**A STUDY ON THE RELATIONSHIP BETWEEN THE GROWTH OF THE ECONOMY AND UNEMPLOYMENT IN INDIA USING THE ORDINARY LEAST SQUARE METHOD**

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INTRODUCTION

The two main indicators that simultaneously inform policymakers and the general public about a nation's economic development are economic growth and the unemployment rate. Arthur Melvin Okun proposed a theoretical relationship between economic growth and unemployment that states that as GDP rises, employment levels rise, and unemployment decreases. Unemployment is a major issue for developing nations like India because it is the main driver of the nation's rising poverty. Even if every growth statistic, including the GDP, points to a significant economic improvement, the unemployment rate in the nation is still rising. The employment market is still having difficulties despite the fact that the economy's main indices indicate a quick recovery. Lack of employment opportunities could slow long-term economic growth by reducing overall purchasing power, which would limit consumer demand.

OBJECTIVES

1. To study the relationship between GDP and unemployment using ordinary least square method.
2. To check the validity of Okun’s law in Indian economy.

OKUN’S LAW

Okun's law is a statistical observation that describes the correlation between growth rates and unemployment. Arthur Okun, a Yale economist who was a member of President Kennedy's economic advisory group, developed Okun's law. Okun promoted utilizing fiscal policy to control inflation and boost employment as a Keynesian economist. In the 1960s, he made the initial argument that unemployment and GDP are correlated. The number of workers employed determines how much production a country's economy produces. Production rises when there are more labourers. According to him, there is an inverse relationship between unemployment and GDP(or GNP). Generally, a 1% decline in employment is followed by a 2% decline in GDP. Similarly, a 1% increase in employment is linked to a 2% rise in GDP. When effective demand is low, economic development slows, forcing firms to cut workforce in order to adjust production costs. Due to weak consumer demand, these workers are made redundant. Since there is insufficient demand for goods and services, GDP will decline as a result. Okun's law aimed to explain how much of a nation's GDP might be lost when the unemployment rate is higher than the natural rate.





y = Actual GDP

y\*= Potential GDP

u=unemployment rate if the current year

u\*=unemployment rate of previous year

Okun coefficient

y-y\*=output gap

Output gap ( the difference between actual GDP and potential GDP) divided by potential GDP equals the negative Okun coefficient multiplied by the change in unemployment. Negative represents the inverse relationship between unemployment and GDP.

This law aids in calculating the gross domestic product and gross national product. The percentage increase in the gross domestic product that occurs when unemployment decreases by 1% is known as the Okun coefficient.

The gross domestic product and gross national product of a country are both influenced by a variety of factors. Although the unemployment rate and economic growth have a negative correlation, the degree to which they are impacted still varies. Since numerous factors influence a country's gross domestic product and gross national product, it is challenging to make accurate forecasts using simply Okun's law. Although the unemployment rate and economic growth have a negative correlation, the degree to which they are impacted still varies. Because of this, some economists claim that Okun's law has limited use as a forecasting tool.

METHODOLOGY

The empirical relationship between unemployment and the economic growth of India was examined in this study using annual growth rate and unemployment rate data from the world bank database for the period of 1991 to 2020. Okun’s law's description of the empirical relationship between unemployment and economic growth is determined using the ordinary least squares (OLS).

Unemployment=f(GDP);

Unemployment is the dependent variable and GDP is the dependent variable

Y=b0+b1Xi+ui

Unemployment rate=b0+b1growth rate+ ui

bo is the intercept and b1 is the slope

ui is the error term

DESCRIPTIVE STATISTICS AND INTERPRETATION

From the Ordinary least square method we obtained the following values

Two variables are the unemployment rate and growth rate. The dependent variable is unemployment rate and the independent variable is growth rate

Y=6.28108-0.11077xi+ui

Beta 1 as -0.11077

Beta 0 as 6.28108

R square as 0.50879

Equation for the trend line is y = -0.1108x +6.2811

The value recorded by the coefficient is -0.11078,the minus sign implies the negative relationship between growth rate and the unemployment rate. Even if growth is 0 there is 6.28(Beta 0) unit unemployment

If there is 1% increase in growth rate then unemployment increases by -0.11078

50% variation in unemployment rate is explained by growth rate.

Null hypothesis(H0) There is no relationship between the two variables, growth rate and the unemployment rate.

Alternative hypothesis(Ha) there is a significant relationship between the two variables , growth rate and the unemployment rate.

P value for the intercept is less than 0.5

P value for growth rate which is the independent variable is 0.00001 which is less than 0.5

Since the P value is less than 0.5,we can reject the null hypothesis. Which means there is a significant relationship between 2 variables growth rate and the unemployment rate.

The t value is greater the data is significant at 95% level

Beta 1 value -0.11078 says that growth rate has influenced by unemployment rate by 11 per cent only remaining 89 percent is influenced by factors other than unemployment rate.

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CONCLUSION

This study's primary goal was to look at the relationship between unemployment and economic growth in India from 1991 to 2020.From the above analysis we can conclude that both unemployment rate and growth rate are correlated and the relationship between these two variables are negative. In a country like India, unemployment rates have an impact on growth. It should be noted that unemployment is not the only factor influencing the country's growth rate; many other factors are also influencing the country's growth rate. So, to a certain extent, the Okun’s law applies in the Indian economy.

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