

The Effects of Chronic Inflation on Resource Allocation: towards understanding non-neutrality of monetary inflation

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Abstract

This paper attempts to provide an in-depth discussion on the ways in which chronic inflation distorts efficient allocation of resources in an economy. The rate of inflation in some developing countries has been high and volatile, and the rate of adjustment of the nominal variables is quite low both in the short and long-run. The process of adjustments is not only low but also less systematic thereby adversely affects contracts denominated in money and money terms. The study also highlights some likely distortions arising from anti-inflationary measures such as usury laws and other state controls, and their likely impacts on long-term finance and implications for rate of urban development in less developed countries. However, the study concludes that monetary inflation is non-neutral on resource allocation as it erodes the real value of money and monetary assets. Therefore, we recommend that given the severity of the distortions and its associated costs there is the need for an effective monetary correction mechanism.

Keywords: Inflation, monetary contracts, non-neutrality of money, Resource allocation

1. Introduction

Inflation is non-neutral in the sense that allocation of resources is different where there is inflation than when there is none. Inflation is literally defined as a continual rise in the price level. The price level is an index of all prices in the economy (Colander, 2004). Thus, the purchasing power of money declines during inflationary periods because each unit of currency buys progressively a smaller amount of goods. Therefore, high inflation largely influences the behaviour of individuals in creating money contracts of various types. Many contracts in monetary terms are either fixed or unable to adjust sufficiently promptly to reflect the increase in the price level and cause them to undergo a decline in their real values.

One of the most important reasons for this concern is the financial market as both short and long term contracts denominated in money may not simply adjust spontaneously to take account of the changes in the price level. This paper makes an attempt to examine theoretically the main ways in which monetary inflation is non-neutral on resource allocation and why do various contracts denominated in money do not simply adjust spontaneously to take account of the new price level and, is the problem simply a short-term adjustment problem or can the distortions be long-lasting. The essay is divided into three sections. The following section discusses the conceptual and theoretical underpinnings concerning the subject. The final section provides the conclusion and practical implications.

2. Conceptual and theoretical discussions

One of the fundamental propositions of the monetary economics is that money is neutral to the real economic phenomenon. The real question is whether inflation affects the structure of relative prices, output and employment. It is indeed the classical paradigm of the quantity theory, which argued that a change in the quantity of nominal money causes the price level to change proportionately, while real variables such as real interest rates, output and employment remain unchanged.

Fisher (1930) raised the concept of “money illusion” to elucidate for the short-run effect of money arising from changes in real interest rates. The short-run non-neutrality of money is an important feature in the Keynesian monetary theory. It is based on the contention that under the conditions of underemployment the price level does not increase in the same proportion to the increase in the quantity of money. Therefore resulting increase in the quantity of money reduces the interest rate and hence increases investment and real output. The monetarists argue that in the short-run the impact of money is non-neutral on the real economy's output but in the long-run (which is over decades) affects mainly prices. However, the level of output in the long run is not influenced by

money supply but it is dependent on real factors such as technology, the quality and quantity of productive inputs and so on.

The New-Keynesians argue that money is not neutral and thus monetary policy can affect the real economy. However, the Post-Keynesian economists (such as Robinson, Paul Davidson, and Minisky) reject the theory of the neutrality of money instead stress the fundamental role played by banks, particularly the credit money creation and the role of nominal debt in an economy. They argue that as nominal amount of debts are generally not linked to inflation, thereby inflation diminishes the real value of debt, and deflation causes a rise in the real value of debt and hence creating real economic consequences as in a debt-deflation.

The likely impact of inflation depends on whether it is an anticipated or unanticipated inflation or whether the institutional structures have been adjusted to account for the consequences of inflation. The rigidity of the tax systems, the inadequacy of the financial markets among others can cause the real effect to vary not only within an economy but also among other economies at different period (Fischer and Modigliani, 1978).

Imperfect information is another factor that hinders the ability of the financial market to allocate resources efficiently even if the inflation is anticipated. Huybens (1998) and Smith (1999) more specifically, explain the magnitude of information in credit markets and describe the mechanisms through which the volatility in the rate of inflation adversely affects the credit market with negative consequences for financial sector performance and perhaps long-run real activity. They argue that the externality regards to information is severe and endogenous.

2.1 The social cost of chronic Inflation on resource allocation

High inflation imposes welfare costs on society, hinders efficient resource allocation by making it difficult to predict the relative price changes, restrain financial development by making intermediation more expensive. Furthermore, high inflation distresses the poor more than the non-poor.. The effects on poor are not only exist to reduce their income but have they cannot resist the fall in the real value of their financial assets because they do not hold financial assets that provide a hedge against inflation.

Inflation is said to have a distribute effect on Income. High inflation changes the real terms of all outstanding contracts and forces a substantial transfer of wealth from creditors to debtors, workers to employers etc. A hypothetical example, a worker agreed to receive a fixed wage plus 6 percent annual increase for 5 years. If the worker anticipates a 4% increase in inflation rate at the time of the agreement, that is, expecting his or her real wage to rise to 2% annually, and instead inflation turns out to be 7%, his/her real wage will fall by 1%. Therefore, the worker loses and the firm gains because a firm can charge 3 percent more for its products but the worker's wage is fixed by contract. This may affect his real wage. As workers notice a decrease in their real income they solicit for higher nominal wages in an attempt to reduce the loss. The resultant increase in wages will certainly lead to a rise in prices of goods and services, as a result of the firms' "mark-up" price. This would adversely affect workers' real income and hence induces workers to negotiate for new wage contract again. This wage-price spiral continues to fuel the situation and create an unstable economic environment and makes resource allocation more difficult.

In case of credit markets, suppose a lender and borrower entered into a contract with a fixed nominal interest. The interest rate payable 6 percent and the annual inflation rate is 3 percent, and hence the targeted return is 3 percent. But if inflation turns out to be 5 percent, the lender will only earn a 1 percent and borrowers will end up paying less than the anticipated in real terms (i.e., 1% instead of 3%). Therefore, in this instance, the Lender loses and the borrower gains. The implied decrease in real returns aggravates credit market frictions as agents' incentives to lend would be low and to borrow would be high. This means, the demand for loans will be high and the excess demand of funds over supply may lead to credit rationing and thus causes resource allocation to be sub-optimal.

Similarly, the low real interest rate undermines the ability of financial institutions to mobilize adequate funds and makes effective and efficient financial intermediation difficult with adverse repercussion for capital investment. The consequent reduction in capital formation has a negative impact on equity market activity and long run economic performance.

Other cost of inflation is its effect on the information prices transmit to people. As exemplified in Colander (2004), an individual who laments the high cost of housing, pointing out that it has doubled in ten years but if average inflation is seven percent a year over the past ten years, a doubling of housing prices should be expected. In reality, with seven percent, on average all prices double every ten years.

In fact prices have not all increased at the same rate, and house prices have risen faster than most other prices over the past few decades in most countries – mainly reflecting the price of land for which demand grows while the supply is fixed. In the boom-bust land/housing cycle, property prices have fallen as well as risen, but the secular trend is for the relative price of housing (land) to increase. General inflation is reflected in nominal interest rates, and this can cause major difficulties for people with heavy mortgages. So the demand is also affected, up and down, and inflation is non-neutral in this sense. This means the individual's wages have probably also doubled, therefore, he was no better off and no worse off than five years ago. The price of housing relative to other goods, which is the relevant price for making decisions, has not changed. When there is inflation it is difficult for people to discern what is and what is not a relative price. Therefore inflation reduces the amount of information that prices can convey and makes people to make choices that do not reflect relative prices.

Expectation of inflation induces contracting parties to curtail the risks or costs involved by frequent renegotiation of contract. This may have a negative consequence on the economic activity. When expectations of inflation are high, workers and firms tend to raise their wages and prices, causing inflation to build up and compound itself. For example a 4% inflation turn into 7% inflation, this in turn becomes 14%. It is believed that once inflation hit 5 or 6%, it is no longer a little thing and inflation of 10 percent or more is significant.

Also, the perceptions of the contracting parties may differ regarding losses and gains which they may likely incur on their contracts as a result of expected inflation; the parties may have the same views about the probable degree of losses and gains in money term but they may attach different weights to these losses and gains. For example, savers as a group are more likely poor than borrowers so savers may attach a greater value for each unit of the loss than borrowers.

2.2 Cost of Inflation on Long term finance

As stated above, if the rate of inflation happened to fluctuate sporadically in the past, may affect the behaviours and expectations of lenders and borrowers differently. This may even be worse, if the length of the time of the contract is longer especially in the mortgage finance or mortgage loans with duration of nothing less than 25 years in most of the LDC. Therefore, the degree of risks and uncertainties are higher than when the contracts are of short-term. In such a situation, there is a possibility of having both future inflation and deflation (falling prices) and this possibility cannot be ignored, savers and investors may appear to be at variance but faces symmetry risks: as the real value of long-term savings may well be reduced by inflation and unlikely be enhanced by deflation. On the other hand borrowers' liabilities are much likely be reduced by inflation than enlarged by deflation. If both savers and investors have same perceptions and attach same degree of probability to likely monetary gains and losses of future inflation this may considered to cancel out and it may be relatively easy to agree on an appropriate risk premium for long term contracts. This view assumes equal evaluation of given monetary gain or loss, but in practice the value attached to given money gain is less highly than an equal money loss, because the marginal utility of money incomes diminishes as income increases.

The risk of committing into a long term contract is high in an economy where inflation rate tended to be high/volatile. In such an economy people willingness to save in long term financial assets –such as bonds and stocks– are difficult unless at relatively high nominal interest rate. One of the most important reasons for this concern is the market for housing finance, and the way in which inflation affects the repayment profile.

Having described some of the instances in which efficient resource allocation are hampered by chronic and volatile inflation, it is also imperative to look at the 'front-end loading' problem which is another serious cost of chronic inflation that affects long term loans through loan repayment schedule. For example, there is a clear difference between paying a 5% interest on a given mortgage loan amortized over 20years in less inflationary situation and paying 20% interest on the same given loan when the inflation rate is 15%. To demonstrate this, in the case of non-inflation, if the principal amount of the loan says £20000 with an interest rate of 5% amortized over 20years level payment system. The first repayment total is £1583.55, interest payment of £1000.00 plus the principal payment of £583.55 approximately.

However, in a situation where the annual rate of inflation is 15%, the nominal interest rate is 20%, on the same principal over 20 years. In this case the first repayment total would be £4084.60, interest payment of £4000 plus approximately £84.60 for the loan. However, the 15% inflation have lessened the real value of the initial payment but still he must pay £4077.18(constant prices) at the end of the first year instead of 1583.55 in the subsequent years the real value of the debt service payments decline. This shows that the higher the nominal interest rate on debt the higher the real burden of the debt at the initial amortization period. As a small amount of

the principal is paid in the first year the borrower will end up paying in real terms.

2.3 Problems arising from state Controls

Apart from the distortions cause by severe inflation, there are also some distortions arising from state controls. The main distortions associated with inflation are those arising from monetary policy and other controls imposed on rent, wages, prices of goods and services, profits, exchange rate and so on. All these controls tend to change the structure of the relative prices and thus affect the allocation of resources in the economy which tend to favour some economic activities and discourage others. The control is either by rationing and subsidies which would give way for the emergence of parallel markets and various illegitimate ways are devised to avoid these controls. For example, price control is usually by subsidies which are financed by taxation but income and sales tax causes welfare losses (are said to be distortionary) because they introduce wedges between prices and marginal cost and also subsidy is not a good incentive to cut costs, encourages rent seeking.

The state usually set the maximum interest rate at the time when prices are stable with the motive of providing reasonable real income which many lenders and savers could obtain on their loans and savings. The implication here is that resources could be allocated wrongly to more risky projects or less credit worthy borrowers –with possibility of default– leave good businesses out, which they may otherwise have been able to negotiate. However, even with the maximum official interest and with such strictness inflation may occur and it wipes out the real returns to lenders and may even cost substantial losses.

If savings are discouraged as a result of the usury laws in times of inflation, the control would be much difficult. Moreover, savers who contribute to the control of inflation are the people penalized most by it. Negative real interest rates diminish their income and also negatively affect not only their incentive but also their ability to save in the future. The negative real interest would encourage savers to switch to real assets like landed property as an effective substitute for anticipated capital gains. This may affect domestic savings and undermines economic growth.

2.4 Adjustment Problem

As earlier mentioned, in making money contracts individuals take into account the impact of inflation, this depends on how the contracting parties predict future price levels. That is, whether price level has been stable, or prices happened to rise reasonably at a constant rate for over a long period in an economy. In this instance, it is likely that the expectation about future price levels will be greatly considered and with consistency. This does not mean that the future expectation turns out to be true always. Conversely, where the changes in the price level have in the past tended to fluctuate extensively and volatile, it would be much more difficult to adjust contracts because of the greater degree of uncertainty and much less uniformity of expectations about future inflation.

The problem of contract such as wages, interest and rent to adjust spontaneously in response to changes in the price level is highly discussed in economics and well established that they are slow to adjust to changes in prices. For instance in Keynes's theory of sticky wages as oppose to the classical wage/price flexibility through market mechanism which emphasise that wages are "sticky" or slow to adjust to external macroeconomic variables. The real cost of labour is reduced in response to an inflation and increasing money supply, which in turn raises labour demand and thus the output.

The wage theory which has a strong insightful appeal argued that it takes long time to wages to be reviewed as union wages are renegotiated once a year or once every two years, and so on. That is, if annual wage contract was finalized today, your wage would not fully reflect changes in prices, and other relevant macroeconomic events for a year. This allows for in support of the argument that wages are not flexible downward.

Even though in some developed and advanced economies union wage contracts have incorporated features like inflation and cost-of-living adjustments to allow wages at least adjust partially to the price rise. This implies that wages are becoming less sticky and money less neutral but contracts apply to a smaller proportion of the labour force. However, in the most LDCs where such a system is impracticable and the rate of inflation is volatile. This makes monetary correction difficult. The difficulties occur for many reasons, of which the more important are that changes occur that are unpredictable and to which adjustment is difficult. The process of state possibilities of reducing the cost at least in the short run by interfering in one way or another with any available system of adjustment which may cause distortions in the economy and may exacerbate the adjustment problem by hindering adjustments that might otherwise happen without too much complexity and by allowing disequilibria

to cumulate. In addition, attempts to adjust or control the rate of inflation may cause expectations about inflation to be inaccurate, thereby altering the value of money contracts secondary due to these expectations.

Moreover, even if the nominal interest rates are allowed to vary according to changes in the demand and supply of funds and in relation to changes in the price level even with the absence of state controls in such an economy. The problem could not be resolved completely as the interest rate paid for short-term deposits are allowed to change with inflation while for long term loans are not. This makes it difficult for financial institutions to recover their expected returns.

3. Conclusion and policy Implications

The foregoing discussion suggests that monetary inflation is non-neutral on resource allocation as it erodes the real value of money and other monetary assets over time. The uncertainty over future inflation tends to affect the demand and supply of loanable funds and thus misallocate resources. Moreover, the high and volatile inflation makes credit money creation difficult in an economy due to wide scale speculation which locks up resources in the form of excessive holdings of inventory rather than investment. Monetary policy (both direct and indirect) affects the behaviour of people towards inflation expectation thereby exacerbates distortions. High inflation can also lead to front-end loading problem that adversely affects the ability to borrow and causes bias against long term borrowing.

Based on the review, the study provides the following policy implications. In the case of short term monetary contracts, there is a need to incorporate inflation and cost of living adjustment to allow nominal income to adjust quickly to changes in the price level. Similarly, to address the distortions arising from long tenure, indexation of interest rates is necessary. Finally, to reduce the cost of inflation generally the monetary authorities should pay particular attention to the causes of inflation rather than the symptoms.

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