DETERMINANTS OF UNEMPLOYMENT:
A CASE STUDY OF PAKISTAN ECONOMY (1998-2008)

M.Rafiq[*][†], Iftikhar Ahmad[‡] Asmat ullah[§] Zahoor Khan[**]

Abstract

This study has been conducted to analyze the determinants of unemployment in Pakistan economy for the period of 1998-2008 using Simple Single Equation Linear Regression Model (SELRM). Population growth, Inflation rate (CPI based) and FDI is used as explanatory variables. Our main finding includes that population growth stimulate unemployment positively and inflation and FDI has negative impact on unemployment. The study confirmed trade off between inflation and unemployment in Pakistan economy.

Introduction:

Unemployment is one of the major problems in almost all countries of the world. It has been the most consistent problem which is facing by all industrially advance as well as poor countries. Unemployment is defined as the condition of having no job or being out of work or proportion of people which are able to work and actively searching jobs but they are unable to find it. IMF report (1998) defines 'unemployment is measured annually as percentage of labor force that can't find a job'. International Labor Organization (2001) defines unemployment as situation of being out of work or need a job and continuously searching for it in the last four week or unemployed (age 16 or above) but available to join work in the next two weeks. People who voluntarily do not want to work, full time students, retired people and children are no included in unemployed category.

[*]   Assistant Professor in economics, Institute of Management Sciences, Peshawar
[†]   Assistant Professor in economics, Institute of Management Sciences, Peshawar
[‡]   Research Student, Applied Economics, Institute of Management Sciences, Peshawar
[§]   Visiting Lecturer, Institute of Management Sciences, Peshawar
[**]   Zahoor Khan Lecturer, Department of Economics University of Peshawar.

Dramatic increase in the level of unemployment is a big headache in less developed countries in particular and advance countries in general. A number of social problems are driven by high growth of unemployment, for example Harvey & Blenna (1998) studied unemployment and social problems and they concluded that unemployment gave rise to crimes, suicides and poverty rates. Unemployment suffers workers, workers' families and even countries because lost of job means lost of income both at individual level and national level.

Ozturk L. & Akhtar.I. (2009) took an comprehensive approach to unemployment by using VAR of " Variance Decomposition and Impulse response function analysis". He was interested in studying interrelationship among Foreign Direct investment, Export, Gross Domestic product and unemployment in Turkey for the period of 2000-07. They found only two counteracting vectors in the system, showing long run relationship. They concluded that foreign direct investment did not lead to reduce unemployment in Turkey. GDP is positively affected by variations in exports but is insignificant. So they did not found any evidence of export led growth in Turkey. Again, Variations in DGP was no attached with reduction of unemployment.

Marika Karanassou.et.al (2007) analyzed labor market dynamically to find relationship between capital stock and unemployment. They used indirect transmission channels of the effects of capital stock for estimating single equation unemployment model. The major variables they used were interest rates and investment ratios. They introduced different approaches especially by direct estimation of the model of "Employment theory of Chain response" for the effects of capital stock on labor market. They concluded that capital stock is the key determinant of unemployment.

Aleksander.et.al (2009) focused on studying long run relationships among money supply, interest rate and unemployment. They concluded that these variables are positively related at low frequencies. They developed such a framework where

money and unemployment were modeled by using micro details based on "search and bargaining theory". They provided a unified theory for analysis of labors and goods markets. As people hold a sizable amount in unemployment so the use of monetary theory can be on basis of search and bargaining or may an alternative ad hoc plan.

Mark C. Foley (1997) used Russian People's longitudinal survey for studying determinants of unemployment in early stages of economic transition in Russia. He used a discrete-time waiting model along with competing risk and heterogeneity models. He concluded that married women experience longer unemployment period than married man. Older worker face higher unemployment period as compared to younger worker. Persons with lower education were forced to have longer unemployment spell.

Kupets. O.V (2005) studied determinants of unemployment in Ukraine between 1997 & 2003. He used Ukrainian Longitudinal Monitoring Survey 2003, to investigate an individual conditional probability about leaving unemployed to employ. Effects of unemployment benefits on unemployment were not conformed. Again, Multivariate Analysis suggested that long term unemployment reduction policies should focus more on less educated & older workers and residents of rural areas.

Elameskov. et al (1998) focused on relationship between unemployment and taxation in OCED countries for the period of 1983-1994. He used Hausman specification test & concluded that impact of taxation on unemployment is positive and exogenous in short run where as in long run, relationships are simultaneously determined. Main conclusion is taxation as a major determinant of unemployment in long run.

Shu-Chen Chang. (2006) applied VAR method of variance decomposition and impulse response function analysis for studying relationship among economic growth, trade, foreign direct investment(FDI) and unemployment in Taiwan. The result showed that export and economic growth effect FDI inflow positively however export expansion has negative impact on FDI outflow. Study confirmed no

relationship between FDI and unemployment where as negative relationship between unemployment and economic growth was obvious and confirmed.

Izraeli and Murphy (2003) studied influence of degree of industrial diversification on unemployment rates and per capita income in seventeen states. The result showed that a state with more diversified base has lower unemployment rate. Evidence on the relationship between per capita income and industrial diversification remained inconclusive.

Though a lot of work has been done on relationship between unemployment and other set of macroeconomic variables but less attention is paid to determinants of unemployment i.e. what are the major determinants of unemployment? This paper proceeds to employ simple econometrics technique of Regression analysis for analyzing determinants of unemployment based on evidence from Pakistan economy.

Research Methodology:

We have estimated simple single equation linear regression model (SELRM) for analysis of determinants of unemployment in Pakistan economy. Simple specification of SELRM is given below.

$$UR = \partial_0 + \partial_1 PG + \partial_2 FDI + \partial_3 INR + U_i \qquad (1)$$

Where UR stand for unemployment rate, PG represent population growth, FDI is for Foreign Direct Investment and INR denotes Inflation rate. Some researchers have taken these listed variables for studying unemployment in different context, e.g. Shu-Chen Chang. (2006) and Ozturk L. & Akhtar.I. (2009) have used FDI in VAR framework. Remaining variables i.e. PG and INR (CPI based) are added as determinants of unemployment on priory basis.

Data on each variable have been taken from various issues of economic survey of Pakistan for the period of 1998-2008. Only FDI is in Millions of Dollars and rest of

variables are measured in growth or percentage change. Model is estimated using OLS technique and significance of results have been checked by using usual t-test.

Empirical Results:

Based on data for the period of 1998-2008, the empirical result of estimated SELRM is presented in the following table.

Table No:1 Determinants of Unemployment (Result of Model-1)

Model-1	Unstandardized coefficients		dardized coeffici	T – value	Probability
	B	Standard error	Beta		
Constant	13.862	2.775		4.931	.002
PG	1.704	0.873	0.521	-1.951	.092
FDI	-0.002	0.000	-0.995	-4.332	.003
INR	-0.250	0.053	-1.552	-4.707	.002

$R^2 = 0.806$ Adjusted R square = .722

F = 9.674   Sig = .007

D = 3.060   C.R : dl = 0.715   du = 1.816   n = 11

The results of the model- 1 are shown in table-1. Empirical evidence suggests that Population growth has a positive and significant relationship with unemployment. It means that with increase in population, unemployment also increases. Many studies in the past have reported that high population growth has a negative impact on macroeconomic variables of all almost all countries especially poor countries. Pakistani population is growing annually by 1.9% which is very high. The present study reveals that high population growth is the key determinant of unemployment.

FD1 plays vital role in development of less developed countries. FDI opens and strengthen economy. Empirical results suggest that FDI inflow and unemployment is

negatively related and its coefficient is statistically significant. FDI inflow opens employment opportunities and thus helps in reducing unemployment.

Inflation and unemployment together got popularity after Phillip's (1958) works on unemployment and rate of change of money wages which was than restated in terms of inflation and unemployment short run trade-off. He found that unemployment and inflation is inversely related in short run and our finding confirm Phillip's (1958) claim. The coefficient of inflation rate is not only negative but also statistically significant.

The value of R-Square is close to 0.80 which indicate very well fit to data. It means that about 80% changes are due explanatory variables (PG, FDI, INR) and rest of 20% is due to error term. The value of F-test is also very highly significant which means that overall model is well fitted. The value of d-statistic is 3.060 which is very close to 4. It is perhaps suffer from negative autocorrelation. More research in this area can be related to inflation and unemployment relationship (both long run and short run) and also more econometrics work can be done to obtain more reliable estimates.

Conclusion and Recommendations:

Unemployment is one of the major problems in almost all countries especially less developed countries. It has been very consistent problem and remains difficult to manage in many countries. Unemployment can be viewed from different dimensions but the present paper focus on the determents of unemployment. Our finding reveals that population growth contributes to unemployment positively and FDI and inflation rate has negative impact on unemployment. Population growth is statistically significant at 10% level where as FDI and inflation rate both is significant at 1% level. We also observed trade-off between unemployment and inflation in Pakistan economy but more research is needed to check it whether is short run trade-off or long run one.

Based on this paper, it is highly recommended that govt. should give proper attention to population growth. Rapid growth of population creates unemployment pressure along with other problems. All possible steps are needed to capture investor from abroad because FDI plays very vital role in decreasing unemployment. Govt. should try attracting foreign investor.

References

Aleksander Berentsen, Guido Menzio, and Randall Wright,.(2009) "Inflation and Unemployment in the Long Run".

Andrea Bassanini and Romain Duval. (2006). "The Determinants of Unemployment across OECD Countries: reassessing the role of policies and institutions." OECD Economic Studies No. 42.

Blackley, P.R. (1991) "The Measurement and Determination of Okun's Law. Evidence from State Economics".

Elmeskov, J., J.P. Martin and S. Scarpetta (1998). "Unemployment and Labor Market Rigidities in OECD Countries – The Impact of Taxes". *Swedish Economic Policy Review* 5 (2): 207–258.

Eran Yashiv (2000)."The Determinants of Equilibrium Unemployment." The American Economic Review, 90 (5): 1297-1322 http://www.jstor.org/stable/2677852 Accessed Date:

Kupets O.V. (2005). "Determinants of unemployment duration in Ukraine-Moscow: EERC." Economics Education and Research Consortium. Working Paper Series. ISSN 1561-2422

Latif Ozturk and Ismail Aktar. (2009) "Can Unemployment be Cured by Economic Growth and Foreign Direct Investment in TURKEY?" International Research

Journal of Finance and Economics. 27: 1450-2887.

http://www.eurojournals.com/finance.htm

Mark C. Foley.(1997) "Determinants of unemployment duration in Russia". Center Discussion Paper No. 779. Economic Growth Center.

Marika Karanassou, Hector Sala, and Pablo F. Salvador . (2007) "Capital Accumulation and Unemployment: Capital Accumulation and Unemployment: new insights on the Nordic, experience". Economics review. 90 (5):1223-1322 http://www.jstor.org/stable/2587763

Mary J. Keeney1. 2008. "Wage Inflation and Structural Unemployment in Ireland". Economic Analysis and Research Department. Central Bank and Financial Services Authority of Ireland. http://www.centralbank.

Shu-Chen Chang. (2006). "The dynamic interactions among foreign direct investment, economic growth, exports and unemployment: evidence from Taiwan". Econ Change (2005) 38:235–256

Thomas L. Bogacz. 2004. "Investment Enigma: Determinants of U.S. Foreign Direct Investment in Europe." Indiana University of Pennsylvania 916 Orchard ark Drive Gibsonia, PA, 15044.