

## The Impact of Inflation on Unemployment to the Extent of Pakistan

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### Abstract

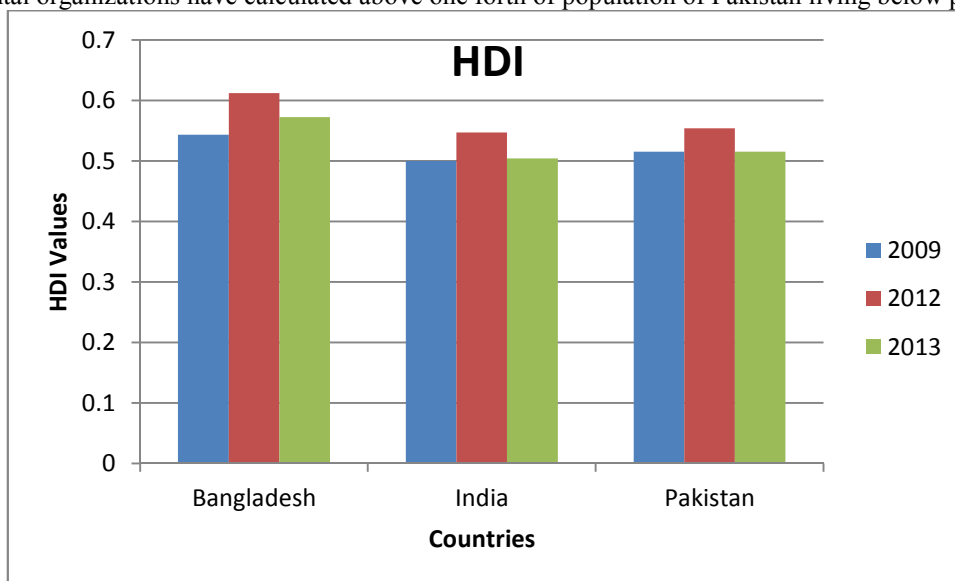
This work studies the association between Unemployment Rate (UR) and Inflation Rate (IR) for Pakistan for the span of 1973 to 2014. OLS and ECM is employed to investigate the empirical association between the UR and rate of inflation. Outcomes of this study disclose that there is strong, indirect and significant association found between UR and IR. As this is important finding for Pakistani perspective since both have strong trade-off.

**Keywords:** Inflation, Error correction model, Inflation, Long Run, Philips Curve, Short run, Unemployment.

**JEL Code:** E31, P24, E24, J64.

### INTRODUCTION:

For consecutive Pakistani governments, unemployment and poverty stand as most important challenges similar to different underdeveloped and developing nations. At the moment, non-governmental organizations (NGOs) governmental organizations have calculated above one fourth of population of Pakistan living below poverty line.



Source: UNDP Reports (Different)

Countries	2009	2012	2013
Bangladesh	0.543	0.500	0.515
India	0.612	0.547	0.554
Pakistan	0.572	0.504	0.515

Source: UNDP Reports (Different)

In accordance with United Nation Development Program (UNDP), HDI different reports, Bangladesh, India, and Pakistan place at 0.572, 0.543 and 0.612 in 2009, 0.504, 0.500 and 0.547 in 2012 and 0.515, 0.515 and 0.554 in 2013 correspondingly. These reports moreover explain an irregular wealth distribution within Pakistan that highest ten percent of population occupies 27.6 percent and lowest ten percent get merely 4.1 percent of the

total GDP. There are numerous elements accountable intended for Pakistani poverty; even though in this research article association among poverty, inflation and unemployment has been considered.

The association between inflation and unemployment is different in every/different economy Slesnic (1993). In Various countries both are too much high. A number of countries have low unemployment and too much inflation and in some countries too much unemployment and low inflation Blank, R.M. (1993). Likewise numerous economies have moderate to lower unemployment and moderate to low inflation and in same manner some economies have moderate to high unemployment but moderate to low inflation. For that reason rate of inflation exists in distinct economies diversely Chaudhary et al (1995).

Thus inflation is proper research objective for investigation because it exists everywhere in economy. Relationship between unemployment and inflation is also critically investigated in this present article. The detection of relationship between unemployment and inflation will give ability to understand problems related to economy and how to resolve these issues. This article maybe helpful to characterize the determining factors of UR. It also significantly illustrates various vital results for the enhancement of the present condition.

UR and rate of economic growth stay essential problems for all nations in spite of their level of development. The basic macroeconomic goals of any country are to reducing UR and enhance rate of economic growth. While, a lot of literature regarding the association between UR and rate of economic growth, the intensity and the direction of the empirical association between unemployment and economic growth is still controversial issue. Distinctions in the countries' economic structures further reflect upon the association between UR and rate of economic growth to a vast degree. The converse connection between UR and rate of economic growth was initially focused by Okun (1962). Emulating studies have generally anticipated confirmation that is similar to the study of Okun. It is conceivable to gathering these studies in the writing into two.

Pakistan's macroeconomic stability is vulnerable, and also not enough to decrease UR. The growth rate of the economy is around 3.5% to 4.5% for last six years and in the same period government is achieved some success to control the inflation and drag it down to single digit. This recommends that vulnerable macroeconomic dependability is not enough to decrease unemployment and make the required employments. Insights from the different issues of the economic surveys and Labor Force survey that economic and political stability is much necessary for employment growth and investment.

There is negative association between employment and minimum wage if it is set at very high level. If the minimum wage increases, the firms with low value added output of the market, results to expand inflows to unemployment. By presenting inflexibility at the base of the wage distribution and by keeping firms from offering lower compensation, outstandingly to new job contracts, the minimum wage permitted by law lessens inflows to job. Significant upward changes in the minimum wage permitted by law can likewise create general wage pressures as workers try to re-make wage disparities over the minimum wage.

### **Review of Previous Literature:**

There are different empirical works available that researched the factors that determine the UR. Few articles examined the factors that determine the UR from a microeconomic point of view, whereas remaining explored the macroeconomic factors that determine the UR in both developing as well as developed nations. There are likewise distinctive hypothetical models that are applicable for the examination of the factors UR.

Dickens, et al (1999) concentrating on the industry based British Wages Councils span from 1975 to 1992. The results uncover that minimum wages altogether pack the circulation of income however don't have a negative effect on rate of employment.

Madeline (2000) inspects the impact of the minimum wage increments on high teen hours of work and employment utilizing both individual as well as state level panel data in the US. The results at state-level demonstrate that lowest wage enhances May higher rates of unemployment however doesn't unfavorably influence hours among moreover working youngsters or the entire adolescents. The results at individual-level don't point out that lowest wage enhances have a critical negative impact on hours worked by low-wage adolescents who are liable to be influenced by a minimum wage enhance. The outcomes recommend that low-wage teenagers are more probable to stay in employment, with respect to high-wage adolescents, when the lowest level of wage is increased.

Fialová & Mysíková (2009) performing study in Czech Republic regarding "The Minimum Wage: Labor Market Consequences in the Czech Republic." Utilizing territorial data span for 1995 to 2004, it evaluates the impact of the lowest wage balanced for the local wage differential on provincial unemployment. The observational results uncover that the lowest wage has had a critical effect as far as expanding provincial unemployment and decreasing the job probabilities of low-wage individuals.

Eita & Ashipala (2010) explores the reasons for unemployment in Namibia for 1971-2007. The outcomes uncovered that there is inverse association in the middle of rate of inflation and UR within Namibia. UR reacts directly if genuine output is beneath possible output, and if wages increment. An increment in

investment reasons UR to reduce essentially. The outcomes give confirm that the Phillips curve embraces for Namibia and UR can be lessened by expanding total demand.

Fuad (2011) examines the association in the middle of UR and rate of economic growth in Jordan during the execution of law of Okun. Utilizing yearly data span for 1970-2008, time series approach are utilized to check the connection in the middle of UR and rate of economic growth as well as to acquire estimates for Okun's coefficient. Specifically, the study utilized Augmented Dickey-Fuller (ADF) to check stationarity of data, to check long run cointegration test and a basic regression between UR and rate of economic growth. The empirical outcomes uncover that Okun's law can't be affirmed for Jordan. In this manner, it can be recommended that the absence of economic growth doesn't clarify the UR issue in Jordan.

Aminu & Anono (2012) examines the association between rate of inflation as well as UR for the Nigeria span for 1977 to 2009. The ADF method is used to inspect the stationarity subsequent to which Granger causality test is used to verify causation in the middle of rate of inflation as well as UR, then to check long run relationship Johansen cointegration test is used, finally GARCH as well as ARCH method was carried out to observe the volatility in data. The outcomes point out that price rise effect indirectly on the UR. The Granger causality analysis discloses that no causation between rate of inflation as well as UR in Nigeria for said era. Long-run association presents between rate of inflation as well as UR. GARCH as well as ARCH outcomes disclose that the data span in evaluation show a high instability clustering.

Dogan (2012) examines the impact of selective macroeconomics shocks on UR for the span 2000 quarter one to 2010 quarter one in Turkey. It is finds in the study that growth rate in export, economic growth rate and rate of inflation shrink UR. Conversely, foreign exchange rate, rate of interest (interbank) as well as supply of money enhance UR. The outcomes of this research are reliable with respect to Okun's Law as well as Phillips curve implication. That is, inverse association between UR and output as well as direct association between rate of inflation and UR are establish.

Oloni (2013) investigates the impact of economic growth rate on employment generation within Nigeria. The Johansen-cointegration test and VECM were employed in the study. The outcomes discovered that, even though rate of economic growth had direct association along with employment, but this association is insignificant. Government spending has direct and statistically considerable impact over rate of employment whereas FPI has inverse as well as statistically considerable impact over rate of employment.

Cheema & Atta (2014) examines the factors that determine UR in Pakistan. The results of this study discover the factors by employing the Auto Regressive Distributed Lag bound testing technique employing the data span from 1973 to 2010. Outcomes point out that UR has direct associations with output gap and this relationship is statistically significant. It has also direct associations with Productivity and Economic Uncertainty which is also statistically significant, whereas UR has inverse associations with Trade Openness and Fixed Gross Investment but this relationship is less statistically significant.

### Methodology:

Engel Granger is utilized for bi-variant model and Ordinary Least Square is practiced when the choose variables became stationary at level. The ADF test is used to check stationary of data.

ADF (unit root test) testing regression equation as follows:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha_i \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t$$

Where:

- $Y_t$  symbolizes as time series variable,
- $\Delta$  symbolizes as 1<sup>st</sup> difference operator,
- $t$  symbolizes as trending variable,
- $A$  symbolizes as Constant
- $\varepsilon$  symbolizes as Residual term.

The null hypothesis of unit root is  $\beta=0$

If non stationarity is found in variables at level then the first difference will be taken for further evaluation. Then the ECM is run to evaluate the Short run model which is as follows:

$$ECM = \Delta UR = \alpha + \beta_2 \Delta GRCPI + \beta_3 ECT_{t-1} + \varepsilon$$

$$ECM = \Delta UR = \alpha + \beta_2 \Delta GRWPI + \beta_3 ECT_{t-1} + \varepsilon$$

In ECM  $ECT_{t-1}$  is Error Correction Term.

**Empirical results and analysis:**

**Table no. 1 Unit root test (ADF)**

Variables	Calculated value	1% Critical value	5% Critical value	10% Critical value	Prob
UR (0)	-8.909800	-4.198503	-3.523623	-3.192902	0.0000
GRCPI (0)	-3.386440	-4.205004	-3.526609	-3.192902	0.0672
GRWPI(0)	-3.698098	-4.198503	-3.523623	-3.192902	0.0338

Source: Authors Estimation

All the Variables are Stationary at level at 10% level. So we can use OLS estimation technique to evaluate the relationship.

**Table no. 2 Ordinary Least Square Estimation Results With CPI**

Variable	Coefficient	Std. Error	t-Statistic	Prob
GRCPI	-0.17954	0.04647	-3.86392	0.0004
C	6.707656	0.55092	12.17527	0.0000
AR(1)	0.411669	0.11299	3.643344	0.0008
R-squared	0.409032	Adjusted R-squared		0.3779
F-statistic	13.15065	Durbin-Watson stat		1.5642
Prob (F-statistic)	0.000046	Inverted AR Roots		0.41

Source: Authors Estimation

Above result show significant relationship between UR and GRCPI which is unemployment and growth rate in consumer price index or inflation. If there is 1% increases in inflation the UR reduce by 0.17954.

**Table no. 3 Ordinary Least Square Estimation Results with WPI**

Variable	Coefficient	Std. Error	t-Statistic	Prob
GRWPI	-0.17347	0.04426	-3.9197	0.0004
C	6.648973	0.52137	12.75294	0.0000
AR(1)	0.39443	0.10783	3.658005	0.0008
R-squared	0.424851	Adjusted R-squared		0.3946
F-statistic	14.0349	Durbin-Watson stat		1.3801
Prob(F-statistic)	0.000027	Inverted AR Roots		0.39

Source: Authors Estimation

Above result show significant relationship between UR and GRWPI which is unemployment and growth rate in consumer price index or inflation. If there is 1% increases in inflation the UR reduce by 0.17347.

**Table no. 4 Error Correction Model with CPI**

Variable	Coefficient	Std. Error	t-Statistic	Prob
D(GRCPI)	-0.01228	0.037264	-0.32962	0.744
D(c)	1.5755	0.75985	2.0735	0.045
D(T)	0.029464	0.018443	1.5976	0.119
ecm(-1)	-0.3982	0.14505	-2.7452	0.009
R-squared	0.20686	Adjusted R-squared		0.140
F-statistic	3.1297	Durbin-Watson stat		1.757
Prob(F-statistic)	0.037			

Source: Authors Estimation

Above result shows negative significant coefficient of error correction term which employs that there is convergence in the short run.

**Table no. 4 Error Correction Model With WPI**

Variable	Coefficient	Std. Error	t-Statistic	Prob
D(GRwPI)	-0.04179	0.035148	-1.189	0.242
C	1.9569	0.67857	2.8839	0.007
T	0.031277	0.017569	1.7803	0.083
ECT(-1)	-0.42784	0.13162	-3.2505	0.003
R-squared	0.23453	Adjusted R-squared	0.17074	
F-statistic	3.6765	Durbin-Watson stat	1.757	
Prob(F-statistic)	0.021			

Source: Authors Estimation

Above result shows negative significant coefficient of error correction term which employs that there is convergence in the short run.

### Conclusion

High UR and high rate of inflation are two of the worst troubles in almost every nation particularly for developing countries. Developing country like Pakistan it become a serious issue because large portion of the population living below the poverty line and if there is high unemployment exist in than this problem become very severe. Inflation is somehow acceptable if the unemployment is low since people has income to fight with inflation, but if unemployment is high it become curse. According to A. W. Philips there is inverse association between UR and rate of inflation. It is kind of constant problem that face trough out the life span. The findings of the results disclose significant inverse association found between rate of inflation and UR.

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