Determinants of Rural-Urban migration: A Case Study of Pakistan

Muhammad Zahid Naeem
Department of Economics, University of the Punjab

Wajid Alim
Institute of Business Studies, Kohat University of Science and Technology

Abstract
This article highlights the determinants of rural-urban migration in the case of Pakistan. For this purpose, data from 1981 to 2015 has been used. For checking the stationarity of the data, Augmented Dickey-Fuller (ADF) unit root test is applied. Autoregressive Distributed Lag (ARDL) model has been used for examining the co-integration among the variables of the model. The results of the study reveal that economic growth has a positive and insignificant impact on migration in the case of Pakistan. Population growth has positive and significant impact on migration in the case of Pakistan after the selected time period. The level of unemployment has negative and significant impact on migration in Pakistan. The inflation rate has negative and significant impact on migration in Pakistan.

Keywords: migration, inflation, unemployment
JEL Codes: E24, F22, P24,

I. Introduction

The movement of people from places of origin to terminal zones or temporary destination, particularly in Ghana, is complex and dynamic. People migrate from one place to another for these reasons; The socio-cultural problems in which people are forced to emigrate to avoid many social problems in their place of origin (Ewusi, 1986), (2) there is no community in which people, by exasperation and lack of recognition Tends to move to another (Nabila, 1986) (3) infrastructural development and urban expansion in another area that motivates people to move from their origin sites to final destinations (Chopra, 1997) migrating to the north Ghana exists from pre-colonial times to date. According to Abdul-Core (2008), people in that area of northern Ghana moved to other areas based on two main reasons, first, to see the world and gain experience and secondly to suit your taste style Of Southern life. This study tends to understand why people sometimes migrate temporarily from rural areas to urban centers, irrespective of the continued efforts of central government and other non-governmental organizations and their impact on rural development. The study seeks to understand the socioeconomic and cultural causes of urban-rural migration in the study area and its effect on rural development compared to the sector that determines the socioeconomic and cultural effects of migration. There are many causes that migrate from one country to another, such as lack of job opportunities, lack of healthcare facilities, lack of adequate education and infrastructure, etc. The main reason for migration is the lack of opportunities to work in the agricultural sector. However, the unemployment rate is more in rural areas than in urban areas.

These general features have been apparent in Rwanda, especially after the 1994 genocide in rural areas compared to urban ones. Mostly the land is unproductive. In Rwanda, rural-urban migration is great. There are three reasons why people migrated from Rwanda described below; There is limited land and high poverty. (3) Because of the shortage of land, the Rwandan government is promoting grouped settlements so that people can use their small land plots for strategic agriculture. Some recent studies suggest that migration is the development path. Migration is the key to survival and livelihood. People migrate from one place to another to improve health, education, infrastructure, etc. A wide range of indicators for the welfare and subjective and objective development of children. Major studies so far have to do with the children of urban migrants with their indigenous peers, an inadequate reference group to understand the real causal impact of migration. Since socioeconomic times have been favored for decades. The impact of urban growth, whether good or bad, is also needed to be understood and valued for sustainable urban growth. 18 percent of the population lives in urban areas. However, its urbanization rate is one of the highest in the world, 4.1 percent (Markos and Seyoum, 1998).

The positive aspect is that migration contributes to the needs of working reception areas, devolution powers and play a key role in diversifying and improving family income (Degefa, 2005). The population growth rate is 1.32 percent per year. The population density is 964 per km2 (Bangladesh Population Census, 2011). People living below the poverty line are 40% nationally, 39.5% and 43.2% rural and urban areas, respectively, according to the Calculation of Income Calculation (ICD). The agricultural sector contributes 20.24 percent of GDP at constant prices in the 2009-10 fiscal year. The total number of international migrants worldwide has been estimated at 214 million, representing 3% of the world's population (Migration World Report 2011), compared with 191 million in 2005. In Bangladesh, 66 per cent of rural migration is directed to urban centers, while 10 per cent corresponding to rural-rural migration and 24 per cent migration abroad. Many people who migrate to urban areas in search of more productive and profitable work in the agricultural sector will probably feel disappointed. There are several logics for its presence and these logics may differ from one countryside to another. The outcome of such migration has same result in dissimilar countryside. Effort is complete on the basis of primary origin and literature. No actual work in this study. Rural-urban migration has previously been considered as favorable economic development "Moving people from rural areas to cities. Some time ago, the migration was inside to allow over-labor labor slowly to take in rural areas to give labor to industries in urban areas and thus help growth. Practice in developing countries has display that the rural-urban migration rate has consistently exceeded the rate of job making and stout in social and infrastructure services available in urban areas. (Todaro and Smith, 2007) have considered that this adds to the before serious problems of urban unemployment caused by the economic and physical inequality between urban and rural areas. Because of the creation of urban middle by colonial administration, urban middle has become very attractive for people in large figure since there were jobs and other socioeconomic top services. Rural areas have been regularly abandoned by young people, leaving men, women and ages to work with farm children.

II. Literature Review

There are a number of studies, which examine the determinants of migration, but here most relevant and recent studies are selected as a literature review. Momtaz et al. (2012) to analyze the impacts of rural-urban migration in the physical and social environment of the city of Dhaka and to examine the general conditions of poor and disadvantaged migrant consequences of migration to the physical and social environment on their fate. There is no empirical work in the study and work is entirely based on secondary sources. The study explores the factors,

causes, deterioration of the overall urban context, including housing, sanitation, sewage, drainage, water supply, gas supply, electricity, waste disposal and waste management due to the city-country migration. The study also suggests solutions, reducing the gap between rural and urban areas seems to be of good service development and better service and rural and interesting gain opportunities should be urgent attention.

Yaohui et al., (2002) examine return migration, its causes and consequences for China's recent evidence. The study analyze the causes of return relocation and the economic behaviour of returning migrants and return migration is limited in scale and emigration remains dominant, both push factors as an attraction that influence decision to return. They are no longer inclined to participate in local agricultural activities than non-migrants and migrants. The survey data on tariff families conducted in China's six provinces in August and September 1999 by the Ministry of Agriculture.

Ikramulla et al. (2011) review the fiscal and social ways of rural-urban immigration in Pakistan and the outcome come from a current survey in northwest Pakistan. The aim of the effort, depend on a survey in Northwest Pakistan, is to rate impacted of many socioeconomic part, of rural-urban migration. Use the prohibits binary model, our results show that economic factor play an important role in the household's decision to migrate but are not the only determinants. So, to analysis of prevailing socioeconomic factor in rural and urban region to see the factor of rural-urban migration in Pakistan is necessary. Empirical analyzes shows a positive and relationship between work type, family members in the workforce, education and migration. In addition, a significant negative relationship between living conditions, agricultural and non-agricultural income opportunities and rural-urban migration was observed. The dataset used in this study is based on the research conducted by the researcher and his team in Northwest Pakistan in 2010. The size of the total sample used in the study is 260, of which 150 are migrants and 110 are not migrants. These are the linear probability model (LPM) logit and probit (Gujarati 2003).

Derek et al. (1974) analyzed Africa's rural-urban migration on three levels. First, a brief summary of theoretical and empirical evidence has demonstrated the abundance of knowledge about the characteristics of migrants and the migration process, but little information on economic variables relevant immigration decision. The second section provides a framework for a more general migration theory that incorporates information, education, psychological costs such as the risk and elements of the social system such as urban-rural relations and land-based residence. In the third section, the obvious need to formulate policies to control urban-rural migration has been demonstrated because a) distortions in factor prices, (b) distortions in the education system, and (c) external costs rural- Urban is generally too high even from the point of view of reduced economic efficiency. This rural-urban migration analysis in Africa leads to a number of implications for research. In particular, future research economists should be directed to (a) a better migration theory, (b) improved to study migration to Africa, and (c) to integrate the results of migration research into a significant policy analysis methodology.

Michael et al (1980) examines the contact with rural product and the issues of income from migration from rural areas of developing countries. Intra-rural inequality is one of the main causes of rural-urban migration: rich people tend to be "uprooted" and poor people "pushed" the same subset of relatively "unequal" villages. The article claimed that emigration of the city, and its side effects (remittances, return migration), in turn, increases the interpersonal inequality between families inside and fractions. As far as rural capacity is concerned, the neoclassical expectation (which increases the migration of the city) is based on definitions and dubious hypotheses.

Penine et al., (2011) examines the political complexities of post-war reconstruction in contemporary Africa. This article discusses the determinants of rural-urban migration and its consequences for development in Rwanda are analyzed. The article asks for further research on how rural-urban migration is affecting the distribution of development; In the reconstruction of peace and the promotion of sustainable economic well-being in Rwandan society. This paper analyses the factors associated with rural-urban migration and urbanization in Rwanda, more generally, the revision and interpretation of existing information and published results. In the following section the rural-urban migration factors and urbanization in Rwanda are analyzed. The third section takes into account the implications of government policies in Rwanda on rural-urban migration. The consequences of these policies are further investigated.

Birhanu et al., (2017) review the causes and consequences of urban-rural migration in Ethiopia. Environmental indignity, reduced agricultural capacity, poor social works, population pressure, and scarcity of land in rural areas has been described the main driving part for migration. Although push factors predominate, there are some significant "pull" factors that attract rural people to urban areas such as education, health services, security, better employment opportunities for advancement, and other areas urban services. Migration has environmental, economic, social and cultural factors play an important role in rural-urban migration. Rural people with high

propensity to drought and degraded areas of the low-income area, difficulties in accessing social services could migrate to urban centers for better social infrastructure (education, health) guided urban services, urban culture and lifestyle. In urban areas, there is no better access to information, modern technology and modern thinking.

Hongwei et al., (2013) analyze the causal factor of rural-urban migration on child welfare in China. China's rural migration to urban areas affected 12.6 million school children who emigrated with their parents and another 22 million who were abandoned by their migrant parents. We rely on data from the 2010 Family Research Panel's basic survey, a nationwide representative year longitudinal survey of communities, families, and Chinese individuals. Let's look at a full list of results in the different areas of child development, ranging from education to political knowledge, psychological well-being in interpersonal relationships, and long time to use nutritional results. PSM applies methods to estimate called average treatment effects of treatment (ATT), is the average migration effects for children whose parents emigrated or migrated. Borrow statistical notation of potential outcomes.

Habtamu et al., (2015) analyses rural-urban migration and its impact on urban life in the city of Hawassa, southern Ethiopia. In some poor countries, such as Ethiopia, the fact of migration between rural and urban areas, mainly driven by rural factors and urban attraction work, are the main cause of the imbalance in population growth and distribution among Urban and rural areas. This condition, in turn, affects the healthcare development of both urban and rural regions. Nevertheless, much is not known about many aspects of rural-urban migration. As such, this study mainly refers to an assessment of the consequences of rural-urban migration on the socioeconomic status of urban life, due to rural-urban migration to the urban environment and the result of migration to the urban scene of urban Rural-urban work city. A 197 domestic sampled home survey was performed by systematic sampling. Primary data were collected through questionnaires and interviews, while the secondary was documented by different sources.

Nezum et al., (2013) empirical examination of its reasons and costs of rural-urban immigration in Chittagong, Bangladesh. This study aims to highlight the central characteristics of migrants, the decisive factors and the consequences of urban-rural migration in the city of Chittagong, Bangladesh, by a survey of 100 arbitrarily particular refugees and families. The data set, it is that deficiency, job exploration, landlessness, begging, many normal disasters are the core driving forces for rural passage, while informal admission to relax and shanty town areas, pulling factors into the basis of immigration. The normal four-sided minimization method is practiced in three regression models that specify the migrants entering inputs earlier and after immigration, the modification in income after relocation. In-depth interviews have been used by 100 families with a structured questionnaire to gather data. Secondary data is used for arithmetical directory, native administration, and various related sources.

III. Data Source and Model

The study examines the determinants of migration in the case of Pakistan. Following the methodologies of 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 Zulfiqar (2018), Haider and Ali (2015) and Ali et al., (2016), the functional form of the model becomes as:

$$Mig_t = f(Inf_t, unemp_t, Pop_t, GDP_t, Hf_t) \quad (1)$$

MIG = Migration
INF = Inflation
Hf = Health Facilities
GDP = Economic Growth
UNEMP = Unemployment
POP = Population

IV. Econometric Methodology

The application of econometric tools on macroeconomic models is one of the most important aspects within the quantitative economic analysis. In most of macroeconomic data, the involvement of time trend makes the time series data non-stationary and the regression results of this data become spurious. This study uses Augmented Dickey-Fuller unit root for examining the stationarity of the variables and Autoregressive Distributed Lag (ARDL) approach is used for cointegration. Granger causality test is used for exploring the causal relationship among variables.

IV.I. Augmented Dickey-Fuller (ADF) Test

Dickey and Fuller (1981) proposed the Augmented Dickey-Fuller (ADF). The general forms of the ADF can be written as:

$$\Delta X_t = \delta X_{t-1} + \sum_{j=1}^{q} \phi_j \Delta X_{t-j} + e_{1t} \quad (2)$$

$$\Delta X_t = \alpha + \delta X_{t-1} + \sum_{j=1}^{q} \phi_j \Delta X_{t-j} + e_{2t} \quad (3)$$

$$\Delta X_t = \alpha + \beta t + \delta X_{t-1} + \sum_{j=1}^{q} \phi_j \Delta X_{t-j} + e_{3t} \quad (4)$$

X_t is a time series for testing unit roots, t is the time trend and e_t is error term having white noise properties. If $j = 0$, it represents the simple DF test. The lagged dependent variables in the ADF regression equation are included until the error term becomes white noise. For checking the serial correlation of error terms, LM test is used. The null and alternative hypotheses of ADF unit roots are;

$H_0 : \delta = 0$ non-stationary time series; so, it has unit root problem.

$H_a : \delta < 0$ stationary time series

Apply OLS and compute τ statistic of the estimated co-efficient of X_{t-1} and compare with the Dickey Fuller (1979) critical τ values. If the calculated value of τ statistic is greater than the critical value then we reject the H_0. In this case the time series data is stationary. On the other hand, if we do not reject the H_0. In this case the time series is non-stationary. In this way of applying this procedure on all variables, we can easily find their respective orders of integration.

IV.II. Autoregressive Distributive Lag (ARDL) Approach to Co-Integration

In applied econometrics, a large number of co-integration tests are available. Most famous and traditional co-integration tests are the residual based Engle-Granger (1987) test, Maximum Likelihood based on Johansen (1991/1992) and Johansen-Juselius (1990) tests. One thing is common in these tests, they require same order of integration for their analysis. These co-integration tests become invalid and inefficient when the variables of the model have different level of integration. Pesaran and Pesaran (1997), Pesaran and Shin (1999), Pesaran et al., (2001) has introduced, the most advance and recent method of co-integration known as the Autoregressive Distributive Lag (ARDL) bound testing approach. The ARDL bound testing approach has numerous advantages over traditional methods of co-integration. First, ARDL can be applied regardless by following the order of integration. It can be applied I(0), purely I(1) or mix order of integration (Pesaran and Shin, 1999). Second, the ARDL bound testing approach to co-integration can be used for smaller sample sizes (Mah, 2000) rather than traditional methods. Third, this approach allows to use sufficient number of lags for capturing the data generating process in a general to the specific modelling framework (Laurenceson et al., 2003). This technique is based on Unrestricted Vector Error Correction Model (UVECM) which have better properties for short and long run equilibrium as compared to traditional techniques (Pattichis, 1999). For applying the bounds testing procedure, it is necessary to represent equation in a conditional autoregressive distributed lag model as follows:

$$\Delta \ln Y_t = \beta_1 + \beta_2 t + \beta_3 \ln Y_{t-1} + \beta_4 \ln X_{t-1} + \beta_5 \ln Z_{t-1} + ... + \sum_{h=1}^{p} \beta_h \Delta \ln Y_{t-h} + \sum_{j=0}^{p} \gamma_j \Delta \ln X_{t-j} + \sum_{k=0}^{p} \phi_k \Delta \ln Z_{t-k} + ... + u_{it} \quad (5)$$

Here $\ln Y_t$ is used for different dependent t is for time of $\ln Y_{t-1}$ representing the lag of dependent variable and $\ln X_t$ is first independent variable and $\ln Z_t$ is second independent variable and so on. Δ represents the rate of change in variables. The calculated F-Statistic is compared with the critical value tabulated by Pesaran and

Pesaran (1997) or Pesaran et al., (2001) that is extended by Narayan (2005). If the F-test statistic exceeds the upper critical value, the null hypothesis of no co-integration is rejected regardless the order of integration I(0) or I(1). If the calculated F-test statistic is less than the lower critical value the null hypothesis is accepted and there is no co-integration among the variables of the model. On the base of the above equation our null and alternative hypothesis for co-integration test is as given below:

$H_0 : \beta_3 = \beta_4 = \beta_5 = 0$ (no co-integration among the variables)

$H_A : \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$ (co-integration among variables)

If there is long run co-integration relationship among the variables, then for finding short run relationship we use the Vector Error Correction Model (VECM). The VECM is explained as under:

$$\Delta \ln Y_{it} = \beta_1 + \beta_2 t + \sum_{h=1}^{p} \beta_h \Delta \ln Y_{it-h} + \sum_{j=0}^{p} \gamma_j \Delta \ln X_{t-j} + \sum_{k=0}^{p} \phi_k \Delta \ln Z_{it-k} + \omega ECT_{t-1} + u_t \qquad (6)$$

All the variables above except ECT_{t-1} which is one time period lagged error correction term. The error correction model results indicate the speed of adjustment back towards long run equilibrium after a short run shock.

V. Empirical Result and Discussion

This section of the paper is comprised of empirical results and discussion. The estimated results of table 1 reveal that inflation, migration, health facilities, population and unemployment are positively Skewed whereas GDP are is skewed. The table also presents the values of mean, median, maximum, minimum and standard deviation of the series. The results show that all the variables of the model have positive kurtosis. The value of the Jarque-Bera shows that all variables have mean and finite covariance, this confirms that selected data sets is normally distributed.

Table-1

	INF	MIG	HF	GDP	POP	UNEMP
Mean	8.631312	217706.7	0.984964	785.9783	17.43786	4.673429
Median	7.921084	142818.0	1.014398	796.6306	16.93504	4.280000
Maximum	20.90451	773869.0	2.235948	1083.967	20.41474	8.270000
Minimum	2.914135	58002.00	0.024298	481.4575	15.42167	1.70000
Std.Dev	4.215455	179863.7	0.622014	191.0041	1.347838	1.870940
Skewness	1.121639	1.640671	0.164825	-0.013003	0.723712	0.235209
Kurtosis	4.535897	4.787024	2.179971	1.830254	2.469863	2.213063
Jarque-Bera	10.77894	20.35930	1.139129	1.996431	3.465120	1.225821
Sum	302.0959	7619734	34.47373	27509.24	610.3250	163.5700
Sum sq Dev	604.1821	1.10E+12	13.15467	1240407	61.76665	119.0142
Observation	35	35	35	35	35	35

The results of correlation have been given in the table 2. The results show that inflation rate has positive and insignificant correlation with migration in the case of Pakistan. The outcomes reveal that health facilities, economic growth, population growth and unemployment rate have positive and significant correlation with migration in the case of Pakistan. The estimated results reveal that health facilities, economic growth, and population growth have insignificant correlation with inflation rate in the case of Pakistan. The estimates show that unemployment has negative and significant correlation with inflation rate in Pakistan. The results show that economic growth, population growth and unemployment rate have positive and significant correlation with health facilities in the case of Pakistan. Population growth and unemployment rates have positive and significant correlation with economic growth in the case of Pakistan. The estimated results show that population growth and unemployment rate have a positive correlation. The overall results of correlation matrix show that most of the selected variables have a significant relationship with migration in the case of Pakistan.

Table 2

Variables	MIG	INF	HF	GDP	POP	UNEMP
MIG	1.000000					
INF	0.023143	1.0000				
HF	0.798561***	0.015409	1.0000			
GDP	0.767041***	-0.072106	0.981279***	1.0000		
POP	0.872737***	0.012237	0.958684***	0.940212***	1.0000	
UNEMP	0.537391***	-0.302346*	0.724091***	0.793308***	0.744670***	1.0000
*, **, ***, significance level 10%, 5% and 1% respectively.						

For the checking the stationarity of the variables, this study uses the ADF unit root test. The results of the ADF unit test have been presented in the table 3. The results show that, except inflation rate all the selected variables are non-stationary at level. The estimated results show that all the health facilities, economic growth, migration, population growth and unemployment rate are stationary at first difference. This reveals that selected variables of the model have a mixed order of integration; this is best situated for applying ARDL bound testing method of cointegration.

Table 3

I(0)

Variables	T statistics	Prob
INF	-4.371494	0.0015
HF	1.337848	0.9983
GDP	-0.389660	0.8999
MIG	3.329537	1.0000
POP	2.030185	0.9998
UNEMP	-1.966116	0.2997

I(1)

variable	T statistics	Prob
INF	-8.700955	0.0000
HF	-3.252934	0.0257
GDP	-4.807361	0.0005
MIG	-6.558802	0.0000
POP	-1.356719	0.0897
UNEMP	-6.932682	0.0000

The results of lag length criteria have been given in table 4. Keeping the number of observations and number of variables in mind and maximum lags required for co-integration approach, 1 maximum lags are allowed for Vector Auto-Regressive process. But maximum 4 lags are allowed for Granger causality test. The results by lag selection criteria are presented in table 3. SC allows optimal lag length 1 is selected for ARDL bound testing approach, but for Granger causality test LR, FPE, AIC and HQ allow 4 maximum lag length.

Table 4

VAR Lag Order Selection Criteria

GDP INF POP UNEMP MIG HF

Lag	Log I	LR	FPE	AIC	SC	HQ
0	-753.1493	NA	3.86e+12	46.00905	46.28114	46.10060
1	-534.2924	344.8654	61761593	34.92881	36.83146	35.56767
2	-465.2090	83.73747*	10476822*	32.92176*	36.45896*	34.11192*

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

The results of bound testing have been presented in the table 5. The estimated results reveal that calculated F-statistic is 4.159.737, this is greater than the critical value. This show that there is a co-integration between dependent and independent variables.

Table 5
Bound Test

Test Statistic	Value	K
F-statistic	4.159737	4

Significance	I0 Bound	I1Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

The estimated long run results of the model have been given in the table 6. The long run results of the study reveal that economic growth has a positive and insignificant impact on migration in the case of Pakistan. Population growth has positive and significant impact on migration in the case of Pakistan after the selected time period. The results show that 1 percent increase in population growth 0.617178 percent increase has been occurred in migration in Pakistan. The level of unemployment has negative and significant impact on migration in Pakistan. The estimated results show that 1 percent increase in unemployment rate brings 0.126404 percent decrease in migration in Pakistan. The inflation rate has negative and significant impact on migration in Pakistan, the estimated outcomes show that 1 percent increase in inflation rate, a 0.058349 percent decrease has been occurred in migration in the case of Pakistan. The overall long run results of the model show that most of the independent variables have a significant impact on migration in the case of Pakistan.

Table 6
Long Run Coefficients

Variable	Coefficient	Std.Error	t-statistic	Prob.
GDP	0.000904	0.001476	0.612670	0.5454
POP	0.617178	0.204576	3.016857	0.0056
UNEMP	-0.126404	0.101383	-1.246797	0.02336
INF	-0.058349	0.032824	-1.777621	0.0872
C	1.637533	2.519805	0.649865	0.0215

The estimated short run results of the study have been presented in the table 7. The GDP coefficient shows a significant positive effect on migration, which means that the increase / decrease in GDP 1 resulted in a rising / decreasing 9% migration change. The pop coefficient shows a significant positive effect on migration, which means that 1% increase / decrease in appearance has a 61% increase / decrease in migration effect. The unemployment rate has a negative impact on migration, which means that 1% increase / decrease in unemployment has 12% effects increasing / decreasing migration changes. The INF coefficient has a negative effect on migration, which means that 1% increase / decrease in unemployment has a 5% increase / decrease in migration effect. The results show that economic growth, population growth and unemployment rate have positive and significant short run impact on migration in Pakistan. Inflation rate negative and significant short run impact of migration. The overall short run results have the same type of short run results as like a long run. ECM has significant and negative value (-0.448183) which is correct theoretically. The significant negative value of ECM shows the speed of adjustment from short run to long run equilibrium. The estimates of ECM reveal that short run needs 2 years and 1 month to converge in the long run equilibrium.

Cointeq = LMIG - (0.0009*GDP + 0.6172*POP -0.1264*UNEMP -0.0583 *INF + 1.6375)

Table 7
Short Run Results

Variable	Coefficient	Std.Error	t-Statistic	Prob.
D(GDP)	0.000405	0.000656	0.618284	0.5418
D(POP)	0.276608	0.113625	2.434408	0.0221
D(UNEMP)	0.029929	0.045414	0.659013	0.0157
D(INF)	-0.042493	0.014134	-3.006470	0.0058
ECT(-1)	-0.448183	0.127574	-3.513132	0.0016

The stability of model is very important because the stability tests enable us to see whether the estimated model shifts or not over the selected time period. The Cumulative Sum (CUSUM) and the Cumulative Sum of the Squares (CUSUM sq) tests are used for this purpose. The results of Cumulative Sum (CUSUM) and the Cumulative Sum of the Squares (CUSUM sq) tests are reported in Figure 1 and Figure 2. The figures show that Cumulative Sum (CUSUM) and the Cumulative Sum of the Squares (CUSUM sq) are between the two critical boundaries and do not go outside the critical boundaries. The figures of Cumulative Sum (CUSUM) and the Cumulative Sum of the Squares (CUSUM sq) confirm that selected model is correctly specified.

Figure 1: Plot of cumulative sum of recursive residuals

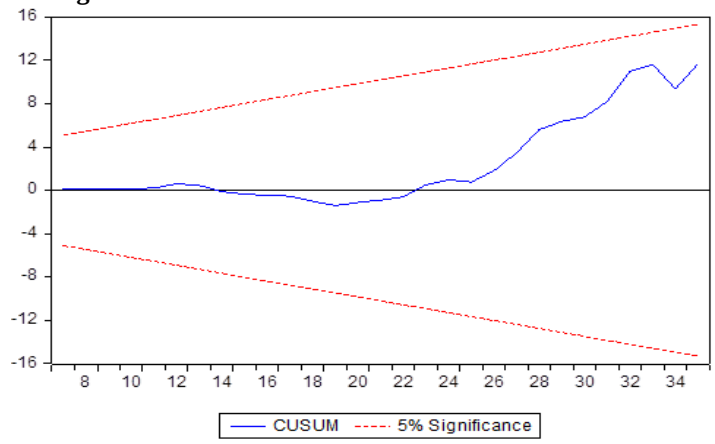
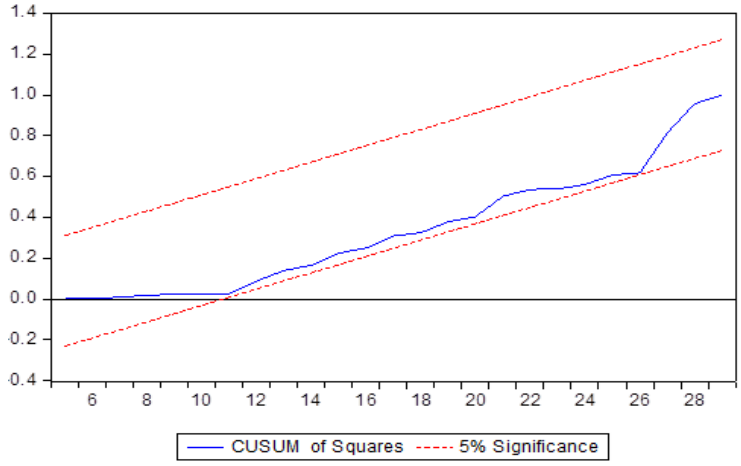


Figure 2: Plot of sum of recursive residual



Heteroskedasticity Test;

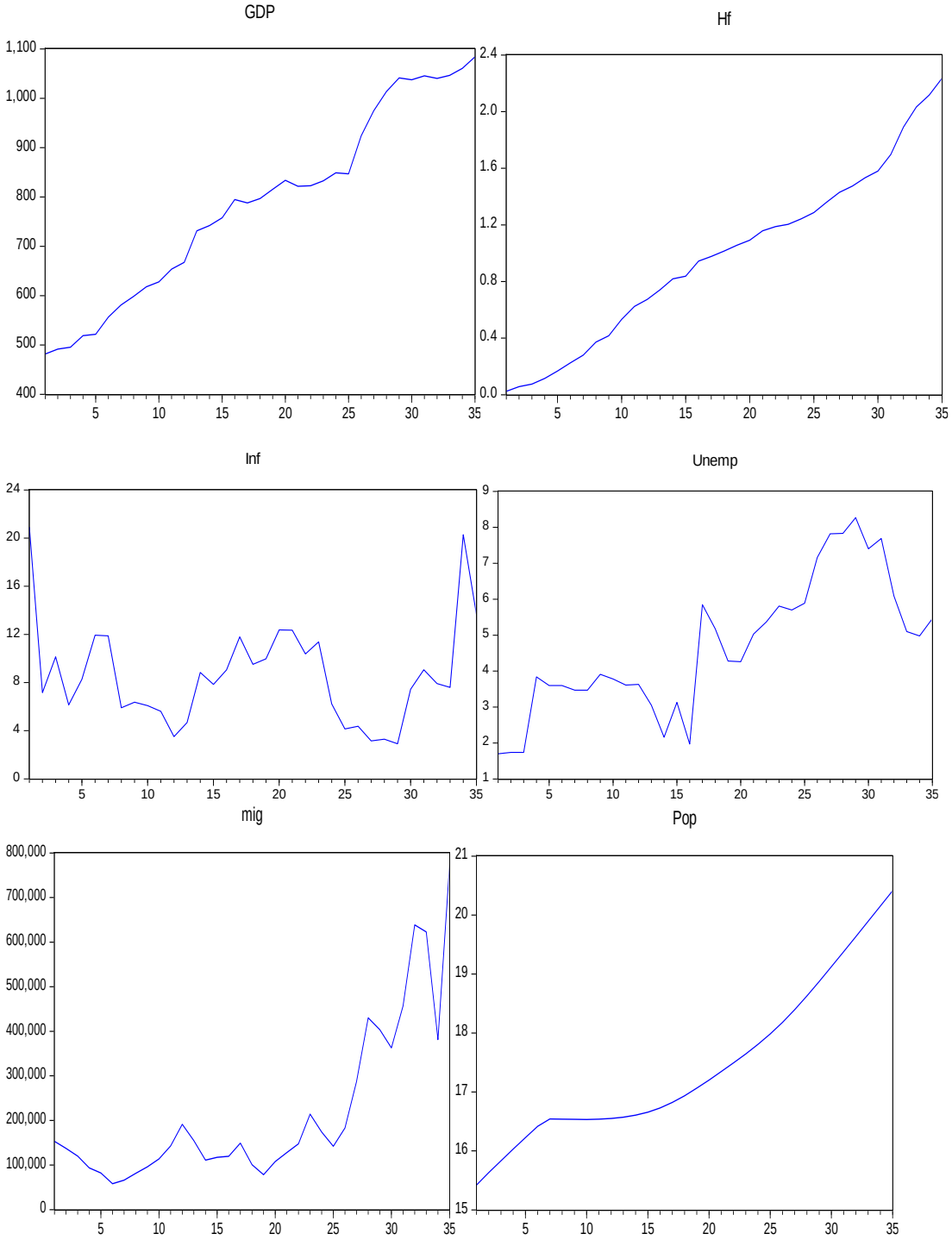
F-statistic	0.252933	Prob.F(3,31)	0.8586
Obs R-square	0.836238	Prob.Chi-Square(3)	0.8408
Scaled explained ss	1.162727	Prob.Chi-Square(3)	0.7620

The value of F-statistic is 0.7620 insignificant it means there is no problem of heteroskedasticity.

V. Conclusions

This study examines the determinants of migration in the case of Pakistan. In this study rural-urban migration is taken as dependent variable, whereas economic growth, inflation rate, population growth and unemployment have been selected as independent variables. The data from 1981 to 2015 has been used. For checking the stationarity of the data, Augmented Dickey-Fuller (ADF) unit root test is applied. Autoregressive Distributed Lag (ARDL) model has been used for examining the co-integration among the variables of the model. The results of the study reveal that economic growth has a positive and insignificant impact on migration in the case of Pakistan. Population growth has positive and significant impact on migration in the case of Pakistan after the selected time period. The level of unemployment has negative and significant impact on migration in Pakistan. The inflation rate has negative and significant impact on migration in Pakistan.

Figure 3



References

Abdulai, A. (1999). International Migration and Agricultural Development in Ghana. *Journal of Development Studies*, 8(1), 61-74.

Abdul-Korah, G. (2008). Migration, Ethnicity and Uneven-Development in Ghana, the Case of the Upper West Region University of Minnesota Scholarly Library, USA.

Adepoju, A. (1977). Migration and Development in tropical Africa: Some Research Priorities; Department of Demography and Social Statistics at the University of life, Nigeria; 210-225.

Afsar R. (2000). Rural Urban Migration in Bangladesh: Causes, Consequences and Challenges, Dhaka, The University Press Limited, 2000.

Ali, A. (2011). Disaggregated import demand functions of Pakistan; An empirical Analysis. M-Phil Thesis, NCBA&E, Lahore, Pakistan, 1-70.

Ali, A. (2015). *The impact of macroeconomic instability on social progress: an empirical analysis of Pakistan*. (Doctoral dissertation, National College of Business Administration & Economics Lahore).

Ali, A. (2018). Issue of Income Inequality Under the Perceptive of Macroeconomic Instability: An Empirical Analysis of Pakistan. *Pakistan Economic and Social Review*, 56(1), 121-155.

Ali, A. and Bibi, C. (2017). Determinants of Social Progress and its Scenarios under the role of Macroeconomic Instability: Empirics from Pakistan. *Pakistan Economic and Social Review* 55 (2), 505-540.

Ali, A., & Ahmad, K. (2014). The Impact of Socio-Economic Factors on Life Expectancy in Sultanate of Oman: An Empirical Analysis. *Middle-East Journal of Scientific Research*, 22(2), 218-224.

Ali, A., & Audi, M. (2016). The Impact of Income Inequality, Environmental Degradation and Globalization on Life Expectancy in Pakistan: An Empirical Analysis. *International Journal of Economics and Empirical Research*, 4 (4), 182-193.

Ali, A., & Audi, M. (2018). Macroeconomic Environment and Taxes Revenues in Pakistan: An Application of ARDL Approach. *Bulletin of Business and Economics* (BBE), 7(1), 30-39.

Ali, A., & Rehman, H. U. (2015). Macroeconomic Instability and Its Impact on Gross Domestic Product: An Empirical Analysis of Pakistan. *Pakistan Economic and Social Review*, 53(2), 285.

Ali, A., & Zulfiqar, K. (2018). An Assessment of Association between Natural Resources Agglomeration and Unemployment in Pakistan. *Pakistan Vision*, 19(1), 110-126.

Ali, A., Ahmed, F., & Rahman, F. U. (2016). Impact of Government Borrowing on Financial Development (A case study of Pakistan). *Bulletin of Business and Economics* (BBE), 5(3), 135-143.

Anarfi, J. K. (2009). Independent North-South Child Migration in Ghana: The Decision-Making Process Migration DRC Working Paper T29.

Anderson, L. E. (2002). Rural-Urban Migration in Bolivia: Advantages and Disadvantages, Institute for Socio-Economic Research, Universidad Católica Bolivia, Bolivia.

Arshad, S., & Ali, A. (2016). Trade-off between Inflation, Interest and Unemployment Rate of Pakistan: Revisited. *Bulletin of Business and Economics (BBE)*, *5*(4), 193-209.

Azad, A. K. (2009). Impact of rural-urban migration on childhood risk of Acute Respiratory Infection (ARI) among under-5 children, paper presented in the Population Association of America, 29th April-2nd May.

Battistella, G. (1998). The Impact of Labour Migration on the Children Left Behind: A Study of Elementary School Children in the Philippines. *Journal of Social Issues in Southeast Asia* 13(2), 220-241.

Beals, R. E. (1970). Migrant Labor and Agricultural Output in Ghana, *Oxford Econ.* 22, 109-127.

Bhattacharya, P.C. (1993). Rural-Urban Migration in Economic Development. Heriot-Watt University. *Journal of Economic Surveys*, 7(3), 243-281.

Bhattacharya, P.C. (1993). Rural-Urban Migration in Economic Development. Heriot-Watt University. *Journal of Economic Surveys*, 7(3), 243-281.

Birru, B. (1997). Causes and Consequences of Rural-Urban Labor Migration in Ethiopia: The Case of Arab Minch town. MA. Thesis in Geography, Addis Ababa University, Addis Ababa.

Chang, H. (2011). Labor Migration and Time Use Patterns of the Left behind Children and Elderly in Rural China. *World Development*, 39(12), 2199-2210.

Dasgupta, B. (1981). Rural-Urban Migration and Rural Development. In Jorge Balan (ed), Why People Move: Comparative Perspectives on the Dynamics of Internal Migration, The UNESCO Press, 43-58.

Edwards, A.C. (2003). International migration, remittances, and schooling: Evidence from El Salvador. *Journal of Economic Survey* 72(2), 429-461.

Gibson, M. A. (2012). Rural to urban migration is an unforeseen impact of development intervention in Ethiopia, Plos One, 7(11).

Gimba, Z. and Kumshe, M. G. (2001). Causes and Effects of Rural-Urban Migration in Borno State: A Case Study of Maiduguri Metropolis. *Asian J. Bus. Manage. Sci*, 1, 168-172.

Global, I. D. P. Database (2002). Profile of International Displacement: Rwanda, Global IDP Project, Norwegian Refugee Council, Switzerland.

Haan, A. (1999). Livelihood & Poverty: The Role of Migration A Critical Review of the Migration Literature. *Journal of Development Studies*, 36(2), 1-47.

Hamid, T. A. (2012). Predictors and prevalence of successful aging among older Malaysians. *Gerontology*, *58*(4), 366-370.

IFAD. (2007). Migration and Rural Employment. Policy Division, Thirtieth Session of the Governing Council of IFAD, 14 February.

Landale, N. S. (2000). Migration and Infant Death: Assimilation or Selective Migration among Puerto Ricans? *American Sociological Review*, 65(6), 888-909.

Liang, Z. (2007). The educational consequences of migration for children in China. *Social Science Research*, 36(1), 28-41.

McCatty, M. (2004). The Process of Rural-Urban Migration in Developing Countries. Carleton University: Ottawa, Ontario.

McDowell, C. (1997). Migration and Sustainable Livelihoods: A Critical Review of the Literature. IDS Working Paper 65.

Meyerhoefer, C. D. (2011). The effect of parental labor migration on children's educational progress in rural china. *Review of Economics of the Household*, 9(3), 379-396.

Musahara, H. (2001). Land and Poverty in Rwanda, Seminar on Land in Rwanda, Landnet: Rwanda Chapter, Kigali, Rwanda.

Republic of Rwanda (2008). National Urban Housing Policy for Rwanda, Ministry of Infrastructure, Kigali, Rwanda.

Samers, M. (2010). Migration, London: Routledge.

Stark, O. (1985). The new economics of labor migration. *American Economic Review*. 75, 330-350.

Todaro, M. P. (1970). Labour Migration and Urban Employment: Reply. *American Economic Review*, 6(3), 187-188.

Todaro, M. P. (1976). Internal Migration in Developing Countries, Geneva, International Labour Office.

Todaro, M. (2003). Economic Development. (8th ed.), New York University and Population Council, Barkharath printers: New Delhi

Zhao, Y. (1999). Labor Migration and Earnings Differences: The Case of Rural China. *Economic Development and Cultural Change*, 47(4), 550-565.

Zhao, Y. (2002). Causes and consequences of return migration: recent evidence from China. *Journal of Comparative Economics*, *30*(2), 376-394.