

Ricardo, Tooke and the Monetary Thought of Classical Economics*

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1. Introduction

In chapter 4 of Charles Rist's *History of Monetary and Credit Theory: from John Law to the present day* (1940) the monetary thought of 'Tooke the historian' is compared favourably to that of 'Ricardo the logician'. To quote Rist:

On almost every point Tooke takes the opposite view to Ricardo. "Abstract arguments", as Tooke is pleased to call Ricardo's reasoning, find no place in his book [i.e. *History of Prices*]. His conclusions are always preceded by a detailed description and analysis of facts, and are so superior to and so much more comprehensive than the Ricardian simplifications as to make the latter seem unrecognisable. History and theory go hand in hand.' (1840: 180)

According to Rist (1940: 181-2, 202-38) Tooke was the 'creator of the credit theory' who 'illuminates every aspect of every problem which he discusses – the role of banks, the nature of bank-notes and cheques, the origin of crisis, the rate of interest'. Yet, notwithstanding this high opinion, Rist (1940: 190) considered that 'Tooke was no theorist' in a counterpoint to Ricardo, who was a theorist. This comparison by Rist between Ricardo and Tooke was essentially about that between the quantity theory of

* Sections 3-5 of this paper are revised excerpts from draft sections 7.6, 8.4 and 8.5 of my book, *Thomas Tooke and the Monetary Thought of Classical Economics*, London: Routledge, 2011. For more detailed citations of Tooke's banking school theory summarised in section 3, I refer to chapter 7 of this book.

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money approach, which Ricardo was seen to be largely responsible for establishing, and the anti-quantity theory approach of the banking school Tooke. In this regard Rist is correct in our view believing that Tooke's monetary theory to be more appealing than Ricardo's. However, the characterisation by Rist of Ricardo's monetary theory as an oversimplification compared to the more complex but less coherent theory of Tooke is in our view misplaced. From the standpoint of classical economics, the banking school theory of Tooke is as coherent as Ricardo's quantity theory of money. A more accurate characterisation of the intrinsic difference between the contributions to monetary thought of these two writers is: Ricardo the supreme 'deductive thinker' versus Tooke the supreme 'inductive thinker' among nineteenth-century English classical economists. Whereas Ricardo had the tendency of interpreting factual events consistent *a priori* with his theory, Tooke was concerned with establishing the concrete facts in all their complexity by empirical analysis in order to construct a theory. Hence, while Ricardo did not change his monetary theory after 1811 when he had largely worked it out, Tooke progressively altered his position over some thirty years until he had developed his banking school theory by the late 1840s.

The main argument of this paper is that from the standpoint of classical economics Tooke's banking school theory provides a more valuable and lasting contribution to its modern development than Ricardo's quantity theory of money. By modern development of classical economics, we mean its reconstruction following the revival of its theoretical approach by Sraffa's *Production of Commodities by Means of Commodities* (1960). In this regard the outlook of this paper is that classical economics in its modern form as reconstructed since Sraffa (1960) is a superior alternative long-period theory to that of marginalist economics. In fact the revival of classical economics was closely connected to Ricardo, or rather to the re-interpretation of Ricardo's economics by Sraffa, in *The Works and Correspondence of David Ricardo* (1951-73) he edited. In this edition Sraffa (1951) showed that Ricardo's economics was not a precursor to the marginalist approach of Marshallian economics but was in the very different tradition of the surplus approach of classical economics. In this way Sraffa undermined Marshall's 'continuity thesis' which essentially interpreted classical economics as an embryonic forerunner to

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marginalist economics in the seamless development of economic science. Moreover, Sraffa showed that Ricardo is one of most important contributors, after Adam Smith and before Marx, in the development of the *core* theory of value and distribution in classical economics. Indeed, by establishing the inverse relationship between the real wage and profit rate for a given technique, by developing the differential theory of rent to get of 'rid of rent' in the determination of natural price and to show that relative prices were dependent on distribution, Ricardo contributed greatly to the scientific advancement of classical economics. As is well known, Ricardo also made other significant contributions, in particular, the law of comparative advantage, the theory of wages, on taxation incidence, on public debt and of course on money. In many respects, of all Ricardo's contributions, his monetary theory is the least original, with most elements of it having been previously developed by Hume (1752), Adam Smith (1776 [1976]: 37-64, 195-233), Wheatley (1803; 1807) and Thornton (1802). Instead, the great merit of Ricardo's monetary theory is its consistency with other parts of his theoretical 'system'.

This paper begins in section 2 with a concise summary of Ricardo's monetary theory and the main reasons for its lack of appeal. Then, in section 3, an account is provided of Tooke's banking school monetary theory. This is followed in section 4 with an exposition of the constructive value of Tooke's banking school ideas to the theoretical development of modern classical economics since Sraffa (1960). Lastly, section 5 identifies Tooke's main legacy to economic science.

2. On Ricardo's Monetary Theory

It is well known that among English classical economists Ricardo was an exponent of a rigid version of the quantity theory of money. He largely developed his theory in writings published between 1809 and 1811 which concerned the bullionist controversies in England that arose out of the depreciation of pound sterling (as measured by reference to the premium on market price of gold above its official mint price) during the period of restriction in which Bank of England notes were not convertible into gold. Unlike many other parts of his theoretical system, Ricardo did not entertain any significant change in

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his monetary theory. The quantity theory of money formulated by Ricardo can, for convenience, be considered by reference to the income form of the monetary equation:

$$M V = P Y \quad (2.1)$$

where M is the quantity of money (consisting of Bank of England notes and coin), V velocity or ‘rapidity’ of circulation, P the price level and Y the level of output. Ricardo (1951-73, III: 311) argues that causation runs unambiguously from MV to PY , with M being the main regulator of P . While Ricardo (1951-73, III: 88-90, 276-7) acknowledged that V can vary, it does not do so in any systematic way in relation to changes in M on the basis that it is essentially conceived to be an institutional datum which depends on the banking habits of the public and the developed state of the financial system. Ricardo also acknowledged that changes in M could influence Y , but that this influence would only be temporary and insignificant, because it was seen to be largely derivative of the change in P .¹ Hence, for Ricardo, generally ‘money cannot call forth goods’ (III: 301). In this regard, it appears Ricardo (1951-73, V: 436-8) invokes Says Law to suppose Y is fixed at full capacity utilization, an *assumption* which lacks any theoretical basis in classical economics, as we will consider below. On the basis that M is under the exogenous control of the Bank of England as the central banking authority, which Ricardo takes for granted, then an increase (decrease) in M will, given that V and Y remain largely unchanged, lead to an increase (decrease) in P , the result of an excess of money.

An important element in Ricardo’s theory, which is connected to the issue of the Bank of England’s exogenous control over the quantity of money, is the argument that additional money will always be completely absorbed into circulation and not be ‘over-full’. Ricardo (1951-73, I: 363-4) argued that in the event of an increase in the quantity of money the rate of interest would decline in relation to the rate of profit to ensure that the excess of money would be absorbed to circulate commodities at higher prices. In Ricardo’s theory of distribution developed from 1815, the natural rate of profit is determined by ‘real forces’, consisting of the real wage in conjunction with the technique

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of production, so that monetary conditions influencing the rate of interest have no significant bearing upon it (see section 5 below). On this basis, Ricardo argued that the demand for money would rise indefinitely if the rate of interest was lowered in relation to the rate of profit by an increased issue of Bank of England notes:

The applications to the Bank for money, then, depend on the comparison between the rate of profits that may be made by the employment of it, and the rate at which they are willing to lend it. If they charge less than the market rate of interest, there is no amount of money which they might not lend, - if they charge more than that rate, none but spendthrifts and prodigals would be found to borrow it (1951-73, I: 364).

Once the excess of money necessary to accommodate the price inflation has been absorbed by its demand the rate of interest will adjust back up to the level of the rate of profit compatible with price stability. This argument essentially constituted a monetary transmission mechanism, albeit incomplete, causally linking changes in the interest rate in relation to the rate of profit to the demand for money connected with the employment of borrowed capital and, necessarily, spending. During the bullionists controversies Ricardo (1951-73, III: 91-2) and also Thornton (1811: 335-9) ultimately relied upon this argument to substantiate their proposition that by lending at a rate below the market rate of interest (and profit rate) the Bank of England was able under restriction to issue an excess amount of inconvertible banknotes which would be absorbed by a higher induced demand for money in the process of causing price inflation.

A key feature of Ricardo's quantity theory of money is that its applicability is different under a gold (or silver) convertible monetary system to an inconvertible monetary system in which fiat money circulates. In a gold (or silver) convertible monetary system the quantity theory is essentially confined to the short run. The reason for this is that in a gold convertible monetary system the money prices of commodities other than gold are determined by their relative value to gold normalised by the official mint price of gold (i.e. the gold standard). In Ricardo's theoretical 'system' this means that gold money prices of commodities at long period equilibrium positions are determined by the

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technique of production on the basis of the distribution of income. The price level therefore depends on the technique of production of commodities, and, in particular, on the technical conditions of production which determines the value of gold as a non-reproducible commodity. From the first edition of the *Principles* (1817) onwards, Ricardo (1951-73, I: 85-7) conceived that like agricultural production on land, gold mining was subject to diminishing returns with the normal value of gold being determined by the quantity of labour embodied in its production at the least productive mine at which rent was zero. This conception is consistent with the long held position in classical economics that the long run quantity of money employed in monetary circulation was endogenously determined by its natural value for a given level of output and velocity of circulation (see Green 1992: 14-15; also see section 3 below). Hence, by reference to equation 2.1 above, in a gold convertible monetary system PY are determined at long-period normal positions by 'real forces', mainly by technical conditions of production at a 'stage in accumulation', so that long run causality runs from nominal income, PY , measured according to the gold standard, to the effective monetary circulation, MV , including gold money used in circulation. This position of Ricardo's is conveyed in the following passage:

Gold and silver, like all other commodities, are valuable only in proportion to the quantity of labour necessary to produce them, and bring them to market. Gold is about fifteen times dearer than silver, not because there is a greater demand for it, nor because the supply of silver is fifteen times greater than that of gold, but solely because fifteen times the quantity of labour is necessary to procure a given quantity of it. ... The quantity of money that can be employed in a country must depend on its value: if gold alone were employed for the circulation of commodities, a quantity would be required, one fifteenth only of what would be necessary, if silver were made use of for the same purpose (1951-73, I: 352; also see III: 90).

For Ricardo (1951-73, III: 90-94), providing gold is convertible at a fixed monetary standard, then monetary policy induced changes in the quantity of paper money, consisting of Bank of England notes, would exert a short-run not a long-run influence on

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the price level in Britain. The 'price-specie-flow' mechanism plays a critical role here in Ricardo's theory. If, for example, the Bank of England should issue an excess amount of paper money by discounting below the market rate of interest, then this will tend to induce a rise in the price level and, thereby a depreciation in the value of paper money in terms of gold, as measured by the premium of the market price of gold above its mint price. An important point for Ricardo (1951-73, III: 61) is that this excess of money would make gold effectively cheaper relative to all other commodities so it becomes 'the cheapest exportable commodity' in the country. As a result, according to the price-specie-flow mechanism, on the balance of payments there would be a larger importation of commodities other than gold settled by the export of gold (specie) which, in turn, would lead to a decline in specie reserves so compelling the Bank of England to contract its gold convertible banknotes, and, thereby, reduce the (gold) price level and restore the value of paper money at par. On this basis Ricardo (1951-73: 63-5, 218-21) reasoned that in gold convertible monetary system Bank of England monetary policy could have only temporary impact on the price level and the pound sterling exchange rate could only vary to the limits of gold points given by the cost of melting and exporting gold.

It is under an inconvertible monetary system, which was the case in Britain during the restriction period 1797-1821, that Ricardo's quantity theory of money applies to both the short and long run. In this case the price level in long-period positions is no longer determined by technical conditions of production determining the relative values of commodities other than gold to gold, but, instead, it is simply determined by the quantity of paper money issued at the fiat of the Bank of England and other note-issuing banks. As a bullionist Ricardo strongly opposed restriction because he believed that in absence of convertibility there was no means of compelling the Bank of England, through the operation of the price-specie-flow mechanism, to always adopt a sound policy which kept the purchasing power of money stable. Put simply, under restriction the quantity of money was not constrained in any way by the state of the balance of payments because the Bank of England was under no obligation to hold levels of specie reserves to ensure the convertibility of its banknotes. In the bullionist controversies Ricardo (1951-73, III: 49-99, 214-21, 236-44) therefore argued that price inflation which occurred during the

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restriction period was entirely the consequence of an excess quantity of paper money. Moreover, Ricardo (1951-73, III: 86-8, 227-35) attributed the excess quantity of money to the Bank of England, contending that its accommodating monetary policy facilitated an overall expansion of banknotes by note-issuing country banks. Ricardo pointed to the premium of the market price of gold above its official mint price as clear evidence of the depreciation of paper money as a result of its excess quantity.

In these controversies Ricardo showed himself among bullionists to be one of most uncompromising quantity theorists who minimised the influence of real forces on the price level. Irrespective of whether the originating cause of a rise in the price level was a real factor such as an unproductive harvest, Ricardo's position was that its effect could always be countervailed by a contraction in the quantity of money. Indeed, by reference to his own test, even if the originating cause of the depreciation of paper money with respect to gold was real factors operating on the value of gold, Ricardo's (1951-73, I : 148-9, IV: 335) position was that it was still ultimately the result of an excess in the quantity of money allowed by Bank of England policy. In other words, the ultimate cause of variations in the price level was always changes in the quantity of money. This uncompromising stance was also shown in Ricardo's criticism of Thornton (1802: 144, 151-3) for maintaining that harvest failures and foreign expenditure by the British Government for subsidies to allies and military operations in prosecution of war could be causes of an unfavourable balance of trade. Ricardo (1951-73, III: 59-61) claimed an 'unfavourable balance of trade never arises but from a redundant currency' which makes gold the cheapest commodity to export. In the case of a harvest failure, Ricardo (*ibid*) essentially argued that in absence of a countervailing reduction in the quantity of money the amount of commodities produced would be reduced, lowering the value of gold in terms of other commodities so that it becomes the 'cheapest exportable commodity'.² However, in the case of government foreign expenditure, Ricardo failed to provide a convincing argument showing that it too led to a 'redundancy of currency' that could be corrected by a restrictive monetary policy stance. The problem for Ricardo is that he would not understand that gold was just not like any other tradable commodity but was by consent a universally accepted means of settling international debts which unlike other

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commodities was always in universal demand (see De Vivo 1987: 188) Hence, independent of the redundancy of currency, a harvest failure or government foreign expenditure could cause an unfavourable balance of payments which required the export of bullion to creditor nations unwilling to accept an additional quantity of British exports not in immediate demand (see Malthus 1811: 342-5). This lack of understanding also undermined Ricardo's explanation of the depreciation of pound sterling against gold during the restriction period in which he dismissed the role of the French Wars. As Blake (1823: 10-38) and then later Tooke (1838, I: 153-172, 242; II: 28-34) showed, the depreciation of paper currency against gold could, in the circumstances of these wars, be explained by the depreciation of the pound sterling exchange rate against other foreign currencies caused by an unfavourable balance of payments independent of changes in the quantity of money. Indeed, the evidence supports this explanation in which foreign expenditure in prosecution of the wars by the British Government was a major cause of the extended depreciation of the pound exchange rate in which Napoleon's Continental blockade prevented exports from correcting the country's balance of payments.

A major weakness in Ricardo's monetary theory is its lack of flexibility. Unlike Thornton (1802), Ricardo did not allow much for even short run changes in the velocity of circulation of money which suggests that he did not appreciate that a major strength of Britain's monetary system was its elasticity in coping with changes in economic conditions. In particular, Ricardo's denial that monetary conditions, including monetary policy, exerted any significant influence on the level of output is on weak ground. While adopting Says Law in the long run had a theoretical rationale in classical economics the adoption of it in the short run by Ricardo (1951-73, III: 108) to deny the possibility of 'general gluts' amounted to an *ad hoc* assumption. The reason for this is that after Adam Smith (1776 [1976]: 72-81) classical economists conceived that in long-period equilibrium positions at which competition established a uniform net rate of profit on capital the outputs of all commodities are adjusted to their effectual demand so that aggregate production must be equal to aggregate demand. This provides a rationale for Says Law identity to fix the level of long-period output. But there is no such rationale for Ricardo invoking Says Law in short-period positions when market prices deviate from

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their normal values, outputs of commodities can deviate from their effectual demands and there is non-uniformity in the net rate of profit. By doing so Ricardo essentially ruled out consideration of the role of money in the fluctuation of activity and not just the price level. In this regard, being a strict quantity theorist, Ricardo considered money unimportant: 'productions are always bought by productions, or by services; money is only the medium by which exchange is effected' (1951-73, I: 292).

From the standpoint of the development of monetary thought in classical economics Ricardo's monetary theory is not in our view very appealing. Firstly, unlike in marginalist economics, there is no theoretical basis in classical economics for supposing that competitive forces would cause the economic system to tend in the long run to a full-employment equilibrium level of output, which is necessary to properly accommodate the quantity theory of money. Ricardo's notion of Says Law as being a level of output characterised by the full-utilisation of productive capacity is not based on any theoretical foundations and amounts to nothing more than an assumption. Other classical economists, more careful to invoke Says Law only in the long run, certainly did not make this full-employment assumption (see Smith 2011: 103-4). As Garegnani (1983: 24-8) has shown, Says Law of the classical economists, including Ricardo, stemmed from the absence of any coherent theory of output with a saving-investment analysis. In the modern reconstruction of classical economics the most appropriate theory to explain the level of output is the Keynesian principle of effective demand. However, the quantity theory of money of Ricardo is not compatible with this Keynesian theory of output. A more compatible and, indeed, empirically plausible, theory is that which proposes that the quantity of money is endogenously determined by its demand, along lines pioneered by Tooke in his banking school theory (see section 4 below). Secondly and connected to the first point, is that Ricardo's quantity theory of money lacks a solid transmission mechanism by which it can be supposed that an exogenous change in the quantity of money is absorbed into circulation. As discussed above, Ricardo, along with Thornton, relied on the indirect effect of variations in the rate of interest in relation to the profit rate on the inducement to spend to substantiate their proposition that lending at a rate below the market rate of interest, the Bank of England was able to issue an excess amount of

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inconvertible banknotes which would be absorbed by higher monetary demand in the process of causing price inflation. However, this transmission mechanism of monetary policy was incomplete because there was no serious consideration given by Ricardo as to how, given the profit rate, an increase (or decrease) in the rate of interest would precisely induce an increase (reduction) in the demand for credit to finance an increase (reduction) in monetary expenditure. Ricardo simply took for granted such a causal relationship. But, as is discussed in section 4 below, in classical economics no strong systematic or functional relationship between the interest rate and spending can be established. Thirdly, an implication of Ricardo's monetary theory is that monetary forces, including monetary policy, cannot exert any lasting influence on real economic variables such as output and employment. This long-run money neutrality, which is characteristic of Ricardo's theory, is discussed in section 5 below. While long-run money neutrality has traditionally characterised economics, it is not in our view empirically plausible nor theoretically sound in modern classical economics. By contrast, as shown in the following, Tooke's banking school theory is not encumbered by these problems in constructing a monetary theory compatible with modern classical economics.

3. Tooke's Banking School Theory

Tooke's banking school theory essentially consists of three connected principles. The first and central principle was that in a convertible system of currency the quantity of money in circulation, consisting of all forms of means of payment, is endogenously determined by the aggregate monetary value of all transactions in the economy (Tooke 1844). Its corollary was that causation ran from the price level to the quantity of money in circulation. The main implication of this proposition is that the Bank of England, as the central banking authority, did not have the discretionary power to autonomously regulate the quantity of money in conflict with the requirements of trade. Any attempt by the Bank of England (or the banking sector as a whole) to autonomously expand its convertible banknotes in circulation which was not justified by public demand would be returned to the banking system; while, alternatively, effective measures to withdraw banknotes and

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coin from active circulation in relation to public demand would result in their substitution by other less convenient monetary instruments (i.e. credit). Hence, Tooke (1844: 49-52; 1848, IV: 183-97) proposed that the velocity of circulation of banknotes and coin would vary considerably in the short run in response to changes in the demand for money according to the institutional structure of the financial system and the conduct of monetary policy in response to economic circumstances. Only in an inconvertible system of currency did a central authority responsible for issuing paper money have the power to autonomously influence the quantity of money. However, looking at history, Tooke (1844: 19-20, 71-2; 1848, IV: 173-218) believed the only plausible way that this power could be systematically exercised was by the government issuing compulsory money to finance its expenditures and, thereby, force it directly into circulation. But, when, in the ordinary course of commercial banking, inconvertible banknotes were issued by way of short-term loans and discounts, as occurred in England during the restriction period 1797-1821, the central issuing authority (i.e. Bank of England) had limited power to autonomously regulate the quantity of money. Therefore, with qualification, Tooke proposed that the quantity of money in circulation was normally demand-determined in a fiat-based monetary system as well as in a gold-based one. Importantly, Tooke's conception of endogenous money was entirely compatible with his long held explanation of prices which attributed price movements in England to 'natural' and 'political' factors affecting the supply conditions of commodities.

The second banking school principle of Tooke's was the negative one that the rate of interest has no systematic inverse causal influence on the inducement to spend in the economy. This meant that while the Bank of England could exert a temporary influence on the rate of interest, it could *not* thereby exert a systematic and predictable influence on expenditure and the public's demand for money. Instead, Tooke (1840, III: 150-66; 1844: 76-86) argued that through its effect on the rate of interest, the Bank could influence credit conditions and, according to the state of markets, economic activity. In regard to credit conditions, Bank of England policy was conceived to have a systematic effect on portfolio investment, with a lower (higher) discount rate tending to promote higher (lower) prices of shares and government securities. Bank policy was therefore conceived

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to have a reliable influence on share market activity. Through adjustments in its discount rate, the Bank could also reliably influence short-term capital flows and, thereby, the reserves of bullion which underwrote liquidity (and ‘confidence’) in Britain’s gold-based money market. Nevertheless, by affecting credit conditions, the Bank of England’s influence on monetary expenditure was unsystematic, depending on the concrete situation. Thus, under circumstances favourable to speculation, a low rate of interest could play a role in facilitating additional borrowing and increase the purchase of commodities (by dealers), but it could not be the moving cause of higher monetary expenditure. Alternatively, a high rate could have a restraining influence on speculative buying pressure in commodity markets. Based on empirical evidence, Tooke (1840, III: 266-8; 1857, V: 585-90) proposed that if anything a restrictive policy, especially a violent one, involving the Bank of England raising its discount rate, was more effective in reducing expenditure by dealers on commodities, mainly in credit-laden markets, than a low interest rate policy was in stimulating higher spending.

The third principle was that the long-run average rate of interest entered into the normal cost of producing commodities so that permanent changes in this rate exerted a positive causal influence on the long run price level (Tooke 1840, III: 166-7; 1844: 81, 123-4). Consistent with this notion, the banking school Tooke implicitly proposed this average rate governed the normal rate of profit. Tooke (1826: 5-31) had long argued that this average rate of interest was determined in the financial market by politico-institutional and conventional factors, largely independent of Bank of England policy. Hence, in the long run, the monetary authorities were conceived by Tooke to have limited power to indirectly influence the rate of interest and, thereby, the price level.

On the basis of these principles and in accordance with his dual circulation framework, Tooke’s banking school theory can be represented in terms of the income form of the monetary equation. The following two monetary equations are employed for this purpose:

$$M_n^* V_n^* = P_n Y_n \quad (3.1)$$

$$M_n V_n = P_n Y_n \quad (3.2)$$

where P_n is the normal general price level; Y_n is the normal level of aggregate real income (or gross output); M_n^* is the normal quantity of the total money in circulation (i.e. including all forms of credit in what Tooke called ‘circulating medium’) and V_n^* is its normal income velocity of circulation; M_n is the normal quantity of Bank of England notes and coin in circulation and V_n is its normal income velocity of circulation. With respect to the relationship between these two equations: $M_n^* > M_n$ and $V_n^* < V_n$.

These two equations are conceived to correspond to a long-period position of the economy in which monetary equilibrium is established. In this position the normal outputs of all commodities are conceived to have adjusted to their effectual demands and, for a given technique of production, normal (relative) prices of commodities are determined on the basis of a uniform net rate of profit on capital. The normal general price level, P_n , is calculated according to the composition of commodities making up the value of gross output, whereby, in a convertible system of currency, the normal money prices of commodities are expressed in terms of gold at its official mint value. It is also conceived that for a given level of income (and wealth), V_n and V_n^* are determined by the institutional structure of the monetary system in relation to the conventions and habits of agents in expediting payments. In this equilibrium M_n and M_n^* will correspond with a certain reserve of (gold) bullion at which the foreign exchanges are at par and the money (or paper) price of gold is at its mint value.

In the long run Tooke argued that changes in the general price level, P_n , are determined by natural and political factors permanently affecting the normal costs of producing and bringing to market a major group of commodities in relation to gold. Given the normal level of output, Y_n , changes in the price level are conceived to endogenously determine monetary circulation, consisting either of $M_n^* V_n^*$ or $M_n V_n$ on the left-hand side of equations of (3.1) and (3.2), respectively. This conception that for a given technique of production and given the institutional structure of the financial system, causality runs from nominal income to monetary circulation is entirely compatible with

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classical economics. As shown by Green (1992: 12-17), the classical economists, including Ricardo, conceived that a permanent change (rise) in the general price of commodities in relation to gold (or silver) would result in an endogenous change (increase) in monetary circulation associated with a sympathetic change (rise) in the production of gold (or silver). The distinctive feature of Tooke's banking school theory was that compatible with this conception, for a given level of normal real income (and aggregate output), long-run causality ran from the average rate of interest to the normal price level to an endogenously determined quantity of money in circulation.

It was in relation to short-run monetary disequilibria, when economic variables deviated from their normal values, that the monetary thought of the banking school Tooke differed so markedly from the classical quantity theorists. Indeed, Tooke's differences with the currency school centred on the short-run position of the economy (Laidler, 1975: 218-19; Green, 1992: 15-17, 207-9). In relation to equations (3.1) and (3.2), this short-run disequilibrium position can be expressed as truisms by the following equations:

$$M^* V_m^* \equiv P_m Y_m \quad (3.3)$$

$$M V_m \equiv P_m Y_m \quad (3.4)$$

where P_m is the short run general price level calculated on the basis of the *market* prices of commodities at which their demands and supplies are not equal and a non-uniform net rate of profit on capital rules; Y_m is the short-run level of aggregate real income (and gross output) different from its normal level; M^* is the actual quantity of circulating medium associated with V_m^* , its short-run income-velocity of circulation; M is the actual quantity of Bank of England notes and coin and V_m is its short-run income-velocity of circulation. In contrast to the classical quantity theorists, Tooke proposed that in a convertible system of currency, *short-run causality* went from fluctuations in nominal income, $P_m \cdot Y_m$, according to changes in prices and economic activity, to the quantity of circulating medium (M^*) associated with variations in its velocity of circulation (V_m^*).

This will be associated with relatively larger variations in the velocity of circulation of Bank of England notes and coin (i.e. $\Delta V_m > \Delta V_m^*$), the extent of which will depend on the policy of the Bank of England in relation to the circumstances behind the particular change in nominal income.³ Within his dual circulation framework, Tooke believed these short-run changes in nominal income (around normal levels) were predominantly due to fluctuations in the price level as connected with variations in the number of commodity transactions (or trading activity) between dealers and dealers accommodated by sympathetic variations in the amount of credit.⁴

Tooke's conception of endogenous money is entirely consistent with his explanation of short-run price fluctuations. It was shown in chapters four and five that from the beginning the pre-banking school Tooke attributed price fluctuations mainly to real factors affecting supply in relation to the demand for (a major group of) commodities. In the anatomy of price fluctuations Tooke believed the main catalyst was a supply shock which caused a shortage in the market for a major commodity (or group of commodities) so that $P_m > P_n$. The banking school Tooke argued such an upturn in the price level (and nominal income) was accommodated by an increase in the facility of credit available to dealers so that in relation to the equations above: $M^* > M_n^*$, given $V_m^* \approx V_n^*$, and $V_m > V_n$. When this upturn is extended by speculative buying by dealers then, as a result of increased confidence in the provision of credit (especially of bills of exchange), income-velocity of the circulating medium will tend to rise so that $M^* > M_n^*$ will be accompanied by $V_m^* > V_n^*$. This will particularly occur when commodity speculation is accompanied by a speculative boom in the share market.⁵ Should the Bank of England adopt a low interest rate policy which helps accommodate speculative activity, the income-velocity of Bank of England notes and coin will tend to be greater. According to Tooke's principle of limitation, a rising price level will eventually be brought to an end by an insufficient effectual demand as limited by a relatively stable level of social income (in gold). By contrast, a downturn in the price level (so that $P_m < P_n$) is the result of an excess supply in markets for a major group of commodities. In Tooke's analysis this excess supply is usually caused by either an exogenous increase in supply (e.g. an abundant harvest) in relation to demand or, in reaction to a collapse of a speculatively-based upturn in

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commodity prices demand falls in relation to supply. This will induce a contraction of credit so that $M^* < M_n^*$, and with market confidence low, $V_m^* < V_n^*$. Furthermore, as a result of widespread efforts to shore up liquid positions, the demand for Bank of England notes and coin will tend to increase so that $M > M_n$, associated with $V_m < V_n$. Tooke (1848, IV: 125-6) believed such an intense demand for liquidity will on its own tend to raise the market rate of interest. Tooke also believed this will occur in a situation where the Bank of England adopts a violent restrictive monetary policy which effectively depresses economic activity as well as the price level.⁶ On the basis of Tooke's (1844: 71-5) principle of limitation, notwithstanding losses incurred by commodity traders in the adjustment process, the downturn in prices (and therefore the price level) will be ultimately limited to the 'cost of production' (in gold) at which producers can profitably supply the market.

Of particular interest is the implication of Tooke's banking school position for the external adjustment process. The price-specie-flow mechanism of the quantity theory is completely repudiated by his banking school principles. In particular, Tooke rejected that (a) there was any systematic relationship (even in a purely metallic system) between external specie flows and the internal quantity of money in circulation and that (b) a change in the quantity of money would (*via* the rate of interest) systematically cause a change in domestic expenditure and the price level. Nevertheless, Tooke considered variations in relative prices in international commodity markets would effect trade flows and contribute to external adjustment in the long run. From his monetary analysis it is apparent Tooke believed the trade adjustment process relied on three kinds of price mechanisms. In the first place, Tooke believed that when exports were high, there was a tendency for supply on the domestic market to decline in relation to demand, imparting upward pressure on prices; and when exports were low, *vice versa*. Secondly, when export income was high (low), the resulting increase (decrease) in the nation's income and prices would tend to raise (lower) import expenditures.⁷ Thirdly, Tooke believed changes in the foreign exchanges within the gold points under a gold-convertible monetary system contributed to trade adjustment. Accordingly, when a trade surplus (deficit) resulted in a balance of payments surplus (deficit), an appreciation (depreciation)

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in the foreign exchanges would, by reducing (improving) price competitiveness, tend to reverse the flow of trade. It needs to be emphasized though that Tooke considered this adjustment process to be a tendency subject to natural and political factors which often disturbed international market conditions. In the short run, Tooke had long held the position that besides the cushion provided by variations in bullion reserves at the Bank of England, external adjustment relied heavily on the effect of variations in the rate of interest (relative to overseas rates) on net capital flows. He argued that to ensure monetary stability, this adjustment process needed to be managed by the Bank of England through discretionary policy, involving the alteration of its discount rate.

4. Tooke and Modern Classical Economics

A fresh light has been thrown on Tooke's political economy by the modern reconstruction of classical economics, which chiefly stemmed from a clarification of the classical theory of value and distribution by Sraffa (1951; 1960). In particular, this revival has clarified many theoretical issues in classical economics enabling a more precise assessment of Tooke's monetary thought. It was shown in section 3 above that from the standpoint of classical economics Tooke's banking school theory was as coherent as the quantity theory approach. Moreover, within the framework of modern classical economics, Tooke's banking school theory makes an important constructive contribution to explaining the distribution of income, the behaviour of the general price level and the operation of the monetary system.

The first element of Tooke's theory which makes a constructive contribution is his conception of endogenous money, essentially consisting of the argument that given the institutional structure of the monetary system, the quantity of 'circulating medium' is determined by the demand for money of the non-bank public according to the level of nominal income of the economy. In this conception, Tooke proposed that on the basis of a *given* level of output (or real income), short run fluctuations in the price level would be accommodated by variations in the velocity of circulation of banknotes and coin. Tooke believed this conception was not only relevant to a gold-based monetary system but was

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also relevant to a fiduciary monetary system. It has been argued by Green (1991: 203, 207-8) that a major weakness in the position of Tooke was his adherence to Say's Law because it ruled out the possibility that adjustment to monetary disturbances involved changes in output as well as in prices and the velocity of circulation. However, Tooke maintained that such disturbances were usually the result of natural and political factors which, by influencing the conditions of production and distribution of commodities, acted on the general price level. Except in the special case of a government issuing compulsory money to finance its expenditures, Tooke disputed the fact that monetary disturbances could in the first place stem from monetary policy acting directly on the quantity of money. Moreover, Tooke invoked Say's Law only as a long-run equilibrium condition. He fully grasped that in the short run there could be 'general gluts' from 'overproduction' or, alternatively, an excess in aggregate demand. From Tooke's standpoint, the response to these temporary states of disequilibrium between aggregate demand and aggregate supply was a change in output sympathetic with price fluctuations so that adjustment fell upon the velocity of circulation.

Nevertheless, it is true that by adhering to Say's Law Tooke neglected to account for the determination of output and income in his monetary analysis. Indeed, he adopted Say's Law essentially because he lacked a saving-investment analysis and theory of output. In the absence of such an analysis to explain the determination of equilibrium output Tooke was unable to account adequately for the interaction between financial and expenditure flows consistent with his conception of endogenous money. However, Tooke's shortcoming should be seen in the context of the absence of any coherent saving-investment analysis and theory of output in classical economics. Hence, the precise theoretical shortcoming in question is present in the monetary analysis of all classical economists, even those such as Malthus who opposed Say's Law but did not possess a theory of output. It was not until the ascendancy of marginalist economics in the late nineteenth century and the subsequent development of a saving-investment analysis, chiefly by Marshall as developed by the Cambridge School and by Wicksell, in the Austrian tradition, that the quantity theory was re-formulated in terms of expenditure flows and the determination of output.

In view of the primacy Tooke gave to the demand for money in his conception of endogenous money and the importance he ascribed to the rate of interest in the Bank of England's capacity to temporarily influence monetary conditions, Tooke showed a much greater appreciation of the transmission mechanism by which monetary policy could be effected than his contemporaries. Tooke's main attack on the currency school consisted in exposing the absence of a plausible transmission mechanism in its quantity approach to money. The currency school simply took it for granted that the banks possessed the power to regulate exogenously the quantity of money in circulation. For this reason, aside from other members of the banking school and J.S. Mill, Tooke's classical contemporaries could not comprehend his notion that the quantity of money was contingent on and not the cause of changes in economic activity and prices. As remarked by Pivetti (1991: 77): 'Tooke has the great merit of managing to go to the heart of the matter; the question of the effects of changes in the rate of interest on the inducement to purchase commodities'. Tooke denied any functional inverse causal influence of changes in the rate of interest on the demand for commodities, thereby disputing that monetary policy could in a predictable way influence economic activity in the short run. On this point, Tooke stood on firm theoretical ground. This is because the theoretical basis in monetary economics for a functional inverse relationship between short-run changes in the rate of interest and changes in monetary expenditure has been the interest-elastic demand for saving (or investment) function derived from the marginalist analysis of distribution and production, specifically from the marginal productivity premises underlying the demand function for capital (Garegnani 1983: 24-8; 1990: 58-61). By contrast, in classical economics, there is separability between the analysis of distribution and the determination of output which rules out any such functional relationship between the rate of return on capital and investment-related expenditure.⁸

Instead, in classical economics, there is scope to argue that changes in the rate of interest can exert a *short run* influence on monetary expenditure but only in an unsystematic manner, consistent in fact with the approach taken by Tooke.⁹ Certainly Tooke's analysis admitted the possibility of a causal relationship through the systematic influence of the rate of interest on the value of share capital which, thereby, could affect

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large-scale investment projects and, indirectly, by way of a wealth effect, could affect consumption expenditure. Moreover, Tooke believed the most common way changes in the rate of interest influenced spending in the short run was by its impact on the facility of credit to merchant traders. Tooke also believed that an increase in the money rate of interest was generally more effective in depressing monetary expenditure in the short run than a decrease in the money rate was in stimulating monetary expenditure. But, importantly, Tooke maintained that the effect of a temporary change in the rate of interest on spending was contingent on a wide set of factors and could only be ascertained by reference to the concrete situation under consideration.

With respect to the *long run* influence of the rate of interest on monetary expenditure, in contrast to the position in marginalist economics, it is possible in modern classical economics to argue that a permanent change in the money rate of interest will exert a lasting influence on aggregate demand and, thereby, real income and output. This argument will be elaborated in the next section of this chapter. As is anticipated in our discussion below in this section, in large part, this argument originally derives from Tooke's conception of the long-run average rate of interest as a cost of production. Nevertheless, in Tooke's picture, monetary policy can only influence economic activity and prices in the short run through its temporary effect on the rate of interest, and, thereby, through its unsystematic effect on spending, with the quantity of circulating medium endogenously determined by the resulting demand for money. Hence, while Tooke rejected any systematic influence of short-run changes of the rate of interest on spending, unlike the classical quantity theorists, he well appreciated that it was through interest rates that monetary policy could influence financial conditions and the wider economy.¹⁰

Tooke's banking school theory of endogenous money in which the quantity of money in circulation is demand-determined in the short run as well as in the long run is entirely compatible with classical economics. However, as suggested above, this theory can only be properly formulated in connection with a saving-investment analysis and theory of output which provides a congruent framework for developing an analysis of the

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interaction between expenditure and financial flows in relationship to the capital stock of a monetary economy. The Keynesian demand-led theory of output provides that congruent framework in modern classical theory. In this connection, the principle of effective demand is capable of explaining the level (and structure) of output compatible with the classical approach to the determination of (relative) prices and distribution.¹¹ This is because in the classical approach long period normal prices and distribution are determined for *given* quantities of gross outputs (Kurz and Savadori 1998). Therefore, in classical economics the aggregate level of output is open to determination by the principle of effective demand (Garegnani, 1983: 61-3; 1990: 122-4; Milgate 1982: 100-101). On the basis of this principle, economic growth is conceived to be determined by the growth in effective demand (Serrano 1995). As is well known, according to the Keynesian principle of effective demand equilibrium income, output and employment are determined by effective demand on the basis of a given propensity to spend and given levels of expenditure exogenous of income. An important feature of this theory of output is that providing there is unutilized productive capacity saving can always be generated by increases in aggregate demand.¹² The non-existence of a factor-price mechanism characteristic of marginalist theory which acts to adjust aggregate demand to a level of output at full-employment means that in classical economics unutilized productive capacity can be conceived to be the norm. Indeed, the evidence of history is that labour unemployment is the norm though its rate may vary.

This demand-led theory of output, with its postulate that *via* the multiplier the volume of saving endogenously adjusts to the level of investment, is also consistent with the conception that subject to the institutional structure of the financial system, the overall quantity of money (and its composition) is endogenously determined by a demand-driven process. An important aspect of this latter demand-driven process in a developed monetary system is the role of credit-creation in which money, in the form of bank deposits, is created on the basis of fractional reserve holdings of liquid funds by banks. Tooke was well aware of the credit-creation process in which bank deposits could be generated as a multiple of a bank's cash reserves. In Tooke's banking school theory bank loans are clearly conceived to be exogenous as they represent the major way in which the

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demand for money is met with bank deposits created endogenously according to a reflux mechanism. But Tooke does not articulate this demand-driven process in terms of expenditure flows and income creation. In this connection the Keynesian theory of effective demand supposes that the financial system is capable of creating credit in order to finance any levels of net investment which happen to exceed planned saving for the period of time it takes for the operation of the expenditure-multiplier process to raise the level of income and generate the additional savings necessary to restore equilibrium.¹³

From this theoretical standpoint the demand-driven credit-creation process can in simple terms be conceived to involve, for example, the advancement of loans by banks to meet an exogenous demand for funds to finance new investment, the expenditure of which endogenously generates additional bank deposits and, in turn, enables an expansion in bank loans, corresponding to the increased transactions demand for money associated with the expansion in income, output and, thereby, saving, generated in the expenditure-multiplier process. Deriving from a net expansion of bank credit and deposits, the banking system will require additional cash reserves the net demand (of existing supply) for which is conceived to be ultimately met in the short-term money market by the central bank at its set rate of interest on liquidity.¹⁴ This simple example illustrates that the flows of expenditure and income in the Keynesian demand-led theory of output are congruent with the flows of credit funds and the volume of money in which the latter is conceived to be endogenously determined in a demand-driven process. Hence, Tooke's conception of endogenous money is capable of being developed to incorporate a credit-creation process on the basis of a demand-led theory of output compatible with modern classical economics.

The second element of Tooke's banking school theory which makes a constructive contribution is the conception that as a constituent part of the normal money cost of production of commodities, the average rate of interest exerts a positive causal influence on the general price level in the long run. This conception is underpinned by his argument that the long-run average rate of interest governs the normal rate of profit. However, there is a major shortcoming in Tooke's articulation of this concept in the adding-up theory of

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prices and distribution as the latter is analytically deficient because it fails to account for the interdependence between the real wage and rate of profit in the determination of normal prices for a given technique of production. As a result, Tooke was impervious to the full implications for distribution theory of his conception that the money rate of interest, as an independently determined variable governing the normal rate of profit, exerted a positive causal influence on prices. In classical theory, according to the surplus approach to prices and distribution developed by Ricardo and Marx, and reconstructed by Sraffa (1960), for a given technique of production, there is an inverse relationship between the rate of profit and the real wage. Hence, Tooke's conception implies imputing to the money rate of interest the main role in determining distribution through the determination of the rate of profit and, thereby, for a given technique, the real wage as a residual.

On the assumption that the real wage is not determined by, and normally stands above, the subsistence requirements of workers, Tooke's conception is entirely consistent with this classical theory of prices and distribution. Indeed, based on this assumption Sraffa (1960) proposed that the rate of profit in an economic system producing a positive surplus product can be taken (necessarily lower than the technically maximum possible rate of surplus value) as the autonomous distributive variable so that real wage is determined residually along with normal prices. For Sraffa, this manner of determining distribution could find plausibility in the idea that the money rate of interest regulated the rate of profit:

The rate of profits, as a ratio, has significance which is independent of any prices, and can be 'given' before prices are fixed. It is accordingly susceptible of being determined from outside the system of production, in particular by the level of the money rate of interest (1960: 33).

This proposition entailed a two-fold conception about the relationship between the rate of interest and rate of profit that Tooke had originally formulated. Firstly, that the rate of interest is an autonomous variable in the sense that it is systematically determined by

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forces ‘outside the system of production’ and can be explained without resort to the rate of profit on productively employed capital. Secondly, the money rate of interest, as the main component of the normal rate of profit, systematically regulates the normal rate of profit on capital employed in production. In this way Tooke’s conception has become the basis of the ‘monetary explanation of distribution’, which supposes that it is primarily through the determination of the long-term rate of interest in the financial market that socio-economic and politico-institutional factors determine the distribution of income between wages and profits in a capitalist society.

In the monetary explanation of distribution the normal rate of profit is conceived to be determined by two autonomous components: the long-term rate of interest, which is the ‘opportunity cost’ of employing capital in its financial form, plus a remuneration for the normal ‘risk and trouble’ of productively employing capital. It is envisaged that the normal remuneration for risk and trouble is determined by longstanding factors specific to particular lines of capital investment and independent of the money rate of interest, so that a persistent change in the money rate causes the normal rate of profit to (uniformly) change in the same direction (Pivetti 1991: 24-32). The long-run average rate of interest is therefore conceived to regulate the normal rate of profit and, thereby, exert a decisive influence on the distribution of income between wages and profits. As already mentioned, this explanation of distribution supposes that the real wage is not determined by the necessary subsistence of workers but, instead, is conceived to be normally determined at levels at which wages share in the surplus product along with profits. In this connection it is interesting to note that Tooke believed the real wage was normally determined above necessary subsistence, essentially proposing that the lower limit to the real wage was determined by social welfare provision as a kind of social wage.¹⁵ On the basis of a prior determined normal rate of profit and a given technique of production, the (surplus) real wage is conceived to be determined residually at a rate normally above the social wage along with normal (relative) prices. Accordingly, permanent changes in the money rate of interest, which cause uni-directional changes in the normal rate of profit, induce inverse changes in the real wage for a given technique of production.

This explanation of distribution is most relevant to a fiat-based monetary system characteristic of modern capitalism in which monetary values are not tied to any produced-commodity standard. In the fiat-based monetary system money prices can be normalized by an exogenous (homogeneous) money wage, which is seen to be determined independently by wage-bargaining.¹⁶ The monetary explanation of distribution then consists of the argument that as a component of normal money costs of production, for a given technique, a lasting increase (reduction) in the money rate of interest will cause enterprises in general to raise (lower) money prices and, therefore, the general price level, in relation to the *given* money wage in order to earn higher (lower) normal rates of profit on capital consistent with free competition. The resulting increase (reduction) in the price-wage ratio means that the real wage declines (increases), associated with a redistribution of income from wages (profits) to profits (wages). This change in distribution will involve a change in relative prices. Hence, according to this explanation, the money rate of interest exerts a lasting influence on the distribution of income, relative prices and the general price level (Pivetti 1991: 20-41). With regard to the latter, Tooke's argument that as a part of the normal money cost of production, the long-run average rate of interest exerts a positive causal influence on the long-run price level entirely accords with this explanation of distribution and prices.

The monetary explanation of distribution is also relevant to a gold-based monetary system in which, like pre-1914 Britain, monetary values were tied to a gold standard, providing the real wage is not determined by necessary subsistence (Smith 1996: 35-9). In this kind of economy the monetary explanation of distribution relies on the historically plausible proposition that productive enterprises hold the balance of power over (organized) workers in the determination of the long-run normal (gold) money wage so that for a given technique the normal gold money wage and, hence, the real wage, adjusts to accommodate any lasting changes in rate of interest and, thereby, in the normal rate of profit.¹⁷ Thus, Tooke's notion that the money rate governs the rate of profit can be the basis for a monetary explanation of distribution in a gold (or silver) based monetary economy such as nineteenth-century Britain as well as fiat-based monetary economies of modern twentieth and twenty-first century capitalism.

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However, Tooke's argument of a long-run causal relationship going from the interest rate to the price level cannot be sustained in a gold-based monetary system as existed in Britain from 1821 to 1914, in which money prices are normalized by the official money value of converting currency into gold (Pivetti 1991: 79; Smith 1996: 47). In such a commodity-based monetary system, for a given technique of production, a permanent increase (or reduction) in the rate of interest and, thereby, the normal profit rate, will *not* systematically raise (or lower) the general price level, which is approximately fixed to the gold standard. Instead, according to the classical theory of value and distribution, it will only induce a change in the relative prices of commodities.¹⁸ It is perhaps significant therefore that Tooke's conception of the positive causal influence of the rate of interest on the price level originally sprang from empirical evidence of a strong correlation between long-term movements in the rate of interest and money prices over the period of restriction, 1797-1821, when Britain's monetary system was effectively fiat-based. But while Tooke's explanation of the Gibson Paradox is not theoretically feasible in gold (or silver) based monetary economies relevant to old capitalism it is theoretically feasible in fiat-based monetary economies of modern capitalism.¹⁹ Indeed, from the standpoint of modern classical economics, Tooke's fundamental view that long-run causality runs from the rate of interest to the general price level and then, endogenously, to the quantity of money, is highly applicable to contemporary capitalism (Smith 2001: 45-8).

The third element of Tooke's banking school theory which makes a constructive contribution within modern classical economics, which follows from the previous one, is that as an autonomous variable the rate of interest is determined causally prior to the normal profit rate by factors exerting their influence in the financial system. Tooke (1826: 4-31) explained the long-run average rate of interest by reference to politico-institutional and conventional factors which directly determined the demand for and supply of 'monied capital' in the financial market (see Smith 2011: 147-53). It was also shown that while Tooke believed the Bank of England chiefly conducted monetary policy through the setting of its discount rate, curiously he insisted that its monetary policy could exert only a temporary influence on demand and supply conditions in the loan market and, thereby, on the rate of interest. However, this insistence by Tooke that

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monetary policy cannot exert a lasting influence on the rate of interest considerably weakens his argument that the latter is an autonomous variable which governs the normal rate of profit. If the rate of interest is autonomous on the grounds that it is directly determined by factors operating in the financial system then the interest-rate policy of central banks must be considered one of the major factors.²⁰ Hence, in adopting Tooke's conception of the rate of interest as an autonomous variable, Marx (1894: 358-68) included the discount policy of the Bank of England among the major factors determining its average level.

The most plausible way to give substance to Tooke's conception of an autonomously determined rate of interest is therefore to suppose, contrary to his own view, that the Bank of England had the power to exercise not only a temporary influence but also a lasting influence over the rate of interest (Caminati 1981: 101; Pivetti 1991: 86). As is shown in section 5 below, the monetary explanation of distribution supposes that the general level of interest rates is determined by monetary forces, chief among them being the central bank's interest-rate policy, conducted through its direct control over short-term rates on liquid funds supplied to the financial system as well as other operations connected to debt management. This is entirely consistent with a theory of endogenous money as originally proposed by Tooke. Underlying this theory is the notion that the central bank, as the ultimate supplier of liquid reserves to the financial system and responsible for safeguarding its stability, is compelled to accommodate the system's demand for liquid funds but at a price of the central bank's choosing: the price being the short-term rate of interest on liquid funds (Goodhart 1989: 208-11; Dow and Saville 1988: 127-37). It is this short-term rate of interest which constitutes the central bank's main monetary policy instrument. In this conception there is no inconsistency in the position held by Tooke that the central bank has little power to regulate the quantity of money yet it has considerable power to influence the general level of interest rates.

Altogether Tooke's banking school theory makes an important contribution to the development of monetary theory in modern classical economics. The conception of endogenous money, as articulated by reference to a demand-led theory of output,

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provides the basis for an alternative monetary theory to the traditional approach based on the quantity theory of money. An important aspect of this alternative monetary theory is Tooke's conception of the rate of interest as an autonomous variable which governs the normal rate of profit which, as shown above, can be logically sustained in the classical approach to the determination of distribution and prices. While Tooke did not subscribe to the notion that monetary policy exerted a persistent influence on the rate of interest, his conception of the latter as an autonomous variable is fundamental to sustaining this notion in the monetary explanation of distribution. In this explanation of distribution the determination of the rate of interest by monetary forces is central to explaining the division of income between wages and profits in society. Hence, Tooke's conception of the interest-profit rate relationship provides the basis in classical analysis for being able to suppose that monetary forces can influence real variables in the long run, most directly, by influencing the normal distribution of income. In addition, Tooke's related notion that the long-run rate of interest constitutes a normal cost of production of commodities makes an important contribution to better explaining price inflation in a fiat-based monetary economy. It informs that the inflationary process should not just be understood as a wage-price spiral in which expectations of future inflation fuels spiralling money wage and price increases but a process which includes the possible contribution made by persistently high and rising *nominal* long-term rates of interest also fuelled by inflationary expectations.²¹ More generally, Tooke's explanation of price movements shows that the major *originating cause* of price inflation is natural and political factors that significantly restrict the supply of an essential commodity input not easily substitutable such as oil today (equivalent to corn in early nineteenth century England) and/or a group of commodities constituting material inputs which, in relation to its existing long run demand, induces a general increase in the cost of production of commodities in the economic system.²²

5. Tooke's Main Legacy: Overcoming Money Neutrality

There has been a renewed interest in Tooke's banking school theory in recent times by 'post-Keynesian' writers advocating the notion that the quantity of money is endogenously determined by demand against the traditional view that the quantity of money is exogenously controlled by the monetary authorities.²³ These writers have concentrated on Tooke's role in pioneering the notion of endogenous money (see Moore 1988: 5; Wray 1990: xiii, 102-10). No doubt a very important aspect of Tooke's legacy is as pioneer of the anti-quantity theory tradition in economic thought. But while Tooke's conception of endogenous money represents an important contribution to the development of an alternative to the quantity theory approach, in our view a more important legacy to economics consists of his proposition that the rate of interest is an autonomous variable that can systematically govern the normal rate of profit because it opens up the possibility of supposing, in contrast to the tradition position, that monetary forces exert a *long run* influence on real economic variables, in particular, on income distribution and on aggregate output and employment.

Since the identification of profit as a category of income distinct from interest on money, by Turgot (1766: 68-71, 76-80, 87-8) and, then, within a more coherent analytical framework, by Adam Smith (1776 [1976]: 65- 81, 105-15), the traditional position in economic thought has been that in the long-run, causality runs from the profit rate to the rate of interest. This traditional position was well articulated by Ricardo when he argued that while 'subject to temporary variations from other causes' the rate of interest is 'ultimately and permanently governed by the rate of profit' (1821: 297). With the historical development of monetary theory those 'other causes' have consisted of monetary forces, explained principally in terms of the supply of and demand for credit and the quantity of money as well as by reference to the role of a central banking authority. By contrast, the profit rate is conceived in economic theory to be determined by real forces in the system of production, so that however different the explanation, the traditional position supposes that the rate of interest is *ultimately* determined by those real forces which are specified to determine the profit rate. Thus, as is well known, in Ricardo

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(1821: 110-127, 363-4) the real forces determining the normal rate of profit, and therefore, ultimately, the rate of interest, are the technique of production and real wage; while, in Wicksell (1898: 102-4, 122-34; 1906: 205-6), according to the marginalist approach, they are essentially the marginal productivity of real capital and the propensity to save of society that determines the relative scarcity of real capital.

Accepting it is chiefly through the rate of interest that monetary forces can transmit their influence on economic activity, the traditional position entails long-run money neutrality in which monetary forces can exert a temporary but not a permanent influence on real economic variables such as output and employment. Monetary forces, including monetary policy, are traditionally envisaged to exert an influence on real economic variables only when the rate of interest deviates from the rate of profit, after accounting for a magnitude to cover the additional risk normally associated with productive investment compared to investment in financial assets: with output and employment tending to decline temporarily when the money rate rises in relation to the normal profit rate and with excess aggregate demand and price inflation tending to occur when the money rate declines in relation to the normal profit rate.²⁴ Hence, monetary forces are traditionally envisaged to be a possible source of disequilibria as well as a means by which equilibrium is restored, chiefly through the gravitation of the money rate of interest to a level in sympathy with the normal rate of profit. It follows from this argument that to overcome long-run money neutrality it is necessary to propose that opposite to the traditional position, causality runs from the rate of interest to the rate of profit logically consistent with the determination of normal prices and distribution.

In the history of economic thought there have been some notable dissenters to the traditional position. The best known dissident is Keynes who by 1932 well recognized the implication for monetary theory of the traditional position he inherited:

... the root of the objection which I find to the [Marshallian] theory under discussion, if it is propounded as a long-period theory, lies in the fact that, on the one hand, it cannot be held that the position towards which the economic system is tending ... is

entirely independent of the policy of the monetary authority; whilst, on the other hand, it cannot be maintained that there is unique policy which, in the long run, the monetary authority is bound to pursue (Keynes 1971-89, XXIX: 55 [‘Lecture Notes’, dated 14 November 1932]).

From the *General Theory* (1936) onwards, Keynes proposed that the rate of interest was determined by ‘purely’ monetary forces, completely independent of those real forces in marginal theory that are envisaged to determine the normal profit rate (or equilibrium rate of interest).²⁵ Keynes went so far as to argue that of the two rates it was the profit rate on capital that would adjust to the rate of interest rather than the other way around: ‘instead of the marginal efficiency of capital determining the rate of interest, it is truer ... to say that it is the rate of interest which determines the marginal efficiency of capital’ (1937b: 123). Over one hundred years before Keynes, when classical economics dominated, Tooke dissented from the tradition position and was subsequently joined in that dissent by J.S. Mill and Marx. However, it was Tooke who from 1838 onward adopted the novel position that in the long run the average rate of interest systematically governed the normal rate of profit which, like Keynes’ position post-1936, gives full force to the notion of an autonomous rate of interest. This notion is the basis of the monetary explanation of distribution in the classical theory of prices and distribution expounded in the previous section of this chapter.

In the monetary explanation of distribution the long-run average level of interest rates is conceived to be determined by the longstanding interest-rate policy of the monetary authorities established on the basis of policy objectives and constraints of a social, economic and political nature, all of which can only be ascertained by consideration of the concrete historical situation. Among those factors which have been historically important in shaping interest-rate policy is the management of public debt, mainly in relation to minimizing the debt-servicing burden on the government budget and meeting fiscal policy objectives, the constraint imposed by the external position of a country *vis-à-vis* the rest of the world and, connectedly, whether the main objective of policymakers is price stability or achieving full-employment. Because of its implications for income

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distribution, interest-rate policy is also envisaged to be shaped more widely by the relative power of competing interest groups in society, in particular, by organized labour on one side and productive enterprises on the other side in directly determining wage outcomes, as well as the banking and finance sector, which tends to represent the interest of portfolio wealth holders. Moreover, the institutional form of the monetary system will play a crucial role in shaping interest-rate policy, not least because it defines the main objectives of monetary policy and the nature of the constraints on it. Indeed, institutional changes in the monetary system of economies have historically been accompanied by a change in conventional thinking about the role of monetary policy. As illustrated by Pivetti 1991: 10-19) and Smith (1996: 39-43, 55-8), an appeal to history shows that a complex of these inter-related factors can explain longstanding monetary policy without any reference to the rate of profit (particularly see Homer and Sylla 1996).

The important implication of the monetary explanation of distribution is that however interest-rate policy is explained on the basis of a complex set of social, economic and politico-institutional factors, by its determination of the long-run level of money interest, it exerts a lasting influence on the distribution of income, through which it can exert a lasting influence on real economic variables, in particular, the level of aggregate output and employment, as well as the price level.

In modern classical economics, incorporating the Keynesian demand-led theory of output, monetary forces, most especially monetary policy, are conceived to exert a lasting influence on aggregate output and employment through their lasting influence on effective demand. On the basis of the monetary explanation of distribution, longstanding interest-rate policy, by influencing the determination of the normal distribution of income between wages and profits, can exert a systematic influence on consumption expenditure. Consistent with an under-consumption argument, on the highly plausible assumption that the propensity to consume of workers (or low-income earners) is lower than for capitalists (or high-income earners) in general, a lasting increase in the money rate of interest, which tends to redistribute income from wages to profits, would permanently reduce the overall level of real consumption. In the opposite case, a permanent lowering

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of the money rate of interest, by redistributing income in favour of workers (lower income earners) would tend to increase consumption.²⁶ Permanent changes in the money rate of interest and, thereby, the normal rate of profit can also be expected to exert a lasting influence on the inducement to invest, though the direction and force of this influence cannot be known with any certainty (Pivetti 1991: 45-6). Instead, the impact of a permanent change in the rate of interest on private capital expenditure will depend on a wide set of other existing factors such as technological development, the state of public infrastructure, commercial laws and trade regulations which affect entrepreneurial opportunity for profitable investment. Another avenue of influence is the impact of changes in the rate of interest on fiscal policy. Through its effect on debt-servicing costs, a lasting change in interest rates can affect the government's budgetary position and, thereby, its long run fiscal stance. Thus, permanently lower interest rates that reduce the amount of government revenue that must be devoted to servicing public debt can accommodate either higher public expenditure and/or lower taxation which would contribute to stronger effective demand; while permanently higher interest rates will tend to have the opposite influence. However, this avenue of influence will depend critically on the objectives of fiscal policymakers.

Overall, then, while a change in the rate of interest will exert a lasting influence on the level of output and employment through its effect on aggregate demand, the nature of that influence cannot be predicted with any certainty. It can only be ascertained by reference to the concrete historical situation under consideration. Nevertheless, by reference to the history of modern capitalism, it can be argued that generally a persistently low money rate of interest tends to support stronger aggregate demand, not only because it is likely to permanently increase private consumption expenditure (including spending on consumer durables) but, by reducing public debt-servicing costs, it better enables the government to adopt a more sustained expansionary fiscal policy, especially in the form of higher public capital expenditure.²⁷ Stronger private consumption and public expenditure is likely, in turn, to induce higher capacity-generating private investment as well as generally providing more profitable opportunities for investment in new products and technology.²⁸ But what is important here is that from the standpoint of the monetary explanation of

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distribution in classical analysis, it is possible to argue, as indeed Keynes wanted to, that interest-rate policy can exert a lasting influence on the level and composition of output and employment.²⁹ This represents a dramatic departure from the long run money neutrality of traditional economic theory.

Long run money neutrality fundamentally stems from the traditional position in economic theory that the money rate of interest is ultimately determined by those real forces specified to determine the normal rate of profit (or natural rate of interest). It should be emphasized that this traditional position underlying money neutrality applies whether one supposes that the quantity of money is endogenously determined by demand (i.e. theories of endogenous money) or adopts the quantity theory approach to money (Pivetti 2001). Once it is acknowledged that monetary forces, including monetary policy, can exert its influence on a capitalist economy by acting on the money rate of interest, long-run money neutrality is seen to be the consequence of the traditional view that the money rate of interest must adjust to the normal rate of profit to restore long-run equilibrium. The implication for economic theory is clear: long-run money neutrality can only be overcome in a theory of value and distribution that can logically accommodate the conception that the long run rate of interest systematically governs the normal rate of profit.

In the marginalist approach to value and distribution this conception cannot be accommodated because the normal prices of the factors of production are determined *simultaneously* by the technique of production, consumer preferences (especially with regard to saving-consumption decisions) and the given quantity of the factors of production available for use to society. Along with the normal real wage going to labour, the normal rate of profit on capital can only be determined in marginalist theory by the above-specified real forces which, thereby, must determine the money rate of interest in long run equilibrium.³⁰ By contrast, in the surplus approach of classical economics, the distributive variables are determined *sequentially* in which either the real wage or the rate of profit is exogenously given and, on the basis of the prevailing technique of production the other one is residually determined along with normal (relative) prices. As has been

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shown in our exposition of the monetary explanation of distribution, it is logically possible to sustain the conception in classical analysis that the money rate of interest governs the normal rate of profit, as originally suggested by Tooke. His main legacy to economics lies with this contribution toward opening up the possibility in the framework of modern classical analysis of supposing that monetary forces, in particular, monetary policy, exerts a lasting influence on the real economy, permanently affecting growth and distribution, as well as the price level.

Notes

¹ Thus, Ricardo (1951-73, III: 302) concedes that if money wage adjustment lags behind price rises a reduction in real wages could induce a temporary increase in the employment of labour and, thereby, production (see De Vivo 1987: 187).

² In terms of equation 2.1 this argument can be represented by a reduction in Y which, *ceteris paribus*, leads to $MV > PY$, and, thereby, given V , to an excess quantity of money that causes a ‘redundancy of currency’. In absence of a monetary policy which contracts M , adjustment occurs through an increase in P .

³ For example, an expansionary policy stance by the Bank of England which, as in the mid-1840s railway boom, facilitated speculative activity and heightened prices, will, according to Tooke, lead to a higher V_m^Y than if it adopted a restrictive policy stance. On the other hand, the adoption of a restrictive monetary policy in circumstances of depression and low confidence is likely to be associated with a fall in V_m^Y as a panic-stricken financial market scrambles for liquidity by selling off stocks so forcing prices ever lower.

⁴ By contrast, the currency school maintained that though initially caused by real factors, variations in the price level accommodated by changes in the quantity of circulating medium (i.e. M^* for given V_m^*), could only occur if there was accommodating changes in Bank of England notes and coin (i.e. M). In this regard, an accommodating change in M was conceived to be of a smaller proportional magnitude than of M^* so that $1 > \Delta M^* / \Delta M$, associated with $V_m > V_n$, when $P_m > P_n$, and, with $V_m < V_n$, when $P_m < P_n$, and, given $Y_m \approx Y_n$. In accord with the currency principle, price stability could be achieved by ensuring $M \approx M_n$ so that causally, $M^* \approx M_n^*$.

⁵ A speculative boom centred on the share market cannot be properly accounted for in the income-form of the monetary equations employed in the text. It could only be accounted for by the inclusion of asset prices into nominal income.

⁶ Hence, according to Tooke the ratio M^*/M would tend to change in sympathy with changes in nominal income (and therefore the demand for money) as principally caused by price fluctuations.

⁷ This mechanism is most evident in Tooke’s explanation for the significant rise in income (especially wages) and prices which occurred in the United Kingdom during the 1850s. Tooke and Newmarch (1857, VI: 204-13) largely attributed this development to strong growth in export income which, in turn, generated higher imports. The mechanism also clearly lies behind Tooke’s early arguments for the British government to unilaterally adopt freer trade. Also see Tooke (1819: 171; 1857, V: 448-51, 483-5).

⁸ Nescience of this point has been a major source of unjust criticism of Tooke’s position on the influence of the rate of interest on prices. Hence, it is significant that Wicksell (1898: 88-92; 1906: 184-7) criticized Tooke for disputing the argument that a lowering of the rate of interest was an inducement to increased bank borrowing and increased monetary expenditure largely on the basis of his own marginal productivity theory of capital and investment (Pivetti 1991: 81-4). Following Wicksell, Gregory (1928: 22-31), Marget (1938: 189-205), Schumpeter (1954: 709 n.11) and Humphrey (1979) have also committed the error of assessing Tooke’s position from the standpoint of marginalist analysis.

⁹ It can be argued in classical economics that in the short run there is an inverse causal relationship running from changes in the money rate of interest to aggregate expenditure but that this relationship is *non-*

functional in that the causal effect is contingent on a set of other factors existing in the given situation. In consideration of investment spending, only long-lived investment in fixed capital (e.g. building construction) in which depreciation and technological obsolescence are not significant factors in the investment decision is likely to be sensitive to a temporary change in interest rates. Hence, for example, in the event of a temporary lowering of the money rate in relation to the long-run normal rate of profit it will be profitable for firms to take advantage of the lower cost of borrowing and increase capital expenditure on long-lived projects; whilst in the opposite case of a temporary increase in interest rates firms will tend to postpone long-lived investment spending. However, if the change in interest rates is considered lasting so that the long-run normal rate of return is expected to adjust accordingly then no such effect on the inducement to long-lived investment will occur (Pivetti 1991: 43-5). In affluent societies in which a sizable proportion of households are home mortgage holders and a significant proportion of consumption is financed by credit, the impact of interest rates on aggregate spending in the short run is in fact likely to work more reliably through its effect on consumption than through its effect on investment. Hence, for example, if household debt is relatively high, consumption spending is likely to be sensitive to a change in interest rates that affects the debt-servicing burden on households and, therefore, the level of disposable income in the short run. The sensitivity of consumption to interest rates is however likely to be less in societies in which household debt is not significant.

¹⁰ On the *non-functional* connection between the money rate of interest and spending in classical economics, see Caminati (1981) and Pivetti (1991: 41-51).

¹¹ On the incorporation of Keynes's theory of output into classical analysis, see, in particular, Garegnani (1983: 61-3), Kurz (1985), Vianello (1985) and Ciccone (1986).

¹² Given that firms, for competitive purposes, normally maintain spare productive capacity, there is normally unutilized capacity in the economic system that can be exploited (Steindl 1952: 4-14). The additional production of capital goods associated with a utilization of capacity above the normal utilization will, in the long run, increase productive capacity itself and maintain planned spare capacity. By so allowing for persistent as well as temporary variations in the utilization of productive capacity, long run output has the elasticity to accommodate changes in aggregate demand free of steady state conditions (Garegnani 1992).

¹³ This was the point of Keynes (1937a: 206-11) 'revolving-fund' doctrine, whereby a flow of positive net investment in excess of *planned* saving is financed by newly created bank credit. Through the expenditure-multiplier process, an increased level of income will bring forth the necessary savings to service the higher stock of debt (or liabilities) of the private sector (and/or public sector) and restore equilibrium between planned investment and saving associated with ongoing capital formation. The crucial point is that the capacity of the banking system to make finance available for investment is not constrained (at least in the short run) by planned saving. On this issue, see Wray (1988; 1990: 155-92) and Terzi (1986-87).

¹⁴ This argument can be represented in a simple model in which it is assumed that all transactions in the economy are performed by bank deposit transfers only. The balance sheet of the banking system can be expressed as $D = L + R$, where D is deposits, L is loans and R is bank reserves. Let us then suppose that bank reserves are determined on the basis of a reserve ratio, r , expressing the proportion between cash reserves and deposits liabilities: $R = r \cdot D$. From $L = D - R$, can be obtained $L = D - r \cdot D$ and, by rearrangement, $D = L / (1 - r)$. In this latter equation, L is exogenously determined by the demand for finance which, given r , endogenously determines the volume of bank deposits, D . Furthermore, from the above quantitative relationships, $r \cdot D$ can be expressed as $R = r \cdot L / (1 - r)$, showing that the demand for bank reserves is derived from the demand for credit and money. Hence, the volume of money created depends on the amount of bank loans demanded to finance monetary expenditure. In our example in the text the endogenous increase in deposit money and reserves will therefore depend on an increased amount of bank credit, ΔL , necessary to finance the total increase in monetary expenditure initially stimulated by new investment, according to: $\Delta D = \Delta L / (1 - r)$ and $\Delta R = r \cdot \Delta L / (1 - r)$.

¹⁵ On the notion that the 'necessary subsistence' wage can be explained by reference to social welfare, see Smith (1996: 35-9) and also Aspromourgos and Groenewegen (1999: 198-200).

¹⁶ As Nuti (1971: 32) first pointed out in connection to Sraffa's suggested interest-rate closure of the system of prices and distribution 'after Keynes we have to recognize that wage bargaining determines *money* wages, while the real wage rate is determined by the behaviour of the price level'. On this point, also see Pivetti (1991: 33-7).

¹⁷ The major difference between this explanation of distribution in a gold-based monetary system and one in a fiat-based monetary system is that for a given technique of production and rate of profit, the gold money wage cannot be given independently of the price-wage ratio and, hence, the real wage. This means that for a given technique, a change in the gold money wage must be accommodated by an inverse change in the rate of profit. A major implication is that unlike a fiat-based monetary system, any conflict over the distribution of income between capitalists and organized workers cannot result in wage-price inflation in a gold-based monetary system because the price level is approximately fixed by the gold standard for a given technique. On this difference, see Smith (1996: 43-55).

¹⁸ This criticism was first made by Wicksell (1898: 99-100) from the theoretical standpoint of the marginal productivity theory of capital and distribution. As Laidler has argued, from this theoretical standpoint, Tooke's proposition would 'be true only were gold production less capital-intensive than some representative bundle of other goods' (1975: 226, n. 14). By contrast, in classical analysis, whatever the capital intensity of producing gold in relation to all other commodities on the basis of the most profitable method of production, a permanent change in the rate of interest and, thereby, the normal rate of profit, will only affect relative prices in a gold-based monetary system because the general price level is approximately fixed by the gold standard (Smith 1996: 43-4, 54-5).

¹⁹ As shown in Smith (1996: 47, 53-5), in accordance with classical theory, the most plausible explanation of the Gibson Paradox in the era of the gold standard was that the nominal rate of interest tended to adjust to prior changes in the price level on the basis of wealth holders desire to maintain a real inflation-adjusted rate of return on long-term financial securities.

²⁰ After all, the discount policy of a central banking authority has long been regarded by economists as a major factor among the 'monetary forces' determining the rate of interest, albeit temporarily, in relation to the rate of profit. See, for example, Marshall (1923: 258), Wicksell (1898: 188-9; 1906: 109-115), Keynes (1930, II: 339-77), Hawtrey (1938) and Mises (1953: 357-64).

²¹ On the distinction between the nominal and real rate of interest in connection with the dynamics of price (wage) inflation, see Pivetti (1991: 52-8). From the standpoint of the monetary explanation of distribution in classical economics, this wage-interest-price inflationary process can be understood as part of a conflict over income distribution in which a significant supply shock to an economic system (e.g. a deterioration in the terms of trade) manifests itself in social groups (i.e. trade unions, firms and wealth holders) attempting to shift the burden of the resulting reduction in aggregate real income onto others through incompatible adjustments in their nominal income, compatible with a situation of high and rising unemployment (see Aspromourgos 1991; Stirati 2001). Clearly, this viewpoint has implications for the conduct of anti-inflationary monetary policy.

²² While Tooke advanced the notion that increases in the nominal interest rate is a causal factor of price inflation, his view that English wage-earners in the early nineteenth century did not have much power to respond to price increases means that he makes a limited contribution to an understanding of the dynamic process of wage-price inflation characteristic of modern economies. In this regard, it should be kept in mind that explaining persistent inflation by reference to distributional conflict (see note 21 above) relies on wage-earners, in particular, being able to exercise sufficient bargaining power to obtain cost of living adjustments in the money wage in response to a rising price level. The lack of bargaining power of workers supposed by Tooke helps explain why the high price inflation in Britain during the period of the French Wars was unstable which, according to the pattern of supply shocks, was characterized by alternations between rapidly accelerating inflation and disinflation.

²³ A renewed interest in the notion of 'endogenous money' appears to have been sparked by Kaldor's (1970; 1982) response to 'monetarism'. For a survey account of post-Keynesian writers who have advocated the notion of endogenous money, see Rochon (1999).

²⁴ In the marginalist approach, monetary forces can only exert an influence by causing the money rate of interest to deviate from the natural rate of interest (i.e. normal profit rate). Hence, from the standpoint of the quantity theory of money proposed in marginal theory, an exogenous change in the quantity of money, whether it is effected by bank lending as transmitted through a change in bank loan rates or effected more directly by financing an increase in government expenditure in excess of its revenue, can exert an influence on the economic system *only* by causing the money rate of interest to deviate from the natural rate, necessary to induce an alteration in aggregate expenditure in relation to full-employment output. In the classical approach the issue is much less clear-cut because the normal rate of profit does not (except by accident) correspond with full-employment output and no functional relationship between changes in the

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money rate of interest in relation to the normal rate of profit and the level of monetary expenditure can be supposed to exist. The classical quantity theorists relied on Says Law, with its assumption of a fixed level of aggregate output, to ensure money neutrality, at least in the short run. In absence of this assumption, long run money neutrality can be assured in classical economics on the basis of (i), the money rate of interest is determined in the long run by real forces that determine the normal profitability on capital, and, (ii), that monetary forces *can only* transmit their influence by acting on the money rate of interest.

²⁵ In the *General Theory* (1936: 203-4) Keynes proposed that because the rate of interest was a 'highly conventional phenomenon' its normal level was liable to be determined by the policy of the 'monetary authority'. Also see Keynes's (1945: 390-92) notes for meetings of the National Debt Enquiry proposing measures in support of a postwar cheap money policy.

²⁶ The government's taxation and welfare policy will also play an important role in influencing the distribution of income among social classes, and, thereby, will have an ongoing influence on aggregate consumption expenditure.

²⁷ Twentieth-century history suggests that public capital expenditures (compared with recurrent expenditures) appear to be sensitive in the long run to interest rate changes so that at a permanently higher level of interest rates, and thereby, with a higher proportion of government (tax) revenue having to go to service public debt, government policymakers come under pressure to reduce capital expenditures, especially those non-commercial public investments which do not generate a pecuniary return. There appears to be historical evidence to support the proposition that sustaining a persistently expansionary fiscal policy stance, entailing significant growth in public capital expenditures, depends on permanently low rates of interest. In addition, with regard to private investment expenditure, a persistently lower level of interest rates also appears to support stronger growth in house building in those affluent countries in which private home ownership is an affordable aspiration for a large proportion of the population.

²⁸ There appear to be several ways in which government expenditure can conceivably assist the inducement to private investment. One obvious way is through government financial support of research in the development of technical knowledge. This provides profitable opportunities for the development of new technologies in the form of more productive capital equipment and superior consumer products. In this regard, technical change is, at least partially, endogenous to capital expenditure. The best modern example of this phenomenon of national government support for technical change is the longstanding United States military expenditure program, including that related to financing scientific research (Pivetti 1989). Another, more straightforward way, that government expenditure can assist the inducement to private investment is by the provision of public infrastructure (e.g. transport, electronic communications, hospitals, dams with hydroelectric plants etc.) that opens up new opportunities for profitable investment, perhaps by lowering the costs of producing and distributing products or, connectedly, by opening up new markets. It should be emphasized that this 'crowding in' effect so to speak, cannot be properly considered in isolation from the wider structural features of a capitalistic economy. Indeed, under some circumstances, government expenditure may have little impact on private expenditure. Hence, proper consideration of the effect of government expenditure on private investment would essentially be part of an analysis of the role of the State in the economic development of a nation by reference to the historical concrete situation.

²⁹ It follows from this argument that the long-run average level of interest rates that is seen to be the outcome of the long standing interest-rate policy of the monetary authorities can influence the *growth rate of output* through its impact on those autonomous growth components of aggregate demand as well as on the 'social expenditure multiplier'. For the relevant demand-led growth theory, see Serrano (1995) and Trezzini (1995; 1998).

³⁰ The only avenue by which monetary forces can exert a 'secondary' influence on real variables in the marginalist approach is through the effect of changes in the price level on the datum (especially the quantity of real capital) determining the natural rate of interest, of which the best example in the literature is 'forced saving'. On this remote theoretical possibility, see Pivetti (1991: 91-7).

References

- Aspromourgos, T. (1991) 'Inflation in a Sraffa-Keynes Framework', *Economies et Societes*, 11-12 (8): 107-126.
- Aspromourgos, T. and Groenewegen, P. (1999) 'The notion of the subsistence wage in pre-Smithian classical political economy: some reflections inspired by the surplus approach', in *Value, Distribution and Capital: Essays in Honour of Pieroangelo Garegnani*, edited by G. Mongiovi and F. Petri, London: Routledge: 181-203.
- Blake, W. (1823) *Observations on the Effects produced by the Expenditure of Government during the Restriction of Cash Payments*, London: John Murray.
- Caminati, M. (1981) 'The Theory of Interest in the Classical Economists', *Metroeconomica*, XXXIII (Feb.-Oct.): 79-104.
- Ciccone, R. (1986) 'Accumulation and Capacity Utilization: Some Critical Considerations on Joan Robinson's Theory of Distribution', *Political Economy: Studies in the Surplus Approach*, 2 (1): 17-36.
- De Vivo, G. (1987) 'Ricardo, David (1772-1823)', *The New Palgrave Dictionary of Economics*, Eatwell, J., Milgate, M. and Newman, P. (eds), London: Macmillan, vol. 4: 183-98.
- Dow, J.C.R. and Saville, I.D. (1988) *A Critique of Monetary Policy: Theory and British Experience*, Oxford: Clarendon Press.
- Garegnani, P. (1983) 'Notes on consumption, investment and effective demand', in J. Eatwell and M. Milgate (eds), (1983): 21-69.
- Garegnani, P. (1990) 'Sraffa: Classical versus Marginalist Analysis', in K. Bharadwaj and B. Schefold (eds), *Essays on Piero Sraffa. Critical Perspectives on the Revival of Classical Theory*, London: Unwin Hyman: 112-41.
- Garegnani, P. (1992) 'Some Notes for an Analysis of Accumulation', J. Halevi, D. Laibman and E.J. Nell (eds), *Beyond the Steady State*, London: Macmillan: 47-71.
- Goodhart, C.A.E. (1989) 'Monetary Base', *The New Palgrave: Money*, J. Eatwell, M. Milgate and P. Newman (eds.), London: Macmillan: 206-11.
- Green, R. (1992) *Classical Theories of Money, Output and Inflation: A Study in Historical Economics*, London: St. Martins Press.
- Hawtrey, R.G. (1938) *A Century of Bank Rate*, 2nd edn., reprint 1962, London: Frank Cass.

Hume, D. (1752) *Essays Moral, Political and Literary*, Part II, Edinburgh: Green and Grose, Essay 3: of Money, Essay 5: Of the Balance of Trade.

Humphrey, T.M. (1979) 'The Interest Cost-Push Controversy', *Federal Reserve Bank of Richmond Economic Review*, 65 (1) (Jan.-Feb.): 3-10.

Kaldor, N. (1970) 'The New Monetarism', *Lloyds Bank Review*, X (July): 1-51.

Kaldor, N. (1982) *The Scourge of Monetarism*, London: Oxford University Press.

Keynes, J.M. (1930) *A Treatise on Money*, vols I and II, reprint 1934, London: Macmillan.

Keynes, J.M. (1936) *The General Theory of Employment, Interest and Money*, in Keynes (1971-89), vol. VII.

Keynes, J.M. (1937a) 'Alternative Theories of the Rate of Interest', in Keynes (1971-89), vol. XIV: 201-23.

Keynes, J. M. (1937b) 'The General Theory of Employment', in Keynes (1971-89), vol. XIV: 109-123.

Keynes, J.M. (1945) 'National Debt Enquiry: Lord Keynes' Notes', in Keynes (1971-89), vol. XXVIII: 388-96.

Keynes, J.M. (1971-89) *The Collected Writings of John Maynard Keynes*, 30 vols, edited by D. Moggridge and E. Johnson, London: Macmillan for the Royal Economic Society.

Kurz, H.D. (1985) 'Effective Demand in a 'Classical' Model of Value and Distribution: The Multiplier in a Sraffian Framework', *The Manchester School*, June, 53 (2): 121-37.

Kurz, H.D. and Salvadori, N. (1998) 'Given Quantities', *The Elgar Companion to Classical Economics*, 2 volumes, Cheltenham: Edward Elgar, A-K: 325-9.

Laidler, D. (1975) 'Thomas Tooke on Monetary Reform', *Essays on Money and Inflation*, Manchester: Manchester University Press: 211-227.

Malthus, T.R. (1811) 'Depreciation of Paper Currency', *The Edinburgh Review*, 17: 339-72.

Margt, A.W. (1938) *The Theory of Prices: A Re-Examination of the Central Problems of Monetary Theory*, New York: P.S. King and Sons.

Marshall, A. (1923) *Money, Credit and Commerce*, reprint 1991, New Jersey: Augustus M. Kelley.

Marx, K. (1894) *Capital: A Critique of Political Economy*, vol. III, edited by F. Engels, English first edition published in 1959, reprint 1978, Moscow: Progress Press.

Milgate, M. (1982) *Capital and Employment: A Study of Keynes's Economics*, London: Academic Press.

Mises, L. von (1953) *The Theory of Money and Credit*, New enlarged English edition, London: Jonathan Cape.

Moore, B. (1988) *Horizontalists and Verticalists: The Macroeconomics of Credit Money*, Cambridge: Cambridge University Press.

Nuti, D. M. (1971) "Vulgar economy" in the theory of income distribution', *Science and Society*, XXXV (1): 27-33.

Pivetti, M. (1987) 'Interest and Profit in Smith, Ricardo and Marx', *Political Economy: Studies in the Surplus Approach*, 3 (1): 63-74.

Pivetti, M. (1989) 'Military expenditure and economic analysis: a review article', *Contributions to Political Economy*, 8: 55-67.

Pivetti, M. (1991) *Essay on Money and Distribution*, New York: St. Martins Press.

Pivetti, M. (2001) 'Money endogeneity and money non-neutrality: a Sraffian perspective', in *Credit, Interest and the Open Economy. Essays on Horizontalism*, edited by L.P. Rochon and M. Verengo, London: Edward Elgar: 104-19.

Ricardo, D (1951-73) *The Works and Correspondence of David Ricardo*, edited by P. Sraffa with the collaboration of M. Dobb, volumes I-XI, Cambridge: Cambridge University Press.

Rist, C. (1940) *History of Monetary and Credit Theory from John Law to the Present Day*, London: Allen and Unwin.

Rochon, L.P. (1999) *Credit, Money and Production: an Alternative Post-Keynesian Approach*, Cheltenham: Edward Elgar.

Schumpeter, J.A. (1954) *History of Economic Analysis*, edited from manuscript by E.B. Schumpeter, London: George Allen and Unwin.

Serrano, F. (1995) 'Long Period Effective Demand and the Sraffian Supermultiplier', *Contributions to Political Economy*, 14: 67-90.

Smith, M. (1996) 'A Monetary Explanation of Distribution in a 'Gold Money Economy'', *Contributions to Political Economy*, 15: 33-61.

Smith, M. (2001) 'Endogenous Money, Interest and Prices: Tooke's Monetary Thought Revisited', *Contributions to Political Economy*, 20: 31-55.

Smith, M. (2011) *Thomas Tooke and the Monetary Thought of Classical Economics*, London: Routledge.

Sraffa, P. (1951) 'Introduction', in Ricardo (1951-73, I: xiii-lxii).

Sraffa, P. (1960) *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory*, Cambridge: Cambridge University Press.

Steindl, J. (1952) *Maturity and Stagnation in American Capitalism*, Oxford: Basil Blackwell.

Stirati, A. (2001) 'Inflation, Unemployment and Hysteresis: an alternative view' *Review of Political Economy*, 13 (4): 427-51.

Terzi, A. (1986-87) 'The Independence of Finance from Saving: A Flow-of-Funds Interpretation', *Journal of Post-Keynesian Economics*, IX (2): 188-97.

Thornton, H. (1802) *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*, as reprinted in Hayek (1939): 65-276.

Thornton, H. (1811) 'Two Speeches of Henry Thornton, Esq. on the Bullion Report, 7 May and 14 May, 1811', reprinted as Appendix III in Hayek (1939): 323-61.

Tooke, T. (1819) Evidence to the Lords Secret Committee to enquire into the State of the Bank of England, with respect to the Expediency of the Resumption of Cash Payments, P.P. 1819, (291) III, (98 Qs): 168-83.

Tooke, T. (1826) *Considerations on the State of the Currency*, 2nd edn., London: John Murray.

Tooke, T. (1838) *A History of Prices and of the State of the Circulation from 1793 to 1837; preceded by a brief sketch of the corn trade in the past two centuries*, vols I and II, 1928 reprint, London: P.S. King and Son.

Tooke, T. (1840) *A History of Prices, and of the State of the Circulation in 1838 and 1839, with some remarks of the alterations proposed in our banking system*, vol. III, 1928 reprint, London: P.S. King and Son.

Tooke, T. (1844) *An Inquiry into the Currency Principle*, 2nd edn., in Series of Reprints of Scarce Works on Political Economy, No. 15, 1959, The London School of Economics and Political Science.

Tooke, T. (1848) *A History of Prices, and of the State of the Circulation, from 1839 to 1847 inclusive: with a general review of the currency question, and remarks on the operation of the Act, 7 & 8 Vict. c32*, vol. IV, 1928 reprint, London: P.S. King and Son.

Tooke, T. and Newmarch, W. (1857) *A History of Prices and of the State of the Circulation, during the Nine Years 1848-1856*, vols V and VI, 1928 reprint, London: P.S. King and Son.

Trezzini, A. (1995) 'Capacity utilisation in the long run and the autonomous components of aggregate demand', *Contributions to Political Economy*, 14: 33-66.

Trezzini, A. (1998) 'Capacity utilisation in the long run: some further considerations', *Contributions to Political Economy*, 17: 53-67.

Vianello, F. (1985) 'The Pace of Accumulation', *Political Economy: Studies in the Surplus Approach*, 1 (1): 69-87.

Wheatley, J. (1803) *Remarks on Currency and Commerce*, London: T. Cadell and W. Davies.

Wheatley, J. (1807) *An Essay on the Theory of Money and Principles of Commerce*, vol. 1, London: T. Cadell and W. Davies.

Wicksell, K. (1898) *Interest and Prices: A Study of the Causes Regulating the Value of Money*, English translation by R.F.Kahn with an introduction by B.Ohlin, 1936, reprint 1965, New Jersey: Augustus M. Kelley.

Wicksell, K. (1906) *Lectures on Political Economy*, vol. II, English translation by E. Classen and edited with an introduction by L. Robbins, 1935, reprint 1978, New Jersey: Augustus M. Kelley.

Wray, L. R. (1988) 'Profit Expectations and the Investment-Saving Relation', *Journal of Post-Keynesian Economics*, XI (1): 131-47.

Wray, L. R. (1990) *Money and Credit in Capitalist Economies: The Endogenous Money Approach*, Aldershot: Edward Elgar.