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An Analysis on Inflation in U.S.A. – Causes, It's Impacts, Trends and Measures to Control

Shubh Walia[1*], Rahul Chaurasia[2]
[1,2]Department of Mathematics, Shivaji College, University of Delhi, Saharanpur, India

Abstract*: Growth with stability is an essential condition for attaining sustainable economic development. Fluctuations in prices create an atmosphere of uncertainty which is not conducive to developmental activities. Inflation means paying more for goods than paying earlier. The cost of essential and non-essential goods both sees a hike. The price of everything goes up over time and this phenomenon is called inflation and the rate at which the prices of everything go up is called the "rate of inflation". For example, if the price of something is $10 this year and next year the price becomes approximately $11 then the rate of inflation is 10%.The present article made an attempt to assess the issues relating to inflation such as relationship between Money supply and Inflation, What causing inflation in 2022?, Impact of inflation (Less purchasing power, Less savings, Paying higher taxes, More employment and better income and more particularly on common man), Measures of Inflation (Consumer Price Index (CPI) and Personal Consumption Expenditure (PCE)). Historical Statistics of Inflation in U.S from 1980-2020 and Current Scenario of Inflation in U.S (in particular from 2020 to 2022), Methods to control Inflation such as Monetary policy, Open Market Operations, Fiscal Policy, Fed Fund Rates. The study examines that increasing price level could lead to fall in Purchasing power of the Dollar; commuting budget has increased for most of the middle class. Fixed income groups will be hit the hardest because their salaries will not be revised to include the cost of living even as prices of items soar. Inflation has affected badly the life of middle and poor class. Finally it concludes that, controlling inflation is needs tremendous, effective and long term policies of the government. Inflation has been properly been curbed or averted the world economy with experience of new face on employment policies and have a new breath on the standard of living around the globe.

***Keywords*: Consumer Price Index, Personal Consumption Expenditure, Money supply, Monetary policy, Inflation.**

1. Introduction

Growth with stability is essential condition for attaining sustainable economic development. Fluctuations in prices create an atmosphere of uncertainty which is not conducive to development activity. Inflations mean paying more for goods than paying earlier. Not only essential goods see a hike as well as non-essential items would also cost more. Inflation is a general and ongoing rise in the level of prices in an entire economy. Inflation does not refer to a change in relative prices. A relative price change occurs when you see that the price of tuition has risen, but the price of laptops has fallen. Inflation, on the other hand, means that there is pressure for prices to rise in most markets in the economy. And the common measure of Inflation is called Inflation rate. For example, if the price of something is $10 this year and next year the price becomes approximately $11 then the Inflation rate is 10%.

Also, the popular saying by the former Indian Prime minister Dr. Manmohan Singh that:

"Inflation poses a serious threat to the growth momentum. Whatever be the cause, the fact remains that inflation is something which needs to be tackled with great urgency …"

One of the most remarkable macroeconomic events of the past two decades has been the significant decline in inflation in both the developed and emerging market economies. The recent rise in inflation is very unusual, especially when compared to earlier rises in inflation in the United States. The recent rise in inflation is unusual because it came on very quickly and sharply: The inflation rate, as measured by the percentage change in the consumer price index, jumped from 1.4% in the 12-month period from January 2020 to January 2021 to 7.68% in the 12-month period from November 2021 to November 2022. The last time inflation in the United States moved by such a large amount was in the 1960s and 1970s. But the situation was much different then: it took over 12 years, not just a year, for inflation to rise by large amounts.

In 1980, $1 is equivalent in purchasing power to about $3.14 in 2020, an increase of $2.14 over 40 years. The dollar had an average inflation rate of 2.90% per year between 1980 and 2020, producing a cumulative price increase of 214.30%. This means that 2020 prices are 3.14 times as high as average prices since 1980, but from 2021 to 2022 the value of $1 of 1980 gradually increases from $3.14 to $3.61 and the average inflation rate from 2021 to 2022 is 6.18%. The behaviour of inflation in U.S broadly exhibits such a pattern. For much of the 1980s and 2020s, U.S experienced repeated episodes of low and variable inflation, while there has been a sharp Increase in average inflation since the 2020s. Why this uncertainty arise in the inflation rate?

2. Money Supply and Inflation

An increase in the amount of currency in circulation, resulting in a relatively sharp and sudden fall in its value and rise in prices: it may be caused by an increase in the volume of

*Corresponding author: shubhahluwalia2002@gmail.com

paper money issued or of gold mined, or a relative increase in expenditures as when the supply of goods fails to meet the demand. This definition includes some of the basic economics of inflation and would seem to indicate that inflation is not defined as the increase in prices but as the increase in the supply of money that causes the increase in prices i.e., inflation is a cause rather than an effect. A persistent increase in the level of consumer prices or a persistent decline in the purchasing power of money, caused by an increase in available currency and credit beyond the proportion of available goods and services. In this definition, inflation would appear to be the consequence or result (rising prices) rather than the cause. A general and progressive increase in prices; "in inflation everything gets more valuable except money"

The Quantitative Easing by the Central bank (Federal Reserve in case of U.S.) with the effect of an increased money supply in an economy often helps to increase or moderate inflationary targets. There is a puzzle formation between low-rate of inflation and a high growth of money supply. When the current rate of inflation is low, a high worth of money supply warrants the tightening of liquidity and an increased interest rate for a moderate aggregate demand and the avoidance of any potential problems. Further, in case of a low output a tightened monetary policy would affect the production in a much more severe manner. The supply shocks have known to play a dominant role in the regard of monetary policy. The normal growth cycles accompanied with the international price pressures has several times being characterized by domestic uncertainties.

The Federal Reserve is responsible for evaluating current market conditions and deciding whether to make changes to the money supply. The Fed makes changes to the money supply by lowering or raising the discount rate banks pay on short-term loans. The Fed also buys or sells securities from banks to increase or decrease the amount of money these banks have in reserves.

When the Fed increases the money supply faster than the economy is growing, inflation occurs. In this situation, the increase in money circulating in an economy is higher than the increase in goods produced. There is now more money chasing not as many goods in this economy.

- The Federal Reserve changes the money supply by buying short-term securities from banks, injecting capital into the economy.
- During COVID-19, the Federal Reserve materially increased the nation's money supply. As a result, the nation experienced higher-than-usual inflation.
- As the world grappled with COVID-19, the Federal Reserve enacted policies to combat the financial implications of the pandemic. In March 2020, the Fed announced it would keep its federal funds rate between 0% and 0.25%.
- In February 2020, the United States money supply topped \$4 trillion. Due to the massive policy response for COVID-19, the money supply more than quadrupled by June 2020. The money supply topped \$20 trillion by October 2021.

The nation had successfully navigated the economic downturn, but the growth in the nation's money supply had caused inflation.

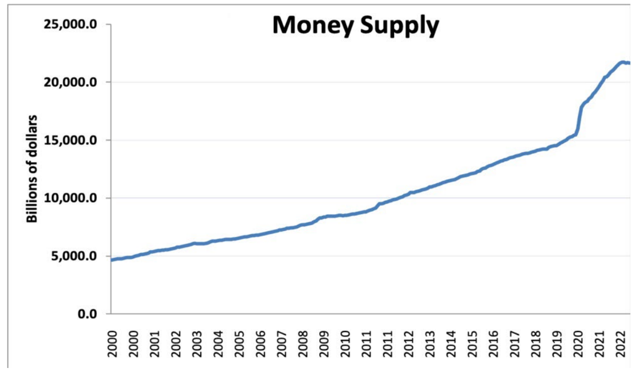

Fig. 1. Money supply

3. What Causes Inflation in 2022?

Economists, generally agree on some of the causes behind the high inflation that has defined the economy over the last several months:

- The pandemic shifted consumer demand away from services toward goods, which left producers unable to keep up with demand.
- Factory closures from early in the pandemic reduced supply just as demand was rising, which sent prices up even further.
- Russia's invasion of Ukraine caused a spike in oil prices, which increased the cost of both manufacturing and shipping, while also forcing up the price of wheat and other commodities.

On top of that, the U.S. was dealing with a labor shortage, leaving many businesses that had been shuttered for months unable to meet rising demand — much of which was due to stimulus payments — when they were finally able to open."

4. Impacts of Inflation

Inflation seemed to be a chronic problem in many parts of the world. There is a wide spread recognition that inflation results in inefficient resource allocation and hence reduces potential economic growth. Inflation imposes high cost on economies and societies; disproportionately hurts the poor and fixed income groups and creates uncertainty throughout the economy and undermines macroeconomic stability. High inflation has always penalized the poor more than the rich because the poor are less able to protect themselves against the consequences, and less able to hedge against the risks that high inflation poses. Lowering inflation therefore, directly benefits the low- and fixed-income groups.

- *Less Purchasing Power*: The most obvious impact of inflation is that it hurts your purchasing power. If you can't buy as many goods and services as you did before inflation, your quality of living will eventually diminish. Less purchasing power really hurts families that were already experiencing financial hardship, says Dan North, senior economist at trade credit insurer

Allianz Trade. Inflation hits the lowest-income families harder because items such as gasoline and food make up a much larger portion of their budgets, leaving less for discretionary spending. For example: "where they used to have money to go out to dinner, even fast food, or [go to the] the movies once a month, now they won't at al."

- *Less Savings:* Inflation makes all of our income and savings less valuable," says Todd Steen, professor of economics at Hope College in Holland, Michigan. If you're not able to save as much as you used to, you may be less prepared for financial emergencies, forcing you to rely on costly credit card or loans to pay unexpected bills. And even if you have money in savings already, that decreased purchasing power means your emergency fund might not stretch enough to cover a financial crisis during an inflationary period. For example- Car repair prices went up 9% from June 2021 to June 2022 according to the CPI (Consumer Price Index). If you had a $900 car repair in June 2021, in June 2022, that same car repair would have been $981. Suddenly your $1,000 saved up is a little less valuable.
- *Paying Higher Taxes:* Inflation creates other opportunities for sophisticated institutions to unfairly take advantage of the average individual, in many people's minds. Inflation can increase the complexity of evaluating financial assets, from CDs and insurance policies to stocks and bonds. This shifts the distribution of power in the financial marketplace to the more sophisticated and knowledgeable actors to the detriment of the average person, in this view. Thus, the government might "forget" to change the tax brackets after an inflationary episode, so the average person would end up paying higher taxes.
- *More Employment and Better Income:* Inflation has historically had an inverse relationship with unemployment. This means that when inflation rises, unemployment drops. Higher unemployment, on the other hand, equates to lower inflation. When more people are working, they have the power to spend, which leads to an increase in demand. And prices (inflation) soon follow. The opposite is true when unemployment rises. Since production increases, there is an increased demand for the various factors of production, including manpower. Therefore, employment and income increases during inflation. The Phillips curve states that inflation and unemployment have an inverse relationship. Higher inflation is associated with lower unemployment and vice versa.
- *Limitation:* Understanding the Phillips curve in light of consumer and worker expectations shows that the relationship between inflation and unemployment may not hold in the long run, or even potentially in the short run. (In case of Venezuela in 2016)

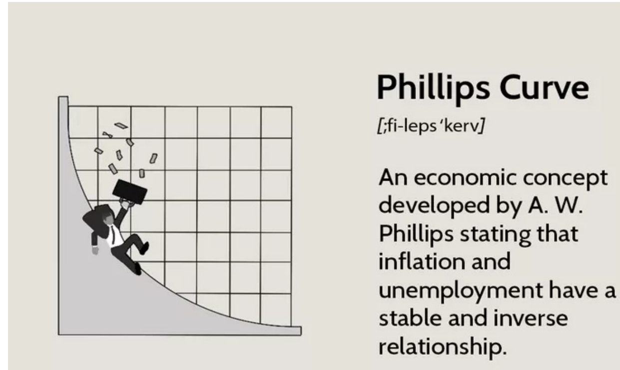

Fig. 2. Phillips curve

Inflation and its effect on the common man: In United States of America the average inflation rate from 2020 to 2022 is approximately 5% above than the average inflation rate of last 4 Decades. This has hit budgets of salaried middle class in the country. Inflation has hit the common man in so many ways, as follows;

- *Food and dairy products:* These are of daily use are rising above 12%. For a middle-class person, it constitutes about 30-40% of his monthly spends. Such an impact leaves him very less money for other activities.
- *Fixed income groups:* They will be hit the hardest because their salaries will not be revised to include the cost of living even as prices of items soar.
- Petrol Prices: The Petrol or diesel prices have been increased so many times this year that travel or commuting budget has increased for most of the middle class.
- *Credit card usage:* As customers are short of cash, more customers are using credit cards and getting into a debt trap. To pay these card dues they then take personal loan if the shortfall becomes higher thus one more EMI to pay.
- *Retail investors:* Retail investors owning stocks of inflation-sensitive companies such as automobiles are likely to see the stock prices fall on low sales as people prefer to not spend money on "luxury" items, sticking instead to the "necessities".

5. Measures of Inflation

The two most frequently cited indexes that calculate the inflation rate in the U.S. are the Consumer Price Index (CPI) and the Personal Consumption Expenditures (PCE). These two measures take different approaches to measuring and calculating inflation.

- *Consumer Price Index [CPI]:* The Consumer Price Index (CPI) measures the monthly change in prices paid by U.S. consumers. The Bureau of Labour Statistics calculates the CPI as a weighted average of prices for baskets of goods and services representative of aggregate U.S. consumer spending.
- The Consumer Price Index measures the overall change in consumer prices based on a representative

basket of goods and services over time.

- The CPI is the most widely used measure of inflation, closely followed by policymakers, financial markets, businesses, and consumers.
- The CPI is based on about 94,000 price quotes collected monthly from some 23,000 retail and service establishments as well as 43,000 rental housing units.

Annual CPI Formula: To calculate the annual CPI, the BLS divides the value of a specific basket of goods today compared to one year ago:

$$\text{Annual CPI} = \frac{Value\ of\ Basket\ in\ Current\ Year}{Value\ of\ Basket\ in\ Prior\ Year} \times 100$$

Personal Consumption Expenditure [PCE]: Personal consumption expenditure (PCE) is a measure of the prices people in the United States pay for goods and services. According to Bureau of Economic Analysis (BEA), PCE accounts for about two-thirds of domestic spending and is a significant driver of Gross Domestic Product (GDP).

- Personal consumption expenditure (PCE) is a measure of consumer spending.
- PCE is one measure reported by the Bureau of Economic Analysis, along with personal income and the PCE Price Index (PCEPI) in the Personal Income and Outlays report.
- PCE includes how much is spent on durable and non-durable goods, as well as services.

The BEA's personal consumption expenditures price index also calculates a core PCE measure, like CPI, that strips out volatile food and energy prices. The Federal Reserve considers Core PCE to be its most important measure of inflation in the U.S.—although it also considers other inflation data when setting monetary policy. In general, the Federal Reserve aims to keep inflation (as calculated by Core PCE) at about 2%, though it has said it will let this rate run higher short term to encourage recovery from Covid-19-related economic damage.

6. Historical Statistics on Inflation in the U.S (CPI) in Different Years

Current inflation U.S (CPI U.S) – The inflation is based upon the U.S consumer price index. The index is a measure of the average price which consumers spend on a market-based "basket" of goods and services. Inflation based upon the consumer price index (CPI) is the main inflation indicator in most of the countries. The annual inflation by year for U.S - comparing the December CPI to the December CPI of the year before and the average inflation by year for U.S presented in the table 1.

7. Current Inflation Scenario in the U.S.

In November 2022, prices had increased by 7.1 percent compared to November 2021 according to the 12-month percentage of change in the consumer price index - the monthly inflation rate for goods and services in the United States. In November 2022, the unadjusted consumer price index (CPI) of all items for urban consumers in the United States amounted to about 297.71. The data represents U.S. city averages. The base period was 1980-81=100. The monthly CPI of urban consumers in the United States increased from 277.95 in November 2021 to 297.71 in November 2022. The CPI in the United States has increased steadily over the past two decades from 140.3 in 1992 to 270.97 in 2021. A forecast of the CPI expects this positive trend to continue, reaching 325.6 by 2027. As of October 2022, the CPI of the nation's education had increased by three percent. Further, in October 2022, costs of recreation, rent, housing, medical care, and food and beverages, gasoline, and transportation increased.

Table 1
The annual inflation by year for U.S.

Years	Inflation Rate in U.S.
1981 – 1990	4.77% [Average]
1991 – 2000	2.79% [Average]
2001 – 2010	2.39% [Average]
2011	3.16%
2012	2.07%
2013	1.46%
2014	1.62%
2015	0.12%
2016	1.26%
2017	2.13%
2018	2.49%
2019	1.76%
2020	1.23%
2021	4.70%
2022 [NOVEMBER]	7.87%

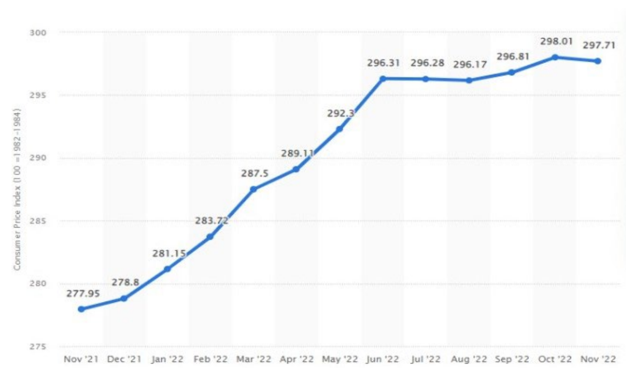

Fig. 3.

Table 2

Months	PCE Price Index
July 2022	4.8%
August 2022	4.6%
September 2022	4.9%
October 2022	5.1%
November 2022	5.0%
December 2022	4.9%

The PCE price index for November increased 0.1 percent. Prices for goods decreased 0.4 percent and prices for services increased 0.4 percent. Food prices increased 0.3 percent and energy prices decreased 1.5 percent. Excluding food and energy, the PCE price index increased 0.2 percent.

From the same month one year ago, the PCE price index for November increased 5.5 percent. Prices for goods increased 6.1 percent and prices for services increased 5.2 percent. Food prices increased 11.2 percent and energy prices increased 13.6 percent. Excluding food and energy, the PCE price index increased 4.7 percent from one year ago.

8. Methods to Control Inflation

The primary job of the Federal Reserve is to control inflation while avoiding a recession. It does this with monetary policy to control inflation.

- The Fed's annual target inflation rate is 2% over time.
- Monetary tools contract or expand the money supply.
- These tools include the federal funds rate, open market operations, and the discount rate.
- Managing people's inflation expectations is another important tool.

Monetary Policy: It is the most important tool for maintaining low inflation. Increased interest rates will help reduce the growth of Aggregate Demand in the economy. The slower growth will then lead to lower inflation. Higher interest rates reduce consumer spending. Increased interest rates increase the cost of borrowing, discouraging consumers from borrowing and spending.

Open Market Operations (OMO): The Fed's first line of defence is OMO. The Fed buys or sells securities, typically Treasury notes, from its member banks. It buys securities when it wants them to have more money to lend. It sells these securities, which the banks are forced to buy. That reduces the Fed's capital, giving them less to lend. As a result, they can charge higher interest rates. That slows economic growth and mops up inflation.

Fiscal Policy: The government also uses fiscal measures to control inflation. The two main components of fiscal policy are government revenue and government expenditure. In fiscal policy, the government controls inflation either by reducing private spending or by decreasing government expenditure, or by using both. It reduces private spending by increasing taxes on private businesses. When private spending is more, the government reduces its expenditure to control inflation. However, in present scenario, reducing government expenditure is not possible because there may be certain on-going projects for social welfare that cannot be postponed. Besides this, the government expenditures are essential for other areas, such as defence, health, education, and law and order. In such a case, reducing private spending is more preferable rather than decreasing government expenditure. When the government reduces private spending by increasing taxes, individuals decrease their total expenditure.

FED Fund Rates (FFR): It is the most well-known of the Fed's tools. It's also part of its OMO. The FFR is the interest rate banks charge for overnight loans they make to each other. It has the same effect as changing the Reserve requirement and is easier for the Fed to modify.

9. Conclusion

Based on our research's observation, we reach to various conclusions that Inflation varies directly with the money supply, also inflation deteriorates the budget of common man on various aspects like Purchase of food and daily use items, Impact on electricity bill, house rent, telephone bill, Use of public transport and medical expenses. Inflation plays major role to weaken the economy. Controlling inflation is needs tremendous, effective and long-term policies of the government. Inflation has been properly been curbed or averted the world economy with experience of new face on employment policies and have a new breath on the standard of living around the globe.

References

[1] Jordi Gali, "Monetary Policy, Inflation, and the Business Cycle: An Introduction to the new Keynesian Framework and its Applications."
[2] Anna Schwartz & Milton Friedman, "A Monetary History of the United States, 1867-1960."
[3] Adam S. Posen, Ben Bernanke, Frederic S. Mishkin & Thomas Laubach, "Inflation Targeting: Lessons from the International Experience,"
[4] Thomas J. Sargent, "The Conquest of American Inflation."
[5] Barro, Robert J., "Macroeconomics," 1997.
[6] The Macro Economy Today [The McGraw-Hill Series in Economics]
[7] http://www.vox.com/cards/inflation-definition-and-explanation/inflation-explanation
[8] https://www.in2013dollars.com/us/inflation/1980?amount=1#:~:text=Core%20inflation%20averaged%203.12%25%20per,an%20inflation%20total%20of%20262.94%25