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INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)

Vol. 04, Issue 10, October 2024, pp : 246-251

e-ISSN : 2583-1062
Impact Factor : 7.001

MISERY INDEX: IMPACT ON GDP AND COST OF LIVING IN INDIA

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DOI: https://www.doi.org/10.58257/IJPREMS36190

ABSTRACT

Misery Index establishes the relationship between inflation and unemployment level in the economy. It is the sum total of inflation and unemployment. It was proposed by Arthur Okun in 1960. It further suggests the fear of joblessness and economic distress due to the increased cost of living. In this research paper, we are going to study the impact of increasing inflation and unemployment on GDP. We are going to assess the previous ten years data of inflation, unemployment and GDP to find the effect of Misery index on India's GDP. This Research is trying to evaluate the effect of increasing inflation rate on unemployment and GDP. It will further examine the contribution of increased cost of living on unemployment level and overall GDP of the economy. The study will suggest the effect of inflation and unemployment on per capita GDP. This study is going to advice on various tools and techniques to reduce the misery index of an economy, so the people of the country may get rid of the economic distress.

Keywords: Misery Index, GDP, Inflation, Unemployment, Cost of Living, Economic distress

1. INTRODUCTION

"Money might not buy you happiness, but there's often a correlation between economic opportunity and personal wellbeing. After all, you likely won't be very happy if you can't afford basic necessities, find a job, or get a loan"

Misery index is a measure of recording economic distress faced by the normal people due to the increasing cost of living and risk of (or actual) unemployment. It is a single statistical tool used to calculate the inflation and unemployment. Misery Index was created by the economist Arthur Okun in 1960. It can be calculated by adding the seasonally adjusted unemployment and current inflation rate.

MI = U + I

MI = Misery Index

U = Unemployment

I = Inflation

For example, if current employment rate is 4.75% and inflation rate is 2.25%, the misery index of the economy is 7.00.

The misery index provides the economic indicator which helps to determine how the average person is doing economically and financially. Several simple inputs are provided by the misery index to create an easy-to-understand and replicable measure of a nation's misery levels.

The factors that go into the misery index

Taking a closer look at each of the misery index factors can be important for understanding how the indexes work. Focusing on Hanke's Annual Misery Index (HAMI), which we'll cover later, these factors are:

The annual unemployment rates. Unemployment measures the percentage of people who are willing to work at a particular wage rate but can't find the work.

The annual inflation rates. The increase in the cost of goods and services is known as inflation. When there is a increase in prices, there is a need of more money to buy the same things, which is resulted into the misery.

A higher number is worse because it indicates a country is more miserable. In 2020, Venezuela (3,827.6), Zimbabwe (547), and Sudan (193.9) topped the HAMI with the highest scores.

The history of the misery index

The misery index has undergone several ammendments and revisions over the years. But the first misery index was called the Economic Discomfort Index, and it was simply the sum of the inflation and unemployment rates.

Arthur Okun, an economist and member of President Jonhson's Council of Economic Advisers, proposed that first index so the president might get a quick read on how the country was doing. It became popularized in the 1970s.

Misery index criticisms

The popularity and power of misery index comes from its simplicity and understandability. It also has certain limitations which opens it up to criticism. For instance, it doesn't include broad factors that may be important to an individual's misery, such as real-wage growth or consumer confidence. And it uses the unemployment rate, which is a lagging

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indicatoras it only undertakes the person who is willing to work but there are also the persons in economy who left the willingness to do the work at a particular wage rate. It may not provide exact information at the time of low inflation and low unemployment. People have other concerns such as war, pandemics etc than inflation and unemployment.

2. REVIEW OF LITERATURE

"For Okun, it was just inflation plus unemployment," says Steve Hanke, a professor of applied economics at Johns Hopkins University in Baltimore. "Unemployment is bad — that's misery."

Robert Barro, a Harvard economist, created a new Barro Misery Index (BMI) in 1999. He added two factors: the change in interest rates (based on long-term government bond yields) and the gross domestic product (GDP) growth rate. "He added something that subtracted from misery, which was economic growth," says Hanke.

Gregorio (1992) has the view that inflation will affect growth by reducing the efficiency of resources' allocation. He elaborated that inflation will change the return on money and capital and then alter the choice by which firms and consumers may opt for those economic activities, which are adverse-risk. Fischer (1993) examined that inflation and economic growth are negatively related. Unemployment and economic activities are positively correlated. Choi, Smith and Boyd (1996) echoed a similar view and argued that inflation, in the presence of information asymmetry can harm growth by accentuating financial markets frictions and thereby adversely affecting the provision and allocation of investment. Sarel (1997) concludes that inflation affects growth only if it breaches a specific 'threshold' rate of inflation but not otherwise. Sarel (1997) concludes that inflation affects growth only if it breaches a specific 'threshold' rate of inflation but not otherwise. He concludes that an inflation threshold of about 8 % for a pooled sample of a large number of countries, including India, serves as a good common benchmark for the sample as a whole. Since the common threshold is an estimate from a pooled sample, it may not be exactly suitable for particular country if taken in isolation. There is, therefore, a need to have yet another empirical assessment of the problem of finding the level at which inflation actually begins to erode economic growth in given economy. Bruno and Easterly (1998) conclude that there was no evidence of a growth-inflation trade-off in a sample which excluded discrete high inflationary crisis. They also argued that the failure of investigators in detecting a meaningful relationship between inflation and growth can be attributed to a stylised rapid recovery of output after inflation which, on an average, renders the overall statistical relationship insignificant. Gokal and Hanif (2004) presented a detailed review about the development of inflation - economic growth relationship from theoretical angle. They also summarized that, inflation uncertainty, which is generated by inflation and will inversely affect growth.Many learned researchers around the globe have put forward their views, based on empirical evidence collected through the economic factors prevailing in different nations, on the output gap and methods to measure the same by developing various models. Sweidan (2004) adopts annual time series data of Jordan by using of ARCH (Autoregressive Conditional Heteroskedasticity) model to detect the relationship between inflation and inflation uncertainty. The study confirmed a positive relationship between inflation and inflation uncertainty in the context of Jordan. But on the contrary he has not evidenced any significant relationship between inflation uncertainty and economic growth. The association among economic growth and unemployment was investigated in Jordan using Okun's law of misery index from 1970 to 2008 by Kreishan (2011). The author found that decreasing economic growth cannot explain the unemployment problem in Jordan. Saboor et al. (2017) examined how the MI is correlated with crime and democracy, and both have an impact on economic growth in quasi-democracy when compared to the quasi-dictatorship in Pakistan from 1975 to 2013. The effect of economic misery and human capital outflow using time series data from 1975–2015 of Pakistan was investigated by Ali et al. (2015). They concluded that economic misery increases human capital outflow. Arouri et al. (2014) examined the microeconomic factors of brain drain in Pakistan for the period 1972–2012 using the ARDL approach for analysis. They found that financial development and economic growth have a negative impact on brain drain as compared to inflation, unemployment, and trade openness, which is positively related with brain drain. Dadgar and Nazari (2018) studied the impact of economic growth and good governance on the misery index for Iran. They concluded that there is a negative relationship between the MI and economic growth. Furthermore, the relationship between good governance and the MI is positive. Tang and Lean (2009) concluded that there was a positive relationship between the misery index and growth of crime in the USA during the period 1960–2005. The influence of the MI on the US presidential performance was investigated by Adrangi and Macri (2019) using macroeconomic variables, and they concluded that the misery index has a significant impact on the US presidential performance. To summarize, we conclude that the misery index has a greater impact on the growth of a country. Therefore, in this study, our focus is to find out the relationship in the context of Pakistan.

The paper is designed to find out the relationship between misery index and GDP of the country and to examine the impact of inflation on the cost of living and GDP growth rate.

3. METHODOLOGY

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3.1. Data and Research Design

The current study is based on the secondary data taken from the reports of the world bank from 2010 to 2022, websites of world bank and International Monetary Fund, economic surveys of India, research papers and journals.

4. DISCUSSION AND FINDINGS

The Statistical Analysis of secondary data pertaining to the MI (inflation and unemployment) and GDP has been made through the SPSS software in order to test the hypothesis framed hereunder.

H0: There is no sigficant relationship between misery index and GDP growth rate of the country.

H1: There is a sigficant relationship between misery index and GDP growth rate of the country.

4.1 Economic Growth and Misery Index

The misery index is dependent on unemployment and inflation, which has a negative implication on the economic growth. The increasing index shows the declining economig growth which may harmful for the standart of living of the common people. Decreasing index shows the signs of improvement in economic growth of a country which may helpful to improve the standard of living of common people.

4.2 Historical data of Inflation

Table 1: Inflation Rates of India – Historical Data

Year	Inflation Rate (%)	Annual Change	Year	Inflation Rate (%)	Annual Change
2021	5.20%	-1.42%	2022	6.95%	1.75%
2020	6.62%	2.90%	2010	11.99%	1.11%
2019	3.72%	-0.22%	2009	10.88%	2.53%
2018	3.95%	0.62%	2008	8.35%	1.98%
2017	3.33%	-1.62%	2007	6.37%	0.58%
2016	4.95%	0.04%	2006	5.80%	1.55%
2015	4.91%	-1.74%	2005	4.25%	0.48%
2014	6.65%	-4.41%	2004	3.77%	-0.04%
2013	11.06%	1.75%	2003	3.81%	-0.49%
2012	9.31%	0.45%	2002	4.30%	0.52%
2011	8.86%	-3.13%	2001	3.78%	-0.23%

Table 1 clearly shows the data of inflation in India over the years from 2001 to 2020. The inflation rate in 2020 was recorded as 6.62% which is quite high. The highest rate of inflation was recorded in the year of 2010 which indicates the higher misery index.

4.3 The Trends of Unemployment in India

Table 2: Trends of Unemployment in India

India Unemployment Rate - Historical Data					
Year	Unemployment Rate (%)	Annual Change	Year	Unemployment Rate (%)	Annual Change
2022	8.20%	0.23	2011	5.65%	0.00%
2021	7.97%	0.86	2010	5.65%	0.04%
2020	7.11%	1.84%	2009	5.61%	0.25%
2019	5.27%	-0.06%	2008	5.36%	-0.05%
2018	5.33%	-0.08%	2007	5.41%	-0.11%
2017	5.41%	-0.10%	2006	5.52%	-0.13%
2016	5.51%	-0.05%	2005	5.65%	-0.07%
2015	5.56%	-0.04%	2004	5.72%	-0.05%
2014	5.60%	-0.07%	2003	5.77%	0.00%

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2013	5.67%	0.01%	2002	5.77%	0.04%
2012	5.66%	0.01%	2001	5.73%	-0.02

It can further be inferred from above table that the rate of unemployment varies from year to year. The unemployment rate serves as a bench mark to assess the economic stability therefore it becomes obligatory on the part of the respective governments to create employment opportunities and investment avenues to address the issue of unemployment. The total employment of course would remain distant entity but concerted efforts if made will surely bring dividends in generating additional employment. The pattern of unemployment in India from the year 2001 to 2022 has been presented in above mentioned Tabular representation.

4.4: Misery Index: The calculation of MI and assessment of MI as an economic tool

Table 3: The Table showing Misery Index

Misery Index			
Year	**Inflation Rate (%)**	**Unemployment Rate**	**Misery Index = U + I**
2022	**6.95%**	**8.20%**	**15.15**
2021	**5.20%**	**7.97%**	**13.17**
2020	**6.62%**	**7.11%**	**13.73**
2019	**3.72%**	**5.27%**	**8.99**
2018	**3.95%**	**5.33%**	**9.28**
2017	**3.33%**	**5.41%**	**8.74**
2016	**4.95%**	**5.51%**	**10.46**
2015	**4.91%**	**5.56%**	**10.47**
2014	**6.65%**	**5.60%**	**12.26**
2013	**11.06%**	**5.67%**	**16.73**
2012	**9.31%**	**5.66%**	**14.97**
2011	**8.86%**	**5.65%**	**14.51**
2011	**11.99%**	**5.65%**	**17.64**
2011	**10.88%**	**5.61%**	**16.49**
2011	**8.35%**	**5.36%**	**13.71**
2011	**6.37%**	**5.41%**	**11.78**
2011	**5.80%**	**5.52%**	**11.32**
2011	**4.25%**	**5.65%**	**9.9**
2011	**3.77%**	**5.72%**	**9.49**
2011	**3.81%**	**5.77%**	**9.58**
2011	**4.30%**	**5.77%**	**10.07**
2011	**3.78%**	**5.73%**	**9.51**

Higher the MI, higher the infavourable conditions of the economy which suggests that more people are losing their jobs and have to pay more prices for essentials. A lower number shows the favourable conditions which suggest the people having more wealth and less prices. The normal rate of misery index should be between 6 to 7. A misery index higher than 7 shows the unemployment or inflation has grown higher than previous norms. A Misery Index below 5 shows that inflation or unemployment is falling. India is at the Misery Index of 15.15 which is quite high. It also suggests the condition of a common man in the society as prices are soaring day by day and job oppurtunities are following downward trends. It indicates the poor condition of the citizens not having the job oppurtunities and paying higher prices. In 2022 inflation is increased upto 8% and unemployment also touches above 7% which result into the high Misery Index. The Government should undertake the various economic tools to reduce the rate of inflation and unemployment so we can achieve the lower Misery Index. The current MI shows the hardships faced by the common people due to the high

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inflation and unemployment. It negatively effect the lives of the people and lower their standard of living as prices of essentials are increasing day by day.

4.5 GDP Growth

The economic cycle signifies the market fluctuations of an economy such as the period of boom, recession, depression and recovery. The pattern of GDP growth rate of India has significantly showed these fluctuations in different business cycles. Therefore, the ups and down in terms of GDP growth rate is visible in Indian economy. In 2009, country witnessed the impressive change in growth rate followed by the year 2014. In the year 2020 it showed the sluggish growth rate due to COVID 19. But in the end of 2022 Indian GDP is likely to grow in double digit predicted by the economic survey of India. The highest GDP growth rate of 10.26% was witnessed in the year 2009 and the lowest 1.87% in 2020 understandably due to COVID 19 epidemic. However the GDP growth rate has shown a smart recovery in2021 and stands at 7.43%.

Table 4: GDP Growth Rate

India GDP Growth Rate - Historical Data					
Year	GDP Growth (%)	Annual Change	Year	GDP Growth (%)	Annual Change
2022	8.70%	15.30%	2011	5.24%	-3.26%
2021	-6.60%	-1.36%	2010	8.50%	0.64%
2020	-7.96%	-12.01%	2009	7.86%	4.78%
2019	4.04%	-2.49%	2008	3.09%	-4.57%
2018	6.53%	-0.26%	2007	7.66%	-0.40%
2017	6.80%	-1.46%	2006	8.06%	0.14%
2016	8.26%	0.26%	2005	7.92%	0.00%
2015	8.00%	0.59%	2004	7.92%	0.06%
2014	7.41%	1.02%	2003	7.86%	4.06%
2013	6.39%	0.93%	2002	3.80%	-1.02%
2012	5.46%	0.22%	2001	4.82%	0.98%

4.6 Findings

By applying and conducting the test of bivariate correlation test through SPSS. Correlation between Misery Index and GDP growth rate is found to be significant at 0.01 level (Two Tailed Test).

Correlations

[DataSet0]

Correlations

		GDPGROWTH	MISERYINDEX
GDPGROWTH	Pearson Correlation	1	-.094
	Sig. (2-tailed)		.676
	N	22	22
MISERYINDEX	Pearson Correlation	-.094	1
	Sig. (2-tailed)	.676	
	N	22	22

Figure 1: Source SPSS

The Test showed the high negarive correlation between Misery Index and GDP growth. Based on the results of the correlation, the null hypothesis is rejected and and the alternative hypothesis is accepted which means that there is a significant relationship between Misery Index and GDP growth rate.

5. CONCLUSION

The study shows that there is a significant relationship between Misery Index and GDP growth rate. The study reveals the high negative correlation between the MI and GDP which suggests that higher the GDP, the lower the MI and lower

the GDP higher the MI. Therefore, the policymaker should be focus to achieve the higher gdp growth rate to attain the lower Misery Index which will further enhance the lives of the people. By following the adequate measures the economy may become prosperous and citizens may afford the essential items by lowering the inflation and standard of living may also improved by eliminating the massive unemployment.

This research may provide the basis to address the problems of researchers and policymakers to find the relationship between these variables. This relationship has indicated the growth pattern, inflation trends, unemployment level and Misery Index in India from 2001 to 2022 which may enable the users to assess the growth pattern. Policy-makers and researchers may use the research to solve the problems of inflation, unemployment and to study the Misery index and GDP growth rate. This research is open for further improvements.

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