

On the Transformation in Tooke's Monetary Thought

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1. Introduction

Among those commentators who have closely studied Thomas Tooke's (1774-1858) political economy there is general agreement that there was a transformation in his monetary thought after 1838, from an 'orthodox' quantity theory position to an anti-quantity theory position embodied within his novel banking school theory.¹ For this reason Tooke's monetary thought is considered to consist of two main phases in its evolution. The first is the pre-banking school phase, covering Tooke's writings and parliamentary evidence from 1819 to 1838 when, broadly speaking, his monetary thought remained within the bounds of the quantity theory approach orthodox among most classical economists of the early nineteenth century. The second phase comprises Tooke's writings and parliamentary evidence from 1840 to 1857 when he developed his banking school theory as an alternative to the classical's quantity theory approach. The only accounts in the secondary literature of this transformation are provided by T.E. Gregory in his one-hundred-and-twenty page 'Introduction' to the 1928 reprint of Tooke's *History of Prices* and by Arnon in his book, *Thomas Tooke: Pioneer of Monetary Theory* (1991). In our view neither of these authors provides a satisfactory explanation for Tooke's transformation, mainly because their accounts of his monetary thought, both of his pre-banking school position and banking school theory, is incomplete. After all, the essential question here is what did Tooke transform from and to what did he transform into? The question therefore resolves around both an interpretation of Tooke's pre-banking school monetary thought as well as his banking school thought. A staunch quantity theorist, Gregory (1928) provides a fairly sketchy and unsympathetic account of

¹ See Gregory (1928, pp. 16-17, 69-83), Arnon (1991, pp. 2-3) and Pivetti (1991, p. 75).

Tooke's banking school ideas. Hence, while Gregory (1928) makes some insightful points he provides an imprecise account of the nature and causes of Tooke's transformation. By contrast, Arnon (1991) considers Tooke's transformation to his novel banking school theory to be a progressive development in monetary thought. In addition, Arnon (1991, pp. 120-135) more comprehensively deals with Tooke's 'transition' in endeavouring to identify its central causes. Though Arnon (1991) makes a valuable contribution to an understanding of Tooke's transformation, his account remains incomplete and, on a number of issues, is unconvincing.

This paper will be concerned with explaining the nature of the transformation in Tooke's monetary thought and the central reasons for it. Section 2 of the paper is concerned with expounding Tooke's monetary thought in detail and its evolution during the pre-banking school phase. It shows that Tooke became progressively dissatisfied with the classical economist's quantity theory approach. In section 3 the banking school theory into which Tooke's monetary thought transformed is examined together with an account of the causes for his transformation. The conclusion in section 4 will briefly consider the consistency in the development of Tooke's monetary thought from his pre-banking to banking school position.

2. The Evolution in Tooke's Pre-Banking School Thought

There is agreement among commentators that Tooke's pre-banking school position did not accord with Ricardo's strict version of the classical's quantity theory which, in particular, proposed a stable proportional relationship between the overall structure of paper credit and Bank of England notes and coin (or specie reserves). It was Gregory's view that '[H]e *never* was a strict Bullionist, and, in fact, from his earliest writings, deprecated the extremes to which he thought that this point of view had been pushed' (1928, p. 16). Only in his *Considerations on the State of Currency*, published in 1826, did Gregory (ibid, p. 76) consider Tooke showed an 'attitude' that 'is largely Ricardian'. For the most part Gregory believed Tooke's 'attitude' was 'eclectic', by which he meant that Tooke did not hold a consistent position. According to Arnon (1991, pp. 3, 58-9) Tooke was a 'modified

bullionist' by which he meant that Tooke subscribed to the quantity theory of money in the long-run but not in the short run:

He thought the quantity theory to be basically true, i.e. if other things do not change, prices are determined by the quantity of the medium in circulation. However, other things do change. Hence, in practice, in many cases, the quantity theory, while continuing to represent a fundamental long-run tendency, does not provide a good explanation for short-run phenomena (*ibid.* p. 59).

Arnon locates Tooke's pre-banking school monetary thought largely by reference to Ricardo's quantity theory position. He shows Tooke had reservations about aspects of Ricardo's analysis, mainly in connection with the 'price-specie-flow' mechanism and the permissive role of credit in accommodating short-run fluctuations in prices (*ibid.*, pp. 46-55, 65-70). In contrast to Gregory, Arnon (1991, pp. 58-65) believes Tooke's monetary thinking remains consistent, changing little during his pre-banking school phase. Both commentators suggest that tensions in Tooke's analysis in the causal relationship between the quantity of money and prices anticipate his transformation to banking school theory. Indeed, these tensions connected with Tooke's explanation of price movements are at the heart of an evolution in his pre-banking school thinking which help explain his transformation to banking school theory after 1838.

In consideration of Tooke's pre-banking school monetary thought it will be useful to do so by reference to the basic propositions of the classical economists quantity theory of money which had been most clearly articulated by Ricardo (1811). It should be kept in mind though that the version of the quantity theory adopted by most 'bullionists' in the early part of the nineteenth century was in fact closer to that articulated by Henry Thornton [(1802) 1939] than that by Ricardo (1811). Indeed, as we shall show, from the beginning the pre-banking school Tooke held a position much closer to that of Thornton than of Ricardo. Our consideration of Tooke's pre-banking school monetary thought will proceed by reference to three important theoretical propositions of the quantity theory: firstly, external adjustment in terms of the 'price-specie-flow' mechanism; secondly, the

autonomous control of the Bank of England (the central banking authority) over the *whole* quantity of money and credit in circulation; and, thirdly, the causal relationship between the quantity of money (and credit) in circulation and prices and economic activity. In connection to these theoretical issues we shall also be concerned with Tooke's views on policy questions which provide an important key to understanding the transformation to banking school theory.

External Adjustment

In general Tooke subscribed to the 'price-specie-flow' doctrine as a *long run* mechanism of external adjustment. However, from the beginning he had major reservations about its *short run* efficacy. When he appeared as a witness to the Lord's committee on resumption in 1819, Tooke was questioned on the external adjustment process by which the foreign exchanges are restored to par. In the hypothetically proposed case of an autonomous 'reduction of Banknotes' which induced a decline in the prices of domestically produced commodities, Tooke (1819b, Qs 13-14, p. 170) was clear that an improved trade balance depended on the response of foreign and domestic demand to the relative price change. Tooke acknowledged that this response was conditional on "[T]he Wants, of effectual Demand of Foreign Countries, as well as at Home", but maintained them to be "very much influenced by the Price" since "a Quantity of Commodities, which is much beyond the Vent at one Price, may be within it at another" (*ibid.*, Q 15, p. 170). On the conditions necessary for an improvement in export revenue, Tooke stated:

... in almost all Cases of increased Exportation in consequence of reduced Prices, the Total Amount in Value at the low Prices exceeds what it would have been in the Case of a smaller Quantity at higher Prices (*ibid.*, Q 16, p. 170).

On the import side, it appears Tooke believed that a reduction in the relative prices of domestic products would more easily lower the domestic demand for foreign products, perhaps because there was greater scope for substitution in 'industrial' England than in foreign countries. However, while Tooke certainly believed that a favourable change in

relative prices would improve the trade balance, in contrast to Ricardo's position, he did not regard the adjustment process as 'automatic' but rather as a 'tendency' whose effective operation was subject to wider circumstances. This is clear from the answer he gave to a question about whether "Foreign Countries will be able and willing to purchase a larger Amount of Value" following a reduction of prices:

I should say, that in general that would be the Effect, or that in general such is the Tendency of reduced prices, taking a greater or shorter Length of Time to produce the full Effect, according to Circumstances, too numerous to detail; such as Distance, the bulk or quality of the articles, &c. (ibid., Q 17, p. 170).

These 'wider circumstances', variously elaborated upon in Tooke's later writings, essentially determined the period of time in which adjustment in the *balance of trade* occurred. The kind of circumstances (in peacetime) mentioned by Tooke (1826, pp. 90-91, 113-14) included prohibitions and other legislative restrictions on trade, the condition of credit in foreign markets, the distance of transit of commodities between foreign and domestic markets, and supply conditions (principally of re-exports) affecting the ability to satisfy 'effectual demand' abroad. Since these circumstances were "incidental to all extensive commercial relations" (ibid., p. 114), Tooke contended that the adjustment in trade flows "requires an interval of some length" (ibid., p. 90) before it impacted on bullion flows.²

Featuring prominently in Tooke's view on the process of adjustment of the balance of payments was the role of capital flows, consisting of foreign loans, international debt payments and discretionary payments in bullion unrelated to transactions in trade (including foreign exchange speculation and government military

² In an illustration of the adjustment process, Tooke estimated that after a reduction in the relative prices of tradeable products, "several months must elapse" before export orders are received from 'distant' foreign markets, while, additionally, in the "common course of trade", a "period of a year and a half, or two years, may elapse before the funds arising from such [resulting export] shipments can be made applicable to foreign payments" (1826, pp. 106-7). This suggests that depending on the logistics of foreign markets and the 'bulky' nature of the commodities usually traded, the adjustment process – from the change in prices to the transmission of funds (i.e. credit /bullion) on traded products – may have taken from two to three years in duration.

expenditure abroad). In this regard, Tooke believed that the rate of interest, relative to other countries, played a key role in regulating the direction of commercially related capital movements. Thus, in explaining to the Lord's committee on resumption how the 1819 monetary contraction could restore the exchanges to par, Tooke argued that:

... there is a Tendency to an Increase of the Rate of Interest of Money, which may have the Effect of bringing back some Part of the British Capital which had been forced out by the previous artificial Reduction of the Rate of Interest at Home (1819b, Q 13, p. 170).³

and, more than a decade later, to the Committee on the Renewal of the Bank Charter in 1832:

If the mode by which the Bank endeavours to rectify the Exchanges is contracting its issue, how does that contraction of the issue of the Bank act upon the Exchanges? - (Tooke) It operates in two modes, namely, by its tendency, *ceteris paribus*, to reduce prices and to raise the rate of interest; it therefore tends ultimately, though perhaps not immediately, to increase the export and to diminish the import of commodities and to check the transmission of capital (1832, Q3948, p. 286).

It is evident from his analyses that the rate of interest was seen by Tooke to be the key mechanism in the *short run* adjustment of the balance of payments and the foreign exchanges to par. For Tooke, a deficit on the balance of payments leading to a net outflow of bullion and depreciation of the foreign exchanges below par, tended to raise the (relative) rate of interest and arrest net capital outflows; and, *vice versa*. According to Tooke (see 1826, pp. 93-6; 1838, II, pp. 287, 296), when a deterioration in the foreign exchanges occurred, the accompanying rundown in bullion reserves caused the Bank of England to adopt a tougher monetary stance and accordingly raise its discount rate on commercial bills (or equivalently shorten the term of the discount). The resulting rise in market rates of interest tended to correct the foreign exchanges by attracting bullion from

³ Also see Tooke (1819b, Q 32, p. 172).

overseas investors in domestic securities. On the other hand, under circumstances when the foreign exchanges rise above par, Tooke (1838, I, p. 194) believed that an accompanying inflow of bullion would tend to reduce market rates of interest on securities, often in relation to an unchanged discount rate charged by the Bank of England. From empirical study, Tooke (1826, pp. 46-55; 1838, II, pp. 148-9, 191) also noticed instances when the Bank of England autonomously brought down the structure of interest rates on securities relative to 'prospective' returns overseas, thereby inducing capital outflows and placing pressures on the exchanges. Tooke believed that by exerting influence on the short-term market rate of interest, the Bank of England could, *via* its *direct* effect on capital flows, effectively correct the balance of payments in the short run and ensure stability of the foreign exchanges around par. This was distinguishable from the *indirect* effect of the rate of interest on the foreign exchanges, which was conceived by Tooke to operate in the long run according to the influence of changes in monetary policy on (relative) prices and trade flows.

Tooke maintained that periodically Britain's balance of payments and its foreign exchanges were seriously disrupted by 'natural' and 'political' events which, in particular, included large importations of grain as a result of climatically-induced reductions in the domestic production of corn and the sudden collapse of export markets as a result of war or social revolution.⁴ In addition, Tooke (see 1826, p. 90 n.; 1829, pp. 70-72; 1838, II, pp.139-40) showed an awareness of irregular cycles in the position of the balance of payments according to the timing of export receipts and import payments, sometimes referring to the delay in 'returns' on export sales, and, especially, to the adverse effect of the corn laws, by its tendency to increase the lumpiness of import volumes at high duties. Thus, Tooke opposed Ricardo's position that the foreign exchanges were wholly determined by monetary conditions determining the pound sterling value of gold, believing like Thornton ((1802) 1939, pp. 143-5) that real factors could significantly influence the foreign exchanges. Moreover, in achieving external adjustment Tooke believed that the 'price-specie-flow' mechanism worked only slowly over the long run

⁴ On large importations of grain, see Tooke (1838, I, pp. 217, 241, 246-52, 295-6); and, on the collapse of export markets, see Tooke (1838, I, pp. 272-3, 303-6, 353-5; II, pp. 8-10, 154-6).

according to the afore-mentioned indirect effect of monetary policy on (relative) prices. He regarded it as a fundamental tendency rather than as an ‘automatic’ self-correcting mechanism. In the short run, Tooke believed external adjustment operated through the direct effect on capital flows of policy-induced variations in the level of interest (relative to overseas).

From this standpoint the pre-banking school Tooke (1826, pp. 90-91, 113-14) concluded that external *trade* adjustment occurred too slowly to be a reliable basis for the short-term conduct of monetary policy. Instead, short-term external adjustment relied heavily on Bank of England policy and changes in rates of interest (relative to foreign rates) on capital flows. In the conduct of monetary policy Tooke (1826, pp. 103-110) maintained that as a matter of prudence the Bank of England should hold a sizeable precautionary bullion reserve as a contingency against ‘natural’ and ‘political’ events (e.g. an unproductive domestic harvest leading to a sudden large importation of corn) which occasionally caused an *extraordinary* external drain. Tooke believed the Bank needed a large reserve to give it sufficient time to adjust policy and for the process of external adjustment – *via* capital flows – to work in these circumstances before any panic in the financial markets was ignited by concerns about an inadequate level of reserves to meet prospective demand. Indeed, Tooke (1819b, p. 181; 1832, Q5374 p. 433; 1826, pp. 56-75) essentially opposed the adoption of Ricardo’s famous ‘Ingot Plan’ on a permanent basis with the restoration of the gold standard in 1821 on the grounds that the low reserve of bullion implied by it would be impractical in the Bank of England’s ability to cope with external drains (see Smith 2008, pp. 51-55). For Tooke a major concern with the management of the currency after the restoration of the gold standard was that the Bank of England did not hold sufficient reserve of bullion to meet the contingency of an ‘extraordinary’ demand for cash. Thus, in reference to the Bank’s role in the 1836-7 financial pressure, Tooke (1838, II, pp. 285-6, 331-2) believed it had erred in not allowing its reserves to accumulate to a ‘safe’ level when external conditions favored an inflow of bullion. On the safe level of bullion reserves that should be held by the Bank of England, Tooke wrote that “as far as the eventful experience of the last fourteen years, namely, since, 1824, can serve as a guide for judgment ... not less than ten millions can

ever be considered as a safe position of its treasure, seeing the sudden calls to which it is liable” (1838, II, pp. 330-31). This policy issue became central to his banking school position.

Exogenous ‘Policy’ Control over the Quantity of Money

The pre-banking school Tooke believed that the power of the Bank of England, as the central banking authority, to autonomously control the *whole* quantity of money and credit in circulation (i.e. ‘circulating medium’) was heavily constrained in the short run. This view stemmed from Tooke’s position on the causal relationship between the circulating medium and price fluctuations. Indeed, from the beginning, Tooke believed that the Bank of England could autonomously control its own banknotes in circulation, but he did not subscribe to the rigid position of Ricardo that their velocity of circulation was virtually constant. To the commons committee on resumption in 1819, Tooke contended that this velocity usually varied with “what is called confidence” when “[G]oods change hands freely upon notes, or other means of credit, and therefore the currency has fewer functions to perform, and is less detained in the hands of the different classes who have to part with it” (1819a, p. 132). These short run variations were seen to be associated with alternations in economic activity (in the ‘rapidity or stagnation in the circulation of commodities’) and fluctuations in the prices of commodities. According to Tooke (1819a, pp. 127, 132), for a *given* amount of Bank of England notes and coin, “the value of currency depends very much upon the rapidity of its circulation”, rising (or declining) with a low (or high) ‘state of confidence’ and ‘slowness’ (or ‘rapidity’) in its velocity of circulation. This edict is similar to that articulated by Thornton (1802, pp. 75-102). Although Tooke did not dissent from the premise that the Bank of England, through the management of its notes, can *influence* the whole quantity of money (and credit) in circulation, he contended, in particular, that the amount of country banknotes could vary independently of Bank of England notes and coin. This is evident in his answer to the following question:

Q. Have you observed, within your own experience, in the city of London, what is called abundance, and sometimes a scarcity, without any corresponding increase or diminution, at the same periods, in the amount of the bank of England paper?

(Tooke) ... in the case of bank issues, there may be, from distinct causes, an increase or diminution of country bank notes, without a corresponding change in the amount of bank of England paper ... (1819a, p. 131).

Among those ‘distinct causes’ affecting the quantity of country banknotes, Tooke emphasized the supply conditions of corn because it had a considerable influence on the “general prices of other commodities, as well as of corn” (ibid., p. 132). In his evidence explaining the inter-relationship between the conditions of (corn) production, the movement in prices, the role of ‘confidence’ and speculative activity in commodity markets, Tooke (ibid., pp. 127-32) came very close to contending that variations in the structure of credit depended on prices. This position was developed more firmly on empirical grounds in *High and Low Prices*. As a result of his empirical studies, Tooke (1824, i, pp. 93, 106-119) found ‘little coincidence’ between variations in the quantity of Bank of England notes and in ‘private paper’, ascertaining that “the most striking instances of a great rise of general prices occurred without any increase of Bank notes” and “the most memorable instances of a sudden fall took place contemporaneously with large additions to the Bank circulation” (ibid., p. 106). In the *Considerations*, Tooke argued that a major difficulty for the Bank in regulating the whole ‘paper circulation’ arose “out of the nature of the country bank circulation” which seemed “to be dependent on circumstances not immediately under the control of the Bank of England” (1826, p. 86 n.). Those ‘circumstances’ were the afore-mentioned state of market conditions and prices of agricultural (corn) commodities. This reasoning also lay behind Tooke’s opinion to the Common’s Committee on the Renewal of the Bank Charter in 1832 that “I conceive that the Bank of England has a very imperfect power of controlling the country circulation” (1832, Q 3906, p. 282).

As well as the paper money circulation in the country, Tooke (1824, i, pp. 63-8) argued that the paper circulation in the City of London (or ‘metropolis’) also varied in the short run independently of Bank of England notes and coin. On the basis of the dependence of country banks on their correspondent London banks for readily convertible funds, Tooke maintained that variations in country notes were usually associated with changes in the amount of ‘book credits’ of London deposit banks and the circulation of notes in the City: “In fact, a speculative advance of prices generally originates in London, and then it affords the means and inducement to an extension of country bank paper” (1829, p. 31 n.). In rebutting the position of the Bullion Committee of 1810 that in the short run the quantity of Bank of England notes was a limitation on the extension of country banknotes in circulation, Tooke argued that:⁵

The error ... is in the assumption that the whole amount of London circulation is commensurate or identical *at any given time* with the Bank of England paper circulating in the metropolis, and accordingly the conclusion that a demand upon the country bankers for bills on London is equivalent to a demand for Bank of England notes and requires an increase of these to support extended issue of the country bankers, is incorrect, as referring to any limited period (*ibid.*, pp. 31-2 n.).

In his *Letter to Lord Grenville* Tooke (1829, pp. 117-27) supported his position by reference to a paper by James Pennington which was published as Appendix I of this work. Pennington’s paper expounded the process by which London deposit banks expanded and contracted their book-credits on the basis of a given amount of Bank of

⁵ The following passage from the Report of the 1810 Bullion Committee to which Tooke refers is very significant because it essentially underlies the argument of Ricardo and other classical quantity theorists for treating the velocity of Bank of England notes and coin as constant in the short run:

If an excess of paper be issued in a country district, while the London circulation does not exceed its due proportion, there will be a local rise of prices in that country district, but prices in London will remain as before. Those who have the country paper in their hands, will prefer buying in London, where things are cheaper, and will therefore return that country paper being continually returned upon the issuers for Bank of England paper, the quantity of the latter necessarily and effectually limits the quantity of the former (as quoted by Tooke 1829a p. 31 n.).

On this argument see Viner (1937, pp. 154-65).

England notes and coin necessary to meet ‘occasional demands’ made on them.⁶ This 1829 paper, together with some clarifications made by Pennington in a follow-up letter published as Appendix C of Tooke’s *History* (1838, II, pp. 369-78),⁷ is particularly significant because, based on fractional reserve banking, it set out a credit-creation process in which loans advanced by banks generated re-deposits. In the analysis of Pennington the process depended on, and was limited by, firstly, the cash reserve requirements of the banks, secondly, the proportion of currency which is habitually held as banknotes and coin rather than as book-deposits and, lastly, whether the ‘circumstances’ of trade are conducive to the extension of loans by deposit banks overall. The analysis lent considerable support to Tooke’s general argument that in the short run the whole quantity of paper money and credit (i.e. ‘circulating medium’) varied in proportion to its ‘basis’ – being Bank of England notes and coin – according to the state of market activity: rising with a ‘spirit of speculation’ and high ‘confidence’ and declining with ‘stagnation and despondency’ in commodity and share markets.⁸

By *History* (1838, I; II) the pre-banking school Tooke had taken the firm position that the variation in the whole ‘circulating medium’ was predominantly the *consequence* of short-run fluctuations in the price level. Moreover, he contended that in sympathy with price fluctuations, the velocity of circulation of the ‘basis’ of the currency was often accompanied by an inverse change in the *quantity* of Bank of England notes in circulation. This position was largely outlined in the following passage:

⁶ On the importance of the paper Tooke wrote:

I am indebted to my friend Mr. James Pennington for the means of making my conclusion on this point more complete. He has addressed a paper to me noticing an analogy, which has not, as far as I am aware, before been distinctly observed, between the book credits of the London bankers and the promissory notes of country banks. The point is so important, and bears so much upon the present subject, that I am induced, with Mr. Pennington’s permission, to insert the paper containing his views upon it, and upon one or two topics connected with it, in the Appendix (1829, p. 32 n.).

This paper was based heavily on an unpublished memoranda titled, ‘Observations on the Private Banking Establishments of the Metropolis’, prepared by Pennington for William Huskisson in 1826 (see Sayers 1963, pp. xvii-xviii, xlv-li).

⁷ This letter was sent to Tooke to rebut the interpretation placed on the analysis of Pennington’s 1829 paper by Torrens (1837). See Tooke (1838, II, pp. 337-8 n.).

⁸ For evidence of this argument see Tooke (1832, Qs 3819-20, p. 270; Q 3836, p. 272; 1838, I, pp. 172, 203; II, pp. 123-4, 334).

... it may be remarked of this portion of the circulating medium [country banknotes], that, supposing it to bear for local purposes a certain due proportion to the basis of the currency, the deviations from this, its due level, have been, not only during, but before and since the restriction, very considerable, expanding under circumstances, and in a state of opinion, favouring a rise of prices, and collapsing under the opposite circumstances; and these expansions and contractions have, in the majority of instances, not been preceded by any corresponding variations of the Bank issues, although eventually they have come under the limitation and control of the Bank regulation.

The same, and perhaps in a still greater degree, may be said of those other component parts of the circulating medium, bills of exchange, and book credits ... The expansion and contraction of these and country bank notes, are, as will be abundantly exemplified, the *consequences, and not the causes*, of a rise and fall of prices (1838, I, pp. 148-9; emphasis added).

Nevertheless, as indicated in the quote above, Tooke believed that the Bank of England, through the regulation of its issues, could influence, albeit imperfectly, the whole 'circulating medium', limiting its variations in the short run and bringing it under control in the long run.

In his pre-banking school writings and parliamentary evidence, but especially his discussion of the regulation of banknote issues in Section III of the *Considerations* (1826), Tooke identified four main ways in which the Bank of England influenced the wider 'paper circulation'. Firstly, by directly altering the rate at which it discounted commercial bills of exchange brought to its door in relation to the market rate of interest. Thus, according to Tooke (see 1826, pp. 73-83), by lowering (or raising) the 'bank rate' in relation to the market rate, the Bank was able to induce an enlarged (or reduced) application for discount facilities upon which its Banknotes could be expanded (or contracted). Secondly, by altering the volume of commercial discount business brought to

its door at the given bank rate. It is evident though that Tooke (see 1826, pp. 77-80; 1829, pp. 54-7; 1832, Qs 4080-4083, pp. 299-300) believed the effectiveness of this ‘rationing’ method depended on the state of the money market; with a policy of extending or reducing its accommodation more effective when there were ‘pressures’ in the money market and a relatively high market rate of interest was inducing a greater demand for discount facilities at the Bank than when market conditions were slack and the market rate low. Thirdly, by the sale or purchase of securities, in particular, exchequer bills, on the open market, the Bank could alter its notes in circulation as well as exert an influence on the market rate of interest (see Tooke 1826, pp. 73-4; 1832, Q5454, pp. 441-2 and Q5478, p. 444). Fourthly, through advances to and repayments from government, the Bank could influence the amount of its notes in circulation (see Tooke 1826, pp. 79-81; 1829, pp. 61-71; 1832, Q 4084, p. 300). However, Tooke believed that this method was not really at the discretion of the Bank of England, but rather at that of the British Government according to whether it was cheaper to borrow funds in the open market or at the Bank.⁹ It appears from his various discourses on the subject that Tooke believed the Bank of England largely regulated its Banknotes through the second and third ‘channels’. Indeed, given the non-discretionary nature of government funding arrangements and the institutionalized policy of the Bank of England to charge a fixed discount rate under the constraints of the Usury Laws, these were clearly the two most effective channels for regulating its Banknotes in circulation. According to Tooke the latter policy position especially hampered the ability of the Bank to regulate its issues:

One of the great difficulties which the directors have experienced in the regulation of their issues, has arisen from the uniformity of the bank rate of discount, while market-rate of interest has been subject to frequent and sometimes great variations. The consequence of this has been, that when the market-rate has been above the rate charged by the bank, the applications for discount have been so numerous and urgent, that the issues through that medium have tended to an excess; while, on

⁹ This is evident in the statement that “when the market-rate is high, there must be an increased disposition on the part of government to apply to the bank for accommodation; as on the other hand, when it is low, to take the opportunity of paying off previous advances” (Tooke 1826, p. 80). For this reason, Tooke believed the debt-funding activities of the government tended to exacerbate pressures in the money market and the difficulties for the Bank in managing its issues. Also see Tooke (1829, pp. 52-3).

the other hand, when the market-rate has fallen below the bank-rate, the channel for keeping up the circulation of paper through the medium of discount, seems almost wholly to have failed (1826, pp. 77-8).

That Tooke focused on this difficulty is an indication of his deep concern with the ‘transmission mechanism’ by which the Bank of England could effectively conduct policy. In this regard, more so than his contemporaries, Tooke did associate the regulation of the Banknotes in circulation with alterations in the rate of interest.¹⁰

In spite of the difficulties mentioned above, Tooke believed the Bank of England had the power to control the whole ‘circulating medium’ in the *long run* by affecting the ‘reserves’ of the commercial banks, in particular, the country banks and, by the late-1830s, the provincially established joint-stock banks. However, as will be clarified below, Tooke believed this ‘power’ was largely asymmetric: the Bank could restrain the commercial banks and force them to reduce their paper circulation, but it could not cause them to expand it and, thereby, increase the whole ‘circulating medium’ independently of trade and prices. Thus, Tooke conceded that in circumstances when trade and manufacturing was ‘flourishing’ and ‘confidence was entire’, the commercial banks could, in the short run, counteract or even undermine a restrictive policy stance of the Bank of England. But he argued that this would:

... not proceed far, nor last long, under a resolute reduction of its securities by the Bank of England. The reserves of the country banks must be in gold or Bank of England notes: these they would have an increasing difficulty to possess

¹⁰ This concern was also expressed when, in a draft summary of the *Considerations* (1826) which Tooke sent to Lord Grenville with a letter dated 19 November 1825, he wrote:

That the principal, if not the only medium, through which the Bank of England or indeed any Bank of circulation can extend its issue of paper money beyond what it may give out in the mere payments for purchases of bullion is that of loans to the state or to individuals and that it can only diminish its issues of notes, excepting such as may be cancelled against coin or bullion delivered from its coffers, by withdrawing or diminishing such loans; that consequently in extending or diminishing its issues beyond those limits it has a powerful influence on the rate of interest, as on the other hand its means of extending or contracting its circulation within limited intervals is very naturally affected by the rate of interest (*Grenville Papers*, British Library, Add 69082, reprinted in Tooke 1996, pp. 136-7).

themselves of, the resource of re-discounting in London being greatly curtailed, so that the means of making advances, as well by discounts and by book credits, as by issue of notes, would be abridged, and the whole of the country circulation would thus be more or less restrained ... (1838, II, pp. 287-8).

Tooke (ibid., p. 302) indicated that this process entailed the eventual adoption by provincial banks of the higher rate of interest 'established in London'.

In Tooke's view it was also possible for the Bank of England to exert an influence on credit conditions and the whole 'circulating medium' in the *short run*, chiefly through the effect of its operations on the market rate of interest (on short-term bills). This was based on the notion that the level of interest had an influence on speculative activity in both the financial stock and commodity markets. According to Tooke (1826, pp. 36-47, 55-8, 83-4; 1838, I, 194; II, pp. 148-9, 191, 344-5) a low rate of interest facilitated credit-financed buying of shares and commodities by traders intent on making windfall profits from expected price hikes; while a high rate discouraged this speculative activity.¹¹ But significantly, Tooke (1832, Qs 3845-6, pp. 274-5) believed that an accommodating monetary policy and low interest rate was not the 'moving power' but was instead an encouragement to the *heightening* of speculative activity. He also came to believe that a low rate was a greater inducement to share speculation than to speculation in commodities.¹² In this regard, Tooke (1838, II, pp. 177-81, 287, 298, 302) believed that if well managed, monetary policy was capable of suppressing speculatively-driven expansions in paper credit. Its effectiveness largely rested on how quickly the Bank of England was able to identify speculative activity and, by reducing its issues and raising

¹¹ However, Tooke does not provide a convincing explanation of how the level of interest on short-term bills of exchange precisely influences speculative activity, especially in relation to spending behaviour by traders in commodity markets. It appears he relied on the notion that an alteration in the cost of credit tended to affect its demand by speculators as well as the 'confidence' of lenders to grant credit facilities.

¹² In reference to a speculative upturn in commodity and share markets in 1835-6, Tooke wrote:

... although, as regards the markets for goods, there is not a trace of any *direct* influence of the amount of the currency, or of the rate of interest, on the rise of prices of produce in 1835-6, the case, as relates to the share markets, is different; both the inducement to adventure, and the means of investment in joint-stock companies, are alike promoted, by a low, and above all, by a falling rate of interest (1838, II, p. 326).

the discount rate on bills, dampen ‘confidence’ in the markets before a ‘spirit of speculation’ gained momentum. For Tooke (see 1826, pp. 42-54, 87-90; 1832, Q3849, pp. 275-6) this policy action may often involve the Bank having to adopt a restrictive stance in absence of any signs of depreciation in the foreign exchanges or rundown in its bullion reserves. As indicated above, Tooke believed the most effective mechanism for immediately influencing monetary conditions was by direct alterations of the ‘bank rate’ in relation to the market rate of interest. Hence, the afore-mentioned policy of not varying the bank rate was seen by Tooke (1826, pp. 77-8; 1829, pp. 58-61) to be a significant handicap on the capacity of the Bank of England to exert a restraining influence on short run inflationary expansions of the whole ‘circulating medium’.

Relationship between the Price Level and Money

In his extensive empirical analysis of prices the pre-banking school Tooke argued that the primary cause of price variations was ‘natural’ and ‘political’ factors affecting the supply conditions of commodities. From these causes short-run price fluctuations were seen by Tooke to be accommodated by changes in the whole ‘circulating medium’, usually associated with sympathetic variations in the velocity of Bank of England notes and coin. Hence, for the most part, causality was held by Tooke to run from prices to the whole ‘circulating medium’, while its ‘basis’, the quantity of Banknotes and coin in circulation, separately depended on the policy stance of the Bank of England. Yet, despite this position, the pre-banking school Tooke adhered ‘in principle’ to the quantity theory of money. To the Bank Charter Committee of 1832, Tooke stated “[A]s a general proposition I am quite prepared to admit, and I have never denied, that all other things being the same, an increase of the circulating medium would tend to produce a rise of prices, and *vice versa*” (1832, Q 4019, p. 294).¹³ A reconciliation between these two apparently conflicting positions lies with Tooke’s view on the permissive role of credit in price fluctuations and the policy response of the Bank of England. This is best explained in terms of Tooke’s conception of the anatomy of price fluctuations. As already shown, Tooke argued that the ‘moving’ cause of short run price fluctuations were ‘natural’ and

¹³ For a similar statement, see Tooke (1832, Q 5439, p. 440).

‘political’ factors which induced an imbalance between the demand for and supply of a major commodity (i.e. corn) or group of commodities. The resulting fluctuation in the price level will usually be associated with and aggravated by speculative activity in the markets. According to Tooke, the ‘circumstances’ which gave rise to a ‘spirit of speculation’ and ‘overtrading’ are those of excess demand in the markets for major commodities, either as a result of an actual or anticipated deficiency in supply or as a result of an anticipated higher demand from the ‘opening up of new and extensive markets’. Importantly, the *original* causes of these ‘circumstances’ are ‘natural’ and ‘political’ factors.¹⁴ Furthermore, the speculatively-driven upward movement in the price level is accommodated by an expansion in paper credit. For Tooke the extent to which speculative activity is ‘excited’ and permitted to raise prices depended heavily on the supply of credit provided by the English banking system. While Tooke believed the enlargement in the ‘circulating medium’ was always the consequence of the speculative ascent of prices, the banking system could nevertheless have an influence on the latter through the effect of its banknote issues on credit conditions.¹⁵ It is evident Tooke (1838, I: 148-9; II: 312-14, 332) believed that subject to the institutional structure of the banking system, only the Bank of England possessed the power to *autonomously* influence banknote circulation and monetary conditions. Hence, according to Tooke, if the Bank adopted an expansionary policy which extended credit facilities and provided a further stimulus to speculation, it will contribute to a higher range of prices. This position was crystallized by Tooke in the following way:

¹⁴ For a clear statement of this position, see Tooke (1824, i, pp. 63-6).

¹⁵ This is illustrated in the following answers Tooke gave to the Bank Charter Committee of 1832:

Q 5469 You have stated that the increased issues by the Banks would have an effect upon credit, rather than upon the prices of commodities; do you conceive that it would have any effect upon the prices of commodities? - (Tooke) That must depend on the circumstances under which the enlarged issues were made; at the moment of an enlarged issue, if specially advance to enable merchants to export or to import more or to work up more raw materials than they otherwise would have done, they would, *pro tanto*, add to the prices.

Q 5470 Then the effect upon the prices is not produced by the addition to the circulating medium, but by the additional facility given to commercial transactions? - (Tooke) Yes, at periods when, from the circumstances of trade, or of a particular commodity, there is a tendency from other causes to a rise in the price (1832, p. 443).

Now my firm belief is, that there is hardly a single instance in which the Bank of England issues can be adduced as the origin of the rise of prices. As I have said before, when the increase takes place coincident with a disposition to speculate from other causes, then it very naturally contributes to extend the range of speculation (1832, Q 3845, p. 274).¹⁶

He added, moreover, that “it is a subject on which I think more delusion prevails than any other I am acquainted with” (ibid.). According to Tooke, a speculatively-driven increase in prices would inevitably lead to ‘overtrading’, and, from a lack of ‘consumption’ demand, eventually to an excess supply in commodity markets which would cause a collapse of prices. Tooke (see, in particular, 1824, i, pp. 66-8) maintained that the greater the speculative upturn, the more violent would be the ‘recoil’ in commodity markets and decline in prices which followed, and the deeper the ‘stagnation and despondency’ in financial markets. Hence, according to Tooke, to the extent that Bank of England policy may have contributed to the speculative upturn, it will also have contributed to the subsequent commercial discredit and contraction of the ‘circulating medium’.¹⁷

The above discussion shows that Tooke believed ‘monetary’ factors to be a secondary (or auxiliary) cause of short run price fluctuations. In this context, again, Tooke believed the Bank of England’s influence was largely asymmetric. It was capable of accommodating an expansion in credit which aggravated a speculative upturn in prices and, by the adoption of a restrictive policy stance when ‘confidence’ in the markets was beginning to wane, to also bringing on the inevitable turnaround and decline in prices. But Tooke was of the view that, except when it was a reaction to a speculative ‘boom’, the Bank was less capable of extending a decline in prices as a result of an excess supply in commodity markets caused by ‘natural’ and ‘political’ factors (e.g. an abundant domestic harvest of corn). In his empirical studies covering the period from 1792 to 1837, Tooke (1826, pp. 2-35; 1838, II, pp. 46-55, 172-89, 280 *et seq.*) discovered that the Bank of England contributed significantly to price variations in 1817, 1824-5 and 1835, by

¹⁶ Also see Tooke (1832, Q’s 5448-9, p. 441).

¹⁷ See, for example, Tooke (1838, II, pp. 177-88, 191-2, 286-97, 344).

accommodating a speculatively-driven expansion in the ‘circulating medium’. It is notable that Tooke fully appreciated that on the latter two occasions, the speculative ‘booms’ which led to financial crisis in 1825-6 and 1835-6, applied especially to shares and foreign investments rather than to commodities. Therefore, for the greater part, Tooke believed that in practice the Bank of England exerted little influence on price fluctuations:

In the research I have had occasion to make into the fluctuations of prices, with a comparison of precise dates of the occurrence of enlarged issue, and likewise of the occurrence of advanced prices, as likewise of a contraction of paper and a fall of prices, I have been struck with great surprise at finding that in point of fact the sequence did not answer the previous expectation; that the most signal instances of a rise in prices, and the most signal instances of a fall of prices, have been totally unconnected in their origin with the Bank of England issues; that is, the rise of prices has *preceded* any large issue of Bank of England paper, and a fall of prices has *preceded* contraction, and in some instances it proceeded consistently with a very enlarged issue of paper (1832, Q 3976, p. 289; emphasis added).

In his writings, especially in *History* (1838, I; II), Tooke continuously presented evidence to repudiate the position of the ‘partisans of the currency doctrine’ that the main cause of price fluctuations were variations in the quantity of Bank of England notes in circulation.¹⁸

The pre-banking school Tooke did not abandon the ‘general principle’ that changes in the quantity of ‘circulating medium’ causally influenced the price level. However, Tooke acknowledged it only as a *long run* ‘tendency’ which did not work in practice.¹⁹ Indeed, the only circumstance in which Tooke believed that the Bank of

¹⁸ A ‘partisan’ who came in for much criticism by Tooke (see 1832, Q’s 3840-46, pp. 273-5; Q 2994-5, p. 291; Q 5439: 440; 1838, I, pp. 10-11), was Robert Mushet, author of *An attempt to explain from facts the effect of the issues of the Bank of England upon its own interests, public credit and country banks* (1826).

¹⁹ This is evident when Tooke stated before the Bank Charter Committee of 1832 that “I have always acknowledged the general principle, that, other things being the same, variations in the amount of the circulating medium have a tendency to influence prices” (1832, Q 5439, p. 440) and, then, in reply to the

England exerted a lasting influence on prices occurred during the restriction period, when, a passive monetary policy allowed the depreciation of an inconvertible paper to persist, so raising the cost of imports. However, even in this instance, Tooke was of the view that the ‘original’ causes of this depreciation were ‘natural’ and ‘political’ factors. In a convertible system of currency, Tooke clearly believed that through the regulation of its issues, the Bank could not have such a persistent influence on the price level incompatible with the market price of gold being around its mint standard.²⁰ In this regard, Tooke (1832, Q’s 4013-14, p. 293) believed that the Bank of England’s obligation to maintain convertibility of its banknotes placed a limit on its capacity to causally influence the price level. This relates to Tooke’s view about the Bank’s role in the external adjustment process. To begin with, according to Tooke, the indicator (or ‘test’) for ascertaining an excess or deficiency in the ‘circulating medium’ was the depreciated or appreciated state of the foreign exchanges, irrespective of its original causes, which he largely attributed to ‘natural’ and ‘political’ factors. In particular, when the foreign exchanges have fallen below par and there is a serious rundown in the country’s bullion reserves, Tooke (*ibid.*, Q’s 3880-81: 279) believed that external adjustment involved the Bank of England adopting a restrictive policy which, by constricting the facility for credit provision, tended to reduce domestic prices. However, as previously mentioned, Tooke held that the price-specie-flow mechanism worked so slowly that in practice external adjustment largely relied on the more immediate effect of a higher rate of interest attracting capital flows from abroad. Moreover, it is evident from Tooke’s analysis that he believed that a decline in prices, especially if in reaction to a speculative rise, would often quickly undermine ‘confidence’ and lead to the widespread withdrawal of credit (even commercial discredit) which acted to raise the market rate on bills.²¹ Hence, the Bank’s role in facilitating external adjustment was dependent on the state of credit conditions in relation to the (irregular) cyclical movement of commodity (and share) prices. The important point is that Tooke did not regard external adjustment as being an

following question, ‘But your notion of that tendency arises from general principle, rather than from any observation of facts?’, “Certainly” (*ibid.*, Q 5440, p. 440).

²⁰ This was linked to his view that under a convertible system of currency that “there can be no great range in the actual quotations of the Exchanges” such that a bullion “drain may be very considerable, while the indication of the Exchanges is not so” (1832, Q 3884, p. 280).

²¹ See Tooke (1826, pp. 56-60; 1838, II, pp. 160-71, 283 et seq.).

automatic self-correcting process, but, instead, one often requiring skilful management by the Bank of England to prevent a drain of bullion which endangered the convertibility of the currency.

3. Tooke's Transformation to Banking School Thought

While there is agreement that Tooke's transformation to his banking school theory began in the late-1830s and took shape in the early 1840s there are differences on the nature and causes for the transformation. According to Gregory (1928) Tooke's conversion to "to the unvictorious side in the controversy over the Bank Charter Act" occurred when, in volume III of *History* (1840), he "first examined the problem of Bank policy and of the relation of circulation, deposits and prices to each other in the light of the writings of the Currency School" (ibid., pp. 16, 78). As far as the nature of this transformation was concerned, Gregory (1928, pp. 81-2) ascertained that it essentially consisted of a "bold reversal of the traditional position" in which instead of "variations in prices being caused by alterations in the amount of the circulation, it was changes in the price level which caused alterations in the amount of the circulation". Arnon (1991, pp. 120-25) also locates Tooke's conversion "during the writing of Tooke's third volume" of *History* (1840) and appears to support Gregory's view that it was largely a response to the Currency School. In explaining Tooke's transformation Arnon (1991, pp.) places much importance on Tooke's development of the so-called 'income theory of prices' which "explains prices as resulting from changes in income and expenditure and not from changes in the quantity of the medium of circulation" (ibid., p. 123). However, Arnon fails to explain how this theory was supposed to work and in our view represents a misunderstanding of Tooke's approach to explaining prices which he had long adopted in his pre-banking school phase (see Smith 2001, pp. 38-9; 2003, n. 2 p. 31). Arnon (1991, pp. 126-131) also attributes considerable importance to Tooke's supposed adoption of a 'free banking' position for his transformation. According to Arnon (ibid.), unlike his pre-banking position, Tooke's banking school theory was compatible with a free trade policy on the issue of banknotes. However, this argument is not supported by the textual evidence, which in fact shows that the banking school Tooke most definitely did not

support free banking.²² Notwithstanding problems of interpretation, a couple of significant points do emerge from these commentaries on Tooke's transformation. First, they both suggest that a major factor in stimulating Tooke's transformation was the emergence of the Currency School. Second, they indicate that Tooke's transformation is anticipated by some aspects of his pre-banking school thinking. However, both authors do not develop upon these points to provide a comprehensive explanation of Tooke's transformation. In this regard, they do not provide sufficiently coherent accounts of the banking school theory to which Tooke's monetary thought transformed into after 1838. Hence, in order to properly explain Tooke's transformation we need to provide an account of his banking school theory.

Tooke's Banking School Principles

Tooke's banking school position essentially consisted of three related principles.²³ 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. Its corollary was that causation ran from the price level to the quantity of money in circulation. The main implication of this proposition was 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 according to the 'law of reflux'; while, alternatively, effective measures to withdraw banknotes and coin from active circulation in relation to public demand would result in their substitution by other less convenient monetary instruments

²² In particular, it is difficult to reconcile Arnon's interpretation with a clear restatement by Tooke (1848b, Qs 5384-5, p. 422) against 'free trade' in banking in evidence to the 1848 Commons' committee on the Causes of Commercial Distress, saying definitely "I do not admit the doctrine of what is called free trade in banking" (ibid.: Q5384, p. 422).

²³ Tooke's banking school principles was most clearly articulated in his famous pamphlet *Inquiry into the Currency Principle* (1844) and, then, importantly, elaborated on in volume IV of *History* (1848a). Our summary below of Tooke's banking school theory is based heavily on Smith (2001), which provides a detailed account.

(i.e. credit). Hence, Tooke 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, in which the ‘law of reflux’ did not operate completely, did a central authority responsible for issuing paper money have the power to *autonomously* influence the quantity of money. However, looking at history, Tooke believed the only plausible way that this power could be systematically exercised to overcome reflux 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. In this regard, Tooke essentially proposed that the quantity of money in circulation was normally demand-determined in a fiat-based monetary system as well as 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 that while monetary policy was able to influence economic activity chiefly through its effect on the rate of interest, the rate of interest has no systematic (or predictable) influence on the inducement to spend in the economy. In this regard, unlike the quantity theorists, the banking school Tooke well appreciated that the ‘transmission mechanism’ by which Bank of England policy could influence economic activity depended mainly on the influence of the rate of interest on monetary expenditure. While Tooke believed the Bank of England could exert a temporary influence on the rate of interest, it could *not* thereby exert a systematic influence on expenditure and the public’s demand for money. Instead, Tooke argued that through its effect on the rate of interest, the Bank was able to influence credit conditions and, according to the state of markets, thereby influence 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 seen to have a reliable effect 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 the financial 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 proposed that if anything a restrictive policy, especially a ‘violent’ one, involving the Bank of England raising its discount rate, would be more effective in reducing expenditure by ‘dealers’ on commodities, mainly in credit-laden markets, than a low interest rate policy would be 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. Consistent with this notion, the banking school Tooke implicitly proposed that this ‘average’ rate governed the normal rate of profit. Indeed, Tooke had argued since the *Considerations* (1826, pp. 5-30) that this ‘average’ rate of interest was determined in the financial market by politico-institutional and conventional factors (see Smith 2006, pp. 4-11). This notion was entirely consistent with the ‘adding-up’ (or ‘cost of production’) approach to distribution and prices that Tooke had always adopted in his analysis of prices.²⁴ In the ‘adding-up’ approach, which was originally developed by Adam Smith ([1776] 1979, I, vi-vii) normal price is conceived to be ultimately determined by its input costs, consisting of the natural wages of labour, rent on land and the rate of profit on capital for a given technique of

²⁴ For a detailed account of Tooke’s approach to natural prices and distribution, see Smith (2002). Also see Smith (2006, pp. 12-14).

production. Having adopted the Ricardian theory of rent, Tooke's 'adding-up' approach to distribution and prices essentially reduced to explaining the real wage and profit rate for a given technique as component parts of what he called 'cost of production', which was equivalent to normal price when rent was zero on the least productive (or marginal) land. In this adding-up approach these two distributive variables are conceived to be explained as if they are independent of each other, thereby logically accommodating Tooke's notion that the normal rate of profit is governed by the money rate of interest and, connectedly, that the money rate of interest constitutes a cost of production. But while Tooke believed Bank of England policy could greatly determine the money rate of interest in the *short run* it could not influence the determination of the average rate in the long run which governed the normal rate of profit. Hence, in Tooke's banking school theory, in the *long run*, the monetary authorities were conceived to have limited power to influence the rate of interest and, thereby, the price level (see Smith 2001, pp. 42-5; 2006, pp. 14-15).

Model of Tooke's Banking School Position

On the basis of these principles Tooke's banking school position can be fully explained in terms of the 'income form' of the monetary equation. The following two monetary equations are employed for this purpose:

$$M_n \cdot V_n^Y = P_n \cdot Y_n \quad (1)$$

$$M \cdot V_m^Y \equiv P_m \cdot Y_m \quad (2)$$

where P_n is the long-run normal general price level; Y_n is the long-run normal level of aggregate 'real' income (or gross output); M_n is the long-run normal quantity of Bank of England notes and coin in circulation; V_n^Y is its long-run normal income-velocity of circulation; 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 rate of profit on capital rules; Y_m is the short-run level of aggregate real income

(and gross output) different from its long-run normal level; M is the actual quantity of Bank of England notes and coin and V_m^Y is its short-run income-velocity of circulation.

With respect to monetary equation (1), 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. Consistent with the logic of their general approach to value and distribution classical economists commonly believed that for a given technique of production and given the institutional structure of the financial system causality in equation (1) ran unambiguously from nominal income (i.e. $P_n \cdot Y_n$) to monetary circulation (i.e. $M_n \cdot V_n^Y$).²⁵ The distinctive feature of Tooke's banking school position was that compatible with this conception, for a given level of normal 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. Equation (1) represents a position of long-run monetary equilibrium in which (relative) normal (gold) prices are determined at which competition establishes a uniform rate of profit on capital. By contrast, equation (2) represents a *short-run* monetary equilibrium or, in relation to the long-run position, a position of monetary disequilibrium, in which economic variables deviate from their normal values. It was in relation to the short-run 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 centered on the short-run position of the monetary economy (cf. Laidler, 1975, pp. 218-19; Green, 1992, pp. 15-17, 207-9).

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 (i.e. $P_m \cdot Y_m$) – according to changes in prices and economic activity – to the whole quantity of 'circulating medium' associated with variations in the velocity of circulation of Bank of England notes and coin (i.e. $V_m^Y > V_n^Y$), the extent of which will depend on the policy of the Bank of England in relation to the circumstances behind the particular change in

²⁵ On this position of the classical economists, see Green (1992, pp. 12-15).

nominal income.²⁶ It should be noted that entirely consistent with pre-banking school position the banking school 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.²⁷

External Adjustment Process

It was shown in Section 2 above that the pre-banking school Tooke believed the ‘price-specie-flow’ mechanism was not ‘automatic’ and worked only slowly in establishing external adjustment in the long run. However, this mechanism is completely repudiated by the banking school principles enunciated above. 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 believed that variations in relative prices in international commodity markets would effect trade flows and contribute to external adjustment in the long run. From his analysis it can be established Tooke believed that 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

²⁶ 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.

²⁷ By contrast, the Currency School maintained that though they may be initially caused by ‘real’ factors, variations in the price level accommodated by changes in the whole quantity of ‘circulating medium’, *could only occur* if there were accommodating changes in Bank of England notes and coin (i.e. M). This stemmed from the Currency School’s adherence to the notion that the velocity of circulation of Bank of England notes and coin was stable in the short run (i.e. $V_m^Y \approx V_n^Y$). In accord with the ‘currency principle’, price stability could be achieved by ensuring $M \approx M_n$.

income and prices would tend to raise (lower) import expenditures.²⁸ Thirdly, Tooke believed that when a trade surplus (deficit) resulted in a balance of payments surplus (deficit), an appreciation (depreciation) 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 believed this adjustment process was a *tendency* subject to ‘natural’ and ‘political’ factors which would often disturb international market conditions. In the short run, Tooke had long held 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 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.

What is highly significant about Tooke’s banking school position on external adjustment is that it gives increased support to the view he formulated during his pre-banking school phase that the Bank of England needed to hold a large precautionary reserve of bullion to safely manage short-run external adjustment without the risk of inducing financial instability. A fundamental objection to the 1844 Bank Charter Act by Tooke was that it would effectively operate to reduce the bullion reserve habitually held by the Bank of England and that it would thereby contribute to increase not decrease the propensity for financial instability (see Smith 2003, pp. 47-51). As indeed shown by Tooke’s (1840, IV, pp. 172-207) critical disposition toward the plan proposed by the

²⁸ 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 (1857, VI, pp. 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. The first paragraph of the ‘Merchant’s Petition of 1820’ essentially argues that enabling a greater importation from foreign countries will be conducive to increasing the demand for British exports (see *ibid.*, p. 332). Moreover, before the Lords’ committee Appointed to Inquire into the Means of Extending and Securing the Foreign Trade of the Country in 1820, Tooke gave the following evidence:

In the present state of the Russian trade, and under the present duties, do you think that an increased import of Russian timber could be paid for directly by an increased export of British manufactures to Russia? - (Tooke) I think any increase of demand for Russian produce would have a tendency to increase the exportation of British manufactures (1820, p. 32).

Also see Tooke (1819b, p. 171; 1857, V, pp. 448-51, 483-5).

Currency School for separating the functions of the Bank of England between note-issuing and its banking business operations, he would have vehemently opposed the 1844 Bank Charter Act on the basis of his pre-banking school position. In this regard, based on the Currency School's strict version of the quantity theory the 1844 Act is unlikely to have been supported by most bullionists who tended to adhere to Thornton's (1802) more flexible version of the quantity theory characterized by the possibility of significant short-run variations in the velocity of Bank of England notes and coin that made doubtful the Bank's control of the whole circulating medium in the short run.

Process of Transformation

The transformation from Tooke's pre-banking school position to his banking school position essentially consisted of developing monetary principles more compatible with his 'real' explanation of prices. With an increasing uneasiness, the pre-banking school Tooke reconciled this explanation of prices with the quantity theory of money. It was largely because of his 'inductive' approach to the study of economics that Tooke was slow to abandon the quantity theory in the face of accumulated evidence of its weak explanatory power. Indeed, in the context of defending Tooke against claims of inconsistency by members of the Currency School,²⁹ Fullarton made reference to this very point:

In the first place, [Tooke's views] have never, till very lately, been brought before the public in a condensed or popular shape, but have had to be searched out among the dry details of statistical work, in which few general readers have the courage to look for them. Secondly, Mr. Tooke himself has been exceedingly slow in following out his original conclusions on the subject of price to all their consequences. The germ of his present opinions may be traced in the facts, which he collected and laid before the public in the first edition of his great work [i.e.

²⁹ See Torrens (1844, pp. 1-2) and Clay (1844, pp. 29-41). Also, as Fullarton (1845, p. 16 n.) pointed out, Overstone (1840, pp. 150-52) had earlier attempted to show an inconsistency between Tooke's pre-banking and banking school position on the connection between the quantity of money in circulation and price fluctuations.

High and Low Prices] but at the time of that publication, in 1823, Mr. Tooke's mind appears to have been still strongly imbued with the prevailing notions, that prices are liable to rise and fall with the increase or diminution of the amount of Bank notes in circulation, that banks have it in their power to increase at pleasure the quantity of paper money, and that the efflux and influx of gold are to be regulated by regulating the issues of the banks. He adhered to these doctrines even after he had refuted them by his discoveries, and seems to have parted with them at last only by degrees and with reluctance, under the pressure of his growing convictions. The progress of those convictions may be traced through their successive stages in his various publications, and in the evidence delivered by him before diverse Parliamentary Committees ... (1845, pp. 18-19).³⁰

The catalyst for the transformation of Tooke's monetary thought was the controversies of the late-1830s which saw the emergence of the Currency School and its advocacy of banking policies which had the intent of giving practical effect to the 'currency principle'. Thus, when asked by the 1848 Lords' Committee on the Causes of Commercial Distress in 1847-8 to explain "the Nature of the Phenomena which have come within your Observation and have led to an Alteration of your Opinions", Tooke replied:

As well as I can now remember it was the Controversy which took place consequent upon the monetary Derangement in 1836-37, which led me to suspect the Existence of the Error which, as I now believe, lies at the Bottom of the Theory which ascribes to the Bank of England and other issuing Banks a direct Power over the Amount of the Circulation, and thence an Influence on Prices, being the Theory upon which the Act of 1844 has been founded. It is an Error in which I participated ... I did not sufficiently perceive that Bank Notes issued on Loan for short Periods, and strictly convertible, are simply the Effect of Transactions and not Causes of them. But in the renewed Researches which I was led into on that Occasion, *I found that the Facts were totally irreconcilable with*

³⁰ The part of this passage which follows the first two sentences was quoted with approval by Tooke in the 'Preface' to volume IV of *History* (1848a, pp. xi-xii). This passage is also quoted by Arnon (1991, pp. 133-4).

the Theory in question [i.e. the Quantity Theory], and a further Investigation into the Rationale of the Connexion between Prices and the Circulation has perfectly satisfied me that Bank Notes are simply the Effect of Transactions (1848c, Q3129, p. 351; emphasis added).

It was at the end of the 1830s when Tooke was preparing volume III of *History* for publication in 1840 that he began to formulate his banking school principles first articulated in that work.³¹

A major factor in Tooke's transformation was his retirement from Russian trading business in 1836 which afforded him much more free time to devote to his studies and reflect on political economy. Although he subsequently became Governor of the Royal Exchange Assurance Corporation in 1840, a position he held until 1852, this role was not a full-time one and continued to afford him significant time for carrying on his work in political economy. In the period 1836-1840 Tooke in fact was highly productive, writing the first three volumes of *History of Prices*, with volumes one and two published in 1838 and the third volume published in 1840. It was also during this period that the Currency School emerged and their main policy proposal for dividing the note-issuing and banking functions of the Bank of England, which became the basis of the 1844 Bank Charter Act, gained influential support. The process of transformation is likely to have begun when Tooke was preparing volumes I and II of *History* (1838), entailing a re-assessment and re-writing of his historical analysis of prices from 1792 to 1822 contained in *High and Low Prices* (1824) and, on the basis of fresh research work, extending the analysis to 1837. As shown in Section 2 above, the pre-banking school Tooke progressively attached less relevance to the explanatory power of the quantity theory so that by *History* (1838)

³¹ They appear in Chapters IV and V of this volume which were devoted to controversies over the management of the currency by the Bank of England and included an examination of the proposals for the separation of the Bank by the Currency School. Thus, in the preface to volume IV of *History*, Tooke wrote that:

If the earlier [three] volumes of the present work be critically examined, there will be found in them some remains (chiefly, however, in the phraseology) of my former attachment to the currency theory, as it was generally received, before it had been caricatured by the modern school (1848a, IV, p. x).

he had all but abandoned it ‘in principle’. In particular, it is notable in *History* (1838) that Tooke had taken the position that the British monetary system accommodates variations in prices largely independent of Bank of England policy. However, at this point, Tooke was unable to abandon the quantity theory in principle because he had not yet developed an alternative theory of monetary behaviour.

It was the emergence of the Currency School and their policy proposals that was the major catalyst in his development of an alternative theory in the form of his banking school principles. The strict version of the Currency School’s quantity theory of money provided a stark basis for Tooke to focus on the key issues and re-think his position on monetary theory consistent with his empirical findings. In this connection, based on his pre-banking school position, Tooke vehemently opposed the quantity theory of the Currency School. The process of developing his banking school theory after 1838 and up to the *Inquiry* (1844) involved Tooke systematically revisiting afresh the basic theoretical issues of monetary behaviour by reference to the ‘currency principle’: the causality between prices and money, the capacity for the velocity of Bank of England notes and coin to vary in the short-run, the role of Bank of England policy in external adjustment and, connectedly, the relationship between changes in bullion reserves and behaviour of Britain’s financial market and the transmission process by which monetary policy can influence economic activity and, in this connection, the role of the interest rate. Hence, Tooke articulated most of his banking school theory in the context of criticizing the premises underlying the ‘currency principle’. But, importantly, Tooke’s criticisms of the ‘currency principle’ and, more generally, of the classical’s quantity theory, were firmly based on his newly formulated banking school theory.

The process of Tooke’s transformation can be summarized in the following way. First, it is a hallmark of Tooke’s approach to political economy that he is stimulated by debate over practical policy issues to develop and enunciate theoretical principles that support his policy position. Hence, as the Tooke quote above indicates, it was the Currency School’s banking policy proposals which played an important part in stimulating Tooke to re-evaluate the classical’s quantity theory. Tooke believed that these

proposals, which became the foundation of the 1844 Bank Charter Act, would hamper the Bank of England in its conduct of monetary policy and contribute to greater not less instability of Britain's financial system. In the Currency-Banking School debates it led Tooke to criticize the premises of the currency principle upon which the Currency School's banking policy proposals were based. Significantly, while Tooke could have opposed these premises on the basis of his pre-banking school position he did it on the basis of his newly formulated banking school position. Second, as our discussion above has shown, after 1838 Tooke no longer believed that the quantity theory was reconcilable with his 'real' explanation of prices. Hence, Tooke naturally sought an alternative theory of monetary behaviour consistent with the empirically-based findings of his price analysis. The core elements of his alternative banking school theory appear to have been developed in the early 1840s with the theory coherently articulated in the *Inquiry* (1844) and elaborated upon in volume IV of *History* (1848a). Third, it was only with the development of what he believed was an *alternative theory* of monetary behaviour that the banking school Tooke was able to finally abandon the quantity theory in 'principle'. It was not until the *Inquiry* (1844) when Tooke had properly developed his banking school theory that he was then able to reject *as a theory* the classical's quantity theory of money. Thus, notwithstanding that Tooke articulated most of his banking school principles in the context of criticizing the premises underlying the 'currency principle', he clearly meant them to be a constructive alternative to more substantive versions of the quantity theory of money, in particular, by that version articulated by Ricardo (1811).³² This is verified by the critical review which Tooke wrote of the progress of monetary debate in England from 1797 to 1847 in volume IV of *History* (1848a, pp. 84-402), *after* he had well established his own banking school position in the *Inquiry* (1844).³³ In the review Tooke (1848a, IV, pp. 84-142) was critical of the 'bullionists' in general,

³² It is evident from his discussion of the 'currency principle' that Tooke (1844, pp. 1-6; 1848a, IV, pp. 166-71) considered it was a narrow version of the classical's quantity theory of money because of its contention that price stability required "the Bank notes in circulation should be made to conform to the gold, into which they are convertible, not only in value, but in amount" (1844, p. 2). For criticisms of Ricardo's monetary theory, see Tooke (1848a, IV, pp. 100-105, 199-206). Though Tooke (1848a, IV, pp. 85-7) showed sympathy toward Thornton, indirectly he was critical of him as author of the 'Bullion Report' of 1810 (see *ibid.*, pp. 97-113).

³³ Aside from Ricardo and the Currency School, the review was critical of the position of the 'bullionists' in general (see 1848a, IV, pp. 84-142).

including Henry Thornton, for their quantity theory based views, made on the basis of his banking school theory.

4. Conclusion

In the light of Tooke's growing dissatisfaction with the classical's quantity theory of money during his pre-banking school phase, the transformation to his banking school position is much less 'radical' than has been supposed in the literature.³⁴ In the first place, the banking school Tooke's concept of 'endogenous money' is anticipated in his long held belief in the permissive role of credit in Britain's monetary system. In particular, as indicated by Gregory (1928, p. 81), this is reflected in his pre-banking school view that the quantity of country banknotes in circulation depended on the level of agricultural prices.³⁵ It is also reflected in Tooke's pre-banking school view discussed in section 2 above that the banknote circulation in the 'City' of London systematically varied in the short-run independently of Bank of England policy, often in connection with variations in the country banknote circulation and often associated with speculative activity in both commodity and financial assets. Moreover, as shown in section 2 above, by 1838 the pre-banking school Tooke argued that short-run variations in the general price level were accommodated by changes in the quantity of 'circulating medium' largely independent of the quantity of Bank of England notes in circulation. Secondly, from the *Considerations* (1826) onwards, the pre-banking school Tooke showed a strong interest in the mechanism by which Bank of England policy could influence credit conditions and economic activity.³⁶ In fact he emphasized that Bank policy chiefly operated through the rate of interest and, connectedly, was concerned with ascertaining how changes in its level actually affected activity in the share market and commodity market. An important

³⁴ See Arnon (1991, p. 120) and Gregory (1928, pp. 79-88).

³⁵ See, for example, Tooke (1819a, pp. 130-32; 1824, i, pp. 63-8; 1826: 37-41, 86 n.; 1832, Q3836, p. 272, Q3906, p. 282; 1838, I, p. 148) and compare with Tooke (1844, pp. 38-43).

³⁶ This is particularly evident in Section III, 'Upon the Regulation of the Bank Issues', of the *Considerations* (1826, pp. 65-85). The *Considerations* was in fact important to the early development of Tooke's monetary thought because, as discussed in Smith (1996, pp. xl-xlvi), it represented his first attempt to develop a systematic position distinct from Ricardian orthodoxy. A different viewpoint is offered by both Fullarton, who believed the pamphlet could "have been the production of Mr. Loyd and Mr. Norman" (1845, p. 19), and Marx [(1859) 1977], who commented that it "could even be regarded as the first consistent exposition of the views which Overstone was to set forth later".

aspect of Tooke's banking school theory is the key role of the interest rate in the power of Bank of England policy to autonomously influence economic activity. Tooke was perhaps the first economist to realize that this power depended on how interest rates influenced monetary expenditure. In this regard, Tooke's conception of 'endogenous money' is firmly based on a rejection of any *systematic* relationship between changes in the rate of interest and the inducement to spend. Indeed, at the heart of Tooke's banking school criticisms of the Currency School was its lack of a 'transmission process' to plausibly support the premise that the Bank of England (or banking system) could autonomously determine the quantity of money in circulation.

Therefore, in retrospect, the evolution of Tooke's monetary thought to his banking school position was a long and torturous one, which, in the heat of the Currency-Banking School debates, culminated in the development of an alternative monetary theory to the classical economist's quantity theory of money.³⁷ From this standpoint, it is highly significant that despite this development in his monetary thought, the banking school Tooke's position on *banking policy* remained largely the same as the one he held during his pre-banking school phase. While, from 1848 onwards, the banking school Tooke adopted a more enlightened view on the role of the Bank of England as a 'central bank', the main development in his position consisted of refining already well established views about the best way for the Bank of England to conduct monetary policy (with a higher precautionary reserve) in a 'discretionary way' in order to secure financial stability and, thereby, promote commercial activity. In essence Tooke's new banking school principles supplied more substance to his longstanding position on banking policy against that of the Currency School.

³⁷ In contradiction to Gregory's (1929, p. ix) view, quoted by Viner (1937, p. 218), that 'after 1832' monetary debate in Britain 'produced much heat and little light', we would argue that the development of banking school thought, principally by Tooke, but also by Fullarton (1845), as well as the contributions of J.S. Mill (1844), was *the light* stemming from *the heat* of the Currency-Banking School debates. However, this 'light' represents a repudiation of the classical economist's quantity theory approach.

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