

The Impact of Macroeconomic Factors on National Saving

MUHAMMAD REHAN

School of Economics and Management
Northeast Normal University, Changchun Jilin, China

Abstract:

This paper has empirically explored factors which affect the national savings of Asian countries. Asian countries were selected, based on the availability of data from the year 1997-2018. Descriptive statistics, correlation matrix and fixed effects model were employed in this research study and results revealed that age dependency ratio, broad money, gross domestic product, and inflation have statistically significant effect on the national saving while tax revenue, age dependency ratio and inflation have negative effect on national savings.

Keywords: National saving, gross domestic saving, gross domestic product, age dependency ratio, broad money and inflation

1. INTRODUCTION

The high rate or percentage of domestic saving plays a pivotal role for the economic growth because high rate of saving and their channelization to investment not only ensures the growth of the economy but it also creates employment opportunities for the citizens and also attract foreign investors for investment (Mboweni, 2008). According to (Khan, 1993) high rate of saving is required for every country for the purpose to achieve sustainable growth, capital formation and mobilization of domestic resources. In case of achievement of investment and growth rates targets, appropriate domestic saving rate is an essential and important component (Kazmi,

1993). Domestic saving plays a noteworthy role in the economic growth of any country. Saving is an important factor which finance investment, creates job opportunities and improve the level of productivity in a country. Therefore, it would be vital to look at the factors which affect the level of national saving and improve the economic growth. National saving offers an important association between past, present and future economic growth (**Kazmi, 1993**). Gross domestic saving is gross domestic product minus final consumption expenditure. The savings of public sector, private corporate sector and household sector in a country is called gross domestic saving. Domestic saving helps in maintaining high growth rates through its effect on the capital formation and investment. Strong reliance on external financing may erode competitiveness through an overvalued currency, providing additional motives for wanting to stimulate domestic saving. The OIC member countries saved 28 percent of their gross domestic product while the average rate is 18.9% in the world and 17.0% in developed countries. Capital formation is a function of domestic savings. According to (Nga, 2007) domestic saving plays a vital and collective role for the sustainability and growth of an economy because it encourage investment eliminate poverty and create employment opportunities for the citizens. Mboweni (2008) has stated in his study that high rate of saving is a safeguard which save economies from bankruptcy, devaluation of currency and inflation.

The importance of national saving and its awareness has been recognized on international as well as on national levels because it has played central role in decreasing inflation of a country. In this study, data regarding elements which affect the rate of domestic saving in the selected countries i.e. China, Pakistan, Malaysia, Philippines, Georgia, Nepal, India, Vietnam, Turkey, Cambodia, Sri Lanka, Russia, Iran, Mongolia, Bangladesh, Thailand, Indonesia and Bhutan was compiled from secondary sources (Websites of World Bank). The effect of independent variables on dependent variable (Gross domestic saving used as proxy for national saving) was evaluated and analyzed. Previously research studies have been conducted by Sinha et al. (1998) and Weller et al. (2010; Jappelli et al. (1994); Blomstorm et al. (1996) and Gavin et al. (1997) on this topic of research. However earlier studies have emphasized on domestic saving of one country or countries chosen from other different regions

of the world. Our research study is different from other research studies in term of geographical location, sample, and number of countries. The present study has considered a sample of eighteen Asian countries. This research study has focused the national saving of different countries i.e. Philippines, Georgia, Nepal, India, Vietnam, Turkey, Cambodia, Sri Lanka, China, Pakistan, Russia, Iran, Mongolia, Bangladesh, Thailand, Indonesia, Malaysia, and Bhutan. This study has employed secondary data regarding macroeconomic factors of national saving of the selected countries in the research. The data was collected for period of 1997-2018. Literature review related to dependent variable and all independent variables of study was compiled from published research papers and research reports of different research journals etc. The current research has focused gross domestic saving, gross domestic product, age dependency ratio, broad money, tax revenue and inflation.

THEORETICAL BACKGROUND

The life-cycle hypothesis was developed by Franco Modigliani and his student in the year 1950. Richard Brumberg, developed a theory which was based on the observations that the consumption decision of the many people mainly depends on their available assets over their lifetime, and on their current life stage. Brumberg and Modigliani observed that people make up different kinds of assets at the initial stages of their working lives and use it after their retirements. Most of The working people save up for their retirement lives and change their consumption behavior according to their basic needs at different stages of their lives. The Theory of relative income hypothesis was developed by James Duesenberry. This theory states that the behavior saving and consumption behavior of the people depends on their income level in relation to others than by abstract standard of living. The percentage of resources consumed by a person mainly depends on his percentile position within the income or resources distribution. The permanent income hypothesis economics theory which explains that how an agent extends utilization of resources over his lifetime. This theory was developed by Milton Friedman, it supposes that a consumption of a person at a point in time is determined not just by their available resources but it also depends on their expected future permanent income.

The rest of this research paper is structured as follows. Section 2 provides brief literature of previous studies. Section 3 provides data and methodology. Section 4 provides results and discussion, and conclusion in section 5.

2. LITERATURE REVIEW

The elements which play dominant role in increasing rate of domestic saving has at all times is a significant question for economists over the history. It is known fact that one element may not affect the rate of domestic saving. However, different elements together such as gross domestic product & broad money growth rate of country, foreign direct investment, per capita income, inflation, age dependency ratio, macroeconomic certainty level, financial liberalization, and economic policy will influence the rate of domestic saving. Published Literature is available on saving pattern; factors of national saving of various countries of the world .Important published literature on national saving is summarized as under:

Newman et al. (2008) conducted research study on causes of saving which emphasized that three different elements has affected domestic saving performance in Africa. In which one was the ability of a person or individual to save money as his disposable income. The 2nd was the tendency to save as influenced by socio-cultural and financial elements like domestic expenses to educate offspring. However to save and return on saving was the third opportunity. In addition to that size of family has controversial and negative influence on individual savings signifying that grand families have more sources constrained than little one's with disposable earnings and assuredly a worse level of savings. 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 effect on the rate of saving. Rate of real interest and rate of age dependency ratio revealed synthesis consequences 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 of 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. Imran et al. (2010) reported consumer price inflation, public loans, interest rates, government consumption and remittances were as main factors of national saving. They revealed that these independent variables owns long run connection with dependent variable i.e. national savings, somehow or other these variables are co-integrated. Weller and Rao (2010) conducted study on tax revenue and domestic savings. They reported direct relationship of tax revenue and domestic savings. Rehman et al. (2010) studied the causes of families saving and recognized that age has positive connection with rate of savings. Issahaku (2011) reported that age structure and properties does not have major influence on saving. Components which make families or domestic investment were expenditure and occupation. 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. In 2010, Kim analyzed the factors of personal saving in USA from the year 1950 – 2007. He used OLS and found same results to Kulikov et al. (2007) for Estonia. He further found that the coefficients of lagged private saving, real estate loan and tax were negative. This implies that the higher the amount of

personal saving in the period, the lower the amount of private saving in the current period. Kim (2010) however, found that, old dependency ratio to be insignificant in determining personal saving, while the employment rate was only significant at 5 percent. Surprisingly, Kim (2010) found that economic growth negatively impacts personal saving. This implies that during good economic times, people save less and during bad economic times people save more as they expect the bad economic times prevail and as take precaution for the future.

Simleit, Keeton and Botha (2011), the income variable (disposable per capita income) was found to be positive. However, this difference could stem from the different proxy used to measure income in the two studies. Government debt to GDP ratio and inflation had also had a positive impact on household saving. In addition, financial deepening was reported to have a negative impact, while echoed the results of Simleit, Keeton and Botha (2011), and Mahlo (2011) with a negative coefficient for interest rate. Turner and Manturuk (2012) studied that how single, formal, and fundamental factors influence the procedures of decisions making which supported domestic savings in New York. The outcomes revealed the factors of single elements such as requirement of family, upbringing effect of individuals toward savings and their self-reliance in their capability to save. Formal elements allowances, disincentives, and structural values form households' trust in economic institutes and their readiness towards contributing in savings programs.

Mishi (2012) studied the trends and factors of household saving in South Africa with a VECM method from the year 1963 and 2011. The variables included in the VECM were growth rate of real disposable income (GDP per capita), ratio of household saving to household disposable income, interest rate (proxy: risk premium), public saving (proxy was government debt to GDP), and financial deepening (ratio of M2 to GDP). Paxson. (1997) reported negative relation between per capita income and saving. Basely et al. (1998) revealed that opposite income effect was dominated by positive alternatives causes and therefore savings rates has optimistic link or relationship with rate of interest. 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. The connection or link among savings and interest rate was unclear because of a paradox it follows

i.e. it shows an optimistic alternative for upcoming or expected expenditure and simultaneously it created opposite influence on income due to high yields on saved wealth. Ozcan et al. (2003) concluded that saving of peoples was positively affected by income levels in Turkey. Positive relation between per capita income and savings was described by life cycle hypothesis. Metin-Ozcan, et al. (2003) examined the empirical factors of private savings behavior in Turkey from 1968-1994 using the ordinary least squares (OLS) estimation techniques. They identified six different explanatory variables in their study including government policies proxied by public savings; income variable; financial variables measured as the ratio of M2 to gross national product (GNP), and real interest rate on saving deposits; external variable measured as the terms of trade and current account deficit; demographic factors such as urbanization ratio, youth dependency ratio, old dependency ratio and life expectancy ratio; uncertainty variables (inflation). The study found that government savings to Gross Private Domestic Investment ratio (GPDI) and the Turkish economic crisis had significant negative effects on saving behavior. In addition, the study found that a deeper financial system, inflation and terms of trade shocks all had a positive impact on private savings. The effect of the current account deficit as well as the growth of income was statistically insignificant in Turkey. The study found that financial market development, macroeconomic stability, life expectancy, external factors and economic crisis have a significant impact on household saving in Turkey. This study used OLS to estimate time series data, as such the results are not reliable as the OLS would produce biases estimators. Narayan et al. (2005) reported basic components of Oman's national savings, from the year 1977-2003 by means of bound testing approach and ARDL model. Aggregate saving was dependent variable in his study while domestic credit, rate of population, rate of per capita income, money supply rate, current account deficit and urbanization rate were independent variables in his research study. 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. 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. Samantaraya et al. (2014) used Autoregressive Distributive Lag (ARDL) techniques in their study in order to investigate those factors which influencing household savings in India during the year 1992 – 2012. Variables included in their study were age dependency ration, inflation, gross fiscal deficit-GDP, real GDP ratio, personal income tax to GDP ratio, share of agriculture in total GDP, and external terms of trade. They found the existence of a long run association between the variables. Income and age dependency showed a positive impact while interest rate and inflation were negative. The terms of trade and fiscal were insignificant in explaining household saving in India.

3. RESEARCH METHODOLOGY

In this paper the impact of macroeconomic factors on national savings has empirically explored by taking the data from the year 1997-2018 of different Asian countries i.e. Thailand, Indonesia, Malaysia, Philippines, Georgia, China, Pakistan, Russia, Iran, Mongolia, Nepal, India, Vietnam, Turkey, Cambodia, Sri Lanka, Bangladesh, and Bhutan. In this paper Gross domestic saving as a share of GDP was used as proxy for national saving of the selected Asian Countries as dependent variable of this research study while independent variables are BM: Broad Money, TR: Tax Revenue, INF: inflation rate, GDP: Gross Domestic Product and ADR: Age Dependency Ratio. The results obtained from panel data technique were more accurate and generalized because of less Co-linearity between the selected variables. Fixed effects model has used for the robustness in the result because it shows vigorous average errors where Heteroskedasticity is available in data. According to Wooldridge (2001) 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).

Gross domestic saving as a share of GDP was used as proxy for national saving of the selected Asian Countries as dependent variable of this research study. The percentage or rate of gross

domestic product (GDP) held by households in a country is called gross domestic saving (GDS). The overall private corporate and public saving in the form of liquid assets in a country is called domestic savings. An adequate domestic saving rate is an essential condition for attainment of investment or capital formation and growth rate target of a country. (Kazmi, 1993). Saving is a shield which protects economies from bankruptcy. (Mboweni, 2008). 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. There is a positive and durable connection among growth and domestic saving. According to Maddison (1992) and Bosworth (1993) GDP has constructive relationship with the rate of saving and economic growth. Age dependency ratio is the percentage 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 rate of domestic saving of a country. According to Modigliani (1970) 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. According to Masson et.al. (1998) countries with high percentage of working age population present high saving percentage rate as compared with other nations with minimum ratio of working age population. Broad money is the most inclusive method of calculating a given country's money supply. The money supply is the totality of assets that households and businesses can use to make payments or to hold as short-term investments such as currency, funds in bank accounts and anything of value resembling money.. Brookin (2001); Narayan and Siyabi (2005) reported in their researches 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. 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 tax revenue has positive relationship with national savings. It can be defined as when prices of commodities increase and

value of money decrease in an economy. When prices of commodities rises, individuals have to consume extra on purchasing which declines the amount of domestic saving which reveals negative trend. According to (Kazmi, 1993) that there exists a negative connection among inflation and domestic saving.

RANDOM EFFECT MODEL, CHOW TEST AND BREUSH-PAGAN TEST

Random effect h is the most important type of panel data analysis. In this model the mean of all intercepts of the cross sectional units is the value of intercepts. It was applied for robust errors, where Heteroskedasticity was found in data. Chow test was applied to select among Fixed Effects Model and Pooled regression Model. Breush-Pagan Test **was used for** selecting between pooled Model and Random Effects Model, Breusch-Pagan Test has been used in this research study.

HAUSMAN TEST AND REGRESSION MODEL

In this research study Hausman test (1978) was applied to select among Fixed Effects Model and Random effect model. Regression model which was used for the assessment of present research study.

$$GDS_{i,t} = \alpha + \beta_1GDP_{i,t} + \beta_2ADR_{i,t} + \beta_3BM_{i,t} + \beta_4TR_{i,t} + \beta_5INF_{i,t} + \epsilon$$

Where *i* is for country, *t* is for year, GDS: Growth of gross domestic saving, GDP: Gross Domestic Product, ADR: Age Dependency Ratio, BM: Broad Money, TR: Tax Revenue, INF: inflation rate While, α : constant $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are called the regression coefficients, and ϵ is the random error terms.

4. RESULTS AND DISCUSSION

Table. 1 DESCRIPTIVE STATISTICS

VARIABLES	OBS	MEAN	S.D	MIN	MAX
GDS	396	24.12458	11.92634	-11.68198	52.3679
GDP	396	4.432594	3.553076	-12.01673	18.82582
ADR	396	54.81351	13.11578	34.49041	89.65256
BM	396	59.72837	38.35612	5.71303	205.2067
TR	396	11.342009	4.333958	3.884378	27.60997
INF	396	8.8839888	17.32484	-17.01863	186.2147

The above tables reveals descriptive statistics such as mean, standard deviation, minimum and maximum of gross domestics savings (GDS), gross domestic product, age dependency ratio, broad money, tax revenue and inflation during the period from 1997 to 2018 of different Asian countries i.e, Indonesia, Philippines, Georgia, Nepal, India, Vietnam, Turkey, Cambodia, Sri Lanka, Bhutan China, Pakistan, Iran, Mongolia, Malaysia, Russia, Bangladesh and Thailand. According to the above table gross domestics saving has mean value of 24.12 % in gross domestic saving of the selected countries other variables such as gross domestic product, age dependency ratio, broad money, tax revenue and inflation 4.43, 54.8, 59.7, 11.3 and 8.8 respectively while the minimum values of gross domestics saving, gross domestic product, age dependency ratio, broad money, tax revenue and inflation are -11.68, -12.01, 34.4, 5.71, 3.88 and -17.0 respectively. The maximum values of gross domestics saving, gross domestic product, age dependency ratio, broad money, tax revenue and inflation are 52.36, 18.8, 89.6, 205.2, 27.6 and 186.2 respectively.

Table.2 CORRELATION MATRIX

Variables	GDS	GDP	ADR	BM	TR	INF
GDS	1.0000					
GDP	0.1304	1.0000				
ADR	-0.5254	-0.0318	1.0000			
BM	0.5869	0.1005	-0.4280	1.0000		
TR	-0.0175	-0.0217	-0.3407	0.1280	1.0000	
INF	-0.0831	-0.2368	-0.0039	-0.2726	-0.0400	1.0000

The above table reveals the correlation matrix of dependent and independent variables for Sri Lanka, Bhutan China, Pakistan, Iran, Mongolia, Malaysia, Russia, Bangladesh, Thailand, Indonesia, Philippines, Georgia, Nepal, India, Vietnam, Turkey and Cambodia, for the period from 1997 to 2018. National saving have positive correlation with gross domestic product and broad money, but have negative correlation with age dependency ratio, Tax revenue and inflation.

Table. 3 CHOW TEST

S.No	Variables
1	GDP = 0
2	ADR = 0
3	BM = 0
4	TR = 0
5	INF = 0

Chi2 (5) = 83.38
Prob> chi2= 0.0000

This table was used for the selection purpose of fixed effect model and Pooled OLS Model. P Value of chow test indicates that P value is less than 0.05 so we reject null hypothesis because fixed effects model is more suitable than pooled regression model.

Table. 4 BREUSCH AND PAGAN LAGRANGIAN MULTIPLIER TEST

	Var	SD = sqrt (Var)
GDS	143.3375	12.93634
E	20.4322	4.5202
U	51.68923	7.189522
Var(u) =	0	
Chibar ² (01) =	1404.47	
Prob > Chibar ² =	0.0000	

The variation and SD of national saving was 143.33 and 12.93 respectively. On the basis of p-value we reject null hypothesis which indicates that pooled OLS model is better than random effects model.

Table. 5 HAUSMAN TEST

Variables	Fixed Effect Prob.	Random Effect		Var(Diff.)
GDP	0.272709	0.280152	0.000049	0.2876
ADR	-0.113456	-0.115012	0.000092	0.8712
BM	0.043232	0.055705	0.000045	0.0622
TR	0.063976	0.024447	0.000286	0.0195
INF	-0.030807	-0.029327	0.000001	0.1477

Test Summary	Chi-Sq Statistic	Chi-Sq. d.f	Prob.
Cross-section	15.874442	5	0.0046

The above table 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. The p-value of chi² is .0046 which is less than .05. Under this assumption fixed effect model is more efficient than random effect model.

Table. 6 FIXED EFFECT MODEL

Dependent variable: NS

	Coefficient	Std. Error	t-ratio	p-value
Const	26.92347	3.379058	7.967746	0.001
GDP	0.272709	0.074310	3.669874	0.003
ADR	-0.113456	0.038076	-2.979726	0.031
BM	0.043232	0.019286	2.241646	0.025

TR	0.063976	0.090891	0.703879	0.481
INF	-0.030807	0.015350	-2.006939	0.045

R-squared	0.864352	Adjusted R-squared	0.856352
F Statistic	108.0349	P-value (F)	0.00000

It can be observed that gross domestic product, age dependency ratio, broad money and inflation were statistically significant because the P value of these variables are less than 0.05 i.e. 0.003, 0.031, 0.025 and 0.045 respectively. The value of R-squared shows that independent variables explains 86 % of the entire panel's variation. The coefficient of fixed effect model shows that gross domestic product, broad money and tax revenue have positive effect on gross domestic saving while age dependency ratio and inflation, have negative effect on gross domestic 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 same to the results of the Mckinnon (1973) and Shaw (1973) they revealed that increase in the interest rate of 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. Age dependency ratio are statistically significant and coefficient of age dependency also show negative effect on gross domestic saving. Results of age dependency are same to 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. Broad Money was statistically significant and have positive effect on gross domestic saving. Result of money supply was same to the results of of Joshi. Joshi (2007) conducted investigation on the domestic savings, capital account of the balance of payment. He used explanatory variables for the study of capital formation. 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. Tax revenue have positive effect on gross domestic saving of the selected Asian countries. But the results of tax revenue has non-significant effect on gross domestic saving. Our study results are same with Rao (2010). He conducted a study on tax revenue and domestic savings, the result showed that they have direct relationship among each other. The tax revenue has positive relationship with National Savings. Inflation has negative effect on gross domestic savings and having statistical significant value. Our result of inflation is similar with the results of Muradoglu et al. Muradoglu et al (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 factors of national savings. Their results indicated that inflation has significant relationship with savings.

5. CONCLUSIONS & RECOMMENDATIONS

This paper has empirically explored some important factors of national saving such as broad money, tax revenue, gross domestic product, age dependency ratio and inflation from the year 1997 to 2018. The coefficient of fixed effect model shows that gross domestic product, broad money and tax revenue have positive effect on gross domestic saving while age dependency ratio and inflation, have negative effect on gross domestic savings. It is suggested that in future authors may use primary data for papers publications on the topic of national saving because the primary data will depict accurate impact of the factors of national saving in countries of the world. Maximum independent variables will generate more valuable and accurate reports which may improve understanding on the subject as well as quality of future research studies. Proper policies may be framed and adopt for financial institutions by the selected countries in the study for the purpose to achieve main goal of economic growth, capital formation.

REFERENCES

1. Agrwal, P. "The relation between savings and growth: Cointegration and Causality Evidence from Asia, Bombay." *Indira Gandhi Institute of Development Research* (2001).
2. Aleemi, Abdur Rahman, Shuaib Ahmed, and Muhammad Tariq. "The Determinants of Savings: Empirical Evidence From Pakistan." (2014).
3. Ando, Albert, and Franco Modigliani. "The "life cycle" hypothesis of saving: Aggregate implications and tests." *The American economic review* 53, no. 1 (1963): 55-84.
4. Aron, Janine, and John Muellbauer. "Monetary policy and inflation modeling in a more open economy in South Africa." (2008).
5. Attanasio, Orazio P., Lucio Picci, and Antonello E. Scorcu. "Saving, growth, and investment: a macroeconomic analysis using a panel of countries." *Review of Economics and Statistics* 82, no. 2 (2000): 182-211.
6. Basely, T., and Costas Meghir. "Do tax incentives raise private saving." *World Bank Document* (1998).
7. Blomstrom, M., R. E. Lipsey, and M. Zejan, 1996, Is fixed investment the key to economic growth? *Quarterly Journal of Economics* February, 269-276.
8. Bonham, Carl, and Calla Wiemer. "Chinese saving dynamics: the impact of GDP growth and the dependent share." *Oxford Economic Papers* 65, no. 1 (2012): 173-196.
9. Bosworth, B. P. "Saving and Investment in a Global Economy (Washington: Brookings)." (1993).
10. Carroll, Christopher D., and David N. Weil. "Saving and growth: a reinterpretation." In *Carnegie-Rochester conference series on public policy*, vol. 40, pp. 133-192. North-Holland, 1994.
11. Chaudhry, Imran Sharif, Muhammad Zahir Faridi, Muhammad Abbas, and Furrukh Bashir. "Short run and long run saving behavior in Pakistan: An empirical investigation." (2015).
12. Corbo, Vittorio, and Klaus Schmidt-Hebbel. "Public policies and saving in developing countries." *Journal of Development Economics* 36, no. 1 (1991): 89-115.

13. Denizer, Cevdet, and Holger C. Wolf. "The saving collapse during the transition in Eastern Europe." *The World Bank Economic Review* 14, no. 3 (2000): 445-455.
14. Dusenberry, J.S. *Income, Saving and the Theory of Consumer Behavior*, Harvard (1949).
15. Edey, Malcolm, and Luke Gower. "National saving: trends and policy." In *The Australian Economy in the 1990s*, papers from the annual Reserve Bank of Australia conference, pp. 24-25. 2000.
16. Faridi, Muhammad Zahir, and Furrukh Bashir. "Households Saving Behaviour in Pakistan: A Case of Multan District." *Pakistan Journal of Social Sciences (PJSS)* 30, no. 1 (2010).
17. Friedman, Milton. *A theory of the consumption function: A study by the National Bureau of Economic Research*. Princeton University Press, 1957.
18. Fuller, Kathleen, and Benjamin M. Blau. "Signaling, free cash flow and "nonmonotonic" dividends." *Financial Review* 45, no. 1 (2010): 21-56.
19. Gale, William G., and Peter R. Orszag. "Budget deficits, national saving, and interest rates." *Brookings Papers on Economic Activity* 2004, no. 2 (2004): 101-210.
20. Gavin, M., Hausmann, R. and E. Talvi "saving behaviour in Latin America: Overview and Policy issues, in: Hausmann, R., Reisen, H. (eds), *Promoting Savings in Latin America*. Organization for Economic Cooperation and Development and Inter-America Development Bank, Paris. (1997).
21. Giovannini, Alberto. "Saving and the real interest rate in LDCs." *Journal of Development Economics* 18, no. 2-3 (1985): 197-217.
22. Gujarati, Damodar N. *Basic econometrics*. Tata McGraw-Hill Education, (2012).
23. Hausman, Jerry A. "Specification tests in econometrics." *Econometrica: Journal of the Econometric Society* (1978): 1251-1271.
24. Heer, Burkhard, and Bernd Süßmuth. "The savings-inflation puzzle." *Applied Economics Letters* 16, no. 6 (2009): 615-617.
25. Hussain, Mumtaz, and Oscar T. Brookins. "On the determinants of national saving: An extreme-bounds analysis." *Review of World Economics* 137, no. 1 (2001): 150-174.

26. Irshad Ali., Ibrahim and Owais Ahmad. Effect of tax revenue on national saving of Pakistan. "International Journal of Economics. (2014)
27. Jappelli, T and M. Pagano., Savings, Growth and Liquidity Constraints, *Quarterly Journal of Economics*, 109: 83-109. (1994)
28. Joshi, Himansu. "The role of domestic saving and foreign capital flows in capital formation in India." *RBI Occasional Papers* 28, no. 3 (2007).
29. Kazmi, Aqdas Ali, and Faiz Bilquees. "National Savings Rates of India and Pakistan: A Macroeconometric Analysis [with Comments]." *The Pakistan Development Review* 32, no. 4 (1993): 1313-1324.
30. Kazmi, Aqdas Ali, and Faiz Bilquees. "National Savings Rates of India and Pakistan: A Macroeconometric Analysis [with Comments]." *The Pakistan Development Review* 32, no. 4 (1993): 1313-1324.
31. Kazmi, Aqdas Ali. "A Study on Saving Functions for Pakistan: The Use and Limitations of Econometric Methods." (2001).
32. Khan, Ashfaq H., Lubna Hasan, Afia Malik, and Beatrice Knerr. "Dependency ratio, foreign capital inflows and the rate of savings in Pakistan [with comments]." *The Pakistan Development Review* 31, no. 4 (1992): 843-856.
33. Khan, Naheed Z., Eric Rahim, and Zafar Mahmood. "Foreign Aid, Domestic Savings and Economic Growth (Pakistan: 1960 to 1988)[with Comments]." *The Pakistan Development Review* 32, no. 4 (1993): 1157-1167.
34. Khan, Saleem M. "Domestic resource mobilisation: a structural approach." *The Pakistan Development Review* 32, no. 4 (1993): 1067-1078.
35. Kim, Myeong Hwan. "The Determinants of Personal Saving In the US." *Journal of Applied Business Research (JABR)* 26, no. 5 (2010).
36. Komicha, Hussien Hamda. Farm household economic behaviour in imperfect financial markets. Vol. 2007, no. 78. 2007.
37. Kulikov, Dmitry, Annika Paabut, and Karsten Staehr. *A Microeconometric Analysis of Household Saving in Estonia: Income, Wealth and Financial Exposure*. Eesti Pank, 2007.

38. Loayza, Norman, Klaus Schmidt-Hebbel, and Luis Servén. "What drives private saving across the world?." *The Review of Economics and Statistics* 82, no. 2 (2000): 165-181.
39. Lucas, Robert E. "On the mechanics of economic development." *Journal of monetary economics* 22, no. 1 (1988): 3-42.
40. M.I.Khan et al (2017) determinants of national saving: an evidence from south Asian countries "European Academic Research vol. v, Issue 8/ November 2017".
41. Maddison, Angus. "A long-run perspective on saving." *The Scandinavian Journal of Economics* (1992): 181-196.
42. Mahlo. N. Determinants of household savings in South Africa. University of Johannesburg. (2011).
43. Masson, Paul R., Tamim Bayoumi, and Hossein Samiei. "International evidence on the determinants of private saving." *The World Bank Economic Review* 12, no. 3 (1998): 483-501.
44. Mboweni, T. "Monetary Policy, Inflation targeting and inflation pressures: in address by Governor of the south African Reserve Bank, to the Bureau for Economic Research Annual Conference, Johannesburg, 22 May.
45. McKinnon, Ronald I. Money and capital in economic development. Brookings Institution Press, 2010.
46. Modigliani, Franco. "Life cycle, individual thrift, and the wealth of nations." *The American Economic Review* 76, no. 3 (1986): 297-313.
47. Modigliani, Franco. "The life cycle hypothesis of saving and intercountry differences in the saving ratio." *Induction, growth and trade* (1970): 197-225.
48. Muradoglu, Gulnur, and Fatma Taskin. "Differences in household savings behavior: evidence from industrial and developing countries." *The Developing Economies* 34, no. 2 (1996): 138-153.
49. Narayan, Paresh Kumar, and A. L. Saud. "An empirical investigation of the determinants of Oman's national savings." *Economics Bulletin* 3, no. 51 (2005): 1-7.
50. Narayan, Paresh Kumar, and Seema Narayan. "Savings behaviour in Fiji: an empirical assessment using the ARDL approach to cointegration." *International journal of social economics* 33, no. 7 (2006): 468-480.

51. Nga, Marie-Therese. "An investigative analysis into the saving behaviour of poor households in developing countries: with specific reference to South Africa." PhD diss., University of the Western Cape, 2007.
52. Ozcan, Kivilcim Metin, Asli Gunay, and Seda Ertac. "Determinants of private savings behaviour in Turkey." *Applied Economics* 35, no. 12 (2003): 1405-1416.
53. Paxson, Christina H., and Angus Deaton. *Saving, growth, and aging in Taiwan*. National Bureau of Economic Research, 1993.
54. Reinhart, Carmen, Masao Ogaki, and Jonathan Ostry. "Saving behavior in low-and middle-income developing countries." (1995): 38-71.
55. Samantaraya,A., and Patra,S. *Determinants of Household Savings in India: An Empirical Analysis Using ARDL Approach*. Economics Research International, 2014.
56. Samwick, Andrew A. "Is pension reform conducive to higher saving?." *The Review of Economics and Statistics* 82, no. 2 (2000): 264-272.
57. Schultz, T. Paul. "Demographic determinants of savings: estimating and interpreting the aggregate association in Asia." (2005).
58. Simleit, C., Keeton, G., and Botha, F. The determinants of household savings in South Africa. *Studies in Economics and Econometrics*, 35(3), 1–20. (2011).
59. Sinha, D., and Sinha, T., Cart Before Horse? The Saving-Growth Nexus in Mexico, *Economics Letter*, 61: 43-47.(1998).
60. Solow, Robert M. "A contribution to the theory of economic growth." *The quarterly journal of economics* 70, no. 1 (1956): 65-94.
61. Syden, Mishi. "Trends and determinants of household saving in South Africa." *Economic Affairs* 59, no. 2 (2014): 191.
62. Teshome, Girma, Belay Kassa, Bezabih Emanu, and Jema Haji. "Saving patterns of rural households in east hararghe zone of Oromia National Regional State, Ethiopia." *Journal of Development and Agricultural Economics* 6, no. 4 (2014): 177-183.
63. Vincelette, Gallina A. *Determinants of saving in Pakistan*. The World Bank, 2006.

64. Weller, Christian E., and Manita Rao. "Progressive tax policy and economic stability." *Journal of Economic Issues* 44, no. 3 (2010): 629-659.
65. Wooldridge, Jeffrey M. *Econometric analysis of cross section and panel data*. MIT press, 2010.