

RIVAL NOTIONS OF MONEY

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Introduction

The rise of Milton Friedman's version of monetarism in the 1960s and early 1970s provoked an antimonetarist backlash culminating in the late Nicholas Kaldor's *The Scourge of Monetarism* (1982). Friedman stressed the ideas of exogenous (i.e., central bank determined) money, money-to-price causality, inflation as a monetary phenomenon, and controllability of money through the high-powered monetary base. He traced a chain of causation running from open market operations to bank reserves to the nominal stock of money and thence to aggregate spending, nominal income, and prices.

By contrast, Kaldor postulated the opposite notions of endogenous (i.e., demand-determined) money, reverse causality, and inflation as a cost-push or supply-shock phenomenon. He denied the possibility of base control given the central bank's responsibility to guarantee bank liquidity and the financial sector's ability to engineer changes in the turnover velocity of money via the manufacture of money substitutes. Kaldor's transmission mechanism runs from wages (and other factor costs) to prices to money and thence to bank reserves. Wages determine prices, prices influence loan demands, and loan demands via their accommodation in the form of new checking deposits created by commercial banks determine the money stock, with central banks passively supplying the necessary reserves.

Kaldor claimed his attack on monetarism was in the tradition of Keynes's *General Theory*. So much so that he labeled it "a Keynesian perspective on money." In so doing, he contributed to the standard textbook tendency to treat the monetarist-antimonetarist debate as a post-Keynesian development. This article shows that the debate long predates Keynes, that it is rooted in classical monetary tradition, and that it traces back at least to the bullionist-antibullionist and currency school-banking school disputes in England in the nineteenth century. More precisely, the following paragraphs demonstrate that the arguments of Friedman and Kaldor were fully anticipated by their classical predecessors.

Bullionist Controversy (1797-1821)

Monetarism did not begin with Friedman nor did antimonetarism originate with Kaldor or Keynes's *General Theory*. Those doctrines clashed as early as the Bank Restriction period of the Napoleonic wars when the Bank of England suspended the convertibility of its notes into gold at a fixed price on demand. The suspension of specie payments and the resulting move to inconvertible paper was followed by a rise in the paper pound price of commodities, gold bullion, and foreign currencies. A debate between strict bullionists, moderate bullionists, and antibullionists then arose over the question: Was there inflation in England and if so what was its cause?

Strict Bullionists: the classical monetarists

Led by David Ricardo, the strict bullionists argued that inflation did exist, that overissue of banknotes by the Bank of England was the cause, and that the premium on gold (the difference between the market and official mint price of gold in terms of paper money) together with the pound's depreciation on the foreign exchange constituted the proof. Price index numbers not then being in general use, the bullionists used the gold premium and depreciated exchange rate to measure inflation.

The bullionists arrived at their conclusions via the following route: The Bank of England determines the quantity of inconvertible paper money. The quantity of money via its impact on aggregate spending determines domestic prices. Domestic prices, given foreign prices, determine the exchange rate so as to equalize worldwide the common-currency price of goods. Finally, the exchange rate between inconvertible paper and gold standard currencies determines the paper premium on specie so as to equalize everywhere the gold price of goods. In short, causality runs unidirectionally from money to prices to the exchange rate and the gold premium. It followed that the depreciation of the exchange rate below gold parity (i.e., below the ratio of the respective mint prices of gold in each country) together with the premium on specie constituted evidence that prices were higher and the quantity of money greater in

England than would have been the case had convertibility reigned. Here is a straightforward application of the monetarist ideas of exogenous money, money-to-price causality, inflation as a monetary phenomenon, and purchasing power parity. On these grounds the strict bullionists attributed depreciation of the internal and external value of the pound solely to the redundancy of money and reproached the Bank for having taken advantage of the suspension of convertibility to overissue the currency.

The strict bullionists also enunciated the monetarist notion of control of the money stock through the high-powered monetary base. With respect to base control, they argued that the Bank of England could, through its own note issue, regulate the note issue of the country (non-London) banks as well as other privately issued means of payment (bills of exchange and checking deposits). Two circumstances, they said, worked to ensure base controllability. First, country banks tended to hold in reserve Bank of England notes (or balances with London agents transferable into such notes) equal to a relatively fixed fraction of their own note liabilities. This established a constant relationship between the Bank note base and the country note component of the money stock. Second, a fixed-exchange-rate regional balance of payments or specie-flow mechanism kept country bank notes in line with the Bank's own issues. Country bank notes were fully convertible into Bank of England notes but did not circulate in London. Should country banks overissue, the resulting rise in local prices over London prices would lead to a demand to convert local currency into Bank of England notes to make cheaper purchases in London. The ensuing drain on reserves would force country banks to contract their note issue, thus eliminating the excess. For these reasons, the quantity of country notes was tied by a rigid link to the volume of Bank notes and could only expand and contract with the latter. The implication was clear: Bank of England notes drove the entire money stock. Country banks were exonerated as a source of inflation.

The strict bullionists displayed another monetarist trait in prescribing rules rather than discretion in the conduct of monetary policy. Their rule called for the Bank of England to contract its note issue upon the first sign of exchange depreciation or rise in the price of gold. This rule derived from the famous *Ricardian definition of excess* according to which if the exchange was depreciated and gold was commanding a premium the currency was by definition excessive and should be contracted.

Moderate Bullionists

Moderate bullionists, led by Henry Thornton, Thomas Malthus, and William Blake, modified the strict bullionists' analysis in one respect: they argued that it applied to the long run but not necessarily to the short. They held that in the short run real as well as monetary shocks could affect the exchange rate such that temporary depreciation did not necessarily signify monetary overissue. In the long run, however, real shocks were self-correcting and only monetary disturbances remained. Their position is best exemplified by Blake's distinction between the *real* and *nominal* exchanges. The real exchange or barter terms of trade, he said, registers the impact of nonmonetary disturbances—crop failures, unilateral transfers, trade embargoes and the like—to the balance of payments. By contrast, the nominal exchange reflects the relative purchasing powers of foreign and domestic currencies as determined by their relative supplies. Both components contribute to exchange rate movements in the short run. In the long run, however, the real exchange is self-correcting (i.e., returns to its natural equilibrium level) and only the nominal exchange can remain permanently depressed. Therefore, persistent exchange depreciation is a sure sign of monetary overissue. On this point the moderate bullionists agreed with their strict bullionist colleagues.

Antibullionists: the classical nonmonetarists

Opposed to the bullionists were the antibullionist defenders of the Bank of England. They denied that the Bank had overissued or that domestic monetary policy had anything to do with the depreciating exchange rate and rising price of gold. Such inflationary symptoms they attributed to real rather than monetary causes. In so doing, they contributed two key ideas that today appear in Kaldor's work.

First was their supply-shock or cost-push theory of inflation. They argued that crop failures and war-time disturbances to foreign trade had raised the price of wheat and other staple foodstuffs that constituted the main component of workers' budgets. These price increases then passed through into money wages and thus raised the price of all goods produced by labor. Ricardo, however, convincingly replied that this explanation confused relative with absolute prices. For without excessive money growth, a rise in the relative price of wheat that required workers to spend more on that commodity would leave them with less to spend on other goods whose prices would accordingly fall. In that case the rise in wheat's price would be offset by compensating falls

in other relative prices leaving general prices unchanged.

Second, the antibullionists enunciated the notion of an endogenous, demand-determined money stock. This came in the form of their *real bills doctrine*, which they employed to assert the impossibility of an excess supply of money ever developing to spill over into the commodity market to put upward pressure on prices. The real bills doctrine states that money can never be excessive if issued upon the discount of sound, short-term commercial bills drawn to finance real goods in the process of production and distribution. It purports to match money creation with real output so that no inflation occurs.

The antibullionists used this idea to defend the Bank of England against the charge that it had caused inflation through overissue. The Bank, they said, was blameless since it had restricted its issues to real bills of exchange and so had merely responded to the real needs of trade. In other words, the Bank, by limiting its advances to commercial paper representing actual output, had merely responded to a loan demand for money already in existence and had done nothing inflationary to create that demand.

The real bills doctrine was an early version of Kaldor's notion that a passive, demand-determined money stock cannot be overissued and so cannot cause inflation. Antibullionists also anticipated Kaldor in arguing that since no one would borrow at interest money not needed, the Bank could not force an excess issue on the market. Such excess, they said, would be speedily extinguished as borrowers returned it to the Bank to pay off costly loans. In short, the antibullionists held that the Bank could not cause inflation since it merely supplied money passively in response to a loan demand for it. Thus there could be no excess issue to spill over into the commodity market in the form of an excess demand for goods to bid up prices.

Critique of the Real Bills Doctrine

Monetarists today criticize Kaldor's notion of a transmission mechanism running unidirectionally from wages to prices to money for ignoring the feedback effect of money on prices. Adding this feedback loop produces a two-way interaction in which prices and money can chase each other upward ad infinitum in a self-reinforcing inflationary spiral. Monetarists argue that such a spiral is sure to result if banks, in passively creating new money in response to loan demands for it, set the loan rate of interest

below the expected rate of profit on the use of the borrowed funds. In this case loan demands will be insatiable and the resulting rise in money and prices will be without limit.

Bullionists, especially Henry Thornton, advanced exactly this same argument against the antibullionists' real bills doctrine. That doctrine, they said, suffers from two basic flaws. First, it links the nominal money stock with the nominal volume of bills, a variable that moves in step with prices and thus the money stock itself. In so doing it renders both variables indeterminate. It thus ensures that any inadvertent jump in money and prices will, by raising the nominal value of goods in the process of production and hence the nominal quantity of bills eligible for discount, lead to further increases in money and prices ad infinitum in a self-justifying inflationary spiral. Second, it overlooks that the demand for loans and volume of bills offered for discount depend not so much on real output to be financed as on the perceived profitability of borrowing as indicated by the differential between the loan rate of interest and the expected rate of profit on the use of the borrowed funds. In particular, it fails to see that when the profit rate exceeds the loan rate the demand for loans becomes insatiable and the real bills criterion fails to limit the quantity of money in existence.

This last flaw, bullionists argued, rendered the real bills doctrine an especially dangerous policy guide under inconvertibility. To be sure, even under specie convertibility a central bank that set its loan rate too low relative to the expected profit rate would find itself inundated with a potentially unlimited supply of eligible bills clamoring for discount. But the resulting rise in money and prices would, by making home goods dearer than foreign ones, lead to a trade deficit and a matching gold drain that would force the bank to protect its metallic reserves by raising its loan rate thereby ending the inflation. No such result was assured under paper currency regimes, however. For without the crucial check of convertibility, the profit rate-loan rate differential could persist indefinitely and with it the self-reinforcing rise in money, prices, and commercial bills. This point was particularly telling during the suspension period when usury ceilings constrained the Bank of England's lending rate to 5 percent at a time when the expected profit rate, buoyed by the boom conditions of the Napoleonic wars, was well in excess of that level.

Currency School-Banking School Debate (1821-1845)

Monetarist and antimonetarist doctrines clashed again in the three decades following the Bank of England's restoration of the gold convertibility of its notes in 1821. This time the debate focused on how to protect the currency from overissue so as to secure the gold reserve and ensure the maintenance of convertibility. The protagonists in this dispute were known collectively as the currency school and the banking school, but they were the intellectual heirs of the bullionists and antibullionists. Leaders of the currency school included such names as Samuel Jones Loyd (Lord Overstone), George Warde Norman, and Robert Torrens. Similarly, Thomas Tooke, John Fullarton, James Wilson, and J.B. Gilbart led the banking school.

The currency school's bullionist predecessors had assumed that a convertible currency needed no protection. If the currency were convertible, they reasoned, any excess issue of notes which raised British prices relative to foreign prices would be converted into gold to make cheaper purchases abroad. The resulting loss of specie reserves would force the Bank immediately to contract its note issue thus quickly arresting the drain and restoring the money stock and prices to their preexisting equilibrium levels. Given smooth and rapid adjustment (monetary self-correction) convertibility was its own safeguard.

A series of monetary crises in the 1820s and 1830s, however, convinced the currency school that adjustment was far from smooth and that convertibility per se was not a guaranteed safeguard to overissue. It was an inadequate safeguard because it allowed banks—commercial and central—too much discretion in the management of their note issue. Banks could and did continue to issue notes even as gold was flowing out, delaying contraction until the last possible minute, and then contracting with a violence that sent shock waves throughout the economy.

Currency School's Prescription

What was needed, the currency school thought, was a law removing the note issue from the discretion of bankers and placing it under strict regulation. To be effective, this law should require the banking system to contract its note issue one-for-one with outflows of gold so as to put a gradual and early stop to specie drains. Such a law would embody the currency school's *principle of metallic fluctuation* according to which a mixed currency of paper and coin should be made to behave exactly as if it were wholly metallic, automatically expanding and con-

tracting to match inflows and outflows of gold. Departure from this rule, the currency school argued, would permit persistent overissue of paper, forcing an efflux of specie through the balance of payments, which in turn would endanger the gold reserve, threaten gold convertibility, compel the need for sharp contraction, and thereby precipitate financial panics. Such panics would be exacerbated if internal gold drains coincided with external ones as moneyholders, alarmed by the possibility of suspension, sought to convert paper currency into gold. No such consequences would ensue, however, if the currency conformed to the metallic principle. Forced to behave like gold (regarded by the currency school as the stablest of monetary standards) the currency would be spared those sharp procyclical fluctuations in quantity that constitute a prime source of economic disturbance.

The currency school scored a triumph when its ideas were enacted into law. The Bank Charter Act of 1844 embodied its prescription that, except for a small fixed fiduciary issue, Bank notes were to be backed by an identical amount of gold while the country bank note issue was frozen at its 1842 level. In modern terminology, the Act effectively established a marginal gold reserve requirement of 100 percent behind note issues. With notes tied to gold in this fashion, their volume would start to shrink as soon as specie drains signaled the earliest appearance of overissue. Monetary overexpansion would be corrected automatically before it could do much damage.

Banking School

The rival banking school flatly rejected the currency school's prescription of mandatory 100 percent gold cover for notes. Indeed, the banking school denied the need for statutory note control of any kind, arguing that a convertible note issue was automatically regulated by the needs of trade and required no further limitation. This conclusion stemmed directly from the real bills doctrine and *law of reflux*, which the banking school took from the antibullionists and applied to convertible currency regimes.

The school's real bills doctrine stated that money could never be excessive if issued on loans made to finance real transactions in goods and services. Similarly the law of reflux asserted that overissue was impossible because any excess notes would be returned instantaneously to the banks for conversion into coin or for repayment of loans. Both doctrines embodied the notions of a passive, demand-determined money supply and of reverse causality running from economic activity and prices to money

rather than vice versa as in the currency school's view. According to the reverse causality hypothesis, changes in the level of prices and production induce corresponding shifts in the demand for bank loans which the banks accommodate via variations in the note issue. In this way prices help determine the note component of the money stock, the expansion of which is the result, not the cause, of price inflation. As for the price level itself, the banking school attributed its determination to factor incomes or costs (wages, interest, rents, etc.) thus establishing the essentials of a cost-push theory of inflation. The importance of the cost-push idea to the banking school cannot be overestimated: it even led Thomas Tooke to argue that high-interest-rate tight-money policies were inflationary since they raised the interest component of business costs.

Antimonetarist Ideas

The concepts of cost inflation, reverse causality and passive money are the hallmarks of an extreme antimonetarist view of the monetary transmission mechanism to which the banking school adhered. Its list of antimonetarist ideas also included the propositions (1) that international gold movements are absorbed by and released from idle hoards and have no effect on the volume of money in circulation, (2) that an efflux of specie stems from real shocks to the balance of payments and not from domestic price inflation, (3) that changes in the stock of money tend to be offset by compensating changes in the stock of money substitutes leaving the total circulation unchanged, and (4) that discretion is superior to rules in the conduct of monetary policy.

In its critique of the monetarist doctrines of the currency school, which contended that note overissue is the root cause of domestic inflation and specie drains, the banking school argued as follows: Overissue is impossible since the stock of notes is determined by the needs of trade and cannot exceed demand. Therefore, no excess supply of money exists to spill over into the goods market to bid up prices. In any case, causality runs from real activity and prices to money rather than vice versa. Finally, specie drains stem from real rather than monetary disturbances and occur independently of domestic price level movements.

These arguments severed all but one of the links in the currency school's monetary transmission mechanism running from money to prices to the trade balance, thence to specie flows and their impact on the high-powered monetary base and finally back again to money. The final link was broken when the banking school asserted that gold flows come from

idle hoards (i.e., buffer stocks of specie reserves) and could not affect the volume of money in circulation. Falling solely on the hoards, gold drains would find their monetary effects neutralized (sterilized) by the implied fall in reserve-note and reserve-deposit ratios. To ensure that these hoards would be sufficient to accommodate gold drains, the banking school recommended that the Bank of England hold larger metallic reserves. With regard to the currency school's prescription that discretionary policy be replaced by a fixed rule, the banking school rejected it on the grounds that rigid rules would prevent the banking system from responding to the needs of trade and would hamper the central bank's power to deal with financial crises. Finally, the banking school asserted the impossibility of controlling the entire stock of money and money substitutes through the bank note component alone since limitation of notes would simply induce the public to use money substitutes (deposits and bills of exchange) instead. In other words, the total circulation is like a balloon; when squeezed at one end, it expands at the other. More generally, the banking school questioned the efficacy of base control in a financial system that could generate an endless supply of money substitutes.

The currency school, however, rejected this criticism on the grounds that the volume of deposits and bills was rigidly constrained by the volume of notes and therefore could be controlled through notes alone. In short, the total circulation was like an inverted pyramid resting on a bank note base, with variations in the base inducing equiproportional variations in the superstructure of money substitutes. In counting deposits as part of the superstructure, the currency school excluded them from its concept of money. It did so on the grounds that deposits, unlike notes and coin, were not generally acceptable in final payments during financial crises.

Subsequent Developments

In retrospect, the currency school erred in failing to define deposits as money to be regulated like notes. This failure enabled the Bank of England to exercise discretionary control over a large and growing part of the money stock, contrary to the intentions of the school. The school also erred in not recognizing the need for a lender of last resort to avert liquidity panics and domestic specie drains. With respect to specie drains, the currency school refused to distinguish between domestic (internal) and foreign (external) ones. As far as policy was concerned, both drains were to be handled the same way, namely by monetary contraction. By the time Walter Bagehot wrote his celebrated *Lombard Street* in 1873,

however, it was widely recognized that the two drains required different treatment and that the surest way to arrest an internal drain was through a policy of liberal lending. Such drains were caused by panic-induced demands for high-powered money (gold and Bank notes) and could be terminated by the central bank's announced readiness to satiate those demands. The currency school nevertheless remained opposed to such a policy, fearing it would place too much discretionary power in the hands of the central bank. These shortcomings in no way invalidated the currency school's contention that convertibility is an inadequate safeguard to overissue and therefore must be reinforced by positive regulation. Nor did they undermine its monetary theory of inflation, which was superior to any explanation its critics had to offer.

As for the banking school, it rightly stressed the importance of checking deposits in the payments mechanism. But it was wrong in insisting that the real bills doctrine, which tied note issues to loans made for productive purposes, would prevent inflationary money growth. The currency school triumphantly exposed this flaw by pointing out that rising prices would require an ever-growing volume of loans just to finance the same level of real transactions. In this way inflation would justify the monetary expansion necessary to sustain it and the real bills criterion would fail to limit the quantity of money in existence. Also, by the 1890s Knut Wicksell had rigorously demonstrated the same point made by Henry Thornton in 1802, namely that an insatiable demand for loans results when the loan rate of interest is below the expected rate of profit on capital. In such cases the real bills criterion provides no bar to overissue.

Despite this criticism the real bills doctrine survived in banking tradition to be incorporated as a key concept in the Federal Reserve Act of 1913. And during the German hyperinflation of 1922-23 the doctrine formed the basis of the Reichsbank's policy of issuing astronomical sums of money to satisfy the needs of trade at ever-rising prices. Oblivious to the Thornton-Wicksell demonstration that the real bills test provides no check to overissue when lenders peg loan rates below the going profit rate, the Reichsbank insisted on pegging its discount rate at 12 percent (later raised to 90 percent) at a time when the going market rate of interest was well in excess of 7000 percent per annum. This huge differential of course made it extremely profitable for commercial banks to rediscount bills with the Reichsbank and to loan out the proceeds, thereby producing additional inflationary expansion of the money supply and further upward pressure on interest rates. The authori-

ties failed to perceive this inflationary sequence and did nothing to stop it. On the contrary, they saw their duty as passively supplying on demand the growing sums of money required to mediate real transactions at skyrocketing prices. They simply refused to believe that issuing money on loan against genuine commercial bills could have an inflationary effect.

After the hyperinflation debacle of the 1920s, banking school doctrines reappeared in renovated form as part of the Keynesian revolution. Keynes in his *General Theory* (1936) stressed the banking school's notion of money entering idle hoards (liquidity traps) rather than active circulation. He also stressed the school's ideas (1) of variable velocity absorbing the impact of money-stock changes leaving spending and prices unaffected, (2) of real rather than monetary causes of cyclical depressions, and (3) of prices determined by autonomous factor costs. And in the immediate postwar period, Keynesians developed the notion of cost-push inflation emanating from growing union bargaining strength, business monopoly power, supply shortages, and other institutional forces that produce autonomous increases in labor and other factor costs. Only the banking school ideas of unlimited money substitutes and the futility of base control were missing. And these were provided in the famous report of the British Radcliffe Committee (1959). Representing the apogee of post-Keynesian skepticism of the relevancy of the quantity theory, the Radcliffe Report concluded that attempts to control inflation by limiting the stock of a narrowly defined monetary aggregate would merely induce spenders to turn to money substitutes instead. Velocity would rise to offset monetary restriction.

The Debate Goes On

Today currency school doctrines survive in Friedman's work just as banking school doctrines appear in Kaldor's writings. When Friedman argues that rules are preferable to discretion, that inflation is largely or solely the result of excessive monetary growth, that monetary shocks are a primary cause of cyclical swings, and that the entire stock of money and money substitutes can be governed by control of the high-powered monetary base, he echoes currency school opinion.

Likewise, Kaldor echoes the doctrines of the banking school. The school's cost-push theory informs his view of inflation. Inflation, he argues, stems mainly from increasing militancy of trade unions and the resulting rise in unit labor costs caused by money wages advancing faster than labor-hour productivity. The banking school's notion of passive money appears in his statement that money is a demand-

determined variable that comes into existence as banks accommodate loan demands and central banks acting as lenders of last resort permissively supply the necessary reserves. The school's law of reflux surfaces in his declaration that because money is demand-determined its supply can never exceed demand; any oversupply is extinguished automatically as borrowers return it to the banks to pay off costly loans. Finally, the banking school notion of a potentially unlimited supply of money substitutes underlies his belief in the futility of base control. Like the bank-

ing school, he argues that restriction of the monetary base induces offsetting rises in the stock of money substitutes thereby thwarting base control.

In short, Kaldor emerges as the intellectual heir of the banking school and the antibullionists just as Friedman is the heir of the currency school and the bullionists. It follows that the debate between the monetarists and antimonetarists is not of post-Keynesian origin. Rather it has its roots in policy controversies going back to the era of classical monetary thought.