

Unemployment, Public Expenditure & Economic Growth in India During Post Economic Reform Period

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Abstract

The paper examines the unemployment, public expenditure, and economic growth relationship in the Indian economy. A model of unemployment, public expenditure, and economic growth was formulated and the time series data were corrected for stationarity using the Hodrick-Prescott filter. The growth rate of the economy has a positive but relatively low correlation coefficient with the unemployment level in India and has influenced the unemployment rate only by 8 percent. Besides, the unemployment rate has also a low correlation coefficient with public expenditure. A log linearized version of the model has revealed that the employment elasticity of economic growth was negative and significant which indicates the notion of jobless growth applied to the Indian economy during the post-economic reform period. The high level of unemployment currently experienced in India can be attributed to the low employment intensity of GDP growth. The negative relationship between the level of employment and GDP growth rate is a pointer that investments are capital-intensive that needs to be reversed with a policy of labor-intensive investment to contribute significantly to employment generation. The government should urgently create more employment opportunities to absorb the unemployed workforce through the modernization of the agriculture sector, which is providing livelihood to nearly half of its population but contributing too small towards the gross domestic product.

Keywords: Unemployment; Economic Growth; Economic Reform; Real Gross Domestic Product; Public Expenditure. *JEL Classification.* Codes: E24; J21; O47.

Introduction

The goal of achieving employment is the most important among the macroeconomic goals in India, where unemployment and underemployment have been major causes and consequences of widespread poverty. Despite the high-sounding electioneering promises of political leaders, the achievement of employment remains a mirage. The high rate of unemployment and poverty among the other miseries of the populace are the order of the day. Economic growth generally ameliorates unemployment concerns. India pushed the economy to grow at a faster rate by suitably structured policy to help employ its millions of workforce every year. Economic reforms introduced in 1991 were seen as a breakthrough in this strategy. Even while all growth indicators including the gross domestic product (GDP) imply a strong economic improvement, unemployment in the country continues to rise. While major economic indicators point to a fast rebound, the employment market as a whole is struggling hard and has not helped to alleviate its unemployment problem. India's macroeconomic challenges continue to be stagnant economic growth and high unemployment. According to the latest employment data, employment growth in India slowed dramatically from 2012 to 2016, while an absolute decline in employment was recorded for the first time from 2013-14 to 2015-16. Kannan & Raveendran who conducted an independent survey reported a net decline in employment and an increase in unem-

ployment [1]. United Nations (ILO) also reported an increment in unemployment in India from 17.6 million in 2016 to 18.0 million in 2018. Economists point out that the reason behind this scenario was not to link economic growth with proportionate employment expansion. The expansion of the Indian economy has created just a limited number of well-paying employments. India's workforce increased by 63 million between 1990- 2000, while employment in the organized sector fell by three million, and twenty-two million of the workforce became unorganized workers in the organized sector. India's labor force participation rate was 58.3% in December 1990, which declined to a record low of 36.9% in December 2018, though increased to 41.6% in December 2021. Lack of job possibilities may strife long-term economic growth by lowering the purchasing power of the common people, which would lead to a drop in their consumption demand.

Economic Reform & Unemployment

Unemployment in India is attributed to the negative development of economic activities; the substitution of labor for capital; and an increase in workforce supply. The country was facing the challenge as early as the 1980s when it was operating under a 'one-sector growth model. India took initiative in the 1990s in the form of Economic Reforms that characterized pro-market orientation that includes the followings: (i) fiscal policy reforms,

aimed at rationalization of the tax structure, and reduction of subsidies & fiscal deficit; (ii) financial sector reforms that included liberalization of interest rates, relaxation of controls on capital issues, freer entry for domestic and private foreign banks, and opening up of insurance sector; (iii) liberalization of industrial policies and abolition of industrial licenses; (iv) reforms in foreign trade and investment, liberalizing foreign trade in goods, services, and technology, eliminating import licensing, reducing non-tariff barriers and liberalizing foreign direct and portfolio investment; (v) infrastructure sector reforms, encouraging private investment in infrastructure and telecommunication; and (vi) reforms in agriculture, relating mainly to both internal and external trade in agricultural commodities. Thus, the thrust of the reforms had been to open the Indian market to international competition, reduce government control, encourage private investment & participation, liberalize access to foreign capital and attract foreign capital. These reforms were aimed to curb the problem of capital inadequacy in the country for the stagnant growth, but the implication of these policies lagged behind the economic and employment growth leading to more unemployment, which economists are more concerned to portray the recent experience of one of the jobless growth [2]. Michael, Eme-ka, & Emmanuel provides results regarding Granger causality between economic growth and unemployment in Nigeria. However, it has been found that the unidirectional relationship between unemployment and economic growth with causality runs from the real gross domestic product (RGDP) to unemployment [3]. Rosin & Rosin examined that unemployment and economic growth have strong negative relations in the U.S.A over the period 1977-2011 [4].

Theoretical Issues

The desire to expand decent and productive employment is at the heart of national macroeconomic policies geared toward poverty reduction. The implementation of policies on employment creation has not yielded much impact as there is a wide gap between the jobs available and the number of job seekers actively seeking work. Apart from the level of decent jobs diminishing, the challenge of globalization and economic liberalization has brought about new realities having uncertain implications for employment creation in many developing countries [5]. The high rate of labor force growth vis-à-vis, the low and dwindling rate of the formal sector of job growth has made the labor market in developing countries exhibit some peculiar characteristics : (i) widening of the informal sector where many who would have remained in open unemployment take-up low-wage job or even self-employment while still hoping to take-up formal sector job when available; (ii) the unemployed in the labor market do not get any benefit or insurance from the government; (iii) the unemployment rate in the official documents are usually low due to high rate of disguised employment and underemployment in the informal sector; and (iv) self-employment, part-time employment, and unpaid employment in the family enterprises have a disproportionate share in total employment. All of these point toward the need for a solution to the employment problem. In the classical labor market, the concept of unemployment is explained by the price flexibility of labor market disequilibrium, a shortage or surplus of labor is dealt with by wage movement to

remove the incidence of involuntary unemployment. However, at the ruling market clearing wage, unemployment that can exist is the voluntary and frictional type. Keynes recommends fiscal policy measures in the form of the government deficit budgeting spent on public work to remove the incidence of involuntary unemployment- which may be applicable in the developed economy but its potency is doubtful in developing economies as they suffer from chronic unemployment for a long period due to either deficiency or inefficient use of capital or other co-operant factors. Thus unemployment in developing / underdeveloped nations might not be receptive wholly to demand-augmenting policies due to structural rigidities, especially regarding the supply of output. As a result, increases in aggregate demand will only lead to rising product prices rather than increasing employment. Besides, the developing nations have enormous disguised unemployment, which did not receive attention in Keynes's policy.

Objective of the Study

In economic literature, the relationship between unemployment and economic growth is described by Okun's law. This study aims to look at the relationship between unemployment, public expenditure, and real gross domestic product (RGDP) in the Indian economy during the post-economic reforms introduced in 1990. The study covers the overall duration of 1990 to 2021 to examine whether economic growth stimulates the unemployment rate or the unemployment rate stimulates economic growth and focuses attention on how the economic reforms and public expenditure have influenced the relationship between these macro variables.

Methodology

This study uses descriptive statistics to determine whether three sets of data on Real GDP (R); Public Expenditure (E), and Unemployment (U) are normal or asymmetrical from the mean. In the next stage, stationarity was tested by the Augmented Dickey-Fuller unit root test to determine the order of integration of data series. If the series is determined to be stationary it means that its mean, variance, and covariance remain constant over time and that the result of the analysis is reliable and can be used to forecast future economic activities.

The ADF test was carried out using the models

$$\Delta R_t = \alpha_0 + \alpha_1 R_{t-1} + \sum \alpha R_j + \varepsilon_t \quad (1)$$

$$\Delta U_t = \alpha_0 + \alpha_1 U_{t-1} + \sum \alpha U_j + \varepsilon_t \quad (2)$$

$$\Delta E_t = \alpha_0 + \alpha_1 E_{t-1} + \sum \alpha E_j + \varepsilon_t \quad (3)$$

Where ΔR_t , ΔU_t , ΔE_t and are data series, t is the linear time trend, Δ is the first difference operator, α_0 is constant, k is the optimum number of lags in the development variables, and ε_t is the residual term. If the ADF test result fails to reject the test in level but rejects the test in the first difference. It means that the series contains one unit root and is of integrated order one, and so on.

The Granger Causality test, suggested by Eagle & Granger (1989) is used in the second stage of the estimation procedure to examine the causality between unemployment and economic growth. It is mainly concerned with the nature of the relationship between the two variables, especially whether the relationship is

unidirectional, bidirectional, or there is no causality between the two variables.

$$U_t = \sum \alpha_j U_{t-j} + \sum \beta_j R_{t-j} + \epsilon_t \quad (4)$$

$$R_t = \sum \gamma_j U_{t-j} + \sum \phi_j R_{t-j} + \xi_t \quad (5)$$

Where α , β , γ , and ϕ are the parameters associated with unemployment and economic growth measured by the growth rate of real gross domestic product (RGDP); ϵ , and ξ are the error term; t is the current period and $t-j$ is the lag period.

Several studies employing various macroeconomic variables have examined the unemployment/employment-economic growth relationship in both developing and developed nations. Lavine and Renelt, Barro Becker and Sinha used simple regression analysis to assess the relationship between the level of employment and other macro-variables highlighted in their studies [6-9]. Pendolino and Vivarelli used panel data to study the employment/ economic growth relationship in G-7 countries [10]. Fofana studied the employment-economic growth relationship for a single country Cote d'Ivoire using time series data for the study [11]. The methodology of this study takes after Fofana uses the regression model expressing the relationship between economic growth (R), public expenditure (E), and unemploy-

ment rate (U) as represented by

$$U = f(R,E) \quad (6)$$

Where U represents the total unemployment level in the economy; RGDP represents the growth rate of the real gross domestic product, and E represents the public expenditure for the period under review. Equation (6) is represented in log-linearised form as

$$U = \alpha + \beta_1 (R) + \beta_2 (E) + \epsilon \quad (7)$$

Where U is the dependent variable, R is the explanatory variable α , β_1 , & β_2 are the coefficients and ϵ is the residual term. Empirical verification of the above model for the relationship between unemployment, public expenditure, and economic growth in India during the post-reform period (1990-91 to 2020-21) was based on the data from the World Bank database supplemented by the Government of India.

Result and Discussion

Descriptive Statistics: Mean, Median, Standard Deviation, Skewness, and Kurtosis for the unemployment rate, public expenditure, and real gross domestic product were computed for the post-reform period 1991-92 to 2020-21. These values are indicated in Table 1.

Table 1: Descriptive statistics of Unemployment rate, Public Expenditure & Growth rate of RGDP, India.

Descriptive Statistics	RGDP	Unemployment	Public Expenditure
Mean	5.788	5.760	5.267
Median	6.596	5.655	5.304
Standard Deviation	3.221	0.308	0.457
Skewness	-2.882	3.567	3.122
Kurtosis	11.130	17.308	15.644

Source: Authors' computation.

The economic growth in India during the entire period of 1990-91 to 2020-21 is congregating around the mean value of 5.788 during the post-reform period 1991-92 to 2020-21 indicating a significant positive change in the growth rate of RGDP. The unemployment rate is congregating around the mean value of 5.760 during the post-reform period, also indicating a significant increment in the unemployment rate. The public expenditure is congregating around the mean value of 5.267 during the post-reform period, also indicating a significant increment in the public expenditure. The movement of these series suggests that though economic reform meets its basic objective of economic growth and enhanced public expenditure but added many more unemployed forces in the economy to pull it down in the long run besides creating numerous social problems. The standard deviation of the economic growth series is much higher than the unemployment rate and public expenditure series, implying more volatility in the economic series than in the unemployment

and public expenditure series. The values recorded by skewness and kurtosis coefficients show that all these series of growth rate, public expenditure, and unemployment are not normally distributed and are asymmetrical, as the values are greater or lesser than the absolute one. Hence these series are not suitable for further analysis without detrending them through the Hodrick-Prescott filter [12]. To purge data of non-stationarity the data series were detrended using the Hodrick – Prescott Filter to ensure stationarity of the variables. The Hodrick-Prescott Filter is a smoothing method that is widely used among macroeconomists to obtain smooth estimates of the long-term trend component of the series. [Ayoyinka & Isaiah, 2011].

Besides these descriptive statistics, a correlation matrix that shows the magnitude and direction of the relationship between each pair of variables being analyzed was also worked out and is presented in Table 2.

Table 2: Correlation Matrix of Variables

Variable	U	R	E
U	1.0000	0.0978	0.2801
R		1.0000	0.8749
E			1.0000

Source: Authors' computation.

The Correlation Matrix is symmetric about the diagonal and the diagonal has a value of 1.0000 since there is the perfect correlation of the variable with itself. It was observed that the growth rate of RGDP has a positive but relatively low correlation coefficient of 0.0978 with the unemployment level in India. Besides, the unemployment rate has also a low correlation coefficient of 0.2801 with public expenditure. This is surprising as economic growth and public expenditure are expected to be job-creating and as such expected to exhibit a positive and strong correlation

but is not visible in the Indian economy for the period under review. However, as expected the growth rate of RGDP has a high positive correlation of 0.8749 with the public expenditure.

The stationary test

The stationary test of the time series employed in the study was investigated through the application of the Augmented Dickey-Fuller (ADF) test, the results of which are depicted in Table 3.

Table 3: Augmented Dickey-Fuller (ADF) test for R, E, & U.

Series	Level	1st difference	2 nd difference	Decision
U	-1.408646	-5.244630	-4.807088	I(1)
R	-6.554013	-5.701999	-3.676568	I(0)
E	-1.867778	-7.553897	-7.209272	I(1)
Critical value at 10%	-3.24	-3.24	-3.26	

Source: Authors' computation.

Results in Table 3 indicate that U & E series are non-stationary at a level of 10%, whereas R is stationary at 10%. So these series can't be used for further analysis before detrending as that may cause spurious results. Hodrick-Prescott filter was employed for detrending and the absolute value of ADF statistic at 1st difference was more than the critical value at 10%, which implies that both the series became integrated of the same order after the first differencing and that mean-variance and covariance are constant over time and the long-term properties of the series are established.

Granger Causality Test

The F statistic value of the causality that runs from unemployment to real gross domestic product is 0.1284 with an associated p-value of 0.7228, whereas the F statistic of the causality that runs vice versa is 2.2086 with an associated p-value of 0.1488.

Since the p-value of the null hypothesis is more than 0.05 level of significance, the corresponding null hypothesis can't be rejected. This implies that the change in any one of them does not make a change in the other variable. Changes in these variables are affected by the factors not included in the study.

Ordinary Least Squares

Results of the Granger causality test show that there is no causation between economic growth and unemployment in India over the period 1990-2021; whereas Okun's law describes the strong negative relationship between economic growth and unemployment in India [13]. These results are contradictory to each other. This study has further used a simple regression analysis to find the intensity of the unemployment rate concerning the real gross domestic product in India, whose findings are presented in Table 4

Table 4: Results of Ordinary Least squares.

Variables	Co-efficient	Standard Error	t- statistics	Prob.
GDP Growth Rate	-0.081	0.018	-3.480	0.002
R ²	0.295	Std. The error of the estimate of		0.175
Adj. R ²	0.270	Durban- Watson		2.047
F- Statistic	11.726	Prob. (F- Stat.)		0.002

Source: Authors' computation.

Results expressed in Table 4 were obtained from the Ordinary Least Squares between the unemployment rate as the dependent variable and the real gross domestic product as the explanatory variable in India. Related relevant probabilities such as t-statistic, R², Adj. R², F- Statistic, and Durban-Watson test were also taken into consideration to obtain reliable results.

The probability associated with the t-statistic computed for the coefficient corresponding to the independent variable was 0.002, which is smaller than the significance level of one or five percent. Therefore, the null hypothesis cannot be rejected. This emphasizes that the coefficient estimated by the ordinary least squares is significantly different than zero, so the evolution of

the unemployment rate has been influenced by the evolution of economic growth and explains the regression coefficient. The value recorded by this coefficient is -0.081. The minus sign implies the negative relationship between the unemployment rate and economic growth, but the intensity of change in the unemployment rate by the change in economic growth is very small, which leads us to conclude that economic growth has influenced the unemployment rate only by 8 percent and the remaining 92 percent of the unemployment rate is by other factors – not included in this study.

The R² value shows the proportion of the dependent variable explained by the independent variable. The value of the R² statistic for this model is equal to 0.295 and the associated F- statistical probability value is 0.002, which is significant at both 1 percent and 5 percent significance levels. Thus, it could be concluded that the model is valid and Okun’s law is not wholly applicable in India over the study period 1990-2021. As the R² and Adj. R²

is not very high, we could safely conclude that variables other than the economic growth rate might explain the relationship between unemployment and economic growth in India. The Durban-Watson test value of 2.04 leads us to conclude that the data series is free from collinearity whose presence may have created spurious regression.

Regression Analysis

The results of the regression analysis estimating the relationship between unemployment and selected macroeconomic variables are presented in Table 5. The equation was estimated with unemployment as the dependent variable and real GDP and public expenditure as the explanatory variables. Table 5 mention the results of the regression analysis at levels and after detrending for a linear form of the variables (column 2 &3) and a log-linear form of the variables (column 4 & 5).

Table 5: Results of the regression analysis at levels and after detrending.

Variables/Constant	Regression at Level	Regression after de-trending	Coefficient	t-Statistic
1.	2.	3.	4.	5.
Constant	7.7583 (1.7363)	16.3445(5.2567)	3.7118***	26.2806
R	0.0038(0.0536)	0.3528(1.6971)	0.0478	7.5805
E	0.0397***(7.7531)	0.0451***(7.7327)	0.2185***	5.3268
R2	0.8454	0.0997	0.9558	
Adj. R2	0.8233	0.9969	0.9488	
F- Statistic	38.2921	26.2349	136.9352	
D-W Statistics	2.3150	2.0191	2.2798	

Note 1. *** are values significant at 1%; 2. Results in column 2 & are the results of the linear relations. ; 3. Values in parenthesis in columns 2 & 3 are the t-statistic. 4. Results in columns 4 & 5 are the results of log-linear detrended regression. Source: Authors’ computation.

Results of the log-linear form of the variables as expressed in columns 4 & 5 of Table 5 are important as the coefficients therein could be interpreted as elasticities. The real GDP growth rate has an unemployment elasticity of 0.0478 – meaning that a unit change in the growth rate of GDP brings about a 0.0478 percent change in unemployment. Similarly, a unit change in the growth rate of public expenditure can bring a 0.2185 percent change in unemployment. These elasticities provide some numerical measures of how unemployment varies with growth in economic output on the one hand and other related macro variables on the other hand. Though discussed less frequently in labor market indicators these elasticities provide important information about the labor market. Since the unemployment elasticities of economic growth and public expenditure are less than one, these are indicative of the fact that a given level of output growth produces less than a proportionate change in the level of aggregate employment in the economy. This observed inelastic relationship between the employment growth rate and the growth rate of GDP in the Indian economy is an object of concern because it is low to the recommended figure of 0.7 by an ILO-sponsored study by Khan and the view expressed by the ILO that countries with a large number of impoverished workers

may need to achieve relatively higher employment elasticities than the developed countries with less labor abundance –to provide sufficient employment opportunities for the poor [14, 15]. Developing economies have higher surplus labor and require higher employment elasticities for a given rate of economic growth in comparison to developed economies.

Conclusion

This study examines the relationship between unemployment, public expenditure, and economic growth in India over the period 1990-2021 by estimating the elasticity of economic growth using the Ordinary Least Square econometric approach. The variables taken were the unemployment rate and real gross domestic product as an indicator of economic growth. The results of the descriptive statistics show that the variables were not normally distributed. The stationarity test conducted through the application of the Augmented Dickey-Fuller (ADF) test indicated that the variables were stationary after detrending the series by the Hodrick- Prescott filter at the first difference.

The Granger causality test indicated no causation between the variables, that is neither the unemployment to gross domestic

product nor the gross domestic product to unemployment. The results obtained from the regression analysis of unemployment on public expenditure and economic growth as the explanatory variable confirm only 8 percent impact of economic growth on unemployment and are inversely related to each other, while the remaining 92 percent are by the other factors not included in this study. The relatively smaller values of R^2

show that unemployment rate evolution is largely influenced by the other factors, which are not part of this study. Thus, this study concludes that the relationship between unemployment and economic growth is not strong enough for the Indian economy and is contradicting the Chand study in terms of the intensity of the relationship between the two variables [13].

A simple model of unemployment, public expenditure, and real GDP growth rate using a non-linear version that was log linearised for econometric estimation purposes has revealed two important findings:- 1. The employment elasticity of economic growth was negative and significant which indicates that the notion of jobless growth (where economic growth is negative to the level of employment) apply to the Indian economy during the post-economic reform period (1990-2021). The high level of unemployment currently experienced in India can be attributed to the low employment intensity of GDP growth (0.0478 percent). ; 2. The negative relationship between the level of employment and GDP growth rate is a pointer to the fact that investments are capital-intensive.

Recommendations & Implications

India a labor-surplus economy should have a labor-intensive method of production. Several implications for policy formulation and further research can be gleaned from this study:

1. Given the low elasticity of employment relative to the recommended benchmark, the public sector has a key role to play in job creation along with the private sector.
2. The Government is providing the necessary macroeconomic environment for economic growth enhancement, its policies on the quantum and distribution of public expenditure are expected to improve employment generation which in turn is expected to increase the level of output. The current policy of capital-intensive investment needs to be reversed with a policy of labor-intensive investment to contribute significantly to employment generation.
3. The economic reform of the 1990s adopted policies which are majorly capital-intensive and retarded employment growth with an increase in the gross domestic product. Since India is a labor-abundant country, it is suggested that the government should urgently create more employment opportunities to absorb the unemployed workforce through the modernization of the agriculture sector, which is providing livelihood to nearly half of its population but contributing merely 14 percent towards the gross domestic product.

References

1. Kannan, K. P., & Raveendran, G. (2019). From jobless to job-loss growth. *Economic and Political Weekly*, 54(44), 38-44.

2. Padder, A. H. (2018). Changing Pattern of Economic Development and Employment in India: An Interstate Analysis. *Social Science and Humanities International*, 1-29.
3. Michael, E. O., Emeka, A., & Emmanuel, E. N. (2016). The relationship between unemployment and economic growth in Nigeria: Granger causality approach. *Research Journal of Finance and Accounting*, 7(24), 153-162.
4. Rosoiu, L. & Rosoiu, A. (2014): The Relation between Unemployment Rate and Economic Growth in U.S. A, *International Journal of Economic Practices & Theories*, 162-167.
5. Ogunrinola, I. O., & Osabuohien, E. S. (2010). Globalisation and employment generation in Nigeria's manufacturing sector (1990-2006). *European Journal of Social Sciences*, 12(4), 1-13.
6. Levine, R., & Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *The American economic review*, 942-963.
7. Barro, R. J. (1991). Economic growth in a cross section of countries. *The quarterly journal of economics*, 106(2), 407-443.
8. Becker, G. S., Murphy, K. M., & Tamura, R. (1990). Human capital, fertility, and economic growth. *Journal of political economy*, 98(5, Part 2), S12-S37.
9. Sinha, J.K.(2022): Public Expenditure for Agricultural Development & Economic Growth of Bihar (1981-2019), *Asian Journal of Economics & Finance*, Vol.4(4), pp. 414-424.
10. Padalino, S., & Vivarelli, M. (1997). The employment intensity of economic growth in the G-7 countries. *Int'l Lab. Rev.*, 136, 191.
11. Fofana, N. Z. F. (2001). Employment and economic growth in the Cote d'Ivoire: An analysis of structural determinants. *african development review*, 13(1), 98-113.
12. Hodrick, R.J. & E.C. Prescott (1997): Post-war U.S. Business Cycles: An Empirical Investigation, *Journal of Money, Credit, and Banking*, pp.1-16.
13. Chand, K., Tiwari, R., & Phuyal, M. (2018). Economic growth and unemployment rate: An empirical study of Indian economy. *Pragati: Journal of Indian Economy*, 4(2), 130-137.
14. Khan, A. (2001): *Employment Policies for Poverty Reduction: Recovery and Reconstruction Department*, ILO, Geneva.
15. International Labour Organisation (2001): *Key Indicators of Labour Market (KILM)*, 2001-2, ILO-UNDP.
16. Abraham, V. (2017). Stagnant employment growth: Last three years may have been the worst. *Economic and Political Weekly*, 52(38), 13-17.
17. Sodipe, O. A., & Ogunrinola, O. I. (2011). Employment and economic growth nexus in Nigeria. *International Journal of Business and Social Science*, 2(11).
18. Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. *Econometrica: journal of the Econometric Society*, 251-276.
19. U.N.Report/ India News- The Times of India, September 27, 2021 (ND): Unemployment in India to Increase marginally in 2017-18.

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