

THE IMPACT OF INFLATION AND ECONOMIC GROWTH ON UNEMPLOYMENT

The Impact of Inflation and Economic Growth on Unemployment: Time Series Evidence from Pakistan

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ABSTRACT

This study is conducted to explore the impact of inflation and economic growth along with trade openness and urban population on unemployment for a case of Pakistan for the period from 1973 – 2010. This study uses Augmented Dickey Fuller (1981) Test to test unit root problem and in order to find out the long run relationship among unemployment; inflation, economic growth, trade openness and urban population as share of total population, we have applied Johansen – Juselius (1990) Maximum Likelihood Approach. This study concludes that inflation significantly increases unemployment in the long term; economic growth has a significant adverse impact on unemployment in the long run and in the short run respectively, and the impact of trade openness on unemployment is positively and insignificant in the long run but this impact becomes significant in the short run. Finally, the findings of the study sheds light on the impact of urban population as share of total population on unemployment for both long run and short run, and it has found that urban population as share of total population has an adverse impact on unemployment in the long run as well as in the short run.

Keywords: Pakistan; Unemployment, Inflation, Trade Openness, Real GDP Per Capita, and Urban Population as share of Total Population

1. INTRODUCTION

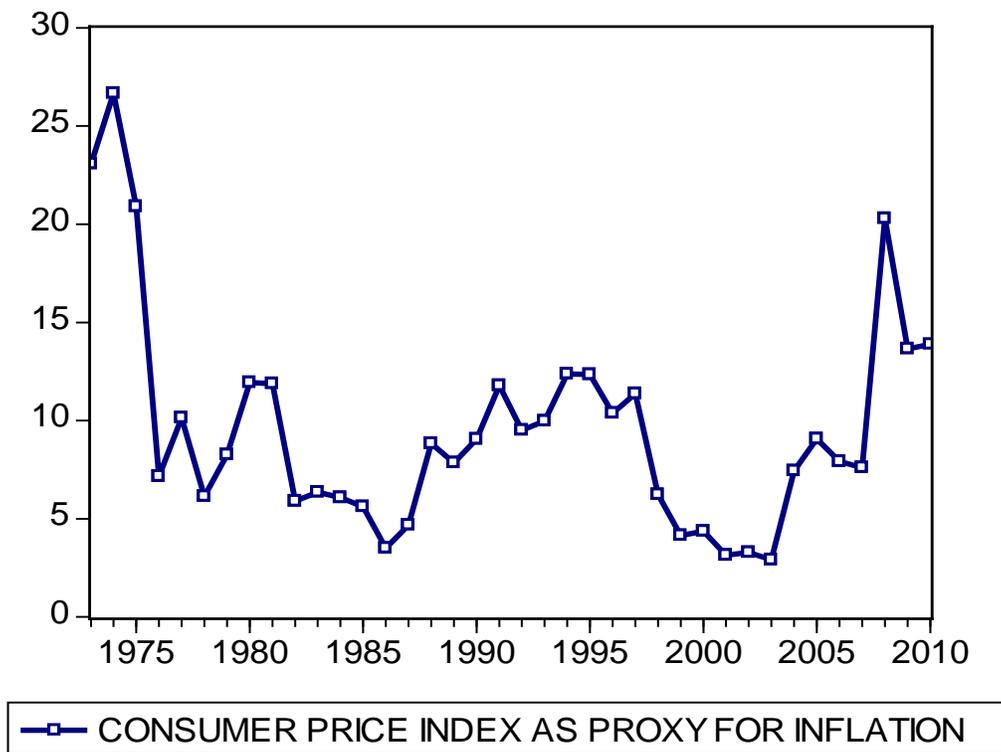
Unemployment is has great importance among the macroeconomic problems. If any country experiences unemployment, it will not only put negative impact on the economic indicators of that country but, it will also hurt the social norms of such country. In case of Pakistan; the unemployment was 3.14 percent in the year 1973; it increased to 3.7 percent in the year 1980, then it started declining and became 2.55 percent in the year 1989. After the year 1989; the unemployment started increasing and it reached to its highest level 8.64 percent in the year 2003. Afterwards, the unemployment rate reaches to 5.34 percent in the year 2010. The trends of unemployment may be viewed from the figure no. 1 for a case of Pakistan.

FIGURE NO. 1



Besides unemployment; inflation is another macroeconomic problem which hurts both economic and social indicators in any country. Pakistan economy has also come across with this macroeconomic problem. The inflation rate was 23.07 percent in the year 1973; it increased to 26.66 percent in the year 1974, then it started decreasing and became 11.94 percent in the year 1980, and afterwards it reached to 7.84 percent in the year 1989. After the year 1989; the inflation rate turned to be 2.91 percent in the year 2003 and it became 13.88 percent in the year 2010. The inflation rate changed each year and followed both upward and downward trend. It could be seen from the figure no. 2 for a case of Pakistan.

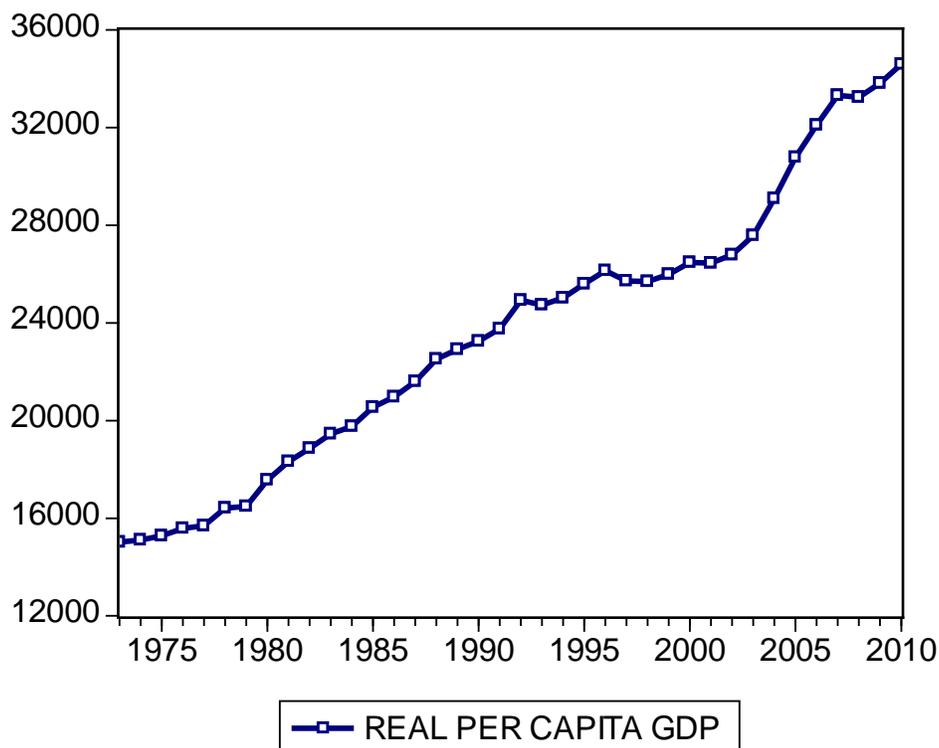
FIGURE NO. 2



Real Per Capita GDP is used as proxy for economic growth in this study. It is generally perceived that when economic growth takes place in the country; it increases the pace of economic

activity in the country, due to which, employment increases. The increase in employment will enhance the purchasing power of the people in the country and as result to it, consumption increases which leads to raise aggregate demand and hence inflation in the country. The real per capita GDP was Rs. 15025.8 in the year 1973; it turned to be Rs. 17561.04 in the year 1980, it further went up to Rs. 23244.33 in the year 1990, afterwards the upward trend continues to Rs. 26474.2 in the year 2000 and finally it reaches to Rs. 34588.9 in the year 2010. The trend of economic growth is presented in the following diagram:

FIGURE NO. 3



The association between inflation and unemployment is a relationship which has got a great fame in the literature. The studies like Rogerson's (1988); Cooley and Hansen (1989), Mortensen and Pissarides (1994), Shi (1997), Pissarides (1999), Berentsen, Lagos and Wright (2005), Lehmann (2006), Beyer and Farmer (2007), Kumar (2008), Berentsen, Menzio and

Wright (2008), and Menzio and Wright (2008) have found a positive relationship between inflation and unemployment in the long run.

On the other hand; Karanassou, Sala and Snower (2003), Franz (2005), and Schreiber and Wolters (2007) had found an inverse relationship between inflation and unemployment in the long run. After the relationship between inflation and unemployment; another relationship has got great name in the studies of macroeconomics and that is the relationship between economic growth and unemployment. The studies like Vandemoortele (1991); Oladeji (1994), Umo (1996), Rama (1998), Silvapulle et al (2004) and Stephen (2012) have found an inverse relationship between economic growth and unemployment for the different countries for different periods respectively. Based on this argument; this study is aimed at finding empirically the impact of inflation; trade openness, economic growth and urban population as share of total population on unemployment in case of Pakistan for the period ranges from 1973 – 2010.

1.1. OBJECTIVES OF THE STUDY

This study comprises of the following objectives:

1. To explore the impact of inflation; trade openness, economic growth and urban population on unemployment in the long run.
2. To explore the impact of inflation; trade openness, economic growth and urban population on unemployment in the short run.

1.2. HYPOTHESIS OF THE STUDY

Null Hypothesis:

1. Inflation; trade openness, economic growth and urban population do not impact significantly unemployment in the long run.

2. Inflation; trade openness, economic growth and urban population do not impact significantly unemployment in the short run.

1.3. ORGANIZATION OF THE STUDY

In the first part of this study; introduction is presented, in the second part of the study, some of the empirical studies are presented which have already tested our desired objectives, in the third part of the study, an attempt is made to mention data source and methodology of the model, in the fourth part, results and their discussion is presented and in the last part, the conclusion of the study is shown.

2. LITERATURE REVIEW

The literature reveals many studies on the relationship among unemployment; inflation, economic growth, trade openness, real GDP per capita, and Urban Population as share of total population for different countries for different time periods. This part is designed to review the past studies which demonstrate the relationship among unemployment; inflation, economic growth, trade openness, real GDP per capita, and Urban Population as share of total population. It is given as below:

Stephen (2012) investigates the impact of unemployment on economic growth for a case of Nigeria for the period from 1980 – 2008. He used Cobb – Douglas production function to develop his model and estimates his results by using simple OLS method. He has found the unemployment changes significantly and inversely to the economic growth in Nigeria. Dutt, Mitra, and Ranjan (2009) and Felbermayr, Prat, and Schmerer (2011b) had empirically tested the relationship between trade openness and unemployment by using cross section and panel data for the high quality OECD countries respectively. They came up with the findings that there

prevails an inverse relationship between trade liberalization and unemployment. Hence, economies which are more open tend to have lower rate of unemployment on average. Berentsen, Menzio and Wright (2008) explored the inflation and unemployment relationship for the U.S. for the period 1955 to 2005. They concluded that there does exist positive relationship between inflation and unemployment, and also they found this positive link after filtering out the higher frequency movements. Germany. Beyer and Farmer (2007) investigated the link between unemployment and inflation by using the dataset of the U.S. ranges from 1970 – 1999. They found that there exists direct relationship between inflation and unemployment in the U.S. in long run. The studies made by Schreiber and Wolters (2007) and Franz (2005) for a case of Germany to sense whether there prevails long run trade off between inflation and unemployment or there exists positive relationship between them. Both studies concluded that there exist an inverse relation between inflation and unemployment in the long run in case of Germany.

Janiak (2006) explored the link between trade exposure and equilibrium unemployment. He concluded that the higher equilibrium unemployment is dependant on the higher trade exposure. To him, the firms who produce high – productivity will create more job opportunities as they reap higher profits from the market and these firms will eliminate the negative impact of job destruction which comes into being due to the exit of the low – productivity firms from the market. Haider and Haider (2006) highlighted the significance of urbanization in Pakistan and they argued that until 2030 the population who is living in the urban areas will elevate by almost 140%. They developed an argument that the rapid growth in the urban population as share of total population will spread unemployment in the country especially among the youth and hence it will change the approach of the people and convince them to commit crime. They also claimed that due to urbanization; people may mobilize themselves from the rural areas to urban areas for improving their living standard and to search for better livelihood into cities, therefore, the concept of urbanization can not be treated as bad.

Silvapulle et al (2004) used the other way of examining the relationship between unemployment and economic growth. They explored the impact of cyclical output on cyclical unemployment for a case of U.S. by applying dynamic model for post – war period dataset. They found two conclusions from their study; the first conclusion made by them was that the positive impact of cyclical output on unemployment differs from the negative impact of cyclical output on unemployment in the short run, the second conclusion made by them was that their dataset support this their proposition that the negative impact of cyclical output on cyclical unemployment is more significant than that of the positive impact of cyclical output on cyclical unemployment.

Karanassou, Sala and Snower (2003) empirically examined the long run trade off between inflation and unemployment by using Panel Data Study for the European countries. They empirically found that long run trade off between inflation and unemployment does exist in case of European countries. The researchers like Vandemoortele (1991); Oladeji (1994), Umo (1996), and Rama (1998) investigated the impact of unemployment on economic growth for the African economies and for Nigerian economy in specifically. They found that as growth rate of unemployment increases, it curtails economic growth and hence they found trade off between unemployment and economic growth. Besides the brief review of literature; in the next part, data source, model and methodology for estimation are presented. Phillips (1958) used dataset from 1861 to 1957 for the U.K. in order to test the relationship between wage inflation and unemployment and concluded that there exists an inverse relationship between these two variables.

3. DATA SOURCE AND METHODOLOGICAL FRAMEWORK

3.1. DATA SOURCES

The annual data for unemployment as share of Labor Force; Consumer Price Index, Value of Trade, Real GDP per capita, and Urban Population as share of Total Population is taken from World Development Indicators, World Bank (2012) for the period ranges from 1973 – 2010 for a country like Pakistan.

3.2. MODEL

The model of this study contains five variables within which the impact of trade openness along with other independent variables is tested on unemployment for a case of Pakistan. The data is initially converted to logarithmic form in order to improve the efficiency of the results. Ehrlich (1977), Layson (1983), Bowers and Pierce (1975), Cameron (1994) and Ehrlich (1996) had investigated into their respective studies that when the data is converted into logarithmic form; then such dataset produce more robust results. Now the unemployment function is written as:

$$LUN_t = f(LCPI_t, LTR_t, LGR_t, LUB_t)$$

The model can be stated as:

$$LUN_t = \alpha_C + \alpha_{CPI_t} LCPI_t + \alpha_{TR_t} LTR_t + \alpha_{GR_t} LGR_t + \alpha_{UB_t} LUB_t + \mu_t \quad (3.1)$$

Whereas;

t	=	1, 2, 3,, 38 (time period is from 1973 – 2010)
LUN_t	=	Unemployment as share of Labor Force at time t
$LCPI_t$	=	Consumer Price Index as Proxy for Inflation at time t
LTR_t	=	Trade as Share of GDP at time t
LGR_t	=	Real GDP Per Capita at time t
LUB_t	=	Urban Population as share of Total Population at time t

3.3. METHODOLOGY

Initially, the unit root problem is tested by using Augmented Dickey Fuller (1981) test after the considering the lag term of the dependant variable in the equation of the conventional unit root test named as Dickey Fuller (1979) test. The main equation of the Augmented Dickey Fuller (1981) test is mentioned as below:

$$\Delta LUN_t = \alpha + \delta LUN_{t-1} + \sum_{i=1}^p \varphi_i \Delta LUN_{t-1} + \varepsilon_t \quad (3.2)$$

Similarly by following the equation 3.2, the remaining variables will also be tested for unit root problem. Afterwards, the long run relationship among the variables is tested by using Johansen and Juselius Approach (1990) Maximum Likelihood Approach. This approach comprises of two test statistics such as (a) Trace Statistic and Maximum Eigen – Value Statistic. Long run relationship among the variables is confirmed if the calculated value from the both test statistics is greater than their respective critical values. The following equations help us to estimate these test statistics:

$$\lambda_{trace} = L_A - L_O \quad (3.3)$$

and

$$\lambda_{max} = -T \log(1 - \hat{\lambda}_{r+1}) \quad (3.4)$$

The literature says that Co – Integration test should be applied after finding the maximum lag length for the model. Therefore, the maximum lag length is estimated by using Vector Autoregressive (VAR) Model. Also, the impact of trade openness along with other independent variables on unemployment in long run is found by using fully modified ordinary least square method (FMOLS) and we have used equation 3.1 for this purpose. In the end, the same impact

of independent variables on dependant variable in short run is found by applying error correction mechanism (ECM). The equation of ECM is written as below in order to find out short run estimates:

$$\Delta LUN_t = \beta_C + \beta_{CPI_t} \Delta LCPI_t + \beta_{TR_t} \Delta LTR_t + \beta_{GR_t} \Delta LGR_t + \beta_{UB_t} \Delta LUB_t + \lambda_{ecm_{t-1}} + \eta_t \quad (3.5)$$

Afterwards; estimated results and their discussion are presented in the following part:

4. RESULTS AND THEIR DISCUSSION

Table – 4.1 is presented to show the descriptive statistics of the model and results are given as below:

TABLE – 4.1 DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

	LUN_t	$LCPI_t$	LTR_t	LGR_t	LUB_t
<i>Mean</i>	1.496546	2.119433	3.521245	10.03951	3.431507
<i>Median</i>	1.438446	2.145665	3.539248	10.09578	3.432689
<i>Maximum</i>	2.156854	3.283278	3.766878	10.45129	3.610918
<i>Minimum</i>	0.936093	1.069573	3.323086	9.617524	3.246491
<i>Standard Deviation</i>	0.342259	0.546354	0.097183	0.249833	0.102543
<i>Skewness</i>	0.304163	0.026035	0.202299	-0.191668	-0.035482
<i>Kurtosis</i>	2.018681	2.648376	3.257113	2.022391	2.007888
<i>Jarque-Bera</i>	2.110658	0.200055	0.363860	1.745886	1.566428
<i>Probability</i>	0.348078	0.904812	0.833660	0.417720	0.456935
<i>Sum</i>	56.86875	80.53846	133.8073	381.5013	130.3973
<i>Sum of Square Deviation = $\sum (Y - \hat{Y})^2$</i>	4.334217	11.04462	0.349447	2.309412	0.389054
<i>Sample Size = n</i>	38	38	38	38	38

Table – 4.1 shows that error term of the model is normally distributed J – B test has appeared to be insignificant. After the descriptive statistics, the unit root problem is tested by using Augmented Dicky Fuller (1981) test. The results of unit root test are given into Table – 4.2 and these results have shown that the variables have unit root problem when they are tested at level but when all these variables are tested at first difference then the problem of unit root have disappeared from all the variables and hence all the variables have become stationary at first difference. After the unit root test, the maximum lag length of the model is found by using Vector Autoregressive (VAR) Model. The results are presented into Table – 4.3 and it has confirmed that the maximum lag length of the model is 2 and it is selected on the basis of the minimum value of Hannan-Quinn Information Criterion. The estimated results for unit root test and lag length criteria are given in the below tables: Table – 4.2 and Table – 4.3 respectively.

TABLE – 4.2 UNIT ROOT TEST

Augmented Dickey Fuller Test					
Variables	At Level		Variables	At First Difference	
	t – Statistics	Prob.* Value		t – Statistics	Prob.* Value
LUN_t	-1.375756	0.5824	ΔLUN_t	-3.235986	0.0267
$LCPI_t$	-1.976225	0.2954	$\Delta LCPI_t$	-3.330387	0.0214
LTR_t	-2.487483	0.1273	ΔLTR_t	-3.662153	0.0096
LGR_t	-0.692804	0.8360	ΔLGR_t	-3.191133	0.0290
LUB_t	2.006305	0.9998	ΔLUB_t	-2.741844	0.0786
Critical Values			1% level	-3.661661	
			5% level	-2.960411	
			10% level	-2.619160	
*MacKinnon (1996) one-sided p-values.					

TABLE – 4.3: LAG LENGTH CRITERIA

VAR Lag Order Selection Criteria						
<i>Lags</i>	<i>Log L</i>	<i>LR</i>	<i>FPE</i>	<i>AIC</i>	<i>SIC</i>	<i>HQ</i>
0	125.2965	NA	7.12e-10	-6.874083	-6.651891	-6.797382
1	344.5787	363.3821	1.09e-14	-17.97593	-16.64277*	-17.51572
2	380.5398	49.31808*	6.41e-15*	-18.60228	-16.15816	-17.75857*
3	408.5861	30.45016	6.95e-15	-18.77635*	-15.22126	-17.54913

* indicates lag order selected by the criterion
LR : Sequential Modified LR Test Statistic (Each Test At 5% Level)
FPE : Final Prediction Error
AIC : Akaike Information Criterion
SIC : Schwarz Information Criterion
HQ : Hannan-Quinn Information Criterion

As it has found that all variables have become free from unit root problem at first difference; therefore, it is more suitable to apply Johansen and Juselius (1990) Maximum Likelihood Approach. The estimated results are given in the below Table – 4.4:

TABLE – 4.4 UNRESTRICTED COINTEGRATION RANK TEST

Unrestricted Co – Integration Rank Test							
Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	114.4720	76.97277	0.0000	None *	44.89172	34.80587	0.0023
At most 1 *	69.58031	54.07904	0.0012	At most 1 *	32.57825	28.58808	0.0146
At most 2 *	37.00206	35.19275	0.0316	At most 2	19.56219	22.29962	0.1154
At most 3	17.43986	20.26184	0.1169	At most 3	10.55801	15.89210	0.2862
At most 4	6.881853	9.164546	0.1328	At most 4	6.881853	9.164546	0.1328

Trace test indicates 3 co-integrating equations whereas Max-eigenvalue test indicates 2 co-integrating equation at the 0.05 level of significance.
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Two tests statistics are used at 5% level of significance in the Johansen and Juselius (1990) maximum likelihood approach and these tests are (i) Trace statistics and (ii) Maximum Eigen statistics; the results given in Table – 4.4 have shown that there are found three Co –

Integrating equations according to Trace statistics and there are found two Co – Integrating equations according to Maximum Eigen statistics. Hence it could be stated that there exists long run relationship among Unemployment; Inflation, Trade Openness, Economic Growth and Urban Population as share of Total Population in case of Pakistan. After finding long run relationship among the variables of the model, the long run estimates are found in the below Table – 4.5 by using equation 3.1:

TABLE – 4.5 ESTIMATED LONG TERM DYNAMICS

Dependent Variable: LUN_t				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LUN_{t-1}	0.587249	0.135369	4.338144	0.0002
$LCPI_t$	0.127305	0.064080	1.986649	0.0565
LTR_t	0.425894	0.392668	1.084614	0.2870
LTR_{t-1}	-0.912502	0.367564	-2.482567	0.0191
LGR_t	-3.635561	1.141775	-3.184131	0.0035
LUB_t	-43.25611	19.92455	-2.170995	0.0383
LUB_{t-1}	52.80984	22.00250	2.400175	0.0230
C	6.308700	2.529847	2.493708	0.0186
R – Squared	0.853687	Mean Dependent Variable		1.506068
Adjusted R – Squared	0.818370	S.D. Dependent Variable		0.341839
S.E. of Regression	0.145685	Akaike Information Criterion		-0.825932
Sum Squared Residual	0.615498	Schwarz Information Criterion		-0.477625
Log Likelihood	23.27974	F – Statistic		24.17223
Durbin-Watson Statistic	2.254724	Prob. Value (F – Statistic)		0.000000

Table – 4.5 shows that one period lag term of unemployment; inflation, and one period lag term of urban population are significantly adding to unemployment in the long run; trade openness is also adding to unemployment in the long run but its impact on unemployment is insignificant. However; the first period lag term of trade openness, economic growth, and

urban population are significantly but inversely linked to unemployment in the long run. The model as whole is also significant in the long run. The positive relationship of inflation and unemployment is more consistent with the studies of Rogerson's (1988); Cooley and Hansen (1989), Mortensen and Pissarides (1994), Shi (1997), Pissarides (1999), Berentsen, Lagos and Wright (2005), Lehmann (2006), Beyer and Farmer (2007), Kumar (2008), Berentsen, Menzio and Wright (2008), and Menzio and Wright (2008).

The inverse relationship of economic growth and unemployment is also consistent with the studies of Vandemoortele (1991); Oladeji (1994), Umo (1996), Rama (1998), Silvapulle et al (2004) and Stephen (2012). The negative impact of urbanization on unemployment in this study has denied the findings of Haider and Haider (2006). The positive relationship of trade openness with unemployment in this study is not consistent with the findings made by Dutt; Mitra, and Ranjan (2009) and Felbermayr; Prat, and Schmerer (2011b). After finding the impact of independent variables on unemployment for the long run time, now the impact of these independent variables is tested on unemployment for the short run time for a case of Pakistan and the results are given in the below Table – 4.6:

TABLE – 4.6 ESTIMATED SHORT TERM RESULTS

Dependent Variable: ΔLUN_t				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ΔLUN_{t-1}	0.487900	0.292141	1.670082	0.1065
$\Delta LCPI_t$	0.043145	0.067647	0.637798	0.5290
ΔLTR_t	0.646581	0.372215	1.737117	0.0938
ΔLGR_t	-1.933818	1.459247	-1.325216	0.1962
ΔLGR_{t-1}	-2.010546	1.739058	-1.156112	0.2578
ΔLUB_t	-76.80115	31.10243	-2.469298	0.0202
ΔLUB_{t-1}	75.50793	30.50480	2.475281	0.0199
ECM_{t-1}	-1.137557	0.359498	-3.164291	0.0038
C	0.118494	0.151239	0.783486	0.4402
R – Squared	0.504914	Mean Dependent Variable		0.014224

Adjusted R – Squared	0.358221	S.D. Dependent Variable	0.182155
S.E. of Regression	0.145927	Akaike Information Criterion	-0.799106
Sum Squared Residual	0.574955	Schwarz Information Criterion	-0.403226
Log Likelihood	23.38391	F – Statistic	3.441992
Durbin-Watson Statistic	2.076628	Prob. Value (F – Statistic)	0.007393

Table – 4.6 shows that one period lag term of unemployment and inflation are insignificantly adding to unemployment in the short run; economic growth and its first period lag term are insignificantly reducing unemployment even in short run, but urban population is significantly declining unemployment in the short run and then trade openness and first period lag term of urban population are significantly adding to unemployment in the short run in case of Pakistan. In the end, the first period lag term of the error term is also negative and significant which is showing that the model of this study does meet the convergence hypothesis which means that if there emerges any disequilibrium in the long run stable equilibrium due to short run fluctuations then it will be adjusted again and it will take around 0.88 years to achieve long run stable equilibrium and hence concluding that the pace of adjustment is quite strong. The model as whole is also significant for the short run time.

5. CONCLUSION AND RECOMMENDATIONS

5.1. CONCLUSION

This study examines the impact of inflation; trade openness, economic growth, and urban population as share of total population on unemployment both in long term and in short term in case of Pakistan for the period ranges from 1973 – 2010.

It has found that unemployment lagged by one year and inflation are affecting significantly to unemployment in the long run but these factors are insignificant affecting to unemployment in the short run. Trade openness has insignificant impact on the unemployment in the long run

but in the short run the impact of trade openness on unemployment becomes significant and positive. The trade openness lagged by one year is also significant in the long run but it has an inverse relation with unemployment. Also, economic growth reduces unemployment significantly in the long run but this impact of economic growth on unemployment remains negative. However, the unemployment responds insignificantly to the changes in the economic growth in the short run. Moreover, the economic growth lagged by one year also remains insignificant in the short run and the relationship of the economic growth lagged by one year and unemployment has appeared to be negative.

Last but not the least; the impact of urban population as share of total population on unemployment significant and negative in the both long run and short run respectively, but, the urban population as share of total population lagged by one year is significantly raising unemployment in the both long run and short run respectively in case of Pakistan.

5.2. RECOMMENDATIONS

The literature and the findings of this study have confirmed that inflation and economic growth have significant relationship with unemployment. Therefore; targeting unemployment via inflation and economic growth channel will be more helpful in case of Pakistan. This study proposes recommendations to control inflation and these recommendations are given as below:

1. As it has found that inflation has a significant and positive relation with unemployment in the long run; therefore, both fiscal and monetary authorities must design policies in such a way that inflation would come down. The fall in the inflation will eventually decrease unemployment.
2. The findings have reported that as economic growth increases; it significantly decreases unemployment in the long run and short run respectively. It means that both fiscal and monetary authorities must set up an environment which could flourish investment

opportunities in the country. Increase in investment will increase production and employment in the country and hence unemployment will decline.

- 3.** Another factor which is significantly hitting unemployment is increase in the size of the population in the cities. It has witnessed that due to increase in the size of the urban population; unemployment has significantly reduced into both long run and short run respectively. This study proposes that as size of the urban population expands government must ensure that the supply of availability of resources remains larger as compared to the increase in the size of the urban population. Otherwise, the unemployment will increase rather decreasing.
- 4.** Lastly, it has also found that trade openness is insignificantly affecting unemployment in the long run; but, in the short run, trade openness is significantly increasing unemployment in the country. Openness to trade may be beneficial to reduce unemployment if both fiscal and commercial policies are formulated by increasing the skills and education of the working labor force; by introducing research and development to the firms and by reducing import duties on the imports of advanced and modern technology. All this will enhance production activities in the country and hence the employment will increase and unemployment will come down.

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