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FINANCIAL DETERMINANTS OF ECONOMIC GROWTH OF PAKISTAN: AN EMPIRICAL ANALYSIS

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Abstract: *The paper attempts to investigate the relationship between Savings and Economic growth of Pakistan by using the time series data from 1972 to 2011. Ordinary Least Square method is used for empirical analysis. The analysis is made in two parts. In the first part, descriptive statistics and correlation matrix are described. In secondpart, multivariate analysis explains how saving of Pakistan is determined byeconomic growth. The study concludes that the employed labour force, realgross fixed capital formation have positive and significant influence on* real gross domestic product.*Exchange rate and foreign direct investment have negative but significant impact*on real gross domestic product. *Real gross domestic savings has positive and insignificant impact on real gross domestic product.Keeping in view the role of savingsand economic growth in Pakistan, it is suggested that Government should provide enabling environment and fiscal incentives for enhancing the foreign direct investment. This will increase the gross domestic product in the country. For this purpose, the industrial and agricultural sectors of the country must be stable. Moreover, there is a need of creating an investment friendly business environment in Pakistan.*

Keywords: *Workers' remittances; Globalization; Deposit rate; Surplus labor; Trade Openness; Pakistan*

I. INTRODUCTION

Savings and economic growth are two important components of macroeconomic analysis both in short run and in long run. Aggregate savings is used to determine the capital stock and standard of living of the economy. From economic point of view, growth in savings plays

an important role to promote capital formation, investment, employment, and output and growth rate of the economy. Savings is not only essential for the growth of the developed economies but it also boosts up the developing countries by increasing the internal resources and reducing the dependence on external resources in the form of foreign borrowing. Therefore, efficient utilization and rapid mobilization of domestic resources are considered as main factors for achieving self-reliance and growth objectives.

Because of inefficient credit and underdeveloped insurance markets, savings are considered as an essential factor to promote the welfare of developing countries. On the one hand, without savings, it is difficult for the households to smooth out unexpected variations in their income, while on the other hand; savings are the only mean to accumulate wealth and assets in the absence of credit and insurance markets. It is generally said that when savings start to rise, the potential to finance investment and to create more opportunities forthe growth of economy may also enhanced.

The situation was mostly observed in the form of growth and capital flows, free flow of international trade and migration of people to America and other countries. During the years from 1990 to 2001, total output of imports and exports of goods and services as a proportion of GDP grew from 32.3 percent in developing countries. While for low to middle income countries, this ratio grew to 48.9 percent from 33.8 percent. Over the period 1990 to 2003, exports grew to $ 7.3 trillion, but such a huge growth was unevenly distributed between poor and rich countries. All the societies will be better off only if they are provided with equal freedom to produce and to exchange among nations andthis will improve the savings, investment, output and stability of economy.

The main objective of the present study is to examine the impact of financial determinants such as exchange rate, gross fixed capital formation, real gross domestic savings,foreign direct investment and employed labour force on economic growth of Pakistan. The study is organized as follows. Savings trends of Pakistan are interpreted in section 2.Section 3 portrays the review of literature at national and international level on the financial indicators and economic growth of Pakistan. While Data source, methodological issuesare explainedin section 4 and 5 respectively while, section 6 discusses an empirical analysis of study. Concluding remarks and policy implications have also been offered in the end.

II. SAVING TRENDS OF PAKISTAN

According to Economic Survey of Pakistan 2010-2011, real GDP is estimated to grow at 2.4 percent depend on the performance of services sector instead of its target of 4.5 percent. Such low growth is because of the lower growth in the output of manufacturing and agricultural sector. It is also observed in table 1 that there is positive relationship between savings and investment. If the savings rates are higher, the investment will also be increased. Both the savings and investment jointly determine the growth rate of economy.

Table 1 Saving trends (As Percentage of GDP- Current Market Price)

Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Growth Rate	2.0	3.1	4.7	7.5	9.0	5.8	6.8	3.7	1.7	3.8	2.4
Total Investment	17.2	16.8	16.9	16.6	19.1	22.1	22.5	22.1	18.2	15.4	13.4
National Saving	16.5	18.6	20.8	17.9	17.5	18.2	17.4	13.6	12.5	13.1	13.8
Foreign Saving	0.7	-1.9	-3.8	-1.3	1.6	4.5	5.1	8.5	5.7	2.0	-0.4
Domestic Saving	17.8	18.1	17.6	15.7	15.4	16.3	15.6	11.5	9.8	9.3	9.5

Source: Economic Survey of Pakistan (2010-2011)

The savings trends of Pakistan economy is shown in table 1. The growth rate of the economy was 2.0 percent in 2000. After that itwas increased very rapidly in the 2003 and 2004.But in the last three years GDP growth remained so slow and declined up to 2.4. In 2003, Pakistan has achieved a high growth of 7.5 percent. It shows a great performance of the country.The foreign savings is negative in year but national and domestic savings growth rate is positive. But after 2003, foreign savings has started increasing up to 8.5 percent in 2007 but it was negative in 2010. After 2003, foreign savings started increasing but domestic savings and national savings was declined up to 9.5 percent of GDP. Pakistan had achieved growth rate of 2.4 percent during 2010-11. The growth was relatively slow due to less domestic savings and national savings. The domestic or household savings can play an important role to increase capital accumulation and attaininghigh growth rate.

III. REVIEW OF THE LITERATURE

Economic Growth has been an important objective of development strategies in most of the LDCS. This is also on the agenda of several worldwide development organizations, like UNDP and the WORLD BANK. Many approaches are in practice towards economic growth including endogenous growth model and Solow growth models. The savings play an important role in economic growth. This has been widely admitted that savings are the strong reason to the

growth process. As we know that savings drives us towards economic growth that is why we have taken stock of all the literature available so far under the perspective of different human development approaches.

Burney and Khan (1992) analyzed the impact of household income and saving behavior of Pakistan. Data was taken from the household income and expenditure Survey(HIES) for the year 1984-1985.The Ordinary Least Squares (OLS) technique was used for estimation. It was found that the propensity to save of the rural household was muchhigher as compared with their urban counterparts. The research concluded that household income and earning status of household head, employment status of household head and occupation of household head were found to be positively related to savings.

Hussain (1995) studied long run trend of the private saving behavior in Pakistan, and compared it with the Southeast Asian economies. The study found that during 1970-92 the saving rate in Pakistan was 50 percent lower than Southeast Asian countries. Econometric analysis was conducted by using time series data for the period of 1970-93. Co-integration methodology was employed to analyze the long run behavior of saving.The research concluded that the proportion of working members of the population,income growth and financial dependency were positively associated with saving behavior.

Agarwal (2000) attempted to analyze the empirical analysis of the determinants ofsavings and investment in South Asia. The study made the causality analysis between saving rate and GNP growth rate. The analysis used Pooled time series data of South Asian countries from 1960-1996 for saving model and from 1960-1998 for investment model. For estimation purposes, Ordinary Least Square Method was employed. Granger Causality test was used to examine the causality among the variables. Variables were used as percentage of GDP. The results of the study showed that Foreign Direct Investment and Net total foreign borrowing were positively affecting total investment and also to private investment. Growth rate of real GDP, money supply, and lagged dependent variable were positively affecting, age, dependency ratio, foreign savings and private saving'srate as well.

Kenrick (2004) demonstrated that remittance had positive impact on financial deepening and policymakers considered that enhancement of remittances flow may influence saving behavior. The author utilized panel data for the microeconomic variable for the period 1983-2001 complied from 18 countries and examined by using OLS method. The research

concluded that in case of income variable, the estimated coefficients were negative and statistically significantly relating to remittance. The country intercept terms was positive and statistically significant for the countries like Bangladesh, China, Costa Rice, Egypt, Indonesia, Korea, Mexico, Philippines, Thailand and Turkey. The estimated coefficient for high income countries was negative and statistically significant. The result implied that high income countries tend to receive less remittance flows than low income countries. Another variable of remittance as a share of the product of income times the interest rate (iY) had positive significant impact on remittance as well as on financial deepening and saving.

Hasnain et al. (2006) estimated the determinants of household saving in the process of economic development in Pakistan during the period 1972-2003.Data used in this study was arranged by State bank of Pakistan in the years 1980-2003, Economic Survey of Pakistan, and World Development Series. Johansen Multiple Co-integration and ErrorCorrection Model were used to estimate long run and short run relationship. The study concluded that Growth rate per capita income, per capita income and interest rate were positively affecting public savings and young dependency ratio, old dependency ratio and inflation rate were negatively influencing public saving in the long run as well as in the short run. ErrorCorrection term -0.05 showed that model would be converged towards long run equilibrium with 0.05 percentage point adjustment each year.

Fasoranti (2007) examined the impact of rural saving mobilization on economic development of rural households. Primary data were collected through questionnaire of 100 respondents from 5 villages of Nigeria. For estimation purposes, Ordinary Least Square method was used. Results of this study showed that income, human capital, investments and assets were positively associated with total savings. It was also found that 98 percent variation in total saving was explained by income, human capital, investment and assets. It was also proposed that rural households should be properly mobilized to join co-operative societies.

Horioka (2009) surveyed the saving behavior of the aged in Japan. The study analyzed micro data for the years 1990-2008. For this purpose, the Family Income and Expenditure Survey were conducted to collect information on saving rats by considering age group of the households head. The study found that dis-saving had been made at retired age, working age and even at early ages. Moreover, there had been a sharp increase in the dis-saving of

the retired aged since 2000 because of the reduction in social security benefits, increase in consumption expenditures, and increase in taxes and social insurance premiums. These findings were consistent with the life cycle model andsuggested that this model was highly applicable in case of Japan.

Chaudhry et al. (2009) examined the effects of foreign debt and foreign debt servicing on saving and investment efforts in country. In this study, annual time series data from 1973 to 2006 was taken from Economic Survey of Pakistan, the Ministry of Finance and from various Annual reports of the State Bank of Pakistan. Augmented Dickey Fuller test was used to test the variables for unit root. Real gross domestic product and its growth rate were found stationary at level 5 percent. All other variables were found stationary at first difference. The study concluded that real GDP and real interest rate were adversely related to savings. The regression coefficients of real interest rate, growth rate of real GDP and lagged investment were according to the theory.

Chaudhry et al. (2010) attempted to deal with the determinants of national savingof Pakistan in the long run as well as in the short run. In this study, time series annualdata from 1972 to 2008 was used. All the variables were taken in million US dollars as apercentage of GDP. The study used Johansson Co-integration approach to examine longrun relationship and VECM for short run dynamics among variables. The resultconcluded that in the long run,CPI, workers remittance, interest rate, exports andgovernment consumption has positive impacts on national savings of Pakistan whilepublic loans negatively influenced the dependent variable in the long run. The short run analysis presented thatremittance as percentage of GDP and rate of interest have positively influence on nationalsaving.

Faridi et al. (2010) estimated the determinants of households saving in Multandistrict of Pakistan. The author used the primary data of 293 respondents. The datawas collected through field survey in 2009-10. In multivariate analysis, multipleregressions using OLS method were made. It was concluded that spouse participation, totaldependency rate, total income of household and size of landholdings had a significantpositive relationship with household saving. While education, household head, children'seducational, expenditures, family size, liabilities to be paid, marital status and value ofhouse had a significant negative relationship with household saving. The study alsosupported existence of Life cycle hypothesis.

IV. DATA, MODEL AND METHODOLOGY

The issues relating to data sources, methodology and model specification are as follows. Time series data of the selected variables for the period 1972-2011 is usedin this analysis.For the empirical analysis, the annual data for the variables of gross fixed capital formation, exchange rate, employed labour force, foreign direct investment and real gross domestic savings was obtained from The Hand Book of Statisticsof Pakistan Economy (2012) which was published by Federal Bauru of statistics. Someof data has also been obtained from the Economic Survey of Pakistan (2011-12).Allvariables are taken in million rupees.

The methodology applied to examine the savings and economic growth of Pakistan is the time series analysis. Whenever an econometric measurement is taken into account there may be some methodological problems in hand. Mostly,the econometrics time series face the problems of non-stationarity and spurious regression. In the presence of non-stationarity or in case of spurious regression the OLS method becomes inefficient. If all the variables are stationary at level I (0) or the value of the DW is greater than R2, the ordinary least square method is useful and applicable. In the present study, we have foundthat the variable meet the property of stationarity at level(0).

Carl Friedrich Gause, a German mathematician in 1974 was introduced the methodof OLS. Under certain assumption, the method of least squares has some very important statistical properties that have made it one of the most popular and powerful method ofregression analysis Ordinary least square method is used to estimate therelationships of the independent variables with a dependent variable. Mostly this method is employed when all the variables arestationary at level. This technique is also important in multivariate data analysis. Themultiple regression equation takes the form as;

Y = β1 + β2X2 + β3X3--------+βnXn + μ

Where

Y= Regression variable

Xi = set of explanatory variables and

μ= disturbance term.

(a) Model Specification

Model specificationdependson multiple regression technique. Assuming the properties of data, we have followedthe log linear model in the study.

$$\text{RGDP} = a_0 + a_1\text{ER} + a_2\text{ELF} + a_3\text{GFCF} + a_4\text{RGDS} + a_5\text{FDI} + \mu_i \qquad (1)$$

RGDP=Real gross domestic product

EX =Exchange rate

ELF =Employed labour force

GFCF= Gross fixed capital formation

RGDS =Real gross domestic savings

FDI =Foreign direct investment

μ_i=Error term

(b) Description of the Variables

Gross Domestic Product:

Gross domestic product is a measure of income and output produced in an economy in a specific period. It is defined as the market value of all final good and services produced domestically during a specific period.

Exchange rate:

The price of one country's currency in term of another country's currency is called exchange rate.The rate at which two currencies are traded with each other is called exchange rate.

Labour Force Participation:

The percentage of working age population (labour force) of age 14 to 64 years who are involved in earning activities is known as the labor force participation.

Gross fixed capital formation

Itcan be estimated using three approaches.

- Commodity flow approach
- Expenditure approach
- Financial approach

Real gross domestic savings:

National Saving

National savings are the sum of private savings and public savings

Private Saving

Private saving is the difference of disposable income and consumption. The term (Y-T-C) is private saving.

Public Saving

Public saving is the difference between government revenues and government spending. The term (T-G) is public saving. (If government spending exceeds government revenue, the

government faces a budget deficit, and public saving is negative and vice versa. So, national saving is shown by the term (Y-T-C) + (T-G).

Foreign direct investment:

Foreign direct investment is the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long run capital and short run capital. Pakistan has been introducing reforms to attract the inflows of investment. Foreign direct investment as positively related to national savings.

V. RESULTS AND DISCUSSIONS

The results are presented in two parts. In first part descriptive analysis and in 2nd partthe results of empirical analysis have been presented.

A. Descriptive Analysis

Descriptive statistics analysis indicates the basic characteristics of the data like Arithmetic Mean, Standard Deviation, Maximum and Minimum values of data series. It also describes the degree of association among the variables. The first column indicates the average of the variables and the other columns indicates the values of standard deviation, minimum and maximum values of the variables of in the data sample.

The table represents the descriptive statistics and pair–wise correlations. The variables are positively linked with each other and the value of mean is the range of minimum and maximum values.Correlation analysis has also been made to check the multicollinearity among the independent variables.

Table 2: Descriptive Analysis of the Variable (Million Rupees)

Variables	Mean	Maximum	Minimum	Std. Dev
GFCF	472705.5	2210921	6812.000	647378.9
ER	32.49228	85.19382	8.681383	23.22863
ELF	31.36219	48.54000	17.98223	8.574971
FDI	47438.64	380893.4	-62.37000	95320.46
RGDS	7314.291	1672.72	948.4644	4971.986

Source: Authors Estimation using E-views statistical software

B. Correlation Matrix

Correlation matrix explains the relationship between explanatory and explained variables. It is used to measure the degree or strength of relationship between two variables and also indicates the problem of multicolinearity. If correlation co-efficient between two

independent variables has absolute value above 0.80 then there will be severe problem of multicolinearity. The correlation matrix is shown below in table 3 which indicates that

Table 3: Correlation Matrix

Variable	RGDP	ER	ELF	GFCF	RGDS	FDI
RGDP	1					
ER	0.66	1				
ELF	0.67	0.76	1			
GFCF	0.75	0.70	0.077	1		
RGDS	0.61	0.61	0.62	0.74	1	
FDI	0.72	0.73	0.61	0.73	0.58	1

The table shows zero order correlation coefficient among variables. According to this matrix exchange rate is moderately related to real gross domestic product .while it has a strong relation with exchange rate. The variables have expected signs of correlation and are not very highly correlated with one another as the value of correlation co-efficient is found to be less than 0.80.

C. Multivariate Analysis

The OLS estimates regarding savings and economic growth are reported intable 4. Column 1 shows the variables named Exchange rate (EX),employed labour force (ELF),Gross fixed capital formation(GFCF), real gross domestic savings, (RGDS) and foreign direct investment (FDI).Column 2 reportsthe estimates of coefficient of the model;Column3 discusses the standard errors. For the reliability of our coefficient values, t test is used whose values are given in 4th column.It determines whether we may reject or may not reject null hypothesis at some level of significance.

Table: 4 Estimates of Savings and Economic (GDP Growthas Dependent variable)

Variable	Co-efficient	Std. Error	T. Statistics	Probability
C	-841795.7	846220.6	-0.994771	0.3271
ER	-76839.93*	17922.86	-4.287258	0.0001
ELF	72087.88***	41472.14	1.738224	0.0915
GFCF	4.847847*	0.784011	6.183395	0.0000
RGDS	20.16148	48.53127	0.415433	0.6805
FDI	-4.103400	3.212910	-1.277160	0.2105
R. Square	0.94	F- statistic	117.90	
Adjusted R. Square	0.93	Prob (F-statistic)	0.00000	
Observation	40	Durbin- Watson	2.056	

Authors Calculation by using E-views

The coefficient of exchange rate has negative significant impact on dependent variable. Exchange rate may have negative impact on the growth which means our export would

becomeless expensive abroad. At the same time our import would appear to be more expensive. As a result their domestic prices of the good will rise. This would create inflation in our country. The prices of imports would also rise this would and this rise in exchange rate would lead towards unemployment and fall in productivity. The variable is significant at one percent level of significance.

Employed labour force is an important factor affecting economic growth. It is observed in the present study that employed labour force has positive and statistically insignificant effect on real gross domestic product. The variable is significant at 10 percent level of significance. It implies that the positive effect of employed labour force on economic growth may be helpful to increase savings as well as investment which may be generated due to higher return on growth .The employment opportunities are created and ultimately the market is extended due to the operation of investment and employment multiplier. With the help of increased manpower the natural resources are efficiently utilized. As the oil, gas, iron, coal, bronze and zinc etc. can be discovered and properly utilized with the help of manpower.

The result shows that the growth is positively related to employment level and shows a statistically significant relation because as employment level rises and the poverty level falls, which in turn fosters the growth level. According to classical theory of employment and output, employment level is determined by interaction of labour supply and labour demand at particular real wage. When this equilibrium level of employment is plugged into production function it determines the equilibrium level of output.

Gross fixed capital formation has positive and significant impact on real gross domestic product.The variable is significant at one percent level of significance. Capital formation plays an important role in the economic growth.The reason of this result may be the increase in stock of capital. The concept of capital formation has great importance in labour surplus countries because in these countries there is more availability of labour due to high population growth rate. The surplus labour can be transformed into human capital through education and skill development. In this way, these resources can be transformed into highproductivity.

Real gross domestic savings has positive but insignificant impact on real gross domestic product. It indicates that people in study area feel responsibility in providing the future

needs of their dependents. It is expected that they save more and more for precautionary measures only to spend in future to support their dependents in meeting health,educational and marriage expenditures. The result indicates that the savings are not properly being invested in economic activities and hence insignificantly affect economic growth.

The value of regression coefficient of foreign direct investment is -4.10. This reveals that one millionadditions in FDI will decrease the GDP to 4.10 million. This effect is negative and statistically insignificant. FDI may have negative effect on the growth of the recipient economy if they give rise to a considerable reverse flows in the form of remittances of profits, mostly if resources are remitted through transfer pricing and dividends. Moreover, FDI can also reduce competition and growth particularly, if the host country government affords extra protection to foreign investors to attract their capital. Dependency school theory claims that foreign investment from developed countries is injurious to the long-term economic growth of developing countries. It argues that developed countries can become rich by extracting labor and other resources from the developing countries. This kind of act causes distortion, hinders growth, and increases income inequality in poor countries. Brecher and Diaz-Alejandro (1977) showed that foreign capital can decrease economic growth by earning more profits in a country with severe trade distortions. In the same way,Hien (1992) explained an insignificant effect of FDI inflows on economic growth in 41developing countries. Singh (1988) found a positive relation between GDP and foreign direct investment. The reason could be that in our country lack of fiscal incentive and political instability is a great hurdle in the way of get proper benefits from foreign direct investment.

VI. CONCLUSIONS AND POLICY SUGGESTIONS

The study examined the savings and economic growth in Pakistan using the time series data over the period of 1972-2011. Our study supports the slow growth theory by neo-classical. These results highlight the importance of savings in order to enhance growth. Exchange rate is negatively and significantly effects gross domestic product. Employed labour forceand gross fixed capital formation has significant positive impact on the GDP. The real gross domestic savings has a direct but insignificant impact on gross domestic product. The more savings provides internal resources to enhance the investment and output as well as employment. In this way not only the internal resources will be available but the

dependence on foreign resources will also decrease. Credit and Physical assets may help to increase productive capacity of an economy (Rahman, et al., 2014).Physical capital and labour force participation rate have positive impact on economic growth in long run. Which suggest the increase in labour force participation, trade openness, improvement in exchange rate and foreign direct invest are necessary for achieving economic growth (Khan, et al., 2015).

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- Government may device policies supportive to enhance private savings and cutting down unproductive expenditure.

- Government may help to provide investment friendly environment such as fiscal incentives for enhancing the foreign direct investment. This will raise the saving and growth in the country.
- Government may provide give micro loans and land to poor for cultivation. Loans and subsidies may be granted to small farmers for enhancing agricultural and diary produce in order to achieve economic growth.
- Government should provide basic health and nutrition facilities in work places so that they can work in healthy environment up to old age and increase their savings growth level.
- Earning opportunities for the households may be created so that people can work according to their choices as part time, hourly, weekly and full time for more savings and growth.
- Development expenditures may be enhanced so that real output of the economy can increase.
- If taxes are to be imposed then focus must be on direct taxes and taxes should be in limit not to reduce to output and employment and the policy may be made to reduce the tax evasion.
- Tax concession may be granted to investors where necessary for GDP Growthso that investment in the economy be increased which will eventually cause growth and employment to increase.

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