



UNDERSTANDING INFLATION AND HOW CONSUMERS THINK ABOUT IT

A GUIDE TO A BASIC KNOWLEDGE OF ONE OF TODAY'S MOST PRESSING ISSUES

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February 2023



ABSTRACT

After several years of low inflation, prices have been rising rapidly for several months and despite the central banks' efforts to slow down the increase in prices, they have kept rising. This paper aims to explain in simple words the basic concepts that a broader audience needs to understand in order to have a basic comprehension of one of today's most pressing issues. In addition to that, this paper has a special focus on inflation expectations with the purpose to improve the general public's knowledge about this area of study, which despite being relatively new it has developed a lot in the past decades and it has become a key factor in determining inflation policy.



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INTRODUCTION AND STRUCTURE OF THE STUDY

Inflation has become very present in our lives due to its rapid increase in the past years, reaching high levels for the rich world that hadn't been seen in many years. That is why now, in a time of uncertainty and concern, it is vital to get the basics right. That will be a pillar of this paper, which aims to improve the knowledge of the general public so it can make well-informed decisions while also spreading the knowledge about inflation expectations, a relatively unknown yet very important area of study that is key in determining policy to reduce inflation.

The structure of this study is chronological, it begins answering a simple question that provides the reader with basic knowledge and then gradually tackles more complicated questions while adding new concepts and it ends with the possible solutions to the problem and a conclusion.

WHAT IS INFLATION?

Inflation is, basically, a generalized increase in the price level. Inflation can be measured with two price indexes. The most common one is the Consumer Price Index (CPI) which is the average of the prices of multiple different goods which are selected previously to elaborate this index and constitute a basket of market goods, in other words it is the average cost of living. The second index is the GDP¹ deflator which is the average cost of production. Another important concept to take into account is the inflation rate, which is just the percentage increase of prices. It is also interesting to remark that in Europe there is a special index elaborated to serve as a representation and as a means to compare the increases in prices of goods and services most representative of the European consumer. This index is called the Harmonised Index of Consumer Prices (HICP) and every country of the union elaborates their own to later be all aggregated into a European HICP. Finally, it is important to note that inflation can also be measured without taking into account volatile products or services like energy and food which is called core inflation.

HOW DOES IT IMPACT THE ECONOMY?

The impact of inflation in the economy is usually thought to be negative, however that is not always true. In this section both sides of the inflation will be examined.

¹ The GDP, short for Gross Domestic Product, is the most common way to measure the production of goods and services in a country during a certain period of time.

First of all, how does inflation impact the economy negatively? That is very simple, as I said before inflation is a generalized increase in prices, that means that products have become more expensive, which becomes a problem when wages do not increase at the same pace because it means that consumers can buy less with the same amount of money and they lose purchasing power. Inflation for example has a specially negative impact on workers who are about to retire because suddenly the value of their life savings has decreased, which is a problem that some people are facing now. But it is important to point out that inflation does not affect everyone the same way, those who have the least are the most affected by inflation, since they do not have as much savings they are not able adapt their consumption to the increase in prices. Another reason for that is the way they save, which often is in cash or in a bank account with a very small interest that does not protect their savings from inflation. Plus in the labor market their lower bargaining power can cause their salary to be reduced if it does not rise at the same pace as inflation. It is also important to take into account what is called the cognitive costs, which refer to the psychological costs that people endure during a time of inflation: the confusion generated and very negative perception that people have about inflation.

Secondly, how can it be positive? Inflation can have a positive effect when its rate is low and it is controlled. When that happens it is just a sign that the economy is growing. Actually an important part of a central bank's² job is to hit an inflation target that they have set. But what is that? It is just the maximum rate of inflation that a country wants to have. Plus, when we look at the data, as was pointed out in an article of The Economist³, we can see that inflation, at a certain rate, can help boost the labor market, helping the unemployed find jobs while real wages rise at the same time (at least in the cases of the 35 OECD countries since 1990). In that article it is also pointed out that many studies have shown that when a low level the costs of inflation are not that high, so most of the time there should be no cause for concern (although that does not mean that the cognitive costs do not exist). Finally there is a group of people who are especially benefited by inflation, and that is borrowers, since the amount they have to pay back stays the same while prices rise, and usually wages at the same time it is much easier to pay off the debt. That however has a negative impact on lenders (what they are paid back is not adjusted for inflation).

WHY DOES INFLATION HAPPEN?

When trying to solve a problem it is very important to understand at its root, where it comes from, why it happens, because it is when we understand it very well that we will be able to solve it. Inflation it's not different in that regard, so to propose solutions we need to understand what

² A central bank is a public financial institution responsible for the monetary policy that consists basically in controlling the money supply, which is the amount of money in circulation in an economy.

³ The Economist, 23/04/2022, *Does high inflation matter?*

causes it. We can classify causes of inflation into three different groups (although economists do not fully agree on what causes inflation):

Demand-pull or demand-driven inflation

This type of inflation happens when the total demand for goods and services of an economy (which is known as aggregate demand) increases without being matched by the supply of those goods and services (the aggregate supply). But that does not mean that there is a lack of trying by the supply side, it just doesn't happen as quickly, in fact it is that trying to match the demand that can provoke the increase in prices, because in order to increase production businesses (referred as firms in economics) will hire more workers and in order to attract them and incentivise the workers they already employ they will increase wages. Now, this increase in wages will cause an increase in the producers' costs who will translate those costs to the final price of whatever it is that they produce.

But what makes the aggregate demand increase? Well, there are a lot of things that can make that happen, for example an increase in spending by consumers, businesses and the government (implementing an expansionary fiscal policy⁴ like reducing taxes) and monetary policy⁵ (increasing the amount of money circulating in the economy) among others. Plus, the increase in production as a reaction to the increase of the demand can further contribute to inflation because the rise in wages puts more money into the consumers pockets who will spend it and thus contribute to the aggregate demand, increasing inflation and creating the risk for the economy to fall into what is called a wage-price spiral (imagine the situation described in the last paragraph repeating again and again).

Cost-push or supply-driven inflation

This takes place when the total production of goods and services (aggregate supply) in an economy falls and it is not matched by a proportional decrease in the aggregate demand. This can be caused by an increase in the cost of raw materials and any other production factor. Since their costs rise, firms adjust their production and prices, reducing the first and increasing the second, causing inflation. Another reason for the drop in total production can be a supply disruption in a specific industry, meaning a sudden change that difficulties the production of the goods or services produced in that industry. Although it is important to note that in this case the resulting high inflation is just temporary and it is resolved naturally. In fact, for it to be persistent there should be a lack of effort in monetary policy to reduce it or a consecutive sequence of supply shocks. An example that can be very helpful to illustrate this cause (in which you can see the increase spread through the economy) is an increase in the price of oil . If the price of oil rises then there will be

⁴ Fiscal policy is basically, the use of certain policies, spending and taxing, by the government in order to impact the economy.

⁵ Monetary policy is, in very simple terms, the policies that a country can effect in order to control the amount of money in their economy and its economic growth.

many sectors affected and gas prices will start to rise, which will make transportation more expensive, translating these increases in prices during the process to the final product that the consumer buys.

Inflation expectations

This cause comes from the consumers' beliefs about the behavior of prices. This is very important because it has crucial effects on the economy and the inflation rate. An example of this would be if in anticipation to a forecasted increase in prices workers demand a proportional increase to compensate for the expected loss. If this raise is granted and it is greater than inflation, then they will be contributing to increase the prices sooner and faster than it was expected. Another and perhaps more relatable example would be to think of a consumer that with the prospect of buying a computer has to decide whether to buy it now or in a year when prices are expected to have risen by 10%. Most likely, the consumer will choose to buy the computer now and avoid the possible increase, but this just makes the situation worse because if this belief is shared across the economy then demand-driven inflation could be caused. Now, when talking about inflation expectations it is important to note that these can be anchored or unanchored. Expectations are anchored (to the inflation target, which was explained before) when consumers think that regardless of the current rate of inflation it will eventually return to the central bank's target. That means that even with high inflation the consumers behavior will not change and consequently inflation will probably match the target again. When expectations are anchored it is more simple for the central bank to manage inflation. However, if consumers do not think that inflation will return to the target then their behavior will adapt, making the high inflation rate more persistent and thus the job of the central bank more difficult. These expectations can be measured by looking at the market data or surveying professional economists or consumers. Finally there are two more interesting facts about inflation, one is that the credibility of the central bank's commitment to the task of lowering inflation affects expectations, and the other is that history suggests that consumers respond to a considerable increase in inflation by increasing their future expectations despite that this might not happen immediately.

INFLATION EXPECTATIONS, A CLOSER LOOK

Before the crisis of the 70's and 80's inflation expectations were taken for granted until that time, when it became clear that expectations were not fixed. During that time employees demanded an increase in their salaries to protect them from inflation and firms passed increases in costs onto the final price. Since then, the study of expectations has increased a lot, although there is still a lot of progress to be made. In this section, inflation expectations will be explained with more detail.

To begin with, it is important to know that in this area of study information is vital, despite being difficult and costly to collect and process, the data shows really interesting information (the data is from the United States of America). In this case, the data of expectations is collected from three sources: households (consumers), firms and experts. Of these three, experts are the ones with better expectations, they take into account a lot of prices and use many complicated tools. However responses from households and firms differ quite considerably from that.

In the case of households we know that in the US they are very guided by gasoline prices (in smaller open economies the exchange-rate is the equivalent)⁶. In fact, when looking at the data there appears to be a strong relationship (or correlation in statistics jargon) since the year 2000 with consumers' inflation expectations and gas prices, despite representing a small percentage of their basket of consumption (although the amount of money is significant). That makes them a strong predictor for inflation expectations in the United States. Households also have high sensitivity to salient prices and weigh them differently in general: for instance, an item that has a 5% weight on their consumption basket actually accounts for 20-25% in their expectations. Moreover, they also include asset prices, like the price of a house and a lot of them do not know the inflation target of the Federal Reserve Bank (the central bank of the United States of America, also known as the Fed). In addition to that, when their expectations rise their consumption changes, increasing for nondurable goods and reducing for durable ones (like a car), which is not positive because they should buy those before prices rise. Plus in the short term they usually don't pay attention to monetary and fiscal policy or shocks which is actually good because it allows the central bank to take stronger measures to help the economy without inflation expectations changing a lot, although they will pay more attention in the long term. Another important thing about consumers is how they are informed, that is usually through the media. The problem with that is the low trust scores of the media, which means that a lot of the information is actually discarded. Furthermore, they heavily relate inflation to a bad state of the world, and against experts' opinions and different models they think that an increase in interest rates and income taxes can cause an increase in inflation. What at the end matters the most to form their expectations is their own shopping experience.

Households' inflation expectations also change a lot depending on certain conditions. They are more accurate for people with higher education and also for people with high IQ, who also have a better natural understanding of macroeconomic variables. For example, they understand that when inflation is high it is a good time to borrow, which does not happen with people with lower IQ.

⁶ Movements in the exchange rate (which redundantly, is the rate at which one currency will be exchanged for another one) can impact prices and inflation. A depreciation of the currency of a country will cause an increase in inflation in two different ways. The first one being through cost-push inflation due to an increase in prices of imported goods and services, and the second one through an increase in the aggregate demand, and therefore demand-pull inflation. The last one happens because exports become cheaper and so foreigners increase their demand while domestic consumers shift their demand towards domestic goods and services because they are cheaper than the imported ones, which also helps increase the aggregate demand. These increases put pressure on domestic production but also allow firms to increase their prices which contributes indirectly to inflation.

Additionally, a study⁷ found a difference in age rooted in experiences when it comes to forming expectations showing that younger individuals update their expectations more strongly in the direction of recent shocks than older ones just because these shocks are all they know to that point. In the abstract of that study the authors also point out that those differences in experience translate into predictable differences in their expectations, explaining also, the disagreement between these two groups and their behavior when it comes to borrowing and lending money.

When it comes to firms or the people who manage them, they tend to be more sophisticated than households although not as much as experts. Although many of them do not know the inflation target of the Fed, they look at more variables and they are more informed than households, and it is very important for them to get it right so they respond to the useful information they get because it helps their decision making.

Finally, it is important to take into account that in certain economies where inflation is out of control expectations can be self-fulfilling, which means that they become the main cause of the hyperinflation in the economy.

WHAT CAN BE DONE?

Inflation can be fought in different ways, although the most known is increasing the interest rates⁸. However, it is also important to note that the policy applied needs to be coherent with the cause of inflation, if that is not the case then the policies could be contradictory and worsen the state of the economy. But before explaining the main way to fix inflation, let's see other policies that can help the economy when prices are on the rise.

One of them is tying the value of the country's currency to that of another country, which means that the country is also tied to the other country's monetary policy. However, this policy may not always work, as it was just explained, depending on the cause of inflation policy might work or not, in this case that would happen if inflation was driven by global developments. Another policy, which is quite controversial, is price-setting by the government, although usually in these cases the government ends up having to compensate firms for their losses in income. Since the government limits the price of certain goods to avoid inflation entering from other countries into their economy, firms have to sell products at a loss because they buy the products with inflation and cannot translate those costs into the final price. The government can also control inflation through fiscal policy, mainly through increases in taxes (that reduces the demand) and reducing

⁷ Learning from Inflation Experiences, Malmendier and Nagel, April 4 2013, Abstract

⁸ Interest rates are the return to a government bond (which simply put is a piece of government debt with the promise to pay back the lender back with a profit, the interest rate), but they also reflect the cost of money, in other words the amount borrowers have to pay back in addition to the original amount of money borrowed, which will increase in relation to the interest rate.

spending, policies that simply put, slow down the economy. In addition to those, a policy that has become a priority is making sure that expectations are anchored, for that is very important to have one focal point (the inflation target) and to keep households informed, making information more accessible and widespread. Plus it is also important to improve measurement and feedback of expectations. Staying well informed is one of the best ways consumers can help the economy during an inflationary period.

Finally the most known way to control inflation is through monetary policy: reducing the money supply in the economy and raising the interest rates. If the amount of money in the economy decreases consumers will spend less and therefore the demand will be reduced. Plus, if the interest rates increase that means that the cost of loans increases, which in turn means that households and firms will borrow less and the demand will decrease again. The central banks do that through what is called open market operations, which basically consist in selling government bonds in the market (they can also buy them but that policy is used to stimulate the economy). By selling bonds the people that buy them exchange their money for the bonds, which decreases the amount of money in the economy, decreases the price of bonds and increases the interest rates, because money becomes more scarce and the cost of borrowing increases.

CONCLUSIONS

Inflation is a very complex issue and it is unquestionable that it has an important effect on everyone's life. That is why improving the general public's knowledge about this topic is a vital task, one that needs to quickly become a top priority, because as this paper has explained, everyone's perceptions are very important and have a real impact on the economy. Which is why having well-informed citizens can help the economy a lot.

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