Determinants of National Saving: Evidence from South Asian Countries

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Abstract:

   This research paper investigated determinants of national saving in six South Asian countries including Sri Lanka, Nepal, Pakistan, Bangladesh, India and Bhutan. Panel data were used for econometrics analysis of the selected countries from the year 1989-2013 duly obtained from the official website of World Bank. Different kinds of econometrics techniques were applied for analysis such as correlation matrix, descriptive statistics and fixed effects model in this research paper. Results of fixed effect model indicate that inflation, tax and gross domestic product have statistically significant effect on the gross domestic savings while per capita income, interest, money supply growth and age dependency ratio have non-significant effect on gross domestic saving. Inflation, tax revenue and gross domestic product showed positive effect on gross domestic saving. Based on results of this research paper it is recommended that these selected countries should adopt proper policies for financial institutions in order to encourage saving behavior among their citizens.

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INTRODUCTION

National saving is the combination of public and private savings of an economy and it plays significant part in economic growth of every country. Different economics concepts regarding growth of economy have revealed that national saving is an important component which finances investment, improves the level of productivity and economic growth of every country. Therefore, it would be vital to look at the determinants of national saving to completely recognize economic growth. National saving offers an important link & connection between past, present and future economic growth of a country (Kazmi, 1993). In case of achievement of investment and growth rates targets, appropriate national saving rate is an essential component for the development and economic growth of a country (Kazmi, 1993). Saving plays an important and collective role as basis for upcoming sustainability and growth of an economy (Nga, 2007). Saving is a safeguard which shields nations from economic tremors and bankruptcy (Mboweni, 2008). Due to savings, a person can be secured financially for future calamities and uncertainties. Savings kept by an individual in the form of fixed assets such as machinery, land and equipment can be utilized immediately but these kinds of assets are not accessible in the financial market for lending to others. However liquid assets such as bank deposits & cash can be utilized and mobilized for use in future date because these assets can be immediately utilized and used in financial markets. Current assets such as cash and bank deposits can be utilized immediately by an individual at any time for any

expenditure and it is also accessible in the financial market for lending to others.

National Saving is an important tool for economic development, prosperity of public and employment opportunities in a country. South Asian countries are facing many economic problems like unemployment, rapid growth of population, slow economic growth, low rates of national saving which is undesirable for the sustainable economic development of the selected countries. Saving & investment plays a dominant role in the development as well as in capital formation process of an economy. Saving is vital component for economy of any country because countries with a minimum percentage of savings face severe problems in the development process. Lucas (1988) reported that high savings rates & growth in the creation of wealth and capital formation can affect economic growth of the country very positively. The savings rates in many developing countries have been weakened while according to economic concepts for financial development, the required savings rate is 22-25%. Countries situated in south Asia are facing different kinds of challenges and tremors from several years. Solow (1956) concluded that growth of an economy and development of any country is influenced by rates of national saving because high rate of saving is vital for accumulation of capital and improvement of the monetary growth of an economy.

The aim of this research paper is to study that how rate of national saving of selected South Asian countries affected in long term by different factors like inflation, interest rate, per capita income, gross domestic product, money supply growth and age dependency ratio and how the rate of national saving can be enhanced/upgraded through creating these factors friendlier for savings.

National Saving has received more importance and attention from economists (i.e. academic and research

community) due to its dominant role in economic development. Previously research studies have been conducted by Khan et al. (1992); Caroll (1993); Ogaki et al. (1995); Weller and Rao (2010) and Rahman et al. (2010) on this topic of research. However previous studies have emphasized on National Saving of one country or countries chosen from different regions of the world. The current research is different from earlier research studies in term of sample, geographical location and number of countries. The present study has considered a sample of six South Asian countries.

1.2. THEORETICAL BACKGROUND

1.2.1. THE LIFE-CYCLE HYPOTHESIS (LCH)

Hypothesis that comprises of expenses and saving behaviors of people over the passage of a life cycle is known as the life-cycle hypothesis. This theory was established by Franco Modigliani and his pupil Richard Brumberg (1986). LCH states that persons base expenditure on continuous ratio of its predictable lifetime revenues. Most of the people earn regular income but they save for their retirement is an example supporting this theory. This concept helps the economists in significant and non-obvious predications regarding economic development and they easily predict about development of an economy. Several economists have urged major factors on which public saving depend is the national income growth rate. The percentage of wealth in economy of a country has an ordinary link to period of retirement. This concept remains an important part for economists' thinking. Due to growth of population, young people are more than old, more people save than spending, hence overall expenditure of old age people will be less than overall savings of the people of young age. Hence rate of savings will be improved. When revenue or income of people grow in a country it attract the middle and young age people as compared

to old age people because people of middle and young age earn more while people at old age do not earn due to their retirement and they are more attractive toward habit of savings. The growth of population and development of economy has great and important effect on national savings because savings of a country mostly depend on growth rate of population The growth rate of population has direct impact on rate of income of a country. However compared with growth of population, the growth of revenue or income of a country is much important for rate of savings. According to this theory people of medium age prefer high saving as compared with youth and elderly people because people of this age can earn regular income while old age people and people of young age do not earn as middle age people earn. There are many countries where the people older than 60 year and younger than 22 are not allowed for working in any sector while the people of middle age are allowed anywhere in the world for working.

1.2.2. RELATIVE INCOME HYPOTHESIS

According to this theory utility or satisfaction derives by individuals with stated consumption level, which mainly depends on its comparative size in society, instead of its complete level. It is acknowledged by sociologists and psychologists that individuals care about status. The implications of this concept for consumption behavior was investigated by James Duesenberry (1949) in his book entitled "Income, Saving and Theory of Consumer Behavior". When Duesenberry published his book "the Dominant Theory of Consumption" was advanced by John Maynard Keynes(economist). This book was based on theory that consumption of people decline, and saving rises percentage of their income with growing trends of their income. It was mainly the outline perceived in cross-sectional expenditure data: The rich in population save maximum fraction of income compared

with poor people at specified time. The total saving rate does
not increase overtime when total income rises. According to
statement of Duesenberry, proportional income concept could
account for both time series and cross-sectional evidence.
Duesenberry (1949) reported that utility index of people mainly
depends on her/his consumption percentage weighted average
of consumption of others. Duesenberry (1949) concluded that:
(1) the saving tendency of individual is a rising function of his
percentile status in distribution of income which is constant
with cross sectional evidence (2) the saving rate (aggregate) is
independent of aggregate income. The saving rate is consistent
with time series evidence. Some corroboration was initiated
from relative income concept with indirect macroeconomic
evidence. Which may led to observation that rate of savings
mainly depends on growth rate because higher growth rates of
economy in a country may results maximum saving rates in
that country, which is incompatible with lifecycle/permanent-
income hypothesis since lifetime resources of people rises with
enhancing growth trends.

1.2.3. THE PERMANENT INCOME HYPOTHESIS

The permanent income hypothesis was formulated during 1957
by Nobel Prize winning economist Friedman Milton (1957).
According to this hypothesis variation or changes in
expenditure behavior of people is based on expectations of
people which are not predictable. This has wide inferences
relating to monetary policy. According to permanent income
hypotheses even if monetary policies are effective for enhancing
peoples' income, the policies may not kick off multiplier effect
from high level consumption of consumers. This theory also
forecasts that there will not be any increase in expenditures of
consumers. According to this hypothesis individuals spend
money according to their expected average revenue or income
but with passage of time this expected income (average)

becomes level of "permanent" income which can be spent safely. When present income of a worker increase as compared with his permanent income then he will save money for future protection. Permanent Income Hypothesis splits income into permanent income and transitory income: $Y = YP + YT$

LITERATURE REVIEW

Khan, Hassan and Malik (1992) studied foreign investment inflow, dependency ratio and rate of savings in Pakistan. They used aggregate saving as dependent variable in their study while rate of interest, dependency ratio, foreign investment inflow, foreign aid and per capita income as independent variables. Results revealed that rate of real interest and per capita income has positive and constructive relation with savings rate while age dependency ratio and investment inflow or capital inflow has negative & opposite relation with the rate of savings. They reported low rate of saving in Pakistan.

Kazmi (1993) reported inflation and savings a two-way relationship having two different signs, in one way it has negative relationship and on the other hand it has positive relationship. For example if there is rise in price of the commodities then households would spend more of their income on buying commodities as a result household savings will decreases. In this case we have inverse relationship (negative) between national savings and inflation. Macroeconomic certainty was created by inflation in economy of a country. The relation among savings and inflation has two different aspects and indicates two signs. According to consumers' perception due to increase in prices of commodities, the rate of domestic savings showed downward trend because individuals spend more on buying of commodities and products which indicated that there was significant and negative relation among domestic savings and inflation which in turn, directly affect

rates of National Savings. According to Producers' perception, producers charge high prices from consumers due to which prices of commodities increase and manufacturer or producers earn more which shows positive link between savings and inflation.

Carrol and Weil (1993) revealed that increasing trends of per capita income has led to enhancing saving rates. Incomes has generated saving. High saving depends directly on enhanced income in situation of reduced or consistent expanses. Ogaki et al. (1995) conducted research and proved that people save more of their income if rate of interest is high. They concluded that interest rate and saving are positively related. They reported that savings depends on rate of interest, in terms of rate of return at elevated levels of income. Masson et al. (1998) revealed that countries with high percentage or rate of working age population shows maximum rate of savings as compared to countries with minimum working age population rate.

Loayza et al. (2000) concluded that savings and inflation rate have positive and significant relation. The rate of savings of different countries was mostly influenced due to changes or variation in consumption and income of the government. When expenditures or consumptions of the government were more than incomes or revenues of the government, it has caused fiscal deficit. The influence of surplus or fiscal deficit on national savings is more common in Asian countries. They concluded that savings of governments have played a main part in decreasing fiscal deficit.

Hasnain (2001) conducted research study on factors of national savings: He collected data from the period 1965-1998. He employed the method of extreme bounds analysis and linear regression. National saving was dependent variable while life expectancy, growth rate, income level, inflation rate, taxes and government costs, public saving and total budget

balance, social security and credit availability rate were independent variables. It was concluded that few factors were positive and were related to national savings except financial, income and demographic elements. Savings of government and budget balance of the country has a major influence on national savings.

Agarwal (2001) reported the savings pattern of seven Asian countries. He revealed dissimilarities in connection or link among rate of interest and rate of savings from country to country. In Taiwan, India and Malaysia, there was an optimistic connection among rate of savings and rate of interest but influence of the rate of interest over the savings rate was insignificant.

Schultz (2005) conducted research study on demographic elements of savings forecasting and interpreted total association in Asia. Data of 16 Different countries were collected from 1952-92 with application of different econometric methods for analysis of data. Age composition of population was independent variable while savings were dependent Variable. The results showed link among age composition and rate of savings which depends on trends of time of each country along with diverse priorities of families keeping in view their requirements and life style. He concluded stronger and healthier life will move up the point of aggregate saving.

Narayan and Siyabi (2005) reported elements of Oman's national savings, from 1977-2003 by means of bound testing approach and ARDL model. Aggregate saving was dependent variable while domestic credit, rate of population, rate of per capita income, money supply rate, current account deficit and urbanization rate were independent variables. The results showed that domestic credit, current account deficit and urbanization rate has encouraged influence on rate of saving while urban population rates, money supply and rates of per capita income has negatively affected the savings rate of Oman.

Narayan and Narayan (2006) reported saving activities in Fiji during 1968-2000 via ARDL method to co-integration rectification model. In this research study dependent variable was aggregate saving while rate of interest, deficit of current account, and dependency ratio of age were independent variables. This research proposed that both on long term and short term basis, 1% increase in growing rate of per capita income enhanced the saving rate by 0.05 and 0.07%. Which showed constructive affect on the rate of saving. Rate of real interest and rate of age dependency ratio revealed synthesis consequences with saving.

Vincelette (2006) studied the saving factors of Pakistan. The research has compiled data for the year 1973-2005. He employed the method of OLS regression. Rate of saving was considered as dependent variable while, income of financial development, rate of interest, financial policy and factors of demography as independent variables. The results illustrated that there was negative and important connection among development of financial sector and aggregate saving. Direct inverse connection among economic or monetary imbalances and saving on the other hand income and demographic factors have major effect on rate of saving.

Befekadu (2007) reported that knowledge and art of saving has major role in conversion of personal behavior and financial development in any country of the world. Credit and savings organization play or yield major part in helping customers in the marketplace. The commercial and profitable sector of a country showed significant & intermediary part in channeling resources from the ineffective use (resource traders) to its productive use (resource buyers). The method of monetary intermediation can influence financial performance and development of economic growth directly through the part it shows in allocation of resources. Growth of Economic sector is at the heart of resource utilization, mechanization, enhancing

investment and speed up financial progress in a country. The
momentary or financial system can also influence decisions
related to saving and capital or investment. Specifically , the
fiscal system can also influence saving and investment choices
or decisions   and therefore capital gathering and scientific
invention by minimizing information and business
expenditures, creating mechanisms of threat sharing, assisting
or facilitating business and payments among economic
mediators and furnishing different facilitating services.

Braun, Ikeda and Joines (2008) reported savings rates in
Japan during 1999-2000. In this research study aggregate
saving rates was taken as dependent variable, while housing
market imperfections, lower fertility, increase longevity,
demography and taxation such as total factor productivity
growth and aging of baby boom generation were taken as
independent variables. This research study has defined that
differences in development rates of production and stable aging
of population have main effect on the national savings rates.

Braun, Ikeda and Joines (2008), analyze the saving rate
in Japan, for the period 19902000. The dependent variable is
aggregate saving and independent variables are total factor
productivity growth, housing market imperfections, taxation
and demographic such as aging of baby boom generation, lower
fertility and increase longevity. The study concludes that
permanent aging of population and variations in the growth
rate of productivity have large effect on the national saving
rate.

Chaudhry, Faridi, Abbas and Bashir (2010), examined
the determinants of national savings of Pakistan in short run
as well as in long run. The author used time series data for the
period 1972-2008 and used Johansson Co integration technique
and vector error correction model (VECM) .The explanatory
variables that effect national saving in long run used in this
study are workers remittance, public loans, consumer price

index, interest rate, exports and government spending it was found that in long run public loans were negatively related to saving rates while consumer price index, exports, interest rates, workers remittance and Government spending have significant positive influence on national saving. On the other hand in short run time period interest rate and workers remittance had positively related with saving.

Abbas and Bashir (2010) reported the factors of National Savings for short and long term in Pakistan. Time series data was applied by the author for the period or time from 1972-2008 by using vector error correction model (VECM) and Johansson Co integration method. The descriptive factors that influence the rates of National Savings in long term were price index, interest rate, exports, workers remittance, public loans, consumer and government spending. In long term public loans were inversely connected to rate of saving while interest rates, export, consumer price index, workers remittance and Government spending have vital and constructive or positive effect on rates of national savings. The interest rates and workers remittance was positively related with saving rates for short period.

Girma et al. (2014) reported the causes of domestic savings in Oroomia region, Ethiopia. In this research study different nine important factors, explanatory variables of domestic savings were analyzed which contains family head's education status and level, profit, capital, income, access to credit services, training membership, contact with extension, forms of savings and saving objects.

3. RESEARCH METHODOLOGY

3. PANEL DATA

To examine the determinants of National Saving of selected South Asian countries, panel data were used for econometric

analysis. With the features of heterogeneity, as compare to cross-sectional and time series regression, panel data technique has advantage over them. While on the other hand as compared to panel data investigations, there are greater chances of heterogeneity in cross-sectional regression and time series regression. Moreover the method of panel data has furnished accurate information. The results acquired from panel data technique were more accurate and generalized because of less Collinearity between the selected variables.

3.1 FIXED EFFECT MODEL

Fixed Effects Model is the type or kind of Panel data. Wooldridge (2001) reported that fixed effect model furnish the imbalanced results in regression model, generated due to omitted variables. Intercepts are different for people while coefficient's slopes are constant in fixed effects model Gujrati (2003); Baltagi (2008). Fixed effects model is applied for the robustness in the result. Fixed effects Model will show vigorous average errors where Heteroskedasticity is available in data.

3.2 RANDOM EFFECT MODEL

The most important type of panel data analysis is Random effect model and it was used and applied in this research study. In this model the mean of all intercepts of the cross sectional units is the value of intercepts. Fixed effect model has provided fixed value to the intercept of the cross sectional unit Gujrati (2003). Random Effect Model was applied for robust errors, where Heteroskedasticity was found in data.

3.3 CHOW TEST:

This test was applied to select among Fixed Effects Model and Pooled regression Model. The hypotheses of this test are given as below.

·   Ho: Pooled OLS Model is higher than Fixed Effect
Model.
·   H1: Pooled OLS Model is not higher than Fixed Effect
Model.

3.4   BREUSH-PAGAN TEST:

For selecting between pooled Model and Random Effects Model,
Breusch-Pagan Test has been used in this research study.
Following are the core null hypothesis and substitute of the test
which are given below.
·   Ho: Pooled OLS Model is higher than Random Effect
model.
·   H1: Pooled OLS Model is not higher than Random Effect
model.

3.5   HAUSMAN TEST:

In this research study Hausman test (1978) was used to select
among Fixed Effects Model and Random effect model. The null
hypothesis of Hausman test reject Fixed Effects Model and
accept Random Effect model which are as follows.
·   Ho: Random effect model is higher than fixed effect
model.
·   H1: Random effect model is not higher than fixed effect
model.

3.6   REGRESSION MODEL

Below is the model which was used for the assessment of
present research study.

$$GDS_{i,t} =_+ \beta_1 INF_{i,t} + \beta_2 PERCI_{i,t} + \beta_3 TR_{i,t} + \beta_4 GDP_{i,t} + \beta_5 RIR_{i,t} + \beta_6 M2_{i,t} + \beta_7 ADR_{i,t} + \varepsilon$$

Where
i is for country.
t is for year
GDS: Growth of gross domestic saving

INF: inflation rate
PERCI: per capita income
TR: Tax Revenue
GDP: Gross Domestic Product
RIR: Real Interest Rate
M2: Money Supply Growth rate
ADR: Age Dependency Ratio

While, α: constant β1, β2, β3, β4 and β5 are called the regression coefficients, and ε is the random error terms.

DEPENDENT VARIABLE

National Saving
Gross domestic saving has used as a proxy for national saving. National saving is the dependent variable of our study. The overall private and public savings in country is called national savings. The total income or revenue of government minus the overall expenditures of government is equal to National Savings. An adequate National Savings rate is an essential circumstance for attainment of investment and growth rates targets (Kazmi, 1993). Saving is a shield which protects individuals and nations from economic shocks (Mboweni, 2008).

Gross Domestic Saving
The gross domestic savings have been used as a proxy for national saving. The percentage or rate of Gross Domestic Product (GDP) held by Households in a country is called as Gross Domestic Saving (GDS). It shows economic status, economic growth and development of the country. The rates of savings are different from country to country which was effected by different components such as income distribution, retirement age, borrowing constraints, welfare and demography of the country.

INDEPENDANT VARIABLES

GROSS DOMESTIC PRODUCT

The value of all finished commodities or products and services produced in a state or country in a particular time (i.e. one year) is known as Gross Domestic Product. Gross Domestic Product includes all Public and private expenditures and outlays, capital and exports of Government less than imports within a defined space.

$$GDP = C + G + I + NX$$

where:

"**C**" indicates all expenditure of private sector in the economy of country while "**G**" was used for total amount spending by government spending "**I**" indicates the overall businesses expenditures on investment, "**NX**" is the total exports of the country which is calculated as the overall export minus total imports. (NX = Exports - Imports).

There is a positive and durable connection among growth and national savings. Maddison (1992) and Bosworth (1993) reported solid and constructive relationship among National Savings and economic growth. However this relationship differs from kingdom to kingdom. Growth and savings of a state or nation are related positively to each other in developing countries. Though the sign of causality between growth and savings is ambiguous and not clear, i.e. if investments drive development over an automatic transaction of investments in wealth formation, growth provides and increase to more and more savings (Agrwal 2001).

LENDING INTEREST RATE

The rate of interest is rewarded by financial organizations to its customers. The accounts consist of self-directed deposits, certificates of deposits, saving accounts and accounts of retirement. If we have low interest rates then it will discourage the savings, while if we have a high real interest rate, it would

encourage savings thus real interest rate directly affects our National Savings (Mackinnon 1973). Connectivity of savings and interest rate is not clear due to paradox followed by it. i.e. it provides a constructive alternatives for upcoming expenditure and at the same time, it causes contradictory results of investments due to profit on saved capital. Researchers like Mckinnon (1973) as well as other researchers have disputed this theory that enhancing interest rate increases savings which cause improvement in financial development. Whereas Basely et.al. (1998) reported that opposite or contradictory revenue or profit effect is subjugated by constructive alternative effect, therefore interest ratio has fruitful connection with savings of money. Giovannini (1985) revealed that association among savings and interest rate differed and showed an unimportant association among interest rate and savings. Agarwal (2001) revealed variation in association among interest rate and saving rate. For example, Ogaki et.al, (1995) reported that savings give additional reaction to interest rate in terms of amount of return at advanced revenue stages.

TAX REVENUE

All type of Excise duty and custom duty plus Interests and Penalties collected by government itself depend on Provincial and Local Government to perform as its gathering facilitators. Weller and Rao (2010) conducted a study on tax revenue and domestic savings, the result showed that they have direct relationship among each other. The income tax has positive relationship with National Savings.

AGE DEPENDENCY RATIO

Age dependency ratio is the ratio of dependents which includes from people younger than 15 or older than 64, to the working-age population (ages 15-64). According to previous relevant

research studies it seems that demographics (size, age and
structure of households) affect the National Savings of a
country. Modigliani (1970) reported that people save more and
more money at the middle age as compare to young or old age.
The proportion of the working age population to total
population of a country is called the percentage of age
dependency ratio. Masson et.al. (1998) revealed that countries
or nations with high percentage of working age population
presents high saving percentage compared with other nations
with minimum percentage of working age population.

MONEY SUPPLY GROWTH (BROAD MONEY)

Currency in circulation and all reserve balances or deposits
held by financial institutions i.e. public and commercial banks
in a country is called money supply growth (broad Money).
Money supply growth is the overall money held by any country
in the form of liquid instruments for a specified time. The
money supply can include balances held in checking and
savings accounts, cash and coins. Financial advisors have
recognized money supply and growth policies revolving around
money supply through controlling rates of interest and
increasing or decreasing the percentage of money circulating
the economy. Brookin (2001); Narayan and Siyabi (2005)
reported that money supply (M2) have opposite and inverse
connection or link with aggregate savings. As money supply will
increase then aggregate savings will be decreased. In the
present study broad money will be used as proxy for money
supply.

INFLATION (CPI)

When prices or rates of products and items increase in any
country such situation in an economy is called inflation because
too much money chases to few goods and this behavior or
process affect the pattern of national savings. When price of

commodities rises, persons have to consume extra on purchasing which declines the amount of national savings which reveals negative trend. It can be argued that there exists a negative and noteworthy connection among inflation and national savings which, affects National Savings (Kazmi, 1993).

PER CAPITA INCOME:

National Income and all other sources of a country divided by the population of that country is equal or considered as per Capita Income. Carrol and Weil (1993) reported that higher saving rates are because of increase in per capita income. Generally, savings are generated from incomes. Income increases and savings subsequently increase if expenses decrease or remain constant. The life cycle hypothesis also describes the positive relation between per capita income and savings.

4. RESULTS AND DISCUSSION

4.1   DESCRIPTIVE STATISTICS

Variables	Obs	Mean	S.D	Min	Max
GDS	144	19.3625	8.39810	7.0	43.6
IFL	144	7.98243	4.43512	-18.1	22.6
PCI	144	22.59860	6.97130	17.5	32.9
TR	144	10.00694	3.04246	4.4	19.0
GDP	144	5.43333	2.38550	-1.5	17.9
IR	144	4.85944	4.47676	6.8	14.7
MSG	144	17.07639	7.00404	.12	58.9
ADR	144	68.31944	13.18383	48	90

Table 4.1 reveals descriptive statistics such as mean, standard deviation, minimum and maximum of gross domestics savings (GDS), inflation, per capita income, tax revenue, GDP, interest rate, money supply and age dependency ratio during period 1990-2013 for six Asian Countries (i.e. Pakistan, Bangladesh, Sri Lanka, Nepal, India and Bhutan). Table 4.1 indicates that gross domestics savings (GDS) has mean value of

approximately 19.36% in domestic savings of Asian Countries, while other variables such as inflation, per capita income, tax revenue, GDP, interest rate, money supply and age dependency ratio have mean values of 7.98, 22.59, 10, 3.43, 4.85, 17.07, and 68.31 respectively. The minimum values of gross domestics savings (GDS), inflation, per capita income, tax revenue, GDP, interest rate, money supply and age dependency ratio are is 7, -18, 17.5, 4.4, -1.5, -6.5, 0.1, and 48 respectively. The maximum of gross domestic savings (GDS), inflation, per capita income, tax revenue, GDP, interest rate, money supply and age dependency ratios   are 43.6, 22.6, 32.9, 19, 17.9, 14.7, 58.9 and 90 respectively.

4.2   CORRELATION MATRIX

Variables	GDS	IFL	PCI	TR	GDP	IR	MSG	ADR
GDS	1.0000							
IFL	-0.2276	1.0000						
PCI	0.3436	0.0488	1.0000					
TR	-0.2076	0.2785	0.2186	1.0000				
GDP	0.4765	-0.1509	0.2929	-0.0753	1.0000			
IR	0.3274	-0.4122	-0.0235	-0.2978	0.1819	1.0000		
MSG	0.0538	-0.0099	-0.1661	-0.1661	0.1090	-0.0321	1.0000	
ADR	-0.2372	-0.0530	-06515	-0.4055	-0.2600	-0.1246	0.1426	1.0000

Table 4.2 reveals the correlation matrix of dependent and independent variable for six Asian Countries (i.e. Pakistan, Bangladesh, Sri Lanka, Nepal, India and Bhutan) for the period of 24 years from 1990 to 2013. Gross domestic savings have positive correlation with per capita income, GDP, interest rate and money supply but have nagative correlation with inflation, tax revenue and age dependency ratio.

4.3   CHOW TEST

S.No	Variables
1	IFL = 0
2	PCI = 0
3	TR = 0
4	GDP = 0
5	IR = 0
6	MSG = 0
7	ADR = 0
F (7,131)=5.59	
Prob> F= 0.0000	

Table 4.3 shows result of chow test. Chow test was employed for
selection of fixed effect model and Pooled OLS Model which give
details if model is according to the nature of data. P Value of
chow test indicates that P value is less than 0.05 so, on this
basis we reject null hypothesis. We reject null hypothesis on the
basis of P values which means that fixed effects model is more
suitable than pooled regression model.

4.4   BREUSCH   AND   PAGAN   LAGRANGIAN MULTIPLIER TEST

	Var	SD = sqrt (Var)
GDS	70.52809	8.398101
E	15.50194	3.93725
U	0	0
Var(u) =	0	
Chibar^2 (01) =	0.00	
Prob > Chibar^2 =	1.0000	

Table 4.4 indicates variation and standard deviation of gross
domestic saving. The variation and SD of gross domestic saving
(GDS) was 70.52809 and 8.398101 respectively. On the basis of
p-value we reject null hypothesis which indicates that pooled
OLS model is better than random effects model. We conclude
that random effect model is suitable.

4.5   HAUSMAN TEST

	_____Coefficients_____			
	(b)	**(B)**	**(b-B)**	**Sqrt(diag(V_b-V_B))**
	Fixed Effect	**Random Effect**	**Difference**	**S.E**
IFL	-.1208649	-.2479532	.1270883	.1147265
PCI	.0040489	.0002861	.0037629	.000805
TR	-.5012288	.4662079	-.9674368	.093438
GDP	1.114929	.4794986	.6354303	.2094714
IR	.3662903	-.1633061	.5295964	.1039566
MSG	.080972	-.0325146	.1134866	.0611158
ADR	-0.0175248	-.0649429	.047418	.0367206

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(7) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 179.11	
Prob>chi2 = 0.0000	

Table 4.5 reveals the results of the Hausman specification test. This test was used for the purpose of selecting whether to use fixed effect model or random effect model, which can provide efficient results. The p-value of chi^2 is .0000 which is less than .05. Under this assumption fixed effect model is more efficient than random effect model. We reject null hypothesis under this assumption because fixed effect model is more efficient than random effect model.

4.6   FIXED EFFECT MODEL

Dependent variable: GDS

	Coefficient	_Std. Error_	_t-ratio_	_p-value_
Const	19.6347	5.4986	3.5709	0.00050***
IFL	-0.247953	0.0864034	-2.8697	0.00479***
PCI	0.000286051	0.00100455	0.2848	0.77628
TR	0.466208	0.20722	2.2498	0.02613**
GDP	0.479499	0.158366	3.0278	0.00297***
IR	-0.163306	0.109547	-1.4907	0.13843
MSG	-0.0325146	0.0456345	-0.7125	0.47742
ADR	-0.0649429	0.0535921	-1.2118	0.22777

Mean dependent var	19.36250	S.D. dependent var	8.398101
Sum squared resid	2030.754	S.E. of regression	3.937250
R-squared	0.798647	Adjusted R-squared	0.780202
F(12, 131)	43.29977	P-value(F)	0.000039

The results of Fixed Effects Model are presented in Table 4.6. It can be observed from table that the variables such as Inflation, Tax revenue and Gross domestic product were statistically significant. The P value of Inflation, Tax revenue and Gross domestic product are 0.00479, 0.02613 and 0.00297 respectively. The P values of all variables are less than 0.05 which means that Inflation, Tax revenue and Gross domestic product are highly significant. The value of R-squared shows that independent variable explains 79% of the entire panel's variation. The coefficient of fixed effect model shows that per capita income, tax revenue, and Gross Domestic Product have positive effect on gross domestic savings while inflation, interest rate, money supply and age dependency ratio have negative effect on gross domestic savings.

Inflation has positive effect on gross domestic savings and having statistical significant value. Our result of inflation is in line with the results of Muradoglu and Taskin. Muradoglu and Taskin (1996) aimed at examining the differences in household savings behavior in developing and industrial countries from a cross-country perspective. The purpose of their study was to learn more about differences in nature of the household savings behavior in industrial versus developing countries. Income, wealth, rate of returns, inflation, foreign savings, and demographic variables were taken as the determinants of savings. Their results indicated that inflation has significant relationship with savings.

Per capita income has no significant relationship with gross domestic savings. While the value of coefficient of per capita income show positive effect on gross domestic savings.

Our result of per capita income is not in line with the results of Hasnain et al. Hasnain et al. (2006) evaluated the determinants of household savings in the process of economic development in the light of Pakistan's experience during the period 1972-2003. They used data arranged by State Bank of Pakistan, Economic Survey of Pakistan, and World Development Series during the years 1980-2003. Johansen Multiple Co-integration and Error Correction Model were utilized to estimate long run and short run relationships. The study revealed that growth rate, per capita income, and interest rate were positively affecting; young dependency ratio, old dependency ratio and inflation rate were negatively influencing public savings in long and short term. Error Correction term was found -0.05 suggesting that model would be converged towards long run equilibrium by taking 5% adjustment annually.

Tax revenue is statistically significant. Coefficient of tax revenue shows that it has positive effect on gross domestic savings. Result of tax revenue is in line with results of Irshad Ali et al. (2014). Irshad Ali et al. (2014) conducted research on the effect of tax revenue on National Savings. They used data of State Bank of Pakistan and World Development Series for twenty four years 1990-2014. The results indicated that tax revenue has positive and significant effect on National Savings.

Gross Domestic Product is statistically significant and coefficient of Gross Domestic Product shows positive effect on gross domestic savings. Results of gross domestic product are in line with Mckinnon (1973) and Shaw (1973) they revealed increase in interest rate savings boost up Gross Domestic Product. Our results verify the results of Agarwal (2001), he analyzed the savings behavior of seven Asian countries. He concluded that most of the countries have shown significant impact of Gross Domestic Product on savings.

Interest rates were statistically non-significant. Results of interest rate are not in line with the finding of Komicha. Komicha (2007) examined farm household economic behavior with reference to savings, interest rate, credits and production efficiency under imperfect financial market conditions based on data obtained from farm household survey conducted in two districts of south-eastern Ethiopia from September 2004 to January 2005. Data was analyzed using stochastic frontier analysis and limited dependent variable econometric tools where farm household saving behavior and its determinants were studied. Factors such as interest rate, loan processing time, type of loan, credit information and loan size has significantly affected this borrowing behavior of farm households. The study has used farm household survey data collected using structured questionnaire, which has covered crop and livestock production, off -farm and non-farm activities, income, consumption, saving and borrowing activities of the farm households.

Money supply was statistically non-significant. Result of money supply was not in line with the results of Joshi. Joshi (2007) conducted investigation on domestic savings capital account of the balance of payment and used explanatory variables for capital formation in the country. The long run steady state relationship between various component of saving capital account balance and gross domestic capital formation was estimated. It was pointed out that money supply increase the capital formation and growth in economy and lead to saving. Joshi (2007) revealed significant relationship among saving and money supply.

Age dependency ratio are statistically non-significant and coefficient of age dependency also show negative effect on gross domestic saving. Results of age dependency are not in line with the results of Masson *et.al*. Masson et.al (1998) concluded that the countries which have high ratio of working age

population present high savings rate as compared to countries which have low ratio of working age population. As concluded from these studies countries like China are experiencing increasing savings rate as their young dependency population is increasing. They indicated positive and significant relationship among age dependency and saving in China.

CONCLUSIONS & RECOMMENDATIONS

This research study investigated the economic factors of National Saving from selected six South Asian Countries that either these economic factors have positive or negative effect on National saving of the selected countries. This research study was mainly based on secondary data compiled from "websites of World Bank". The required information was collected from particular sector for purposive sampling. Determinants of National Saving such as Inflation, Tax revenue and Gross domestic product were statistically significant. The coefficient of fixed effect model shows that per capita income, tax revenue, and Gross Domestic Product have positive effect on gross domestics saving while inflation, interest rate, money supply and age dependency Ratio have negative effect on gross domestics saving. The correlation of Gross domestic saving have positive correlation with per capita income, GDP, interest rate and money supply but have negative correlation with inflation, tax revenue and age dependency ratio.

It is recommended that in future, research studies on National Saving may be conducted on primary data due to précised picture of ground situation. The primary data will depict accurate impact of the determinants on National Saving of South Asian Countries. It is suggested that more independent variables will produce more valuable reports which may improve understanding on the subject as well as quality of future research. It is recommended that future

research studies on determinant of National Saving may also be conducted in other regions of world. This kind of research study will reveal useful information especially in those countries where there is no equal distribution of income and where the problem for sharing of resources exists. Proper policies for public, private & commercial banks and other financial institutions may be framed for South Asian countries. Policies of income effect and prices effect should be presented and adopted for constructive changes in behavior of National Savings in South Asia. Proper policies should be established for real interest rate of all Monetary and Financial institutions in South Asia. Furthermore these policies should be adopted or presented as per the real condition of economy. Proper policies may be framed and adopted for the Financial Institutions of the selected countries along with awareness of people of the South Asian Countries will create more motivated and attractive environment towards saving behavior.

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