Inflation: radical interpretations

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ABSTRACT

Marxian analyses of inflation tend to fall under three broad categories, those that emphasise primarily the role distributive conflicts, monopoly power, or state intervention on the dynamics of credit money. This paper reviews these interpretations, and integrates them into an alternative view that departs from the circuit of capital and the endogeneity of credit money in order to explain inflation in inconvertible paper money systems.

Keywords: Inflation, Marxism, Post-Keynesianism, Credit Money, Distributional Conflict.

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Introduction

The collapse of the 'golden age' of capitalism and the concomitant social and economic upheavals led to important developments in non-mainstream theories of inflation. However, their popularity has waned along with interest in 'post-classical economics' (Lavoie 1992) more generally. Interest in developing the insights of the 1970s and 1980s is now at an all-time low. This is partly due to the accelerated shift of the economic debate towards the right, especially since the early 1980s, and partly due to the changing interests of the best-known non-mainstream researchers. This article claims that inflation theory deserves to be investigated more fully, firstly, because inflation poses an intriguing theoretical challenge. In spite of neoclassical claims to the contrary, analyses inspired by the quantity theory usually share unacceptably weak foundations (especially perfect competition, full employment, and costless adjustment between static equilibria), while non-mainstream contributions are promising, but remain relatively

undeveloped. Secondly, because anti-inflation policies are usually blunt weapons that can carry high economic costs, and almost invariably shift the balance of social forces towards capital and, especially, financial interests.
The paper includes this introduction, three substantive sections, and the conclusion. The substantive sections critically review well-known Marxian analyses of inflation, respectively the conflict theory, the monopoly capital-underconsumption analysis, and the extra money approach. This is not an exhaustive list of Marxian (or, more broadly, radical) approaches, and they are not surveyed exhaustively. Moreover, in order to simplify the analysis, inflation is identified with a sustained increase of the price level, accompanied by changes in relative prices. This definition is insufficient for many reasons, among them because it ignores 'hidden' inflation (when technical progress fails to lead to a decline in prices, given the quality of the goods). In spite of these shortcomings, this paper achieves two important objectives. First, it shows why attempts to explain inflation in inconvertible monetary systems, drawing on the anti-quantity theory tradition espoused by Steuart, Tooke, Marx, Kalecki, and the post-Keynesians, are fraught with problems. It is difficult to develop a cogent theory of inflation whilst simultaneously preserving the claims that the needs of production and trade call money into circulation (endogeneity) and admitting that money may influence 'real' variables (non-neutrality). This exercise becomes even more complex when it involves different forms of money, issued by the state and the commercial banks, each of them with a different relationship with the circuit of capital. However, it is possible to outline the general conditions for inflation, which is achieved in section three and in the conclusion.

Second, the paper critically outlines important approaches, which are often indistinguishable from other non-mainstream views (thus, the analysis is applicable across a wider range of theories, with only minor changes). For example, conflict theories are endorsed across the radical spectrum, the monopoly capital analysis owes much to Kalecki and Steindl, and certain aspects of the extra money approach are close to post-Keynesian and circuitist analyses. The critique in sections one to three focuses on the agencies causing inflation and the linkages underlying the process (Fine & Rustomjee 1996). Agencies can be identified from the theories of class, production, the state, and the ensuing analysis of the social conflicts expressed in and through inflation. Linkages include the institutional context in which inflation arises (especially the relationship between the state, industry, finance, the workers, and the foreign sector), and the propagation mechanisms which induce certain disturbances to surface as inflation. This involves, in particular, analyses of the money supply process, of price-setting mechanisms, and of the power of monetary and fiscal policy.

1 – Conflict AND Inflation

Writers of very different persuasions, especially post-Keynesians, neo-structuralists and Marxists, argue that distributive conflicts are generally the most important cause of inflation (this approach is especially appealing to Marxists, because it apparently vindicates the notion of class struggle). This section is divided into two parts, the first outlines the conflict theories of inflation, and the second criticises their assumptions and internal structure.

1.1 – Conflict Theories

Conflict analyses descend from cost-push theories, popular in the 1950s. They usually depart from equilibrium analysis, and assume that the money supply is endogenous, that fiscal and monetary policies are passive, and that key agents (especially monopoly capitalists and unionised workers) have market power and can set the price of their goods or services largely independently of demand. Inflation arises because the sum of claims over the national product (which depends on targets for the real income levels, shares of the national product, or income growth rates) is greater than the real income available. If the demand for money and credit is always satisfied, inflation necessarily follows. The rate of inflation is a positive function of the size of the overlapping claims, the frequency of nominal readjustments and the degree of capacity utilisation, and a negative function of the rate of growth of the productivity of labour. Inflation rates may become downwardly rigid (inertia) if some agents index-link their prices or incomes, in which case each negative shock leads to permanently higher inflation. In sum, there is inflation because the central bank validates, directly or through its support for the financial system, incompatible demands for shares of the national income through monetary accommodation, in an attempt to protect the financial institutions and ensure the continuity of production.

This argument can be presented very simply as follows (see Kotz 1987 and Lavoie 1992, ch.7). The value of the current output Y is:

$$Y = Py = kwL$$

where P = price level, y = real output, w = money wage rate, L = volume of employment, and k = mark-up on wages (presumably the largest cost component). The price level is:

$$P = \frac{kwL}{y}$$

where L/y is the inverse of the average physical productivity of labour, v. It follows that:

$$P = \frac{kw}{v}$$

If a hat denotes growth rates (the rate of inflation is $\hat{P} = \frac{P_1 - P_0}{P_0}$), then:

$$\hat{P} = \hat{k} + \hat{w} - \hat{v}$$

Hence, inflation results from increases in the mark up or in the wage rate in excess of the rate of productivity growth. This model can be refined endlessly, by incorporating target income levels, expectations, reaction functions, and limits on the wage claims because of unemployment, or on the mark up because of competition. It naturally follows that, when inflation is anticipated, the transfer process becomes less efficient and inflation rates must increase in order to achieve the same results. Eventually, the costs of inflation may become so high that the state must intervene,

usually on behalf of (monopoly) capital (see section 2).

More broadly, inflation may be analysed as part of the cycle, or as a structural process that builds up across several cycles. Within each cycle, inflation is relatively low in the upswing because of spare capacity, high unemployment, and high productivity growth. It rises towards the end of the boom, when the slack has been absorbed and the workers become more militant (Boddy & Crotty 1976). Recessions can have many causes, including as a deliberate response to increasing worker claims (presumably, the monopoly sector can compel the state to adopt the required policies, ostensibly in order to preserve the country's financial stability or external competitivity). If the monopoly sector increases prices in spite of the declining demand, because new entry is more difficult or in order to preserve total profits, and if the workers try to defend their standard of living, long-term stagflation becomes possible. Inflation falls, and growth can resume, when the workers or the competitive sector, defeated, concede an additional share of income to the monopolies or back down on their previously 'excessive' claims.

Rising structural inflation and the productivity slowdown, partly due to the workers' increased shopfloor resistance, played a major part in the collapse of the 'golden age' (Devine 1974, Gordon 1981). In the postwar era, the state systematically validated low inflation because it helped to stabilise the economy and ensure continuous growth of output and productivity, with near full employment and continually rising incomes. The requisite economic policies were facilitated by the reduced role of the binding nominal anchors in the Bretton Woods System (which were gradually abolished when it became economically necessary and politically expedient). Between the late 1960s and the late 1970s declining productivity gains, increasing worker militancy, and increased competition due to the growth of international trade reduced the rate of profit sharply. Capital's initial response was to accelerate inflation (many described inflation as a new form of the crisis, which had replaced deflation and unemployment, e.g., Jacobi et al. 1975, Cleaver 1989). When that proved insufficient, capital raised the stakes by reducing domestic investment, increasing the use of labour-saving technology and migrating abroad, which led to high unemployment and de-industrialisation in several OECD countries. At the same time, monopoly capital and the state attacked the workers politically, reducing their entitlements through sharp recessions under the guise of monetarism and neo-liberalism. The defeat of the working class in the 1980s allowed profit rates to rise and inflation to decline almost continually in the following years (Armstrong et al 1991, Marglin & Schor 1990, Weisskopf et al 1985; for a critique, see Clarke 1988 and Weeks 1979).

In order to reduce inflation, the state can use recessions, incomes policies, or heterodox shocks. Radical economists rightly criticise tight monetary and fiscal policies because they are blunt and costly, and reduce inflation only at the expense of long periods of high unemployment, lower wages and profits, and substantial output loss. Incomes policies are favoured especially by the post-Keynesians, who argue that negotiations and carefully chosen policies, such as TIPs, can co-ordinate claims over the national product and reduce inflation, while preserving growth and employment (Kotz 1987, Davidson 1994). The heterodox shock is a type of incomes policy, which is imposed by the state rather than negotiated between social partners. It may become necessary if indexation makes inflation rates high and rigid downwards, in which case agents who accept a reduction in the growth rate of their prices will incur a real income loss. The policy implication of this non-co-operative game approach is that the best way to reduce high inflation

is through a shock that freezes wages and prices around their real, long-term averages, and institutionally breaks with the dynamic influence of past inflation (Cardoso & Dornbusch 1987, Dornbusch & Simonsen 1983).

1.2 – Assessment

Widely different theories of value, production and class are compatible with the conflict approach. Classes are sometimes seen as partners, in which case it is relatively easy to achieve economic stability through negotiated incomes policies. Alternatively, a theory of exploitation may be used, in which case economic stability can be obtained only at the expense of subordination of the workers, under the threat of unemployment or worse. This potential ambiguity makes conflict approaches potentially appealing to a wide audience. However, it also makes them open the charges of arbitrariness and lack of analytical rigour. In particular, inflation generally starts from a dislocation that shifts the economy away from a Pareto-optimal equilibrium. 'Apportioning blame' is therefore naturally at issue, and alternative economic policies are usually assessed in terms of their ability to return the economy to the initial equilibrium. It is not normally explained how it was determined, or why it merits return. Moreover, the conflicting claims approach lacks a clear internal structure, and it is compatible with many alternative theories of employment, demand, income and its initial distribution, and with widely different rules of determination of the target income levels.

Indeterminacies such as these can be eliminated only through the establishment of an organic relationship between the conflicting claims approach and a broader economic theory. However, many such connections are possible, and none is necessary. In sum, conflict theories are typically 'middle range' (Fine & Leopold 1993). They derive from a set of stylised empirical observations (e.g., agents exercise claims over the national product through the sale of their goods), and transform them into structures that are used to explain these stylised facts (e.g., distributive conflict leading to inflation). This procedure smacks of a tautology, and is scientifically unsound because the theories are not grounded by a broader structure that supports their elementary concepts and contextualises their conclusions. The lack of a theory of production implies that the state cannot be adequately grounded either, and it is merely superimposed to the conflict. The state's role and policies are derived from a further set of stylised facts, and the rationale for, and the power of, economic policies are left unexplained and depend heavily on the analyst's preferences (e.g., the extent to which they are influenced by monetarism, as in de Brunhoff's (1982) critique of Rowthorn (1977). In spite of this, state policies are obviously important, and the translation of the distributive conflict into inflation is heavily dependent on the monetary policy stance (Isaac 1991). Regardless of these criticisms, the conflict approach is intuitively sensible and potentially relevant. Distributive conflicts must surely be an essential aspect of any non-mainstream theory of inflation, for inflation would not persist in the absence of widespread dissatisfaction about the level and/or distribution of the national income, and the monetisation of those incompatible claims (Burdekin & Burkett 1996, p.13).

2 – MonopolIES, Underconsumption, and Inflation

In radical economic theory, inflation is often associated with the increasing power of large corporations. Many radicals believe that their growing influence derives from the tendency

towards the concentration and centralisation of capital (Marx 1976, ch.25). Although this is not accepted across the radical spectrum, it is generally agreed that the process of monopolisation has been reinforced by the interventionist policies of the 'Keynesian State.' This view is often accompanied by underconsumptionism, most clearly in the monopoly capital school writings, where expansionary state policies are essential in order to avoid the crisis. This section is divided into two parts; the first outlines the underconsumption-monopoly power analysis of inflation, and the second criticises its internal structure and conclusions.

2.1 – Inflation Theory

This approach argues that state support for the monopolies is essential, because this sector includes the most dynamic firms and the largest investors, employers, producers and exporters, whose prosperity is essential for economic stability. For this reason, the state provides cheap infrastructure to the monopolies, offers tax breaks, finances directly or indirectly part of their R&D costs, and supports their foreign ventures. More broadly, the state spends huge sums in civil servants' wages, consumables, and public investment, funds health, education and defence, and makes large transfers associated with social security. These expenditures support monopoly profits directly through purchases, and indirectly through transfers to their customers. The interventionist policies of the welfare state have delivered unprecedented economic stability, high employment and fast growth, especially between the late 1940s and the late 1960s. However, they have also contributed to persistent budget deficits, rising public debt, and creeping inflation.

Relative economic stability simplified economic calculation and facilitated the credit financing of investment by the monopolies. At this point, two stories are possible. The exceptionally large credit supply led to the overaccumulation of capital and to record levels of excess capacity. The associated costs induced a severe profit squeeze, which badly affected the monopoly sector and, therefore, the economy as a whole (Dowd 1976, Sweezy & Magdoff 1983, drawing on Steindl 1952, Zarifian 1975). Alternatively, the excess demand created by government deficit spending (including, in the US, the costs of the Vietnam War) eventually led to inflation (Morris 1972). In either case, the monopolies responded by increasing their prices rapidly, which led to profit-push inflation and falling real wages from the mid-1960s (Dollars and Sense 1978, Sherman 1972, 1976a,b, Spero 1969, Sweezy & Magdoff 1979, Szymanski 1984). It quickly became clear that the state could no longer simultaneously support monopolies and finance the welfare state, while maintaining low inflation and unemployment: inflation could be controlled only by sacrificing the 'Keynesian consensus.'

2.2 – Assessment

Two agencies are responsible for inflation, monopolies and the state. Let us deal with monopolies first. It is argued that the concentration and centralisation of capital are fundamental processes within capitalism, leading inexorably to monopolisation. However, there is no attempt to develop a distinctly Marxian theory of monopoly power and, even if we assume that monopoly power is increasing, the theory fails to identify the correct level of analysis. Consequently, it is unclear how monopoly power affects the circuit of capital, the circulation of money and the distribution of income, whether or not it can be avoided, and to what extent it

makes inflation inevitable. The theory of monopoly pricing is particularly weak, although it is essential for the analysis of inflation. It relies on a collation of the ideas in Hilferding (1981, ch.15), for whom monopolies impose prices above the prices of production in order to reap extra profits, and Kalecki, for whom monopoly power is a stylised fact and monopolies reap extra profits because of their market power. It is argued that monopoly prices are determined strategically, in order to maximize firm growth, market share or long-run profits, subject to the need to prevent new entries, and are sticky downwards. In Marxist garb, they capture superprofits because of their market power, which may be transfers from the competitive sector or from the workers (in which case the wages fall below the value of labour power). However, these potential developments of Marx's theory of price are not pursued systematically. This may be unimportant except for Marxists, but it does matter more generally that there is scant empirical evidence to support the analysis, in spite of the strong assumptions involved (e.g., that monopolies can raise prices almost at will, and that in spite of this power they often wait for a recession to start before doing so – yet, they fail to reduce prices in the upturn). Moreover, important theoretical objections to the 'Hilferding-Kalecki synthesis' are not addressed adequately. The role of demand and other limits to monopoly power are also often neglected, as are the counter-tendencies to the concentration and centralisation of capital.

The theory of the state is also left unclear, and what is said is potentially contradictory. On the one hand, it is assumed that the state manages the economy trying to ensure the reproduction of capital as a whole, which requires the accommodation of the interests of different fractions of capital and of the workers, and is best achieved in a democracy (O'Connor 1973). On the other hand, the state is little more than a tool of powerful (monopoly) interests, and its policies are limited by the need to obtain their consent, in which case fascism is a clear possibility (Morris 1974).

The workers have no autonomous role, but there seems to be an underlying possibility of social conflict in production and distribution, which is partly responsible for the activist state policies. There is an uneasy relationship between the presumably fundamental opposition between workers and capitalists, and the analytical neglect of the working class, which is generally a spectator of the unfolding events. Moreover, it is curious that the workers are strong enough to prevent the extraction of additional surplus value in production, but not to avoid transfers in circulation through monopoly pricing – even when unemployment is low. The role of the financial system is not analysed in detail, and balance of payments constraints are negligible (which may be explained by the focus on the relatively closed US economy). Essentially, inflation is the result of interventionist state economic policies trying to ensure full employment and social stability, in an economy constrained by monopoly power and pricing strategies (Best 1972).

The linkages connecting monopoly power and state policies with inflation are left mostly unexplained. There is no clear theory of money, credit or finance, except for the presumptions that money supply responds passively to monopoly demand or to state command, and that largely unexplained financial developments are contributory factors. How this leads to inflation is often left unclear. More generally, the causes of inflation shift between monopoly pricing decisions and excess demand induced by the state (which is the paradoxical result of the state's attempt to avoid underconsumption). The distributive impact of inflation is not analysed, except

to argue that monopolies benefit at the expense of the workers and other groups receiving nominally fixed revenues. It is unclear how this relates with a theory of wages or of exploitation. Finally, there is not much empirical research showing that growing monopoly power leads to higher inflation and to a declining wage share in the national income.

3 – CREDIT AND INFLATION

In the mid-1970s, an alternative analysis of inflation was outlined, which explains inflation primarily as the result of discrepancies between money supply and demand. The relationship between the 'real economy' and the monetary and credit systems is essential, and it makes explicit use of the labour theory of value (Saad Filho 1997), although Keynes's work is also influential. Part one of this section briefly explains why differences between money supply and demand are possible in spite of endogeneity, part two outlines the theory of extra money inflation, part three analyses how this approach explains inflation under inconvertible money systems, and part four briefly identifies problems for further research.

3.1 – Money and Credit

Contemporary monetary systems include two main forms of credit money, that issued by the central bank (which is legal tender and discharges all debts) and by the commercial banking system (liabilities of private financial institution, offering a potential claim on another form of money). In addition, trade credits, financial assets such as CDs and treasury bills, and foreign currency, may fulfil certain functions of money. Post-classical writers of widely distinct persuasions share the conviction that the quantity of (credit) money is determined by the output volume, commodity prices, the value of money and the broader institutional framework (the velocity of circulation will be assumed constant for simplicity). Changes in the latter elicit changes in the quantity of circulating money primarily through changes in hoards (which may include all manner of financial assets), the volume of bank loans, and the monetary base. It follows that the money supply is endogenous in two senses; first, because money is necessary for, and a necessary aspect of, capitalist production; second, because its quantity and velocity are determined by 'the needs of trade'.

Money endogeneity does not imply that its supply can never deviate from demand, first, because the empirical determinacy of the quantity and velocity of money declines as the analysis becomes more concrete. They depend on social conventions, including the financial rules and regulations, the structure of the financial system and its relationship with production, the international relations, the property relations in the economy, the degree of concentration of capital, and other variables that may be difficult to estimate in practice. Second, and more specifically, although the supply of credit money necessarily corresponds to individual demand, it may not reflect the needs of the economy as a whole. This is clearly the case when speculative loans help to inflate a real estate bubble, or when banks unwittingly finance the production of unprofitable or unsaleable goods (Lapavitsas 1991, Itoh & Lapavitsas 1999; see also Mandel 1968, pp.254-259).

3.2 - Extra Money Inflation

In order to show how discrepancies between money supply and demand can lead to inflation, let us start from the circuit of capital. The productive circuit begins when capitalists draw on previously hoarded funds or borrow newly created credit money in order to finance production. If the output is eventually sold at the normal price (in Marxian terms, its price of production), additional income is created, which may be accumulated by the firms, repay debts or be distributed as dividend.

If, however, the output is not sold or can be sold only at a discount, the economic loss may be absorbed in two ways. Schematically, if market rules are strictly respected, a well-defined agent, or set of agents, bears the cost, usually the firm (through a decline in the value of its assets), or its bank (if the firm goes bankrupt). At a further remove, the firm may try to offset these losses through transfers from other agents, for example its workers (if the rate of exploitation increases, perhaps only temporarily), or its customers (if the firm has unused monopoly power and raises prices in other lines). 'Market' solutions such as these can be destabilising, because they may lead to unemployment, capacity underutilisation, the deterioration of the working conditions, and financial fragility. They may also lead to inflation (if the loss-making firm increases prices to cover its losses, possibly leading other firms to respond in kind) or deflation (if the firm reduces prices in order to boost sales, or if demand declines because of unemployment or a financial crisis). Alternatively, the loss may be socialised if market rules are violated. This may happen in two different ways. The firm's bank may refinance the debt, or the firm may receive state subsidies (in the extreme, it may be nationalised and 'restructured' with public funds). In either case, there is an injection of purchasing power into the economy that increases the ratio between money in circulation and the price of production of the saleable output. Following de Vroey (1984), the money injected into the economy in violation of market rules is called *extra money*.

Banks or the state may create extra money in order to cover losses incurred in production, as shown above. Extra money may also be created in other circumstances, for example, if the government monetises a budget deficit, purchases treasury bills in the open market, or lowers tax rates (which is a subsidy to the taxpayers), if bank credit increases following a decline in compulsory reserves, if the central bank assists the banking system through the discount window, if the country runs a non-sterilised surplus in its balance of payments, if firms dis-save or borrow in order to expand their output, invest or speculate with inventories, or if households dis-save or borrow, e.g., in order to purchase durable goods. In each of these cases, the nominal income or the liquid wealth of the consolidated non-financial sector increase, in spite of the constant value of the output (regardless of equilibrium, currently or in the past). If the extra money is spent rather than saved or destroyed in the repayment of loans, it may induce a (potentially multiplied) quantity response in those sectors operating with substantial spare capacity (the 'Keynesian' scenario). In this case, there will be more money and more commodities in circulation at the end of the circuit, which may restore the previous relationship between value and money at a higher level of income and output, regardless of equilibrium assumptions. However, if the extra money ends up as demand in a sector without spare capacity, and if additional imports are not available (the 'monetarist' case), the relationship between value and money is not restored spontaneously. A new relationship is established through an increase in prices in this market, ostensibly because of excess demand. This is *extra money inflation*.

This type of inflation can happen regardless of monopoly power or distributive conflicts,

although it is usually a reflex of one or both of them. It may be due to state intervention, but the state cannot be generally 'blamed' for it because extra money is *routinely*, and *necessarily*, created by private decisions that are not subject to state control. Moreover, even if it is created by the state it is impossible to know in advance where the extra money will end up, and whether it will have a quantity or price effect, or both (targeting is possible, but necessarily imprecise). In due course, discrepancies between the 'needs of trade' and the quantity of circulating money are eliminated by changes in output, velocity, hoards, or the value of money. However, these adjustments can take time and create additional instability through their effects on prices, the exchange rate, the balance of payments or the interest rate. If such discrepancies are continually renewed, they can lead to persistent inflation, severe balance of payments disequilibria and prolonged economic stagnation, which testify to the non-neutrality of money and its potential influence over production.

This does not imply that extra money should, or could, be avoided, because its regular creation and destruction is necessarily part and parcel of the circuit of capital. The regular operation of the financial system, state economic policies, and the international relations of the country, *inevitably* involve the regular creation and destruction of extra money, and may lead to inflation or deflation spontaneously (however, persistent inflation is more likely if the state intervenes extensively in the economy). The coexistence of inflation and unemployment is natural, because inflation is due to the propagation of localised devaluations of money. Finally, the changes in relative prices that necessarily coexist with inflation are a reflex of the structural differences between systems of provision.

The theory of extra money inflation is completely incompatible with the quantity theory of money, because the quantity theory propositions that money supply is exogenous, that money is only a medium of exchange and that it is not hoarded, are unacceptable. First, extra money is normally created endogenously by the interaction between the central bank, commercial banks, firms and workers, and its quantity cannot be controlled by the state. Second, extra money is non-neutral in the short and in the long run; it may change irreversibly the level and composition of the national product, depending on how it is created, and how it circulates. Third, its effects (whether quantity, price, or both) cannot be anticipated. All that can be said is that high rates of capacity utilisation and activist state policies increase the probability of extra money inflation, but there is never likely to be a simple relationship between them. Monetary and fiscal policy can be interpreted in this light as attempts by the state to control the level and composition of demand through its influence over extra money. However, these policies can never be completely successful, because the state cannot autonomously determine such variables of accumulation as the level and structure of market interest rates, the rate of return on investment, and the terms of trade.

3.3 – Inconvertibility and Inflation

If the currency is legally convertible into a reserve asset such as gold, there is a relatively strong reserve discipline limiting the creation of extra money by the commercial banks and the central bank. At the same time, arbitrage makes it impossible for commodity prices to deviate permanently from their gold-based price of production, although cyclical fluctuations are inevitable. At the risk of oversimplifying the problem, in the boom there is growing demand and

prices rise, until the growing mass of debt can no longer be serviced precisely when costs are highest. The need for gold as the means of payment reaches its peak, while the relative value of gold is low. In order to avoid a potentially catastrophic gold drain, the central bank must raise the discount rate when the market is most vulnerable, which increases the distress of both borrowers and lenders. The scramble for gold by firms and banks leads to price deflation and rising unemployment as the economy contracts (Aglietta 1976, Itoh & Lapavitsas 1998, Weeks 1981).

This blind and wasteful mechanism can operate if prices and wages are fully flexible. If they are not (e.g., because of increasing monopoly power or workers' resistance against nominal wage cuts), the costs of convertibility may become too high because of the ensuing social and economic instability. The abolition of the nominal anchor allows the central bank to reduce the discount rate and simplify access to the discount window at the trough, in order to support industry and the financial sector. This facilitates the creation of extra money by the state, and stimulates its creation by the private sector, which may reduce the contractionary impact of the crisis. It may, however, lead to extra money inflation instead, or in spite of the crisis, because the underlying mismatch between the structure of supply and the composition of demand tends to persist.

Inconvertibility allows the state (and the banks) to smooth out the cycles, through the manipulation of the supply of extra money in order to alleviate temporary cash flow problems and, more controversially, through direct support to failing corporations or banks (Guttman 1994). Unfortunately, this is not likely to eliminate the crisis, and it may lead to permanent inflation (Aglietta 1980, Clarke 1993, Grou 1977, Mattick 1978, Perelman 1996). The lack of *a priori* co-ordination in capitalist economies implies that there is no other way except the crisis to restore a substantial mismatch between supply and demand and curtail flawed financial strategies. Moreover, if crises are avoided for long enough the threat of failure declines, which reduces the stimulus for technical innovation and the adoption of the most profitable management strategies. This is likely to reduce the rate of productivity growth, lead to wasteful investment practices and reduce economic efficiency. At the same time, the workers tend to become increasingly strong because of the high level of employment. This is the background to the gradual collapse of the 'golden age' in the late 1960s.

In sum, permanent inflation results from the attempt to combine continuous economic growth with the avoidance of deflation; this requires the continuous injection of extra money into the economy. In the upswing, the extra money is provided mainly by the private sector, through dishoarding and bank loans, in order to finance consumption and new investment. Thus, growth necessarily involves a breach of the established relationship between value and money, and it is potentially inflationary (depending on the supply and import responses). As the economy grows, disproportions and bottlenecks inevitably appear, financial structures become more fragile and, unless cheap imports are readily available, prices (and, possibly, wages) tend to increase. At this stage, the crisis erupts either spontaneously or because contractionary policies have been adopted. If the crisis becomes acute and deflation looms, the state will intervene and deliberate inject (or facilitate the private creation of) extra money.

This does not imply that capitalism must face either permanently rising inflation or continually declining growth rates. Distributive conflict inflation (analysed in section 1) can be thwarted by a

change in the balance of industrial relations (i.e., high unemployment and increased repression against the workers), while monopoly price increases can be contained by trade and industrial policy measures. The creation of private extra money can be checked by regulation or high interest rates, and their inflationary impact can be reduced through a decline in the public deficit and the increased availability of competing imports. Finally, the injection of extra money by the state can be reduced by the curtailment of welfare expenditures, or privatisation. This shows that the relationship between extra money and inflation is complex, and is likely to change depending on the broader circumstances of production and exchange.

3.4 – Assessment

The extra money approach can provide the framework for the further development of a comprehensive Marxian (and, more broadly, radical and post-classical) monetary theory of inflation. However, it is still undeveloped at critical points. The analysis of the supply of central bank and credit money would benefit from greater exposure to the recent post-Keynesian insights (for a taste of the vast literature, see Arestis & Howells 1996, Cottrell 1994, and Dow 1996), the circuitist contributions (Loranger 1982b, Nell & Deleplace 1996), and those of Kalecki (1990b, 1997; see also Messori 1991). In addition to this, further work needs to be carried out to clarify the relationship between the supply of money and the value of money (Dymski 1990, Duménil 1980, Foley 1982). At a more concrete level of analysis, the valuable contributions of Minsky (1975, 1982; Dymski & Pollin 1994) on the intrinsic financial instability of modern capitalism need to be evaluated in considerable detail. This will make it possible to link extra money and conflict theories and, at a later stage, the inflationary impact of the concentration of capital and other important contemporary phenomena such as financial development and liberalisation. Finally, it is essential to analyse in detail the potentially inflationary impact of the public debt overhang, whose increasing liquidity is synonymous with the injection of extra money into the economy (Grou 1977, Marazzi 1977, Mattick 1978).

CONCLUSION

This paper has critically analysed three Marxian theories of inflation. They are closely related to one another, and to non-Marxian analyses such as the post-Keynesian, circuitist, Kaleckian and institutionalist. They argue, in different ways, that although inflation is a historically specific phenomenon whose form can be abstractly determined from the broad features of modern capitalism. However, beyond a certain point concrete studies become necessary in order to contextualise the analysis. Different alternatives are proposed in order to overcome the difficult dilemmas imposed by the attempt to explain inflation in inconvertible money systems, while preserving the endogeneity and non-neutrality of money. They are also heavily dependent on the specific context of the analysis.

Inflation is widely recognised to be potentially functional to modern capitalism. It generally leads to transfers to corporations, banks or the state, which may foster accumulation through forced savings or by giving a 'second chance' to firms which have made mistakes in the past. These functional elements were predominant under creeping inflation, between the late-1940s and the mid-1960s. There is disagreement about the causes of the subsequent acceleration of inflation, and they have been reviewed in this paper. There is considerable scope for the further

development of Marxian analyses of inflation, as well as for substantial cross-fertilisation with other post-classical theories.

The conflict and the monopoly capital-underconsumption theories are especially close to one another. Whilst the latter claims that inflation (and, more generally, the crisis) is largely a consequence of the excessive strength of the capitalist class, the former argues that they are due to the excessive strength of the workers. This can help to explain why one was relatively popular in the weakly unionised USA, whilst the other became better known in Europe, especially the UK (Howard & King 1990, Weisskopf et al. 1985; in contrast, the extra money approach has been developed mostly by Francophone writers). The extra money approach is different in its aims and scope, and it provides the basis for further theoretical work on the monetary aspect of inflation, that may encompass the valuable insights of the other approaches. The extra money approach shows that inflation is necessarily a monetary phenomenon, whilst at the same time demonstrating that the quantity theory is sterile as a starting point. It shows that extra money can lead to higher output, employment and increased productivity, to inflation, or to any combination of them. In sum, it preserves valuable insights of the anti-quantity theory tradition, and develops them further in the context of contemporary monetary and financial systems.

The analysis above needs to be developed much further, but some of its policy implications are already discernible. First, inflation can be functional (as explained above), but its dysfunctional aspects gradually tend to become predominant. Indexation reduces the efficiency of inflation, economic calculus becomes increasingly complex, and capital restructuring becomes more difficult because inefficient capitals and productive processes are preserved, rather than ruthlessly annihilated by market forces. Second, inflation leads to financial crisis by its cumulative character, through the formation of increasingly unstable debt structures. Crises may be postponed almost indefinitely by increasing the supply of extra money, but this may lead to hyperinflation (as in some Latin American and former socialist states). Third, there can be inflation purely for monetary reasons, usually associated with speculative bubbles involving housing, the stock exchange and other assets, which can harm real accumulation by draining it of funds. In this respect, incomes policies can be irrelevant to the prevention of inflation, and they can become inimical to the workers' interests as they prevent the readjustment of nominal (hence real) wages (Lapavitsas & Saad Filho 1999). Fourth, inflation is not inevitable, whatever the power of the banks, monopolies or the workers. However, financial deepening, the concentration of capital, the reduction of trade flows, and worker militancy increase the vulnerability of the economy to inflation, and the difficulty to reverse the process once it starts.

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