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Can Economic Globalization Cure Unemployment in Pakistan? An Empirical Investigation

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ABSTRACT

In the current economic climate of boosted economic globalization culture that results in an ease in the movement of resources from one corner of the globe to the other, unemployment is still a bitter reality. Using annual data for Pakistan from 1986 to 2020, an attempt was made in this study to empirically evaluate the long-run and short-run link between the unemployment rate and FDI, economic growth, and trade. Using the multivariate co-integration technique, the data were examined. The long-term link between the unemployment rate and explanatory variables was validated by Johansen's co-integration method. The data series' stationarity was verified using the Augmented Dickey-Fuller unit root test (ADF test), which demonstrates that all of the relevant variables are first-difference stationary. Results suggested a contradiction between the unemployment rate and foreign direct investment. Also, extensive studies found a conflict between economic expansion and the unemployment rate. While there is a long-term positive correlation between trade and the unemployment rate. Using the Impulse Response Function, short-run relationships are evaluated.

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1. Introduction

One of the new societal issues that intensifies as the economy grows is unemployment. An economy with a lower unemployment rate has a greater labor force participation rate, which promotes economic growth, consumer spending, and potential inflationary pressures. On the other hand, a high unemployment rate causes fewer incomes, less spending, a series of unfavorable multiplier effects, and ultimately economic stagnation. Given Pakistan's situation, unemployment has now permeated daily life and is having negative effects including wasting human capital, escalating poverty, and violating human rights.

Both in industrialized and emerging nations, there has been a lot of interest in how macroeconomic factors affect the unemployment rate. Some nations with developing economies embraced western techniques to attain better economic growth in the shortest amount of time; nevertheless, this caused them to experience a significant rise in unemployment as the quick inventions made labor unemployed. The unemployment rate in Pakistan was on the decline, but since the economic downturn began in 2007, the trend has been reversed, and the rate is again rising. When Arthur Okun (1960) looked at the empirical relationship between unemployment and GDP, the findings were unfavorable. In his study of the EU nations from 1988 to 1998, Walterskirchen (1999) discovered a substantial inverse link between the jobless rate and GDP growth rate. In the United Kingdom, Zaglar (2006) discovered a significant inverse link between unemployment and economic growth. Kreishan (2011) discovered that Jordan's unemployment cannot be decreased by economic growth. The effects of GDP growth rate on unemployment have not been extensively studied throughout time, particularly in emerging countries.

Developing countries usually employ international money to address their own issues because they think it to have higher technical standards than local capital. Foreign direct investment (FDI) can reduce the unemployment rate in several ways, including directly by boosting economic activity, growing businesses, and opening up job opportunities, as well as inadvertently by fostering economic growth, increasing income levels, and advancing skill development through technology transfers. According to Macdougall (1960), receiving FDI benefits host countries by reducing unemployment, boosting capital flows, and introducing cutting-edge technologies.

Academics and scholars have begun to focus on the connection between the unemployment rate and FDI as a result of the developing world's adoption of liberal policies in the 1980s. Aktar and Ozturk (2009) analyzed the links between FDI, unemployment, exports, and GDP in Turkey from 2000 to 2007 and found that FDI was negatively correlated with unemployment there. Rafiq, Ahmad, Ullah, and Khan (2009) and Chaudhuri and Banerjee both confirmed that FDI has a negative correlation with unemployment (2010). Positive employment benefits of FDI were discovered by Nunnenkamp and Bremont (2007), Ajaga and Nunnenkamp (2008), Karlsson, Lundin and Sjolholm (2009), and He (2009). The findings of Lin and Wang supported the notion that FDI and unemployment are positively correlated (2008). The level of skilled and unskilled labour unemployment declines as a result of FDI in the agricultural industry (Chaudhuri and Banerjee, 2010). In highly developed nations, FDI may boost employment under certain conditions, but there are few ideas that apply to developing economies.

Moreover, liberal policies were adopted in the 1980s, which led to a massive rise in Investment and commerce. All developing economies must engage in foreign trade because there is a lack of available capital for investment and because they require foreign currency to bring in industrial goods. Trade liberalisation is condemned because it is held responsible for the high unemployment rate, pay inequality, and eventually labour exploitation (Lee 2005; Meo et al.,2020).

The literature that connects trade to unemployment in developing nations is still sparse and produces a variety of findings. A positive correlation between commerce (imports and exports) and unemployment was discovered by Greenaway et al. in 1999. Trade liberalization has improved the state of the economy by boosting demand for labour, increasing output, and driving down prices (Carneiro and Arbache, 2003). According to Janiak (2006), more international commerce is linked to a higher rate of employment loss. According to Kien and Heo (2009), imports had no detrimental

effects on employment in Vietnam, while exports were positively correlated with labour demand. When Dutt et al. (2009) looked at the relationship between unemployment and global trade, they discovered a short-term positive correlation between trade liberalisation and unemployment but a long-term negative correlation. So, in the current economic climate, it is essential to examine the connection between trade and unemployment in order to lower the high unemployment rate in the nation.

It is crucial to look into a country-specific analysis of the impact of economic growth, FDI, and trade on the unemployment rate because numerous research produced contradictory findings. The study is an effort to empirically evaluate the long-run and short-run effects of economic growth, FDI, and trade on the unemployment rate in Pakistan from 1986 to 2020 using a multivariate co-integration technique.

2. Literature Review

Poor industrial bases, a lack of technical skills, a high level of unemployment, and a lack of financial resources are all characteristics of developing economies like Pakistan. The deficit might be filled through foreign direct investment, which would promote development and progress. Foreign direct investment is not a free meal; it is something for something substantial, therefore this is never guaranteed. Meaning that foreign investors invest primarily to generate returns for their stakeholders rather than to help any nation close its budgetary gap or support the development goals of their host nation. There is no universal agreement on the relationship between foreign direct investment and economic growth, despite the focus of numerous studies..

According to the Neo-liberal school, a large portion of the required economic prosperity can be attained through foreign direct investment. It can provide crucial aid in modernizing the industrial order for developing countries through foreign direct investment the country's economy can be expanded by its capital, employment, and technology (Ugwuegbe, Okorie, and John 2013; Suki et al.,2022; Nazar et al.,2022; Chaudhry et al.,2022; Hameed et al.,2021; Islam et al.,2022; Ali et al.,2021; Hassan et al.,2020; Fatima et al.,2021;Meo et al.,2021;Sun et al.,2022;Chang et al.,2022; Numan et al.,2022). The Dependency theory, which holds that foreign direct investment can ultimately result in the transfer of economic power and wealth to foreign investors, is in opposition to this school. It contends that this will economically marginalize host economies. The Neo-liberal school's claimed benefits for recipient companies and host economies are untrue, and the drawbacks exceed the benefits. According to Aremu (2005), developing countries are known for their poverty because they have been systematically exploited through foreign investor malpractice, foreign firms' control of important economic sectors with the displacement of domestic firms, the introduction of inappropriate technology in developing nations, and the distorting effects of indiscriminate pay on the domestic labor force. Because of this (Umah 2007) also maintains that distortion includes the crowding-out of national firms, rising unemployment related to the use of capital-intensive technology, and a marked loss of political sovereignty.

3. Methodology

The goal of the study was to evaluate the long- and short-term relationships between FDI, economic growth, and trade, and unemployment rates. Using the VAR (Vector Auto Regressive) technique, the relationship between the variables was estimated.

The assumption was that FDI, economic growth, and trade (imports plus exports) all

influenced the unemployment rate. The following multivariable model was utilized for econometric evaluation:

$$UR = f(LFDI, GR, LTD) \dots\dots\dots \text{Eq. (1)}$$

Where GR is the GDP growth rate, UR is the unemployment rate, LFDI is a log of foreign direct investment, and LTD is a log of trade (exports plus imports). The following can be written as the generic form of function:

$$UR = \beta_0 + \beta_1 LFDI + \beta_2 GR + \beta_3 LTD + \epsilon \dots\dots\dots \text{Eq. (2)}$$

Here, β_0 represents the intercept, β_1 , β_2 , and β_3 stand for the relevant FDI, economic growth, and trade coefficients, and ϵ represents the error term. The assumption was made that each variable would be identical, regularly distributed, and have a mean and variance of zero.

Since theory predicts the existence of long-run equilibrium linkages among stationary time series, removing the trend from economic data series is a precondition for time series empirical analysis. To ensure stationarity, or the stability of mean, variance, and covariance across time, data series are adequately differentiated. The Augmented Dickey-Fuller unit root test was employed in the study to assess whether the macro series is stationary at level, first difference, or second difference. I (0) denotes the absence of a unit root in the series, proving stationarity, while I (1) denotes the presence of a unit root (non-stationary). The following step is to look for Co-integration among the variables after each data series has been tested for stationarity. To assess co-integration between variables, Johansen's full information maximum likelihood (FIML) technique was utilised (Johansen, 1998; Johansen and Juselius, 1990). The following vector autoregressive (VAR) model was taken into consideration in order to comprehend Johansen's FIML technique:

$$\Delta Y_t = \phi + \Gamma_1 \Delta Y_{t-1} + \dots + \Gamma_{n-1} \Delta Y_{t-n+1} + \Pi Y_{t-n} + \epsilon_t; t = 1; \dots; N \dots\dots \text{Eq. (3)}$$

Where

$$Y_t = \begin{bmatrix} UR \\ FDI \\ GR \\ TD \end{bmatrix} \quad \phi = \begin{bmatrix} \phi_1 \\ \phi_2 \\ \phi_3 \\ \phi_4 \end{bmatrix} \quad \Gamma_i = \begin{bmatrix} \delta_{11;i} & \dots & \delta_{15;i} \\ \delta_{21;i} & \dots & \delta_{25;i} \\ \delta_{31;i} & \dots & \delta_{35;i} \\ \delta_{41;i} & \dots & \delta_{45;i} \end{bmatrix} \quad \epsilon_t = \begin{bmatrix} \epsilon_{1,t} \\ \epsilon_{2,t} \\ \epsilon_{3,t} \\ \epsilon_{4,t} \end{bmatrix}$$

Multivariate co-integration is tested using the VAR technique. The order of VAR may have an impact on Johansen's FIML co-integration technique (Hall, 1991). So, before using this approach, Hall contends that the impact of changing the sequence of VAR must be evaluated. With a maximum of four lags, the Adjusted LR test was used for this.

Two likelihood ratio (LR) tests can be used to see if the co-integrating vector "r" is present in the system. The Trace test statistic and the Maximal Eigenvalue test, respectively, are the first and second LR tests used for this purpose.

As a result, $r = 0$ indicates that there are no co-integrating vectors in the system, $r = 1$ that there is one co-integrating vector present, and H_1 that there are multiple co-integrating vectors present. Osterwald-Lenum and Johansen (1988) computed the critical values for both LR tests using

Monte Carlo simulations (1992).

3.1 Generalized Impulse Response Function (GIRF)

With GIRF, short-run dynamics can be evaluated. In another data series of the system, it demonstrates how one data series responds to a single standard shock. Across time spans, the data series' reaction is plotted.

4. Empirical Results

Four maximum lags were used in the ADF unit root test. At some level, each variable series was non-stationary; nevertheless, for the first difference form, they all became stationary. The following table displays the test's outcomes for the ADF:

Table 1: ADF unit root test results

Variables	At level		At first difference	
	Test statistics	Conclusion	Test statistics	Conclusion
UR	-2.4491	I (1)	-3.0677	I(o)
LFDI	-1.0874	I (1)	-3.0977	I(o)
GDPGR	-2.2957	I (1)	-3.0287	I(o)
LTD	-1.3495	I (1)	-3.3905	I(o)
Critical Value	-1.9627		-2.9665	

Note: critical value at 95% confidence interval

The results of the Adjusted LR test for choosing the order of VAR, which serves as the starting point for the co-integration analysis, are shown in Table 2.

Table 2: ALR test on VAR with a maximum of four lags

Order	LL	AIC	SBC	Adjusted LR test
4	-52.0359	-116.0359	-161.9235	-----
3	-61.7529	-109.7529	-144.1686	8.4036[.897]
2	-76.2048	-108.2048	-131.1486	24.3894[.867]
1	-82.9952	-98.9952	-108.4671	28.9606[.983]
0	-285.7882	-285.7882	-285.7882	227.2110[.002]

The order of VAR is one, according to the results in table 2. After selecting the order of the VAR, the following step is to perform two likelihood (LR) ratio tests to see if the model contains co-integrating vectors "r".

Table 3: LR ratio Tests

Null	Alternative	Trace Test		Maximal Eigenvalue Test	
		Statistic	95% Critical Value	Statistic	95% Critical Value
r = 0	r = 1	83.01	53.48	46.6431	28.2700
r <= 1	r = 2	33.33	34.87	18.0472	22.0400
r <= 2	r = 3	18.32	20.18	12.9603	15.8700
r <= 3	r = 4	5.36	9.16	5.3609	9.1600

Testing of the null hypothesis is shown in Table 3 to begin with. i.e., $r = 0$. $r = 1$ serves as a counterexample to this hypothesis. The test statistic in this case is higher than the critical value, which leads to the conclusion that $r = 1$ and the null hypothesis was rejected. The maximum Eigenvalue Test also recommends $r = 1$ as the accepted null for $r \leq 1$. These parameters can be viewed as estimates of the long-run co-integrating relationship between the variables if there is just one co-integrating vector. As a result, when normalised to the unemployment rate, estimated parameter values from the equation are long-run elasticities.

$$UR = 4.67 - 3.3 LFDI - 1.29 GDPGR + 9.29 LTD \quad \dots\dots\dots \text{Eq. (4)}$$

(2.83) (2.36) (2.61) (2.91)

Estimates of the unemployment rate's long-term elasticity to trade, growth rate, and foreign direct investment are given by the coefficients in Equation 4. The very significant coefficients for each variable show the long-term relationships between the unemployment rate and trade, economic growth, and foreign direct investment. While trade has a positive sign, there are negative relationships between the GDP growth rate, foreign direct investment, and unemployment rate. It illustrates that for every 1% increase in foreign direct investment, the unemployment rate falls by 3.3%. For every 1% rise in GDP growth, the jobless rate decreases by 1.29 percent. Every 1% increase in trade volume results in a 9.29% increase in the unemployment rate.

Generalized Impulse Response Function (GIRF)

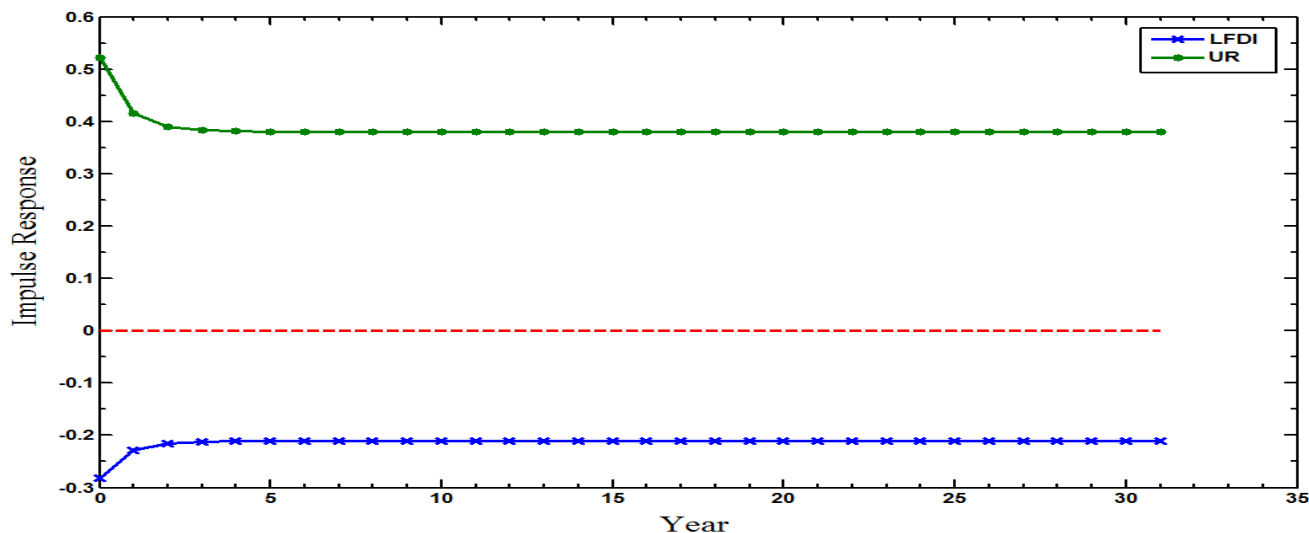


Figure 1: Generalized Impulse Response (s) to one standard error shock in the equation for LFDI

In the equation linking FDI to the unemployment rate, one standard error shock is shown graphically in Figure 1. Figure 1 makes it very evident that one S.E shock in LFDI causes a noticeable shift in the unemployment rate. For long-term balance to be reached, it will take four to five years.

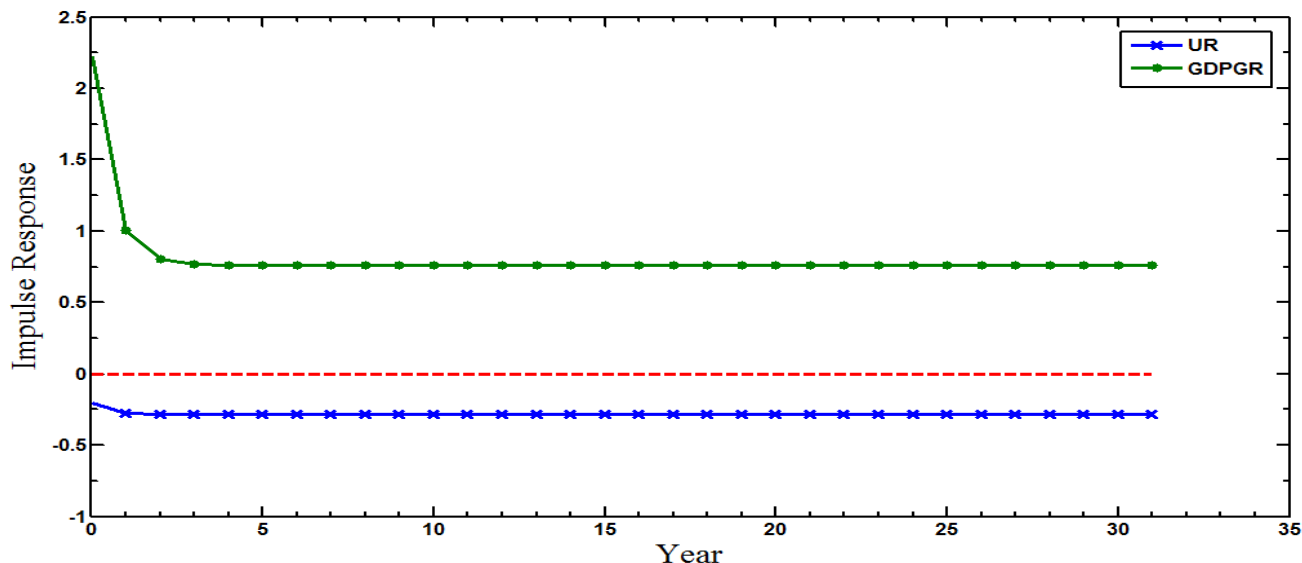


Figure 2: Generalized Impulse Response (s) to one S.E shock in the equation for GDPGR

Figure 2 shows how the unemployment rate responded to a standard error shock in the GDPGR equation. The unemployment rate has received little attention. For the long-term equilibrium to be restored, two to three years will pass.

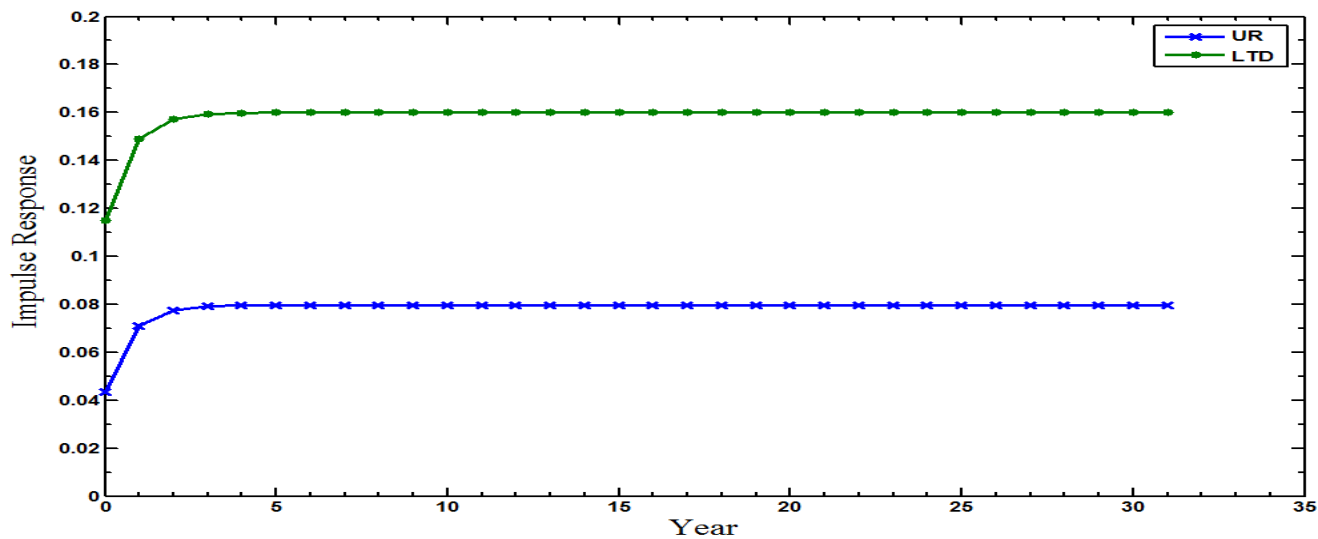


Figure 3: Generalized Impulse Response (s) to one S.E shock in the equation for LTD

A large change in the unemployment rate is shown in Figure 3 as a result of one standard error shock in the LTD equation. Returning to the long-term equilibrium will take four to six years.

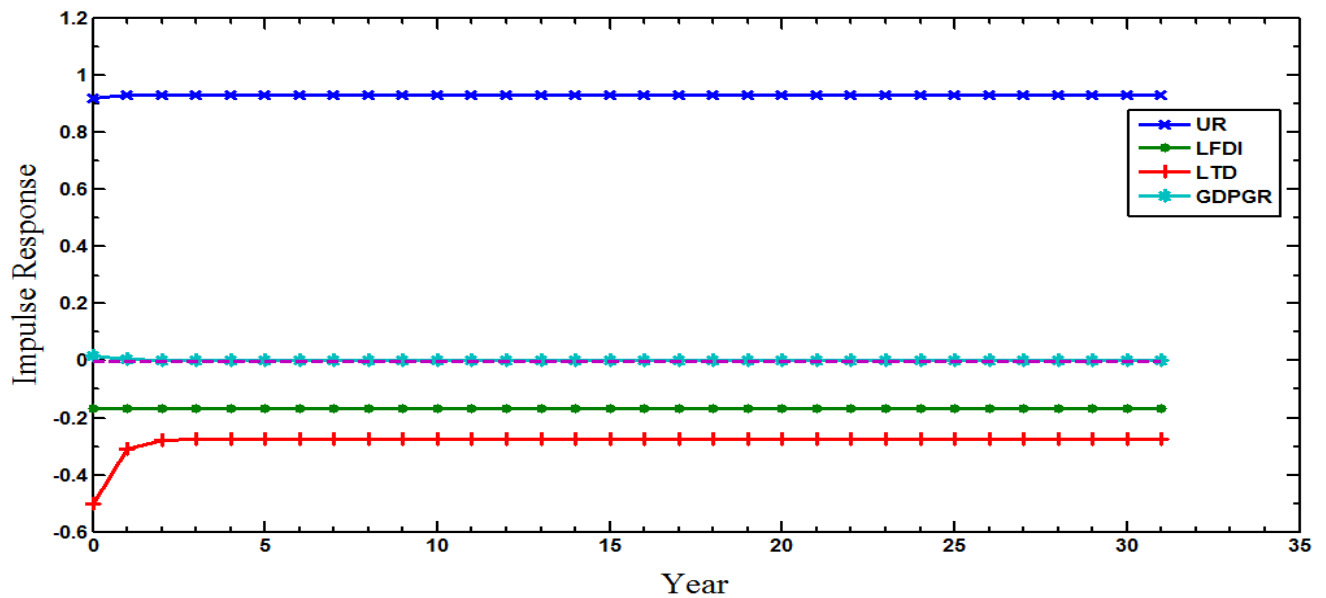


Figure 4: Generalized Impulse Response (s) to one S.E shock in the equation for UR

Figure 4 shows that it will take three to four years to return to the long-run equilibrium with one standard error shock in the equation for the unemployment rate.

5. Discussion and Conclusion

The long-term effects of FDI, economic growth, and trade on the unemployment rate in Pakistan from 1986 to 2020 were assessed using Johansen's co-integration approach. Every variable was initially difference stationary. The co-integration analysis verified a long-term link between the study's variables. Trade showed a negative correlation with unemployment whereas FDI and GDP growth rate showed favorable correlations.

According to the study's findings, the government should encourage foreign investors to boost their FDI in Pakistan and invest those funds in development projects in order to achieve both economic growth and increased employment rates at the same time. To get the intended effects, a respectable economic growth rate must be attained. Currently, continuous economic growth plans and employment-creating projects are essential to combat the perilous problem of unemployment in a developing economy. As international trade policies have a favorable impact on the unemployment rate, policymakers should be more watchful and cautious when developing them.

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