Nonneutrality of Money in Classical Monetary Thought

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Introduction

The rise of the new classical macroeconomics, with its key idea that systematic monetary policy cannot influence real activity, has revived interest in the so-called classical neutrality postulate. That postulate, of course, holds that money-stock changes affect only the price level and not real output and employment. My concern in this paper is not with the neutrality postulate per se but rather with some recent claims made about the original classical economists' adherence to it.

In particular, I am concerned with the contention that the classicals—i.e., those predominantly British economists who wrote during the period 1750-1870 dating roughly from the publication of David Hume's *Essays* to the emergence of the marginalist revolution in the writings of William Stanley Jevons, Carl Menger, and Leon Walras—denied that money-stock changes had output and employment effects even in the short run. Such contentions have been voiced most recently by Lucas Papademos and Franco Modigliani in their essay "The Supply of Money and the Control of Nominal Income" in volume 1 of the prestigious *Handbook of Monetary Economics*. They state:

> The role of money in classical economics is a simple one, and so is the effect of a change in the quantity of money on aggregate nominal income. According to classical theory all markets for goods, including the market for labour services, clear continuously, with relative prices adjusting flexibly to ensure the attainment of equilibrium. Resources are fully utilized and thus aggregate employment and output are always at the "full-employment" or "natural" levels determined by tastes, productive technology and endowments, except for transitory deviations due to real disturbances.
>
> In such an economy, money . . . does not influence the determination of relative prices, real interest rates, the equilibrium quantities of commodities, and thus aggregate real income. Money is "neutral", a "veil" with no consequences for real economic magnitudes . . . (pp. 405-6).

Others arguing that the classicals believed that money is always neutral with respect to output and employment include David Glasner, Arjo Klamer, Kevin Hoover, and Michael Artis. Glasner, in his 1989 book *Free Banking and Monetary Reform*, asserts that "in the economy the classical theorists envisioned, the monetary sector could not . . . be a source of instability. A disturbance could only arise in the nonmonetary or real sector . . ." (p. 59). Arjo Klamer agrees. In the first chapter of his well-known 1984 *Conversations with Economists*, he characterizes the classical view by means of a vertical aggregate supply schedule drawn at the full-capacity level of output in price-output space. The vertical supply curve guarantees that any money-induced shift in aggregate demand affects only the price level but not real output. Support for Klamer's interpretation comes from Kevin Hoover who, in his 1988 *The New Classical Macroeconomics: A Skeptical Enquiry*, writes:

> The vertical aggregate supply curve provides an adequate capsulization of the classical view. . . . Changes in the level of the stock of money would change the general level of prices, but, because money was thought to be neutral . . . relative prices and the levels of employment and output would not be affected (pp. 9-10).

Likewise, Michael Artis, in his 1984 *Macroeconomics*, explains:

> the classical model guarantees full employment equilibrium, and the 'neutrality of money', i.e. the property that changes in the nominal money supply do not affect the real outcomes, but only the price level (p. 193).

This article argues (1) that the foregoing interpretations are wrong, (2) that the classicals held that money affects output and employment certainly in the short run and perhaps to some extent in the long run too, (3) that they identified at least nine reasons for the occurrence of such effects, and (4) that their concern with money's impact on the level of real activity strongly influenced their views of the desirability or undesirability of monetary expansion and contraction. In short, the following survey of eleven leading classical monetary theorists—including Thomas Attwood, Jeremy Bentham, David Hume, Thomas Robert Malthus, John Ramsay McCulloch, James Mill, John Stuart Mill, David Ricardo, Henry Thornton, Robert Torrens, and John Wheatley—

reveals that at least eight rejected the notion that money is always neutral and that continuous market-clearing and perfect wage-price flexibility prevail.[1] In holding that money's short-run impact is predominantly on output while its long-run impact is chiefly on prices, the classicals adhered to much the same view expressed by Milton Friedman in his 1970 Wincott Memorial lecture on *The Counter-Revolution in Monetary Theory*. Wrote Friedman: "In the short run, which may be as much as five or ten years, monetary changes affect primarily output. Over decades, on the other hand, the rate of monetary growth affects primarily prices" (pp. 23-24).

The article proceeds as follows: First it itemizes the particular sources or causes of nonneutrality specified by the classicals. Next it describes what individual classical writers had to say about each item. Finally it shows how classical views of nonneutrality continue to survive in twentieth-century monetary thought. The central message is that the notion of at least some nonneutrality is part of an enduring classical monetary tradition and that theories stressing neutrality-always are a departure from that tradition.

Sources of Nonneutrality

The table below lists the causes of nonneutrality specified by the classicals. A glance at the table shows how erroneous is the notion that those economists denied that money affects real activity. For example, they argued that real effects could stem from price inertia which caused money-stock changes to influence output before fully affecting prices. They found another source of nonneutrality in the lag of nominal wages behind rising or falling prices. This lag caused real wages and thus real profits to change, thereby altering incentives for employment and production. They also attributed money's nonneutrality to the fixity of certain nominal contractual costs whose real burden rose or fell with deflation or inflation.

Inflation-induced shifts of real income from workers and rentiers to producers who invest in real capital constituted an additional source of nonneutrality. So did the lag in nominal interest rates behind inflation which caused real rates to change thus affecting business borrowing, capital investment, and real activity. Nonneutrality was also seen to stem from desired fixed inventory-to-sales ratios that transformed money-induced increases in sales into increased production for inventory. The classicals likewise traced nonneutrality to a confusion between changes in general and relative prices—this confusion causing monetary shocks to be misperceived as real ones requiring output adjustments.

The classicals further argued that money affects output by influencing business confidence. They also cited the boost to productivity given by money-induced increases in aggregate demand which, by extending the scope of the market for goods, encourages specialization and division of labor. Some classicals even held that money's output effects emanate from the need to work harder to maintain one's real income in the face of inflation.

Rightly or wrongly, the classicals appealed to many explanations to account for money's impact on

[1] On these points see O'Brien (1975, pp. 162-65) and Niehans (1987) both of whom stress the short-run nonneutrality of money in classical thought. See also Viner (1937, pp. 185-200) for an earlier treatment of that same subject.

SOURCES OF NONNEUTRALITY

Source	Cause(s) Money to affect real activity through:	Described by:
Sticky prices	real expenditure	Hume
Sticky nominal wages	real wages	Thornton, Torrens
Fixed nominal costs	real cost burdens	Attwood, McCulloch
Fixed nominal income of certain groups ("forced saving")	distributive shares and capital formation	Bentham, Thornton, Malthus, Ricardo, McCulloch
Sticky nominal interest rates	real interest rates	Torrens
Fixed inventory-to-sales ratios	inventory investment	Thornton
General price-relative price confusion	misperceived price signals	J. S. Mill
State of business confidence	changes in confidence	Attwood, McCulloch, Torrens
Market-size limitation to division of labor	labor productivity	Attwood, Malthus, Torrens
Efforts to maintain real income	labor-force participation rate	Torrens

output and employment. One of the first to do so was David Hume, who invoked the notion of price inertia.

David Hume and the Lag of Prices Behind Money

The classical theory of nonneutrality, though partly rooted in the writings of Richard Cantillon, John Law, and William Potter, owes its greatest debt to David Hume. In his 1752 essays "Of Money" and "Of Interest," Hume argued that while a fixed absolute quantity of money is of no consequence for the level of output and employment, *changes* in the quantity of money have a very real significance.

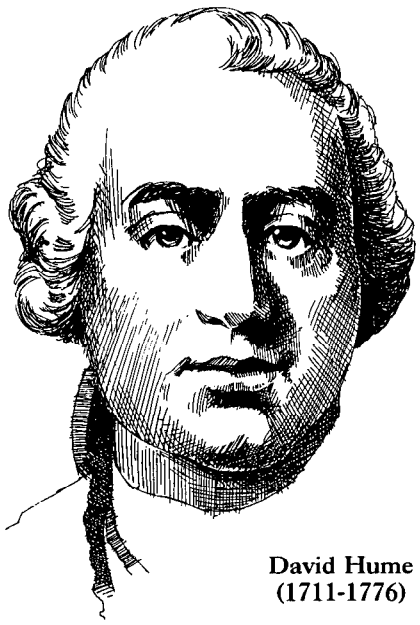
> Accordingly we find, that, in every kingdom into which money begins to flow in greater abundance than formerly, every thing takes a new face: labour and industry gain life; the merchant becomes more enterprising, the manufacturer more diligent and skilful, and even the farmer follows his plough with greater alacrity and attention (p. 37).

Hume attributes these nonneutralities to the lag of prices behind money. This lag, he says, causes money-induced changes in nominal spending to be divided in favor of output before being fully absorbed by prices. In his words:

> To account, then, for this phenomenon, we must consider, that though the high price of commodities be a necessary consequence of the encrease of gold and silver, yet it follows not immediately upon that encrease; but some time is required before the money circulates through the whole state, and makes its effect be felt on all ranks of people. At first, no alteration is perceived; by degrees the price rises, first of one commodity, then of another; till the whole at last reaches a just proportion with the new quantity of specie which is in the kingdom. In my opinion, it is only in this interval or intermediate situation, between the acquisition of money and rise of prices, that the encreasing quantity of gold and silver is favourable to industry (pp. 37-38).

Hume ascribes the price lag to the availability of idle labor willing to work at existing wages. Prices and wages rise only after all hands become fully employed.

> When any quantity of money is imported into a nation, it is not at first dispersed into many hands, but is confined to the coffers of a few persons, who immediately seek to employ it to advantage. . . . They are thereby enabled to employ more workmen than formerly, who never dream of demanding higher wages, but are glad of employment from such good paymasters. If workmen become scarce, the manufacturer gives higher wages, but at first requires an encrease of labour; and this is willingly submitted to by the artisan, who can now eat and drink better, to compensate his additional toil and fatigue. He carries his money to market, where he finds every thing at the same price as formerly, but returns with greater quantity and of better kinds, for the use of his family. . . . It is easy to trace the money in its progress through the whole commonwealth; where we shall find, that it must first quicken the diligence of every individual, before it encrease the price of labour (p. 38).



David Hume
(1711-1776)

Hume next distinguishes between temporary and permanent nonneutrality. Temporary nonneutrality stems from one-time changes in the money stock, changes to which prices eventually adjust. By contrast, permanent nonneutrality stems from a continuous succession of such changes to which prices never fully catch up.

As an example of temporary nonneutrality, Hume considers the transitory stimulus to output exerted by a one-time rise in the money stock. Noting that the stimulus vanishes once prices adjust to the augmented quantity of money, he concludes that

> Money, however plentiful, has no other effect, *if fixed*, than to raise the price of labour. . . . and . . . commodities. . . . In the progress towards these changes, the augmentation may have some influence, by exciting industry; but after the prices are settled, suitably to the new abundance of gold and silver, it has no manner of influence (pp. 47-48).

Hume points out that this same process works in reverse, a one-time contraction in the money stock first depressing output and employment before it lowers prices.

> A nation, whose money decreases, is actually, at that time, weaker and more miserable than another nation, which possesses no more money, but is on the encreasing hand. This will be easily accounted for, if we consider, that the alterations in the quantity of money . . . are not immediately attended with proportionable alterations in the price of

commodities. There is always an interval before matters be adjusted to their new situation; and this interval is as pernicious to industry, when gold and silver are diminishing, as it is advantageous when these metals are encreasing (p. 40).

To Hume, monetary contraction had devastating real effects:

The workman has not the same employment from the manufacturer and merchant; though he pays the same price for everything in the market. The farmer cannot dispose of his corn and cattle; though he must pay the same rent to his landlord. The poverty, and beggary, and sloth, which must ensue, are easily foreseen (p. 40).

Here is the source of the classicals' emphasis on the evils of monetary contraction.

As for permanent nonneutrality associated with sustained rates of monetary change, Hume argued as follows: Continuous money growth combines with sluggish price adjustment to keep money forever marching a step ahead of prices, perpetually frustrating the latter's attempts to catch up. The gap between money and prices persists indefinitely, thus producing a permanent change in the level of real activity. Hume's advice to the policymakers: exploit such nonneutrality via gradual enduring monetary expansion. For while

it is of no manner of consequence, with regard to the domestic happiness of a state, whether money be in a greater or less quantity, [t]he good policy of the magistrate consists only in keeping it, if possible, still encreasing; because, by that means, he keeps alive a spirit of industry in the nation, and encreases the stock of labour, in which consists all real power and riches (pp. 39-40).

Hume's theory of the inflation mechanism was inherited by the other classical economists. Of these, only James Mill, David Ricardo, and John Wheatley rejected it in its entirety. Ricardo, whose skepticism of monetary policy's ability to influence real activity rivals that of modern new classicals, simply called Hume's theory "an erroneous view" (*Works*, V, 524) and remarked that "money cannot call forth goods" (*Works*, III, 301). Mill likewise dismissed Hume's mechanism with the assertion that money cannot exert even the briefest stimulus to output since prices instantly rise to absorb all the stimulus.[2] Wheatley was equally adamant, holding that "an increase of money has no other effect than to cause its own depression" in value (1803, p. 17, as quoted in Fetter 1942, p. 370).

True, Ricardo and Wheatley sometimes expressed concern with the evils of monetary contraction. But the evils they had in mind consisted almost solely of the arbitrary redistributive effects of deflation. Virtually no output or employment effects were envisioned.[3] Such views, however, were exceptions and not at all representative of the dominant classical position. Starting with Hume, most classicals accepted the view that money matters for real output and employment, temporarily if not permanently.

Lag of Wages Behind Prices

Hume blamed nonneutrality on sluggish price adjustment. The next source of nonneutrality recognized by the classicals was the lag of nominal wages behind prices. The classicals explained how monetary expansion and the resulting rise of prices would, because of the stickiness of wages relative to prices, lower real wages, raise real profits, and thereby spur

[2] Mill wrote: "The man who goes first to market with the augmented quantity of money, either raises the price of the commodities which he purchases, or he does not raise it.

If he does not raise it, he gives no additional encouragement to production. The supposition, therefore, must be that he does raise prices. But exactly in proportion as he raises prices, he sinks the value of money. He therefore gives no additional encouragement to production" (1821, p. 123, as quoted in Corry, 1962, p. 40).

[3] On this point see Fetter (1942, pp. 369-71) who effectively refutes Viner's contention that Wheatley was concerned with the output effects of contraction. Also note that Ricardo's belief in money's neutrality extended only to the *level*, not the *composition*, of output. He (*Works*, I, 208-9) thought that, because the structure of excise taxes was fixed in nominal terms, money- and hence price-level changes could, via their effect on the real tax structure, alter profit rates and thus incentives to produce in different sectors of the economy. The result would be a change in the composition, though not the aggregate level, of output.

David Ricardo
(1772-1823)

output and employment. Conversely, the lag of nominal wages behind prices would cause monetary contraction and the ensuing price deflation to raise real wages, lower real profits, and thereby discourage production and employment.

Henry Thornton was among the first to expound these points. He noted that declines in the stock of money would have no employment effect if wages fell as fast as prices. He then observed that wages in fact were downwardly inflexible in response to price falls, particularly temporary or unexpected ones. For that reason he thought monetary contraction would depress real activity. In his 1802 *Paper Credit* he wrote:

> It is true, that if we could suppose the diminution of bank paper to produce permanently a diminution in the value of all articles whatsoever and a diminution . . . in the rate of wages also, the encouragement to future manufactures would be the same, though there would be a loss on the stock in hand. The tendency, however, of a very great and sudden reduction of the accustomed number of bank notes, is to create an *unusual* and *temporary* distress, and a fall of price arising from that distress. But a fall arising from temporary distress, will be attended probably with no correspondent fall in the rate of wages; for the fall of price, and the distress, will be understood to be temporary, and the rate of wages, we know, is not so variable as the price of goods. There is reason, therefore, to fear that the unnatural and extraordinary low price arising from the sort of distress of which we now speak, would occasion much discouragement of the fabrication of manufactures (pp. 118-19).

Of Thornton's analysis two points are especially noteworthy. First, he attributes money-wage stickiness to the fact that wages are established on the basis of the expected long-run equilibrium price level which is much less volatile than temporary prices. In a long footnote attached to the preceding passage he explains that the equilibrium price level in an open economy operating under the gold standard is determined on purchasing-power-parity grounds by the given world gold price of goods. Second, he blames economic distress on *unexpected* contractions of the money stock. In so doing, he anticipates today's new classicals who argue that only unanticipated money matters for real variables.

To avoid deflation and its adverse effects, Thornton recommended preventing gold drains—particularly those arising from bank panics and/or real shocks to the balance of payments—from shrinking the money supply. The Bank of England should offset or sterilize such drains with compensating note issues, thus forestalling monetary contraction and its adverse consequences. He was even willing to risk temporary suspension of the gold standard rather than

Henry Thornton
(1760-1815)

to let specie drains precipitate declines in the quantity of money. To him, suspension was preferable to contraction and the depression it would bring. He was equally opposed to inflation although he admitted that it could stimulate activity through the wage lag. Said he:

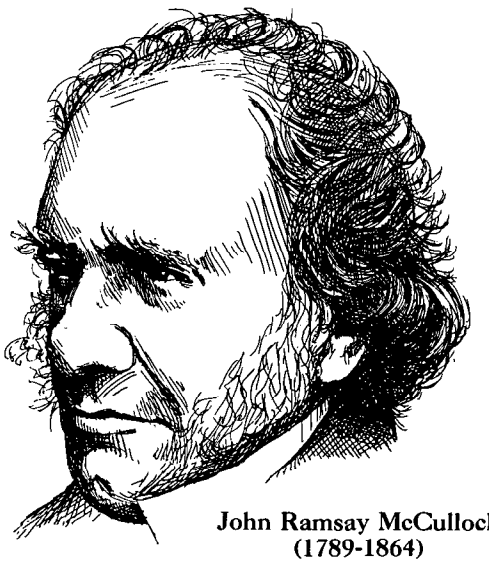
> . . . additional industry will be one effect of an extraordinary emission of paper, a rise in the cost [i.e., price] of articles will be another.
>
> Probably no small part of that industry which is excited by new paper is produced through the very means of the enhancement of the cost of commodities (p. 237).

Ricardo disagreed with Thornton. He did so on the grounds that wage flexibility rendered the lag too short for money to have more than a negligible impact on output. But other classicals concurred with Thornton. Among them was Robert Torrens who stressed the stimulus to profit and production emanating from sticky wages. When the Political Economy Club met in December 1830 to discuss Hume's theory of beneficial inflation, Torrens was in attendance to state his views. According to J. L. Mallet's account of the proceedings:

> Torrens . . . looks chiefly to profits as the great means of increasing general wealth, and as wages are fixed from time to time . . . and do not rise, perhaps for a long time after the value of money has fallen, the Capitalist pays in fact for long periods, lower real wages, and is a great gainer. All employers of Capital borrowed are likewise benefitted—paying less interest. There is a greater stimulus to production (Political Economy Club, 1921, p. 219, as quoted in Corry, 1962, p. 58).

Fixed Charges

Closely associated with sticky wages was another source of nonneutrality, namely the existence of contractually fixed costs, notably rents, taxes, and debt-service charges. Being fixed in nominal terms, these costs, the classicals explained, did not rise with prices, at least not in the short run. Consequently when prices rose due to monetary expansion the real burden of fixed costs fell. The corresponding rise in profits would spur output and employment. Conversely, monetary contraction and price deflation would, by raising the real burden of fixed nominal charges, discourage real activity.



John Ramsay McCulloch
(1789-1864)

Of the classical writers, J. R. McCulloch and Thomas Attwood stressed this particular source of nonneutrality. Thus O'Brien (1970), in his definitive study of McCulloch, writes that the latter saw the benefits of monetary inflation

> as being in reducing the weight of fixed burdens—rents and taxes—as they remained constant in money terms while the prices of final products increased, hence increasing profit margins. Increased profit stimulated production, employment, and wages. Precisely the opposite effect arose from reducing the quantity of money (pp. 160-61).

Thomas Attwood too held that rising prices spur activity by reducing the real burden of fixed costs or, what is the same thing, by increasing the gap between prices and these costs. "There is," he claimed, "no difficulty in employing and maintaining labourers, so long as the prices of the products . . . are *kept above the range of the fixed charges and monied expenses*" (1826, p. 42, italics in original). To him the extra profits arising from a widening of the gap between prices and fixed costs constituted the key to money's stimulus. "Prosperity," he wrote, has occurred whenever the government has

> filled the Country with what is called *Money*; and this *plenty of Money* has necessarily produced a general elevation of prices; and this general elevation of prices has necessarily produced a general increase of *profit* in all occupations; and this general increase of *profits* has, as a matter of course, given activity to every trade in the kingdom; and whilst the workmen, in one branch of trade, are *producing* one set of articles, they are inevitably *consuming* an equal amount of all other articles. This is the *prosperity of the Country*, and there is no other prosperity which ever has been enjoyed, or ever can be enjoyed (1826, pp. 11-12, italics in original).

Again,

> The . . . prosperity of the Country is indeed to be attributed to one cause only, and that cause is the general increase of the Circulating Medium (1826, p. 12).

By contrast, monetary contraction and deflation, he held, had the opposite effect. For when "*paper money* is withdrawn" and "the prices of commodities are suffered to fall . . . within the level of the *fixed charges and expences* . . . the industry of the country dies" (1826, p. 42, italics in original). It does so because "all the monied incumbrances," being fixed in nominal terms, "become encreased in real burthen, and operate in arresting all the means and the motives which conduce to the employment of labour, and to the production of national wealth" (1819, p. 42). Attwood concludes:

> When a [price] fall . . . takes place . . . first upon one article and then upon another, without any correspondent fall taking place upon debts and obligations, it has the effect of destroying all confidence in property, and all inducements to its production, or to the employment of laborers in any way (1817, pp. 78-79, as quoted in Viner, 1937, p. 186).

In short, owing to rigid cost elements, deflation leads to depression that brings suffering to the unemployed and distress to producers. It therefore follows, said Attwood, that

> it is the deficiency of money, and not its excess, which ought most to be guarded against, which produces want of employment, poverty, misery, and discontent in nations (1843, p. 18).

To prevent such disastrous monetary shortage he recommended that the Bank of England

> be obligated or otherwise be induced, to encrease the circulation of their notes as far as the national interests may require, that is to say, until all the labourers in the kingdom are again in full employment at ample wages (1819, p. 44).

To Attwood, full employment was the overriding policy goal and price increases the essential means of attaining it. Said he:

so long as any number of industrious honest workmen in the Kingdom are out of employment, supposing such deficiency of employment not to be local but general, I should think it the duty, and certainly the interest, of Government, to continue the depreciation of the currency until full employment is obtained and general prosperity (1832, p. 467, quoted in Fetter, 1964, p. xxii).

Accordingly, "the great object of currency legislation should therefore be to secure and promote this gradual depreciation" (1817a, p. 101n, quoted in Checkland, 1948, p. 8). To this end he urged the government to

Restore the depreciated state of the currency, and you restore the reward of industry, you restore confidence, you restore consumption, you restore every thing that constitutes the commercial prosperity of the nation (1816, p. 66).

Attwood's inflationary policy views were too extreme even for other classical believers in the nonneutrality of money. John Stuart Mill (1833), for one, opposed Attwood's inflationism on the ground that it only works by tricking or deluding producers into thinking that nominal price changes are real and thus constitutes a deceitful and immoral way to stimulate activity. Mill did not, however, dispute Attwood's contention that inflation could raise profits by reducing the real burden of fixed costs. This item had become a standard element of the classicals' list of sources of nonneutrality.

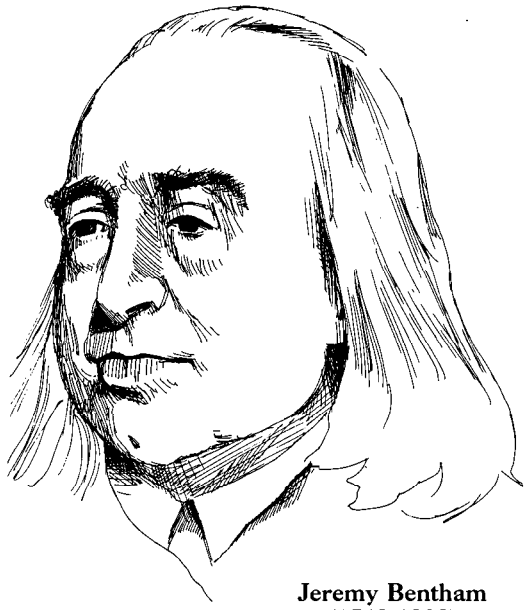
Forced Saving

The classicals explained the fourth source of money's nonneutrality by means of their *forced-saving doctrine*.[4] The doctrine holds that monetary inflation stimulates capital formation and potential output by shifting real income from wage earners and fixed income recipients having high propensities to consume to capitalist entrepreneurs having high propensities to invest.

The doctrine originates with Jeremy Bentham who, assuming as he did continuous full employment, used it to argue that a monetary stimulus must operate through capital formation rather than through the activation of idle hands, as Hume had claimed. In his 1804 manuscript "Institute of Political Economy," the relevant parts of which were completed as early as 1800 or 1801, Bentham wrote:

All hands being employed, and employed in the most advantageous manner, . . . the effect of every increase of money . . . is to impose an unprofitable *income tax* on the income of all fixed incomists.

If . . . the additional money have come into hands by which it has been employed in the shape of capital, the suffering by the income tax is partly reduced and partly compensated. It is reduced by the mass of things vendible produced by means of it. . . . It is in a certain degree, though in a very inadequate degree, compensated for by the same means; viz. by the amount of the addition made to the quantity of sensible wealth—of wealth possessing a value in the way of use. Here . . . in the . . . case of forced frugality, national wealth is increased at the expense of national comfort and national justice (as quoted in Hayek 1932, p. 125).



Jeremy Bentham
(1748-1832)

Henry Thornton extended the doctrine when he argued that, owing to the lag of wages behind prices, forced saving could be extracted from wage-earners as well as from Bentham's fixed-income recipients. As he put it in his *Paper Credit*:

Provided we assume an excessive issue of paper to lift up, as it may for a time, the cost [i.e., price] of goods though not the price of labour, some augmentation of stock will be the consequence; for the labourer . . . may be forced by his necessity to consume fewer articles, though he may exercise the same industry. But this saving, as well as any additional one which may arise from a similar defalcation of the revenue of the unproductive members of the society, will be attended with a proportionate hardship and injustice (p. 239).

Owing to these forced-saving effects, Thornton concludes that "paper possesses the faculty of enlarging the quantity of commodities by giving life to some new industry" (p. 239).

T. R. Malthus further elaborated the doctrine in his 1811 *Edinburgh Review* article on "Depreciation of Paper Currency." He held that forced saving was so potentially powerful in its effects on production that output could rise equiproportionally with the

[4] On the classicals' forced-saving doctrine see Hayek (1932) and Hudson (1965).

money stock leaving prices unchanged. Constituting the most complete description of the forced-saving mechanism in the classical literature, Malthus's statement warrants quotation in some detail. He starts by linking the money stock and its distribution to capital formation and real output.

> If such a distribution of the circulating medium were to take place, as to throw the command of the produce of the country chiefly into the hands of the productive classes . . . the proportion between capital and revenue would be greatly altered to the advantage of capital; and in a short time, the produce of the country would be greatly augmented (p. 96).

Thomas Robert Malthus
(1766-1834)

The key points, Malthus declares, are (1) that new money accrues to capitalists to raise the share of national income devoted to investment, and (2) that the corresponding required decrease in consumption is forced upon wage earners and fixed-income groups by the price rise caused by the monetary expansion. Thus

> A fresh issue of notes comes. . . . into the market, as so much additional capital, to purchase what is necessary for the conduct of the concern. But before the produce of the country has been increased, it is impossible for one person to have more of it, without diminishing the shares of some others. This diminution is effected by the rise of prices, occasioned by the competition of the new notes, which puts it out of the power of those who are only buyers, and not sellers, to purchase as much of the annual produce as before (p. 96).

From his analysis, Malthus concludes that

> On every fresh issue of notes, not only is the quantity of the circulating medium increased, but the distribution of the whole mass is altered. A larger proportion falls into the hands of those who consume and produce, and a smaller proportion into the hands of those who only consume. And as we have always considered capital as that portion of the national accumulations and annual produce, which is at the command of those who mean to employ it with a view to reproduction, we are bound to acknowledge, that an increased issue of notes tends to increase the national capital, and by an almost, though not strictly necessary consequence, to lower the rate of interest (pp. 96-97).

These effects, Malthus said, may explain why "a rise of prices is generally found conjoined with public prosperity; and a fall of prices with national decline" (p. 97).

Finally, Malthus notes that while forced saving necessarily operates through rising prices, the rise may be temporary. For

> it frequently happens, we conceive, that . . . the increased command of the produce transferred to the industrious classes by the increase of prices, gives such a stimulus to the productive powers of the country, that, in a short time, the balance between commodities and currency is restored, by the great multiplication of the former,—and prices return to their former level (pp. 97-98).

In terms of the equation of exchange $MV = PQ$, with velocity V constant, output Q rises to match the increase in money M leaving the equilibrium level of prices P unchanged.

Ricardo did not share Malthus's opinion of the productive power of forced saving. Though giving formal recognition to the doctrine, he denied its empirical importance. Thus he denied that redistribution from fixed-income receivers to capitalists could produce accumulation since both groups, he believed, possessed identical propensities to save and invest. In this case, he said, "there is a mere transfer of property, but no creation" of capital (*Works*, VI, 16). And while admitting the theoretical possibility that monetary expansion might extract forced saving from wage-earners via the lag of wages behind prices, he contended that wage flexibility in fact renders the lag too short and the resulting capital formation and output expansion too trivial to matter. Said he:

> There appears to me only one way in which any addition would be made to the Capital of a country in consequence of an addition of money; it would be this. Till the wages of labour had found their new level, with the altered value of money,—the situation of the labourer would be relatively worse; he would produce more relatively to that which he consumed, or rather would be obliged to consume less.

> The manufacturer would be enabled to employ more labourers as he would receive an additional price for his commodities; he might therefore add to his real capital till the rise in the wages of labour placed him in his proper sphere. In this interval some *trifling addition* would have been made to the Capital of the community (*Works*, VI, 16-17, emphasis added).

Likewise:

> There is but one way in which an increase of money . . . can augment riches, viz at the expence of the wages of labour; till the wages of labour have found their level with the increased prices . . . there will be so much additional revenue to the manufacturer . . . so that the real riches of the country will be somewhat augmented. A productive labourer will produce something more than before relatively to his consumption, *but this can be only of momentary duration* (*Works*, III, 318-19, emphasis added).

In sum, Ricardo, unlike the other classicals, was extremely skeptical of the forced-saving idea.

Although the above economists disputed the size of forced saving's effects, none disputed the distributive injustice involved. All saw forced saving as an immoral and deceitful means of stimulating accumulation and on that ground condemned its use.

Not so J. R. McCulloch, however. He praised forced saving and its inflationary effects and rejected any considerations of injustice. He readily acknowledged that inflation shifts real purchasing power from fixed-income consumers to capitalist investors. But unlike the others, he lauded such redistribution on the grounds that the gainers exceeded the losers. Besides entrepreneurs, the gainers included the whole community which benefited from increased output, employment, and capital formation. The losers were confined to a small group of rentiers and annuitants but excluded wage-earners since wages, he felt, tended to rise with prices. The losers' suffering he thought a small price to pay for the general benefits of inflation.[5] Thus, at the December 3, 1830 meeting of the Political Economy Club, he callously dismissed Thomas Tooke's solicitude for fixed-income recipients. According to J. L. Mallet's Diaries:

> McCulloch in his sarcastic and cynical manner derided Mr. Tooke's concern for old gentlemen and ladies, dowagers, spinsters and land holders. He cared not what became of them, and whether they were driven from the parlour to the garret, provided the producers—the productive and industrious classes—were benefited, which he had no doubt they were by a gradual depreciation in the value of money (Political Economy Club, 1921, p. 219, as quoted in O'Brien, 1970, p. 166).

Although he extolled inflation, McCulloch's main concern was with the evils of deflation. In this connection he argued that any ill effects of paper money expansion came not from inflation per se but from the eventual need to contract to protect the nation's gold reserve. He feared that the damage wreaked by the resulting deflation would far exceed the gains from the preceding inflation. As proof, he noted that the prosperity associated with inflation during the Napoleonic Wars was more than offset by the distress that accompanied the deflation in the immediate postwar period. To him, avoiding monetary contraction was far more important than promoting monetary expansion. His emphasis on the damage of deflation was typical of classical believers in the short-run nonneutrality of money.

Confusion of Monetary for Real Shocks

The classicals traced a fifth source of nonneutrality to a confusion between general and relative prices. They explained that money has real effects because changes in its quantity cause general price movements which producers mistake for real relative price changes requiring output adjustments. Fooled by unexpected monetary growth and the resulting economy-wide rise in prices, economic agents treat the price increases as signifying demand shifts special to themselves and so expand production.

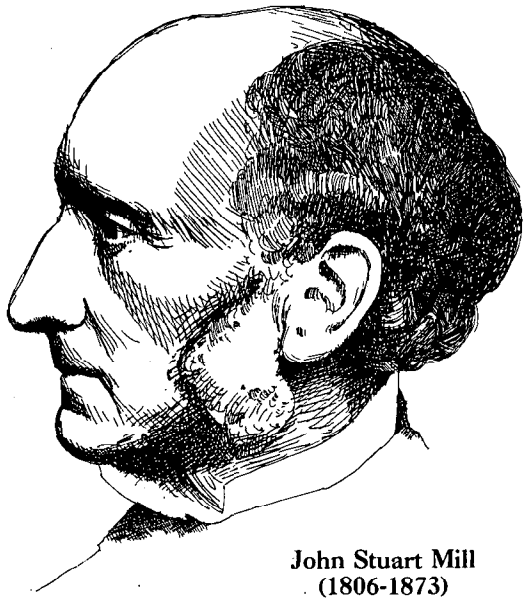
Credit for identifying this particular nonneutrality goes to John Stuart Mill. In his 1833 article "The Currency Juggle," he explained how unanticipated money growth had

> produced a rise of prices, which *not* being supposed to be connected with a depreciation of the currency, each merchant or manufacturer considered to arise from an increase of the effectual demand for his particular article, and fancied there was a ready and permanent market for almost any quantity of that article which he could produce (p. 191).

In other words, each producer had misinterpreted the rise in general prices as a relative-price signal to expand his operations. Here is how monetary expansion and the resulting general inflation may, in Mill's words, "create a *false opinion* of an increase of demand, which false opinion leads, as the reality would do, to an increase of production . . ." (p. 191).

Mill recognized that the confusion between general and relative prices applies equally to workers who,

[5] Torrens in his 1812 *Essay on Money and Paper Currency* took much the same position. He wrote that fixed-income receivers constitute "so small a proportion to the whole community, that any inconvenience they may suffer, from a fall in the value of money, sinks into insignificance, nay entirely vanishes, when compared with the universal opulence, the general diffusion of happiness arising from augmented trade, and the rise in the wages of labour, which the increased quantity of money is instrumental in producing" (pp. 40-41, as quoted in Robbins, 1958, p. 76).



John Stuart Mill
(1806-1873)

failing to see that price rises are so extensive as to reduce real wages, supply extra effort under the misapprehension that nominal wage increases constitute real ones. He explains:

> the inducement which . . . excited this unusual ardour in all persons engaged in production, must have been the expectation of getting more commodities generally, more real wealth, in exchange for the produce of their labour, and not merely more pieces of paper (1848, p. 550).

Mill was no believer in long-run nonneutrality. He insisted (1) that inflation's stimulus is temporary at best, (2) that it lasts only "as long as the existence of depreciation is not suspected" or anticipated (1844, p. 275), (3) that it ends "when the delusion vanishes and the truth is disclosed" (1844, p. 275), and (4) that it is "followed . . . by a fatal revulsion as soon as the delusion ceases" (1833, p. 191). In other words, once agents correctly perceive wage and price increases as nominal rather than real, economic activity reverts to its steady-state level, but only after undergoing a temporary recession to correct for the excesses of the inflationary boom. Here is Mill's conclusion that, when people mistake general for relative price increases, nonneutrality arises both at the time of the misperception and also when it is corrected. Mill's insistence that only unperceived or unanticipated inflation has real effects marks him as a forerunner of the modern new classical school.

Other Sources of Nonneutrality

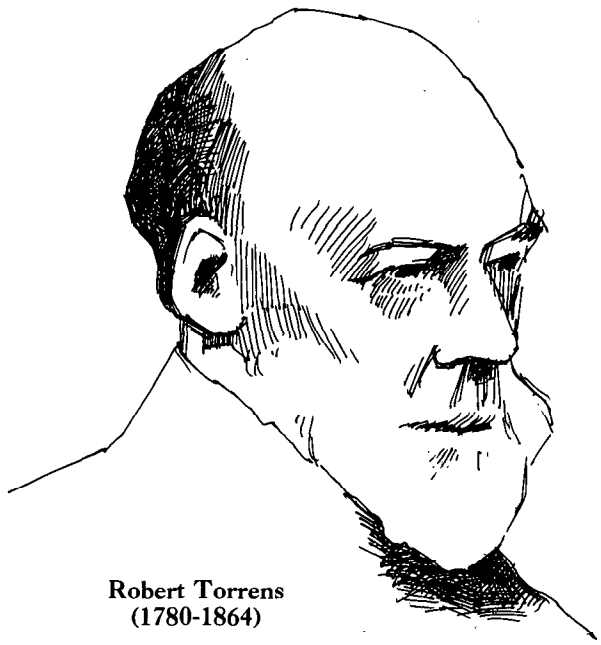
The preceding by no means exhausts the list of nonneutralities considered by the classicals. Also analyzed were at least four more.

The first relied on Adam Smith's doctrine that the division of labor is limited by the extent of the market. Attwood, Malthus, McCulloch, and Torrens employed this idea. They argued that monetary expansion stimulates aggregate spending which enhances the scope of the market for goods and services. In Attwood's words:

> the issue of money *will* create markets, and . . . it is upon the abundance or scarcity of money that the extent of all markets principally depends (1817b, p. 5, as quoted in Fetter, 1965, p. 75).

Similarly Torrens claimed that extra money improves business confidence and that "an enlargement of confidence always produces that enlargement of the market which it anticipates" (1816, as quoted in Robbins, 1958, p. 82). Extension of the market then prompts increased specialization and division of labor, thus boosting labor's productivity. Through this channel monetary expansion, in Torrens's words, "facilitates exchanges, and, by occasioning more accurate division of employment, augments the productiveness of industry" (1812, p. 95, as quoted in Robbins, 1958, p. 77). In so doing, money growth induces a higher level of output from a given labor force.[6]

[6] Traces of the division-of-labor argument survive today in the popular notion that scale economies enable firms to respond to demand-expansion policy by producing higher levels of output at lower unit costs.



Robert Torrens
(1780-1864)

Nor is this all. For Torrens in particular recognized that the labor force itself might expand under the impact of inflationary money growth. He thought that rising prices, by eroding the real value of fixed nominal incomes, could force annuitants, rentiers, and the like to go to work in an effort to maintain their real incomes. Such people, he said,

> finding their places in society perpetually sinking, will be prompted to some species of exertion, in order to avert the evil; and thus the number of idle individuals, who add nothing to the general stock of society, will be diminished, and industry will receive a two-fold stimulus,

namely one arising from increased division of labor and the other from augmentation of the labor force (1812, pp. 40-41, as quoted in Robbins, 1958, p. 76).

Torrens also acknowledged that money growth could stimulate industry if nominal interest rates lagged behind inflation so that real rates fell. He said that when this happens "all employers of Capital borrowed are likewise benefitted—paying less [real] interest. There is a greater stimulus to production" (Political Economy Club, 1921, p. 219, as quoted in Corry, 1962, p. 58).

Division of labor, expansion of the labor force, lag in nominal interest rate—these constituted three of the four additional sources of nonneutrality identified by the classicals. Henry Thornton located the fourth in sellers' efforts to maintain constant real inventory-to-sales ratios. These efforts, which ensured that any money-induced rise in the real volume of sales would be matched by a corresponding rise in production for inventory, were described by him as follows:

> It may be said . . . that an encreased issue of paper tends to produce a more brisk demand for the existing goods, and a somewhat more prompt consumption of them; that the more prompt consumption supposes a diminution of the ordinary stock, and the application of that part of it, which is consumed, to the purpose of giving life to fresh industry; that the fresh industry thus excited will be the means of gradually creating additional stock, which will serve to replace the stock by which the industry had been supported; and that the new circulating medium will, in this manner, create for itself much new employment (1802, p. 237).

All-in-all the classicals left a fairly extensive list of factors explaining money's short-run output effects.

The Classicals' Legacy

The classicals bequeathed their theory of nonneutrality to later generations of economists who used it to account for money's temporary impact on real variables. Thus quantity theorists from Irving Fisher to Milton Friedman introduced Hume's price lag into the equation of exchange $MV = PQ$ to show that, with velocity V constant, a change in the money stock M produces a temporary change in output Q before fully changing prices P.[7] Keynesians employed the same notion to argue that, with unemployed resources, prices fail to rise in proportion with a rising nominal money stock. The resulting rise in the real money stock, Keynesians claimed, lowers the rate of interest and thereby boosts investment spending and thus the level of national income.[8]

Other classical sources of nonneutrality were quickly absorbed into mainstream monetary thought. Alfred and Mary Marshall (1879, pp. 155-56), A. C. Pigou (1913, pp. 75-84), Ralph Hawtrey (1913), and Keynesians in the 1940s, '50s, and '60s used the notion of sticky money wages to explain how fluctuations in prices caused or accommodated by fluctuations in money produce corresponding fluctuations in real wages and thus output and employment. Irving Fisher (1913, Ch. 4) employed the idea of sticky nominal interest rates to explain how money-induced price changes affect investment and real activity by changing real rates. This idea formed the basis of his (1923) theory of the business cycle as "a dance of the dollar." Likewise his (1933) debt-deflation theory of the Great Depression embodied the classical idea that falling prices emanating from monetary contraction depress real activity by raising the real burden of debt-service charges.

Additional classical ideas were put to work. Austrian economists Ludwig von Mises (1912) and Frederich von Hayek (1933) used the classical doctrine of forced saving to explain the upswing phase of their monetary overinvestment theory of the cycle. And most recently, Robert Lucas (1972) has developed John Stuart Mill's idea that money has real effects when general price changes are mistaken for relative price ones. Also prominent in Lucas's and other new classicals' analysis is the Thornton-Mill argument that real effects stem from *unanticipated* money. Classical contributions are thus seen to underlie much twentieth-century work on money's nonneutrality.

These contributions notwithstanding, the myth persists that the classicals adhered to the neutrality

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[7] On the nonneutrality of money in the writings of Irving Fisher, the Chicago school, and the Cambridge cash-balance school, see Patinkin (1972).

[8] See Patinkin (1987, p. 640).

proposition in the short run as well as the long. Keynes created this myth in his *General Theory* when he sought to differentiate his approach from those of his classical and neoclassical predecessors. Today economists and textbook writers perpetuate the myth by disseminating a caricature "classical" macromodel in which money is always neutral. Further contributing to the myth is the tendency of writers such as Arjo Klamer (1984, p. 12) to interpret the new classical macroeconomics and its policy-ineffectiveness idea as a return to an original classical tradition of neutrality-always. All are wrong. The classical tradition never held that money was always neutral. On the contrary, except for Ricardo and one or two others, the classicals believed that money had powerful temporary real effects and perhaps some residual permanent effects as well. In the view of the classicals, nonneutrality typified the short run and neutrality at best held approximately in the long run only.

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