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A Study of Interrelationship between Inflation and Unemployment: A Phillips Curve Approach

Shobhit Sagar*

Introduction

The trade-off between Unemployment and Inflation in conjunction with the sectors used high level trendy technology machinery and excess labour force of the country this results effects the economy underemployment. It is nature for short run period however unemployment is very crucial for it. Phillips Curve: Inflation and unemployment in economics, inflation refers to the sustained increase within the general price index of products and services in associate degree economy. Unemployment takes place once individuals haven't any jobs however they're willing to figure at the prevailing wage rates. Inflation and unemployment are major key economic problems with a fluctuation. Each measure key economic performance indicators of any country and both indicators associated with one another a minimum of during a Short run. Inflation affects the level of unemployment in associate degree economy. Once policy manufacturers (Monetary or Fiscal) expand the aggregate demand by moving upwards on the combination-supply curve, there's growth in the aggregate output and low level of unemployment (as to provide more output,

* Research Scholar, Department of Accountancy and Law, Faculty of Commerce, Dayalbagh Educational Institute (Deemed University), Dayalbagh, Agra, U.P., India.

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additional labor input is required). However, comes at the price of rising price index (Demand pull inflation).Thus, there's a trade-off between inflation and state. Lower unemployment comes at the expense of upper inflationary pressure on the economy. This trade-off between inflation and unemployment rate is explained by Phillips curve.

Need of the Study

Inflation rate and unemployment rate are two of the key indicators of an economy. There are many researches done which are related to these factors and analysis is made, many scientists who still discuss the connection between them, but does this connection actually exist? How do they influence each other and is there any trade-off between these two indicators? To answer these questions, we need to analysed the works dedicated to the this study which includes theoretical concept of Phillips curve trend analysis and % change during the selected years and at last analyses the statistics of inflation and unemployment in India with the help of graphs.

Objectives of the Study

- To study the trends of Unemployment and Inflation rate in India.
- To study and analyze interrelationship between Unemployment and Inflation rate in India through The Phillips Curve Approach.

Research Methodology

The paper used secondary information in period from 2008 to 2017. Therefore, Data were sourced and collected from central bank of India (RBI) and from Ministry of labour and Employment by using simple average, proportion technique and trade off relationship analyzed through trend line.

Theoretical Background of the Study

The Phillips curve explains the short run trade-off between inflation and unemployment. In step with Phillips curve, there's inverse relationship associated between unemployment and inflation. This implies that as Unemployment will increase in an economy, the inflation rate decreases. The trade-off between unemployment and inflation was initially reported by economic expert A.W. Phillips in 1958. In step with A.W. Phillips, policymakers will target either low rate of unemployment or low inflation rate in an economy however it's unfeasible to possess both inflation rate and unemployment rate similarly as low rate of inflation. This idea of A.W. Phillips was revealed in 1958 as a study titled "The relationship between unemployment and also the Rate of modification of cash wages within the UK, 1861-1957". In this article, he makes a diagram showing the link between the rate of unemployment and inflation within the Britain for every year from 1861 to 1957. Through the diagram, Phillips provided proof of a negative relationship between the rate of unemployment and inflation. Years with high unemployment rate have low inflation rate. In 1960, Paul Samuelson and Henry Martyn Robert Solow distributed a similar study of the link between unemployment and inflation within the

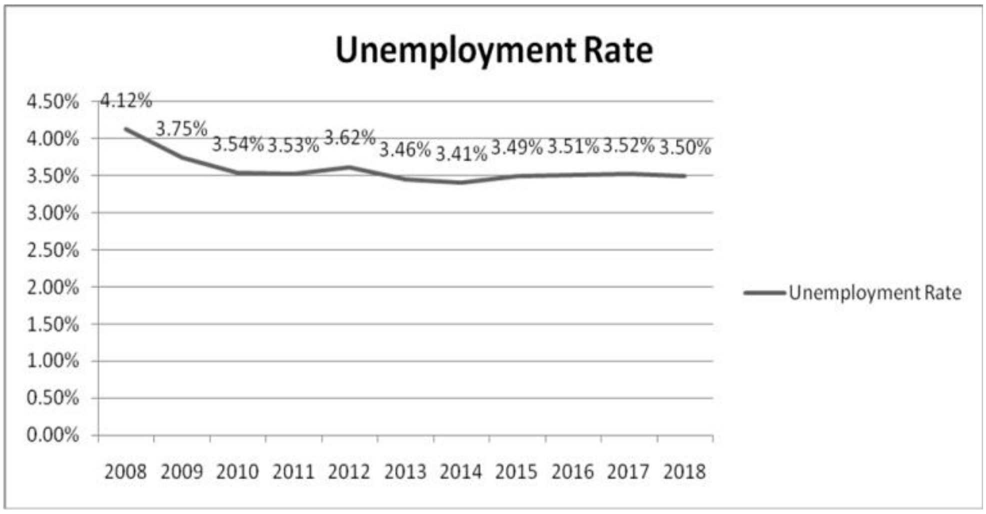
United States of America collected data set from year 1990 to 1960. They too observed a lot of or less, a stable non-linear relation between unemployment and inflation. This relation was labeled by Paul Samuelson and Henry Martyn Robert Solow as Phillips curve. The Phillips curve as shown traces the link between unemployment and Inflation once unemployment is on coordinate X axis and inflation on the coordinate Y axis. Phillips curve describes totally different attainable economic outcomes. Policymakers will value more highly to be anyplace on this curve by influencing combination demand through monetary and fiscal policy.

Result & Discussion

Unemployment rate in India The result and discussion based on objectives of the study firstly we have discussed about unemployment rate in India. The unemployment rate in India during 2008 to 2017, the table and trend line as given below.

Unemployment Rate in India

Unemployment rate is that the rate or say number of individuals as a proportion of the labour force, wherever the latter consists of the unemployed and those in paid or self-employment. Unemployed individuals are those that report that they're available for work, they had taken active steps to seek out their capable job in the last four weeks. Once unemployment ison high, some individuals become discouraged and stop searching for work; they're then excluded from the labour force. This means that the percentage might fall or stop rising, although there has been no underlying improvement within the labour market



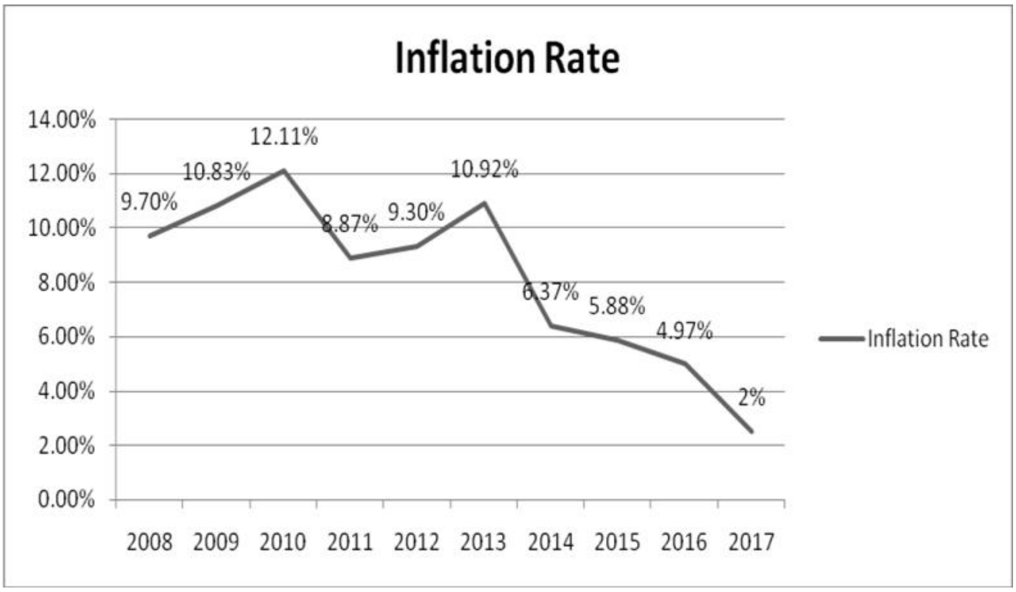
Graph 1 (Unemployment rate %) From the year 2008 to 2017 the unemployment rate decreased consistently from 4.12% to 3.51%.Unemployment Rate in India increased to 3.52 percent in 2017 from 3.51 percent in 2016. Unemployment Rate in India averaged up to 4.05 percent from 1983 until 2017, reaching an all-time high of 8.30 percent in 1983 and a record low of 3.41 percent in 2014.

Inflation Rate in India

In developing economy there are so many challenges and interruptions took place, especially when in context of the monetary policy with the Central Bank, with motive to maintain good inflation rate and price stability phenomenon to develop and achieved growth in the economy RBI (Reserve Bank of India) focus to maintain monetary supply through monetary tools) to strike balance between aggregate demand and supply and maintain inflation rate on that point.

The Quantitative Easing by the central banks with the result of adequate funds in an economy usually helps to extend or moderate inflationary targets. There's a puzzle formation between low-rate inflation and a high growth of monetary supply. Once the present rate of inflation is low, a high price of cash offer warrants the modification of liquidity and an additional rate of interest for a moderate mixture demand and also the shunning of any potential issues. Further, just in case of a down output a tightened monetary policy would have an effect on the assembly production in an exceedingly way more severe manner. The provision shocks have famous to play a dominant role within the regard of monetary policy.

Inflation Rate of India in Percentage During 2009-2017



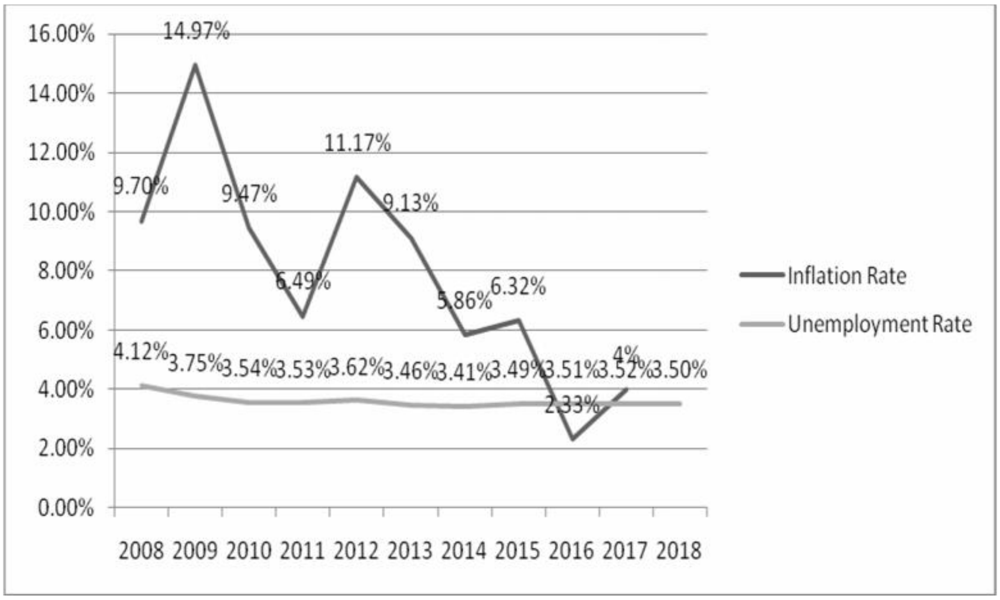
Graph 2 (Inflation rate %)shows average inflation rate (%) in India increased up to 12.11 per cent in period of 2010, then inflation rate is increased upto 10.92 per cent in year 2013 but it fall down to 6.37 per cent in 2017. It was decreased continuously and reached to 2.49 per cent in 2017. From the above data we can conclude that situation of inflation in India sometime increased or decreased i.e., fluctuated not linearly changed

Trade -off between Unemployment & Inflation in Indian economy during 2008-17

Table 1

Year	Inflation Rate	Unemployment Rate
2008	9.70%	4.12%
2009	10.83%	3.75%
2010	12.11%	3.54%
2011	8.87%	3.53%
2012	9.30%	3.62%
2013	10.92	3.46%
2014	6.37%	3.41%
2015	5.88%	3.49%
2016	2.33%	3.51%
2017	4%	3.52%
2018		3.5% {expected}

Source: RBI Bulletin



Graph 3 (Interrelationship between Inflation and Unemployment %) Unemployment rate almost remains constant from year 2008 to year 2017 but some minor fluctuations can be seen like in year 2008 4.12% unemployment rate but as we move further we get unemployment rate is decreased in year 2009 at 3.75% while inflation rate is on high at 14.97% in same year. Inflation rate again goes up from 6.49 to 11.17% in year 2011, it can also be noted fluctuations take place in inflation rate while unemployment rate slowly starts decreasing where the inflation rate is at high, unemployment rate remains constant or decreased by points.

Relationship between Inflation—Unemployment in India Percentage Change

Table 2: Computed

Years	% Changesin Unemployment Rate	%Changes in Inflation Rate
2009	-0.37%	1.13%
2010	-0.21%	1.28%
2011	-0.01%	-3.24%
2012	0.09%	0.43%
2013	-0.16%	1.62%
2014	-0.05%	-4.55%
2015	0.08%	-0.49%
2016	0.02%	-0.91%
2017	0.01%	-2.48%

From the graph 3 .and table 2, it has seen that whether Phillips curve situation exist in our Indian economy during study period .Phillips curve means inverse relationship between inflation and unemployment in the short run period. In above table 2009 registered unemployment rate change in 0.21 per cent while same period inflation rate positively with1.28 per cent. The years of 2015, 2016, 2017 the change in unemployment rate are 0.08, 0.02 and 0.01 percent respectively when at the same time the year of 2015, 2016, 2017 the change in inflation rate goes down from positive to negative, while in year 2013 at positive with 1.62% falls down to 0.49%, 0.91% and 2.48% respectively, therefore trade-off between unemployment and inflation in Indian economy during short run Phillips curve approach can be seen for a short period of time.

Findings

The unemployment rate is 2008 higher level indicate 4.12% per cent compare to other years, while the year of 2014 the unemployment rate is atvery low point of 3.41 per cent, the reason of huge level unemployment in 2009 because of US recession in 2008.Average inflation rate (%) in India increased up to 12.11 per cent in period of 2010, then inflation rate is increased is at 10.92 per cent in year 2013 but fall down to 6.37 per cent in 2017. It was decreased continuously and reached to 2.33 per cent in 2016.In 2009 registered unemployment rate change in 0.21 per cent while same period inflation rate negatively 1.28 per cent. India Unemployment Rate was last reported at 3.52 percent in year 2017. It ranks as the world's 40th lowest recorded unemployment rate. Forecast: 3.5 percent in year 2018.

Policy Implications

- There is need of capital account surplus which can be used for employment of the country.
- Active skills training program with advanced technology helpful in removal of natural rate of unemployment.

- Increasing productive efficiency and import substitution of commodities therefore reduce the price of commodities.
- Set up of unbiased labor unions to help and solving the issues and to promote effective demand.
- 5 economy should follow constant capital ratio or with increasing every year.
- Uniform taxation policy.
- Promote entrepreneurship development program for self-employment and autonomous investment of the country.

Conclusion

It is concluded after analyzing the trends of inflation , unemployment and percentage change took place in both indicators and analyzing both side by side we can see that for a short period of time the Phillips curve reflected in Indian economy which is good sign and viable for the economy it says there is inverse relationship between unemployment and inflation ,yes inflation rate and unemployment in year 2014 to 2017 have an inverse relationship between them at last we can say that The result of the test revealed that unemployment and inflation are inversely related, thus confirming the existence of the Phillips curve in India, with inflation having a significant impact on unemployment in India

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