ECONOMIC GROWTH, UNEMPLOYMENT, AND AGRICULTURAL MODERNIZATION: AN INDIAN CASE STUDY (1991-2022)

Mamoon Rasheed,

Research Scholar, Department of Economics, University of Delhi.

ABSTRACT

The primary objective of this study is to investigate the relationship between economic growth rate and unemployment in India, with a particular focus on the impact of economic growth on employment from 1991 to 2022. Co-integration test was employed in the analysis. The variable utilized in the investigation include Gross Domestic Product (GDP) and unemployment rate. Stationary test was conducted and the results indicated that the variable except unemployment were stationary at level; however, unemployment became stationary after first differencing. The co-integration test result revealed that long run relationship exists among the variables under study. Based on the findings above, the study, therefore, recommends that government, as a matter of urgency create more employment opportunities to absorb the teeming population of the unemployed labour force in the country through modernization of the agriculture sector, bring in model modern equipment in the facilities of agriculture to make the sector more attractive to all cities despite one's qualifications and profession, as that alone would go a long way in reducing unemployment level in the country.

Keywords: *Unemployment, stationary, GDP, growth*

INTRODUCTION

Rapid economic growth generally ameliorates unemployment concerns. In India's scenario however, rapid economic growth would not alleviate the country unemployment problem immediately. Because even when India's GDP increased rapidly in the past, the nature of expansion resulted in the creation of just a limited number of well-paying employments.

Vijay Joshi points out the lopsided nature of India's growth in his book "India is long road",

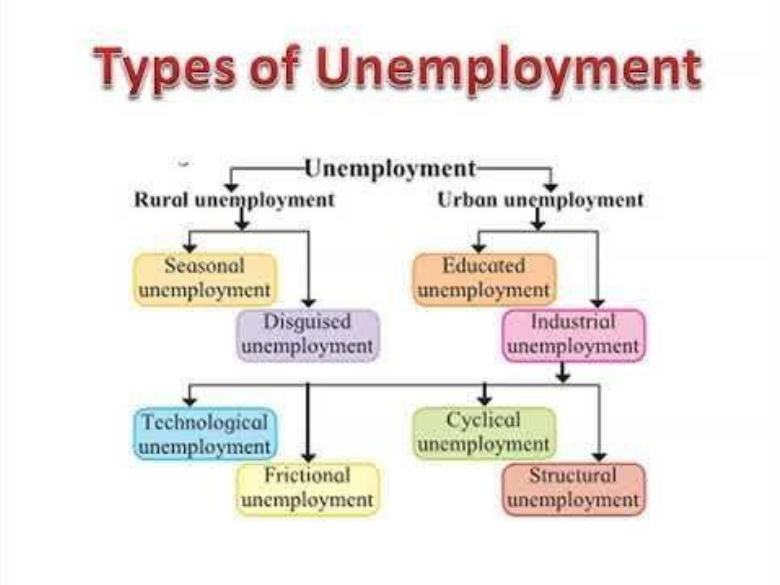
"India's entire workforce increased by 63 million people between 1999-00 and 2009-10, 22million of these 44 million become unorganized workers in the organize sector, while the number of official workers in the organized sector full by 3 million." Even while all growth indicator, including the Gross Domestic Product (GDP), imply a strong economic improvement, unemployment in the country continues to rise a lack of job possibilities may stifle long term economic growth by lowering general purchasing power, which lead to a drop in consumption demand.

The economic growth refers to an increase in aggregate production in an economy, which is generally production in an economy, which is generally manifested in a rise in national income, since World War Ⅱ, the US economy has experienced more expansion than contractions. Between 1945 and 2019, the average expansion lasted about 65 months, while the average contraction was only 11 months. However, the great recession, from December 2007 to June 2009, went on for 18 months. This was followed by the longest expansion on record 128 months, lasting until 2020 and the advent the COVID-19 pandemic.

India's macroeconomic challenges continue to be stagnant economic growth and high

unemployment. According to latest available data collected by the labour bureau, employment growth of India slowed dramatically from 2012 to 2016with an absolute decline in employment in from 2013-14 to 2015-16, possibly for the first time in Independent. According to the UN(ILO), unemployment in 2017 is expected to be 17.8 million in 2018. It also stated that a global unemployment issue exists as a result of social and economic crisis, as well as create high quality jobs for the labour market between 2016 and 2017 the number of unemployed people in developing countries increased by about 3.6 million (UN report-Times of India, n.d).

Unemployment in India is attributed to the negative development of economic activities, the substitution of labour by capital, and increase in workforce supply. Every day IIndia is confronted with a serious problem of unemployment.

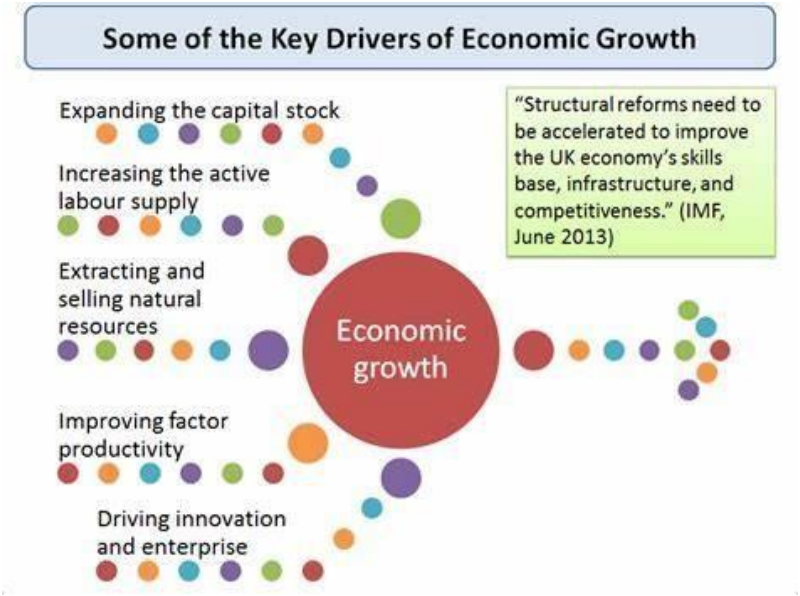


PRESENT SITUATION IN INDIA

India is on track to become the world's third largest economy by 2027, surpassing Japan and Germany, and have the third largest stock market by 2030, thanks to global trends and key investments the country has made in technology and energy. India is already the fastest gro- wing economy in the world having clocked 5.5% average gross domestic product over the past decade. Now, three megatrends-global offshoring digitalization and energy transition-are setting the scene for unprecedented economic growth in the country of more than 1 billion people.

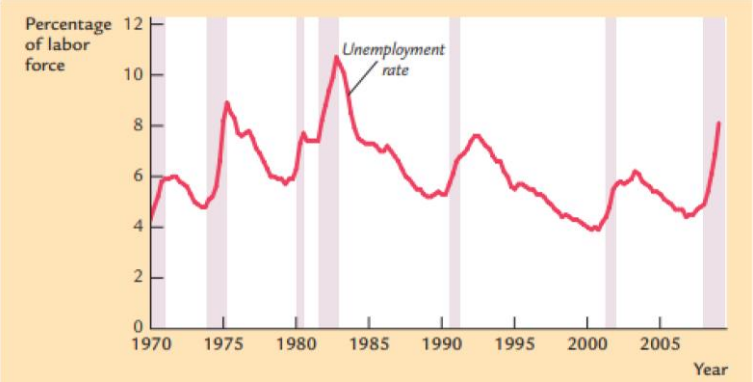
The Indian economy expanded 4.4% on year-on-year in the three months to December of 2022, below 6.3%in the three months to September and forecasts of 4.6%. Private spending which accounted for 61.6% of the GDP in Q4, slowed sharply (2.1 vs 8.8% in Q3) hurt by a rise in borrowing costs. At the same time, investment rose at a slower pace (8.3% vs 9.7%), government spending contracted (-0.8% vs -4.1%) and both exports (11.3% vs 12.3%) and imports (10.9% vs 25.9%) lost steam, on the other hand shocks rebounded (0.2% vs -2.3%) the production side, the manufacturing sector shrank for a second time and a slowdown was seen in finance and real estate and trade, hotels, transport, and communication. In contrast, output in the mining sector rebounded (3.7% vs 0.4%) and faster increases were seen in form, utilities and contraction. The growth rate for the 2022-23 fiscal year kept unchanged at 7%. Annual percentage growth rate for GDP at market prices based on constant local currency. Aggregate are based on constant on 2010 US dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any

subsidies not include the value of product. It is calculated without making deduction for depreciation of fabricated assets or for deplecation and degradation of natural resources. India GDP rate for 2021 was 8.68%, a 15.28% increase from 2020. India GDP growth rate for 2020 was -6.60%, a 10.33% decline from 2019. India GDP growth rate for 2019 was 3.74%, a 2.72%decline from 2018. India GDP growth for 2018 was 6.45%, a 0.43% decline from 2017. During the COVID-19 pandemic, numerous rating agencies downgraded India's GDP predication for FY21 to negative figures, signaling a recession in India, the most severe since 1979. The Indian economy contracted by 6.6% which was lower than estimated 7.3% decline. In 2022, the rating agency fitch rating upgraded India's outlook to stable similar to S&P Global rating and moody's investors service outlooks. In the first quarter of financial year 2022-23, the Indian economy grew by 13.5%.



OKUN'S LAW

The business cycle is apparent not only in data from the national income accounts but also in data that describe conditions in the labour market, Figure shows the unemployment rate from 1970 to early 2009, again with the shaded areas representing periods of recession. You can see that unemployment rises in each recession, other labour market measures tell a similar story.



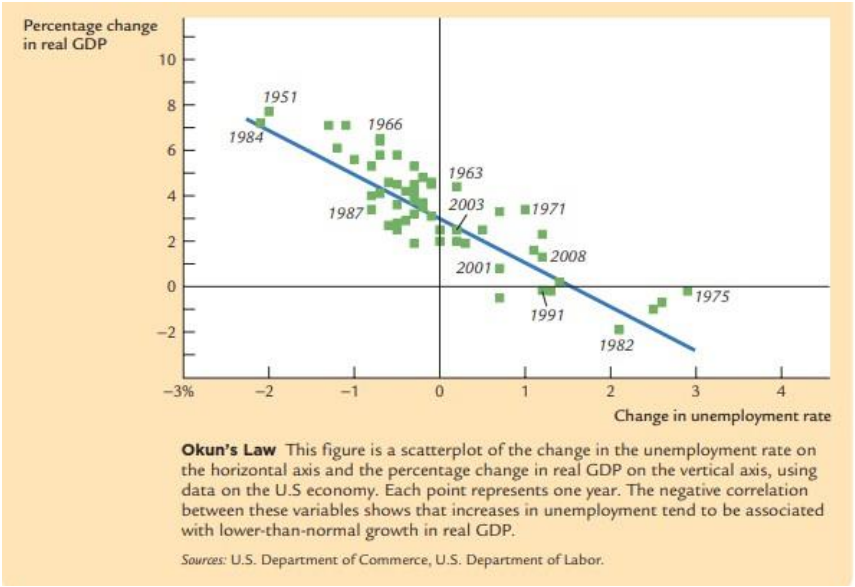
Unemployment The unemployment rate rises significantly during periods of recession, shown here by the shaded areas.

Source: U.S. Department of Labor.

Put simply, during an economic downturn, jobs are harder to find. What relationship should we expect to find between unemployment and real GDP? Because employed workers help to produce goods and services and unemployed workers do not, increases in the unemployment rate should be associated with decreases in real GDP. This negative relationship between unemployment and GDP is called Okun's law, after Arthur Okun, the economist who first studied it. Figure uses annual data for the United States to illustrate Okun's law. In this scatterplot, each point represents the data for one year. The horizontal axis represents the change in the unemployment rate from the previous year, and the vertical axis represents the percentage change in GDP. This figure shows clearly that year-to-year changes in the unemployment rate are closely associated with year-to-year changes in real GDP. We can be more precise about the magnitude of the Okun's law relationship. The line drawn through the scatte of points tells us that.

Percentage Change in Real GDP

= 3% − 2 × Change in the Unemployment Rate.



Okun's Law This figure is a scatterplot of the change in the unemployment rate on the horizontal axis and the percentage change in real GDP on the vertical axis, using data on the U.S economy. Each point represents one year. The negative correlation between these variables shows that increases in unemployment tend to be associated with lower-than-normal growth in real GDP.

Sources: U.S. Department of Commerce, U.S. Department of Labor.

If the unemployment rate remains the same, real GDP grows by about 3 percent; this normal growth in the production of goods and services is due to growth in the labor force, capital accumulation, and technological progress. In addition, for every percentage point the unemployment rate rises, real GDP growth typically falls by 2 percent. Hence, if the unemployment rate rises from 5 to 7 percent, then real GDP growth would be

Percentage Change in Real GDP = 3% − 2 × (7% − 5%)

=−1%.

In this case, Okun's law says that GDP would fall by 1 percent, indicating that the economy is in a recession. Okun's law is a reminder that the forces that govern the short-run business cycle are very different from those that shape long-run economic growth. long-run growth in GDP is determined primarily by technological progress. The long-run trend leading to higher standards of living from generation to generation is not associated with any long-run trend in the rate of unemployment. By contrast, short-run movements in GDP are highlycorrelated with the utilization of the economy's labor force. The declines in the production of goods and services that occur during recessions are always associated with increases in joblessness.

RESEARCH PROBLEM

There are two different points of view regarding the relationship between economic growth and unemployment. (1) First group of studies establishes a symmetrical tie between economic growth and unemployment. (2) Second group which also includes the recent studies discuss asymmetrical relationship between economic growth and unemployment. In most of the studies that support asymmetrical relationship between economic growth and unemployment, main idea is that economic growth and unemployment relationship is more intense in the economic downturn period compare to economic expansion periods. there is some empirical evidence in support of asymmetrical relationship. For example, Cuaresma (2003) proposed an asymmetrical between economic growth and unemployment. So present my study aims to study, is there significant relationship between economic growth and unemployment in India.

OBJECTIVES

- To study the relationship between economic growth and unemployment rate in India.
- To study operation of okun's law consists long run relationship between GDP and unemployment rate in India.

SIGNIFICANCE OF THE STUDY

The study related to the relationship between economic growth and unemployment started when Arthur Okun's gave Okun's law. he was the first economist who studied that, unemployment decreases by 1 percent then GDP increases 2 percent. After this the study related to it started when this study published, data was not published in most of the countries and the same was the case in India, due to which most of the studies were theoretical based, however not much empirical evidence available due to the relationship between economic growth and unemployment. The relationship between economic growth and unemployment is multidimensional to be analyzed in details. After the adoption of new economic policy in 1991 the unemployment is decreases and economy is witnessed exception growth. As data become available, the empirical studies are started, such as the relationship between economic growth and unemployment in Arab countries but not much studies available in

Indian perspective. Keeping in view that background the present study entitled," The relationship between economic growth and

unemployment in India" has been undertaken, this study is important because not much empirical is available regarding to co-integration between economic growth and unemployment in India.

LITERATURE REVIEW

Lee (2000) discussed existence of a strong relationship between economic growth and unemployment in his study which supported Okun's law and was conducted for 16 OECD countries. **Silvapulle et al. (2004)** stressed that the effect of economic over unemployment was more significant during the time of economic shrinkage in his study in which he used US economic data between 1947 and 1999. **Bhadane (2012)** has argued that India can tackle down the problem of unemployment. New employment opportunities could be generated along with high economic growth, further he showed that the growth is majorlygenerated by productivity growth rather than increase the number of employed labours. **Prakash and Abraham (2008) have** also noticed that there is a high unemployment rate among the youth, educated and females even when new economic reforms have succeeded in generating new employment opportunities. This paper explained the trend in unemployment which indicate lower unemployment rate during post-reforms period as compared to prereforms period. **Irfan Lal et al. (2010) estimated** the Okun's coefficient and checked the validity of Okun's law in some Asian countries, for this purpose they used the time series annual data during the period 1980-2006. Engle granger (1987) co-integration technique is employed to find out long run association between variables and error connection mechanism (ECM) is used for short run dynamics. After getting empirical evidence it can be said that Okun's law interpretation may not be applicable. **Reddy (2012)** deliberated that the economic growth (GDP) has accelerated but growth of employment has decelerated since the adoption of privatization and liberalization policies in the 1990s. Therefore, "jobless growth" phenomenon has appeared in India. He also put the reason that the informalisation of the economy has affected the quality of employment due to lack of written contract, security and social protection. **Balla (2008)** has studied the situation of GDP growth rate and employment growth rate in India during the post-reform period. He has found that the GDP growth rate and employment growth rate have increased. Nevertheless, the diversification pattern of employment and quality of employment is not satisfactory. He also observed inequalities in per capita income (PCI) across persons and regions interpretation may not be applicable. **Malley and Molana (2008)** used quarterly data for G7 countries between the years of 1960 to 2001 and they stated that the relationship between economic growth and unemployment was more significant in the case of Jermany. **Cuarema (2003)** proposed an asymmetrical relationship between economic growth and unemployment in his study in which, he used US economic data. The author found significant relationship between economic growth and unemployment during economic shrinkage periods. **Pierdzioch et al. (2011)** tested whether professional economists forcost of change in the unemployment rate and growth rate of real output were consists with Okun's law for the period 1989-2007 for G7 and found the growth rate of real output and unemployment rate were consist with Okun's law. **Owyang and Sekhposyan (2012)** investigated the degree of time variation in the unemployment and output fluctuations over the business cycle for U.S. case. They found a great degree of instability in the historical performance of Okun's law. The breakdowns in Okun's law seemed to be highly correlated with the business cycle. The detected break dates of the largest changes the coefficients appeared to be around recessions. **Bankole and Fatai (2013)** estimated the Okun's coefficient, and checked the validity of Okun's law in Nigeria, using the time series annual data during the period 1980-2008. Engle granger cointegration test and Fully Modified OLS were employed. The empirical evidences showed that there is positive coefficient in the Regression, implying that Okun's law interpretation is not applicable to Nigeria. It was recommended that government and policy makers should employ economic policies that are more

oriented to structural changes and reform in labour market. **Ball, Leigh, and Loungani (2012)** asked how well Okun's Law fits short-run unemployment movements in the United States since 1948 and in twenty advanced economies since 1980. And found that Okun's Law is a strong and stable relationship in most countries, one that did not change substantially during the Great Recession. Accounts of breakdowns in the Law, such as the emergence of —jobless recoveries, ‖ are flawed. Also found that the coefficient in the relationship—the effect of a one percent change in output on the unemployment rate— varies substantially across countries. This variation is partly explained by idiosyncratic features of national labour markets, but it is not related to differences in employment protection legislation. al output and unemployment rate were consisting with Okun's law. **Noor, Nor and Judhiana (2007)** examined whether there exist an Okun – type relationship between output and unemployment in the Malaysian economy. The empirical results show that there was an inverse relationship between output and unemployment. **Naimy (2005)** applied Okun-type relationship to the Lebanese equation in order to estimate the Lebanese potential output. An empirical study covering 400 households is carried out to investigate the employment status using the BLS criterion in determining the most useful measures of the labour market. The main finding was that the impact of unemployment in Lebanon seems to be extremely harmful: the economy is $32 billion below its potential output. Unemployment in Lebanon is continuously growing as a result of the present financial and economic27 —deadlock‖ situation. It is the human resources of a nation, not its physical capital or its natural resources, that ultimately determine the character and pace of its economic growth and social development.

RESEARCH METHODOLOGY

DATA

The present study based on secondary data. Secondary data is often collected from various internal and external, public or private sources but some times secondary data is collected and process by the researcher from the questionnaires or surveys for particular research objective but in general the secondary data is largely collected from consuses, large surveys,and organizational records (Zhang,2011) secondary data are already provided at source and researcher need not to spend resources from on his/her own. Secondary data are comprenhesive because sources provide for a large data base (Sorenson,2000).

DATA SOURCE

The present study based on GDP and unemployment rate level data has been used. Various data sources are used for data collection. The data used in the study is time series secondary data GDP rate collected from the World Bank open data 1991 to 2022. Similarly, unemployment rate data has been collected from the International Labour Organisation's World Social Outlook (WESO) for the period of 1991 to 2022. Unemployment rate data is ILO model estimate.

DESCRIPTION OF DEPENDENT AND INDEPENDENT VARIABLES

VARIABLE	DATA SOURCE	INDICATORS
MARKET SIZE	World Bank Open Data https://data.worldbank.org.in	Gross Domestic Product (GDP) growth rate

LABOUR MARKET	The International Labour Organization's World Social outlook (WESO) https://data. ILO world socialoutlook.org.in	Unemployment

RESEARCH HYPOTHESIS

The research hypothesis determines the requirement for the research approach. Testing the research hypothesis, in this study requires empirical analysis based on samples.

Ho1: - There is significant relationship between economic growth and unemployment rate in India.

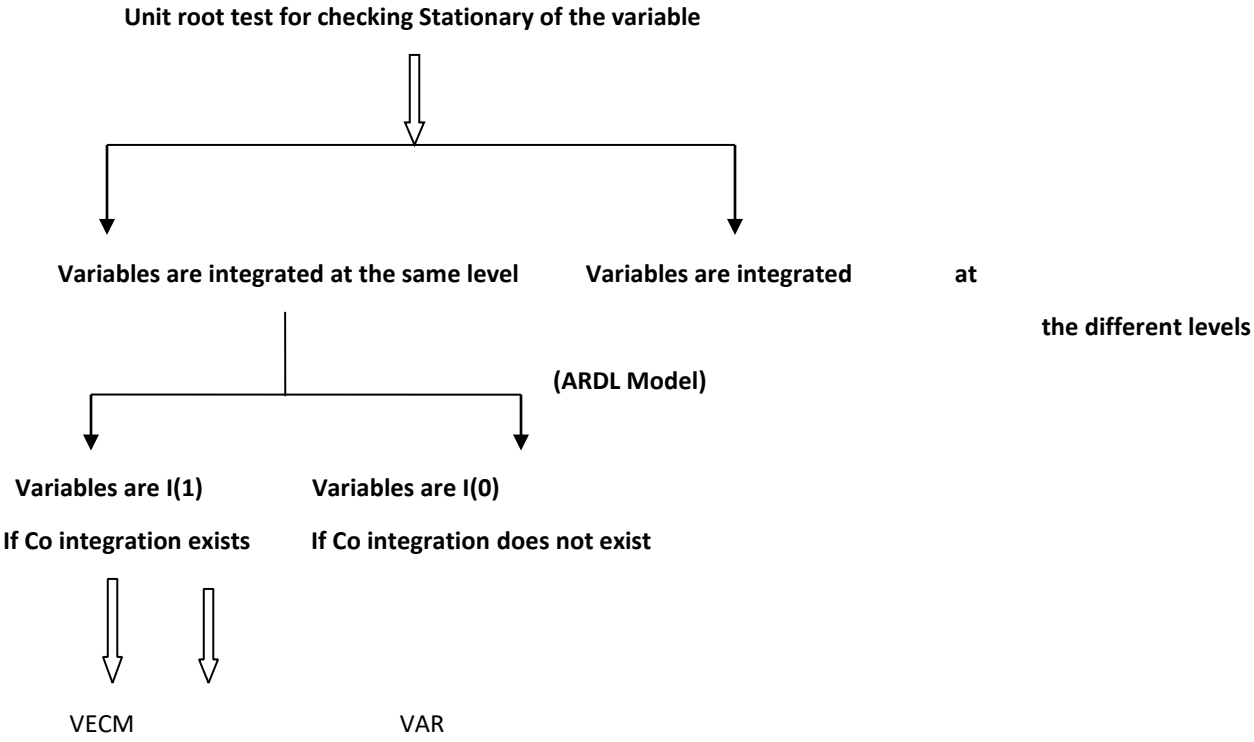
Ho2: - There is long run relationship between economic growth and unemployment rate in India.

ESTIMATION OF THE MODEL

For estimation need to firstly estimate the model. For this unit root test is applied. The estimation on process can be understood through following flow chart.

Estimation Of the Model

(The long run relationship between economic growth and unemployment rate in India)



(A) Time Series Unit Root Test: - A unit root test refers to an econometric measure that aids researchers in identifying whether a time series is stationary or non-stationary. The present study tests

for the presence of unit root in time series, through the relationship between economic growth and unemployment in India.

The Augmented Dickey-Fuller Test – The Augmented Dickey-Fuller test is a statistical test used to assess whether a time series has a unit root, indicating non-stationary. It helps determine if differencing is necessary for achieving stationary. This test correct for serial correction in the errors by allowing lagged values of the dependent variable in the model.

$$\Delta Yt=\alpha Yt\text{-}1+\sum^{n}i=1\ \beta i\Delta Yt\text{-}1+€t$$

Where it assumes a common α=ρ-1but allow the lag order for the difference term n to vary across time series. The null and alternative hypothesis for the tests may written as.

Ho:-α=0 , H1:-α<0

The null hypothesis states that there exists a unit root in the time series and is non-stationary. The alternative hypothesis states that there exists no unit root in the time series and is stationary.

In the next step, time series co-integration test is applied to find out the long run relationship between economic growth and unemployment in India. This enables to study long run structure in dynamic setting. In this analysis Johansen Fisher Panel Co-integration test method has been used to trace the co-integration relationship among the variables.

Johansen's Co-integration test: -Trace statistics and Max Eigen statistics will be used to see the number of co-integration equation suggests that variables are having long run association.

DATA ANALYSIS AND INTERPRETATION

(A) Trend Analysis: - The economic growth and unemployment rate was always present in India. Before reforms not much emphasis was given on these, due to which the GDP growth is very low. In 1991 GDP growth was 1.06%, which is very low and unemployment rate was 6.74%. in 1991 India initiated economic liberalization and reforms. After reforms the GDP growth rate rises to 5.48% but the unemployment rate increased by 0.08% GDP growth decreased in 1993 because in this time continuing political uncertainty coupled with social and communal unrest is just one factor. Especially power supplies, poor transportation; fail but at this time unemployment rate has not decreased continuously. It witnessed periods of bullish trends and corrections, reflecting economic conditions.

Year	GDP Growth (%)	Unemployment Rate (%)
1991	1.06%	6.74%
1992	5.48%	6.82%
1993	4.75%	6.80%
1994	6.66%	6.83%
1995	7.57%	7.01%
1996	7.55%	7.18%
1997	4.05%	7.28%
1998	6.18%	7.49%
1999	8.85%	7.71%
2000	3.84%	7.77%
2001	4.82%	7.96%
2002	3.80%	8.10%
2003	7.86%	8.36%
2004	7.92%	8.53%
2005	7.92%	8.70%

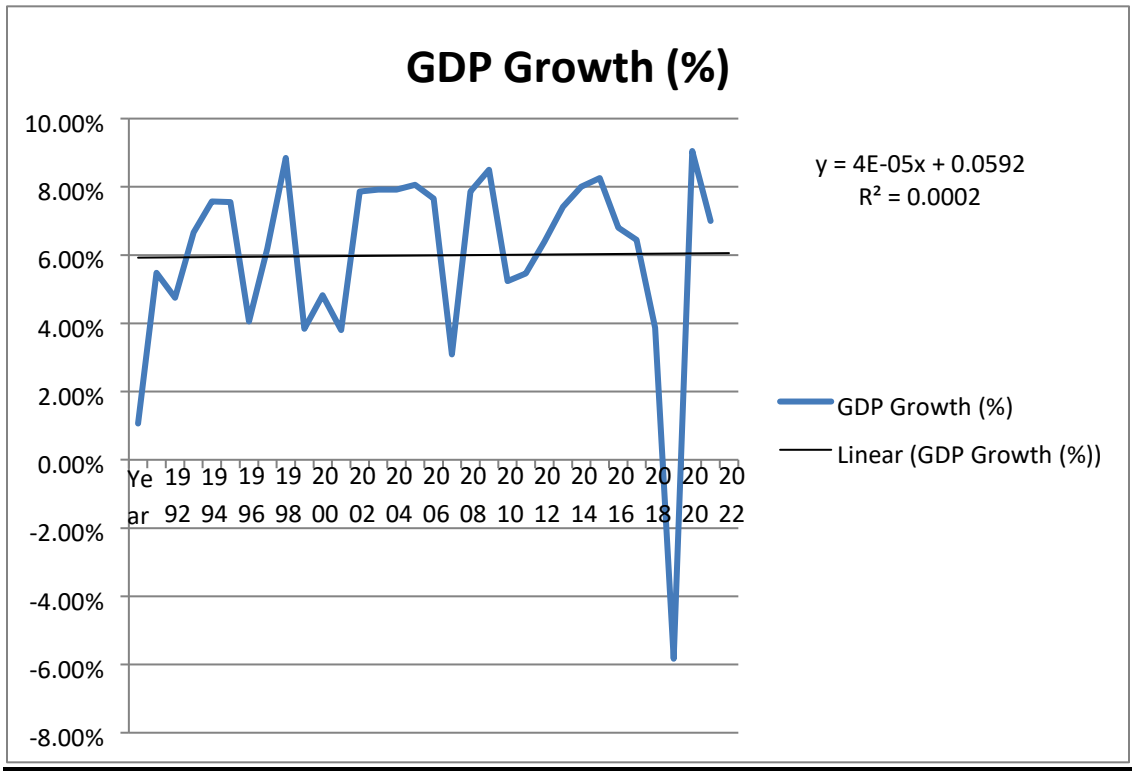
2006	8.06%	8.63%
2007	7.66%	8.54%
2008	3.09%	8.35%
2009	7.86%	8.38%
2010	8.50%	8.32%
2011	5.24%	8.17%
2012	5.46%	8.10%
2013	6.39%	8.04%
2014	7.41%	7.98%
2015	8.00%	7.92%
2016	8.26%	7.84%
2017	6.80%	7.73%
2018	6.45%	7.65%
2019	3.87%	6.51%
2020	-5.83%	10.20%
2021	9.05%	7.71%
2022	7.00%	7.33%

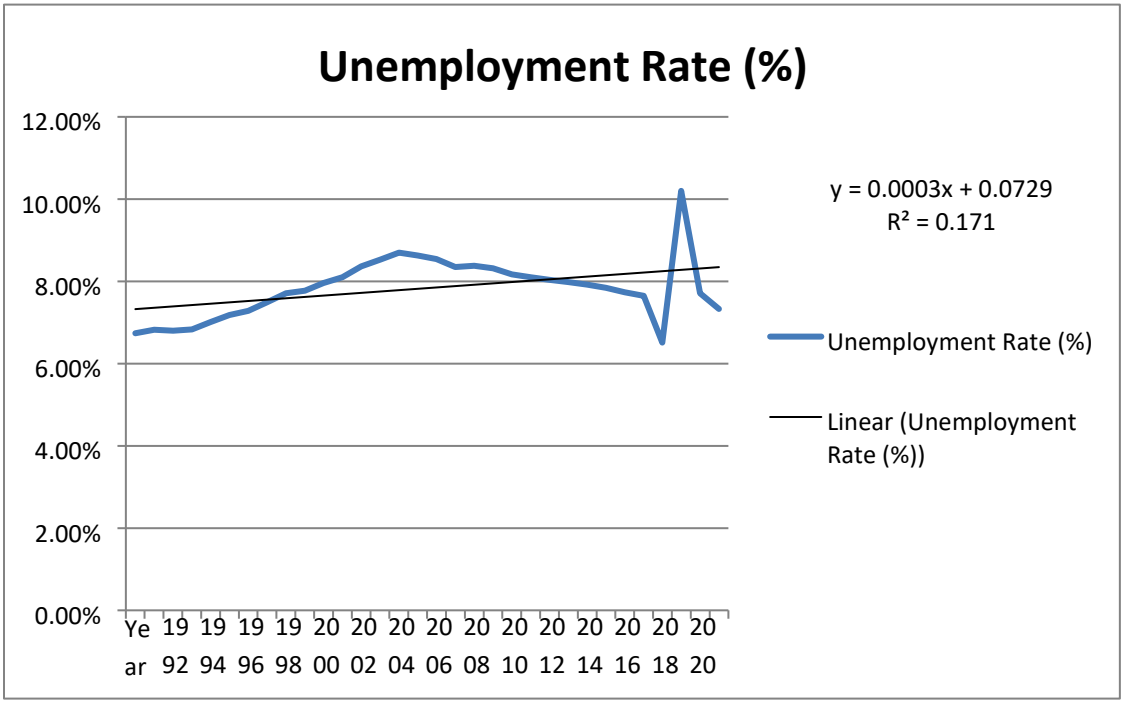
SOURCE: World Bank Open Data and International Labour Organization's

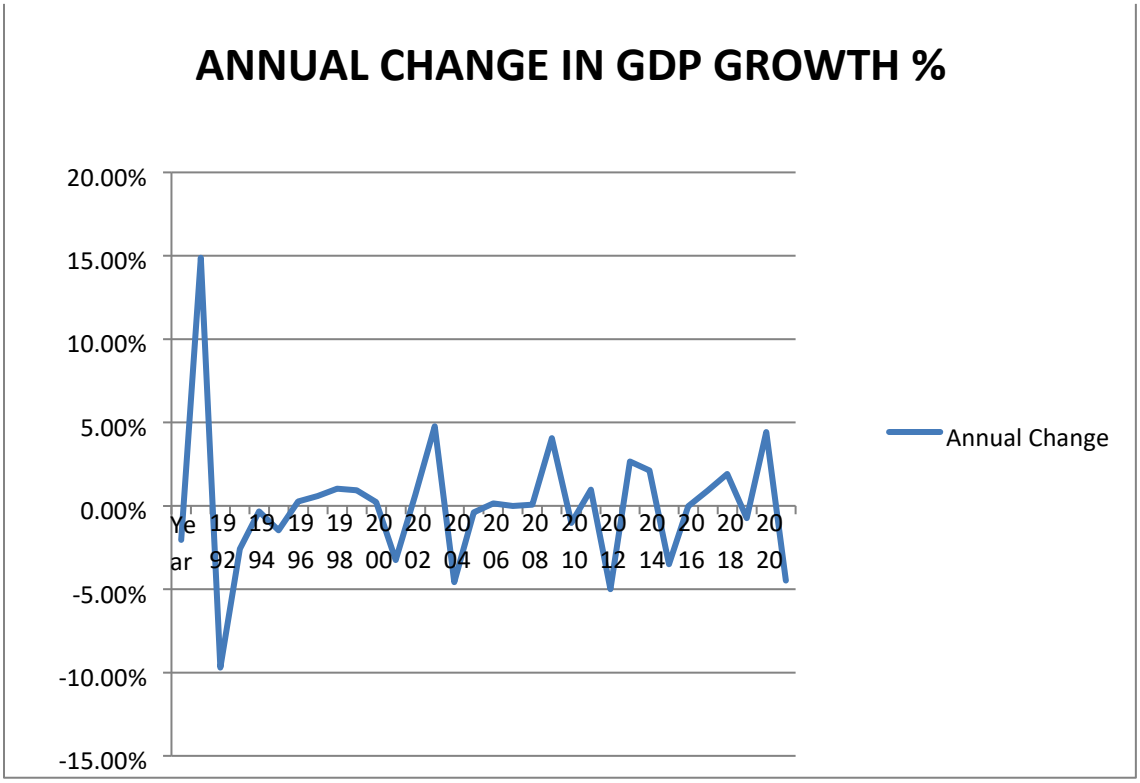
India's GDP growth rate in 2012 stood at 5.5% which kept growing until 2017. The decreasing trend continued till the GDP reached negative as for India's GDP growth rate 2020, the obvious reasons were unmanageable Fiscal deficit, economic disparity government and political turbulence and of course the unprecedented COVID-19 pandemic of 2020. As the economic activities came to total suspension of economic activity after the imposition of the lockdown, the unemployment rate reached unprecedented levels. The unemployment increased 3.69% from 2019. India unemployment rate for 2020 was 10.20%.

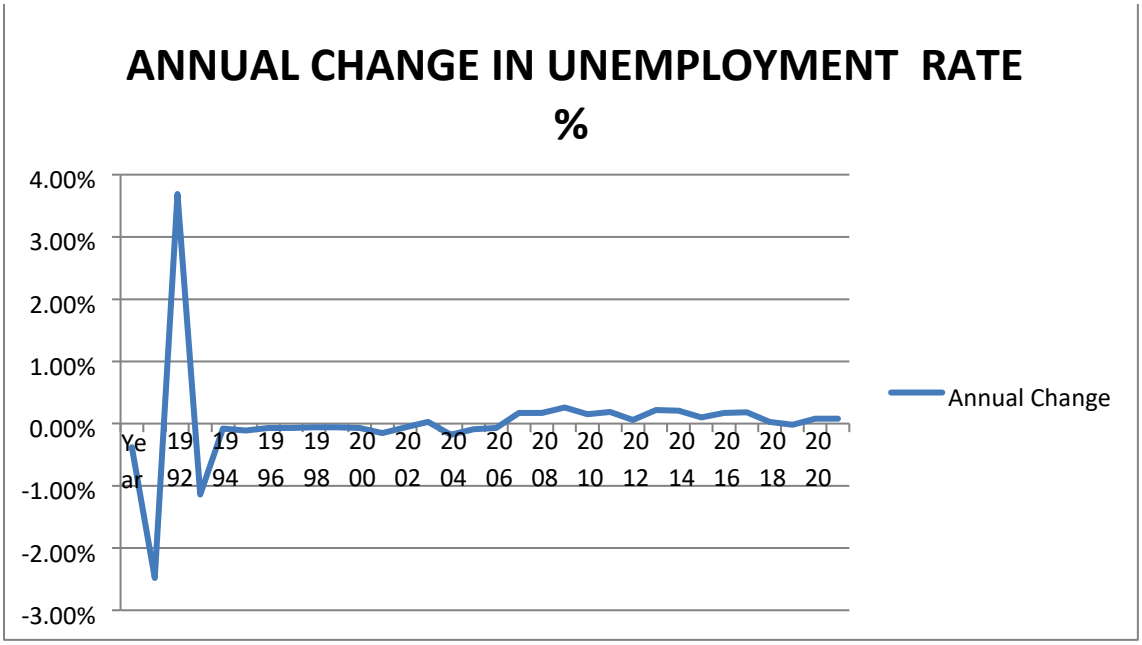
However, the post-pandemic scenario has been a positive end to the light for the country in the year 2021, where the India GDP growth rate 2021, took a complete U-turn with a rise of 8.9% where many sectors, especially healthcare has been a major contributing sector. In post pandemic scenario, as the economy opened up and economic activities started the unemployment rate decreased. India's unemployment rate for 2021 was 7.71%. ,a 2.48 decline from 2020. India GDP growth rate for 2022 was 7.00%, a 2.5 decline from 2021 because the citing higher financing cost and weaker public expenditures.

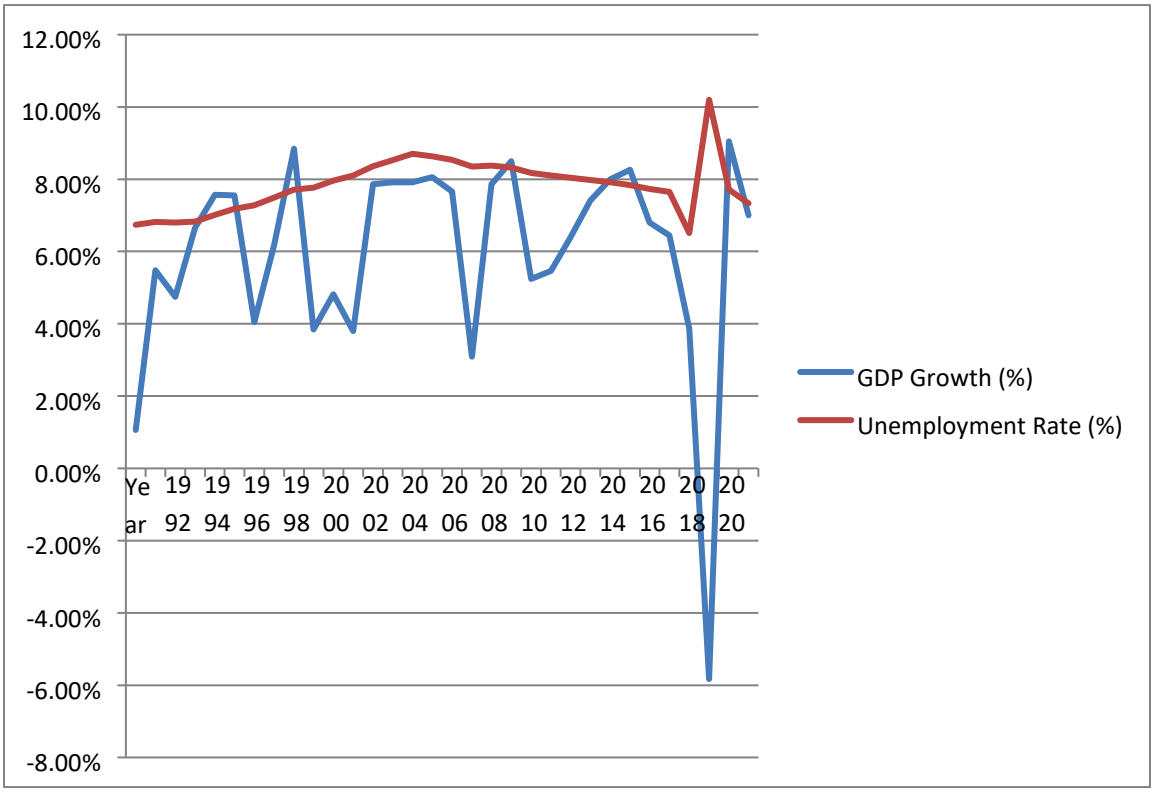
India's unemployment rate for 2022 was 7.33%,a 0.38% decline from 2021. The country's unemployment rate slowed to a six-year low in the July 2022-June 2023 as employment opportunities improved after pandemic-induced curbs had hurt jobs, the pandemic Labour Force Survey (PLFS) showed.


GDP Growth (%)
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
-6.00%
-8.00%
Year 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022
y = 4E-05x + 0.0592
R² = 0.0002
GDP Growth (%)
Linear (GDP Growth (%))


Unemployment Rate (%)
12.00%
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
Year 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020
y = 0.0003x + 0.0729
R² = 0.171
Unemployment Rate (%)
Linear (Unemployment Rate (%))


ANNUAL CHANGE IN GDP GROWTH %
20.00%
15.00%
10.00%
5.00%
0.00%
-5.00%
-10.00%
-15.00%
Year
1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020
Annual Change


ANNUAL CHANGE IN UNEMPLOYMENT RATE %
4.00%
3.00%
2.00%
1.00%
0.00%
-1.00%
-2.00%
-3.00%
Year
1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020
Annual Change



(B) Empirical Result

Test of stationarity

To understand the relationship between economic growth and unemployment rate in India. It is important to check the stationarity of both variables used in the co-integration test. To check the stationarity of the time series data Augmented Dickey Fuller test has been conducted. The null hypothesis of the test is that the series is having unit root i.e. series is non-stationary while the alternative hypothesis is that the series is stationary. For co-integration test, is important that the series should be non-stationary at level while it should be stationary at level while it should be stationary at first difference or second difference. It should be stationary same difference. The level of significance is 5% for the present objective.

Table report the result of unit root test for the variables for the variables used in the present objective.

Unit Root Tests of Variables Used in the Study: -

Variable	Level		t-statistic	Probability
GDP Growth (%)	level	Intercept	-5.510012	0.0001
		Intercept and trend	5.438440	0.0006
	1st difference	Intercept	-5.746443	0.0001
		Intercept and trend	-5.679552	0.0004
Unemployment rate(%)	level	Intercept	-1.880886	0.3361
		Intercept and trend	-1.493589	0.8086
	1st difference	Intercept	-7.16105	0.0000
		Intercept and trend	-7.17593	0.0000

It is clear from the result that both variables are non-stationary at level while they are stationary at their first difference. Therefore, all series can be used for further tests like cointegration and causality test co-integration.

Co-integration Test: -Johansen Fisher co-integration test gives the result that null hypothesis of no co-integration gets rejected since the probability value of Max Eigen statistics and trace is less than 5% (0.05) level of significance.

Johansen Fisher Co-integration Test

Hypothesis No. of CE(s)	**Fisher Stat. (from trace test)**	**Probability**	**Fisher stat. (from max Eigen test)**	**Probability**	**Conclusion**
None	19.85	0.0103	13.93	0.0562	Accepted
At most 1	5.92	0.0150	5.92	0.150	Rejected

It can conclude that the null hypothesis of existence of none the, null hypothesis gets accepted because probability value of the Max Eigen statistics is greater the 5% (0.05) level of significance and the null hypothesis of does not existence of at most1, the null hypothesis gets rejected. It can be concluded that there exists a long run relationship among the variablesince GDP growth and unemployment rate are co-integrated together in the long run.

CONCLUSION AND POLICY IMPLICATION

Conclusion

The main purpose of the study is t examine the relationship between economic growth and unemployment rate in India; specially it focuses on the impact on unemployment on economic growth for the period 1991 to 2022. Similarly, to study the

relationship between GDP and unemployment rate in India was another objective to test the validity of Okun's law with respect to in India. Okun's law for the Indian economy is very weak supporting jobless growth in India. The co-integration test was used in this analysis. The variable such as gross domestic product used as common proxy for economic growth and unemployment rate were employed in the investigation. Stationarity test was conducted through the application of the Augmented Dickey-Fuller (ADF) test, and the results indicated that all the variables except unemployment were stationary at level, while unemployment became stationary after first differencing. Further, the result of the Johansen co-integration test revealed that significant the long run relationship exists among the GDP and unemployment. Empirical evidence suggested "jobless growth" in India. However, it recommends employment-led growth strategies that would not enhance GDP but also will ensure inclusive growth. Various factors responsible for this weak relationship between GDP and unemployment rate in India. Relative employment of labour play a crucial role to define the quantitative relationship of economic growth and unemployment. Short disturbance like demonetization, GST implication and local factors like trade tensions, nosediving metals and oil prices and global COVID-19 pandemic has increase unemployment and reduce the GDP of India.

Policy Implication

India is not a country although it is a continent. Therefore, we need a separate growth model for each state keeping in view of their nature, pattern of economic growth and availability of resources-natural, physical, and human. For example, Kerala and Gujarat growth model fit in their economic setup. The Kerala materialised theme of "Yatha Raja Tatha Praja" ("as is the king, so are the subjects") and Gujrat materialised „Yatha praja Tatha Raja" ("as is the subjects, so are the king) that is the very essence of contemporary political system. In the same way, Uttar Pradesh has latent energy to develop a service sector led growth model to grow with unlimited potential by developing human capital- making a productive and efficient health & education sector in the country as well as in the world. There are following Policy suggestion for the Indian economy-

- Investment should increase for human capital formation. It necessitated dramatic reforms in the education system. Education system should be job oriented, innovative, and productive that is not only able to create productive manpower but also produces job creators.
- It should promote inventions and innovations in the production process as well as of new products. Health infrastructure should be resilient. It should be capable of meeting emergency situations. Better health and education system will provide a healthy and productive labour force on the one hand and will increase GDP on the other hand.
- India should more infrastructure development such as contraction of roads, railways and bridges, which will lead to economic growth and will also generate employment. As we are seeing right now, more and more infrastructure development is happening in India.

Industries should be setup in such areas where people do not have jobs, which will generate employment in that area, those who need employment will get employment, which will reduce unemployment and ultimately increase the economic growth of the country. Most of the population in India lives in rural areas, so such policies should be made so that people living in rural areas can get maximum employment and the work they should be productive, which will also increase lead to economic growth and also reduce the unemployment. A new legislation necessary to check population growth. Family planning programmes should be implemented widely and effectively. Inflation should be in tolerable limits. Supply bottlenecks should be addressed. India also needs safety nets to protect jobs and livelihoods of poor in times of abnormal situations like COVID-19 pandemic.

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