



The impact of Afghan Refugee Influx on Labor Market Outcomes in Pakistan

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ABSTRACT

The study gauges the impact of refugee influx on the labor market in Pakistan. The impact of Afghan refugees is analyzed using three indicators of labor market namely, unemployment, formal employment and informal employment from years 1979 to 2022. For the purpose of analysis, ADF and PP tests are applied first for examining unit root problem. Variables are found having mixed order of integration so ARDL bound test for co-integration is used to derive long run and short run relationship between labor market indicators and refugee inflow. It is found that Afghan refugees have caused positive impact on the labor market of Pakistan in long run while in the short run, it increases unemployment rate. Expenditure on Education, CPI, GDP, Trade Openness and Gross Fixed Capital are significantly reducing Unemployment rate of Pakistan. Expenditure on Education and Gross Fixed Capital are found to have positive effect while CPI and population Growth are reducing Formal Employment. Hence, it is concluded that refugees can serve as stimulus for investment and production in the country.

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1. Introduction

Forced and volunteer migration became a global phenomenon over the recent years. The world has witnessed both forced and volunteer migration mainly due to armed conflict, political instability, economic crises and external invasion (Mosel & Jakson, 2013). Usually, the forcibly displaced people do not own enough resources to move to a different region, hence they prefer moving to their next door neighbor country to sustain their livelihood. During past few decades, refugee inflow has become major issue, especially for the developing countries. The western borders of Pakistan have always lacked security throughout most of the country's history. However, the inflow of refugees intensified from year 1970, after Soviet invasion in Afghanistan. Ever since, Pakistan is providing safe heaven to millions of Afghan refugees who fled from violence, conflict and dictatorial regimes (Aftab, 2022). As of May 2022, there were more than 3 million Afghan refugees

reported to be living in Pakistan, while approximately 1.5 million of them actively hold citizenship in the form of Proof of Registration (PoR) cards, about 900,000 possess Afghan Citizen Card (ACC), while 800,000 are undocumented (Mielke, 2022; UNHCR, 2022)

In the textbook models, there exists a negative relationship between employment and refugee inflow; migration tend to increase labor supply which reduces wages and employment opportunities for natives. However, in reality, a large body of literature argues that there is a little to no evidence of immigrants causing a decline in employment of host country, instead, they often lead to increase in the output and employment of host country (Ezen & Binatli, 2017). The presence of refugees created unemployment in certain regions as refugee workers were more flexible in wage and working hour, but there are some cases as well where unemployment level declines with the inflow of refugees; (Brell, Dustmann, & Pretson, 2020). It is argued that the arrival of refugees can serve as a supply shock to the informal sector of the economy, while on the other hand it serves as demand shock to the formal sector (Del, Wagner, & Vaneass, 2015). One plausible explanation is that refugee inflows could displace natives from informal sector because of their wage flexibility; however, in case of formal sector, evidence is ambiguous. In some cases they ended up causing demand shock by acting as substitute labor to informal sector, while in some cases the demand shock can be negative. (Akgunduz, berg, & hassink, 2015).

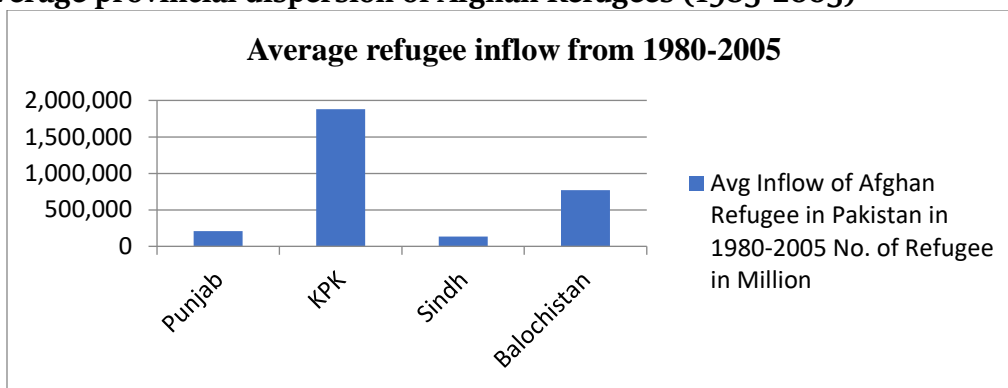
In case of Afghan refugees, mixed evidence exists on the effects of migration on the economy of the country. In some instances, migration proved to be economically beneficial for Pakistan. It is estimated that refugees can spur long-term investment, able to fill demographic gaps, enhance bilateral trade, and serve as productive economic producers as well as consumers. (Baloch, Mohd Noor, & Lacheb, 2017). With the refugee inflow, a demand for and supply of goods increases which cause inflation at local level to rise, acting as a stimulus for increasing production activities. On the other hand, some researchers believe that the presence of Afghan refugees in Pakistan has caused detrimental impact on social, political and economic performance of the country (Brothakur, 2017). Pakistan has been generous in providing accommodation to its Afghan brothers and sisters but unfortunately, the country ended up putting its national security as risk, which adversely affected the economic outlook (Jan, Khan, & Ramzan, 2021). Political, ethnic and economic repercussions of Afghan refugees in Pakistan have posed serious threats to economic and political stability, which became more evident by sudden increase in the violence and illegal activities near western borders of Pakistan (Bhatti, 1987). These refugees are recorded to put an extra pressure on infrastructure of Pakistan for instance; education institutes, hospitals, public housing and other social trusts (Jan, Khan, & Ramzan, 2021).

As of June 2022, there are 1.3 million Afghan refugees living in Pakistan, out of which 68% live in refugee villages while 32% live outside of these villages. According to UHNCR, Khyber PakhtunKhwā actively hosts 670,499 Afghan asylum seekers i.e. 52.3% of refugee population. Baluchistan provides home to 313,882 refugees which is 24.5 %, Punjab hosts 184,258 14.4% of their population, Sindh provide safe heaven to 71,723 refugees which is 5.6% of their population and lastly Islamabad hosts 38,294 refugees i.e. 3% of their population (UNHCR, Afghan refugees in Pakistan, 2022)

Figure 1 shows dispersion of Afghan refugees in the four provinces of Pakistan. Khyber PakhtunKhwā (KPK) is recorded to host the highest number of refugees because it shares border with some of the Afghan states. However, Sindh hosts least number of Afghan refugees as compared

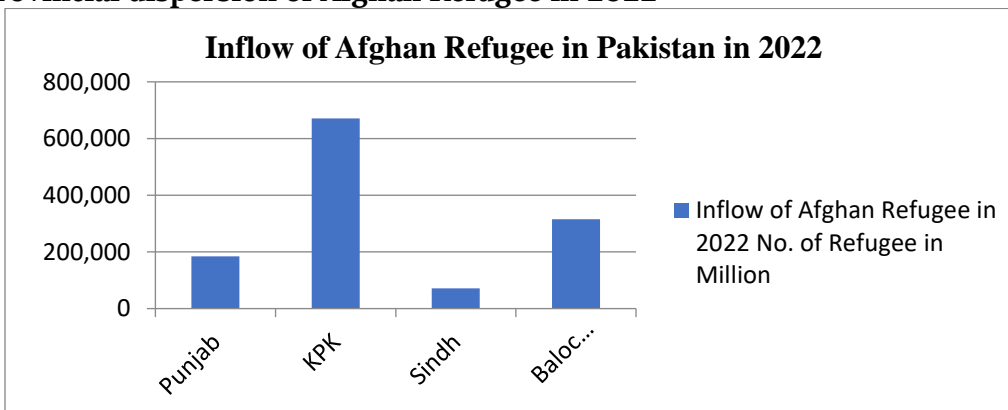
to other provinces. From 1980 to 2005, KPK recorded to host 1,878,170 Afghan refugees, Punjab provided home to 207,758, Baluchistan to 769,268 and lastly Sindh to 135,734 refugees.

Figure 1: Average provincial dispersion of Afghan Refugees (1985-2005)



Source: UNHCR (2005)

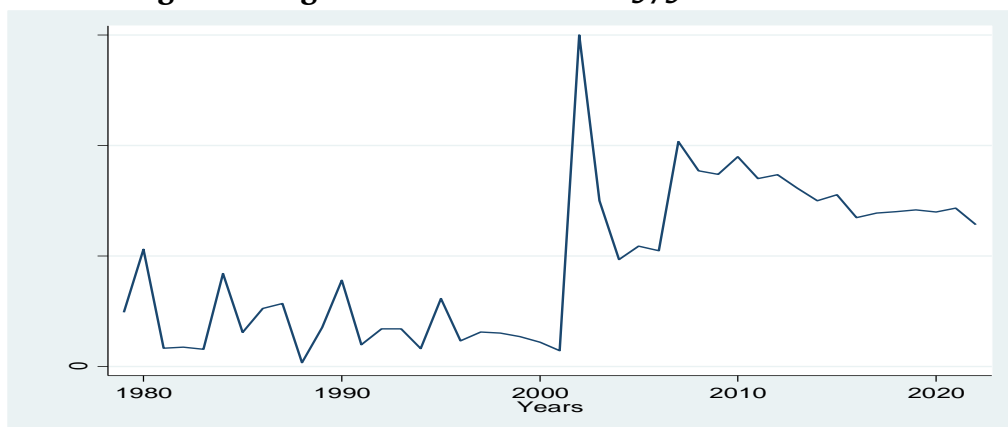
Figure 2: Provincial dispersion of Afghan Refugee in 2022



Source: UNHCR (2022)

According to UNHCR in 2022, KPK is hosting the highest number of refugees which is 671,075. On the other hand Punjab is recorded to host 184,744 Afghan refugees, Baluchistan is hosting 314,866 refugees and lastly, Sindh is recorded to host 671,075 refugees.

Figure 3: Inflows of Afghan Refugees in Pakistan since 1979



Source: author's calculation

The figure 3 shows the time series pattern of Afghan refugee's inflow in Pakistan. First wave of refugee came with Soviet invasion in 1979, while second wave came with the war of terror started by the USA after the incident of 9/11. However, since 1979 Pakistan in collaboration with UNHCR is trying its best for safe repatriation of Afghan refugees. As Pakistan is hosting a significant number of refugees which seem to leave impact on the economy of the country, therefore, the impact of refugee influx on labor market indicators is analyzed in the present study. The study uses time series data over the time period 1979 - 2022 to capture the effects of refugee inflows on the overall unemployment rate in the country and employment in formal and informal sectors.

2. Literature Review

Empirical research on the impact of refugee on the host country suggests that the overall consequences of hosting refugees vary with different countries. It is observed that refugee inflow pose both positive and negative impact on the labor market of the host country(Altum, 2021). On the bright side, asylum seekers increase consumer and producer productivity in host country, give rise to inflation which push local producers to produce more. The negative consequences involve; increase in illegal activities, surplus of unskilled workers which causes unskilled labor to bear the brunt of refugees' inflow relatively more than the skilled ones (Grare & Maley, 2011). There are several studies suggesting that refugee inflow positively contributes to the employment sector of host country. In case of Brazil economy, the evidence reveals that with the inflow of Venezuelans refugees, an expansion in labor market indicators was observed. Labor market variables exhibit a decline after the refugee inflow. However, uneducated and less skilled native people seem to bear more burden as compared with educated ones (Ryu & Paudel, 2021).

It is observed that because displaced asylum seeker are mostly unskilled and have difficult time integrating in the economy, hence they impose negligible impact on labor market of the host country. Refugee influx can positively contribute to economy of a country when they are efficiently allowed to integrate in the economy(Stempel & Alemi, 2021). In Rwanda, significant spillover effects were observed with the refugee inflow, mostly because of several complementary aid programs given to the host country. However, there exist liquidity and financial constraints that hinder the market stimulus(Taylor, Phillipiksi, & Alloush, 2016). By looking at the case of Lebanon, it is suggested that refugee inflow both positively and negatively affect host country. In order to avail the positive spillover of refugees, a country need to possess rich economy otherwise refugees will only worsen the situation for the host country (Shellito, 2016).

For Australian economy, it was found that in long run, if given ample time, refugees gain enough credibility to integrate into local economy. Conclusively, it is found that refugees who are given with opportunities in refugee camps perform better in long run as compared to other refugees who are given no opportunities (Delaporte & Piracha, 2018). In Tanzania, refugee abundant areas experienced a sudden boom but it came with some negative aspect as well. Refugee inflow also pushed country to engage in some political and structural reforms. Hence, citizens of Tanzania experienced a massive structural and political change due to refugee inflow and it would be highly impossible for the country to go back to its previous situation i.e. before 1993 situation (Whittaker, 2002). In case of some African neighborhood, research suggests that with refugee inflow productivity of country increases which add positively by creating employment opportunities for natives as well as asylum seekers (Labiso, 2020).

Refugees can be beneficial for the economy but for that purpose government intervention is needed. However, immigrants do prove to be beneficial to some extent but in case of Turkey, as the Syrian refugees were not awarded with working permit so it became hard for them to integrate in the job market (Serttas & Uluoz, 2020). Fallahet.al., (2019) studied the impact of refugee influx on unemployment and wages in Jordan. Using panel data for 2010-2016 it was found that refugee influx had insignificant effect on labor market indicators. Jordanians who were associated with labor markets with higher concentration of refugees experienced no worst impact on their wages and employment than those who were associated with labor markets having less concentration of refugees.

Looking at the negative impact, it is revealed that refugee put a pressure on the labor market of the host country. Natives and immigrants only exhibit competition in labor market, based solely on their nationality and gender (Malaeb & Wahba, 2018). Another study suggests that with the refugee inflow, unskilled native workers are more likely to bear the consequences by losing their job or willing to accept lower wage rate. However, unskilled labor bears the tendency to negatively impact host market. It can be mitigated through adjustment programs introduced by host government (Card & DiNardo, 2000). For Bangladesh, it was found that Rohingya refugees were putting pressure on the local authorities. Focused group and key informative interviews were conducted in refugee camps to investigate the issue. Hence, the study concluded that refugees do add burden to a country through various means (Kuda, 2020).

It is claimed that refugee cause a pressure in labor market because the supply of labor increases, their demand is unable to increase as much, hence, overall wage rates decrease (Barman, 2020). Evidence also suggests that refugee can instigate political instability in the host country. Asylum seekers in the host country possess the ability to influence voting behavior of locals. Thus, the local voters do not hold their respective leaders responsible for refugee inflow and that is why their voting behavior stays same keeping other things constant (Altingdag & Kaushal, 2021). Lastly, asylum seekers in any country lead to economic, social, and political cost to the local government. For Turkey, it is concluded that inflation increases with refugee inflow but employment rate shows insignificant change. The analysis of Syrian refugee inflow in Turkey has shown that variables like food, housing prices, employment rate, and internal migration patterns exhibit a declining pattern. It is found that with refugee inflow, inflation level changes a bit, however, employment and internal migration shows no significant pattern in association with refugee inflow (Akgunduz, Berg, & Hassink, 2015).

In the case of Jordan, the research found that with the Syrian refugee inflow, Jordan labor market remained unaffected. Host labor market was provided with no such opportunities to refugees and labor market remained least affected (Fakih & Ibrahim, 2016). Syrian refugee seemed to have more impact on informal employment level rather than formal employment (Ezen & Binatli, 2017). In another analysis it was found that inflow of Syrian refugee impact informal sector of Jordan economy which is already a vulnerable sector (Suzuki, Paul, Maru, & Kusadokoro, 2019). In case of middle income countries, a macro perspective based study compared performance of countries before and after refugee influx. It was concluded that refugees actively participate in development of a country depending on the economic condition of host country and their reaction towards refugee influx. Furthermore, study recommends that skilled labor should be separated from unskilled labor for better utilization of refugees for host country's economic gain (Khouni, 2018).

In case of Pakistan, evidence from survey based study suggests that Afghan refugees residing in Pakistan face difficulty in getting into job market. They face a hard time in integrating in the country and due to this they get involved in other illegal activities(Javed, Khan, Syed, & Ahmad, 2020). As asylum seekers are often victim of violence and to channelize their trauma, they usually engage in illegal activities. This gives rise to negative externalities and negative spillovers which deprive native of their chance at sustainable living(Jan, Khan, Ramzan, & Munir, 2021). Anwar et.al. (2021) studies economic, social, political, environmental and security impacts of Afghan refugees on Pakistan. The impact was found to be detrimental. They concluded that Afghan refugee influx resulted in several problems in the country including unemployment among local labor, inflation, drug abuse, child labor, terrorism and over exploitation of natural resources.

Ali, Sabir, & Muhammad (2019) used three different indicators to narrow down economic variables that are vulnerable to change in Pakistan labor market. Their study suggests that afghan refugees cast detrimental effect on ecology and infrastructure of the country. They concluded that Pakistan’s infrastructure, ecology and natural resources are more likely to be affected by influx of Afghan refugee. Another study used the data from 1979 till 2014 and employed Auto Regressive Distributive Lag model (ARDL) to see whether refugee influx has caused any disturbance in country. Refugees proved to cast a threat to economic performance at domestic and international level. Furthermore, they were unable to extract the exact impact of refugee influx, hence, direct effect remains controversial. However, they do suggest that refugees can be used in the benefit of a country though little innovation(Baloch, Mohd Noor, & Lacheb, 2017).

By analyzing a wide range of literature it is discovered that refugee influx can impact the economy differently depending on the country characteristics, job market behaviors and reaction of host country towards the asylum seekers. Although significant work in this regard is available for many developed and developing countries, but for Pakistan a detailed analysis is yet to be conducted on the issue of refugee influx and labor market variables.

3. Data and Methodology

3.1 Data

Time series data for years 1979 to 2022 is used to assess the impact of refugee inflow on labor market. Labor market variables include unemployment, formal and informal employment. Refugee influx is measured by number of Afghan refugees present in the country at each time period. The first wave of Afghan refugees entered the country in 1979 after soviet invasion, therefore, study will analyze impact of refugees from 1979 onwards. Data on unemployment level of Pakistan is retrieved for the years 1979 to 2022, while data on formal and informal employment is available from year 2000 to 2022. Other control variables include gross domestic product, gross fixed capital formation, trade openness, population growth, expenditure on education and consumer prices.

Table 1: Description of variables

Variable	Definition	Source	Variable Type
Unemployment rate (UN)	Percentage of labor force that doesn't have any job.	Labor force survey	Dependent variable
Formal employment rate (FE)	A formal employment is when a formal working agreement is signed between employer and employee.	Labor force survey	Dependent variable

Informal employment rate (IFE)	The informal sector includes workers who are engaged in informal sectors, mostly as unregistered workers	Labor force survey	Dependent variable
Afghan refugee inflow (REF)	A person who has left their country to avoid war, persecution or a natural calamity.	United Nation High Commission for Refugees	Independent variable
Gross Domestic Product (GDP)	GDP measures the monetary value of final goods and services that are brought by final users and produced in a country within a given period of time period	World Development Indicator	Control variable
Gross Fixed Capital Formation (GFCF)	It is an estimate of net capital expenditure by both public and private sectors	World Development Indicator	Control variable
Trade Openness (TO)	Trade openness is an indicator to measure the extent to which a country is involved in the global trading system	World Development Indicator	Control variable
Population growth rate (POP)	The population growth rate of a country expresses the annual average rate of change of population size in a country	World Development Indicator	Control variable
Expenditure on Education (EDU)	The expenditure on education is used a proxy variable to measure the impact of education attainment on the labor market indicators of Pakistan	World Development Indicator	Control variable
Consumer Price Index (CPI)	The consumer price index measures the monthly change in price of consumer goods.	Pakistan Economic Survey	Control variable

3.2 Model Specification

To assess the impact of refugee influx on labor market, three indicators of labor market are selected i.e. unemployment rate, formal employment rate and informal employment rate. Model one analyzes the impact of Afghan refugees who are actively residing in the country, on the unemployment rate of Pakistan. Model two explores the impact of refugees on the formal employment in Pakistan, while model three analyzes the impact of refugees on the informal employment in Pakistan's labor market.

Model 1

$$UN_t = \alpha + \beta_1 Ref_t + \beta_2 GDP_t + \beta_3 GFCF_t + \beta_4 EDU_t + \beta_5 POP_t + \beta_6 TO_t + \beta_7 CPI_t + \mu_t \quad (1)$$

Model 2

$$FE = \alpha + \beta_1 Ref_t + \beta_2 GFCF_t + \beta_3 EDU_t + \beta_4 POP_t + \beta_5 TO_t + \beta_6 CPI_t + \mu_t \quad (2)$$

Model 3

$$IF_t = \alpha + \beta_1 Ref_t + \beta_2 GFCF_t + \beta_3 EDU_t + \beta_4 POP_t + \beta_5 TO_t + \beta_6 CPI_t + \mu_t \quad (3)$$

Whereas, ‘ α_s ’, and ‘ β_s ’ are the coefficients of the equations and ‘ μ ’ is the residual term while ‘ t ’ represents time period.

3.3 Econometric Methodology

This study employs Auto Regressive Distributed Lag (ARDL) approaches of co-integration bound test developed by Pesaran *et. al.* (2001). This procedure has certain advantage over other classical co-integration tests. Some of the benefits are; firstly, this approach is applicable even the variables have mixed order of integration I(1) or I(0), secondly it gives the margin to derive unrestricted error correction model (UECM) from simple linear transformation and lastly, it calculates both short run and long run coefficient of variables simultaneously (Pesaran *et al.*, 2001). This method is developed by Pesaran *et. al.* (2001) to confirm the presence of long run relationship between dependent and independent variable. The ARDL approach is more appropriate and dynamic because it resolves the issue of endogeneity and autocorrelation. An augmented autoregressive distributed lag (ARDL) bound test for co-integration is used to analyze the long run and short run relationship among variables. It involves an F-test (Wald test) on the lagged levels of independent variables (Sam, 2018). To conduct the bound testing procedure, an illustration of ARDL by using unrestricted error correction model (UECM) is as follows;

$$\begin{aligned} \Delta UN_t = & \alpha + \sum \beta_1 \Delta UN_{t-k} + \sum \beta_2 \Delta REF_{t-k} + \sum \beta_3 \Delta EDU + \sum \beta_4 \Delta GDP_{t-k} \\ & + \sum \beta_5 \Delta CPI_{t-k} + \sum \beta_6 \Delta TO_{t-k} + \sum \beta_7 \Delta GFCF_{t-k} + \sum \beta_8 \Delta POP_{t-k} \\ & + \varphi_1 UN_{t-1} + \varphi_2 REF_{t-1} + \varphi_3 EDU_{t-1} + \varphi_4 GDP_{t-1} + \varphi_5 CPI_{t-1} + \varphi_6 TO_{t-1} \\ & + \varphi_7 GFCF_{t-1} + \varphi_8 POP_{t-1} + \theta ECM_{t-1} + \epsilon_t \end{aligned}$$

Where Δ is the first difference operator, with ‘ k ’ is the number of variables, ‘ t ’ is time period, and ‘ ϵ_t ’ is the white noise term. The first part of the equation with $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7,$ and β_8 represents short run coefficients while the rest $\varphi_1, \varphi_2, \varphi_3, \varphi_4, \varphi_5, \varphi_6, \varphi_7,$ and φ_8 are long run coefficients of given ARDL model. The ECM_{t-1} represents the error correction term (ECM) which depicts the speed of adjustment and convergence of the model towards long run equilibrium. The ARDL bound test method in its first step determines the existence of a long run co-integration relationship among explained and explanatory variables through Wald-coefficient test given by Pesaran *et. al.* (2001). The null hypothesis for co integration is that there is no long run relationship i.e. $H_0 = \varphi_1 + \varphi_2 + \varphi_3 + \varphi_4 + \varphi_5 + \varphi_6 + \varphi_7 + \varphi_8 = 0$. For co-integration to exist, the test statistics need to be higher than the upper and lower bound critical values, only then the null hypothesis of co-integration can be rejected.

As ARDL requires the variables to be I(0) or I(1) and no variable should be I(2), therefore it is important to check the order of integration of the selected variables. Augmented Dickey Fuller (ADF) and Phillips-Parron (PP) tests are used to check the stationarity of variables. For unit root to exit in time series the value of α must be equal to 1 in the below equation

$$Y_t = \alpha Y_{t-1} + \beta X_e + \epsilon$$

Where, Y_t is the value of time series at time “ t ” and X_e is an exogenous variable, which is also a time series. The presence of unit root in data suggests that the given variable is non-stationary and the number of unit roots in a time series represent the number of differencing operator needed to make variable stationary.

In the next step lag length of the variables is selected using Akaike Information Criteria (AIC). The selection of lag length in ARDL model is sometimes guided by economic theory but there are also some statistical methods that are helpful in determining the optimal lag length for variables. In general, by using too many lags could lead to inflation of standard errors of coefficient estimates, which would increase in the forecast error, while on the other hand by omitting lags one can protect model from estimation bias. AIC generates lag lengths using following equation.

$$AIC(p) = \log\left(\frac{SSR_p}{T}\right) + \frac{(p+1)2}{T}$$

The criteria use optimal lag length ‘ ρ ’. the basic idea behind the criteria is that SSR decreases as additional lags are added to the model such as the first term declines while the second increases with the growth in the lag order. AIC gives more consistent results as compared to other methods of lag selection, when the sample size is small (Cavanaugh and Neath, 2019).

Next, ARDL bound test is applied to determine the presence of long run co-integration among the variables. Wald-coefficient test is conducted to check long run co-integration. Once the co-integration is established, short run relationship along with the error correction mechanism (ECM) term are obtained. It is mandatory for the coefficient of ECM to be negative and significant to ensure the long-run equilibrium dynamic convergence of variables. Lastly, Diagnostic tests are applied to check accuracy of the results. Breusch-Godfrey serial correlation LM test is used to check the autocorrelation in the error terms of a regression model. In this test the residuals from the model are derived to check if they exhibit any sign of correlation. The null hypothesis for Breuch-Godfrey test is that there is no serial correlation of any order up to ‘ ρ ’. As the test relies on the idea of Lagrange multiplier testing, it is referred to as LM test for the serial correlation.

The Breusch-Pegan-Godfrey test is used to detect heteroscedasticity among the error terms in regression. Heteroscedasticity means that error terms are differently scattered showing variance of error is not constant. The test statistics used for Breusch-Pegan test is $N \cdot R^2$ (with k degree of freedom), where, N = sample size, R^2 = coefficient of determination and K = number of independent variables. The test statistics follow chi square distribution. The null hypothesis states that the variance of error terms is same; i.e. homoscedasticity prevails. Regression Equation Specification Error Test (RESET) is a diagnostic test to check the general specification of linear regression model. This test tells us whether a regression model is correctly specified. Null hypothesis states that original model has no omitted variables. Probability of chi square less than 0.05 leads to rejection of null hypothesis which means that model does suffer from omitted variables and model is incorrectly specified. To test the presence of Multicollinearity, Variance Inflation Factor (VIF) is calculated. Value of the VIF less than 10 means absence of Multicollinearity.

4. Empirical Findings

Results of unit root tests are presented in the table 2. Stationarity of variables is checked by using Augmented Dickey Fuller and Phillips-Perron test. The results indicate that except GDP, all variables are stationary at first difference. Gross domestic product is stationary at level. As none of the variables in integrated of order 2, therefore, ARDL technique is appropriate to be used. In the next step optimal lag length is selected using AIC. Results are given in table 3. For all three models AIC gives same optimal lag values for all the variables except CPI. For model 1 optimal lag length is (1,2,3,1,4,1,1) while for model 2 and 3 the optimal lag length is (1,1,2,3,1,1,1).

Table 2: Unit Root Test

Variable	ADF Constant without trend(p-value)	ADF Constant with trend(p-value)	PP Constant without trend(p-value)	PP Constant without trend(p-value)
At Level				
Unemployment	-0.1392(0.6071)	-0.1938(0.7077)	0.8600(0.3365)	0.8061(0.5972)
Formal Employment	-0.3532(0.1687)	-0.3374(0.5256)	0.6467(0.1867)	0.6625(0.5898)
Informal Employment	-0.1143(0.5165)	-0.5650(0.2877)	0.8856(0.5133)	0.4349(0.3040)
Refugees	-0.1119(0.3768)	-0.3010(0.1761)	0.8458(0.4802)	0.7034(2302)
Education	-0.2391(0.1641)	0.3542(0.4579)	0.7608(0.4729)	0.7641(0.2623)
GDP	-0.5624*(0.039)	-0.6670*** (0.00)	0.3698*** (0.001)	0.2886*** (0.00)
CPI	-0.3147(0.0270)	-0.3140(0.1191)	0.6852(0.0919)	0.6859(0.156)
Trade Openness	-0.2456(0.1634)	-0.3517(0.1567)	0.7543(0.1491)	0.6482(0.1165)
GFC	-0.1683(0.5243)	0.3910(0.1556)	0.8781(0.1498)	0.6819(0.1093)
Pop Growth	-0.0067(0.9537)	-0.3485(0.5684)	1.0042(0.2878)	0.7116(0.5967)
At First Difference				
Unemployment	-1.002(0.00)***	-1.0112(0.00)***	-0.0126(0.00)***	-0.0027(0.00)***
Formal Employment	-0.982(0.00)***	-1.0466(0.00)***	-0.0170(0.00)***	-0.0466(0.00)***
Informal Employment	-1.2317(0.00)***	-1.2202(0.00)***	-0.2317(0.00)***	-0.2202(0.00)***
Refugees	-1.3276(0.00)***	-1.3411(0.00)***	-0.3276(0.00)***	-0.3411(0.00)***
Education	-0.075(0.00)***	-0.7663(0.00)***	0.2420(0.00)***	0.2336(0.00)***
GDP	-1.3610(0.00)***	-1.3615(0.00)***	-0.3610(0.00)***	-0.3615(0.00)***
CPI	-1.0771(0.00)***	-1.0809(0.00)***	-0.0771(0.00)***	-0.0809(0.00)***
Trade Openness	-1.1618(0.00)***	-1.1600(0.00)***	-0.1617(0.00)***	-0.1607(0.00)***
GFC	-0.900(0.00)***	-0.9084(0.00)***	0.0993(0.00)***	0.0915(0.00)***
Pop Growth	-0.093(0.00)***	-0.9515(0.00)***	0.0622(0.00)***	0.0484(0.00)***

Note: *** means significance at 1% level, ** is significance at 5% and * shows significant at 10%

Table 3: Lag Length Selection

Variables	Lag (Model 1)	Lags(Model 2 and 3)
Unemployment	1	-
Formal Employment	-	1
Informal Employment	-	1
Refugees	2	2
Education	3	3
GDP	1	-
CPI	4	1
Trade Openness	1	1
GFC	1	1
Pop Growth	1	1

Note: Author's calculation

Table 4: ARDL Estimates(Dependent variable: Unemployment)

Variable	Coefficient	Std. Error	t-statistics	Prob.*
Long Run Estimates				
Constant	7.0882**	3.6345	2.10	0.051
Refugees	-2.9676***	0.3605	-4.60	0.000
Education	-2.8560**	2.8951	-5.18	0.000
GDP	-2.1311**	0.7176	-3.56	0.003
CPI	-1.6836**	1.7737	-2.08	0.056
Trade Openness	-1.5726***	8.1006	-2.63	0.019
GFCF	-1.4850***	3.7305	-2.64	0.019
Pop Growth	0.5229*	2.2712	-3.12	0.007
Short Run Estimates				
Unemployment (-1)	-0.698***	0.1990	-3.51	0.003
Refugees(-1)	0.3439***	0.1909	3.31	0.005
Refugees(-2)	0.2190	0.1351	1.49	0.156
Education (-1)	-1.3754***	2.2661	3.94	0.001
Education (-2)	-1.1477***	2.8939	3.89	0.001
Education (-3)	-0.8447***	2.3265	3.25	0.005
GDP(-1)	-0.8784**	0.3662	2.40	0.030
CPI(-1)	-1.0005*	0.5642	-1.77	0.096
CPI(-2)	-0.1301**	0.3957	-1.93	0.047
CPI(-3)	0.8215	0.4049	1.03	0.361
CPI(-4)	0.4219	0.3316	0.27	0.223
Trade Openness(-1)	-0.0603***	2.4806	3.50	0.003
GFC (-1)	-0.1784**	2.2329	2.34	0.034
Pop Growth (-1)	-1.7783	5.4548	-1.04	0.315
ECM	-0.3433	0.8977	-2.33	0.001
Test Statistics	R ²	Adjusted R ²	F-statistics (P-value)	Critical values of F-statistics (Bound test)
	0.9355	0.8405	0.0000	4.63 Critical values (at 5%) 2.92 (lower bound), 4.01 (upper bound)

Note: Authors' calculations, *** means significance at 1% level, ** is significance at 5% and * shows significant at 10%

This table includes long run and short run estimation results of model 1, where unemployment rate is taken as dependent variable. In the short run, first lag of unemployment rate is significant. For refugee inflow one percent change in refugee inflow leads to 0.34% increase in unemployment, while the second lag is insignificant. In the case of education expenditure, first lag of education cause 1.3% decline in unemployment rate, second lag suggest 1.1% decline in unemployment rate and third lag shows that expenditure on education decrease unemployment rate by 0.87%. For GDP growth rate, it is revealed that one percent increase in GDP can cause a 0.87% decline in the unemployment rate. For CPI, first lag cause a negative effect; one percent change in CPI leads to 1 % decline in unemployment, while second lag of CPI causes 0.13% decline, third and fourth lags are insignificant. One percent change in TO leads to 0.06% decrease in the unemployment rate for the country. Lastly, for population growth the impact is insignificant. Error correction term is negative and significant showing 34.3 percent convergence towards equilibrium in each time period.

In the long run, all the variables have a significant impact on unemployment. Increase in refugee inflow by one unit cause unemployment to decline by 2.9 percent. One percent change in GDP can cause 2.13% decline in unemployment rate. Inflation also contributes in decreasing unemployment in the long run, as one percent increase in inflation rate results in decline in unemployment 1.68 %. Trade openness also helps to mitigate unemployment in the country. For every one percent trade openness, unemployment decreases by 1.57%. One unit change in GFCF cause 1.48 % decline in unemployment rate. Population growth increases unemployment. One percent increase in population growth rate increases unemployment by 0.5992 % in the long run. R² and adjusted R² values show that model is a good fit. F-statistics of ARDL bound test has a value 4.663 which is greater than critical values of lower bound i.e. 2.92, and upper bound 4.0, proving the existence of co-integration.

Table 5: ARDL Estimates (Dependent variable: Formal Employment)

Variable	Coefficient	Std. Error	t-statistics	Prob.*
Long Run Estimates				
Constant	5.043***	2.0746	7.25	0.000
Refugees	1.8088**	0.0919	2.66	0.032
Education	1.1545**	0.0436	2.13	0.024
CPI	-0.0864**	0.0044	-1.82	0.033
Trade Openness	-0.2775	0.0043	-0.14	0.110
GFC	0.7157**	0.0157	2.44	0.014
Pop Growth	-2.3464***	0.0897	-3.04	0.006
Short Run Estimation				
Formal Employment (-1)	0.1148*	0.0100	1.44	0.056
Refugees(-1)	0.7598***	0.1900	2.67	0.001
Refugees(-2)	1.3963***	0.1340	2.90	0.000
Education (-1)	0.5693*	0.0479	1.88	0.053
Education (-2)	0.7881*	0.0812	2.70	0.065
Education (-3)	-1.1673	0.0952	-0.26	0.152
CPI(-1)	0.0615*	0.0039	5.54	0.041
Trade Openness(-1)	0.1222*	0.0054	1.99	0.08
GFC (-1)	0.5094***	0.0217	3.42	0.001
Pop Growth (-1)	-2.1513**	0.2825	-2.77	0.029
Pop Growth (-1)	-0.1513*	0.1982	-1.89	0.09
ECM (-1)	-0.7964**	0.2603	-3.06	0.010
Test Statistics	R ²	Adjusted R ²	F-statistics (P-value)	F statistics of Pesaran/Shin/Smith ARDL Bound test
	0.9355	0.8405	0.0000	5.556 Critical values (at 5%) 2.49(lower bound), 3.61(upper bound)

Note: Authors' calculations, *** means significance at 1% level, ** is significance at 5% and * shows significant at 10%

Table 5 shows the estimation results for model 2. In short run, the first lag of formal employment rate is significant. The first lag of refugee inflow causes a 0.76% positive change in formal employment and the second lag cause 1.4% increase in formal employment. First two lags of expenditure on education, one unit change cause 0.56% and 0.78% increase in formal employment respectively. For CPI, one percent change leads to 0.06% increase in formal employment, while one unit increase in TO causes 0.12% increase in formal employment. One unit change in GFCF leads to

2.15 % increase in formal employment. Lastly, population growth by one unit causes 0.15% decline in formal employment. Error correction term has a value of -0.796, which is significant at 1percent level. It shows that in every time period, model converges to the long run equilibrium by 79.6 percent.

In the long run, all variables except trade openness are significantly affecting formal employment in the country. One unit change in refugee inflow contributes to 1.808% incline in formal employment. In case of education expenditure, the long run impact is positive and one unit increase causes 1.156% increase on formal employment. One percent change in CPI causes 0.086% decline in formal employment. One unit change in GFCF causes 0.715% increase in formal employment and population growth rate causes 2.34% decline in formal employment. Values of R² and adjusted R² are 0.93 and 0.840 respectively, showing that model is a good fit. F-statistics of ARDL bound test shows the existence of co integration as the F-statistic value is 5.556 which are greater than critical values of lower and upper bound.

Table 6: ARDL Estimates(Dependent variable: Informal Employment)

Variable	Coefficient	Std. Error	t-statistics	Prob.*
Constant	7.3548**	3.5700	2.32	0.020
Refugees	2.9138**	0.7554	1.98	0.032
Education	-0.2221*	0.2079	-1.78	0.087
CPI	-0.0050	0.1789	-0.73	0.980
Trade Openness	-0.5085**	0.4937	-2.03	0.041
GFC	-0.5373**	0.5752	-1.99	0.049
Pop Growth	-2.3574	0.5576	-0.59	0.617
Short run estimation				
Informal Employment (-1)	0.7318**	0.6016	1.92	0.048
Refugees(-1)	1.7358**	0.5588	2.11	0.038
Refugees(-2)	0.1631**	0.8687	1.92	0.079
Education (-1)	-2.2160**	0.0658	-2.14	0.037
Education (-2)	-1.9176**	0.4283	-1.97	0.078
Education (-3)	-0.5507	0.3679	-0.39	0.735
CPI(-1)	-0.0662	0.0604	-0.90	0.199
Trade Openness(-1)	-0.0209**	0.1173	-2.19	0.026
GFC (-1)	-0.6216**	0.3786	2.64	0.024
Pop Growth (-1)	2.9400**	0.8687	1.27	0.089
Pop Growth (-1)	2.328	0.8741	0.40	0.731
ECM(-1)	-0.7964**	0.2603	-3.06	0.010
Test Statistics	R ²	Adjusted R ²	F-statistics (p-value)	F statistics of Pesaran/Shin/Smith ARDL Bound test
	0.9358	0.9599	0.0002	5.23 Critical values (at 5%) 3.01(lower) 4.12(upper)

Note: Authors' calculations, *** means significance at 1% level, ** is significance at 5% and * shows significant at 10%

For model 3, short run analysis indicates that the first lag of informal employment rate is significant. For refugee inflow first lag of refugee inflow suggest that with one unit change in refugee inflow, a significant increase of 1.73% is observed in informal employment rate of country. While one unit change in second lag of refugee inflow causes 0.1631% increase in informal employment rate significantly. First two lags of education expenditure significantly decrease informal employment rate by 2.21 percent and 1.9 percent respectively. Impact of CPI is insignificant in the short run. One percent increase in TO cause 0.02% decline while one unit increase in GFCF causes 0.62% decline in informal employment. For population growth first lag positively and significantly increase informal employment by 2.94%. The error correction term, -0.796 shows speed of adjustment of short run equilibrium to long run equilibrium is 79.6 percent.

In the long run, one unit increase in refugee inflow generates 2.19% positive change in the informal employment. Education expenditure is significant in the long run and one unit increase causes 0.22% reduction in informal employment. For TO, one percent change causes 0.50 % decline in informal employment and results are significant. Lastly, one unit increase in GFCF causes significant decline in informal employment by 0.53%. CPI and population growth have insignificant impact. R^2 and adjusted R^2 have values 0.95 and 0.93 respectively showing maximum variation in the model is caused by explanatory variables. F statistic of ARDL Bound test is 5.23 which is greater than the critical values confirming the presence of long run co integration.

5. Discussion

The estimation results indicate that refugee inflow helps to decrease unemployment rate in the country and increase employment in formal and informal sectors. The results are consistent with the findings of Brell, Dustmann, & Pretson, (2020). It is argued that the arrival of refugees can serve as a demand shock to the formal sector which results in higher prices and production in the country. Therefore, unemployment decreases. Education expenditure helps to decrease unemployment in short run and in the long run for all the three models. Expenditure on education can bring about wealth in the economy and helps to create human capital which has positive effects on employment generation. (Abdullah, Harun, & Razani, 2017). As far as the impact of education expenditure on informal employment is concerned, it is observed that there is a significant decrease in the later. This may be due to the fact that informal employment opportunities are available mainly for uneducated workers (Ceritoglu, Torun, & Tumen, 2017). GDP growth rate significantly reduces unemployment rate in short run as well as long run. Better GDP growth of country reflects stability in various sectors of the economy and improves labor market indicators (Higgins, 2011). Results of the model show a negative impact of inflation on unemployment. Empirical evidence also suggests that increase in inflation leads to increased aggregate supply and higher employment opportunities in the country (Manego, Mahar, & Amhed, 2020). The reason for negative relation between inflation and formal sector employment may be that, during high inflation, firms care about bankruptcy and therefore decrease borrowing, which results in reduced employment in the formal sector (Wadhvani, 2022).

Trade openness results in decreased unemployment in short run and the long run. As several studies suggest that trade liberalization can positively impact employment generation in a country by promoting growth of an economy (Ngouhouo & Nchofoung, 2020). However, results indicate that the impact of trade openness is negative on informal employment. Trade openness reduces the import costs for domestic firms and increases competition which pushes many domestic firms into informality and low productivity firms out of the market. Hence, increasing unemployment in informal sector (Goldberg and Pacvnik; 2003). It is suggested that gross fixed capital formation-

major component of domestic investment-exhibit positive long run relationship with employment generation. Capital formation leads to increased productivity of workers which decreases unemployment. Capital formation also results in more output production and employment opportunities are increased. The results are consistent with the findings of Meyer & Sansui (2019).

In case of informal employment, capital formation has a negative and significant impact. With higher rates of capital formation, formal sectors of the economy grow rapidly while the informal sector shrinks, thereby reducing informal employment levels (Chattopadhyay and Mondal; 2016). Lastly, population growth significantly increases unemployment rate and decreases employment in formal sector. With the increase in population, the ratio of workers relative to total population increases. It leads to low savings and investment which results in low productivity and lesser employment opportunities in formal sector (Mayda, 2017; Mahajan, 2020).

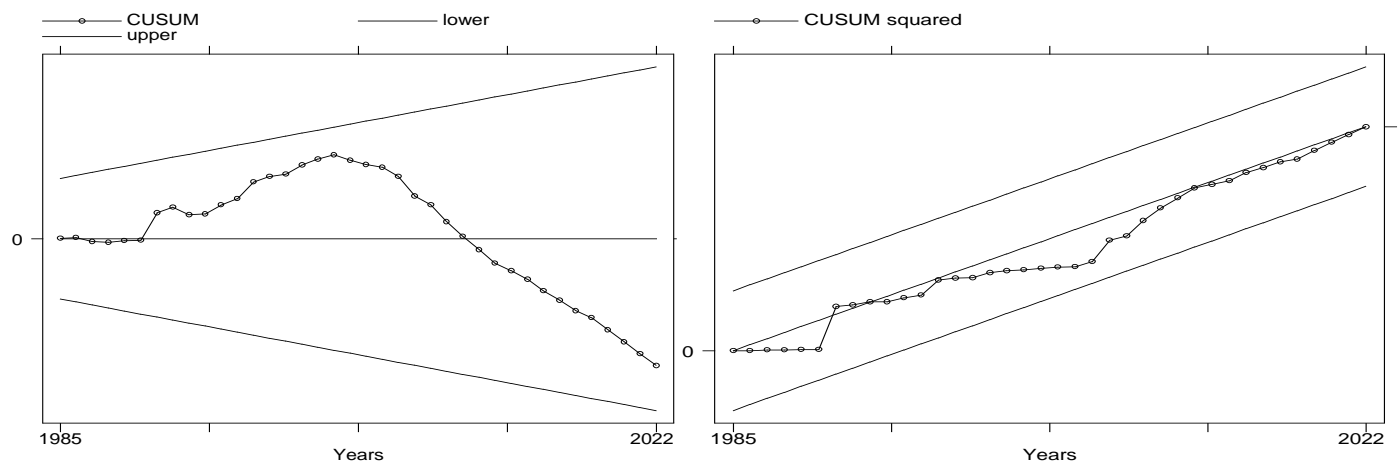
Table 7: Diagnostic tests

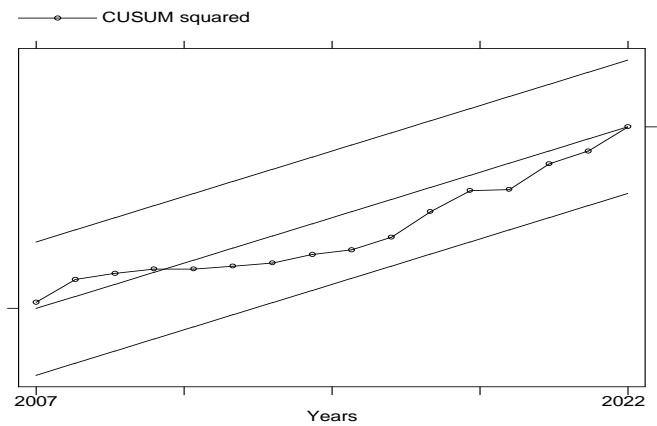
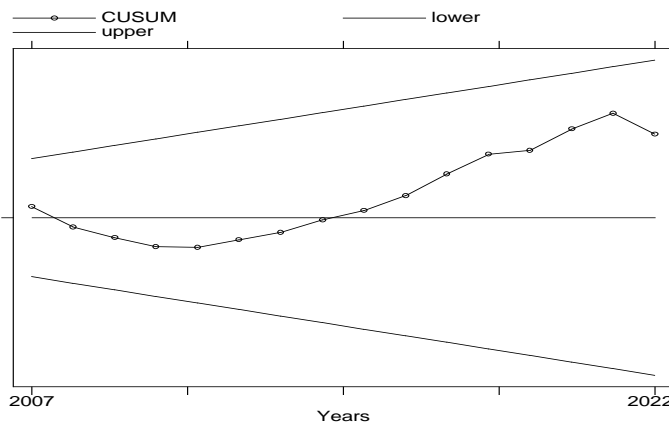
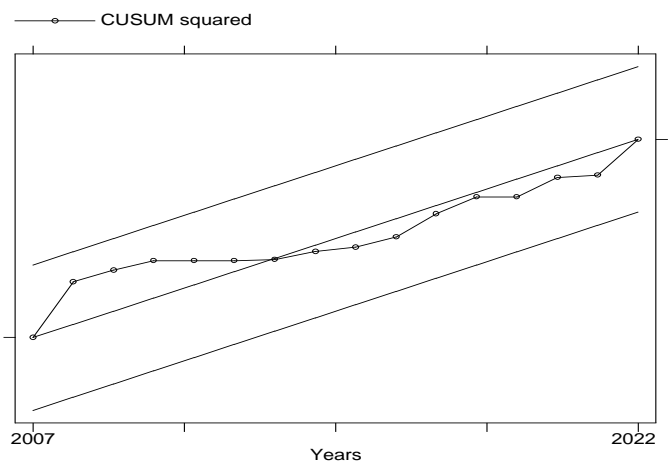
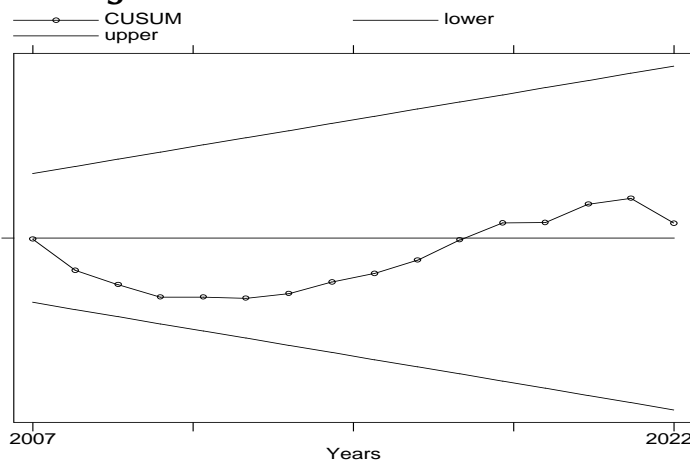
Tests	Model 1	Model 2	Model 3
Serial correlation (Breuch Godfrey test)	42(0.0000)***	55(0.0000)***	32(0.0032)***
Functional Form (RESET)	1.69(0.1898)	0.84(0.4983)	0.14(0.9319)
Heteroscedasticity (Breuch-Pegan Godfrey test)	0.12(0.7299)	0.11(0.7299)	01.15(0.2841)
Variance Inflating Factor(VIF)	2.11	2.38	2.43

Note: Author’s calculation, *** means significance at 1% level, ** is significance at 5% and * shows significant at 10%. P-values in parenthesis

The table 7 includes result of diagnostic test to check authenticity of the results of all the three models. Results of all the diagnostic tests such as Serial correlation (Breuch Godfrey test), Breusch-Pegan-Godfrey test and Ramsay RESET test confirm the regression results are free from problems of autocorrelation, Heteroscedasticity and functional form of the model is appropriate. Value of VIF is less than 10 for all the three models, indicating absence of Multicollinearity. The CUSUM and CUSUM of Squares stability test result confirmed that the parameters were stable over the sample time period for the estimated model, the results are shown below.

Model 1:



Model 2:**Model 3:****6. Conclusion and Policy Recommendations**

This study explores the impact of Afghan refugees on the labor market indicators in Pakistan. For this purpose, three different models are used to capture the impact of refugees on unemployment rate, formal employment rate and informal employment rate. To analyze co-integration in data, ARDL bound co-integration test is employed. F-statistics value confirms the presence of co-integration among the variables. The results indicate that refugee inflow has a negative impact on unemployment in the short run while it has positive impact in the long run. Furthermore, refugee inflow tend to increase formal employment and informal employment in Pakistan. Besides refugee inflow, other significant determinants of unemployment, formal and informal employment include education spending, economic growth, capital formation, population growth and trade openness. Hence, it is concluded that Afghan refugees do not pose harm to the labor market of Pakistan, however, in some instance they even serve as positive contributing factor towards the employment generation.

Government of Pakistan should look for efficient ways to facilitate the integration of Afghan refugees in the labor market. There are more than 1.3 million refugees living in Pakistan and they are partially or completely integrated in the labor market. It is upon government to provide them with better education and vocational training in order to fully use them for the gain of country. There is urgent need for creation of avenues of productive employment and integration of Afghan refugees in the formal labor market of Pakistan.

References

- Abdullah, M. B., Harun, M., & Razani, M. (2017). Employment Generated by Government Spending on Education. *International Journal of Academic Research in Business and Social Sciences* .
- Aftab, S. (2022). *Afghans in Pakistan*. Dawn.
- Akgunduz, Y. E., Berg, M. v., & Hassink, W. (2015). *Impact of Refugee Crisis*. Discussion Paper .
- Akgunduz, Y. E., Berg, M. v., & Hassink, W. (2015). The Impact of Refugee Crises on Host Labor Markets: The Case of Syrian Refugee Crisis in Turkey. *Institute of Study of Labor* .
- Ali, Y., Sabir, M., & Muhammad, N. (2019). Refugees and Host Country Nexus: a Case Study of Pakistan. *Int. Migration & Integration* , 137-153.
- Altingdag, O., & Kaushal, N. (2021). Do refugees impact voting behavior in the host country? Evidence from Syrian refugee inflows to Turkey. *Public Choice* , 149-178.
- Altun, A. E. (2021). Syrian Refugee Crisis in Turkey: Is Migration From Syria Bad for Turkey's demographic and economic structure? *Research Square* , 1-16.
- Anwar, S., Muhammad Hassan, M., Kakar, A. (2021). Afghan Refugees Implications on Pakistan. *Pakistan Journal of International Affairs*, Vol. 4, No. 3.
- Aruroi, F. A. (2009). *Irregular Migration in Jordan*.
- Aziz, A. (2019). Impacts of Vocational Training for Socio-economic Development of Afghan Refugees in Labor Markets of Host Societies in Balochistan. *Journal of International Migration and Integration* , 751-768.
- Balkan, B., & Tumen, S. (2016). Immigration and prices: quasi-experimental evidence from Syrian refugees in Turkey. *Journal of Population Economics* , 657-686.
- Baloch, A., Mohd Noor, Z., & Lacheb, M. (2017). The Economic Effect of Refugee Crises on Neighbouring Host Countries: Empirical Evidence from Pakistan. *Internal Migration* .
- Barman, B. C. (2020). Impact of refugee on host developing countries. *Refugee Crisis and Third World Economies* , 103-111.
- Bhatty, S. (1987). *Impact of the Afghan refugees on Pakistan*. FIU Electronic Theses and Dissertations. 1674.
- Brell, C., Dustmann, C., & Pretson, I. (2020). The Labor Market Integration of Refugee Migrant in High Income Countries. *Journal of Economic Perspectives* , 94-121.
- Brothakur, A. (2017). *Afghan Refugees: The Impact on Pakistan*. *Asian Affairs* , 488-509.
- Card, D., & DiNardo, J. (2000). Do immigrant inflow leads to native outflow? *The American Economic Review* , 360-367.
- Cavanaugh, E., J. and Neath, A. Andrew (2019). *The Akaike Information Criterion: background, derivations, properties, application, interpretation and refinements*. Wiley Computational Statistics,
- Ceritoglu, E., Torun, H., & Tumen, S. (2017). The impact of Syrian refugees on natives' labor market outcomes in Turkey: evidence from a quasi-experimental design. *IZA Journal of labor Policy* .
- Chattopadhyay, S., & Mondal, R. (2016). Investment And Growth In A Developing Economy With Vast Informal Sector. *The Journal of Developing Areas*, 50(4), 113-132. <https://www.jstor.org/stable/26415519>
- Codjoe, S., & al, e. (2013). Perceptions of the Impact of Refugees on Host Communities: The Case of Liberian Refugees in Ghana. *Journal of International Migration and Integration* , 439-456.
- Del, C., Wagner, M. C., & Vaneass, X. (2015). *The impact of Syrian Refugees on the Turkish Labor Market*. World Bank Policy Research Paper .
- Delaporte, I., & Piracha, M. (2018). Integration of humanitarian migrants into the host country labour market: evidence from Australia. *Journal of Ethic and Migration Studies* , 1-26.
- Ehsan, M. (2021). *Refugee Influx: Need to Learn from Past Experience* . Center for Aerospace and

Security studies.

- Ezen, O., & Binatli, A. O. (2017). The Impact of Syrian Refugees on the Turkish Economy: Regional Labour Market Effects. *Social Science* , 1-12.
- Fajth, V., Bilgili, O., Loschmann, C., & Siegel, M. (2019). How do refugees affect social life in host country? The case of Congolese refugees in Rwanda. *Comparative Migration Studies* , 1-21.
- Fakih, A., & Ibrahim, M. (2016). The impact of Syrian refugees on the labor market in neighboring countries: empirical evidence from Jordan. *Defence and Peace Economics* , 65-84.
- Fallah, B., Krafft, C., & Wahba, J. (2019). The impact of refugees on employment and wages in Jordan, *Journal of Development Economics*, Volume 139, Pp 203-216.
- Ghufuran, N. (2006). Afghan Refugees in Pakistan Current Situation and Future Scenario. *Policy Perspective* , 83-104.
- Goldberg, P. K. and Pacvnik, N. (2003), The response of the informal sector to trade liberalization, *Journal of Development Economics*, 72, 463-496.
- Grare, F., & Maley, W. (2011). Afghan refugees in Pakistan. Middle East Institute. *Refugees Cooperation* , 14-19.
- Higgins, P. (2011). GDP Growth, the Unemployment rate, and Okun's law. *EconSouth Third Quarter* .
- Jan, A., Khan, S. K., & Ramzan, M. (2021). Socio-economic impact of Afghan refugees on Pakistan after 1979 soviet invasion. *International Journal of Creativity, Innovation and Change* , 670-680.
- Jan, A., Khan, S. K., Ramzan, M., & Munir, G. (2021). Socio-Economic Impacts of Afghan Refugees on Pakistan after 1979. *International Journal of Innovation, Creativity and Change* . , 670-680.
- Javed, A., Khan, S., Syed, R., & Ahmad, V. (2020). Socio-economic Inclusion of Afghan Refugees in Pakistan. *Sustainable Development Policy Institute* , 1-26.
- Kazmi, J. H., & Pandit, K. (2001). Disease and dislocation: the impact of refugee movements on the geography of malaria in NWFP, Pakistan. *Social Science and Medicine* , 1043-1055.
- Khouni, M. (2018). Impact of refugee population on development: A comparative analysis for the case of host economies. *Review of Economic Perspective* , 77-96.
- Kuda, K. E. (2020). The impact and challenge to host country Bangladesh due to sheltering the Rohingya refugees. *Cogent Social Sciences* .
- Labiso, T. T. (2020). Challenges and Boons of Refugee on the Host Communities: In the Case of Benishangul-Gumuz Regional state, Western Ethiopia. *International Journal of Environmental Science & Natural Resources* , 157-167.
- Landau, L. B. (2004). Challenge without transformation: refugees, aid and trade in western Tanzania. *The Journal of Modern African Studies* , 31-59.
- Landau, L. (2008). *The Humanitarian hangover, displacement, aid, and transformation in Western Tanzania*,. Johannesburg, Wits University Press .
- Lohdi, M. A., Echavarria, F. R., & Kiethly, C. (2008). Using remote sensing data to monitor land cover changes near Afghan refugee camps in northern Pakistan. *Geocarto International* , 33-39.
- Mahajan, A. (2020). How overpopulation affects the growth of the country. *Constitution*.
- Malaeb, B., & Wahba, J. (2018). Impact of Refugees on Immigrants' Labor Market Outcomes. *Economic Research Forum* .
- Manego, G., Mahar, S., & Amhed, B. (2020). Inflation and Unemployment in Pakistan: An Empirical Analysis. *Pakistan Social Science Review* , 306-318.
- Mayda, A. M. (2017). *The Labor Market Impact of Refugees: Evidence from the U.S. Resettlement Program* . US Department of State , 1-42.
- Meyer, D. F., & Sansui, K. A. (2019). A Causality Analysis of the Relationships between Gross Fixed Capital Formation, Economic Growth and Employment in South Africa. *Studia Universitatis*

- Babeş-Bolyai *Oeconomica* , 33-49.
- Mielke, K. (2022). Pakistan-situtaion of Afghan refugees. Austaria: European Union Agency for Asylum.
- Mohmmad, I. (2016). Instability in Afghanistan: Implication in Pakistan. *Journal of Political Science and Public Affairs* , 1-6.
- Molsa, M., Kuittinen, M., &Tiilikainen, M. (2017). Mental health among older refugees: the role of trauma, discrimination, and religiousness. *Ageing and Mental health* , 829-837.
- Mosel, I., & Jakson, A. (2013). Sanctuary in the City? Urban displacement and vulnerability in Pehswar, Pakistan. HPG working paper , 1-48.
- Ngouhouo, I., &Nchofoung, T. N. (2020). Does Trade Openness Affects Employment in Cameroon? *SAGE Journals* , 36-50.
- Owen, R., & Pamuk, S. (2015). Assessing economic impacts of hosting refugees. Mass Havard University Press .
- Pesaran, M. H., Y. Shin, and R. Smith, 2001, Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16, pp. 289-326.
- Ruegger, S., &Bohnet, H. (2018). The Ethnicity of Refugees (ER): A new dataset for understanding flight patterns. *Conflict Management and Peace Science*, , 65-88.
- Ryu, H., &Paudel, J. (2021). Refugee Inflow and Labor Market Outcomes in Brazil: Evidence from VenezulanExodous. *Population and Development Review* , 76-96.
- Sam, C. Y. (2018). An Augmented Autoregressive Distributed Lag Bounds. *Economic Modelling* .
- Schmid, A. P. (2016). Links between terrorism and migration. *International Centre For Counter Terrorism. ICCT Research Paper* .
- Serttas, F. O., &Uluoz, D. (2020). The Impact of Syrian Migration on Unemployment: Evidence from Turkey. *Adam Akademi SosyalBilimlerDergisi* , 1-30.
- Shellito, K. (2016). The Economic Effect of Refugee Crises on Host Countries and Implications for the Lebanese Case. *Joseph Warton Scholars* , 3-50.
- Skinner, P. (2003). *Jordan*. Milwaukee, Wis: Gareth Stevens Pub.
- Stempel, C., & Alemi, Q. (2021). Challenges to the economic integration of Afghan refugees in the US. *Jouranal of Ethnic and Migration Study* , 4872-4892.
- Sunterland, N., Istvandity, L., Lakhni, A., &Lenette, C. (2000). Social and Economic Impact of Massive Refugee, Populations on Host Developing Countries, as Well as Other Countries. *Refugee Survey Quartely* , 168-189.
- Suzuki, K., Paul, S., Maru, T., &Kusadokoro, M. (2019). An empricial analysis of the effect of Syrian refugees on the Turkish labor market. *Asian Development Bank Institute Working Paper* , 1-27.
- Taylor, & al, e. (2016). Economic impact of refugees. *Proceedings of the National Academy of Sciences* , 7449-7453.
- Taylor, E., Fillipiksi, M., & Alloush, M. (2016). Ecnomic Impact of Refugees . *Proceedings of the National Academy of Sciences of the United States of America* , 7449-7453.
- (UNHCR, Afghan refugees in Pakistan, 2022)
- Wadhvani, Sushil B. (2022). The Effects of Inflation and Real Wages on Employment. *Economica*, 54 (213), 21-40. JSTOR, <https://doi.org/10.2307/2554341>. Accessed 27 Nov. 2022.
- Werker, E. (2007). Refugee camp economies. *Journal of Refugee Studies* , 461-480.
- Whittaker, B. E. (2002). Refugee in Western Tanzania:The Distribution of Burdens and Benefits Among Local Hosts . *Jouranal of Refugee Studies* , 339-358.