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Addressing Per Capita Income: Study of Different Economic Measures as a Percentage of GDP, Time Series Analysis of Pakistan (2004-15)

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Abstract: *Issue of per capita income is debatable in different forums world-wide and a sign of showing the economic stability, in this regard research was carried out to predict the per capita income with different economic measures like wise: (Total Public Debt, Fiscal Deficit, Tax Revenue, and Defense Expenditure) as a percentage of GDP and Real GDP growth, data were collected from State Bank of Pakistan and Ministry of Finance Government of Pakistan, used SPSS-18 for entering the data and analysis through correlation and regression, hence forth concluded that public debt must be utilized properly in productive activities, policies must be formed in support of real GDP which are the major predictors of per capita income, defense expenditure must be looked out in a way so that proper allocation of funds towards productive activities can be made to strengthen the per capita income.*

Key Words: *Per Capita Income, Fiscal Deficit, GDP, SBP.*

1.0 Introduction

The economy of Pakistan is facing the external as well as domestic shocks, the budget deficit is key factor and the energy shortfall is considered main indicator which reduce the growth of country. There is no any satisfactory growth in gross domestic product because it is unchanged level define and that is lower than required size of Pakistan in order to sustain or boost in employment, revenue and decrease in poverty.

Fiscal inequity is basic approach for policy making which can be encountered by the policy makers through formulating economic strategies. When we are taking about fiscal deficit we analyzing actually two thoughts as well, first we encounter to calculate fiscal deficits and finance to bring it from negative value into positive. That deficit is financed either from domestic debt or from foreign debt, sometimes from both sources.

Ilaboya & Izedonmi, (2013) studied to investigate and evaluate the debt and active growth, a Nigerian data using time series analysis from 1980 to 2010, through co-integration and error correction set that is connected with basic economics and for economic development is estimated. It describes wide run

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stability values included that is co-integrated, variables are estimated as there in the results to examine, and found reliable with accessible empirical literature on the debt and development connection. Particularly there are facts available to the relevant negative link into public debt loads is very high and progressive development of economy. The percentage of debt service to export was found to have negative and relevance effect on progress development of economy.

Blackley, (1986) the most of the revenue is collected by government of Pakistan through collection of taxes, the gap between overall taxes and overall expenditure is main anxiety of policy makers, researcher also explained that enhancement in revenue causes to increase in expenditures therefore a small portion of deficit is eliminated.

Barro, Robert. J, (1974) defined that increase taxes and borrowing payable for government spending .The country of parliamentary structure of states which choose to government spending although found the possessions of funding to expenditure, Increasing expenditures like Pakistan actually look this position. Furthermore continuous efforts required for public sector improvement to improved growth spending.

1.1 Problem Statement:

As the situation of Pakistan is critical by looking at the past scenario and overall economic position, the public debt is going to increase day by day, Fiscal deficit, defense expenditure are also increasing but the common people of our country is suffering a lot by looking at the per capita income of the country, the aggregate demand is not in a way which is expected, un employment is increasing from previous level. Keeping in view the above situation researchers wants to highlight the per capita income which must be raised, research was carried out by analyzing different economic measures.

1.2 Objectives of the Study:

- ✓ To present a handsome theory for increasing the per capita income of Pakistan
- ✓ Purchasing power in the economy is topmost priority, how best to increase it.

1.3 Justification of Study:

Study will surely help policy makers to revise the policies regarding fiscal deficit, military expenditure, public debt, and bases for collection of tax revenue so that the per capita income may be raised, and if once per capita income raised definitely our purchasing power, GDP, and then exports will improve and it will effects on our overall economy and foreign reserves, currency valuation.

2.0 Literature review:

Antoine & Khoury, (2006) choose endogenously to check all together the continuation of entry stage of per capita income about the effect of services trade openness on economic boost of high and low income counties. They approximate the growth equation with standard yearly boost rate of per capita as a dependent variable influenced by independent variables being a vector of boost, conditioning variables, openness measures of telecommunication and financial service sectors and start level of per capita income. The index of openness for financial and telecommunication sectors. The results through ordinary least square (OLS) estimates without a threshold do not imply a significant impact of openness in telecommunication and financial services on progress development of economy. However, used the entry in regression model, the results shows significant positive association involving openness into telecommunication service of economic development for nations below an entry level of income and for financial services a relevance link between openness and development in states with income per capita above the approach level.

Hussain, (2004) applied the method in Granger Causality to conclude and link between whole government spending with overall tax income with yearly improvement, the study find out a company change and impact from spending towards income, signifying the liking of controlling the expenditure results to decrease the tax incomes-spending shortfall. The main point to decrease the expenditures cannot exclusively be much admired and to main focus on decreasing in the range of big expenditure expend for shifting towards growth and extra investment spending, and also affecting towards Pareto best results and the existence of relying on the political factor affect in formative the liking for spending could disrupt any economic step taken to accurate for the revenue-spending space.

Muhammad (2012) worked on Defense expenditure of Pakistan continues on large scale in classification to maintain a probable prevention and impact on outside country political situation in Afghanistan battle and violence. The recent study examines to security spending in the identified with actual risk in Pakistan’s defense and its relation through boost economy. Through increasing the hypothetical support for discover the unusual measurement of link, analyzed empirical study of connection with security spending and boost economy. Econometric methods like Johansen Co integration and Granger Causality to check have been relevant to get outcome by using a time series data from 1980 to 2010.

Rais, (2012) studied regarding to public debt with boost of economy in Pakistan, the simple OLS method was used and collected data from 1972-2010. Pakistan is enclosing by severe socio-economic calamity. Pakistan tax system to collect small tax found with double shortfalls, Pakistan had to depend in together outside with inside capital streams. The overseas capital streams have not simply available but national capital streams are accessible at all times. Public debt is a crucial aspects of link government funding gaps, however should be used in a modest level because it is raise liabilities in future. The Pakistan excellent public debt is above our GDP and therefore income per capita is poorer than per citizen indebtedness. This is all things appropriate to negligence management and poor planning segment in the country.

Ahmad, (2011) found that how poor debt managing merged with the strategy maker of supporter groups frequently the International Monetary Fund take on the current local and overseas debt crisis. This paper presents a qualitative account of the debt in Pakistan and study of debt data record using a variety of debt trouble. After this study in economy and public expenditure of debt extension into Pakistan, and that is created and net overseas reserve streams into public and private areas are liable for crowding out public with private reserves in that order to public savings are crowding out with reserve streams from the private areas to the public areas. At the end outcomes in the article found and reserves allocation connecting progress and non-progress spending is not rely on government spending was financed in incomes otherwise government borrowing in additional reserves be bound to progress movement the government spending is invested in overseas reserves streams slightly than domestic resource streams.

Hassan, (2013) evaluated the effect of armed spending in poverty down through service sector, inflation in service sector, industrialization with foreign direct investment (FDI) in together with long period and short period impact. It is prepared for discovering the task of armed spending within poverty elimination. Study was completed from time series of 1972 to 2009, and found difficulty of method unit root examined in applying Ng– Perron (2001) test and strong point of link connecting armed spending with scarcity within the brightness of manage factors are examines through with Johansen and Juselius (1990) the extensive period coefficients are analyzed through Ordinary Least Square Method and short term actives are calculate by “applied in fault improvement method”.

Haseeb, (2014) investigated long period link connecting security spending and boost economy, and examine the argument with security spending as a macroeconomic factor unlike to change tools referred as Armed Keynesianism Hypothesis in case of Pakistan over the period 1975 to 2010. The Autoregressive Distributed Lag (ARDL) limits difficult approach to find out long term link connecting in security spending, progress development economy, growth spending, and inflation, as well as saving centers. The Augmented Dickey-Fuller (ADF) check test is used to examine stationary. It is ADF test exposed in inflation and saving are stationary at stage that security expenditure, development expenditure and GDP become stationary at primary dissimilarity. Results of ARDL show and data is constant and validate the existence of long period connection. The strength in model have completed in analytical to check in order to relationship, task type, familiarity, Hetro-Scedasticity, and structural constancy in the model. They selected model usually exceeds every analytic tests and proves the strength of the selected model. The results explained that defense expenditure is negatively effecting on development economy and saving has positive effect on economic growth but other factors have no effect on economic growth. This outcome in long period negative link connecting armed spending and development economy recommend and contain in Pakistan MKH is not include above in evaluation time. The negative long term link connecting armed spending and economic development involves that the policy makers want to have a better focus on development spending as evaluate both of security spending.

Hassan (2012) discovered few more variables provided to budget deficit in Pakistan. GDP per capita, size of deal as allocate of GDP, total liability, service like proportion of GDP as well as monetary asset (another for money supply) as allocate of GDP are measured main variables impacting budget deficit in Pakistan, research examined the data from 1976 to 2009, applied ADF as well as Phillip Peron tests toward examining stationary; Johansen highest probability technique to discover existence of extensive time connect among to running actors to this study and Fully Modified Ordinary Least Square Method to approximate for long period coefficients. Error Correction Mechanism to check the small speed coefficients and at last Granger Causality test to examine the way of causality between in working factors in the current studies in Pakistan. The empirical facts explain to GDP per capita as well as money circulates are relevance to compress budget deficit in Pakistan and both to short period with long period length of time. The entire liability service interval for 1 year decrease budget deficit in the long period. Therefore degree of deal traded with total liability services and time movement is positively and relevance provided for budget shortfall in Pakistan and together for long period and short period extent.

Nazir, (2013) evaluated the growth rate circulation model in dissimilar systems of Pakistan that predicts the growth rate of industrialize, agricultural, service sectors as well as GDP growth rates in Pakistan. Data were collected through secondary source from 1956 to 2011. This record from 1956-2000 are acquired from State Bank of Pakistan and 2001-2011 from Economic Survey of Pakistan. The study was in system-wide sharing in growth rates, the Gini-coefficient and Lorenz curve are applied. Whereas predicting to growth rate, moving standard predict as well as exponential smoothing method be used. They found Gini-coefficients for agricultural, industrial, services and GDP growth rate are 0.1614, 0.2142, 0.1479 and 0.1130. The Lorenz curve too recommends sameness link choose growth rate system wise. The moving average predicts for agricultural, industrialize, service sectors and GDP growth rates 2012 are 1.7%, 2.7%, 2.9% and 3.1% correspondingly for the year 2012. According to the exponential smoothing method these growth rates in the 2012 are predictable in 1.9%, 3.1%, 3.8% and 3.3%. They also above the development allocation method, it is required for get new pace and huge move forward to expansion the macroeconomic factors performance in Pakistan. The result shows that predicting the service sectors might downfall within after that year, while we are required to focus on.

Mehmood, (2012) examined the impact from 13 selected different variables from Pakistan and Bangladesh economic system, independent variable is Gross Domestic Product (GDP). The main reason for measure of similarly countries result and find out to different points while state is enhanced situation and why? Economic development evaluates in GDP with time analysis data from 1976-1977 and 2008-09 for the previous thirty-four years. GDP is dependent variable and independent variables in use likewise gross national expenditure, final consumption expenditure, goods exports & imports, services exports & imports, outside liabilities stocks, gross saving, FDI in streams, FDI out streams, gross domestic income, net income from foreign and employees payments and reward of employees paid. They found that Pakistan gross national spending, export goods outside; gross saving and final consumption spending has directly positive effect on GDP. These factors such as outside financially obligations total reserve and services sell abroad have negative effect on the GDP of Pakistan.

Shahbaz, (2013) studied the link to connect security expenditure and progress development of economy using a Keynesian model in Pakistan and method used was autoregressive distributive lag bounds testing approach to co-integration. Empirical support recommends to constant co integration link connect security expenditure and economic development. The Pakistan economy rise day by day and security expenditure decreases the rapidly economic developments, confirm the power of Keynesian assumption. The present situation of Pakistan economic development is positively connected past decades whereas increase in no armed spending increases economic development. Interest rate is also opposite linked with economic development.

Ghani, (2011)evaluated tax performance among different countries by particular attentions in Pakistan, use dissimilar econometric relevance on a get on data set required to covers 104 states above the time 1996-2005. Usually directness, per capita GDP, urban population, rule of law and manage the fraud system and found be relevance determinants of tax in GDP share crosswise states. The Panel Corrected Standard Error (PCSE) estimation gives to statistically enhanced regression outcomes evaluated and further terms used for research. The tax attempt indices get for Pakistan explain an generally downward to propose to want for better policy structure assess like as implementation of adapted VAT, expand the tax support system as well as progress the institutional excellence policy must be mange to government as tackle matter seriously.

Piancastelli, (2001) defined per capita income with proportion of trade to GDP is positive strong determinants of tax incomes while divide to agriculture in addition to GDP contain negative relationship to tax incomes. More increase in range of study together with broad study of states tax performance by dividing and separating and earning taking groups to explain to middle income states bad positions to evaluate less revenue states.

Davoodi, (2007) worked on tax recovery rate mostly direct taxes focus on Armenia is not rise through the similar rate with GDP. Researcher created the institutional excellence, urbanization and shade economy movement has the key issues following small tax in GDP ratio in Armenia. Panel data technique collected and applied on 141 different states for the time period of 1990-2004. They also build a tax try to index for Armenia which showed a down movement as 2000. They close that reforming to fiscal institutions, implementation of transparency system by management officials and improving VAT tax base have positive impact on tax incomes.

3.0 Data Collection:

Data was collected through secondary sources: literature from different journals, websites, for clarifying the methodology and supporting the conclusions, quantitative data collected from ministry of finance, and state bank of Pakistan for further analysis and conclusion.

3.1 Statistical Techniques:

After collection of secondary data from State Bank of Pakistan and Ministry of

Finance, were entered in SPSS-18 for further analysis and used multiple regression, Pearson correlation, Pearson correlation was analyzed first to check the multi co-linearity issue, if exists there, than followed by regression.

4.0 Results and Discussions:

Pearson correlation of all independent variables checked first as discussed above for checking the issue of multi co-linearity issue in the data and found no any issue of multi co-linearity as supported by below given table.

Table No. 1: Correlation

		Total Public Debt as % of GDP	Real GDP Growth	Fiscal Deficit as % of GDP	Tax Revenue as % of GDP	Defense Expenditure as % of GDP
Total Public Debt as % of GDP	Pearson Correlation	1	.374	-.097	-.003	.270
	Sig. (2-tailed)		.232	.764	.992	.396
	N	12	12	12	12	12
Real GDP Growth	Pearson Correlation	.374	1	-.611*	.313	.801**
	Sig. (2-tailed)	.232		.035	.322	.002
	N	12	12	12	12	12
Fiscal Deficit as % of GDP	Pearson Correlation	-.097	-.611*	1	-.203	-.815**
	Sig. (2-tailed)	.764	.035		.528	.001
	N	12	12	12	12	12
Tax Revenue as % of GDP	Pearson Correlation	-.003	.313	-.203	1	.083
	Sig. (2-tailed)	.992	.322	.528		.798
	N	12	12	12	12	12
Defense Expenditure as % of GDP	Pearson Correlation	.270	.801**	-.815**	.083	1
	Sig. (2-tailed)	.396	.002	.001	.798	
	N	12	12	12	12	12

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

According to different rules of thumb suggested by various statisticians/researchers when the value of "r" in correlation of independent variables are greater than or equal to .90 than it will be considered as issue of multi co linearity and it must be resolved with certain measures than regression will be applied otherwise results will not rightly be interpreted, and by looking at above table there is no any issue of multi co linearity.

Table 2 Model Summary

Model		R	**R Square**	Adjusted R Square	Std. Error of the Estimate
1	.978[a]	**.957**	.922		73.79299

Table of model summary shows different measures but when we are looking at R-Square: which shows the goodness of model and value ranges from (0-1), in this case the bolded value is .957, which states that the model comprises of Per capita income as Dependent variable and others (Defense expenditure, tax revenue, total public debt, fiscal deficit as a percentage of GDP, and real GDP growth) Independent variables are rightly predicting the dependent variable and model is 95.7% good.

Table No. 3: ANOVA

Model		Sum of Squares	Df	Mean Square	F	**Sig.**
1	Regression	733750.237	5	146750.047	26.949	**.000[a]**
	Residual	32672.430	6	5445.405		
	Total	766422.667	11			

Table of ANOVA states the significance level of the above discussed model in perspective of confidence interval, being the researchers of Management Science we are presenting the results on 95% confidence interval, which states the significance levels of (0.05, 0.04, 0.03, 0.02, 0.01, or 0.00) within these significance limits a model can be said as significant, in this case by looking at significance values in above table referred as 0.00, Model is perfectly good and significant.

Table No. 4: Coefficients

Model		Beta	T	Sig.
1	(Constant)		3.120	.021
	Total Public Debt as % of GDP	**.295**	**3.160**	**.020**
	Real GDP Growth	**.418**	**2.526**	**.045**
	Fiscal Deficit as % of GDP	-.261	-1.669	.146
	Tax Revenue as % of GDP	-.005	-.054	.959
	Defense Expenditure as % of GDP	**-1.511**	**-7.078**	**.000**

By looking at the above table only three independent variables among five are predicting the dependent variable per capita income, total public debt as a percentage of GDP, and real GDP growth are positively and significantly contributing to per capita income, while defense expenditure as a percentage of GDP is negatively but significantly related with per capita income and the “t” values of all three independent variables are also significant, while rest of the independent variables fiscal deficit and tax revenue as a percentage of GDP got insignificant relation with per capita income.

6.0 Conclusion

Per capita income is a main priority of every nation and before moving to the track of success countries are looking at their bases and per capita income is one of them which must be addressed and studied at topmost priority in this connection research was carried out, it is very much clear from above discussion that when total public debt is tends to increase it is supposed that same is utilized in productive activities and in the result per capita income tends to increase due to increase in investment, and employment opportunities, same situation is with the real GDP growth when GDP is growing means increasing production in the country and increasing employment opportunities, which ultimately leads to increase in per capita income which is the issue of hour, furthermore defense expenditure is negatively related with per capita income, no doubt Pakistan have limited resources if the major proportion of those resources utilized in un productive activities like defense expenditure than very surely overall performance of GDP, employment, foreign reserves will decline, in this way policy makers must have to keep an eagle eye on the issues and economy of Pakistan to cope the situation.

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