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MIGRATION AND UNEMPLOYMENT IN PAKISTAN: A TIME SERIES ANALYSIS

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Abstract

The study has observed the effect of unemployment on migration in Pakistan from 1981 to 2015. For observing the stationarity of variables, unit root test is used. Autoregressive Distributed Lag Approach (ARDL) is used for cointegration among the variables of the model. The expected results of the study show that unemployment has negative and significant impact on migration in Pakistan over the selected time period. The results of the study show that unemployment increases migration. On the basis of empirical results, this study suggests that unemployment increases migration in case of Pakistan, so Pakistan must try to reduce unemployment for decrease migration.

Keywords: unemployment, migration, Pakistan
JEL Codes: E24, F22,

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I-INTRODUCTION

The people living in one part of the world mostly moved to other parts for their livelihood and Pakistan is no exception. There were also, a number of other reasons for migration, for example, war and unruliness in the home country. Mostly researchers have concentrated on explaining why people travel from one area to another. There were numerous theories to describe migration. One of the most important economic contemplations was appealing higher income through the progression of migration. There were also other aspects that affect the decision to emigrate, such as family and friendship networks. The most important models by (Stark, 1990; Massey et al., 1994; Bauer et al., 1998) and other researchers struggled to explain why international immigration happens. The Push-Pull theory of migration found the economic factors of migration in the host country as well as in the receiving country. The factors of migration contain but not limited to demographic pressure, high unemployment and low living standards in the home country. These factors were recognized as push-factors. The factors of migration in the receiving country comprised the demand for labour, encouraging economic opportunities, and political freedom and these factors were recognized as pull factors. Migration, any type, whether documented or undocumented, forced or voluntary, can be described in terms of push-pull factors (Datta, 1998). Push factors attribute to the negative characteristics working at the center of origin whereas pull factors classify the positive characteristics (Datta, 2002) at the center of target. The economics of migration focuses on the expectation of a higher income abroad as a main cause of decisions to emigrate. There were also other variables that exert an important influence on decisions to migrate, including non-economic reasons, such as war, ethnic discrimination and political persecution at home. The choice of country of destination was also often influenced by the existence of a network of family and friends who have migrated previously to a specific country (Solimano, 2002).

In Pakistan, majority of the macro level studies relied on the census data that provide a detailed picture of the movement and trends of migration at the country level. Using the last census showed in 1998, five studies focused on the migratory movements in the country: at national level Karim and Nasar (2003) conducted a study on the inter-district and interprovincial movements; four other studies provided a detailed description of inter-provincial movements' pattern to prepare a socio-economic and demographic profile of the provinces (Khatak, 2003; Chaudhry, 2003; Naeem, 2003; Rukanuddin and Chaudhry, 2003). Separately from the census-based studies, a number of studies have used survey data to understand numerous dimensions of internal migration: Akram et al (2003) undertook a study on the migratory movements using the 1998-1999 Pakistan Integrated Household Survey (PIHS) data on the province of Punjab; Memon (2005) conducted a district-level study on migration using the Labor Force Survey (LFS) and (PIHS); Mahmud et al (2010) studied the impact of social sector development on internal migration using the LFS data; and Hamid (2010) used various LFS rounds for studying the gender measurement of internal migration. Migration has dynamic results for the migrants themselves, for the parts from which they move and for the parts to which they go. The shift of migrants from one area to another takes changes in the population structure, economy, and social conditions of both the areas, and these changes in turn encouragement the population growth of each area. Rural-to-urban migration is a reason of increasing unemployment, urban congestion, inefficiency and imbalance in the national development (Kuznets, 1964)**.** In Pakistan, according to population census held in 1998 the share of rural population has declined from 71.7% in 1981 to 67.5% in 1998 or by 4.2%. The share of the urban population consequently has increased from 28.3% in 1981 to 32.5% in 1998 or by 4.2%. This suggests that every 3rd person now lives in the city or town. The urban population has grown universally in all provinces and the rural population has simultaneously dropped with same proportion. (Anonymous, 2000). This study shows the relationship and effects of different factors on migration in Pakistan. Unemployment and its impacts on migration, foreign direct investment and its impacts on migration, health facilities and its impacts on migration, infrastructure, inflation, secondary school enrollment and their impacts on migration. Thus, the study of the elements of migration was relatively important for policy maker to understand a broad spectrum of migration. The present study delivers useful parameters for making labour policies and allowing environment for productive investment in the home country. The intent of this paper was to discover the major macroeconomic determinants of international migration from Pakistan and to suggest reference for migration policy formulation in the country.

II. LITERATURE REVIEW

Zenou (2010) studies the reasons of urban unemployment, rigid wage rate and rural workers migrate to the cities. The cities expected utility is already equal to the utility in rural areas. The study characterizes steady-state equilibrium and use an efficiency wage model due to two reasons. First, it is easy way of endogenous wages and unemployment while quiet finding closed form solutions. Second, it has resilient empirical support. Then the study finds two policies: 1) Government should decrease unemployment benefits given to urban unemployed workers. It reduces the utility of unemployment and also rural workers migration. 2) Government should subsidize urban jobs. It increases job creation in city. General policy for the government it should overview both positive and negative effects of rural-urban-migration.

Boutane et al., (2012) explain the interaction between migration and host country economic condition. By using a large annual dataset on 22 OECD countries over the periods 1987-2009, this study uses panel VAR techniques. After introducing migration in an augmented Solow-swan model, the study evaluates a dynamic panel model using a system of universal method of moments (SYS-GMM) to contract with the risk of endogeneity bias of the migration variables. The results show that there is a positive relation between migration and host country's GDP and negative relation between migration and host country unemployment rate. The reasons of migration are following; 1) a migration assessment is connected to job chances and possibility of employment in host country. 2) Governments should adjust migration policies to changing labor market requirements. The finding of the study also mentions that the migration inflows contribute the host country's prosperity reveals the high level of migrants in current periods. More migrants are educated and immigrant has positive effect on host country's economic growth. In order to hold the problem of aged populations, immigration may be considered as a possible solution to pay for labor shortage in many OEDC.

Kuralbayeva (2015) develops a dual economy model to evaluate the effects of energy taxes in general equilibrium. This study uses the general equilibrium model of Satchi and Temple (2009). The model features three sectors; Urban formal, Urban informal and Rural agriculture. This study confirms the results of studies on the develop countries that green tax reforms can decrease unemployment when tax burden moved to other sectors. In less develop countries taxes partly moved on workers in rural areas over rural-urban migration. Workers do not directly pay the taxes then they endure in the form of low wages. Agriculture workers do not pay energy nor labor taxes, they still endure the environmental taxation through reduce wages. The study finds that setting the energy tax in agriculture sector, although increasing energy tax imposed in urban area results in a higher reduction in the earnings of rural workers than when the energy taxes variations universally in the economy. The study shows that in developed countries green tax changes can reduce unemployment when the tax load is moved on to workers in other sectors; informal and rural.

Smith and Moore (1995) develops a model consistent with rural urban migration and presence underemployment is the crucial characteristics of the development procedure. This study creates a two period, overlapping generation model which covers an urban and a rural production sector. Unemployment ascends in the model is not in effect of any exogenous rigidities but endogenously in response to adverse selection problem in labor market. It is exactly presence of unemployment that allows urban rural wage differentials vary over time. However, if enough labor is drawn into the city, next period's capital-labor ratio may actually fall. There are a number of dimensions along which the current analysis could be extended. Two very obvious extensions would be to make land a factor of production. A second would be to allow for agriculture subsidies, or other policies design to discourage rural-urban migration. And finally, the analysis could be expended to consider how the provision of urban public services impact on employment, migration and growth.

Fields (1975) studies basic premise is that the same kind of forces that explain the choices of workers between rural and urban sectors and also in one market to another market in urban sector. During 1950 to 1960, urban areas grew in Africa by 69%, Latin America by 67%, and in Asia by 51%, while rural areas grew by only 20% above the same time period. The study understands the determination of the equilibrium level in less develop countries. By the following, Haris and Todaro research, he

focused on free movement of workers between labor markets. In the framework quantity rather than price adjustment, we have taken into consideration four additional factors: a more generalized account of the process of search for urban jobs, the possibility of underemployment in Murky sector, the chance that educated workers might be favored by employers in job hiring, the recognition of labor turnover in a multi period framework. The study emphasize that these entire extensions shows low unemployment rate than Haris and Todaro predicted.

Guild and Carrera (2012) describe the Impacts of migration on unemployment in the context of Bulgaria and Romania to the EU and EU's rules to free movement of workers. It addresses two questions: 1) does migration correlate with unemployment in host state during unsettled growth? 2) how is member state react in term of restrict or allow access to their labor market by EU's workers in transitional period? In this study, they take the period 2007 to the present and the example of Bulgaria and Romania. In the first part, this study indicates the movement of Bulgaria and Romania workers to the other states and point out that where they go and what they are doing. Most of them found jobs and compare with employment levels in home state and the population of the host state. Although their educational levels are lower than the average in their home state. In the second part, this study indicates the behavior of the member state about restrictions on labor market access for Bulgaria and Romania. From the behavior of the member state, it is clear that authorities do not have opinion that free movement of workers is not a threat to their labor market. These authorities convinced about the positive relationship between intra-EU labor migration and GDP growth.

Bogdanova and Abdrazakova (2013) state that the wages are high in cities as compare to in village and workers are migrate to cities hopping to get the jobs. The study economy may have high rates of unemployment. The chances to get the job Is depends on the size of unemployment pool in relation to the number of employed in industries. When expected rural wage is equal to wage rate then it is the equilibrium condition of the model. Author's main claim is that best way to improve employment is to subsidize agriculture sector rather than manufacturing sector of the country. The study discusses two sectors: 1) subsidizing manufacturing and 2) subsidizing agriculture. For this aim, this study run MS excel in both cases simultaneously. According to author, job creation instead of overcome the problem of unemployment can increase the unemployment. When wage differential is higher then people migration increase and obviously all workers do not succeed to find job and unemployment increase. Another issue is deciding minimum wage creates disequilibrium in labour market, so Government should not set wage. In addition, outcome depends on elasticity of labour demand in different sectors and on marginal product of labour. According to Haris and Todaro, the first-best policy would be subsidizing manufacturing along with restrictions of rural migration.

Bauer and Zimmermann (1999) focus that in 1998 European Union opened cooperation with six countries pursuing membership. The study indicates different aspects and labour market implications of east west migration. The study of economic situation shows that more migration is unavoidable. It can be expected that 2-3% of the population of the countries will migrate to EU in next 10-15 years. Migration in the form of unemployment mechanically creates problems in the labour market of receiving countries. The result of the empirical study of the effects of migration on labour market is that the inflow of 200000 migrants yearly will decrease the wage rate in EU by 0.81%. About unemployment, the result of empirical study is that the same migration will also increase unemployment in EU. Note that both wage and employment effects show a higher bound. Migration also has effect on the income distribution in receiving country. There are two suggestions for the migration policy of current EU members to the future members in Central and Eastern Europe. First, a laissez faire system in which labour migration should free from new members to old members. Second, the new members of EU could decide to control open labour movement from the east to west.

Byerlee (1974) studies that in the developing world; countries are facing high rates of rural urban migration. In Africa, urban growth rates are highest in the world, around 7% annually, in some cities growth rates are increase to 10%. Every part of policies has direct or indirect effect on rural urban migration. For example, export taxes negatively affect rural employment and income in rural areas. As the result of government wage policies, wages are high in urban areas. Due to a large number of

school-leavers in rural urban migration stream, education policies are also very important. Government should offer incentives to inspire the development in little industry in rural areas and minor urban areas. The long-run effects of rural urban migration for population scattering are very important in Africa due to their initial stage of urbanization. The studies settled here should provide a better structure for organization and construction of these useful research efforts.

Zhang and Song (2003) explain that china has practiced a fast flow of urbanization, generated by history's biggest flow of rural urban migration in the world. The study examines, A) to measure the character of city migration in china's urbanization in 1978 -1999 and B) to empirically examine factors back to the migration boom. According to Chinese government, the share of urban population in rapid economic growth in china increase from 18% in 1978 to 31% in 1999. Like several other countries, as the result of speedy migration the problem of unemployment and poverty rise in china. The main findings of this study are following; first, the rural urban migration had been a main source of its growth. Second, rural urban income gap was a strong force behind city migration. Finally, geographic gap discourage interprovincial migration and interprovincial migration is positively related with the dimension of provincial urban population.

Sawyer (1974) tells that the determination of the study is to develop the two-stage migration phenomenon argued by Todaro and Michael. The study explains labour migration in less develop countries (LDC). Sawyer says Todaro play an important role to an understanding migration and unemployment in LDC's. He developed the concept of two-stage migration and modified version of employment and its effects on migration. Enduring to follow Todaro'path, the study explicitly identifies the simultaneous presence of urban traditional sector (UTS) and industrial sector in many LDCs. The study explains that an important reason of migration from the rural sector to UTS is the wage differential between them and the possibility of getting a job in UTS. The decision to migration prejudiced by the actual wage received by the UTS workers rather than the wage rate received by modern sector workers. Whether unemployment in UTS will affect wages in modern sector if there are no restrictions to wage movement. At the point some possible aspects of relationship are; UTS workers would be to some awareness of modern sector employment chances as compare to wage differential which may occur between UTS and modern sector. When workers migrate from UTS to modern sector then wages decrease in modern sector and remain at some minimum level. That level set by normal demand and supply or by independent authority.

Rapanos (2005) studies and analyzes a change in the minimum wage and its effects on income distribution and sectoral employment and unemployment in the small open economy structure with endogenous commodity-price variations in the developing countries. The study is finding the relationship between rural and urban sector in developing countries. The basic structure of this study is Haris-Todaro model, in which labour is the only factor that freely moves between sectors, while other factors like capital, land are not shiftable. The main results of the study are following. By follow the assumption that elasticity the demand for labour is less than one, we have that; firstly, a rise in urban minimum wage will increase urban unemployment. Second, employment in urban sector will decrease the output. Third, the return to capital will decrease, the return to land will decrease and rural wage increase in the small open economy. Finally, if the elasticity of demand for labours greater than one then, all overhead results opposite.

Ahmed et al., (2008) study that the income inequality and unemployment are the reasons of migration in Pakistan. The unemployment rate in Pakistan close to 9 percent and one third of the population lives under the poverty line. In 1970, many unskilled workers migrate to eastern countries. The study examines the determinants of migration in Pakistan and used time series data. The stationary properties of each time series used in the study were tested and each were found to be integrated of order one. Cointegration and vector error correctn models are also used to check the long-run and short-run relationship among the parameters of determinants. Migration from Pakistan positively related to unemployment and inflation in the country and negatively related with real wage rate. Results also showed that remittances also effect migration positively. Government should provide different skills and trades to contest with workers of other countries. It is also important to introduce

labour friendly migration policies and Manpower Ministry should find role markets for latent workers.

Farhana et al., (2012) study the factors of rural urban migration in Bangladesh. The study shows that the causes of migration are unemployment, poverty, political and ethnic conflicts. The push factors are more active than pull factors in migration process. Like poverty and unemployment always push the villagers to migrate to the cities. The purposes of the study are to find the causes of migration and impact of urban migration on poverty reduction. Ramchandrowpur and bhadra were selected for study areas and for many elements of the study, qualitative and semi-qualitative analyses, guided by the research objectives, were carried out. The study reveals that rural urban migration in Bangladesh is poverty driven. The rural urban migration is due to nonstop communication of rural poverty and backwardness to the towns. Rural people migrate to the urban areas for job opportunities and better education and health facilities. The rural people feel that there is a huge gap between rural and urban sectors both in terms of quality and types of facilities. In order to restrict rural urban migration, it is necessary to expand job opportunities and provide better living standard as improving necessary health care facilities and occupation services. In Bangladesh, implicitly, one objective of government's development strategy is to slow the pace of rural urban migration and for this it should reduce the problems related with extreme rural urban migration.

Zhou (2015) studies rural property rights, migration and welfare in developing countries. The study makes two-sector general equilibrium model with dual economy to examine how rural property rights spread rural urban migration, urban unemployment and national welfare in developing countries. In the study, the key variable is rural property rights. In basic model, urban wage rate is exogenous, the impacts of rural property rights on migration and welfare is determined by the rent gaining effect and productivity enhancing effect. Former effect decrease migration cost and latter increase rural wage rate. For generality, he extend basic model. The study implies that change in national welfare is determined by urban unemployment. The reason is that in basic model, urban sector has a fix size. The finding depends on the fixed size of urban sector. If the size of urban sector flexible, then the impacts on national welfare are more complex.

Rehman et al.,(2011) study the impact of various socio economic factors on rural urban migration. The purpose of this study based on survey in the North-West Pakistan during the year 2010. The total sample size is 260, out of 150 respondents are migrants and 110 respondents are non-migrants. A two-stage sampling procedure is use for collection of data. Using the binary probit model, the results recommend that economic factor play an important role in the decision o migration from rural to urban sector. For the analysis of socio-economic condition, it is important to understand the reasons of rural urban migration in Pakistan. The empirical analysis of this study shows a positive relationship between employment, family member in the labour force, years of education, land holding and migration. Furthermore, a negative relationship between living conditions, chances of non-farm and farm income and rural urban migration. Based on empirical findings, this study mentions that investment in urban infrastructure should be complemented by investment in rural areas so as to reduce the increasing pressure on the urban infrastructure. The findings of this study are simple. Provide basic facilities to the rural public, develop their living condition, offer non-farm income opportunities and introduce some land reformers. Alongside this, subsidize electricity, education and basic necessities would certainly do some better for solve this problem. These policies are not destructive for others except land reformers. But land reformers can also be made suitable to the people speciously loosing land.

III. THEORETICAL MODEL

The objective of this paper is to investigate the migration and unemployment for the period 1981-2015 using the fully modified cointegration and long run technique. The study has investigated the impact of unemployment, infrastructure, inflation, foreign direct investment, secondary school enrollment, and health facilities on migration in Pakistan. We collected the data over the period of 1981 to 2015.the data for all the selected variables is taken from the world development indicators, economic survey of Pakistan. Following the previous methodologies, Ali (2011), Ali (2015), Ali

(2018), Ali and Bibi (2017), Ali and Ahmad (2014), Ali and Audi (2016), Ali and Audi (2018), Ali and Rehman (2015), Ali and Naeem (2017), Ali and Zulfiqar (2018), Ali et al., (2016), Arshad and Ali (2016), Ashraf and Ali (2018) Haider and Ali (2015), Sajid and Ali (2018), Ali and Senturk (2019), Kassem et al, (2019) and Ali and Bibi (2020). Then the functional form of the model becomes as

LMG=f(LMG,HT,LSSE,UN,FDI,INFS,INFL)
Where
LMG= log of migration
UN= unemployment
LSSE= secondary school enrollment
FDI= foreign direct investment
INFS= infrastructure
INFL= inflation

IV. ECONOMETRIC METHODOLOGY

Mostly time series data has non-stationary problem and the estimated regression results of this data became spurious for policy suggestion (Nelson and ploser, 1982). All co-integration method also demands the stationary of the variables. This study comprises with the different econometric method or used different test to show our result is stationary or significant, fact of time series data that it contains unit root problem and regression results of this data are spurious. For the solution of unit root problem, this study uses Augmented Dickey-Fuller (ADF) unit root test, the calculated results of ADF test are presented in this paper.

V. EMPIRICAL RESULTS AND DISCUSSION

The descriptive statistics is presented at below:

Table 1

	LMG	INFS	INFL	HT	FDI	LSSE	UN
Mean	12.03855	217721.5	9.564381	0.984964	1.01E+09	8.197988	5.226857
Median	11.86933	142836.9	8.373610	1.014398	3.00E+08	8.248267	5.460000
Maximum	13.55916	773879.2	24.89115	2.235948	3.33E+09	8.815370	8.270000
Minimum	10.96823	58008.92	2.463093	0.024298	7002674	7.309212	1.970000
Std. dev	0.680690	179864.3	5.165101	0.622014	1.20E+09	0.446196	1.617823
Skewness	0.705668	1.640629	1.231953	0.164825	0.819265	-0.525820	-0.066082
Kurtosis	2.533175	4.786865	4.151929	2.179971	1.993264	2.212683	2.375302
Jarque-Bera	3.222619	20.35766	10.78842	1.139129	5.393352	2.516813	0.594584
Prob	0.199626	0.000038	0.004543	0.565772	0.067429	0.284106	0.742827
Sum	421.3491	7620252	334.7533	34.47373	3.54E+10	286.9296	182.9400
Sum sq. dev.	15.75353	1.10E+12	907.0611	13.15467	4.88E+19	6.769094	88.98995
Obs	35	35	35	35	35	35	35

The estimated results reveal that migration, infrastructure, inflation, health facilities, and foreign direct investment are positively skewed and secondary school enrollment and unemployment are negatively skewed. The results show that all the variables have positive Kurtosis. The values of Jarque-Bera show that all the variables have zero mean and finite covariance, this confirms that selected data sets are normally distributed.

Table 2:Correlation

Correlation t-statistic prob	LMG	LSSE	INFS	INFL	HT	FDI	UN
LMG	1.000000						
LSSE	0.735978 6.244959 0.0000	1.000000					
INFS	0.951957 17.85755 0.0000	0.677486 5.291197 0.0000	1.000000				
INFL	0.151162 0.878453 0.3860	0.220552 1.298959 0.2030	0.039647 0.227935 0.8211	1.000000			
HT	0.825084 8.388785 0.0000	0.963586 20.70099 0.0000	0.798569 7.621527 0.0000	0.148862 0.864785 0.3934	1.000000		
FDI	0.861996 9.768479 0.0000	0.805715 7.814382 0.0000	0.828531 8.500053 0.0000	0.148175 0.860702 0.3956	0.868132 10.04774 0.0000	1.000000	
UN	0.382508 2.378199 0.0233	0.660458 5.052914 0.0000	0.281012 1.682074 0.1020	0.114086 0.659684 0.5140	0.649437 4.906171 0.0000	0.403167 2.530819 0.0163	1.000000

The unit root test is used for checking the stationarity of the variables. The results reported in table are describing that foreign direct investment and inflation are stationary at level. While the variables, migration, health facilities, inflation, secondary school enrollment and unemployment are not stationary at level. But at first difference, all the variables of the model become stationary. Hence there is mix order of integration among the variables of the model which is suitable condition for applying Auto-regressive Distributed lag (ARDL) bound testing approach to co integration.

Table 3: Unit Root Test: At level

Variables	T statistics	P values
Mg	3.329537	1.0000
Fdi	-2.714267	0.0824
Hlth	1.337848	0.9983
Infl	-5.313168	0.0001
Infs	3.329298	1.0000
Sse	0.0044262	0.9563
Un	-1.832155	0.3592

Table 4: Unit Root Test: At 1st difference

Variables	T statistics	P values
Mg	-6.558802	0.0000
Fdi	-5.031750	0.0004
Hlth	-3.252934	0.0257
Infl	-7.316513	0.0000
Infs	-6.558760	0.0000
Sse	-5.794084	0.0000
Un	-6.973798	0.0000

The results of bound testing approach show that F-statistic is greater than the upper bound value at 5 percent so there is co-integration among the variables of the model.

Table 5: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1261.972	NA	5.93e+24	76.90738	77.22482	77.01419
1	-1058.404	308.4367	5.4e+20	67.53961	70.07914	68.39408*
2	-997.5593	66.37554	4.08e+20*	66.82178*	71.58339	68.42391

*indicates lag order selected by the criterion
LR: Sequential modified LR test statistics (each test at 5%level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 6: Bound testing analysis
F-statistics=4.671012

Level of significance	Lower bound values	Upper bound values
10%	2.12	3.23
5%	2.45	3.61

Table 7: Cointegration Form
Dependent variable=MG

	Coefficient	Std. Error	t-statistic	Prob
D(LMG(-1))	3.733193	0.973973	3.832953	0.0122
D(INFL)	0.011420	0.008411	1.357747	0.2326
D(INFS)	0.000006	0.000001	5.862880	0.0020
D(HT)	-1.259707	2.240230	-0.562311	0.5982
D(FDI)	0.046345	0.086489	0.535843	0.6150
D(LSSE)	0.095731	1.119891	0.085482	0.9352
D(UN)	0.088357	0.051471	1.716656	0.1467
CointEg(-1)	-4.304364	1.100210	-3.912312	0.0113

After finding cointegration and long run results now we use examining the short run relationship among the variables of the model. The coefficient of CointEg(-1) gives the adjustment speed of the model towards long-run equilibrium. The estimated coefficient of CointEg is statistically significant and the negative sign shows the convergence to the equilibrium. Highly significant estimated coefficient of CointEg also indicates cointegration among variables of our model.

Table 8: Long run results
Dependent variable=MG

Variables	Coefficient	Std Error	t-statistics	Prob
INFL	0.034943	0.005382	6.492503	0.0013
INFS	0.000006	0.000000	25.164640	0.0000
HT	-1.406114	0.166924	-8.423679	0.0004
FDI	-0.092736	0.026135	-3.548402	0.0164
LSSE	1.423544	0.163958	8.682350	0.0003
UN	0.099477	0.020764	4.790765	0.0049
C	-0.067850	1.192235	-0.056910	0.9568

The results show that migration has significant and positive relationship with inflation in Pakistan. The results highlight that health facilities have negative and significant impact on migration. The

estimated results show that infrastructure has positive and significant impact on migration, foreign direct investment has negative and significant impact on migration. Secondary school enrollment has positive and significant impact on migration. The estimation shows that unemployment has positive and significant impact on migration in Pakistan.

Figure 1: Plot of cumulative sum of recursive residuals

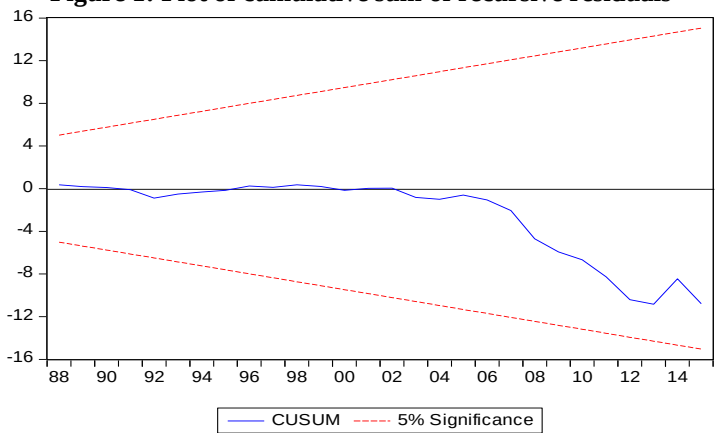
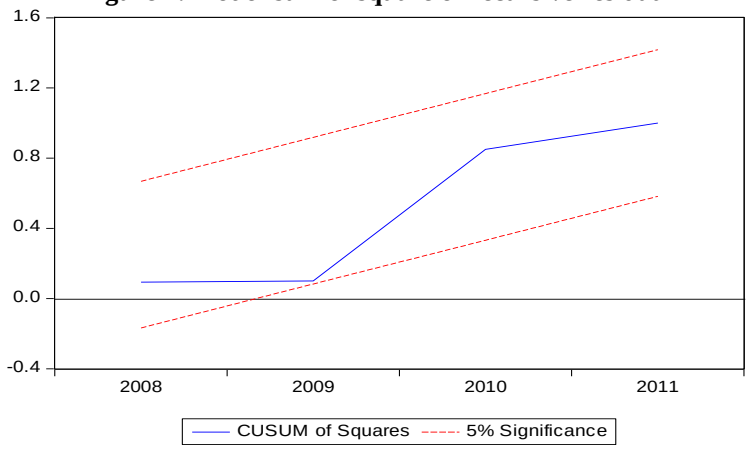


Figure 2: Plot of sum of square of recursive residual



The cumulative sum (CUSUM) and CUSUMQ of recursive residuals are used to detect the structural stability of the equations. The systematic changes in the regression coefficients are detected through diagnostic tests. While the abrupt changes in the regression coefficients are identified through CUSUM and CUSUMQ. The results found in figures indicate that the test statistics are within band of 5 percent confidence interval. This implies the stability of the estimated model over the selected time period.

VI. CONCLUSIONS

The indication behind this study is to observe the linking between unemployment and migration in Pakistan. The first statistical estimation, data used from 1981-2015 and data is collected from economic survey of Pakistan and world development indicator. Unit root test is use for checking the stationarity of the variables of the model. Auto Regressive distributed Lag Model (ARDL) is use to examine the cointegration between the variables of the model. Particularly, present study provides the empirical evidence that unemployment has positive impact on migration in Pakistan. The findings of the study reveal that the coefficient of unemployment has found to be positive and significant. This confirms that unemployment significantly increases migration in Pakistan. Government should invest in infrastructure, increase international trade, provide job opportunities, in this way unemployment

decreases which in turn decreases migration. Government should invest in health facilities like hospitals, doctors and clinics which decrease migration in Pakistan.

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