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Chapter 114

A Study on Determinants of Unemployment in Pakistan

Asif Kamran, Sobia Shujaat, Nadeem A. Syed and Syed Nayyer Ali

Abstract This study has been carried out to examine the determinants of unemployment in Pakistan for the period of 1981-2010 using Regression Model, descriptive stats and graphs. Population growth, Interest rate, foreign direct investment, gross domestic product and literacy rate in Pakistan are being used as explanatory variables. Also the state of democracy in the country has been taken into consideration. Findings include that population growth fuels unemployment positively and where as literacy rate and foreign direct investment has negative impact on unemployment. Often it is perceived that unemployment rate of rural areas is greater because in rural areas there are less chances of employment as compared to urban areas where there are more chances of employment due to more industries. Political regime is also taken into consideration as a dummy variable. In this research we also analyze factors underlying the employment, study the trends of variables involved in the study and suggest recommendations for reduction in unemployment in Pakistan. Numerical data collected from various sources which will be presented in forms of charts and tables and will be given statistical and mathematical treatment through use of E-views. The study is by and large descriptive in nature all the findings will be analyzed theoretically and objectively.

Keywords Foreign direct investment (FDI) · Real gross domestic product (RGDP) · International monetary fund (IMF) · Unemployment rate (UE) · Population growth rate (PGR) · Political regime (PR) · Literacy rate (LR)

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114.1 Introduction

Unemployment is a critical problem and reflects the underutilization of manpower by one nation. High unemployment not only results resource wastage but also results in economic agony. Unemployment is one main problem faced by every nation, be it a highly developed and industrialized or a deprived country. There are several definitions and explanations for unemployment. It can be 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 for ages 16 or above of being out of work or need a job and continuously searching for it in the last four week but available to join work in the next two weeks. The unemployed category do not include those who voluntarily do not work, it includes students who are studying full time, those who are retired, medically unfit and children. However, all people who are without work, accessible for work and in search of for work are included in unemployed people.

Unemployment is more evident in developing nations and it gives birth to many undesirable social consequences in the country e.g. crimes such as theft and burglary, suicide, assassination and a threat to the national security etc. It not only affects the individuals but also by and large the country’s economic standing. According to Pakistan Bureau of Statistics, it has a population over 177 million and as per Pakistan Economic Survey 2011-12, the literacy rate in Pakistan is 58 percent. Foreign Direct Investment in Pakistan is around 532 million dollars in 2012, where as the GDP growth rate of the country is around 3.7 percent, which has steadily declined over the past decade. It is a developing country and is facing numerous social problems including unemployment being one of the major one. The unemployment rate in Pakistan is around 5.55 percent. There are numerous factors that affect the unemployment rate in Pakistan. The explanatory variables under study are Population Growth Rate (PGR), Gross Domestic Product (GDP), Poverty Rate (PR), Interest Rate (IR) and Foreign Direct Investment (FDI). Studies have been conducted to understand the determinants of unemployment in different nations and Pakistan, however there still exist a need to find out the relationships of all these factors with one another. This can provide insights to the policy makers to devise strategies for national growth. This study examines the trends in unemployment rate since 1981 to 2010 in Pakistan.

114.1.1 Literature Review

Considerable amount of text is available for the determinants of unemployment, which helps us to inspect the different aspects of unemployment as observed throughout the world. Khan and Ali [10] investigated the problem of educated unemployed persons in Pakistan, majority of which are less than thirty years of age.

The study analyzes primary and secondary data sources. It shows that around fifty percent of unemployed people are not willing to move away from their homes for employment purpose. The paper suggests that for career counseling the information base needs be enhanced. Chaudhry and Hamid [5] inspected the reasons on unemployment in Pakistan. It is observed that one of the main reasons of unemployment in Pakistan is the low quality of human resource in Pakistan. Hunt [14] studied the employment rate for east German for 10-54 years old after monetary union with the west. It is observed that the employment rate for them fell from 89 to 73 percent in six years. Non-employment period is larger for women and for those who are over 50 years of age. However the presence of children and their care does not have significant affect on unemployment. Cartmel and Furlong [4] contrasted the experiences of 18 to 24 years old unemployed people in rural and urban areas. As compares to urban areas, youth unemployment is less common in rural areas but labor market in rural areas has low skills, also labor market in rural areas is characterized by low demand of qualified workers', insecure employment, less training opportunities and married females lacks access to childcare and other facilities.

Rocha and Divino [13] studied the link between taxes on household expenditures, interest rate, and exchange rate in Brazil and Mexico. The data was analyzed by using autoregressive distributed lag models. The results indicate that in both countries, interest rate is positively related whereas taxes on household consumption is negatively related to unemployment, however exchange rate is positively linked with Brazil and negatively linked in Mexico.

A study conducted by Qayyum [11] identified that unemployment is higher in urban area of Pakistan due to structural mismatch of required skills, poor wage system and the lack of improper future counseling and training skills. A reverse relationship exists between youth unemployment and training. Unemployment is higher among females in Pakistan.

Ozturk and Akhtar [2] studied the relationship among FDI, direct investment, GDP and unemployment in Turkey for the year 2000-2007. The result shows that FDI do not ease unemployment in Turkey where as GDP is positively influenced by deviations in exports, however is insignificant. The study suggests that Turkey should increase its export in order to attract more FDI. Eita and Ashipala [6] examined unemployment causes in Namibia for the period of 1971-2007. The study reveals that inflation, GDP and investment are negatively where as wage increase is positively linked to unemployment in Namibia. If GDP is below potential GDP, that will also cause unemployment. It suggests workers' need to lower their wage demand in order to reduce unemployment, GDP will reduce unemployment. Investment will also help in reduction of unemployment. Faridi et al [8] examined the influence of education on employment of Pakistan through use of primary data source in Bahawalpur. The study revealed that health, education and experience has a strong positive relationship with employment. Higher education provides higher results. It suggests government should play a strong role in development of health and education sector in both urban and rural areas.

Berentsen et al [3] inspected the linkage between money and unemployment and the impact of monetary factors on labor market behavior. Inflation and interest rate

are taken as measures for money. The study reveals a weak positive relationship between the variables under study.

Emst [7] identified numerous factors contributing to unemployment in-and out-flows. These factors include investment dynamics, interest rates, wage bargaining centralization, productivity growth, and legislations for employment protection. The study suggests income support and training measures. Public employment services can also help in outflow of unemployment. Rafiq et al [12] conducted a study in the period 1998-2008 to examine the factors of unemployment in Pakistan. The explanatory variables used in the study included PGR, inflation rate and FDI. The findings revealed that population growth rate has a positive influence on unemployment whereas FDI and inflation are negatively linked to unemployment in Pakistan. Another study by Andrews and Nickel [15] studied the phase after world war and suggested that increase in real wages results in prolong unemployment spell. The finding reveals that one percent rise in real wage results in two to five percent raise in duration of unemployment.

114.2 Research Methodology

114.2.1 Regression Model

$$UE = \beta_0 + \beta_1 PGR + \beta_2 + \beta_3 PR_3 + \beta_4 FDI, \quad (114.1)$$

where,

UE = Unemployment rate;

PGR = Population Growth rate;

RGDP = Real Gross Domestic Product;

PR = Political regime (DM);

FDI = Foreign Direct investment;

LR = Literacy rate.

114.2.2 Hypothesis

H_0 : There exists no relationship between unemployment and population growth, Interest rate, literacy rate, GDP, FDI in Pakistan.

H_1 : There exists relationship between unemployment and population growth, Interest rate, literacy rate, GDP, FDI in Pakistan.

114.2.3 Research Objectives

- To analyze the relationship between unemployment and its determinants in Pakistan.
- To analyze factors underlying unemployment.
- To study the trends of explanatory variables involved in the study.
- To suggest recommendations for reduction in unemployment in Pakistan.

114.2.4 Type of Research

It is a secondary research, based on longitudinal study, in which the researcher is trying to study the actors which have a direct effect on unemployment rate in Pakistan. It is a Quantitative research.

114.2.5 Nature of Study

The research is explanatory in nature as it describes the cause and effect relationship between two variables.

114.3 Data Sources

The study analyzes secondary data. Data related to unemployment, literacy rate, population growth, interest rate FDI and GDP is readily available on state bank of Pakistan website and from economic survey of Pakistan different editions.

114.3.1 Limitations of the Research

The overall scope of the study being too large requires more detailed research; as the secondary data understudy is for last 30 years only, further more primary research can give more insights and the views of unemployed people. Industry specific, area specific, gender/age specific research needs to be carried out. The study is carried out on limited determinants where as more determinants (e.g. inflation, poverty, etc) may be included to have wide and in-depth analysis in future.

114.3.2 Treatment of the Data

It is a descriptive study and all findings are analyzed theoretically and objectively. The numerical data collected from various sources is presented in forms of charts and tables and treated statistically through use of e-views.

114.4 Presentation of Data

Fig. 114.1 shows the trends of the variables selected for study.

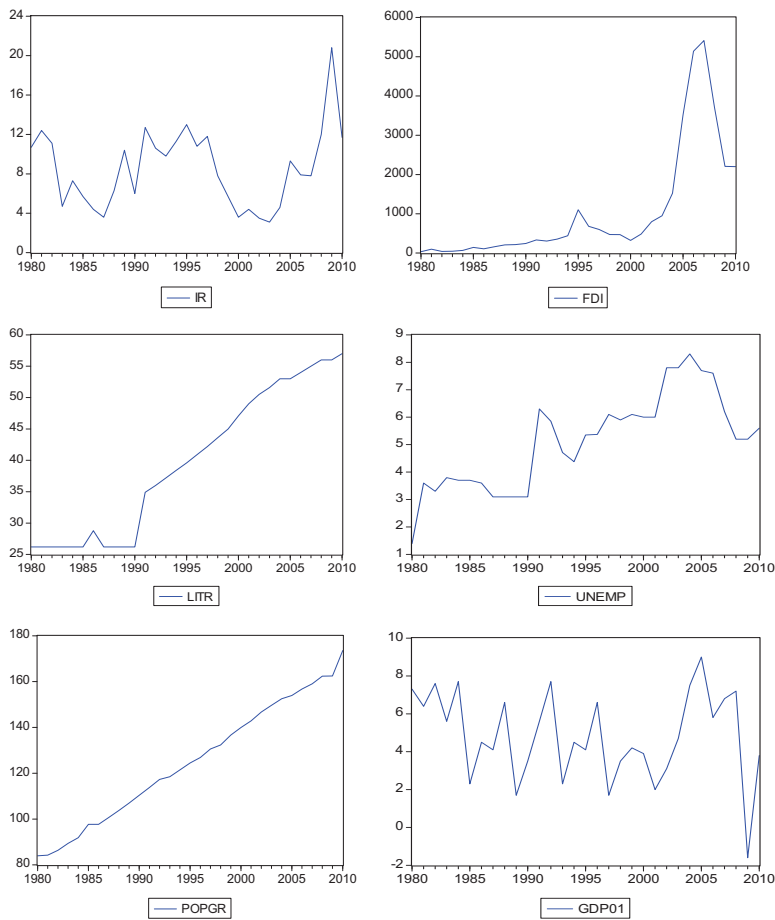


Fig. 114.1 The trends of the variables selected for study

Table 114.1 shows the data for the selected dependent and undependable variables for last 30 years.

Table 114.1 Data for the selective variables of the study for the year 1981-2010

Year	Y	X_1	X_2	X_3	X_4	X_5
	Unemp	PoPGR	RGDP	IR	LitR	FDI
1980	1.4	84	252463	10.7	26.2	35
1981	3.6	84.25	300888	12.4	26.2	98
1982	3.3	86.4	349508	11.1	26.2	42.1
1983	3.8	89.4	403782	4.7	26.2	48
1984	3.7	91.9	459397	7.3	26.2	70.3
1985	3.7	97.7	510468	5.7	26.2	145.2
1986	3.6	97.7	555891	4.4	28.8	108.2
1987	3.1	100.7	608857	3.6	26.2	162.2
1988	3.1	103.8	704484	6.3	26.2	209
1989	3.1	107	797750	10.4	26.2	216.2
1990	3.1	110.4	892843	6	26.2	246
1991	6.3	113.8	1044508	12.7	34.9	335.1
1992	5.85	117.32	1223922	10.6	36	306.4
1993	4.71	118.5	1351589	9.8	37.2	354.1
1994	4.38	121.48	1577085	11.3	38.4	442.4
1995	5.35	124.49	1879965	13	39.6	1101.7
1996	5.37	126.9	2113037	10.8	40.9	682.1
1997	6.1	130.58	2408962	11.8	42.2	601.3
1998	5.9	132.35	2653292	7.8	43.6	472.3
1999	6.1	136.69	2912832	5.7	45	469.9
2000	6	139.96	3778155	3.6	47.1	322.5
2001	6	142.86	4155391	4.4	49	484.7
2002	7.8	146.75	4476319	3.5	50.5	798
2003	7.8	149.65	5027460	3.1	51.6	949.4
2004	8.3	152.53	5765058	4.6	53	1524
2005	7.7	153.96	6634243	9.3	53	3521
2006	7.6	156.77	7773106	7.9	54	5139.6
2007	6.2	159.06	8830640	7.8	55	5410.2
2008	5.2	162.37	10451715	12	56	3719.9
2009	5.2	162.49	13070268	20.8	56	2205.7
2010	5.6	173.51	15402783	11.7	57	2201

114.4.1 Interpretation of Graphs

No trend is observed in Interest rate, but a jump in interest rate is seen in the year 2009, that reflects tight monetary policy stance of State Bank of Pakistan aiming to reduce inflation.

The increase in FDI can be observed in early 90s and another from 2002 to 2008 because of stable political and economic conditions. The decrease in FDI can be observed in 2009-10, indicating adverse law and order situation resulting in economic instability.

An increasing trend can be observed in 1990 in literacy rate. One major cause being the funding provided by the united nation and the increase in budget allocated by the government to education sector.

An increasing trend can be observed in population growth rate.

No trend can be observed in unemployment and GDP rate as unemployment varies according to the economic situation. However an increase in the unemployment trend can be seen in 2009-2010 because of the political instability, law and order threats, and elevating commodity prices, and other such factors.

114.4.2 E-views Output

As shown in Table 114.2, the first column of descriptive statistics shows that unemployment was at its peak level in 2004 and minimum in 1980, population growth rate, GDP and literacy rate was highest in 2010 and lowest in 1980, interest rate highest in 2009 and lowest in 2003 and FDI at its peak level in 2007 and lowest in 1980. The Values of skewness and kurtosis shows that all variables are relatively normally distributed, as the skewness values are closer to 0 and kurtosis values are closer to 3.

Table 114.2 Descriptive stats

	UNEMP	POPGR	RGDP	IR	LITR	FDI
Mean	5.127742	125.0087	3495699.	8.541935	39.70323	1045.855
Median	5.350000	124.4900	1879965.	7.900000	39.60000	442.4000
Maximum	8.300000	173.5100	15402783	20.80000	57.00000	5410.200
Minimum	1.400000	84.00000	252463.0	3.100000	26.20000	35.00000
Std. Dev.	1.726215	26.62806	3961289.	3.948820	11.63258	1473.810
Skewness	0.014196	0.036833	1.546607	0.757591	0.071320	1.885103
Kurtosis	2.272312	1.802889	4.630699	3.965735	1.471281	5.444088
Jarque-Bera	0.685017	1.858063	15.79341	4.170039	3.044882	26.07620
Probability	0.709987	0.394936	0.000372	0.124305	0.218179	0.000002
Sum	158.9600	3875.270	1.08E + 08	264.8000	1230.800	32421.50
Sum Sq. Dev.	89.39454	21271.61	4.71E + 14	467.7955	4059.510	65163463
Observations	31	31	31	31	31	31

114.4.3 Correlation Matrix

It can be seen from Table 114.3 that correlation matrix shows that literacy rate and Population growth are strongly correlated with Unemployment, where as GDP, FDI are moderately correlated with unemployment rate. The value of IR shows that IR is negatively weakly correlated with unemployment rate.

Table 114.3 Correlation matrix

	UNEMP	POPGR	RGDP	IR	LITR	FDI
UNEMP	1.000000	0.787930	0.501831	-0.129627	0.824591	0.505850
POPGR	0.787930	1.000000	0.872227	0.099757	0.976452	0.716139
RGDP	0.501831	0.872227	1.000000	0.308921	0.851646	0.742722
IR	-0.129627	0.099757	0.308921	1.000000	0.112032	0.181900
LITR	0.824591	0.976452	0.851646	0.112032	1.000000	0.716921
FDI	0.505850	0.716139	0.742722	0.181900	0.716921	1.000000

114.4.4 Regression Results

Regression results are shown in Table 114.4.

Table 114.4 The non-metallic mineral products variable value summary in 2008

Dependent variable: UNEMP				
Method: Least squares				
Date: 12/20/11 Time: 20:51				
Sample: 1980 2010				
Included observations: 31				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-17.60352	4.219402	-4.172041	0.0003
POPGR	-0.02121	0.038225	-0.554884	0.5839
RGDP	-1.86E - 07	8.89E - 08	-2.092772	0.0467
LOG (IR)	-0.639825	0.364186	-1.756862	0.0912
LOG (LITR)	6.759596	2.029334	3.330944	0.0027
LOG (FDI)	0.451645	0.32494	1.389935	0.1768
R-squared	0.839655	Mean dependent var		5.127742
Adjusted R-squared	0.807586	S.D. dependent var		1.726215
S.E. of regression	0.757204	Akaike info criterion		2.453618
Sum squared residual	14.33396	Schwarz criterion		2.731164
Log likelihood	-32.03109	F-statistic		26.18277
Durbin-Watson stat	1.183809	Prob (F-statistic)		0

114.4.5 Regression Equation

Regression equation can be shown as follows:

$$UE = \beta_0 + \beta_1 PGR + \beta_2 GDP + \beta_3 PR_3 + \beta_4 FDI,$$

$$Y = \alpha + \beta X, Y = -17.60 - .02X_1 - 1.86X_2 - 0.64X_3 + 6.76X_4 + 0.4516X_5.$$

It states that the expected unemployment rate is equal to $-17.60 - 0.02X_1 - 1.86X_2 - 0.64X_3 + 6.76X_4 + 0.4516X_5$. The c value shows that if all other variables are zero, the average level of unemployment will be 17 percent per year.

R squared measures the goodness of fit, its value of 0.839 means that about 84 percent variations in unemployment is explained by the understudy variables.

Coefficient of population growth shows if there is 1% increase in population, unemployment rate will decrease by 0.02%. This result is unexpected and cannot be justified through empirical study.

Coefficient of GDP shows if there is 1% increase in GDP, unemployment rate will decrease by 0.000000186% that is a negligible amount. As increase in GDP is an indicator of economic growth, resulting in job creation in the country, reducing unemployment rate.

Coefficient of interest rate shows if there is 1% increase in interest rate, unemployment rate will decrease by 0.63%. If there is increase in interest rate, it shows the increase in return on investment in that case people will invest more in business.

Coefficient of literacy rate shows if there is 1% increase in literacy rate, unemployment will increase by 6.759%. It shows that there will be frictional unemployment in the economy, which represents the mismatch between job specification and job description.

Coefficient of FDI shows if there is 1% increase in FDI, unemployment will increase by 0.45%. It was expected that there would be an inverse relationship between the two variables but the research show that there exist a positive relationship.

114.4.6 Hypothesis Testing

T statistics

T calculated values for GDP and Literacy rate are greater than T tabulated, so we can reject the null hypothesis that there exist no relationship between GDP, Literacy rate and unemployment.

T calculated values for population growth rate, interest rate and FDI are lesser than T tabulated, so we can not reject the null hypothesis. We can reject the null hypothesis at 58%, 9%, and 1% respectively.

F Statistics

F-calculated is greater than F-tabulated, so we can reject null hypothesis that that there exist no relationship between GDP, Literacy rate and unemployment.

114.5 Conclusions

Progress can be seen in the last few years in Pakistan's literacy rate, showing the efforts made by the government. Stringent measures are being taken and an improvement is seen in law & order situation in the country. Coming election are considered to bring political stability. Government is providing micro loan facility and many self employment/rozkar schemes have been initiated to decrease in unemployment. Efforts are also in hand by the government to provide relaxation in investment policies to encourage big guns to invest in major industries to afford employment at large scale. However, providing technical facilities and training at grass root level low to skilled unemployed persons is yet another gray area and still a lot to be done in this domain. A healthy budget required to be allocated for education sector and research & development area. However, on the contrary Government is cutting down already set budget in this field which could be fatal for improving employment rate.

The statically study indicates that IR, GDP Growth rate and LR have a significant impact in determining the unemployment rate. So if we try to improve the three explanatory variables that will result in decrease of unemployment rate. The null hypothesis is being rejected as there exists a relationship between the variables under study. Whereas, a positive relationship between FDI and unemployment has been observed. FDI and population growth rate proved to be statistically insignificant. These results are contradictory to the existing literature. Unemployment trend does not show any significant change but the rising unemployment in the year 2009-10 is due to the worse law & order situation and political instability. Under such conditions, investors did not find Pakistan as an attractive market for business and many winded up their operations from the country. This led to an increase in unemployment. Literacy rate and unemployment rate are positively related to each other showing that if literacy rate increases than there will be a mismatch between a person's qualification and his job description, in this case the people will remain unemployed, in search of better job opportunity.

114.6 Recommendations

A good law and order environment is believed to be essential for inflow of foreign investment in a country. Hence it is suggested that more strong actions must be taken by the government for further improvement in law & order situation. This will result in conducive environment for not only domestic business but will also attract foreign investors in the country thus providing better opportunities for employment. Democracy, though still in a process of getting matured in Pakistan, should flourish by all means to bring political stability in the country. Government must promote such industries which can create better job opportunities. A number of steps have already taken by government in this regard however, for this purpose more relaxation in investment policies and confidence & security to the investors is advisable. Consideration should be paid towards the low skilled unemployed persons by pro-

viding technical facilities and training at grass root level throughout the country in order to enhanced their chance to earn rationally. The increasing trend of population growth rate can be taken as an advantage to the country, they can be better trained, and more industries can be set up for ultimately country can act as export hub for various commodities. Enhanced and proper budget should be allocated for education sector and research and development domain, which will result in creation of more specialized fields and generation of better employment openings. Some results are unexpected, hence it is suggested that further studies can be carried out to find the reasons for unanticipated outcomes.

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