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An Analysis of Causal Relationship between Economic Growth and Unemployment: Evidence from Pakistan

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Abstract

Economic prosperity of any nation relies on the economic progress. The most significant indicator for economic progress is employment generation and it has a negative impact on the overall economy. When there is increase in the employment opportunities overall economic productivity increases as there increase the level of living. Unemployment is also related with poverty. High level of unemployment causes increase in the level of poverty. This research used the data for 1976 to 2017 from various secondary sources. After examining the nature of the time series the by using the ADF (Augmented Dickey Fuller) test the ARDL model was used for the analysis. The results illustrate the inverse impact of unemployment on the economic performance in the country. Increase in labor supply which causes to increase in unemployment the study concluded that enhanced economic activities as increase in employment opportunities which leads to increase in overall economic wellbeing.

Keywords: Unemployment, GDP Growth, Stationarity, Long Run and Short Run Relationship.

1. Introduction

The economic well-being of a country relies on the rate of economic growth. One of the significant economic indexes for economic growth is employment rate and it has a bad effect on the overall economy. When there is increase in the employment rate the production level increases as well as increase the pattern of living. Unemployment is also related with poverty. High level of unemployment causes increase in the level of poverty. Population increase leads to rise in the labor supply which causes to increase in unemployment. In addition, the economic activities changes employment opportunities which leads to changes in economic wellbeing.

Like other advanced countries, employment condition in Pakistan has exacerbated in recent years. The employment creation (2.5 %) is very low than rise of population rate (3.1%). For the last three periods, the real GDP have grown to the level to 6%while the employment level during the same period has reached the level of 2.5%. From (1990-1995) the GDP have grown to the average rate of 4.8 % but population and labor force has grown to 3%. Pakistan economic performances during the last 3 decades have been off balance.

The growth performances during 1960s have been praised. Real GDP has increased at an annual rate of 6.8% with increase in advances occurring in industrial and agriculture sector.

Rise in growth rate made it possible to increase the level of investment and foreign support. The investment rate raised from 14.1% in 1960-61 and 22.8% in 1964-65 but averaged at 17.5%. Labor force increased by 2.0% in 1960s with low inflation rate 3.8% and high growth rate in major labor force areas (agriculture and manufacturing up to 73%), unemployment rate remain at 1.43% in 1960s. By the end of the period, number of problem arises. The investment level decreased by 22.8 % (1964-65) to 15.8% (1969-70). The decrease in investment started due to decrease in the growth in non-agriculture sector. The political disturbance in the late 1960salso effected the industrial activities which caused increase in unemployment rate especially in educated youth. In 1970s there was a major slow down due to local economic measures and foreign economic surrounding. The division of eastern region of the land due to political problems caused a major breakdown in the economy (1971).

Government by adding uncertainties during (1972-77) in economic relations cannot be removed by subsequent assurances. Adverse weather conditions also have an effect on agriculture output in the mid-1970.Other external factors also had negative effect on slowing down the economic activities in the early 1960s.

The growth rate of agriculture and manufacturing has decreased down to 2.4% and 5.5% during the 1970s. Real GDP increased by 4.8% in 1970s. The abrupt decrease in agriculture and manufacturing which are the two largest labor forces absorbing sectors in the country have worsened the unemployment condition in the country. Despite the poor condition of the economy the unemployment problem was manageable during the 1970s (2.4 %).

After the end of emigration explosion in the early 1980s there was still trouble related to employment condition. However, this duration witnessed good improvement related to the labor demand in the domestic market. Pakistan's economy improved impressively in the 1980s.The real GDP increased at a level of 6.1% and growth in agriculture 4.1% and 8.2% increase in manufacturing. Rise in high economic expansion lead to the improvement in work force with positive developments with population rate of 3.1%. Continuous increase in economic growth and high rate of unemployment was a great issue in 1980s. In the first half of 1990s the economic activity was slow. Real GDP increased at a level of 4.8% and 3.4% increase in agriculture and 5.9% increase in manufacturing. The economic growth slowed down due to political uncertainty as a result employment situation became worse.

At least 6.7% labor force was unemployed in 1993-94 and 7.1% in 1994-95.As we all know the economic condition of Pakistan has been unstable because of war and terrisom situation that's why there is a negative effect on the economy and the prices as well. Government was unable to solve and maintain stability in economics. Rise in the rate of joblessness, energy crisis, economic instability, low foreign exchange reserve, low exports and other social and political problems has ruled Pakistan's economy. It also has an adverse impact on business cycle of the economics. In Pakistan there is a major drawback like in other developing countries youth unemployment is connected with armed conflict and political violence. People who are more educated have less concern with political violence. A person who is less educated is more likely to get involved in bad groups and engage in difficult social and political activities and the crime rate will be high. On the other hand, highly educated people are less prone to negative political activities.

2. Literature Review

Unemployment is one of the macroeconomic indicators which causes inability of growth process in the economy. Unemployment can be controlled by high production level and increase in profits. Due to this reason economy cannot recover quickly as result poverty increases. Such economy experience depreciation of labor as employers have upper hand.

Arslan and Zaman (2014) has conducted a study to determine the determinants which causes joblessness in the economic situation of Pakistan for the period (1999-2010). It is a social and political issues. Demographic growth rate, FDI, growth of gross domestic product, expansion rate (independent variable) and unemployment rate is (dependent variable). The outcome of the survey is that FDI has negative connection with unemployment. The relationship of GDP is negative with unemployment. The authority must implement measures to handle demographic growth to overcome the problem of unemployment. Unemployment causes many problems as it increases crime and poverty rates. ARDL approach is used. Outcome show that gross domestic product, public, expansion and FDI are main factors of joblessness in Pakistan. Unemployment rate is dependent variable while GDP, FDI, population, and inflation are independent variables.

Results reveal that all the four variables have significant effect on unemployment. Negative relation occurs between inflation and unemployment. Inducements and technical cognition to the producers and better investments process should be encouraged.

Kreishan (2011) considered the effect of joblessness on economic development in Jordan. For this reason, time series data is employed covering through the implementation of Okun's law. The survey employed augmented fuller test for unit root and a common regression for joblessness and economic expansion. The data for the study was obtained by central bank of Jordan and department of statistics. Two variables joblessness and growth in output rate is used. Amendments in labor market would be more suitable. Many countries offer unemployment benefits which is a type of government expense but it leads to reduction in economic development and may cause dejection.

Ahmed et al. (2011) studied the issue the problem of unemployment in Pakistan. For this reason, ARDL model is used by using time series data from (1973-2010). The outcome of this survey shows that rise in gap financing and insecurity results in rise in joblessness. The results indicate that when unemployment increases output gap will also increase. Productivity and economic uncertainty are negatively related with investment. To check whether the time series data is Stationarity we use the ADF test for unit roots. Government must engage capital plans and also promote personal capital to overcome joblessness problem. A person who is unemployed for a long time may face financial problems. Unemployed workers lose their expertise due to lack of implementation.

Shahid (2014) studied the effect of expansion and joblessness on economic boom in Pakistan. ARDL method is used to determine the results. The expansion of economy is used as conditional inconstant, expansion and joblessness as autonomous inconstant. There is adverse connection between joblessness and economic expansion. The study concluded that self-employment should be encouraged to beat the problem of joblessness. Expenditure of management, political instability, high inflation rate is harmful for economic growth.

Abbas (2014) studied the long term effect of economic expansion on unemployment level (1990-2006) in Pakistan. ARDL method is used to determine the results. The results show

that the there is adverse effect between joblessness level and economic boom which is significant in the long run. For example, if there is one percent rise in economic expansion then there will be reduction in unemployment by 1.665 coefficient of parameters is insignificant. The ECM shows short run disequilibrium adjustment in a year. It can be said that economic expansion can be raised by reducing unemployment level in the long run. As we said that that joblessness is a main cause in Pakistan.

Cheema (2014) investigated the key factors of unemployment. ARDL method is used to determine the results. The conclusion reveals that unemployment and gap year has a significant positive relationship statistically. Efficiency and financial insecurity has an important adverse relationship with capital and trade statistically. Output gap should be decreased by maintaining GDP. Government should reduce trade restrictions by using the depreciation policy. Government should adopt investment projects and also promote private investments.

Shabbier et al. (2012) studied the impact of financial community progress and joblessness in Pakistan. ARDL model technique for co integration is used from the period of 1973-2007.Financial community indications have a long term connection with joblessness. Increase money circulation in the economy is negatively related with employment rate because it increases the unemployment rate. Financial sector activities enhancement can reduce unemployment in short run and long run. Granger causality test show that the loan expenditure to business sector may improve job possibilities and raising activity rate. Maqbool et al. (2013) has studied the key factors of joblessness in Pakistan. It is noted that these variables effect the economy of Pakistan. For this purpose, ARDL model is used to test the key factors of joblessness.

Nayab and Arif (2012) illustrated that developing countries the benefits are related with international migration of labor class. The research says that remittances have a good impact on social and economic expansion of ever changing countries. Because of high unemployment rates in many developing countries the highly skilled labor migrates to developed countries and earn foreign currencies and send them home to their families. Increase in remittances may help in stabilizing exchange rate, poverty reduction and other sectors. So remittances have a positive impact on unemployment. Exports expansion is believed to have improvements in production by technical base and increased knowledge and the transfer of technology, increasing the level of employment and capital formation also economic expansion and improvement. Imbalances in the external sector can be filled by export formation.

Khilifa (1997) studied that unemployment is a condition in which people who want to work but do not have a job. According to the unemployment theory, the relationship between unemployment and inflation is always negative because of increase in unemployment with uncontrolled inflation (Cheema, 2014). Umair (2000) studied the correlation between unemployment and poverty profile of the individuals.

3. Data and Methodology

As we can say that unemployment has major impact on good exports, personal remittances. Secondary data is data that is collected from past projects rather than present projects. We have taken the data ranging from (1976-2017). Gross domestic product, personal remittances, inflation, good exports, foreign direct investment are been used as variables.

3.1 Model specification

Researcher will has used impact of joblessness on the chosen variables Many authors have discussed about the impact and the relationship between the variables in which Buffie (1993) have examined the effect of unemployment on GDP growth.

Econometric Model:-

$$GDP = f(\alpha_0 + \alpha_1 GEX + \alpha_2 FDI + \alpha_3 PRR + \alpha_4 UNEM + \alpha_5 INF + Ut)$$

In the above equation GDP is the dependent variable and α_0 is constant coefficient of independent variable and GEX is exports goods, FDI is foreign direct investment, PRR is personal Remittances, UNEM is unemployment rate, INF is inflation rate and Ut.

3.2 Auto regressive Distributed Lag Approach to Co-integration

ARDL method will be used on single equation. It will estimate the short and long run parameters of model. The evaluated model acquired from ARDL method will be unbiased and effective. ARDL is more useful and effective for small samples. It is not necessary that all the variables will be in order in ARDL method. The variables can be I (0) or I (I) or the mixture of both. If the variables are stationary at high order of I (I) then ARDL is not used. ARDL has two parts, in the first part F-statistics is used to test the long run relationship between variables in order to find out the lagged level variables. Second, the long and short run relationships are considered in order to find coefficient.

Model: Impact of Unemployment on Economic Growth

$$\Delta(GDP)_t = \alpha_0 + \sum_{i=0}^{a} \beta_{1i}\Delta(FDI)_{t-i} + \sum_{i=0}^{b} \beta_{2i}\Delta(INF)_{t-1} + \sum_{i=0}^{c} \beta_{3i}\Delta(PRR)_{t-1} + \sum_{i=0}^{d} \beta_{4i}\Delta(GEX)\sum_{i=0}^{e} \beta_{5i}\Delta(UNEM)_{t-i} + \mu_t$$

This model will estimate the impact of unemployment on economic growth in which GDP is Dependent variable while inflation, foreign direct investment, unemployment, personal remittances, good exports are independent variables. Under this heading, the theoretical problems related to unemployment on economic growth is going to be discussed. Consistent unemployment causes many problems in the economy of a country. When there are more unemployed people in the country the level of productivity and the employment of resources will be less which leads to poor economic growth. Other main issue of Pakistan is poverty which directly influences unemployment. Unemployment causes increase in government expenditure and decrease in taxation because if people are unemployed from whom the government is going to collect taxes from and these unemployed people also causes the crime rate to rise which causes many problems.

3.3 Variables, definitions and Description

I) Exports

Exports are goods and services prepared in one country and bought by citizens of another country. It is produced nationally and sold to someone in a foreign country. It is an export.

II) Foreign direct investment is the form of a monitoring proprietorship in a business in one country by an organization in other country.

(III) Personal remittances

Personal remittances are the amount of personal transfers and remuneration of employees.

(IV) Inflation

Inflation shows overall rise in the cost of services and wares. It is presumed that exports of goods, foreign direct investment, personal remittances and joblessness have a negative relationship with GDP.

Table 1: Descriptive analyses of variables

Variables	GDP	INF	FDI	PRR	UNEM	GEX
Mean	5.007619	8.112920	1.01e+09	5.266809	3.890154	13.32390
Median	4.846451	7.768210	2.76e+08	5.102886	4.065000	13.35924
Maximum	10.21570	20.28612	3.64e+09	10.24763	7.830000	17.35930
Minimum	1.014396	2.529328	913392.2	1.453638	0.397700	8.235441
Std. Dev.	2.133871	3.732482	1.27e+09	2.215351	2.137884	2.586908
Skewness	0.198479	0.753143	0.881593	0.059503	-0.041107	-0.231348
Kurtosis	2.509954	3.898760	2.095036	2.140434	2.185966	2.026005

3.4 Stationarity of Data

Time series data and non-stationary variables are used. The spurious regression results can be avoided. If data is a mixture of stationary and non-stationary data ARDL will be applied otherwise some other econometric technique will be applied. The parameters be integrated at I(I) or I(0) or may be both.

Table 2: ADF Test of stationary

Variables	ADF Statistic(at level)	ADF(with first difference)	Order of Integration
GDP	5.195920	-3.698957	I(I)*
FDI	-2.418900	-4.268366	I(I)*
INF	-4.516792	-7.866915	I(0)*
PRR	-1.568947	-5.987605	I(I)*
GEX	0.004621	-6.196486	I(I)*
UNEMPLOYMENT	-2.189110	-7.136167	I(0)*

4. Long run and Short run Results for Unemployment and Economic growth

To estimate the equation of time series the years ranging from 1976-2017 is used. ARDL method is used to estimate the results. GDP is the dependent variable whereas FDI, GEX, INF, PRR and UNEM are independent variables. Their relationship is positive while with inflation maybe be negative. The empirical testing on nominal versus real economic growth is very difficult. The indirect effect is more complicated compared to the direct effect. The relationship between unemployment and economic growth is very important.

Estimated short run coefficients using ARDL approach ARDL (1, 0, 0, 2, 2, 2) selected basedon Schwarz Bayesian Criterion. Dependent Variable is GDP 39 observations used for estimation from 1976 to 2017

Table 3: Short run effects of unemployment on economic growth

Regressor	Coefficients	Standard error	T-ratio	[prob]
FDI	0.000000	0.000000	1.117992	0.2738
INF	0.071285	0.086316	0.825862	0.4164
PRR	0.221527	0.278535	0.795328	0.4336
GEX	0.335414	0.186532	1.798164	0.0838
UNEMPLOYMENT	0.061624	0.187065	0.329428	0.7445
C	-1.066586	0.145737	-7.318573	0.0000

The coefficient value of the inflation is 0.071, which shows that there is 0.071 unit increase in GDP due to one unit increase in inflation. The impact is statistically insignificant and positive. The coefficient value of foreign direct investment is 0.00000, which shows that there is 0.0000 unit increase in GDP due to one unit increase in foreign direct investment. The impact is insignificant and positive. The coefficient value of personal remittances is 0.221, which shows that there is 0.221 unit increase in GDP due to unit increase in personal remittances. The impact is statistically insignificant and positive. The coefficient value of good export is 0.335, which shows that there is 0.335 unit increase in GDP due to one unit increase in good exports. The impact is statistically significant and positive. The coefficient value of unemployment is 0.061which shows that there is 0.061 unit increase in GDP due to one unit increase in unemployment. The impact is statistically insignificant and positive.

Table 4: Long run effects of unemployment on economic growth

Regressor	Coefficients	Standard error	T-ratio	[prob]
FDI	0.000000	0.000000	1.078148	0.2909
INF	-0.008912	0.107850	-0.082630	0.9348
PRR	0.972956	0.190740	5.100965	0.0000
GEX	0.314475	0.188962	1.664223	0.1081
UNEMPLOYMENT	0.504364	0.195356	2.581771	0.0158
C	-6.557963	3.665645	-1.789034	0.0853

In the long run, the coefficient value of foreign direct investment is 0.0000, which shows that there is 0.0000 unit increase in GDP due to one unit increase in foreign direct investment. The impact is statistically insignificant and positive. The coefficient value of inflation is - 0.0089, which shows that there is -0.0089 unit increase in GDP due to one unit increase in inflation. The impact is statistically insignificant and negative. The coefficient value of personal remittances is 0.9729 which shows that there is 0.9729 unit increase in GDP due to one unit increase in personal remittances. The impact is statistically insignificant and positive. The coefficient value of good exports is 0.3144, which shows that there is 0.3144 unit increase in GDP due to one unit increase in good exports. The impact is statistically insignificant and positive. The coefficient value of unemployment is 0.5043, which shows that there is 0.5043 unit increase in GDP due to one unit increase in unemployment. The impact is statistically significant and positive.

5. Conclusion

This study prepared to establish the effect of unemployment on economic expansion in Pakistan. Time series data from the duration (1976-2017) have been used. Augmented Distributed Lag (ARDL) method is used to find the short and long run results. Previous studies on unemployment were reviewed to know the empirical evidence and found multiple results. Furthermore, the trends, size and structure of unemployment have also been examined. The main goal of this survey is to check the macroeconomic effects of joblessness on economic expansion in Pakistan country. For this reason, ARDL model have been applied.The results of the survey gives that unemployment has negative impact on increase of economy in the short significantly. In other words, that rises in unemployment decreases economic expansion in the economy. The conclusion says that the expansion, FDI, exports of goods play a major role to maintain this problem more efficiently. Inflation in the economy decreases the problem of unemployment to the extent. FDI have a negative impact on joblessness and personal remittances have a positive effect on unemployment and inflation and GDP also have negative impact on unemployment but good exports have an important connection with economic boom.

The survey is developed to check the impact of joblessness on expansion of the economics and the relationship between them. For this purpose, time series data from 1976-2017 have been used. The Augmented Distributive Lag (ARDL) method is used. The previous studies on joblessness and economic boom are reviewed in order to find empirical results. The trends, patterns of unemployment have also been observed. The variables used in the study are GDP, inflation, FDI, personal remittances and good outputs. The findings of the conclusion show that joblessness has a definite relationship with personal remittances and good exports and have a negative relationship with inflation, GDP, FDI. This study have discussed about the impact of joblessness on economic expansion in Pakistan. As the results previous study joblessness has bad impact on the country. The problems effecting the economy are discussed above but what should be the role of the government in the solving of these issues and what policies should be adopted to solve these.

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