



## OUTFLOW OF HUMAN CAPITAL AND HEALTH SECTOR IN PAKISTAN

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### ABSTRACT

This paper reviews the impact of economics conditions on human capital outflow using the item series data over the period of 1981-2015. There has been much deliberation about many problems of migration of physician's from developing to developed countries and presence of unemployment resulting from minimum wage. For this purpose, we applied the integration test innovation accounting approach to serve an effective relationship between variables human capital flow is increased due to poor economic conditions. Due to decrease in value in local currency from Pakistan to rest of the world an increase and uniquely distribution of income is also a major factor. Recent study is a good effort and this may provide the new way to policy makers for solving the problem of the human capital outflow and handle the sorrow economic conditions In Pakistan. Pakistan health care system is facing the various issues like resource scarcity gender insensitivity and efficiency and lack of functional specificity and accessibly for checking the stationary of variables unit root test is used. Autoregressive distributed lag approach is used for counteraction among the variables of the model then the estimated results on economic group show that decentralized economic affair expenditures have the negative effects show the significant impact over the selected time period. The results show that this decentralization effect on the economic growth is harmful for economic affairs expenditure. This is showing that, by the basis of empirical process, in the case of Pakistan the decentralized of economic affairs expenditure is baleful. So, that it's better for the Pakistan to try & use the centralized of economic affairs expenditure for the enthusiastic economic growth.

**Keyword:** Health Sector, Human Capital Outflow, Pakistan

**JEL Codes:** I01, J24

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## **I. INTRODUCTION**

Since, the 1960's there has been an increase in the educational gap between U.S immigrants and natives. The United States self-assurance on being a nation has full confidence to absolving the successfully from the globe. To ever change in the culture for the successful integration of immigrants and their children denote to the economic energy. Americans have to give the opportunities to immigrants & their children to better their life and fully integrate into the U.S society, also to reform immigrants have become Americans cradle and Americans identity and citizenship. By the services in the military to preserve the united states, fostering technological innovations, harvesting its crops, and enhance everything. 2015 marked the 50<sup>th</sup> anniversary of the passage of the Immigration Act of 1965, which began the most recent period of mass immigration of the United States. There are pull and push factors which play their role in stimulating human capital outflow from developing countries to develop economics. Human capital is a measure of a skill, education, capacity and attribute of labor which influence their productive capacity and earning potential: "The Knowledge, skills competencies and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances". In agriculture & manufacturing, human capital was easier to measure. The human capital of an assembly line worker could be measure in simple terms of productivity e.g. the number of widgets produced per hour. Human capital may be strongly to the physical strength & quantity of coal produced per day. Specialization & division of labor allow worker to concentrate a specific tasks & increased the specialization of skills. (Through Specialization can also lead to boring, reparative jobs & limited skill development of workers. "The greatest improvements in the productive power of labor seem to have been the effect of division of labor" (Adam Smith).

"Basic education to improve literacy & numeracy has an important implication for a basic of human capital. An economy dominated by state monopolies is likely to curtail individual creativity and entrepreneurs. An environment which encourages self-employment and the creation of business enables greater use of potential human capital in an economy." This paper contributes that healthcare sector is the category of stocks relating to medical and healthcare goods or services. The health care sector includes, hospital management firms, health maintenance organization (HMOs), biotechnology and a variety of medical products. In this paper the division of healthcare services provides access and oversight to the full range of appropriate medical healthcare services to all eligible, Alaskans in need. These services include but are not limited to hospitals, physicians, pharmacy, dental, vision, durable, medical equipment and transportation. Unfortunately, Pakistan is facing high inflation and unemployment and less domestic investment for new job creation etc. Pakistan is the sixth most populous country of the world with more than 40% population living below poverty line, inflation remains between 10 and 22% and unemployment rate is more than 5% throughout the history of Pakistan. Migration is an activity of human tribes here to there. Globalizations push the phenomena of international migration or human capital outflow from one country to another. In this paper we will take the skilled worker outflow for earning household under consideration. This phenomenon is mostly seen under developing country but some developed countries also have same phenomena but on very minor level. Most immigrants are received by Canada. Human capital outflow happens because of high per capita income, macroeconomic stability and high living standard, but in Pakistan we are facing high inflation and unemployment, lower real wages and less domestic investment. Pakistan is 6<sup>th</sup> popular country having 40% population living below poverty line, and inflation remains between 10% to 22% and unemployment is more than 5%. Every year, millions of family & workers crossed international borders for high payments. Migrants received risk of society and face migration cost.

## **II. LITERATURE REVIEW**

Jayachandran and Muney (2008) examine that a person will invest more if the return profit is greater or equal to investment better life expectancy results in increase human capital and stronger economic growth. This idea theoretically presented by (Porath 1967, Ozean et al., 2000, Soares 2005, Murphy and Topel, 2005). Before schooling death does not affect returns to education. Health effects on individuals and their investment in education through increase life expectancy. The fact of more children and less education would not affect society if this is for both boys and girls. From last fifty years, longevity has become better in developing country from welfare gain when compare to welfare gain from incomes growth longevity improvement also benefit human capital accumulation. We examined maternal mortality rate (MMR) by

70% between 1946 and 1953, which results in increase in female life expectancy in south Africa, 405 of deaths between 15 to 49 years is due to aids. An increase in human capital accumulation which is due to life expectancy gain is an important factor of public health intervention. When life expectancy declines due to any disease the investment decreases.

Becker (1994) analyzes that human capital revolution began about three decade ago. Human Capital includes schooling training about computer course and expenditure on medical care in a way that they improve health and earning. Many people are moving from one place to another in order to obtain better opportunities. Education and training are two important keys in human capital. Educated people have more earning although they are in less develop countries. Knowledge, skills and values of families has a great impact on their children. Parents who beat their children results in their demotivation. While on the other hand cooperative parents motivate their children. Children who are trained with their age learn more easily. That is why labor market cannot help school drop outs who are unable to read and develop good habit. Parents have a great impact on education and other dimension of their children lives. Some families rich enough that they can afford the expensive of their child while on the hand some children have to help their parents. For such student's governments should lend money to students for their training. The countries who have manage income increase also increase education and training of their labor. In the field of agriculture, education is not very much important because forming knowledge is passed from parents to children. But this is only in traditional economy. Modern farmers are using latest technique of Hybrid, Breeding method and complicated equipment. Education changes technology and increase productivity.

Collins and Davies (2002) study that a huge amount of search is made on effective marginal tax rate, the EMTRs are high and they very according to situation. EMTR does not affect the size of investment which is the important part of composition. In recent years a large amount of tax has imposed on education and training. Problems like, progressivity discourage human capital formation while deduction or credit have opposite effect like they support education. However, net result that tax system encourages or discourages human capital is unknown. ETRS are very helpful in calculating the effect of tax system on human capital. The article highlights to two brought features effective tax rate that how high they are for median person and how they very person to person. For median earners ETR on human capital are considerable. At higher income level total tax rate for male is positive and it is noticed that government give more profit for investment in university education. In many firm's worker receives cost of training. This is in the form of lower wages during training.

Schultz (1961) examine that people attain skills and knowledge but it is not clear these skills and knowledge are a form of capital and this capital is an important part of investment. Expenditure on health and education are clear example to take advantage of better job opportunities. Earning by school going students and workers doing job are equally clear example. The use of extra time to improve knowledge and skills is unrecorded. In this way productivity is increased and quality of work of human is improved. Such investments in human capital results in raise earnings of workers. Economists are important part of wealth of nation. They calculate labor output, human being capacity and all other forms of wealth taken together. Economic growth requires migration of worker. Young workers move more quickly than old workers. Earning affects both health and education. Migratory workers earn less as compare to other workers because they have no schooling, less education and poor health status. Our tax laws differentiate against human capital. Human capital destroys when a person lost his job and earnings and his skills impairs. Racial and religious discrimination are very common in choice of profession. The most important features of economic system are growth in human capital. Without it there would be poverty except for those who have income from property.

Actor et al., (2005) analyze about different problems which are related to the migration of the physicians from developing to the developed countries. However, some studies solve these problems in a planned system. A questionnaire has been designed by experts to solve the problems in India, Nigeria, Pakistan, Columbia and Philippine. The problems are due to the physicians, migration to the develop countries and its effects on health care system. Better income and better opportunities are causes of migration. Physicians can use these skills and opportunities in a better way in developed countries. Islam (2002) examines that Pakistan health care system is facing various issues like resource scarcity gender insensitivity

and inefficiency and lack of functional specificity and accessibility. Because of uncertain economic conditions and heavy external debt and delayed productivity, Pakistan's capacity to fulfill health sector demands is very less. However, devoting in plan give different opportunities in health and social sectors. It is an important step to characterize health care services in a particular manner with specification of functions. Another important step is the addition of current vertical programs within a structure of need base comprehensive primary health care system. The most important part of any reform is to promote a public private partnership to share basic primary health care and public health services. Pakistan should make health care gender specific through training programs for service providers along with participation of community in process of decision making. Nowadays comprehensive health sector reform is a demand of Pakistan. Health protection and promotion must receive priority through behavior changes and environmental factor. Each region of Pakistan has an independent regional health board and professionals who provide care services. There would be a separation between services providers and service financials which will improve system. Functional specificity element should be strengthened. Health care system should be gender specific. System must also make women aware of their health needs and fulfill their demands. Pakistan requires political freedom economics facilities and social opportunities to stop corruption.

Bloom and Canning (2003) examine that health is an important part of a person welfare and living standard. Most common issues in shaping in human capabilities and behavior are in health and debt issues. Infectious diseases forced public to control them. Health and large medical bills create a need for insurance. In developing countries most successful method of improving health is involvement of public sector. The main cause of poor health and premature death in developing countries are infectious diseases. They can be controlled through clean water, sanitation system and vaccination programs. However, developing countries have limited budget and there are many departments where there is a need for government spending. Government spends on education, transport and communication structure have a positive impact on economic growth. The WHO report provides a very strong argument to transfer money from developed countries to poor countries where people are suffering dangerous diseases by controlling a small number of diseases such as TB. By vaccination and sanitation, we can attain numerous benefits like save lives and healthy communities. The main issues are not spending on health would be good whether spending on health is better than limited funds available in developing countries. Economic growth removes poverty from a country allowing it to develop and removes the need of aid. This brings progress but also makes the country dependent on aid which effects development. This aid is useless and increases problems. Most aid is not free but available in the form of loan and its interest on very high. So, developing countries have to face many problems due to this. So, if we spend on health it is a best investment in developing countries because healthy people work hard and increase productivity of countries.

Ali and et al., (2016) study that human capital and economic growth in Pakistan. To measure developmental success in human capital, health, education and income per capital is very important. Education, health and housing are very important part of economic growth. Just income is not enough for human capital and economic growth. Economic growth is increased by services and technology. Role of human capital is very important for economic growth and power of economic growth. Any country which lacks of skills, knowledge and trained people is not able to achieve development and economic growth. Education increases productivity and efficiency of people. This study gives information about person capital and growth. Education has a positive impact on financial growth. In Pakistan capital investment is very less which declines the ability of human capital. Pakistan invests more on non-productive expenditure which is dangerous for Pakistan economy. Pakistan should increase creative spending because non-creative spending had a bad impact on financial growth. The main theme of this study lies in classification of economic growth of Pakistan.

Stark and Wang (1999) examine insufficiency in human capital the main cause due to which poor countries remain poor. Human capital is due to an individual decision but individual does not keep in mind positive aspects that human capital gives in production. As a result less human capital is achieved but if human capital is achieved more than it is beneficial for economy. Sometimes human capital is lost through migration leakage. The increase in productivity of an individual in close or small open economy is increased by human capital. An individual's choice about investment depends upon his social point of

views, taxes, migration and on balance insufficiencies. The positive results of migration of welfare gain are applied when all individuals can respond. Kinfu and et al., (2006) examine that health workers are very important part of health system because they provide care services and manage emergencies. Some countries are facing shortage of health workers. The main cause of this is migration, retirement and sometimes early death. Some workers leave health workforce due to illness of further studies and other due to migration. This affects the team work and quality of cost of work is decreased. This analysis is for doctors, nurses and midwives. This article highlights newly entered health workers deaths and retirement. A strong and powerful analysis is required for each. In many countries this shortage cannot be fulfill and time is required to reach the target. These shortages can be minimized by training, more working and providing facilities to health worker which improve their health and status.

Ali et al., (2014) analyze the effects of sorrow economic conditions on human capital outflow by using time series data during 1975-2012. For this purpose, we apply integration test and innovation accounting approach to observe an effective R/S between variables. Then results assure the integration presence between the variable. Human Capital flow is increased due to poor economic conditions. Due to decrease in value in local currency from Pakistan to rest of the world an increase and unequal distribution of income is also a major factor. Recent study is a good effort and this may provide the new ways to policy makers for solving the problem of the human capital outflow and handle the sorrow economic conditions in Pakistan. Our intentions were to check the effect of the sorrow condition on human capital outflow using time series data An unequal distribution of income also play an important role is skilled human capital outflow we can also use as a tool to enhance the economic conditions. In the meaning of policy suggestions, outflow of human capital declines the unemployment thought which promote the economic activities in the country. Government also helps in creating new jobs which will also increase production level as well as the export level in the country.

Abbas (2001) studies the role of human capital on economic development. A complete analysis of developing countries i.e. Pakistan and Sri Lanka was made. He employed the standard growth accounting methodology with human capital specified and production function in which gross domestic product was dependent variable. So, overall empirical evidence of study indicated that human capital played an important role in the growth of the economies for developing countries especially Pakistan and Sri Lanka. Blaho (2016) mentions that health care organizations are very complex. They works together to provide health care services. Health care department have limited budget and it is difficult for than to manage. Most difficult task is to keep a right person in a right position. We should provide benefits to the employees to make them happy and satisfied. Changings should be made in health care system according to advanced technology. Proper training should be given to employees. And other important component is work force management. Contract should be signed to hire new employees. Work force should provide efficient and effective patient services and manage all the administrative task and patient information. Weakness in any of above areas may result an increase expenses. Akram and et al., examine the relationship between the health status and economic growth. There observed a two-way relationship between improved health facilities and economic growth. Health and other type of human capital increase the per capita GDP by increase the productivity of human beings and then some part of this increased income is spent on investment in human capital which furthermore results in per capita growth.

Greiner (2006) studies the time required for getting physical output and formation of human capital. Human capital formation is increased by providing public resources to school. Government when closely examines human capital formation it may overcome all the deficiencies that it is facing during its formation. Increase in productivity results in balance growth rate. However, the result does no effect weather the government is financing human capital or increasing economic growth or not. Financing has very important impact on economies of a country. Manton and et al., (2009) examine that health care is an important sector in US economic growth because increasing health care cost have made US less competitive then its neighboring countries. Investment in aging population save human capital, improve health status and tells about future demand for health. Life expectancy increases with improvement in health component of human capital. Health care system should fulfill unmet demands. Recent studies have been the cure of many untreatable diseases. Health care system has the ability to grow according to need. Investments in biomedical results in increased and improve the quality of human capital. This brings and

increase growth rate. Bong and Kwon (2009) Human capital is actually a mixture of human and capital. Human capital is formed by using human as labor force and by giving them training and education. Human capital helps in increasing wages of people. Human capital is much better than physical capital. Human capital is used for transferring goods and services. Human capital can be increased by learning and this learning affects many sectors. The data of human capital should be efficient and effective.

### III. THE ECONOMICS MODEL AND METHODOLOGY

The objective of this paper is to investigate the relationship between High School, index, Mortality, Personal Remittances Received, Death Rate and Unemployment on Migration of Pakistan for the period 1981 to 2015 using the (ARDL) model. Following the previous methodologies, Ali (2011), Ali (2015), Ali (2018), Ali and Bibi (2017), Ali and Ahmad (2014), Ali and Audi (2016), Ali and Audi (2018), Ali and Rehman (2015), Ali and Naeem (2017), Ali and Zulfiqar (2018), Ali et al., (2016), Arshad and Ali (2016), Ashraf and Ali (2018) Haider and Ali (2015), Sajid and Ali (2018), Ali and Senturk (2019), Kassem et al, (2019) and Ali and Bibi (2020).

$$Y=f(\text{hschl}, \text{dthrt}, \text{mrtly}, \text{unmp}, \text{indx}, \text{prrcvd})$$

Where; y is Migration of Pakistan

Hschl= High School

Dthrt= Death Rate

Mrtly= Mortality

Unmp= Unemployment

Indx= Index

Prrcvd= Personal Remittances Received

Following the long linear form of the function on the model becomes as;

$$\text{Ln migrtn} = f(\text{lnhshl}, \text{ln dthrt}, \text{ln mrtly}, \text{ln unmp}, \text{ln indx}, \text{ln prrcvd})$$

### IV. ECONOMETRIC METHODOLOGY

Mostly time series data has non-stationary problem and the estimated regression results of this data became spurious for policy suggestion (Nelson and Ploser, 1982). All co-integration method also demand the stationarity of the variables. This study comprises with the different econometrics method or used different test to show our result in stationary or significant, fact of time series data that it contain unit root problem and regression results of this data are spurious. For the solution of unit root problem, this study uses Augmented Dickey-Fuller (ADF) unit root test, the calculated results of ADF test are presented in this paper.

**Table 1: Unit Root Test**

Unit root test				
Variables	At Level		At 1 <sup>st</sup> Difference	
	T-Statistics	P-Value	T-Statistics	P-Value
Hschl	1.528219	0.003	-5.083775	0.0002
Drate	-0.814391	0.8022	-5.594400	0.0001
Mig	3.329537	1.0000	-6.558802	0.0000
Mrtly	-1.898969	0.3286	-3.570095	0.0123
Unemp	-1.832155	0.3592	-6.973798	0.0000
PRRcvd	-1.281329	0.6268	-5.226526	0.0001
Indx	1.551697	0.9990	1.462243	0.9987

The Augmented Dickey Fuller (ADF) test is used for checking the stationary of the variables. The results reported in table are describing that High School is stationary at level. While on the other hand High School, Death Rate, Migration, Mortality, Unemployment, Personal Remittances Received are stationary at 1<sup>st</sup> difference. Hence there is mix order of integration among the variables of the model which is suitable condition for applying Auto-Regression Distributed Lag (ARDL) bound testing approach to co-integration.

The results of the Bound Testing are represented in Table 2. The results of Bound Testing approach show the F-statistic is greater than the upper bound value at 5 % so there is co-integration among the variable of the model.

The long Run results of the study are presented in the Table 3. The results show that High School is significant and positive impact on migration. The estimated results show that death rate & mortality are insignificant and have positive relationship with migration. The results highlight that unemployment is insignificant and has positive impact on migration, and finally personal remittances received is significant and has positive relation with the dependent variable (migration).

**Table2: Bound Test Result**

<b>F-statistics= 4.429114</b>		
<b>Level of significance</b>	<b>Lower bound value</b>	<b>Upper bound value</b>
5%	2.62	3.79
10%	2.26	3.35

**Table 3: Long Run Result of Co-integration**

<b>Dependent variable=Migration</b>			
<b>Variable</b>	<b>Coefficient</b>	<b>t-statistics</b>	<b>p-value</b>
H_schl	21158.203	-4.201	0.013
DTH_RATE	1475574.851	-0.798	0.469
MIGRATION	129.702	7.978	0.001
MRTLTY	16670.396	-0.130	0.902
UNEMP	106158.161	1.132	0.320
P_R_RCVD	2983646.457	-3.607	0.022

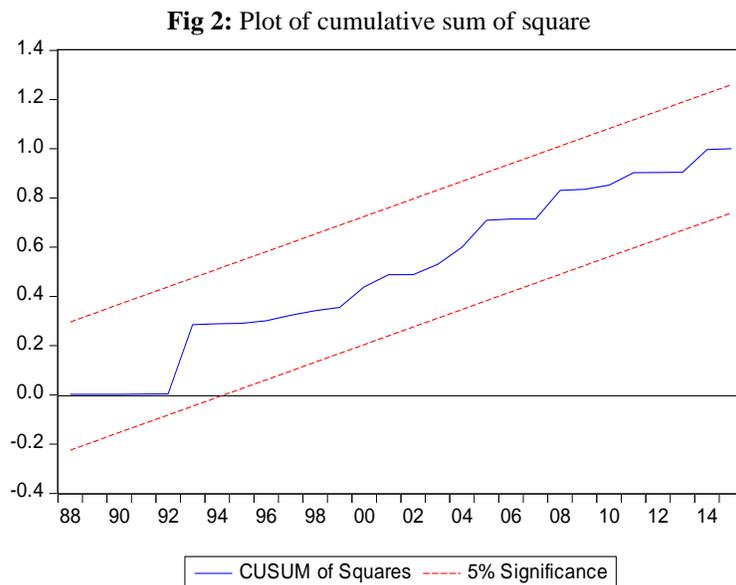
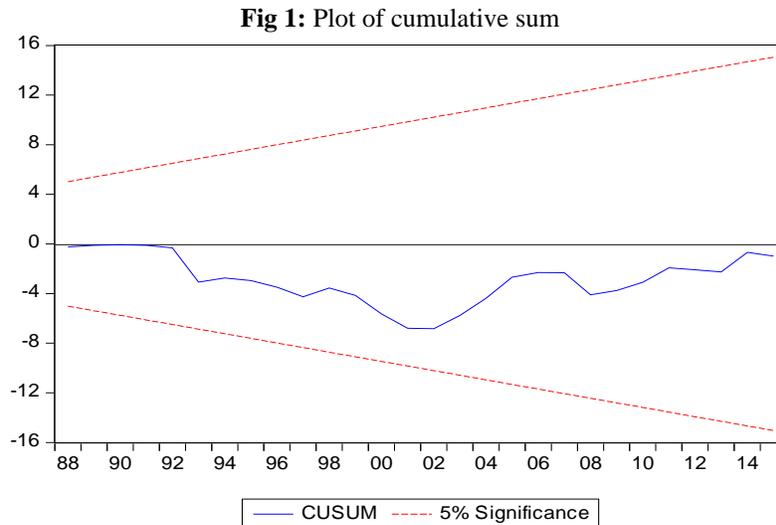
**Table 4: Error correction Model**

<b>Dependent variable=Migration</b>			
<b>Variable</b>	<b>Coefficient</b>	<b>t-statistics</b>	<b>p-value</b>
D(index)	1.159	2.486	0.067
D(H_SCHL)	29843.608	-3.071	0.037
D(MIGRATION)	74.430	2.491	0.067
D(MRTLTY)	422003.468	-1.121	0.324
D(UNEMP)	3617117.579	0.000	0.000
D(P_R_RCVD)	1525576.081	0.000	0.000
D(DTH_RATE)	16088689.840	0.666	0.000
COINTEQ	-0.694	-5.069	0.005

The Short Run results of the study are presented in Table 4. The study uses vector error correction model for investigations the short run dynamic among Index, High School, Migration, Mortality, Unemployment, Personal Remittances Received, Death Rate in the case of Pakistan. The estimation shows that index has positive and significant impact on Migration in Pakistan. The results show that in short run there is negative and insignificant impact on High school. The estimation shows that there is positive and significant. The

result shows that there is negative effect and insignificant relationship between mortality. There is positive and significant relationship between unemployment and Personal remittances received. The negative coefficient (-0.694) of ECM is theoretically correct. The negative and significant value of ECM shows the speed of adjustment from short-run to long-run equilibrium.

The stability of model provides information related to the estimated model of economics growth. The results of cumulative sum (CUSUM) and the cumulative sum of the squares (CUSUMSQ) test are described in Figure 1 and Figure 2. These figures figure that cumulative sum (CUSUM) and the cumulative sum of the square (CUSUMSQ) lie mid the two critical lines which shows that the estimated model is stable:



## V. CONCLUSIONS

The results of the ARDL bound testing approach show that there is cointegration among the variables of the model. The long Run results show that High School is significant and positive impact on migration. The estimated results show that death rate & mortality are insignificant and have positive relationship with migration. The results highlight that unemployment is insignificant and has positive impact on migration, and finally, personals remittances received are significant and has positive relation with the dependent

variable (migration). The Short Run results of the study are presented that the migration. The study uses vector error correction model for investigations the short run dynamic among Index, High School, Migration, Mortality, Unemployment, Personal Remittances Received, Death Rate in the case of Pakistan. The estimation shows that index has positive and significant impact on Migration in Pakistan. The results show that in short run there is negative and insignificant impact on High school. The estimation shows that there is positive and significant. The result shows that there is negative effect and insignificant relationship between mortality. There is positive and significant relationship between unemployment and Personal remittances received. The negative coefficient (-0.694) of ECM is theoretically correct. The negative and significant value of ECM shows the speed of adjustment from short-run to long-run equilibrium. This study concludes that government plays a vital role for reducing the poverty in Pakistan. For this purpose, government should adopt the policies and rules and regulation and also implemented these policies by tax payer.

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