two hundred years of central government debt, inflation and development data and applied a simple pooled least-square regression model. The key finding is that high levels of debt to GDP ratios, 90 percent and above are correlated with substantially lower growth outcomes in both industrialized countries and emerging markets. Moreover, the contribution of this paper to previous studies is to define debt relationships in emerging markets. There seems to be a stricter criterion for the 60 percent ratio of total external debt to GDP, which is often correlated with adverse growth outcomes of around 2 percent. It is hardly the case that, in developed countries, their way out of deep debt burdens is easily extended. The relationship between debt to GDP ratio, growth and inflation has been assessed using patterns and graphs. Third, for advanced countries as a group, there is no obvious correlation between inflation and the level of public debt.

(Reinhart & Rogoff, 2010) interrogate in their paper, the condition of South African Countries, that debt does really matter for growth of economy or not? More specifically, they try determining the association between debt to the GDP ratio with economic development and growth of South African countries from the time 1980 to 2014. They implied the Smooth Transition Regression (STR) model for the estimation purpose. The results of STR show the non-linear relationship in public debt to GDP of South African countries and state that with an increase in debt, it would cause the economic growth to decline, remaining other things equal. Also tries to define the threshold for the debt after which it would turn bad for the economy, the threshold is 31.37% this is a point up till which the debt has positive affiliation with the economic growth rate.

(Chowdhury & Islam, 2010) in his paper attempt to interrogate the optimal level of debt to GDP ratio that whether there exists a benchmark after which debt becomes a curse for economies. The rule thumb says that for developed countries the optimal level is 60% but for developing countries it is 40%. But now the question arises "Are these thresholds really optimal? After research and from past empirical findings, they found in their paper that there are 80% chances that if the 40% limit of debt to the GDP ratio is breached would not do any harm to the economy. They took an example of Japan to show that it is not the debt to the GDP ratio that matters to them as their debt to the GDP ratio is 170% but Japan is facing opposite conditions that are being followed theoretically from many years. Moreover, they address another rule of thumb that when debt increases, it weakens the economy by causing macro instability. However, the relationship is found to be very weak and insufficient to say that debt to GDP ratio, if increases would cause macro instability, because no or less

empirical evidence is found. If there is any such negative relationship exists, it must be because of outliers or extreme values. Furthermore, they insist that it is not debt that needs attention further it is fiscal policies of Government that needs more attention and importance. Debts and deficits in their view are indeed important indicators but not the only indicators; however, they give very little indication or effect in long term on assets of government or growth of economy.

In a report (Grennes et al., 2010) it was concluded that the threshold level or optimal level of the average long run public debt to the GDP ratio for the GDP growth is 77%, for the full sample and 64% for developing countries' sub-samples. For countries that cross the threshold for a prolonged time, reaching these thresholds is expensive and brings negative impact on the economy. Moreover, it would affect the GDP growth as well.

(Comunale, 2019) appear to reflect that when it comes to a government's budget deficit and debt there are no magical numbers or ratios that are relevant for all countries and all times. There are no fixed thresholds that once crossed will be unsustainable. The literature on the relationship between government debt and economic growth is scarce, particularly the empirical portion. The theoretical literature appears to point to a relationship that is negative. They believe that the importance debt threshold levels hold for developing countries is more than the importance they hold for developed nations. However, the paper's empirical estimation is carried out on 12 Euro countries. There is an overall public debt threshold of 90-100 percent of GDP. As low as 70 percent of GDP, its statistical confidence may decrease. This indicates that current debt levels may already have a negative effect on GDP growth in many countries, considering that the euro area's average debt to the GDP ratio is already above the lower threshold.

(Akram, 2011) observe that in Pakistan the surplus account gone into deficit first time during 1984-85 when the debt and fiscal deficit started to grow significantly as the deficit which was in 1990-91 at the level of Rs. 89.2 Billion increased to the level of Rs.148 Billion (66%) in 1997-98. They analyzed the data for Pakistan for a period of thirty six year from 1975 to 2010 and find the tipping point of public debt to the GDP ratio at 62%, where it turns bad and cause problems for the economy and affecting growth.

2.8 Human Development Index

The Human Development Index definition was broadened by the UNDP Human Development Reports. It is stated in the 1995 Human Development Report that human development requires the distribution and production of products along with the expansion and use of human capabilities. Human development goes ahead of them by encircling these issues. It takes into account all problems facing society, such as economic development, trade expansion, job creation, cultural and political values from the viewpoint of individuals. Therefore, it focuses on widening human options with fair consequences for developing and the developed industrial countries (UNDP, 1995). Every year, the United Nations Development Program releases a ranking of 189 countries in the form of its annual Human Development report and these countries are ranked as countries in the very high category, high category, medium and low categories of human development. This study analyses the factors of each country, such as women's empowerment, life expectancy at birth, public health expenditure, public education expenditure, average years of male education, total tax revenue generated, R & D expenditure, profit and capital gain, income tax, labour force participation ratio, financial sector domestic credit provided to the business people, private capital flow, net migration rate and employment to the population ratio etc.

Any government's ultimate concern is the growth of society and the wellbeing of human beings. The revenue is generated by the government with the help of fiscal policy for this purpose. Government manages and administers the fiscal side of economy by collecting revenues from people and spends on the people. Revenue is primarily expended on developing health services, in provision of education facilities, and improving living conditions for the community as a whole, irrespective of any prejudice or distinction. There are three significant measures for assessing any country's Human Development ranking.

First and foremost, there is quite a low trend in life expectancy in the South Asian Region. The causes of low life expectancy rates in this area are inadequate medical services, limited resources and low quality basic equipment available. In addition, other reasons for the low life expectancy trend are the limited level of income, less awareness level among people, and limited access available to the rural areas based population. At present, the South Asian region's life expectancy rate is just 63.45 years, which is 12 years lower than the base countries of Europe and North America. In addition to above, the reason for the low life expectancy level is the less government’s investment, to strengthen the medical facilities and

more dependency on home remedies and conventional ways of healing among the people (Bradshaw et al., 2004).

Secondly, there is also a very low level of education in the South Asian region. As per international standards, this region has the lowest level of literacy in the whole of Asia. With less efficient and quality teachers, the number of primary schools in the South Asian countries is also fairly limited. In addition, free basic education facilities are also not common enough in this area. Less wages and high inflation discourage parents because of high tuition fee and costly reading materials to send their children to the schools. This low education at the basic school level reflects weak education policies and inadequate government expenditure by these countries on the education sector (Dahal, 2016).

Pakistan's HDI 2019 ranking dropped one notch further and was ranked 152nd out of the 189 countries in total. Most alarmingly, the ranking of Pakistan was lower than that of all comparable South Asian regional nations. Pakistan's ranking was 13% below South Asia's average HDI, including India, Bangladesh and Srilanka. Pakistan was ranked 151st in the year 2017. From 2000 to 2015, the HDI of Pakistan grew by 25 percent with an average annual increase of 1.2 percent, but development has since slowed down. The increase could mainly be attributed to indices of education and income. Because of life expectancy at birth, expected years of education, mean years of education and GNI per capita for all South Asian regional countries, Pakistan’s performance was lower. Pakistan did not perform well on account of the Inequality Adjusted Human Development Index (IHDI), as with HDI of 0.386 in 2018, Pakistan experienced a 31.1 percent loss due to inequality in the distribution of Human Development Index dimension indices.

2.9 Debt to GDP Ratio and HDI

It is important to discuss human development and the ratio of debt to GDP ratio in order to understand the economic resources of the South Asian countries. Since the human development process is to extend people's options by building and improving people's environment, so that they can live long and healthy lives and have access to opportunities and the basic necessities of life. Thus, the human development process is completed until the country has reached an optimal degree of health, education and prosperity. Some of the key components of the Human Development Index are health, income and literacy rates, all of which have a significant effect on every nation's debt to the GDP ratio.

Human development is directly linked to every country's health index, which measures the health of the person and the nation's health. The health criterion, which includes life expectancy at birth is considered to be very significant and primary ingredient of Human Development Index. According to a report conducted in 2017, the life expectancy at birth is higher as compared to the global average ratio in South Asian countries such as the Maldives and Sri Lanka. The life expectancy in the Maldives is 76.8% at the birth rate. It is as high as the education ratio in Bhutan and India, when addressing the literacy rate in South Asian countries. As compared to the global average ratio, the GNI per capita of the South Asian countries is much lower. Compared to other South Asian countries, some South Asian countries, such as the Sri Lanka and Maldives, have stronger GNI per capita. Most South Asian countries, with thousands of active civil societies, have a democratic government with a rich cultural heritage, but they still have a low Human Development Index. That may be attributed to high poverty rates, higher illiteracy rates and lower health index rates. It can also be stated that these countries are an example of a low index of human development (Jawaid & Saleem, 2017).

2.10 Human Development Report 2019

As previously mentioned, HDI is a composite index that measures average achievement in the three fundamental dimensions of human development, including wellbeing and long-life knowledge / education and decent quality of living / wellbeing (Wang, 2020). There are four specific category classifications, i.e. very high human development category, categories of high human development, medium human development and low human development category.

In Human Development Index Report 2019, the data of a total of 189 countries has been analyzed. I observe that 62 countries have been placed in the category of very High Human Development Category and top five countries in this category are Norway with the overall Human Development Index, 0.95, followed by Switzerland with HDI 0.94, Ireland with HDI 0.92 Germany and Hong Kong China (SAR) with HDI value 0.939 and Australia and Iceland at fifth place with HDI value of 0.938.

Likewise, in High Human Development category, there are 54 countries in it. The top five countries are Serbia, Trinidad and Tobago with HDI value of 0.799, Iran 0.797, Mauritius 0.796, Panama 0.795 and Costa Rica HDI overall value 0.794. In medium Human Development Category, there are a total of 37 countries and the top five countries are

Marshall Island with 0.698 overall Human Development Index value and 117 ranking, Vietnam 0.693 with 118 ranking, Palestine 0.690 with 119 overall ranking, Iraq HDI value 0.689 and Kyrgyzstan 0.674 with overall ranking of 120 and 121 respectively.

Similarly in low Human Development category, there are a total of 36 countries and the top five countries, are Syria Arab Republic with HDI value of 0.549 and overall ranking of 154, Papua New Guinea with HDI value of 0.543 and 155 ranking, Comoros 0.538 and 156th ranking, Rwanda with HDI value 0.536 and 157th ranking and Nigeria with HDI value of 0.534 and 158 overall ranking.

The top bottom Countries in the overall Human Development Index ranking include Niger 0.377 HDI overall value and 189 ranking, Central African Republic 0.381 HDI and 188th ranking, Chad with 0.401 HDI and 187th ranking South Sudan and Mali with HDI value 0.413 and 0.427 with 185th and 184th overall ranking respectively.

Regions such as Arab states have an overall Human development index value of 0.703 in the developing countries, 0.741 in East Asia and the Pacific region, 0.779 in Europe and Central Asia, 0.759 in Latin America and the Caribbean, 0.642 in South Asia region and 0.541 in Sub-Saharan Africa region.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Methodology:

This chapter included research methodology, data collection method, nature of research and econometric technique used for data analysis.

3.2 Nature of Research

This research is quantitative in nature and used annual time series secondary data of 30 years from the period of 1990 to 2018 of HDI and its other dimensions in respect of the South Asian Countries.

3.3. Theoretical Framework and Methodology

3.3.1 Human Development Index (HDI)

To empirically examine the effect of debt on the human development of South Asian countries I use model of Human Development Index originally developed by a Pakistani Economist Dr. Mahboob ul Haq. It transformed the landscape of human development as it is a closer and wider step towards the human well-being. Human Development Index is a measure of social well-being or social development and includes important proxies of human capabilities, i.e., education, health and GNI. If these vital choices are unavailable, many other opportunities remain inaccessible for individuals (Wang, 2020).These all reflects the decent standard of living of an individual. The value of all these components are combined together and transformed into an index through using a normalization formula. In my study to determine the level of Human Development Index of South Asian countries I follow the basic model of HDI taken from (Stanton, 2007).

Education in a society is calculated by Literacy rate (LIT) and School Enrolment rate (*ENR*), later on these two are combined together and their weighted average is used as Education (*E*).

$$LIT\_index_i = \frac{LIT_i - 0\%}{100\% - 0\%} \qquad \ldots (1)$$

$$ENR\_index_i = \frac{ENR_i - 0\%}{100\% - 0\%} \ldots (2)$$

After combining Equation (1) and (2) I reach at the education index (*E*) i.e.,

$$E\_index_i = \frac{2}{3}(LIT\_index_i) + \frac{1}{3}(ENR\_index_i) \ldots (3)$$

Another main component in developing the process of HDI is the health of a society that is measured by Life Expectancy rate (*LER*)

$$H\_index_i = \frac{LE_i - 25\ years}{85\ years - 25\ years} \quad \ldots (4)$$

In addition to this, last but not the least component is GNI as per capita Income (*Y*).

$$Y\_index_i = \frac{\ln(Y_i) - \ln(\$100)}{\ln(\$40{,}000) - \ln(\$100)} \quad \ldots (5)$$

After combining Equations (3), (4) and (5) I reach at HDI index i.e.,

$$HDI_i = E\_index_i + H\_index_i + Y\_index_i \quad \ldots (6)$$

3.3.2 Debt to GDP Ratio

In order to calculate the Debt to GDP ratio of any country one can utilize standard formula i.e.,

$$Debt\ to\ GDP\ ratio = \frac{Debt}{GDP} \quad \ldots (7)$$

where, debt is the total amount or cumulative debt of any country

GDP is the Gross Domestic Product, the value of the final goods and services generated over a span of one year within the territory of a country.

This ratio helps in identifying the repayment capability of a country, the higher the ratio the higher the inability of a country to repay the borrowed debt. Hence, the higher ratio is undesirable for every country because it leads towards default of the country.

3.4 Statistical Model and Data

The goal of this research study is to examine how debt can directly impact South Asian countries' Human Development Index. By looking at the micro-economic and social factors / variables of South Asian countries, the interrelationship of debt to GDP ratio and HDI was investigated. Different dimensions of social and economic development have been analyzed in depth to understand the effect of debt on the GDP and HDI of South Asian countries. It is evident that most of countries have struggled to raise adequate revenues to fund their budgets and to sustain their economies. As a result, the countries are facing a twin deficit, and hence they depend on foreign and domestic debt to fund their growth projects.

There can be other various factors that can affect the HDI index of country, such as, priorities or preference of government decisions, lack of awareness among general public, social organization's lack of interest for improving social well-being of the society and so on. For the transparency and simplicity of his analysis, the scholar shall stick to partial equilibrium analysis and focus on the chain that he has developed throughout his study i.e., fiscal deficits forces governments to borrow from different sources. Once government borrows, the repayment of debt services poses un-escapable challenges. Hence, in order to payback the borrowed amount governments often go for austerity measures, which means cutting down the necessary expenditures or cutting down the government spending. As a result, less is left to spend on education, health and wellness of people living in society. So, such countries show poor performance on the side of human development. An advantage of using partial equilibrium analysis is that it requires minimal and straightforward data and implementation is easy because of transparency in results.

The scholar utilizes the estimation model;

$$HDI = \alpha_{it} + \beta_1(Debt\ to\ GDP) + \varepsilon_{it} \quad \dots (8)$$

where, the other important factors affecting the HDI of any country are controlled and goes directly in error term. The error term captures the unobservable factors that can potentially affect the HDI.

3.4.1 Description of variables

The scholar makes Equation 8 basis of his econometric analysis and he specifies the model accordingly, and it takes the following form;

$$Y(lnHDI)_{it} = \alpha_{it} + \beta_1 X(lndebt)_{it} + \varepsilon_{it} \quad \ldots (9)$$

where, Y_{it}= which is influenced by or affected by other variables. I have log[2] of HDI of i^{th} countries i.e., Afghanistan, Bangladesh, Pakistan, India, Sri Lanka and Nepal, over a period of 1990-2018 as a dependent variable in my model.

α_{it}= is the intercept term

$\beta_1 = \beta$ is the coefficient/slope/slope coefficient. It is basically the degree of change meaning it helps him in determining association between dependent variable and independent/predictor variable. Let's say, if β is negative, it means that 1-unit decrease in independent variable will cause increase in dependent variable and vice versa.

X_{it}= is the independent or predictor variable, which is the debt to the GDP ratio of the i^{th} countries i.e., Afghanistan, Bangladesh, Pakistan, India, Sri Lanka and Nepal, over a period of 1990-2018. The independent variable (IV) has the potential to affect other variables without getting affected. Government decision to borrow debt and country's own growth rate i.e., GDP, collectively determines the ability to repay the debt, in the form of debt to the GDP ratio. The higher the value of the debt to the GDP ratio, the risk increases for the country to fall in default.

ε_{it}= it is the error term or disturbance. Any effect that I omitted in this panel analysis will be captured here. This variable plays an important part in an Econometric modeling and is of great importance.

In addition to this, I test the hypothesis;

H_0= There exists no significant effect of changes in the debt to the GDP ratio on HDI of South Asian countries.

[2]I took log of the variables because log provides with realistic form of the models as the numbers are reduced and can be measured more easily. Moreover, log helps in reducing variance. Variance is how far values or numbers can get or spread.

H_1 = There exists effect of changes in the debt to the GDP ratio on Human Development Index of South Asian countries.

The purpose of the study is to find out the exact point, where impact of the debt to the GDP ratio on education, health and GNI per capita turns negative. For this purpose interactive dummies of public debt to the GDP ratio are introduced into the model, to capture the effect of the changing slope. Each dummy is assigned an interval of the variable. There are evenly divided nine intervals. A gap of 10% is devised for each new dummy. The observations of public debt to GDP all lay between 20% in 1990 to 99% in 2018 are given. The estimation equation and procedure of dummy creation is explained below:

$$Y_{it} = \alpha_{it} + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \beta_4 D_4 + \beta_5 D_5 + \beta_6 D_6 + \beta_7 D_7 + \beta_8 D_8 + \beta_9 D_9 + \varepsilon_{it} \quad \dots (10)$$

Table 2
Procedure of Dummy Creation

D1=1 PD/GDP<20%	D1=2 if 20% ≥PD/GDP<29%
D1=0 otherwise	D2=0 otherwise
D3=1 if 30% ≥ PD/GDP<39%	D4=1 if 40% ≥PD/GDP<49%
D3=0 otherwise	D4=0 otherwise
D5=1 if 50% ≥ PD/GDP<59%	D6=1 if 60% ≥ PD/GDP<69%
D5=0 otherwise	D6=0 otherwise
D7=1 if 70% ≥ PD/GDP< 79%	D8=1 if 80% ≥ PD/GDP<89%
D7=0 otherwise	D8=0 otherwise
D9=1 if 90% ≥ PD/GDP	
D9=0 otherwise	

Moreover, the scholar is interested in finding the optimal level of debt so (Moosa & Cardak, 2006) defined the following regression:

$$Y_i = \beta_0 + \sum_{ip=1}^{n} \beta_c X_{ipi} + \mu_i \quad \dots (11)$$

$$Y_i = \beta_0 + \sum_{ip=1}^{n} \delta_c X_{ipi} + \beta Q_i + \sum_{ip=1}^{m} \delta_c Z_{ipi} + \mu_i \quad \dots (12)$$

where, Y_i= education, health and GNI per capita

IVs are different level of debt to GDP ratio

μ_i= error term.

In this technique, independent varraibles are segregated into three catagoties such as; (a) fixed varriable(s)-x, (b) varriable of intererst-Q and (c) subset of z varriable. In this model fixed varriables are those varriables which have been confirmed as significant contributors or determinants of debt to GDP. Secondly, varraible of interest are those varriables which I want to test their sensitivity and robustness. Z subset is cobinantion of the all fixed varriables and varriable of interest. To examine the explanatory variables, EBA technique is used to a robust regression. Moreover, in Equation 12, X is explanatory variable(s) as confirmed by previous studies, Q is the variable of robustness is tested; Z is a potential variable and an error term.

3.4.2 Sources of Data

The study is based on data set from six nations, Afghanistan, Bangladesh, Nepal, Pakistan, Sri Lanka and India, consisting on their annual data of HDI from 1990-2018[3]. The main variables are HDI and Debt to GDP ratio. The Human Development Index (HDI) is the collection of three major variables i.e., life expectancy rate, education, and per capita GNI income.

Table 3

Sources of Data

Variable	Data source
Human Development Index	UNDP HDI Report (2019)
Life Expectancy rate	UNDP HDI Report (2019)
Education Index	UNDP HDI Report (2019)
Per Capita income	UNDP HDI Report (2019)
Debt-to GDP Ratio	Trading Economics (2020)

Source: *Author's.*

3.4.3 Estimation Technique

In my analysis I have panel data model, which means that my observations are varying across time and individuals or entities. Here in panel data models I have more degrees of freedom and wide variety of sample which improves the estimation results. Moreover, the panel data models offer with wide variety of advantages that time series and cross sectional does not, apparently. Normally, in time series models, I come across with auto-correlation problem,

[3] The detailed data set utilized for study is attached in appendix Table no. 1, 2, 3, 4, 5 and 6.

and in cross sectional models we encounter heteroscedasticity problem. But if I combine both i.e., time series and cross-sectional data sets, I get panel data set and can get rid of these complications.

For panel data estimation I can run simple panel regression, i.e., ordinary least square (OLS). Moreover, there are further two methods which I can use to estimate my model, Fixed Effects (FEM) and Random Effects Model (REM). These two regressions are widely used for panel data model. Moreover, to decide between these two techniques that which one best fits my model I will use Housman test.

Reasons for using FEM are:

- I am interested in inspecting the impact of the variables which are varying over the period of time.
- FEM would help in discovering the relationship between the dependent and the independent variables.
- With FEM it would benefit us in removing any biasness which is caused by any of the unobservable or omitted variables which I am not including.
- Lastly and importantly, I run Hausman test[4] to choose between FEM and REM. Whose hypothesis is:

  H_0 = Random effect is an appropriate model

  H_1 = Fixed effect is appropriate model.

Table 4
Hausman Test

Estimating equation [5]	Result
Hausman test (p-value)	0.000

Source: *Author's own calculations.*

On the flip side, decades of endeavours have been made to explore the optimal level of debt to GDP ratio so far by many researchers, but the question is to examine the robustness of variables of interest. According to Cooley & Leroy (1981) economic theory does not intricate as to which variables should be kept constant while employing any statistical technique or model. In order to tackle this limitation, (Leamer, 1983 and 1985) developed the Extreme Bound Analysis (EBA). Practically first time this techniques was used by Levine and Renelt

[4] Detailed STATA results are attached in Appendix table no. 7.
[5] Detailed STATA results are attached in Appendix table no. 7.

(1992). Various parallel models have been developed and used but reliability of these models was questionable. EBA technique is very useful and reliable method which is used to test the sensitivity of desired outcomes to specification changes. It also reduces the uncertainty of model fitness and validity and reliability (Leamer, 1985). So, for estimation purposes I will employ EBA technique as well other than FEM.

CHAPTER 4

FINDINGS AND ANALYSIS

4.1 Empirical evidences from South Asian Economies

South Asia having a population of 1.62 billion, which is the half of world's poor, is the least connected region, as there are trade constraints and visa travel exists among the South Asian countries. Two major countries of the region i.e. India and Pakistan are horn to horn due to their border tensions since decades. Likewise, the other countries have their own internal and external issues. If I see the public spending on education in these countries, it transpires that Bangladesh is spending 2.2% of its GDP, Bhutan 4.7%, India 3.2%, Maldives 6.8%, Nepal 4.7%, Pakistan 2.2% and Sri Lanka 2% of its GDP. Health and Education are the primary sectors for public expenditure by any government besides the infrastructure. Government spending on education and health determine the social progress. UK and USA are spending 6.3% and 5.6% of their GDP on education sectors despite having a strong and vibrant private sector in education there.

Economic attitude of South Asian countries is greatly divergent. Some economies like, Bangladesh, India and Bhutan, have positive economic conditions with GDP growth predicted to remain vigorous in near times. However, economic outlook of countries like Pakistan and Iran has evidently deteriorated. And the GDP growth of region as whole, slowed down in 2018. Regional GDP was projected to expand by 5.4% in 2019 and 5.9% in 2020, after an estimated extension of 5.6% in 2018 (Meerow & Newell, 2019). In contrast to this (Rajput et al., 2020) states GDP to contract by 2.7% due to outbreak of Covid19. The main reason of contraction can be credited to less consumption and service sector activity and most importantly the uncertainty about future.

Table 5

Real GDP at Market Prices (%)

Country	2019(e[6])	2020(f[7])	2021(f)	2022(f)
Afghanistan	2.9	-5.9 to -3.8	3.3 to 3.9	5.2 to 6.2
Bangladesh	8.2	2.0 to 3.0	1.2 to 2.9	2.8 to 3.9
Bhutan	3.9	2.2 to 2.9	2.0 to 2.5	3.1 to 3.5

[6] (e) Refers to the estimated results, conducted by The World Bank.
[7] (f) Refers to the forecasting done by The World Bank.

India	6.1	4.8 to 5.0	1.5 to 2.8	4.0 to 5.0
Maldives	5.2	-13.0 to -8.5	6.3 to 7.3	5.0 to 5.5
Nepal	7.1	1.5 to 2.8	1.4 to 2.9	2.7 to 3.6
Pakistan	3.3	-2.2 to -1.3	0.3 to 0.9	3.2 to 3.3
Sri Lanka	2.6	-3.0 to -0.5	0.2 to 1.2	2.0 to 2.5

Source: *World Bank (2020).*

In addition to this Table-1 presents the real GDP of this South Asia region. Hence, I can conclude that in the estimated results of 2019, Sri Lanka, Afghanistan and Pakistan have very low level of real GDP as compared with other South Asian nations. In contrast, the group of other three countries i.e. Bangladesh, Nepal and India are at high level in terms of GDP. Furthermore, the forecasts of 2020, 2021 and 2022 indicate the similar condition of Sri Lanka and Pakistan's GDP in coming years. On the hand the progress or improvement can be seen for Afghanistan. For the other group of Bangladesh, Nepal and India, the conditions seem to deteriorate to very alarming extent, because their predicted GDP level seems to be quite low. Low level of GDP indicates low level of economic growth. When there is poor growth, the level of economic activity or economic wheel of country fails to provide desired level of production, which further welcomes economic crisis.

Moving ahead from economic condition of South Asian countries, the human development or social indicators also plays a vital role in determining healthiness of economy. Economic growth is a narrower concept than economic development or economic welfare. A GDP can be a measure to estimate the economic state of country but cannot be the only source to rely on. So, for the competent results and findings, I have taken a social development measure alongside economic efficiency measure i.e. Human Development Index. Economic growth ignores a wide variety of other indicators which play role in wellness of a society.

Table 6

Human Development Index (HDI) and its Components

	Country	HDI(value)	LER at Birth (years)[8]	Mean Years of Schooling[9] (years)	GNI[10]2011 PPP $)	HDI rank
Category	**2018**					**2017**
High HDI category	Sri Lanka	0.780	76.8	11.1	11,611	72
	Maldives	0.719	78.6	6.8	12,549	105
	India	0.647	69.4	6.5	6,829	129
Medium HDI category	Bhutan	0.617	71.5	3.1	8,609	134
	Bangladesh	0.614	72.3	6.1	4.057	136
	Nepal	0.579	70.5	4.9	2,748	148
	Pakistan	0.560	67.1	5.2	5,190	151
Low HDI category	Afghanistan	0.496	64.5	3.9	1,746	170

Source: *HDI report (2019)*

It is quite evident from Table-62 that the country with the lowest level of GDP according to Table-6, Sri Lanka, belongs to the high HDI category. And the countries with high level of GDP like Bangladesh, Bhutan and India lie in the medium category. Hence, I can conclude besides GDP of country, it is also important to have a look at the well-being of people. HDI provides a complete picture of the health, education and income of its residents. Basically, Human Development Index is a measure of people's standard of living in a country. The countries with HDI closer to #1 are considered to be healthier and happier countries. On the other hand, countries with HDI closer to #160 are considered to be poor and worst countries in the context of health, education and GNI per capita income.

The picture for our analysis is still incomplete because Ihave to take into account another important factor that is fiscal balance to estimate the efficiency in collecting revenues and productive expenditures of these South Asian countries. Fiscal balance is a record keeping of a country's revenue and expenditures. The more the country collects the more they are capable of spending on its people well-being, welfare and development. Thus, Table 7 provides us with the required information.

[8] The expected number of years an infant is predicted to live if the following pattern of LER prevails throughout the child's life.
[9] Mean/average year of schooling which a person of age 25 years or more receives.
[10] GNI is Gross National Income, i.e. measure of aggregate income of a country.

Table 7
South Asia's General Government Overall Fiscal Balance (% of GDP)

	Average				Projections				
Country	**2001-10**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Afghanistan	…	-0.6	-1.7	-1.4	0.1	-0.6	1.5	-0.8	0.0
Bangladesh	-2.9	-3.4	-3.1	-4.0	-3.4	-3.3	-4.6	-4.8	-4.8
Bhutan	-3.0	-4.2	3.8	1.5	-1.1	-3.3	-1.0	2.2	-0.6
India	-8.7	-7.0	-7.1	-7.2	-7.1	-7.0	-6.9	-7.1	-6.8
Maldives	-7.0	-4.3	-7.1	-6.8	-9.3	-2.7	-5.3	-4.8	-4.6
Nepal	-1.0	1.8	1.5	0.7	1.4	-3.1	-6.5	-5.0	-5.0
Pakistan	-3.8	-8.4	-4.9	-5.3	-4.4	-5.8	-6.4	-6.8	-7.1
Sri Lanka	-6.9	-5.2	-6.2	-7.0	-5.4	-5.5	-5.3	-4.6	-3.5

Sources: *IMF, World Economic Outlook; Forecasts and Predictions of National Monetary Authorities; and IMF Staff (2019)*

Table 7, provides the fiscal efficiency of the South Asian countries. The Fiscal balance of all these countries are mostly negative indicating the deficit side. When the expenditures are more than the revenues of a country, it poses greater challenges for the authorities, as the expenditure has to be financed from somewhere, because an economy cannot function properly, for a long time without finances. As a result, the governments of such countries often seek financial help from internal or external sources in the form of borrowing which is called as debt or loans. Table-7 points out that mostly South Asian countries are dealing with deficits and seek finances from different sources from time to time to bridge the financial gap and for smooth functioning of the economy.

So, here rises need to further look at the total debt or debt to GDP ratio of these countries. So, that the researcher may estimate that how much of these countries receive in the form of debt to finance their deficits. As it has been seen in Table 7, that South Asian countries are facing deficits in majority of the years.

Table 8
Debt and Debt to GDP ratio of South Asian Countries in 2019

Country	**Debt (US$ Billions)**	**Debt to GDP Ratio (%)**
Afghanistan	2.48	07.10
Bangladesh	33.11	27.90
Bhutan	2.642	110
India	557.400	69.62

Maldives	1.389	24.80
Nepal	3.100	30.20
Pakistan	106.312	84.80
Sri Lanka	55.469	86.80

Source: *Trading Economics (Dec 2019)*

Debt to the GDP ratio is the ratio of debt over GDP; it basically shows the repayment capacity of the country. The better the economic growth of country the more it enhances the repayment ability of that country and vice versa. In addition to this, if the debt to the GDP ratio increases, it poses great challenges for the country, as it means the debt is more than the capacity to repay. Debt borrowing or debt creation is not bad for any economy, if it is also enhancing its debt utilization capacity. Borrowing domestically or externally is a normal part for any economy. If the debt is utilized in productive manner it enhances the Gross Domestic Product but if not, it becomes problematic for borrower.

Table-8 illustrates annual debt and debt to Gross Domestic Product ratio in the year 2019 of South Asian region. India has the borrowed highest amount of money in the form of debt from different sources, but if its debt to GDP ratio is analyzed, it is quite satisfying that their debt is utilized effectively and efficiently as a result their debt to GDP is closer to 60%. And if the debt of Pakistan and its debt to Gross Domestic Product ratio are analyzed, the condition is quite alarming and indicates towards the ineffective utilization of borrowed amount. Likewise, the debt repayment capacity of rest of South Asian countries with debt to the GDP ratio can also be analyzed. Thus, the researcher utilizes debt to the GDP ratio instead of debt for his analysis.

Table 9

Debt to the GDP ratio of South Asian Countries (%)

Year	1990	1995	2000	2005	2010	2015	2018
Afghanistan	7.7	9.1	6.9	5.3	7.7	9.1	7.1
Bangladesh	35.3	49.0	46.4	46.9	32.3	27.7	27.9
India	41.7	67.2	73.6	79.0	65.6	68.5	68.3
Nepal	49.8	46.6	63.5	51.3	33.5	25.3	30.4
Pakistan	52.4	73.3	83.0	63.5	62.4	63.3	72.1
Sri Lanka	60.1	95.2	96.9	90.6	71.6	78.5	83.7

Source: *Trading Economics (2020)*

Table-9 illustrates the idea that the South Asian countries are on upward trend in terms of obtaining debt. Afghanistan has the lowest debt to the GDP ratio among all South Asian countries, not because their economy is sufficient enough to finance their fiscal deficit which is mostly negative[11]. In the year 2016, Afghanistan experienced low external debt of US$ 1,240 million that is 6.3% to GDP. The reason of low debt to GDP or low debt is outcome of past debt relief and cancellation of debt from Paris club (Ben Naceur, Chami, & Trabelsi, 2020). Whereas, for the rest of South Asian region countries like, Pakistan, India, and Sri Lanka, the debt is continuously rising over the period of 1990-2018. The rise in debt rate is often connected with fiscal profligacy of countries. Hence, countries are forced to borrow from different sources and fall in debt trap. And such countries in order to repay the borrowed amount often cut the development or necessary expenditures. As a result, the well-being of society is every so often compromised in this cycle.

Countries also face difficulties because the funds borrowed are targeted at projects with poor economic returns or at inefficient or political projects. Moreover, the debt is considered as good for an economy but after reaching a certain level, it turns problematic for economy. However, the debt servicing cost put the countries in problems as a little amount is left for social sector development. However, despite all odds, the Human Development Index of South Asian countries, is improving. South Asia ranked as the fastest growing Region, for the period from 1990-2018 and its growth rate increased by 45.3%, followed by the East Asian and Pacific Regions at 41.8% (Wang, 2020). For the period 1990 to 2018, descriptive statistical test is done on HDI's South Asian countries data from 1990 to 2018, to determine the minimum, maximum, mean and standard deviation of major indicators of South Asian countries and its results are as follows;

Table 10
Descriptive Statistics for South Asian Countries

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	0.298	0.650	0.435	0.102
	Life Expectancy Rate	0.467	0.681	0.594	0.059
	Education Index	0.205	0.764	0.413	0.204
	Per Capita Income	0.328	0.572	0.454	0.070
	Debt to DGP Ratio	7.700	95.200	46.942	21.526
1995-2000	Human Development Index	0.331	0.687	0.470	0.102
	Life Expectancy Rate	0.522	0.704	0.639	0.053
	Education Index	0.237	0.790	0.448	0.199

[11] As seen in Table **Error! Main Document Only.** South Asia's General Government Overall Fiscal Balance (Percent of GDP)

	Per Capita Income	0.317	0.604	0.462	0.085
	Debt to DGP Ratio	6.939	96.900	57.171	28.120
	Human Development Index	0.347	0.721	0.507	0.102
	Life Expectancy Rate	0.559	0.735	0.672	0.050
2000-2005	Education Index	0.270	0.841	0.490	0.202
	Per Capita Income	0.302	0.628	0.482	0.087
	Debt to DGP Ratio	5.397	105.600	62.390	30.903
	Human Development Index	0.419	0.750	0.548	0.096
	Life Expectancy Rate	0.597	0.767	0.704	0.048
2005-2010	Education Index	0.335	0.853	0.533	0.191
	Per Capita Income	0.381	0.669	0.517	0.086
	Debt to DGP Ratio	4.164	87.900	49.551	25.944
	Human Development Index	0.465	0.772	0.586	0.090
	Life Expectancy Rate	0639	0.793	0.734	0.045
2010-2015	Education Index	0.370	0.866	0.574	0.174
	Per Capita Income	0.421	0.707	0.548	0.088
	Debt to DGP Ratio	8.700	78.500	45.381	23.632
	Human Development Index	0.491	0.780	0.609	0.091
	Life Expectancy Rate	0.673	0.805	0.753	0.043
2015-2018	Education Index	0.407	0.874	0.599	0.165
	Per Capita Income	0.432	0.718	0.569	0.094
	Debt to DGP Ratio	7.100	83.700	46.831	27.899

For better understanding and for an overview of data we took a precise way to define the variables of our major concern. In addition to this we divided the yearly data in to Five (5) groups for comparison purposes. The first group contains data of year 1990-1995, and then second group contain data of 1995-2000, so on and so forth. This will help us in defining how much progress is made in HDI, along with debt, over the years by the South Asian region countries as a whole and by each country individually or solely.

South Asia as a region has made a significant improvement in its overall Human Development Index from 1990 to 2018. This increasing or upward trend can be attributed to improvements in life expectancy rate, education index and per capita income of this region. As these three are major components that together define the human development of any country. It is evident from the above table that Life Expectancy Ratio (LER) in South Asian region has gradually improved during all the years. The LER was at the minimum level of 0.467 and maximum at 0.681 in the first group of years i.e. from 1990-1995, and improved to 0.673 and 0.805, respectively, in the years 2015-2018. Along with LER, the education index also witnesses significant progress from 1990 to 2018 in South Asia, as during this period it roses from 0.205 minimum and 0.764 maximum to 0.407 and 0.874. Similarly, the per capita income in South Asia also shows significant progress, overall its progress from 1990 to 2018, the index increases from 0.328 to 0.421 at minimum level and 0.572 to 0.718 at maximum level, showing a considerable improvement.

Debt to GDP ratio during the period from 1990 to 2018 also witness fluctuations as during 1990-1995, it records at 7.700 at minimum level and 95.200 at maximum level and during 2015-2018 at 7.100 to 83.700 respectively. However, the period from 2000 to 2005 witnesses the highest ratios as during this period the mean of this ratio records at 62.390 and standard deviation at the level of 30.903. So, it indicates the repayment capacity kept on changing over a period of time. Furthermore, for comparison purposes, we take the data of South Asian countries individually and analyze their situation.

The South Asian countries' debt figures are worrying and this alarming situation appears to suggest that they are on the brink of economic insolvency. The debt to the GDP ratio of almost all South Asian countries shows growing trends in foreign dependence, which will have a significant effect on the country's sustainability within the region. There are several countries that have negative per capita GDP growth as well. The debt forecast for the future indicates that if the country's current borrowing patterns persist, virtually all South Asian countries would end up with an external debt burden of full unsustainability. Furthermore, on the basis of current borrowing patterns, it is also analyzed that if the current debt ratio remains as it is for the next five years, the percentage will rise by 35 percent between 2025 and 2050, which will again rise the reliance of these countries on foreign debt. If they do not pay their debts, the South Asian countries will default. Among all the countries in the South Asian region, Bangladesh and Nepal are the countries whose economies are increasing rapidly and which are slightly less dependent on foreign resources, if these two countries' GDP growth rate increases as it increases at present, they will become less dependent on foreign resources now.

4.1.1 Overview of Afghanistan's Economy

Afghanistan is a war-torn country and facing this situation from late seventies. Afghanistan is a low-income country of South Asia, having population of 38041754 (Chepkosgei, 2020) with 2.4% growth rate. Its Mortality rate under 5 per 1000 live births is 63 during 2018. Earlier, it was at 129 during 2000 and 88 during 2010. Surface area of Afghanistan is 6529000 Square kilometers. Its GDP is 19.481 billion US Dollars and GDP growth rate is 1.8%. Poverty ratio at present in Afghanistan is 54.5 (2016). GNI per capita income is 540 Dollars. Its exports of services and goods remained at 8% of the GDP during 2018, as per the "Database of Global Development Indicators" of the World Bank. Its imports of goods and services come to 41% of the GDP. Tax revenue remained at the level of 9.3% of the GDP. Its

merchandise trade is 43% of the GDP. Its total external debt stock stands at 2605 US million dollars. Personal remittances amounting to 804 million dollars were received during 2018 from its immigrants abroad. It received net official development assistance amounting to 3788.9 Million dollars from the donors during 2018.

Table 11
Descriptive Statistics for Afghanistan

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.30	.33	.3087	.01015
	Life Expectancy Rate	.47	.51	.4910	.01754
	Education Index	.76	.76	.7615	.00217
	Per Capita Income	.33	.47	.4037	.05091
	Debt to DGP Ratio	7.70	11.70	9.4000	1.33116
1995-2000	Human Development Index	.33	.35	.3386	.00573
	Life Expectancy Rate	.52	.55	.5368	.01139
	Education Index	.76	.79	.7704	.01324
	Per Capita Income	.32	.37	.3422	.01915
	Debt to DGP Ratio	6.94	8.00	7.3772	.42524
2000-2005	Human Development Index	.35	.41	.3844	.02421
	Life Expectancy Rate	.56	.59	.5736	.01187
	Education Index	.80	.84	.8252	.01492
	Per Capita Income	.30	.38	.3570	.03092
	Debt to DGP Ratio	5.40	6.63	6.0140	.48762
2005-2010	Human Development Index	.42	.46	.4394	.01704
	Life Expectancy Rate	.60	.63	.6142	.01344
	Education Index	.85	.85	.8490	.00316
	Per Capita Income	.38	.43	.4008	.01722
	Debt to DGP Ratio	4.16	7.70	5.2412	1.41710
2010-2015	Human Development Index	.47	.49	.4814	.01006
	Life Expectancy Rate	.64	.67	.6536	.01108
	Education Index	.86	.87	.8610	.00412
	Per Capita Income	.42	.44	.4330	.00682
	Debt to DGP Ratio	8.70	11.70	9.7400	1.16103
2015-2018	Human Development Index	.49	.50	.4933	.00252

Life Expectancy Rate	.67	.68	.6787	.00551
Education Index	.87	.87	.8717	.00252
Per Capita Income	.43	.43	.4333	.00115
Debt to DGP Ratio	7.10	8.00	7.5667	.45092

In the overall HDI of Afghanistan, a considerable increase is noticed from the period 1990-95 to 2015-18, despite the fact there was a law and order issue and political instability, as it rose from .30 minimum and .33 maximum to the level of .49 minimum and .50 maximum during this period. Likewise, a Life Expectancy Rate has also been increased from 1990 to 2018, as during 1990-1995, it was at .47 minimum and .51 maximum and it increased up to .67 minimum and .68 maximum during 2015-18. Similarly a little change is observed in Education index during this period as during the period 1990-1995, it was at .76 minimum and .76 maximum, but it increased to .87 minimum and maximum during 2015-18. Likewise, there is significant change is noticed in the per capita income during this whole period and reason could be that there was continued war in Afghanistan and this ratio during 1990-1995, was at .33 minimum and .47maximum and it increased to the level of .43 minimum and maximum during 2015-18. Debt to GDP ratio has also been slightly declined as during the period from 1990-1995, it was 7.70 minimum and 11.70 maximum, and it decreased to the level of 7.10 minimum and 8.0 maximum in the period from 2015-19.

4.1.2 Overview of Bangladesh's Economy

As per (BBS, 2020) the population of Bangladesh is estimated to be 163.70 Million (2018) and its surface area is 147570 Square Kilometers. Its population growth rate is 1.37 % (2017). Its crude birth rate (per 1000 population) is 18.5, crude death rate 5.1, and infant mortality rate (Per thousand, below one-year age) is around 24.Total fertility rate per woman (15-49) is 2.05 and life expectancy years (2017), for both sexes is 72.0 (Male 70.6 and female 73.5). Literacy rate of the population Seven (07) years plus is 72.30 percent, with 74.3 % for males and 70.20 % for females. As for poverty situation, the incidence of poverty is 21.8%, while incidence for extreme poverty is 11.30%. If we see the economic situation of Bangladesh, it's GDP (current US$) is 274.04 Billion while GDP Growth is 7.9 %. The contribution of Agriculture and Fisheries sectors in economy is around 13% of the GDP and Industry's share in GDP is around 29% of the GDP. The exports of Bangladesh in 2018 were remained at the level of 15 % and imports 23% of the GDP. Merchandise trade of Bangladesh is 36 % of GDP, External debt stocks accounts for 52124 Million Dollars and total debt service was at

the level of 6.3 % of exports primary income and national income per in Takka is 160060 while in US dollars it is1827. Around 1848,000 workers of Bangladesh are abroad and they sent personal remittance amounting to 15562 Million dollars during 2018.

Table 12
Descriptive Statistics for Bangladesh

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.39	.43	.4072	.01470
	Life Expectancy Rate	.59	.65	.6162	.02188
	Education Index	.25	.29	.2718	.01524
	Per Capita Income	.39	.41	.4027	.00698
	Debt to DGP Ratio	35.32	49.00	39.3967	4.95583
1995-2000	Human Development Index	.44	.47	.4530	.01360
	Life Expectancy Rate	.66	.70	.6796	.01616
	Education Index	.30	.34	.3236	.01629
	Per Capita Income	.42	.43	.4232	.00665
	Debt to DGP Ratio	40.40	46.40	43.2600	2.19043
2000-2005	Human Development Index	.48	.51	.4922	.01076
	Life Expectancy Rate	.71	.74	.7210	.01107
	Education Index	.36	.39	.3700	.01202
	Per Capita Income	.44	.46	.4466	.00865
	Debt to DGP Ratio	46.20	50.00	48.0600	1.53883
2005-2010	Human Development Index	.51	.55	.5286	.01369
	Life Expectancy Rate	.74	.77	.7546	.00996
	Education Index	.39	.43	.4036	.01752
	Per Capita Income	.47	.50	.4846	.01207
	Debt to DGP Ratio	32.30	40.20	36.8200	2.99783
2010-2015	Human Development Index	.56	.59	.5716	.01060
	Life Expectancy Rate	.77	.79	.7834	.00777
	Education Index	.45	.48	.4578	.01264
	Per Capita Income	.51	.53	.5210	.01046
	Debt to DGP Ratio	27.70	32.40	30.3800	1.86333
2015-2018	Human Development Index	.60	.61	.6073	.00764
	Life Expectancy Rate	.80	.81	.8010	.00400
	Education Index	.50	.51	.5073	.00981
	Per Capita Income	.54	.56	.5500	.00854
	Debt to DGP Ratio	27.00	27.90	27.5333	.47258

In the overall HDI of Bangladesh, a significant change is observed from 1990-95 to 2015-18 and it rose from .39 minimum and .43 maximum to the level of .60 minimum and .61 maximum during this period. Likewise, a considerable growth observed in Life Expectancy Rate, as during 1990-1995, it was at .59 minimum and .65 maximum and it goes up to .80 minimum and .81 maximum during 2015-18. Education index has almost doubled

as during 1990-1995, it was at .25 minimum and .29maximum, but it increased to .50 minimum and .51maximum during 2015-18. Similarly, per capita income has also been increased to a considerable extent, as 1990-1995, it was .39 minimum and .41maximum and it goes up to the level of .54 minimum and .56 maximum during 2015-18. Interesting fact is that the debt to the GDP ratio was declined during the period from 1990-1995, it was 35.32 minimum and 49 maximum, and it decreased to the level of 27 minimum and 27.90 maximum in the period from 2015-19. This indicates the repayment capacity was built up that is why the country was able to put its resources for welfare of its general public.

4.1.3 Overview of India's Economy

As per World Bank data India is ranked in Lower Middle-income level country of South Asia. Its population during 2018, as per WB data was 1.352.62 while population growth rate was 1% (W.B Country Profile indicators 2018). Its GDP is around 2.875 trillion dollars and in 2018 its growth rate remained at the level of 6.1%. Life expectancy at birth during 2018 was 69 years. Poverty headcount ratio at the level of 1.90 a day (2011) PPP was 21.2% of the population. Life expectancy at birth was at the level of 69 years during 2018 and fertility rate was around2.2 births per women. Mortality rate under five remained at 36 per thousand live births. Primary school education completion ratio was observed at 92% of the relevant age group while primary school enrollment was 113% gross and secondary school enrollment was 75% of gross. Its surface area is 32873000 square KM's and population density is 4549 people per square Kilometers.

Agriculture, Forestry and fishing remained 15% of the GDP while industry was contributing 26% of the GDP during 2018. Exports of services and goods accounted for 20 % of the GDP while imports of goods and services come to 24% of the GDP. 12.9% of the GDP was the revenue excluding grants and 11.2% of the GDP was the total Tax Revenue in 2018 as per WB data. Its military expenditure was at the level of 2.4% of the GDP (2018). India's external dead stock during 2018 was at the level of 521391 US Million Dollars. The ratio of total debt servicing was 11.4% of primary income and exports of goods and services. India received foreign remittance worth 78,790 million dollars, from its 2663000 migrant workers and residents abroad. During 2018, India received foreign direct investment worth 42117 Million dollars, while it received 2454 Million dollars as net official development assistance

Table 13
Descriptive Statistics for India

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.43	.46	.4462	.01216
	Life Expectancy Rate	.58	.62	.6015	.01395
	Education Index	.31	.34	.3275	.01257
	Per Capita Income	.44	.47	.4510	.00953
	Debt to DGP Ratio	41.70	67.28	50.2233	9.87133
1995-2000	Human Development Index	.47	.50	.4842	.01062
	Life Expectancy Rate	.63	.65	.6408	.01076
	Education Index	.35	.38	.3650	.01107
	Per Capita Income	.48	.50	.4856	.00966
	Debt to DGP Ratio	64.37	73.67	68.3820	3.68827
2000-2005	Human Development Index	.50	.54	.5200	.01525
	Life Expectancy Rate	.66	.69	.6722	.00981
	Education Index	.38	.43	.4058	.01961
	Per Capita Income	.50	.53	.5152	.01248
	Debt to DGP Ratio	78.79	83.28	81.2260	2.13825
2005-2010	Human Development Index	.55	.58	.5646	.01254
	Life Expectancy Rate	.69	.72	.7046	.01060
	Education Index	.44	.48	.4602	.01415
	Per Capita Income	.54	.57	.5558	.01173
	Debt to DGP Ratio	65.60	74.66	70.9020	3.32886
2010-2015	Human Development Index	.59	.63	.6084	.01457
	Life Expectancy Rate	.73	.75	.7368	.00918
	Education Index	.49	.54	.5160	.01951
	Per Capita Income	.58	.61	.5926	.01272
	Debt to DGP Ratio	66.08	68.57	67.0440	1.01948
2015-2018	Human Development Index	.64	.65	.6423	.00503
	Life Expectancy Rate	.75	.76	.7560	.00400
	Education Index	.56	.56	.5570	.00173
	Per Capita Income	.62	.64	.6290	.00900
	Debt to DGP Ratio	68.15	68.90	68.4500	.39686

In the overall HDI of India, a considerable change is observed from 1990-95 to 2015-18 and it rose from .43 minimum and .46 maximum to the level of .64 minimum and .65 maximum during this period. Likewise, a considerable growth observed in Life Expectancy Rate, as during 1990-1995, it was at .58 minimum and .62 maximum and it goes up to .75 minimum and .76 maximum during 2015-18. Education index has almost doubled as during 1990-1995, it was at .31 minimum and .34 maximum, but it increased to .56 minimum and .56 maximum during 2015-18. Similarly, per capita income has also been increased as 1990-1995, it was .44 minimum and .47 maximum, and it goes up to the level of .62 minimum and .64 maximum during 2015-18. Interesting fact is that the debt to the GDP ratio of India has not

been changed much, if we compare the maximum values of the 1990-1995 and 2015-2018 groups.

4.1.4 Overview of Nepal's economy

Population of Nepal during 2018 as per (Chepkosgei et al., 2020) was 28.09 Million and its growth rate was observed at 1.7% of the population. Urban population growth was 3.7% during 2018. Life expectancy at birth was 70 years while fertility rate was 1.9 % per women. Under 5 years mortality rate was observed during 2018 at the level of 32 per 1000 live births. Surface area of Nepal is 1472000 Square KMs, while population density was 195.9 people per Square Kilometer. Primary school completion ratio was 120% of the relevant age group while primary school enrolment was 142.1% of gross and Secondary school enrollment was 80% gross.

Its GNI per capita is 3350 dollars while poverty headcount during 2010 was at the level of 25.2 % of its population. GDP of Nepal is 29.17 billion dollars and GDP growth in 2018 was 6.7%. Inflation rate was recorded 6.7%. Its exports volume was 9% of the GDP while imports volume was 46% during2018. Gross capital formation was recorded at 54% of the GDP and revenue excluding grants was 22.9% of the GDP. Its tax revenue was 20.7% of the GDP. The merchandise trade of Nepal was recorded 46% of the GDP. In 2018 its total debt stock stood at 5478 Million dollars while total debt service was 8.5% of primary income and exports of the goods and services during the same period. The net migration during 2018 was 209000 and 8294 US Million dollars were received from the migrants as foreign remittances during this period. Foreign direct investment was remained at the level of 68Million dollars while it received net official development assistance to the tune of 1450.7 Million dollars during this period.

Table 14
Descriptive Statistics for Nepal

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.380	.411	.397	.012
	Life Expectancy Rate	.651	.681	.667	.011
	Education Index	.276	.299	.290	.008
	Per Capita Income	.374	.392	.384	.007
	Debt to DGP Ratio	42.090	50.870	47.928	3.192
1995-2000	Human Development Index	.421	.446	.433	.010

	Life Expectancy Rate	.687	.704	.696	.007
	Education Index	.310	.330	.320	.008
	Per Capita Income	.397	.412	.404	.006
	Debt to DGP Ratio	42.790	64.600	54.128	10.153
2000-2005	Human Development Index	.446	.474	.461	.011
	Life Expectancy Rate	.708	.728	.718	.008
	Education Index	.322	.359	.344	.014
	Per Capita Income	.414	.426	.419	.005
	Debt to DGP Ratio	51.300	69.500	62.740	7.159
2005-2010	Human Development Index	.484	.527	.503	.017
	Life Expectancy Rate	.734	.757	.746	.009
	Education Index	.375	.443	.402	.028
	Per Capita Income	.430	.453	.441	.009
	Debt to DGP Ratio	33.500	49.500	42.200	5.883
2010-2015	Human Development Index	.534	.568	.553	.013
	Life Expectancy Rate	.762	.781	.772	.008
	Education Index	.451	.495	.479	.017
	Per Capita Income	.457	.486	.472	.012
	Debt to DGP Ratio	25.300	33.900	30.220	3.517
2015-2018	Human Development Index	.572	.579	.575	.004
	Life Expectancy Rate	.785	.792	.789	.004
	Education Index	.495	.502	.499	.004
	Per Capita Income	.485	.501	.493	.008
	Debt to DGP Ratio	25.700	30.400	27.633	2.458

The overall ratio of Nepal's HDI has also been improved gradually from the period 1990-95 to 2015-18 as it increased from the level of .380 minimum and .411 maximum to the level of .572 minimum and .579 maximum during this period. It was .421 minimum and .446 maximum during 1995-2000, .446 minimum and .447 maximum during 2000-2005, 484 minimum and .527 maximum during 2005-2010, 534 minimum and .568 maximum during 2010-2015, and .572 minimum and .579 maximum during 2010-2015. Likewise, a significant increase has been noticed in Life Expectancy Rate, as during 1990-1995, it was at .651 minimum and .681 maximum and it goes up to .785 minimum and .792 maximum during 2015-18 period. Education index has also increased as during 1990-1995, it was at .276

minimum and .299 maximum, and it increased to the level of .495 minimum and .502 maximum during the period 2015-18. Likewise, increase in per capita income has also been noticed, as 1990-1995, it was .374 minimum and .392 maximum, and it reached up to .485 minimum and .502 maximum during 2015-18. In terms of debt to the GDP ratio, Nepal has made significant progress to manage its debt and its debt to the GDP ratio has been declined from the level of 42.90 minimum and 50.870 maximum from the period 1990-1995, to the level of 25.700 minimum and 30.400 maximum till the period 2015-2018.

4.1.5 Overview of Pakistan's Economy

Pakistan was facing fiscal imbalance. Moreover, there is wide spread corruption in the government institutions, as they fail to deliver. Service delivery to the public is at its lowest ebb. For decades its budgets go into deficit and fiscal imbalance perpetuates. Its expenditure is far more than the revenue it earns. Every year the Federal Board of Revenue (FBR) fails to generate enough resources to meet the day to day requirement of the government. A major chunk of its resources is diverted to the repayment of loans. Even more loans are borrowed to repay the outstanding loans.

There is a huge gap in the imports and exports as well. Exports are generally considered as the main forex reserve accumulation driver, but it is showing negative trends since decades. Resultantly, there is huge balance of trade and the country faces economic problems. To maintain its forex reserves, the country has to sign a deal with the IMF in 2013, as its reserves were dipped to $5.2 billion. However, with the support of donors, Saudi Arabia's assistance, State Bank's spot buying, borrowings from the commercial banks, the reserves raised to the level of $15bn.

Every government finds an easy solution to these problems and borrows loans from the commercial banks internally and from external lending institutions like IMF, World Bank, Islamic Development Bank (IDB) and other lending institutions. In this way the country trapped in the vicious cycle of debt. The public debt since 2008 has increased tremendously. By the end of June 2015, it was at the level of 18 trillion, by end of June 2018, it was at the level of 29879.4 Billion Rupees but now it has reached to the level of 44563.9 Billion Rupees by the end of June 2010 (Robotka, 2020).

The current expenditure of Government of Pakistan (GoP) during 2019-20's budget was Rs.7292,481 Million while in the revised budget it goes up to Rs. 7,618,187 Million and for

the year 2020-21 budget it is estimated at Rs.6,344,651 Million. For mark-up payment Rs.2,891,449/- were allocated during 2019-20 budget while for the current year 2020-21, its allocation is Rs. 2,946,135 Million rupees. For foreign loan repayments Rs.1,095,254/- Million were allocated during 2019-20. It's an important fact to mention here that the allocations for Public sector Development Program.

In the case of Pakistan, the debt burden has been exacerbated by mismanagement of wealth, macro imbalances, the loss of competitiveness in the international market and the position of political interest groups. The productivity of the economy needs to be strengthened and macro imbalances must be strengthened. Given the increasing debt burden, particularly, for Pakistan, that reliance on foreign aid is crucial and this dependence must be reduced. Efforts to mobilize domestic capital require this. In addition, to foster economic development, there is a need to have a favorable macroeconomic climate by reducing the mismanagement and enhancing the governance.

As per WB country data profile, the population of Pakistan is 212.22 Million and its growth rate is 2.1 % of the population per annum and population density is 275. 3 people per Sq Kms. Life expectancy is 67 years. Its surface is 796100 Sq Kms. GNI per capita is 5110 dollars. Poverty headcount ratio is 24.3 % of population at national poverty lines. Primary school enrollment is 94.3 % gross while Secondary enrollment is 43% gross. GDP in 2018 was 314.57 Billion Dollars and GDP growth rate was 5.8 %. Inflation rate was at the level of 2.5%. Agriculture and fisheries sectors contributed 23% and 1ndustry contributed 18% of the GDP respectively. The share of merchandize trade during 2018 was 27% of the GDP. Around 1167000 expatriates are in abroad and they contributed 21193 Million dollars during 2018. The net inflows of foreign direct investment 1737 US Million dollars while 1362 Million Dollars were net official development assistance received during 2018.

For the sake clarity on the debt situation and how much it is difficult to manage the affairs, a cursory look on the budget estimates of Pakistan for the fiscal 2018-19's budget revels that the total outlay of the budget was Rs.6409.300 Billion. Resource availability was estimated at Rs. 4417.200 Billion but increased to Rs. 5062.800 Billion in the revised estimates. Net receipts were initially estimated at Rs. 3070.400 Billion but were further decreased to Rs. 2569 Billion. External receipts were estimated at Rs.1180.00 Billion but further increased to Rs1403.200 Billion. The total development expenditure was estimated at RS. 1152.105 billion Including Federal PSDP of Rs. 800 billion. Development expenditure outside PSDP

was amounting to Rs. 180.238 Billion and Development Grants and loans to Provinces at Rs.171.867 Billion, but these figures were decreased to the total Development budget of Rs. 829.680 Billion including Federal PSDP of Rs. 500 Billion (Rs. 300 Billion cut as per actual estimates). Development expenditure outside PSDP was at 162.929 Billion. Bank borrowing was estimated at Rs. 1015.302 Billion but actually it was revised to Rs.1356.315 Billion (Increase of Rs. 337.013 Billion as per original estimates). Likewise, availability of external resources was estimated at Rs.1118.024 Billion but actually it was 1403.156 Billion after revised budget (increase of Rs. 384.932 Billion as per original estimates). On expenditure side it was estimated that Rs.5932.464 Billion including Rs.4780.358 were spent as current and Rs 1152.105 as development expenditure but these estimates were revised to the total amount of Rs. 6419.111 billion including Rs. 5589.431 Billion as current and Rs. 829.680 as PSDP. Out of this current expenditure an amount of Rs.139.90 Billion (2.18 % of the total budget) were spent on Health Affairs and Services and Rs.97.155 Billion (1.515 % of the total budget) on Education Affairs & Services. Rs 1137.711 Billion were spent on defence Affairs & Services (Abbas & Waheed, 2020).

Similarly, if we examine the budget for the year 2019-20, the total outlay of the budget was Rs. 8238.100 Billion. Resource availability has been estimated at Rs.7899.100 Billion, net receipts at Rs.3462.100 Billion while external receipts have been estimated at Rs. 3032.300 Billion. Development expenditure has been estimated at 949.895 Billion. Bank borrowing has been estimated at Rs. 3389.960 billion. Total tax collection has been estimated at Rs.5822.160 Billion including FBR tax collection target of Rs.5555.00 billion. Total current expenditure has been estimated at Rs.7288.179 Billion including mark up payment of Rs. 2891.449 Billion (Rs.2531.685 Billion on domestic and Rs.359.764 on foreign debt) and Rs.1095.250 Billion as foreign loan repayments (Abbas & Waheed, 2020)

Above analysis of Pakistan's budgets for the last two years reveals that a total of Rs. 2916.137 Billion were spent on debt servicing out of the total budget of Rs.6409.300 billion during 2018-19 and this amount constitutes around 45.49% of the total budget. Likewise, during the budget of 2019-20, a total of Rs. 3984.373 Billion have been allocated for debt servicing out of the total allocated budget of Rs. 8238.100 Billion and this amount comes to around 48.36% of the total budget. From it one can understand that how the difficult the debt situation is when you have to spend 45/50 % of the total budget on the loan repayments and their mark up and how you manage the affairs of the country within the remaining amount,

when you have to spend 15 to 20 % on your defence needs and remaining on other affairs of the state and what portion you left for spending on the Human development.

Table15

Descriptive Statistics for Pakistan

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.404	.428	.4162	.00884
	Life Expectancy Rate	.529	.594	.5620	.02417
	Education Index	.205	.232	.2182	.01011
	Per Capita Income	.523	.531	.5263	.00308
	Debt to DGP Ratio	52.340	78.500	61.9983	11.15207
1995-2000	Human Development Index	.433	.449	.4406	.00650
	Life Expectancy Rate	.606	.651	.6288	.01771
	Education Index	.237	.259	.2482	.00870
	Per Capita Income	.528	.532	.5298	.00164
	Debt to DGP Ratio	73.400	83.000	77.5400	4.25887
2000-2005	Human Development Index	.456	.499	.4754	.01723
	Life Expectancy Rate	.661	.696	.6788	.01392
	Education Index	.270	.330	.2962	.02423
	Per Capita Income	.530	.555	.5416	.01001
	Debt to DGP Ratio	63.500	87.900	75.4800	9.86722
2005-2010	Human Development Index	.503	.524	.5142	.00817
	Life Expectancy Rate	.704	.732	.7186	.01108
	Education Index	.335	.365	.3510	.01158
	Per Capita Income	.560	.566	.5636	.00230
	Debt to DGP Ratio	56.400	62.400	59.7200	2.62812
2010-2015	Human Development Index	.528	.550	.5388	.00909
	Life Expectancy Rate	.739	.762	.7506	.00902
	Education Index	.370	.398	.3838	.01217
	Per Capita Income	.567	.582	.5742	.00602
	Debt to DGP Ratio	60.100	63.900	62.8200	1.54013
2015-2018	Human Development Index	.556	.560	.5580	.00200
	Life Expectancy Rate	.767	.777	.7720	.00500
	Education Index	.407	.407	.4070	0.00000

Per Capita Income	.588	.597	.5923	.00451
Debt to DGP Ratio	67.000	72.100	68.9333	2.76466

The overall HDI of Pakistan increased from 1990 to 2018, as the improvement is seen in maximum, minimum and average of the country. When we talk about improvement in overall HDI it shows positive performance in life expectancy rate, education index and per capita GDP of Pakistan. Overall HDI of Pakistan during the period 1990-95 was at the level .404 minimum and .428 maximum and it increased to the level of .529 minimum and .594 maximum till the period 2015-18. However, with the increase in human development of the country, the Debt to GDP ratio of country also hasn't changed a lot. It almost remained same over a period of 1990 to 2018, as it was 52.340 minimum and 78.500 maximum during 1990-95, and 67.00 minimum and 72.100 maximum during 2015-18. Life expectancy index witnessed a significant change as it was .529 minimum and .594 maximum during 1990-95 and it increased to the level of .767 minimum and 72.100 maximum during the period 2015-18. Likewise, Education Index also exhibited a considerable growth, as it was .205 minimum and .232 maximum in 1990-95 and .407 minimum and maximum by the end of 2015-18. Similarly, no significant change has been observed in the per capita income level, as during 1990-95, it was at the level of .523 minimum and .531 maximum and it was at the level of .588 minimum and .597 maximum in the period 2015-18.

4.1.6 Overview of Sri Lanka's Economy

The population of Sri Lanka, as per Database of Global Development Indicators, for the World Bank during 2018 was 21.67 and its population growth rate was 1% and population density was 345.6people Per Square Meter. Its surface area is 65600 Square Kilometer. The life expectancy rate in Sri Lanka during 2018 was 77 years and 2.2% was the fertility rate per woman, while mortality rateunder-5 was 7 per 1000 live births. Primary school enrolment was 100.2 % gross and secondary school enrolment was 100% gross (2018).GDP of Sri Lanka was 88.43 Billion dollars and inflation were recorded 4.3 during 2018. GNI per capita income was 12810 dollars as per $ PPP. Around 4.1% was the poverty headcount during 2018.Agriculture and fisheries sectors contribution in the GDP was 8%, while industry was contributing27% in the GDP. Exports of goods and services of Sri Lanka were observed at the level of 23% of the GDP and imports at 30% of the GDP. Its revenue was 13.4% excluding grants and 11.9% of the GDP was its tax revenue during 208. Merchandise trade of Sri Lanka accounts for 39% of the GDP. The external debt stock of Sri Lanka was 52626 US

Million dollars during 2018 and its total debt servicing was 36% of primary income and exports of goods and services. The net migration of Sri Lanka people abroad is 490,000 and they are contributing 7043 US Million dollars as personal remittances. Foreign direct investment is 1611 US Million dollars. These statistics have been taken from the Database of Global Development Indicators, for the World Bank 2020 (Chepkosgei et al., 2020).

Table 16
Descriptive Statistics for Sri Lanka

Year		Minimum	Maximum	Mean	Std. Deviation
1990-1995	Human Development Index	.625	.650	.6372	.00945
	Life Expectancy Rate	.617	.639	.6278	.00818
	Education Index	.592	.633	.6107	.01546
	Per Capita Income	.541	.572	.5560	.01202
	Debt to DGP Ratio	60.110	95.200	72.7050	11.96323
1995-2000	Human Development Index	.655	.687	.6700	.01253
	Life Expectancy Rate	.643	.659	.6510	.00632
	Education Index	.642	.679	.6608	.01455
	Per Capita Income	.576	.604	.5904	.01064
	Debt to DGP Ratio	85.800	96.900	92.3400	4.29395
2000-2005	Human Development Index	.693	.721	.7072	.01141
	Life Expectancy Rate	.663	.676	.6696	.00522
	Education Index	.689	.710	.6986	.00859
	Per Capita Income	.600	.628	.6134	.01126
	Debt to DGP Ratio	90.600	105.600	100.8200	5.87001
2005-2010	Human Development Index	.728	.750	.7398	.00879
	Life Expectancy Rate	.680	.696	.6876	.00650
	Education Index	.716	.739	.7304	.01101
	Per Capita Income	.638	.669	.6532	.01176
	Debt to DGP Ratio	71.600	87.900	82.4200	6.50169
2010-2015	Human Development Index	.756	.772	.7648	.00622
	Life Expectancy Rate	.701	.717	.7092	.00634
	Education Index	.743	.751	.7468	.00335
	Per Capita Income	.681	.707	.6958	.00988
	Debt to DGP Ratio	68.700	78.500	72.0800	3.73658

2015-2018	Human Development Index	.774	.780	.7767	.00306
	Life Expectancy Rate	.720	.725	.7223	.00252
	Education Index	.749	.756	.7513	.00404
	Per Capita Income	.712	.718	.7150	.00300
	Debt to DGP Ratio	79.000	83.700	80.8667	2.49466

4.1.6.1 Discussion on Descriptive Statistics of Sri Lanka

From the above Descriptive Statistics, I observe that the overall HDI value of Sri Lanka gradually improved from .625 minimum and .650 maximum from the period 1990-1995 to the level of .774 minimum and .780 maximum during the period 2015-18. During 1995-99 period, it was .655, from 2000 to 2005 it was .693, from 2005 to 2010 it was .728 and from 2010 to 2015 it was .756.Similarly, improvement has also been observed in the life expectancy ratio as during the period 1990 to 1995, it was at the level of .617 minimum and .639 maximum and it rose to the level of .725 minimum and .725 maximum during 2015-18 period. Significant increase in Education value has also been witnessed as it was at the level of .592 minimum and .633 maximum during the period 1990 to 1995 and it reached to the level of .749 minimum and .756 maximum during 2015-18. Per capita income value also increased significantly as during the period 1990 t0 1995 it was at the level of .541 minimum and .572 maximum and it reached to the level of .712 minimum and .718 maximum during the period 2015-2018. We also observe increase in the ratio of debt to the GDP ratio from the period 1990-95 to 2015-18, as it was 60.110 minimum and 95.200 maximum and during 2015-18 it rose to 79.0 minimum and 83.700 maximum.

4.2 Results and Discussions

Data that the researcher is using for estimation is panel data and is proved to be strongly balanced balanced[12] panel data by software—STATA, where

T = 1990-2018 $t = 0,1, 2,\ldots,18$

n = 6 $i = 1, 2,\ldots,6$

Total number of observations = 174

Strongly balanced data indicates that all of countries under study have data for all years and the data in respect of any country is not missing for any year. If data is not even or any value is missing, we call such data set as "unbalanced". In ideal situation the data must be strongly balanced.

Table 17

Regression Results of Equation 9

Test Subject	Result
Coefficient value	-0.15***
	(0.04)
F-test	0.0007
t-test	0.001

Note: Standard errors are denoted in parenthesis and are adjusted for clusters. *< 0.01, ** <0.05 and ***0.10 are denoting statistical significance at 1,5 and 10 percent, respectively.

The researcher run FEM regression[13] of Equation 9 and based on his regression estimation and can concludes following results. The estimates of slope coefficient are negative and statistically significant. Ceteris paribus, 1-unit increase in debt to GDP ratio of SA countries causes HDI of SA countries to fall by 15 units. And 1-unit decrease in debt to GDP ratio of SA countries causes HDI of South Asian countries to increase to rise by 15 units.

The F-test hypothesis says H_0 = model is not good and explains no variations in the independent variable. And H_1 = model has explanatory powers. The value of our f test is less than 0.05 i.e., 0.0007, this indicates that I reject null hypothesis and accept alternative hypothesis. 0.0007. My f test value is statistically significant at all three levels, 0.1, 0.05, and 0.01. So, I am quite confident that my independent variable has explanatory power.

Our T-test value is 0.001 which is less than 0.05 so, I can say that I reject null hypothesis that there exists no effect of increasing debt to GDP ratio on human development of SA countries. And I accept the alternative hypothesis and say that there exists effect of debt to GDP ratio on HDI of SA countries.

[10] The result is attached in appendix Table no. 8.

[11] The detailed regression results are attached in appendix Table no. 9.

Table 18
Diagnostic Tests

Test Subjects	Results
Cross sectional dependency	Cross sectional dependence test is if there exists correlation between residual across different entities. We used Breusch-Pagan test for independence[14] and Pasaran CD[15] test. The Pr. value of both tests is 0.000<0.005, which shows that we reject H_0 = residuals are not correlated and accept the alternative hypothesis i.e., H_1 = residuals are correlated. But according to Baltagi (2005) cross sectional dependency is more of a problem in macro panels with time series over the period of 20-30 years. Our data set have time series of less than 30 years, so in micro panel data, cross-sectional dependence is not much of a concern.
Multicollinearity	Multicollinearity [16] is the linear association between two or more independent variables. If value of Variance inflationary factor (VIF) is greater than 10, it shows that there exists Multicollinearity problem. But our estimation results have values less than 10, which indicate no existence of Multicollinearity problem.
Heteroscedasticity	Heteroskedasticity[17] means the values of the error's terms for the values of predictor variables are varying across the time period.
Model Specification Linktest[18]	Value of _hat must be significant or value of _hatsq should be insignificant. In our case value of _hat is statistically significant with p-value of 0.00<0.005, so we reject assumption that our model is not specified properly.

Up till now I have explored the negative relationship between the debt to the GDP ratio and human development index. If there is increase in the debt to the GDP ratio, it causes HDI to

[12] Result for Breusch Pagan test attached in appendix Table no. 10.
[13] Result for Pasaran CD test attached in appendix Table no. 11.
[14] STATA result for Multicollinearity is attached in appendix Table no. 12.
[15] STATA result for Heteroskedasticity is attached in appendix Table no. 13.
[16] STATA result for Model Specification Link test is attached in appendix Table no. 14.

decrease and vice versa. Furthermore, I am interested in finding optimal level of debt, for which I run Extreme Bound Analysis and the results of regression are as follows;

Table 19
Regression Result for Equation 10

	HDI	Life Expectancy	Education Index	Income per capita
PD/GDP<20%	-0.289	-0.078	0.140	-0.208
	(9.67)**	(3.97)**	(3.37)**	(9.92)**
20% ≥PD/GDP<29%	-0.103	0.131	-0.185	-0.083
	(2.75)**	(5.35)**	(3.56)**	(3.16)**
30% ≥ PD/GDP<39%	-0.182	0.062	-0.285	-0.139
	(5.61)**	(2.92)**	(6.31)**	(6.09)**
40% ≥PD/GDP<49%	-0.234	0.024	-0.342	-0.175
	(7.75)**	(1.20)	(8.15)**	(8.29)**
50% ≥ PD/GDP<59%	-0.245	-0.028	-0.394	-0.111
	(6.73)**	(1.15)	(7.76)**	(4.35)**
60% ≥ PD/GDP<69%	-0.140	0.051	-0.245	-0.058
	(4.79)**	(2.68)**	(6.02)**	(2.83)**
70% ≥ PD/GDP< 79%	-0.100	0.015	-0.189	-0.016
	(3.24)**	(0.73)	(4.44)**	(0.75)
80% ≥ PD/GDP<89%	-0.090	0.014	-0.170	-0.019
	(2.63)**	(0.61)	(3.57)**	(0.77)
90% ≥ PD/GDP	0.000	0.000	0.000	0.000
_cons	0.687	0.659	0.678	0.601
	(26.66)**	(39.06)**	(18.91)**	(33.21)**
R^2	0.51	0.50	0.69	0.63
N	174	174	174	174

* $p<0.05$; ** $p<0.01$

In order to verify the sensitivity of debt to the GDP Ratio on Human Development Index, researcher segregated the data into different ratios, with the range of 10% intervals. The findings of OLS indicate that from 30% onwards, debt to the GDP ratio, has a negative impact (β=-0.182 $p<0.05$) which shows that if the overall volume of debt to GDP ratio will exceed from 30%, then the spending on various dimensions of Human Development Index will decrease. In the consequences education/literacy ratio, life expectancy rate and living standard of general public will slide downward, which further fuel fraction, frustration and

uneven distribution of wealth. Similarly, it also leads to more polarization and segmentation of society.

Table 20
Sensitivity analysis using Extreme Bond Analysis (EBA)

	HDI	**HDI**	**LER**	**Edu Index**	**Per Capita Income**
PD/GDP<20%	-0.289	-0.086	-0.119	-0.452	-0.066
	(9.67)**	(4.46)**	(8.83)**	(16.98)**	(4.86)**
20% ≥PD/GDP<29%	-0.103				
	(2.75)**				
30% ≥ PD/GDP<39%	-0.182				
	(5.61)**				
40% ≥PD/GDP<49%	-0.234				
	(7.75)**				
50% ≥ PD/GDP<59%	-0.245				
	(6.73)**				
60% ≥ PD/GDP<69%	-0.140				
	(4.79)**				
70% ≥ PD/GDP< 79%	-0.100				
	(3.24)**				
80% ≥ PD/GDP<89%	-0.090				
	(2.63)**				
90% ≥ PD/GDP	0.000				
__000004		0.063	0.010	0.068	0.084
		(3.50)**	(0.79)	(2.70)**	(6.63)**
__000005		0.104	-0.027	0.123	0.126
		(5.03)**	(1.85)	(4.32)**	(8.71)**
__000006		0.113	-0.028	0.142	0.124
		(4.32)**	(1.51)	(3.94)**	(6.73)**
__000007		0.203	-0.041	0.312	0.142
		(6.95)**	(2.02)*	(7.73)**	(6.93)**
_cons	0.687	0.484	0.701	0.365	0.458
	(26.66)**	(44.78)**	(92.61)**	(24.44)**	(60.36)**
R^2	0.51	0.45	0.36	0.66	0.59
N	174	174	174	174	174

* $p<0.05$; ** $p<0.01$

In order to check the robustness of sensitivity of these intervals and determine the level of threshold of debt to the GDP ratio, where the debt starts casting negative effect on the Human Development Index, researcher applied Extreme Bond Analysis (EBA). Findings of EBA

indicates that from 20% debt to GDP ratio onwards, it has negative penetration on overall Human Development Index, which further narrow down the scope of influence of debt to GDP ratio on the various dimensions of Human Development Index, like education, health and per capita income. Although this percentage is on higher side in developed countries but due to poor financial governance and improper utilization of public debt in South Asia, shows different results. It is also an interesting fact that (Reinhart & Rogoff, 2011) in their study while analyzing the data of forty-four developed and developing countries find the threshold level of 90% debt to GDP ratio and when this limit exceeds then the growth rate starts declining. (Grennes et al., 2010) in their paper find the level of 77% of debt to the GDP ratio on debt on growth of GDP countries for the developed and 64% for the developing countries. Findings of EBA with regard to other dimensions of Human development indicate that the debt to GDP ratio when exceeds from 50%, it starts causing negative effect on life expectancy. Likewise, when this limit exceeds to 30 % it starts affecting the education and when it exceeds to the ratio of 20% it starts effecting income per capita. When debt is to pay back the immediate action which the Governments usually take, they slash the budgets of social sector and the immediate targets are the Education and Health sectors and when there are no enough resources then the HDI dimensions starts declining. Though the per capita income increases with the availability of more capital in the country but on the other side new taxes are imposed and existing the Tax rates are also increased to generate funds for debt servicing, as the loans have attached various strings by the donors and have to be paid back as per their agreed schedule.

Concluding Remarks

I utilized Fixed Effect Model, Ordinary Least Square and Extreme Bound Analysis to examine the relationship between Human Development Index and Debt to GDP ratio. Hence, I found out following results;

- ***Ceteris paribus,*** there exists statistically significant inverse relationship between Human Development Index and Debt to GDP ratio. That is if debt to GDP ratio of any country increases it causes Human Development Index of that country to decline and vice versa.
- Secondly, I found that debt is not always a problem or a curse. Countries often obtain debt to fulfil their deficits, but there exists a limit after which debt

becomes a curse. Hence, we found out that 30% is the optimal level or threshold.

- Lastly, I found optimal level for HDI components individually, which shows per capita income has less tolerance level and gets affected it debt to GDP exceeds 20%. And if the debt to GDP limit exceeds 30% and 50% it affects health and education respectively.

Thus, my results show that debt can be obtained up till 30% of GDP, after this debt becomes problematic or start affecting negatively Human Development Index (HDI). Countries seek debt in order to fulfill their budgetary needs and often fall in trouble while repayment of obtained debt. Debts and their repayment are usually considered as a burden on economy, especially if obtained amount is not utilized effectively. However, that is not always the case; countries require help from various sources to bridge gaps in their finances. But if the debts are utilized in productive projects and human development ventures then they are able to repay them. However, in case of Pakistan the public demand is always on infrastructure development like roads, pavement of streets, drains etc. Moreover, the Public Sector Development Program is spent on political and short gain projects by the politicians and time and cost overrun issues are common due to lack of funds and these projects are delayed too much due to these issues. Resultantly, the rate of return on these projects is far less. Sometimes institutional capacity also plays its role in lingering on the projects. Moreover, whenever there is any pressure on the economy, the first step is always is to slash the development budget. Resultantly, the funds are not allocated for the specific and relevant projects and diverted to other sector including repayment of loans and debts and projects lost their utility.

CHAPTER 5

CONCLUSION

5.1 Conclusion

On the basis of my research study I can make few conclusions. The fiscal policy has a significant role in the defining and administering the welfare of a country. The poor management of fiscal policy decisions has the potential to welcome a long chain of economic as well as social crisis. In this study I assessed the impact of poor fiscal policy of South Asian countries on their social wellbeing. The deprived fiscal policy result into budget deficit, which means expenditures, exceeds the revenue collection. When such a situation arises, the need to finance the necessary expenditures also increases. This need encourages governments to seek help from external or internal sources, in the form of debt. Such debt specifically the foreign debts, comes along with several conditionality's and strict policies. Moreover, the debt's principle amount is to be paid along with the interest amount. This repayment of debt puts pressure on the government and government in return cuts the necessary expenditure or developmental expenditure. The amount that was to be spent on the welfare of the society i.e. on general public health, schooling, per capita income, infrastructure development or other public welfare measures is rather spent on debt servicing. So, the HDI of South Asian countries show poor or unfortunate picture.

Through my descriptive and regression analysis, I have proved the connection between debt to GDP ratio and HDI. I employed various statistical and econometrics techniques for reliability and authenticity of the results. I took debt to GDP of South Asian region as dependent and HDI of South Asian region as independent variable over a period of 1990-2018. I found out that there exists negative and statistically significant relationship between the debt to the GDP and the HDI. If debt to GDP of South Asian countries increases by 1-unit, there is fall in HDI by 15-units and vice versa.

However, debt is not always a curse; many countries in world obtain debt. It is not the debt but the utilization of this debt that make it blessing or a curse. If the received amount in form of debt is utilized in a productive way, it can help the government in repayment process and can generate productive results or outcomes in home country as well. So, to the optimal level of debt after which the debt will become curse, we again utilized econometric techniques to get reliable and efficient results. I found that for South Asian countries, if debt to the GDP ratio exceeds the limit of 20% of the debt to the GDP ratio, then it starts to pose negative

impact on the HDI. Hence, 20% is the threshold level of the debt, for South Asian region, after which the debt will become burden and will pose serious implications, for the economy of the countries in the region. Similarly, the findings of EBA with regard to other dimensions of Human development Index at individual level, stipulates that the life expectancy has a threshold of 50%, education 30% and income per capita 20% of the debt to the GDP ratio, beyond of which the debt to the GDP ratio starts causing negative effect and un-sustainability, on these dimensions.

In a nutshell, the fiscal policy plays a very effective role and governments need to pay special attention towards its administration and management. Poor fiscal policy can lead a country to long-term crisis and failures. It is wise to allocate resources and spend the collected revenues efficiently and such decisions will provide productive outcome.

5.2. Policy Recommendations

The thesis findings are important for developing countries especially like Pakistan which is struggling for effective utilization of debt and improve living standards. In order to avoid the possibility of liquidation and debt management, a set of policy steps will be proposed for all South Asian countries as part of the analysis of the scenario and the study carried out with regard to overcoming debt problem and improving Human Development Index. Based on the analysis and results, the study suggests useful policy implications. Firstly, the researcher found out negative and statistically significant relationship between the debt to GDP ratio and Human Development Index. Countries obtain debt only when they face budget deficit, i.e., revenues obtained are less than spending. Since the tax rate is considered to be a critical part of the economy, it is recommended to increase the tax collection of South Asian countries. After the policy is enforced, the ratio of revenue produced/collected will increase due to an increase in the tax ratio. As a result of this whole programme, the country's revenues will boost and the reliance on external debt will decline. Moreover, the collected revenues will be used to spend on betterment of human development by spending on health, education and increasing per capita income. By applying these policies this will allow the country to gain a sustainable position. As a result, reliance of the South Asian region on capital inflows will decrease with the aid of this consequence. Secondly, my results suggest obtaining debt is not always a curse, but the problem lies in the extent to which debt is obtained. There exists a wide variety of literature which refers to improvement in economic growth due to reasonable levels of borrowing from foreign sources (Wang, 2009). I found out the threshold or optimal

level of debt after which debt turns bad. Hence, the debt is desirable and effective below that optimal level and efforts must be made to keep debt under that threshold. Previous researches have established that foreign borrowing up to a certain level provides with positive result in economic growth. Lastly, I examined the effect of debt on each component individually and found out that per capita income has very less tolerance level of obtaining debt that is debt exceeds 20% it will start causing negative impact on the income levels.

5.2.1 Steps to Mange Debt

Since the tax rate is considered to be a critical part of the economy, it is recommended to increase the tax ratio of South Asian countries and also to decrease government consumption expenditure in order to examine the current debt situation of South Asian countries. After the policy is enforced, the ratio of revenue produced will increase due to an increase in the tax ratio, whereas the ratio of consumption will decrease with a decrease in government spending. As a result of this whole programme, the country's savings will increase and the country's debt will decrease, allowing the country to gain a sustainable position. The reliance of the South Asian region on capital inflows will decrease with the aid of this consequence, only those policies will not bring about a significant shift in the country's debt burden, but some of the other policies should also be implemented by the region to reduce the debt burden.

As life expectancy and the educational sector increase, the HDI of the countries will also increase as there will be a direct improvement in the country's gross domestic growth. Pakistan is the country where the debt burden is rising rapidly, if these policy steps are to be enforced in true spirit, its debt ratio is projected to decrease by 20% in 2022-2025 and its reliance on foreign capital would also decrease with the increase in the country's gross domestic production, thereby reducing debt servicing from 6.2% to 7.8% of the GDP.

Like Pakistan, the other countries of the South Asia region could also get benefit by adopting these policy measures, because increase in the tax ratio will help to maintain fiscal discipline and current account balance and debt ratio of the country will also decrease. As a result, the country's reliance on international services will also be reduced. In this way the burden of debt will be lessen and there will be GDP growth of the country with good human development index (McManus, 2020)

The steps to widen the tax net and boost revenue and earnings of foreign exchange to minimize dependence on the loans and gradually pay off the debt include preparation of

effective debt management policies to decrease the dependence on debts, obtaining of loans for only violable and productive projects and these funds may not be utilized for other projects, provision of conducive environment for trade and investment, reorganization of tax collecting departments, rationalization of tax rates, less dependence on indirect taxes, focusing on enhancing exports and tapping new foreign markets, free trade among South Asian Countries despite political and geographical difference, promotion of tourism and religious tourism, ease of doing business, provision of cheaper gas and electricity, incentives for foreign direct investment, tapping the potential of youth bulge, manpower export to the countries facing aging issues after imparting skills, special incentives for overseas expatriates who are playing significant roles in sending foreign exchange to home countries, and promotion of agriculture sector for export of surplus agriculture and fruit products.

5.2.2 Recommendations for improving Education Sector

Special emphasis should be given to the Education South Asian, by taking immediate steps for mass literacy programs, allocation of substantial funds for education, promotion of Technical Education/skill development, linkage of industry and academia so that the industry may fund the research projects, setting up Business incubation or Business idea centers in the Universities and professional educational institutes, strengthening the entrepreneurship skills among students, focusing on creativity and critical thinking in educational institutions, promoting science education, provision of quality educational facilities in remote areas, and reforming the religious madrissas to include them in the main stream by introducing modern syllabus and providing basic facilities there by the Government.

5.2.3 Recommendations for improving Health Sector

Health and healthy life style are an important factor in the development of nations. Special steps including provision of free health facilities to all segments of society, Launching of Health insurance schemes or health card schemes for low income groups, modernization of Government owned hospitals, improving health regulations and standards as per international standards and launching special programs and projects to control population.

5.3 Limitations of the research and future research areas

Rising levels of debt are vital to monitor especially for developing countries, for their sustainable development and economic growth. This research aimed at examining impact of increase of debt to GDP ratio on Human development index of South Asian countries.

However, due to time constraint important areas were left for future researchers that would be interesting to examine like;

- Debt to GDP ratio and its impact on Multidimensional poverty in South Asia.
- Debt to GDP ratio and Livelihood in South Asia.
- Debt to GDP ratio and its impact on women empowerment in third world Countries.

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Appendixes

Table 1

Data set for Afghanistan

Year	HDI	LER	E	GNI	DTGDP
1990	0.298	0.467	0.762	0.466	7.700000
1991	0.304	0.477	0.763	0.44	11.700000
1992	0.312	0.487	0.764	0.431	9.700000
1993	0.308	0.496	0.762	0.376	9.500000
1994	0.303	0.505	0.76	0.328	8.700000
1995	0.327	0.514	0.758	0.381	9.100000
1996	0.331	0.522	0.758	0.366	8.000000
1997	0.335	0.53	0.76	0.354	7.600000
1998	0.339	0.537	0.767	0.343	7.100000
1999	0.343	0.544	0.777	0.331	7.247222
2000	0.345	0.551	0.79	0.317	6.938889
2001	0.347	0.559	0.804	0.302	6.630556
2002	0.378	0.566	0.817	0.37	6.322222
2003	0.387	0.573	0.828	0.372	6.013889
2004	0.4	0.581	0.836	0.366	5.705556
2005	0.41	0.589	0.841	0.375	5.397222
2006	0.419	0.597	0.845	0.381	5.088889
2007	0.431	0.606	0.847	0.394	4.780556
2008	0.436	0.614	0.849	0.394	4.472222
2009	0.447	0.623	0.851	0.409	4.163889
2010	0.464	0.631	0.853	0.426	7.700000
2011	0.465	0.639	0.856	0.421	11.700000
2012	0.479	0.647	0.858	0.435	9.700000
2013	0.485	0.654	0.861	0.438	9.500000
2014	0.488	0.661	0.864	0.436	8.700000
2015	0.49	0.667	0.866	0.435	9.100000
2016	0.491	0.673	0.869	0.434	8.000000
2017	0.493	0.679	0.872	0.434	7.600000
2018	0.496	0.684	0.874	0.432	7.100000

Table 2

Data set for Bangladesh

Year	HDI	LER	E	GNI	DTGDP
1990	0.388	0.588	0.762	0.466	35.32
1991	0.395	0.598	0.763	0.44	35.97
1992	0.403	0.61	0.764	0.431	38.14
1993	0.411	0.621	0.762	0.376	38.6
1994	0.419	0.634	0.76	0.328	39.35

1995	0.427	0.646	0.758	0.381	49
1996	0.436	0.658	0.758	0.366	43.9
1997	0.444	0.67	0.76	0.354	43.2
1998	0.453	0.681	0.767	0.343	40.4
1999	0.462	0.69	0.777	0.331	42.4
2000	0.47	0.699	0.79	0.317	46.4
2001	0.479	0.707	0.804	0.302	46.2
2002	0.485	0.714	0.817	0.37	50
2003	0.492	0.721	0.828	0.372	49
2004	0.499	0.728	0.836	0.366	48.2
2005	0.506	0.735	0.841	0.375	46.9
2006	0.514	0.742	0.845	0.381	40.2
2007	0.521	0.748	0.847	0.394	38.6
2008	0.524	0.755	0.849	0.394	37.1
2009	0.535	0.761	0.851	0.409	35.9
2010	0.549	0.767	0.853	0.426	32.3
2011	0.559	0.773	0.856	0.421	32.4
2012	0.567	0.779	0.858	0.435	31.8
2013	0.572	0.784	0.861	0.438	30.4
2014	0.572	0.788	0.864	0.436	29.6
2015	0.588	0.793	0.866	0.435	27.7
2016	0.599	0.797	0.869	0.434	27.7
2017	0.609	0.801	0.872	0.434	27
2018	0.614	0.805	0.874	0.432	27.9

Table 3

Data set for India

Year	HDI	LER	E	GNI	DTGDP
1990	0.431	0.583	0.311	0.443	41.7
1991	0.436	0.59	0.317	0.441	43.03
1992	0.442	0.598	0.324	0.447	45.78
1993	0.449	0.605	0.331	0.451	46.91
1994	0.456	0.613	0.338	0.458	56.64
1995	0.463	0.62	0.344	0.466	67.28
1996	0.471	0.627	0.351	0.475	64.37
1997	0.477	0.634	0.358	0.478	66.29
1998	0.484	0.641	0.365	0.484	67.11
1999	0.492	0.648	0.372	0.494	70.47
2000	0.497	0.654	0.379	0.497	73.67
2001	0.502	0.66	0.382	0.502	78.79
2002	0.508	0.666	0.39	0.505	82.86
2003	0.521	0.672	0.409	0.514	83.28
2004	0.53	0.678	0.419	0.523	82.13
2005	0.539	0.685	0.429	0.532	79.07
2006	0.548	0.691	0.441	0.541	74.66
2007	0.558	0.698	0.452	0.551	71.44

2008	0.565	0.705	0.464	0.553	72.21
2009	0.571	0.711	0.466	0.562	70.6
2010	0.581	0.718	0.478	0.572	65.6
2011	0.59	0.725	0.491	0.578	67.36
2012	0.6	0.731	0.505	0.584	66.15
2013	0.607	0.737	0.514	0.591	67.06
2014	0.618	0.743	0.53	0.6	66.08
2015	0.627	0.748	0.54	0.61	68.57
2016	0.637	0.752	0.555	0.62	68.15
2017	0.643	0.756	0.558	0.629	68.9
2018	0.647	0.76	0.558	0.638	68.3

Table 4

Data set for Nepal

Year	HDI	LER	E	GNI	DTGDP
1990	0.38	0.651	0.276	0.374	49.89
1991	0.388	0.657	0.283	0.38	49.24
1992	0.395	0.664	0.291	0.382	42.09
1993	0.4	0.67	0.293	0.383	50.87
1994	0.407	0.676	0.295	0.391	48.87
1995	0.411	0.681	0.299	0.392	46.61
1996	0.421	0.687	0.31	0.397	44.87
1997	0.427	0.692	0.315	0.401	42.79
1998	0.432	0.696	0.32	0.402	54.88
1999	0.439	0.7	0.325	0.406	64.6
2000	0.446	0.704	0.33	0.412	63.5
2001	0.446	0.708	0.322	0.417	69.5
2002	0.456	0.713	0.341	0.414	67.5
2003	0.461	0.717	0.346	0.418	64.4
2004	0.468	0.723	0.353	0.422	61
2005	0.474	0.728	0.359	0.426	51.3
2006	0.484	0.734	0.375	0.43	49.5
2007	0.49	0.74	0.381	0.434	43.4
2008	0.5	0.746	0.395	0.441	44.3
2009	0.513	0.752	0.416	0.447	40.3
2010	0.527	0.757	0.443	0.453	33.5
2011	0.534	0.762	0.451	0.457	32.1
2012	0.548	0.767	0.475	0.465	33.9
2013	0.555	0.772	0.484	0.471	31.9
2014	0.562	0.777	0.488	0.482	27.9
2015	0.568	0.781	0.495	0.486	25.3
2016	0.572	0.785	0.502	0.485	25.7
2017	0.574	0.789	0.495	0.494	26.8
2018	0.579	0.792	0.501	0.501	30.4

Table 5

Data set for Pakistan

Year	HDI	LER	E	GNI	DTGDP
1990	0.404	0.529	0.205	0.523	52.45
1991	0.409	0.543	0.21	0.523	52.34
1992	0.415	0.556	0.215	0.528	57.25
1993	0.418	0.569	0.221	0.526	58.15
1994	0.423	0.581	0.226	0.527	78.5
1995	0.428	0.594	0.232	0.531	73.3
1996	0.433	0.606	0.237	0.532	73.4
1997	0.436	0.618	0.243	0.529	74.1
1998	0.44	0.629	0.248	0.528	76.2
1999	0.445	0.64	0.254	0.529	81
2000	0.449	0.651	0.259	0.531	83
2001	0.456	0.661	0.27	0.53	87.9
2002	0.464	0.67	0.28	0.534	81.8
2003	0.472	0.679	0.29	0.542	75.9
2004	0.486	0.688	0.311	0.547	68.3
2005	0.499	0.696	0.33	0.555	63.5
2006	0.503	0.704	0.335	0.56	57.5
2007	0.511	0.712	0.347	0.564	56.4
2008	0.513	0.719	0.349	0.563	60.7
2009	0.52	0.726	0.359	0.565	61.6
2010	0.524	0.732	0.365	0.566	62.4
2011	0.528	0.739	0.37	0.567	60.1
2012	0.533	0.745	0.376	0.57	63.3
2013	0.537	0.751	0.38	0.574	63.9
2014	0.546	0.756	0.395	0.578	63.5
2015	0.55	0.762	0.398	0.582	63.3
2016	0.556	0.767	0.407	0.588	67.7
2017	0.558	0.772	0.407	0.592	67
2018	0.56	0.777	0.407	0.597	72.1

Table 6

Data set for Sri Lanka

Year	HDI	LER	E	GNI	DTGDP
1990	0.625	0.617	0.592	0.541	60.11
1991	0.63	0.621	0.6	0.546	69.44
1992	0.635	0.626	0.608	0.551	66.39
1993	0.637	0.63	0.606	0.56	72.13
1994	0.646	0.634	0.625	0.566	72.96
1995	0.65	0.639	0.633	0.572	95.2
1996	0.655	0.643	0.642	0.576	93.2

1997	0.662	0.647	0.652	0.585	85.8
1998	0.669	0.651	0.661	0.591	90.8
1999	0.677	0.655	0.67	0.596	95
2000	0.687	0.659	0.679	0.604	96.9
2001	0.693	0.663	0.689	0.6	103.3
2002	0.699	0.666	0.692	0.605	105.6
2003	0.708	0.67	0.698	0.614	102.3
2004	0.715	0.673	0.704	0.62	102.3
2005	0.721	0.676	0.71	0.628	90.6
2006	0.728	0.68	0.716	0.638	87.9
2007	0.734	0.683	0.721	0.647	85
2008	0.742	0.687	0.738	0.653	81.4
2009	0.745	0.692	0.738	0.659	86.2
2010	0.75	0.696	0.739	0.669	71.6
2011	0.756	0.701	0.743	0.681	71.1
2012	0.762	0.705	0.744	0.693	68.7
2013	0.765	0.71	0.747	0.696	70.8
2014	0.769	0.713	0.749	0.702	71.3
2015	0.772	0.717	0.751	0.707	78.5
2016	0.774	0.72	0.749	0.712	79
2017	0.776	0.722	0.749	0.715	79.9
2018	0.78	0.725	0.756	0.718	83.7

Table 7

Hausman Test

```
---- Coefficients ----
|      (b)          (B)          (b-B)     sqrt (diag(V_b-V_B))
|      fere         Difference           S.E.
-------------------------------------------------------------------------------
LNDTGDP | -.1574093  -.0570304  -.1003789   .022538
-------------------------------------------------------------------------------
b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test:  Ho:  difference in coefficients not systematic
chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=       19.84
Prob>chi2 =      0.0000
```

Table 8

Strongly balanced Panel Data Set

```
panel variable:  Country1 (strongly balanced)
time variable:  Year, 1990 to 2018
delta:  1 year
```

Table 9

Fixed Effect Model

```
Fixed-effects (within) regression               Number of obs =174
Group variable: Country1                        Number of groups = 6
R-sq:                                  Obs per group:
     within = 0.0670                                  min = 29
     between = 0.6081                                 avg = 29.0
overall = 0.3248                                      max =  29
F(1,167) =12.00
corr(u_i, Xb) = -0.8925                         Prob > F = 0.0007
------------------------------------------------------------------------------
LNHDI |      Coef.   Std. Err.      tP>|t|     [95% Conf. Interval]
------------------------------------------------------------------------------
LNDTGDP |  -.1574093   .0454425    -3.46   0.001    -.2471251   -.0676934
 _cons |  -.1009325   .1684293    -0.60   0.550    -.4334576    .2315925
-------------+----------------------------------------------------------------
sigma_u|  .31408189
sigma_e|  .12716624
rho |  .85915834   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(5, 167) = 35.97                     Prob > F = 0.0000
```

Table 10

Breusch Pagan

```
Correlation matrix of residuals:
           __e1    __e2    __e3    __e4    __e5    __e6
__e1  1.0000
__e2  0.8988  1.0000
__e3  0.9262  0.9937  1.0000
__e4  0.8850  0.9871  0.9803  1.0000
__e5  0.9270  0.9886  0.9967  0.9764  1.0000
__e6  0.8384  0.9890  0.9759  0.9789  0.9665  1.0000
Breusch-Pagan LM test of independence: chi2(15) =   396.743, Pr = 0.0000
Based on 29 complete observations over panel units
```

Table 11

Pasaran CD

```
Pesaran's test of cross sectional independence =19.895, Pr = 0.0000
 Average absolute value of the off-diagonal elements = 0.954
```

Table12

Multicollinearity Test

Variable	VIF	1/VIF
LNDTGDP	1.00	1.000000
Mean VIF	1.00	

Table 13

Heteroscedasticity

Modified Wald test for group wise heteroskedasticity
in fixed effect regression model
H0: sigma(i)^2 = sigma^2 for all i
chi2 (6) = 74.45
Prob>chi2 = 0.0000

Table 14

Model Specification Link test

Source	SS	df	MS	Number of obs = 174
Model	2.96226761	2	1.48113381	Prob> F = 0.0000
Residual	5.34557242	171	.031260657	R-squared =0.3566
Total	8.30784003	173	.048022197	Adj R-squared =0.3490
				Root MSE =.17681

LNHDI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	5.332736	1.495355	3.57	0.000	2.381003	8.284468
_hatsq	2.831352	.9746486	2.90	0.004	.9074598	4.755244
_cons	1.594741	.5540326	2.88	0.005	.5011168	2.688364