

Mercantilists and Classicals: Insights from Doctrinal History

Thomas M. Humphrey

Economists typically view their discipline as a progressive science in which superior new ideas relentlessly supplant inferior old ones in a Darwinian struggle toward the truth. Thus it came as something of a shock when Milton Friedman challenged this belief in the May 1975 issue of the *American Economic Review*. In response to the question “What have we learned in the past 25 years?”, Friedman argued that what monetary economists have learned since 1950 are hardly new ideas but rather a rediscovery of old ideas inherited from David Hume and his contemporaries more than 200 years ago.

Three years later, the British economist Ivor F. Pearce shocked his readers even more. He denied that the Keynesian Revolution had contributed a single new or useful idea to monetary economics. Instead, he insisted that “human history is guided not by new ideas, for there are none,” but rather by “some ephemeral sub-group of . . . old ideas.” Such old ideas, “often believed to be new,” are “seized upon as the . . . solution to whatever difficulties immediate experience has made to seem important, and congealed into a crust of dogma by endless repetition and obeisance” (Pearce 1978, p. 93).

The above sentiments express what every doctrinal historian knows, namely that much of what passes for novelty and originality in monetary theory and policy is ancient teaching dressed up in modern guises. To be sure, the increasing application of mathematical modeling has given these concepts greater rigor and precision. Likewise, better data and more powerful empirical techniques have improved our statistical estimates of the relevant quantitative magnitudes. Still, the basic ideas themselves often remain much the same. Thus instead

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of a steady progression of new paradigms, we see repeated cycles of existing ones whose periodic rise and fall perpetually casts them in and out of fashion.

By itself, this recycling of established ideas need be no cause for alarm. Theories may survive because experience indicates that they possess a high degree of validity and because no better theories have been found. The trouble is, however, that sound theories are not the only ones to survive. Unsound theories may coexist with the sound ones.

Unfortunately, policymakers and the general public are in no position to realize as much. Preoccupied by the pressing problems of the day, they have neither the time, inclination, or training, nor indeed the duty to trace the history of the ideas they employ or endorse. They have no reason to be aware of earlier policy debates in which sound theories were distinguished from fallacious ones. The result is that policymakers may subscribe to old theories under the mistaken impression that those theories are new. Worse, they may unwittingly deploy policies whose underlying theory has been challenged and found wanting in earlier policy debates.

Here is where the doctrinal historian can help. His comparative advantage lies in identifying the origin and tracing the evolution of rival monetary doctrines across a succession of writers, events, episodes, and policy controversies. Each such incident constitutes a test, or observation, of the relative strengths and weaknesses of the competing doctrines. While no single test can yield conclusive results, many such tests may do so. Taken together, they reveal which doctrine has emerged from past experience as the more robust analytically. By demonstrating as much, the historian specifies those ideas that seem to offer the most effective basis for public policy. Of course, there is no assurance that the policymaker will heed the doctrinal historian and employ the best ideas. On the contrary, he may reject them or temporarily accept and subsequently abandon them. Here again the historian has something to say. His study of the forces influencing the receptivity and implementation of ideas permits him to predict a doctrine's prospective success or failure. In this manner, the unique perspectives of doctrinal history may prove their worth.

This article puts those perspectives to work. It shows that from a broad standpoint much of the history of monetary theory reduces to a struggle between opposing mercantilist and classical camps. Mercantilists, with their fears of hoarding and scarcity of money together with their prescription of cheap (low interest rate) and plentiful cash as a stimulus to real activity, tend to gain the upper hand when unemployment is the dominant problem. Classicals, chanting their mantra that inflation is always and everywhere a monetary phenomenon, tend to prevail when price stability is the chief policy concern.

Currently, the classical view is in the driver's seat. By all rights it should remain there since it long ago exposed the mercantilist view as fundamentally flawed. It is by no means certain, however, that the classical view's reign is secure. For history reveals that, whenever one view holds center stage, the

other, fallacious or not, is waiting in the wings to take over when the time is ripe. In this manner, the mercantilism of John Law and Sir James Steuart gave way to the classicism of David Hume and David Ricardo, the Currency School's classicism bowed to John Maynard Keynes's mercantilism, the mercantilist doctrines of Keynes's disciples yielded to Milton Friedman's classical monetarism, and so forth. Even today, with central bankers in several nations expressing commitment to the classical goal of price stability and monetarists advocating systematic, zero-inflation rules for monetary policy, mercantilist undercurrents still run strong. Supply-siders who argue that monetary policy must be accommodative to allow tax cuts to work their magic echo mercantilist opinion. So too do those who contend that, with global competition and rapid technological progress holding inflation in check, monetary policy is free to pursue nonprice objectives such as boosting growth and achieving full employment. Finally, observers who believe that monetary policy is powerless to stimulate the currently depressed Japanese economy harbor mercantilist fears of unspent hoards of idle cash.

The following paragraphs attempt to spell out the core propositions of the original mercantilist and classical views and to establish the centrality of those propositions in the famous Currency School-Banking School and Keynesian-monetarist controversies—the two leading monetary policy debates of the nineteenth and twentieth centuries.¹ From this doctrinal historical exercise, three themes emerge. First, with some exceptions,古典派 tend to be quantity theorists; mercantilists, anti-quantity theorists. Second,古典派 prefer rules; mercantilists, discretion. Third, for all their cogency,古典派 may be doomed to face a perpetual mercantilist challenge. As long as some observers continue to believe, rightly or wrongly, that inflation and deflation are nonmonetary, or real, phenomena and that unemployment is a monetary one capable of correction by the central bank, the debate will be unending.

1. MERCANTILIST AND CLASSICAL MONETARY DOCTRINES

The roots of the debate trace back to the original mercantilist writers of the preclassical era 1550–1770. Those writers argued that a nation's stock of precious metals constituted the source of its plenty (wealth), power, prestige, and prosperity. For countries possessing no gold mines, augmentation of those conditions required the accumulation of specie through foreign trade. Accordingly, mercantilists advocated protectionist policies in the form of export

¹ Additional famous policy debates pitting mercantilists and classicals include (1) the Swedish Bullionist controversy (1755–1765), (2) the English Bullionist-Antibullionist, or Bank Restriction, dispute (1797–1821), (3) the Bimetallism debate (1880–1896), and (4) the German hyperinflation debate (1922–1923).

promotion and import restriction schemes to obtain a permanent trade balance surplus matched by corresponding persistent inflows of specie from abroad.

This policy prescription was of course the mercantilists' main claim to fame. But the hallmark that secures them a permanent niche in the history of monetary doctrines was their contra- or anti-quantity theory of money.² They used that theory to deny that money determines prices and to tout the employment benefits of money-stock expansion fueled either by specie inflows or by paper money creation should those inflows languish. Consisting of at least seven propositions, the mercantilists' contra-quantity theory held that (1) money stimulates trade, (2) real cost-push forces determine the price level and the inflation rate, (3) the interest rate is a purely monetary variable whose level, high or low, is proof of the scarcity or abundance of money, (4) idle hoards absorb any cash not employed in driving trade, (5) causality runs from prices and real activity to money such that the money stock passively adapts to the needs of trade, (6) overissue is impossible when the money stock is backed by the nominal value of real property, and (7) discretion outperforms rules in the conduct of monetary policy.

John Law (1671–1729)

The clearest and most emphatic statements of the foregoing propositions came from John Law and Sir James Steuart, two economists writing near the close of the mercantilist era.³ Of the two, Law's name is synonymous with the money-stimulates-trade doctrine that forms the central core and theme of his 1705 *Money and Trade Considered; with a Proposal for Supplying the Nation with Money*. Writing against the backdrop of a chronically depressed and under-employed Scottish economy (his home country), he argued that a shortage of metallic money was to blame, that a bank-issued paper currency must replace the deficient metallic one, and that the resulting expansion of the stock of paper notes would permanently increase the level of output and employment without raising prices.⁴ His argument stemmed from his assumptions of (1) the

² Because anti-quantity theory elements also characterize the fixed-exchange-rate, small-open-economy case of the modern *monetary approach to the balance of payments*, some observers may be tempted to equate mercantilism with that approach. In fact, however, the two theories differ markedly. First, the monetary approach applies the quantity theory, rather than its opposite, to closed-economy and inconvertible-paper floating-exchange-rate regimes. By contrast, mercantilists, with few exceptions, tended to apply the anti-quantity theory indiscriminately to all regimes. Second, the monetary approach rejects the mercantilist money-stimulates-trade doctrine.

³ On Law's monetary theory, see Murphy (1997, Chs. 6 and 8) and Hutchison (1988, pp. 134–40). On Steuart's theory, see Eltis (1986), Hutchison (1988, pp. 341–51), Meek (1967), and Skinner (1981).

⁴ Law's fear of monetary shortage under a metallic standard is incompatible with the monetary approach to the balance of payments. The latter sees a small open economy, like Scotland, taking its price level as given from the closed world economy with money then flowing in through the balance of payments to support that price level such that no monetary shortage occurs. Of these

availability of idle resources at unchanged resource prices and (2) constant returns to scale in production. Given these conditions, it followed that the economy's long-run aggregate supply curve was perfectly horizontal up to the point of full employment. It likewise followed that money-induced increases in aggregate commodity demand would, via rightward shifts along the supply curve, generate matching increases in equilibrium real output without raising prices. Indeed, Law suggested that the price level might even fall if scale economies in production rendered the aggregate supply curve negatively sloped.⁵ In no case, however, would expansion of the stock of paper money raise prices.

Having argued that causation runs from money to output, Law perceived that it could be made to run in the opposite direction too. With appropriate financial linkages put in place, output could induce the very monetary means of its own expansion. Indeed, Law thought this outcome was assured provided that banks issued money on productive loans secured by claims to future product or its equivalent. Coaxed forth by real output in this fashion, the paper money stock would grow in step with the real demand for it such that its purchasing power would be preserved unchanged. To ensure that the nominal money stock automatically expanded equally with the real demand for it, he advocated that paper notes be backed dollar-for-dollar with the nominal value of land. Collateralized by land, money would, he thought, enjoy stability of value. When economic development or cyclical recovery brought more land into cultivation, the money stock, secured by the extra land, could expand to meet the growing needs of trade at unchanged prices. Here was the prototype of the real bills doctrine later attacked so vigorously by classical writers.

As for the doctrine that low interest rates spell monetary ease and high rates monetary tightness, Law accepted it without reservation. Anticipating Keynes's liquidity preference theory of interest, Law saw interest rates as the price of money's use, a price that varied inversely with the quantity available to use. Being purely monetary phenomena, low rates unambiguously signified an abundance of money and high rates a scarcity of it. Law, an ardent advocate of low rates, argued that they reduced the businessman's cost of capital and so spurred investment and real activity. For him, money exerted its stimulus through indirect interest rate channels as well as through direct expenditure ones.

Sir James Steuart (1721–1780)

To Law's doctrines, Steuart in his 1767 *An Enquiry into the Principles of Political Economy* added four more. First was his explicit rejection of a monetary for a real cost-push theory of inflation. Tracing a causal chain from the degree

two propositions, Law recognized the first but denied the second. He also argued, contrary to the monetary approach, that expansion of the domestic stock of paper money would, by stimulating production of goods for export, improve a country's trade balance. See Murphy (1997, Ch. 8).

⁵ See Blaug (1996, p. 16).

of competition in labor markets to wage rates to unit labor cost to product prices, he concluded that cost and competition determine the prices of all goods and thus the price level as a whole. Likewise, he held that the monopoly power of producers determines their profit margins as embodied in the profit markup component of individual and aggregate prices. In other words, he alleged that the same real forces—market power and cost—that govern relative prices account for absolute prices as well. He advanced a relative price theory of the absolute price level.⁶

Steuart's second contribution was his doctrine of the hoards which he used to bolster his denial that money determines prices. He argued that idle hoards of specie absorb excess cash from circulation just as they release into circulation additional coin to correct a monetary shortage. Consequently, there can be no monetary excess or deficiency to spill over into the commodity market to affect prices. The hoarding-dishoarding mechanism ensures as much.⁷ For those occasional increases in the money stock that do manage to elude the hoarding mechanism and spill over into the commodity market, he argued, like Law, that they produce matching shifts in commodity demand along a horizontal supply schedule such that equilibrium real output alters at unchanged prices.

Third was his reverse causation doctrine according to which causality runs from prices to money and its circulation velocity rather than vice-versa as in the quantity theory. Positing a two-step process, he said that cost and competition first determine prices. Then, with prices settled, the circulation velocity of coin adjusts to render the existing stock sufficient to accommodate the prevailing level of real activity at the given prices.⁸ If the money stock is excessive, wealth-holders remove the excess from active circulation and either hold it idle so that velocity falls or melt it down into plate and ornaments such that the money stock contracts. Conversely, if coin is deficient, the resulting recourse to paper substitutes and other expedients allows transactors to economize on coin whose velocity therefore rises. Via such devices, velocity adjusts to ensure that the stock of coin is just enough to purchase all the goods offered for sale at the predetermined level of prices. In this way, causation runs from prices to money and velocity. Here is the origin of the notion that changes in the stock of circulating media (coin and its paper substitutes) merely validate price changes that have already occurred and do nothing to produce such changes.

⁶ On Steuart's cost-push theory, see Screpanti and Zamagni (1993, p. 53).

⁷ Not all mercantilists were as sanguine as Steuart on hoards. Indeed they were somewhat ambivalent on the subject. Hoards to them could be either desirable or undesirable. On the one hand, hoards, by draining excess cash from circulation, would tailor the remaining stock precisely to the needs of trade. On the other hand, if output and so the needs of trade were expandable under the impact of a monetary stimulus, such hoards, by removing the source of that stimulus, could unduly constrain real activity. Even so, such hoards would see to it that no monetary excess ever developed to spill over into the commodity market to bid up prices.

⁸ See Screpanti and Zamagni (1993, p. 53).

Finally, there was Steuart's uncompromising stance on the perennial issue of rules versus discretion in the conduct of policy. Like all mercantilists, Steuart sided with discretion. Monetary rules, whether of fixed or feedback variety, met with his skepticism as did all self-correcting adjustment mechanisms, natural or designed. To him, nothing but discretionary fine-tuning would do.⁹ Such enlightened intervention was the hallmark of his omnipotent, ever-active, benevolent *statesman* whose job was to manipulate the volume of real activity in the national interest.¹⁰ Steuart's statesman alone possessed the detailed knowledge necessary to conduct what today is known as a successful cheap-money, full-employment policy. The gap between actual and potential output, the monetary injection required to close the gap, and the interest rate necessary to draw the required metal from idle hoards: all revealed themselves to the statesman's astute and vigilant scrutiny. So too did the ever-changing circumstances to which he tailored his actions.

These propositions formed the core of mercantilist monetary theory which Law and Steuart deployed to analyze the underemployed economies of their time. Of the two writers, only Law, the paper money mercantilist, was able to translate his theory into action. His famous Mississippi scheme, which merged France's national bank of issue with a trading and land development firm (the Mississippi Company) while simultaneously promising to reduce the French public debt, involved paper money expansion on a mammoth scale.¹¹

The resulting spectacular inflationary boom and collapse of Law's system had three consequences.¹² It revealed that the initial output stimulus of a monetary expansion eventually vanishes leaving only inflation in its wake. It served to discredit paper money and financial innovation schemes for many years to come. It, together with the similar debacle of the *assignats*, a nominally land-backed paper currency issued by the French revolutionary government to inflationary excess in the years 1794 to 1796, provoked classicals to reject mercantilist trade and monetary theory root and branch.

⁹ Steuart of course never resorted to such modern terminology. Nevertheless, the concepts were his.

¹⁰ On Steuart's statesman, see Eltis (1986) and Skinner (1981).

¹¹ Law denied that the monetary expansion was excessive on the grounds that much of it went to redeem outstanding government bonds and equity claims to his trading firm. Since to him bonds and stocks shared money's characteristic as a transactions medium, he saw all three instruments as exerting the same influence on spending. In his view, money swapped for bonds and equities leaves the total supply of financial purchasing power—money, bonds, and stocks—unchanged. Such monetary issue therefore is noninflationary. He erred. Bonds and stocks hardly qualify as transactions media and thus are far from perfect substitutes for money in spending. Monetizing them can be inflationary. See Niehans (1990, p. 51).

¹² See Murphy (1997) for an exhaustive account of the rise and fall of Law's system.

Classical Counterpropositions

Denouncing the mercantilist identification of wealth with precious metals, Adam Smith observed that national wealth consists not of specie or bullion but rather of stocks of productive resources—land, labor, and capital—and the efficiency with which they are used. With respect to the mercantilist prescription of protectionism as the path to opulence, both Smith and David Ricardo noted that wealth-enhancing, efficient resource allocation requires not protectionism but rather free trade in order to exploit comparative advantages stemming from specialization and division of labor.¹³

Price-Specie-Flow and Quantity Theory Propositions

Other classicals joined the attack. David Hume (1752) used his price-specie-flow mechanism to demonstrate the impossibility of the mercantilist goal of a permanently favorable trade balance and corresponding persistent specie inflow. Hume (pp. 62–63) noted that the additional specie, by raising domestic prices relative to foreign ones and so discouraging exports and spurring imports, would render the trade balance unfavorable and reverse the specie flow.¹⁴ The resulting drain of monetary metal would continue until domestic prices fell to the level consistent with trade balance equilibrium. Similarly, Hume (pp. 33, 37, 48) showed that the mercantilist fear of scarcity of money was unwarranted since any quantity of money, via a proportionate adjustment in the price level, could drive the trade of a nation. To prove as much, Hume (pp. 62–63) advanced a rigid version of the quantity theory according to which an exogenously given one-time reduction in the stock of money has no lasting effect on real activity but leads ultimately to a proportionate change in the money price of goods.

Distinction between Absolute and Relative Prices

Hume's classical followers immediately seized upon his quantity theory and deployed it against the mercantilists. David Ricardo applied it to refute cost-push theories of the price level.¹⁵ Accusing cost-pushers of confounding relative prices (market exchange ratios) with the absolute, nominal, or general level of prices, Ricardo flatly denied that a rise in costs—wage costs in particular—could raise general prices without an accompanying expansion of the money

¹³ Thus a follower of Smith might attribute Scotland's penury not to monetary deficiency and the absence of banks, but rather to lack of specialization and division of labor resulting from a small population.

¹⁴ Cesarano (1998) argues that Hume actually rejected the price-specie-flow mechanism and its attendant changes in relative national price levels for the monetary approach to the balance of payments. By contrast, the standard view emphasized here holds that neither Hume nor his classical followers subscribed to the approach's proposition of instantaneous purchasing power parity, or law of one price.

¹⁵ See Ricardo (1951–1973, I, pp. 46, 61–63, 104–05, 126, 302–03, 307–08, 315).

stock. True, he did acknowledge that a wage hike might raise the prices of labor-intensive goods and so require consumers to spend more on those goods. But he also insisted that without accommodating increases in the money stock to foster spending, consumers would have less to spend on capital-intensive goods whose prices would therefore fall. The upshot was clear. Given a constant money stock, any wage-induced rise in some relative prices would be offset by compensating falls in others leaving the general average of all prices unchanged.

Short-Run Nonneutrality and Long-Run Neutrality Propositions

Classicals reserved their severest criticism for John Law's money-stimulates-trade doctrine. Hume insisted that the doctrine holds in the short run but not the long.¹⁶ At first, money-stock changes indeed affect output and employment. Eventually, however, the output stimulus vanishes and only higher prices remain. Law's doctrine holds in the short run because prices are temporarily sticky, or inflexible, in response to money stock changes. Such stickiness Hume attributed to the imperfect information price-setters possess on money-stock changes and their resulting failure to perceive and act upon the changes. Distribution effects constituted for him another source of temporary nonneutrality, or transitory influence on real activity, inasmuch as new money is initially concentrated in few hands and only gradually becomes dispersed throughout the economy.¹⁷

With prices sticky and money's circulation velocity given, it follows that changes in the money stock are absorbed by output which accordingly deviates temporarily from its natural equilibrium level. Prices only begin to adjust when price-setters discover that their inventories of goods and labor are abnormally high or low. Eventually, monetary and price-perception errors are corrected as are initial distribution effects. At that point, the price level fully adjusts to the new money stock and output returns to its natural equilibrium level. Here is the source of the classical doctrine of the short-run nonneutrality and long-run neutrality of money.¹⁸

¹⁶ See Hume ([1752] 1955, pp. 37–38, 47–48).

¹⁷ Classicals recognized still other sources of short-run nonneutrality including sticky nominal interest rates, fixed nominal charges such as rents and taxes, fixed nominal incomes of wage earners and rentiers, confusion of relative price for absolute price changes, market size encouragement to specialization and division of labor, and deliberate efforts on the part of organized groups to maintain real incomes. See Humphrey (1993, pp. 251–63).

¹⁸ Hume ([1752] 1955 pp. 39–40) admitted that money might exhibit long-run supernonneutrality. Being partly unanticipated (perhaps because agents formulate their expectations adaptively in a backward-looking way), a *steady succession* of money stock changes might perpetually frustrate the attempt of prices to catch up and therefore permanently affect the level of real output.

Classical Case for Rules

Four remaining mercantilist arguments clamored for demolition. Classicals were glad to oblige. First was the mercantilist claim that discretion was superior to rules. Classicals countered with the opposite claim that rules replaced destabilizing activist intervention with smoothly operating, or stabilizing, automatic adjustment mechanisms. Unlike Steuart, classicals held a low opinion of the knowledge, capabilities, and motivation of the policy authorities. In particular, classicals, especially Ricardo, John Wheatley, and other Bullionist critics of the Bank of England, feared that central bankers operating under the kind of floating exchange rate, inconvertible paper regime prevailing in England during the Napoleonic Wars, would, if left to their own discretion, pursue inflationary policies.

Since classicals regarded stability of the value of money as the overriding policy objective, they advocated rules obligating policymakers to achieve that goal. One such rule was the gold standard. By requiring the maintenance of a fixed currency price of gold, this rule, provided that the gold price of goods also remained fairly steady, was tantamount to stabilizing the money price of goods. And with the price level stable, money could function reliably as a unit of account and medium of exchange. In so doing, it could make its maximum contribution to the efficient operation of the real economy and cease to be a source of financial crises and panics.

Say's Law of Markets

Next in line for rejection was the mercantilist claim that deficient aggregate demand condemns cash-poor economies to perpetual unemployment. Not so, wrote the classicist Jean-Baptiste Say in his 1803 *Traité d'économie politique*. The value of goods produced equals the cost of the inputs absorbed in their fabrication. It follows that the very act of production creates, in the form of factor payments, incomes sufficient to buy the goods off the market. And those incomes indeed will be spent. The insatiability of wants together with the unlikelihood that rational people would hoard their savings indefinitely in the form of sterile money ensures as much.

Far from going unspent, saving automatically translates itself into investment. People deposit their savings with banks to earn interest. Those intermediaries, upon lending the saving to capitalist entrepreneurs to finance investment projects, guarantee that it enters the spending stream just as surely as if it were consumption spending. The upshot is that full-capacity supply creates its own demand such that mercantilist fears of general gluts and permanent stagnation are unfounded. Say's Law of Markets identifies the natural level of real activity with full employment.¹⁹

¹⁹ Perhaps too cavalierly, classicals dismissed or minimized the problem of unemployment. To them joblessness, while it certainly occurred from time to time, was necessarily short-lived and

Real Interest Rate

As for the mercantilist argument that the interest rate is purely a monetary phenomenon, Hume, Ricardo, and Henry Thornton all repudiated it.²⁰ They contended (1) that the natural equilibrium rate of interest is a real magnitude determined by productivity and thrift, and (2) that money, being neither of those variables, cannot affect the natural rate whose level is therefore resistant to monetary control. True, they conceded that a one-time monetary injection could temporarily depress the loan rate of interest below its equilibrium level. But they stressed the transience of this effect. They pointed out that the monetary injection puts upward pressure on prices. And since with higher prices more loans are needed to finance a given real quantity of investment projects, it follows that loan demands increase. The rise in loan demands reverses the initial fall in the loan rate and restores it to its natural level thereby frustrating attempts to keep it low. Supplementing the price-induced rise in loan demand is a fall in loan supply. For as prices rise, people need more cash, or coin, to mediate hand-to-hand transactions. The resulting conversion of notes and deposits into coin precipitates a cash drain from banks that diminishes bank reserves. To protect their reserves from depletion, banks raise their loan rates. Or what is the same thing, they contract their loan supply. The contraction of loan supply combines with the rise in loan demand to restore the interest rate to its natural equilibrium level determined by productivity and thrift.

Criticism of Backing Theories of Money

Last but not least was Law's idea of a land-collateralized paper money stock. Henry Thornton was merciless in his criticism. He excoriated the plan on the grounds that it would fail to limit the money supply and in so failing would render the price level indeterminate.²¹ The plan's flaw, wrote Thornton, is that it ties money to the nominal or dollar value, rather than to the fixed physical acreage, of land. By anchoring each dollar to another dollar, it sets up a dynamically unstable price-money-price feedback loop whose elements are free to expand or contract without limit. The result is that any random shock which raises land's price would, by raising land's value, increase money's backing and so justify an expansion of its supply. The consequent expansion would further bid up land's price thereby justifying still further increases in the money

self-correcting through automatic wage, price, and interest-rate reductions. Only their inflationist, full-employment-at-any-cost counterparts of the Birmingham School, especially the Attwood brothers, Thomas and Matthias, were gravely concerned with it.

²⁰ See Hume (1752, pp. 47–59); Ricardo (1951–1973, I, pp. 363–64; III, pp. 88–89, 91, 92; IV, p. 233; V, p. 445); Thornton ([1802] 1939, pp. 253–56).

²¹ Thornton ([1811] 1939, p. 342). He ([1802] 1939, pp. 244, 253–56) applies the same criticism to the real bills doctrine which ties the issue of bank money (notes and checking deposits) to the nominal volume of commercial paper that borrowers offer as collateral for bank loans.

stock which would raise prices again and so on ad infinitum. In short, backing money with the nominal value of land—or, for that matter, with commercial paper representing the nominal value of goods in the process of production and distribution—would destabilize prices rather than stabilize them. Price stability required another principle of monetary limitation.

Thornton's refutation of the nominal backing idea completed the list of the original classical rebuttals of mercantilist monetary doctrine. Having contested this doctrine once, however, classicals and their descendants were called upon to counter it repeatedly throughout the nineteenth and twentieth centuries. Mercantilist views, despite their devastating initial rejection, reemerged to form the Banking School position in the famous Currency School-Banking School controversy that took place in England in the mid-1800s. Most of the usual suspects—cost-push, hoarding, reverse causality, discretion, nominal backing—appeared in the Banking School's roundup. In opposing them, classicals, in their Currency School guise, found occasion to deploy the same quantity theoretic, price-specie-flow concepts they had earlier deployed against Law and Steuart.

2. CURRENCY SCHOOL-BANKING SCHOOL DEBATE (1830–1850)

Ending a 24-year experiment with inconvertible paper, Britain had restored the gold convertibility of her currency in 1821. The ensuing Currency School-Banking School debate focused on whether the note component of such a convertible, gold-standard currency required statutory regulation to prevent overissue.²² The Currency School's classical predecessors, notably David Ricardo, Henry Thornton, and others, had assumed that a convertible currency needed no such protection. If the currency were convertible, they reasoned, any excess note issue which raised British prices relative to foreign prices would be converted into gold to make cheaper purchases abroad.²³ The resulting loss of specie reserves would immediately force banks to contract their note issue thus quickly arresting the drain and restoring the money stock and prices to their pre-existing equilibrium level. Given smooth and rapid adjustment (monetary self-correction), convertibility alone 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 by no means a guaranteed safeguard to overissue. It was an inadequate safeguard because it allowed banks, commercial and central, too

²² For classic accounts of the Currency School-Banking School debate, see Viner (1937, Ch. 5), Fetter (1965, Ch. 6), Robbins (1958, Ch. 5), and Mints (1945, Ch. 6). For recent interpretations, see O'Brien (1975, pp. 153–59) and Schwartz (1987).

²³ With the exception of John Wheatley, classicals held that national price levels could deviate temporarily from their purchasing power parity, or long-run equilibrium, levels.

much discretion in the management of their note issue. Banks, facing no minimum required reserve ratio and willing to sacrifice safety for profit, could and did continue to issue notes even as gold was flowing out, delaying contraction until the last possible moment, and then contracting with a violence that sent shock waves throughout the economy.

Currency School's Monetary Rule

What was needed, the Currency School thought, was a rule removing the note issue from the discretion of bankers and placing it under strict regulation. To be effective, this rule should require the banking system to contract its note issue one-for-one with losses of gold reserves so as to put a gradual and early stop to specie drains. Such a rule 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 contracting to match inflows and outflows of gold.²⁴

Departure from this rule, the Currency School argued, would permit persistent overissue of paper. Such overissue, by forcing a protracted efflux of specie through the balance of payments, would in turn 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 domestic money holders, alarmed by the possibility of imminent suspension of cash payments, sought to convert paper currency into gold. No such consequences would ensue, the School felt, if the currency conformed to the metallic principle. Forced to behave like gold (regarded by the School as the stablest of monetary standards), the currency would be spared those sharp procyclical fluctuations in quantity that amplified disturbances arising from real shocks.

The Currency School scored a triumph when its monetary rule was enacted into law. The Bank Charter Act of 1844 embodied its prescription that, except for a small fixed amount of notes issued against government securities, bank notes were to be backed by an identical value of gold. In modern terminology, the Act established a marginal gold reserve requirement of 100 percent behind note issues. With notes rigidly 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, swiftly, and gently before it could do much damage. Here was a practical policy application of Hume's quantity theoretic, specie flow doctrines. Here was the notion of a channel of influence running from note overissue to rising prices to trade deficits to gold drains to corrective reductions in the note issue, reductions that

²⁴ O'Brien (1975, p. 153) credits Joplin, Drummond, Page, Pennington, and McCulloch with the simultaneous enunciation of the metallic principle.

restore general prices to their target equilibrium level. Here too was the classical preference for rules—in this case a 100 percent gold reserve requirement rule—rather than discretion in the conduct of banking policy.

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. Instead, the School argued 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 the *law of reflux* which together posited guaranteed safeguards to overissue obviating the need for monetary control.

The School's real bills doctrine stated that the money stock could never be inflationary or deflationary if issued by way of collateralized loans advanced to finance transactions in the nominal volume of real 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 prices and economic activity to money rather than vice versa as in the Currency School's view.²⁵ According to the reverse causality hypothesis, changes in the level of prices and production induce corresponding shifts in the demand for bank loans which banks accommodate via variations in their 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 positing a cost-push theory of price movements. The importance of cost-push theorizing to the Banking School cannot be overestimated. It even led Thomas Tooke, the School's leader, to argue that high-interest-rate tight-money policies were inflationary since they raised the interest component of business costs, costs that passed through into higher prices.²⁶

Mercantilist Ideas

The concepts of cost inflation, reverse causality, and passive money are the hallmarks of an extreme anti-quantity theory of money to which the Banking School

²⁵ Because these doctrines are consistent with those of the monetary approach to the balance of payments, Skaggs (1999) interprets the Banking School as early anticipators of that approach. Even so, the School hardly derived its conclusions from the logic of the monetary approach. The conclusions may have been the same, but they were reached by a different route.

²⁶ On Tooke's interest cost-push theory and Knut Wicksell's definitive critique of it, see Humphrey (1998, pp. 60–64).

adhered. Additional mercantilist hallmarks included the School's propositions (1) that international gold movements are absorbed by idle hoards of excess specie reserves without affecting the volume of money in active circulation, (2) that gold drains stem from real shocks to the balance of payments rather than from domestic price inflation, (3) that changes in the stock of money are 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.

The Banking School put these propositions to work in its critique of the classical monetary doctrines of the Currency School. Those doctrines, of course, contended that note overissue is the root cause of domestic inflation and specie drains. In opposing them, 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 prices to money rather than vice versa. Finally, specie drains stem from real rather than monetary shocks to the balance of payments and are totally independent 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 monetary base, and finally back again to the money stock. The final link was broken when the Banking School asserted that gold flows come from idle hoards—buffer stocks of excess specie reserves—and not from 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 excess reserves. To ensure that these hoards would always 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 monetary circulation via control of the gold and bank note component alone since limitation of that component would simply induce the public to resort to money substitutes (deposits and bills of exchange) instead. In other words, the 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 gold and notes and therefore could be controlled through the latter alone. In short, the total circulation was like an inverted pyramid resting on a gold and 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.

Evaluation

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 circulating medium, contrary to the School's intentions. The School also erred in failing to recognize the need for a lender of last resort to avert liquidity panics and domestic cash drains. By the end of the nineteenth century it was widely recognized 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 coin and Bank of England notes) and could be terminated by the 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 School's monetary theory of inflation which was superior to any explanations 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. Like Henry Thornton, the Currency School triumphantly exposed this flaw by pointing out that rising prices would generate a growing demand for—and corresponding nominal collateral backing of—loans to finance the same level of real transactions. These loan demands, when accommodated in the form of deposit and note creation, would enlarge the money stock. 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 1900 Knut Wicksell and Irving Fisher had rigorously demonstrated the same point made by Thornton in 1802, namely that an insatiable demand for loans and a corresponding inexhaustible supply of eligible bills 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.

3. THE KEYNESIAN REVOLUTION AND MONETARIST COUNTER-REVOLUTION (1936–1985)

Classicals won the Currency-Banking dispute. Their victory lasted until ex-classical John Maynard Keynes, having defected to the opposite side, routed

them in 1936.²⁷ But they regained their crown when monetarists (with help from the new classical school) dislodged Keynesian macroeconomics in the 1970s and 1980s.

Keynes launched his attack in the midst of the Great Depression when the stark conditions of stagnation, poverty, and mass unemployment mocked the classical notion of a self-equilibrating, fully employed economy. Clearly the time was ripe for a mercantilist revival. That revival took the form of the Keynesian Revolution with the leader's *General Theory* as its bible. In that book, Keynes replaced the full capacity, quantity theoretic doctrines of the classicals with at least four propositions inherited from Law and Steuart.

Keynes's Mercantilist Propositions

First, like Law, he argued that in times of mass unemployment the primary stimulative effects of expansionary monetary policy fall on real output and employment rather than on prices. That is, they do so unless negated by liquidity traps and interest-insensitive investment demand schedules, both of which cause velocity reductions to absorb the impact of monetary expansion. Absent such phenomena, however, Keynes's model implied that monetary stimuli affect real activity rather than prices. Like Law, he stressed that the stimulus works through an interest rate channel. More money means lower interest rates, a cheapened cost of capital, and thus a rise in investment spending. The increased investment induces additional rounds of consumption spending causing aggregate demand to rise by a multiple of the new investment spending. With idle resources available to draw upon, production expands to meet the increased aggregate demand. In expounding his interest rate transmission mechanism, Keynes praised his mercantilist forebears for anticipating it. Indeed, the "Notes on Mercantilism" section of his *General Theory* argues that the notion of a linkage running from money to interest rates to investment to output constituted the rationale for the mercantilists' advocacy of export surpluses financed by specie inflows.

Second, like Steuart, Keynes held that product prices, individual and aggregate, are determined by unit labor cost plus a markup to cover profits and nonlabor costs. Here is the mercantilist notion of the price level as a nonmonetary phenomenon.²⁸ True, Keynes admitted that monetary expansion through its stimulus to employment might, because of diminishing returns to labor, raise unit labor costs and so prices. But he tended to minimize or disregard money's price-raising effects. Instead, he treated the price level as an institutional datum

²⁷ Before he abandoned classicism, Keynes was one of its luminaries. Both his 1923 *A Tract on Monetary Reform* and his 1930 *A Treatise on Money* are squarely in the classical tradition. He returned to the classical fold shortly before his death in 1946.

²⁸ Keynes applied this notion to a closed economy. He was not referring to the case where, with foreign prices given and the exchange rate fixed, the real terms of trade drives the price level in a small open economy.

governed by nominal wage rates which autonomous forces—union wage-setting policy, worker money illusion, and the like—render downwardly inflexible at low levels of employment. By expressing prices in terms of exogenously given factor costs, he pointed the way to a cost-push theory of the price level. His immediate followers, Joan Robinson, Nicholas Kaldor, and Richard Kahn, certainly interpreted him this way and accordingly denied money a role in price determination.²⁹

Third, Keynes restated Steuart's doctrine of hoarding in the form of his concept of the liquidity trap. The trap, he wrote, might come into operation in deep depressions when the interest rate falls to a level so low that everybody unanimously believes it cannot stay there but must return to its conventional normal height. At the floor rate, all are indifferent between holding cash or earning assets whose prices, which vary inversely with the interest rate, are expected to fall. Indeed, asset prices are expected to fall by an amount such that the resulting anticipated capital loss just equals (and so offsets) the interest return on the assets. As there is no advantage to holding such assets instead of zero-yield cash, the latter becomes a perfect substitute for the former in individuals' portfolios. At this point, the demand for money becomes insatiable and infinitely sensitive to the slightest change in interest rates. Keynes called this pathological condition *absolute liquidity preference*.

When this condition rules, no increase in the money stock, no matter how large, can reduce the interest rate. Suppose the central bank expands the money stock by purchasing bonds on the open market. Such bidding puts incipient upward pressure on bond prices. But the slightest rise of the latter induces bondholders to sell to the central bank and then to hoard the cash proceeds. Since at the floor rate of interest the demand for money is insatiable and the willingness to sell bonds absolute, no amount of open market operations can overcome absolute liquidity preference and reduce interest rates. And with rates at their irreducible minimum, they cannot fall any lower to stimulate real activity. Here is Keynes's expression of the mercantilist fear that monetary expansion cannot be counted upon to stimulate spending because the new money may disappear into idle hoards.

Fourth, Keynes found still another obstruction to block the interest rate channel. Even if monetary injections were successful in lowering interest rates, those injections still might fail to stimulate real activity if investment spending were unresponsive to the lower rates. If so, then two obstacles—an interest-insensitive investment schedule as well as a liquidity trap—could render monetary policy ineffective in a depression. In both cases, a rise in the money stock would be offset by a fall in velocity leaving total spending unchanged. With

²⁹ On the cost-push pricing theories of Keynes and his followers, see Taylas (1981, pp. 324–30).

variable velocity absorbing the impact of money stock changes, none would be transmitted to nominal income. The rigid links connecting money to nominal income and prices as postulated by the classics would be severed or severely weakened. Steuart had said exactly the same thing in 1767.

Post-Keynesian Extensions

To Keynes's own mercantilist doctrines, Keynes's followers writing in the inflationary post–World War II period added others. Some interpreted inflation as a cost-push phenomenon emanating from union bargaining strength, business monopoly power, oligopoly administered prices, commodity shortages, supply shocks, and other real and institutional forces putting upward pressure on factor costs and profit mark-ups. Then too, “cheap money” advocates held that expansionary monetary policy could be used to peg interest rates at low levels so as to minimize the interest burden of the public debt while simultaneously stimulating real activity. An alternative version of the same argument, associated with the Phillips curve trade-off approach to policy questions, held that monetary policy could peg the unemployment rate at permanently low levels at the cost of a stable (nonaccelerating) rate of inflation.

Underlying all these arguments were the presuppositions (1) that full employment is the dominant policy concern, (2) that the employment benefits of monetary stimuli exceed their inflationary costs, and (3) that disinflationary monetary policy, because entrenched inflation is so resistant to it, would produce intolerably large and protracted reductions in output and employment. John Law of course held similar presuppositions, as did other mercantilists.³⁰

There remained the mercantilist ideas of reverse causation, passive money, and futility of base control of money and of inflation. Nicholas Kaldor supplied these ideas in his 1982 *The Scourge of Monetarism*. Representing the peak of post-Keynesian skepticism of the relevance of the quantity theory, Kaldor's *Scourge* denied the possibility of base control given the central bank's duty 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 trade unions to wages to prices to money and thence to bank reserves. Unions determine wages, wages determine prices, prices influence loan demands, and loan demands, via their accommodation in the form of bank-created checking deposits, determine the money stock, with central banks permissively supplying the necessary reserves. Far from exerting an activating influence, money appears at the end of the causal chain.

³⁰ On the mercantilists' policy goal of full employment, see Grampp (1952).

Monetarists' Response to Keynes and the Keynesians: The Classical Comeback

Even as Keynesianism was riding high, critics were sniping at it from the sidelines. Eventually these criticisms would culminate in a monetarist counter-revolution that would dethrone mercantilist doctrines and restore classical ones. At least eight mileposts mark the route of the classical comeback.

First came the theory of the real balance effect. Enunciated by Gottfried Haberler, A. C. Pigou, and Don Patinkin, it denied that Keynesian liquidity traps and interest-insensitive investment schedules could bar full employment.³¹ That is, it denied they could do so provided (1) wealth in the form of real money balances influences consumers' spending decisions, and (2) prices possess some downward flexibility. The latter condition should hold in a slump since a depressed economy implies an excess supply of goods exerting downward pressure on prices. Lower prices in turn raise the real value, or purchasing power, of cash balances in consumers' wealth portfolios. The rise in real cash balances stimulates consumption spending until full employment is reached.

Indeed, it is unnecessary to wait for falling prices to activate the real balance effect. The central bank can achieve the same result directly by increasing the money supply. In principle, then, Say's Law holds and money is hardly powerless to affect aggregate demand even under extreme Keynesian conditions. Keynes might have realized as much had he incorporated real balances into his consumption function.

Second came the empirical work of Clark Warburton, Milton Friedman, and Anna Schwartz confirming money's power to affect spending. Contrary to Keynes's claim that idle hoards and offsetting velocity movements might negate money's impact on nominal expenditure, Warburton established that (1) an erratic money stock through its impact on spending had been the chief factor causing most U.S. recessions, (2) money's initial impact was on output, and (3) with a lag, prices eventually adjusted to fully absorb the money stock change.³² Friedman and Schwartz (1963) then corroborated Warburton by showing that a one-third contraction of the money stock caused or intensified the Great Depression of the 1930s. These studies, together with Friedman's findings that persistent inflation is largely or solely the result of excessive monetary growth, effectively reestablished the classical doctrine of the short-run nonneutrality and long-run neutrality of money. They also showed that classical doctrine could account for the Great Depression.

Third came Karl Brunner's and Allan Meltzer's 1967 critique of the Law-Keynes theory of interest rates as a policy guide. That theory claimed that

³¹ See Haberler (1941, pp. 242, 389, 403), Pigou (1943, 1947), and Patinkin (1948, 1965).

³² See Warburton (1966) for a collection of his relevant papers, many published between 1944 and 1953.

the interest rate, a purely monetary variable, accurately measures the degree of monetary ease or tightness. Brunner and Meltzer disagreed. The rate, they said, is an unreliable indicator of monetary ease or tightness. It is unreliable because it registers the impact of nonmonetary determinants—notably business loan demands—as well as monetary ones. The rate might be low or high not because money was easy or tight but rather because loan demand was weak or strong. Neglect of this important consideration could lead to perverse, destabilizing policy. For example, in times of depression, when slack business loan demands rendered the rate low, the authorities, misinterpreting the low rate as signifying easy money, might contract the money stock and thereby intensify the depression.

Contrariwise, in times of inflation when booming credit demands rendered the interest rate high, the authorities, misinterpreting the high rate as signaling tight money, might expand the money supply and so escalate the inflation. By confounding the effects of loan demands with those of monetary ease or tightness, the central bank would engineer a perverse, procyclical monetary policy. This critique did much to discredit the Law-Keynes theory of the interest rate.³³

Milton Friedman's case for monetary rules constituted the fourth monetarist milestone. Friedman (1960) argued that long and variable time lags render discretionary countercyclical monetary policy destabilizing. Because such lags make forecast errors inevitable, the central bank cannot predict the short-run impact of its moves. The result is that expansionary actions aimed at fighting recessions may take effect at precisely the wrong time when the economy is booming just as contractionary anti-inflation actions may hit the economy when it is already mired in a slump. Friedman's solution was to recommend a rigid rule fixing the money stock's growth rate equal to the trend growth rate of output. Such a rule would operate as an automatic stabilizer working to restore aggregate spending to its long-run noninflationary full-employment path. Inflationary spending that outruns the rule-determined money stock could not be sustained and must slacken. Conversely, spending that falls short of money stock growth, as in recessions, would eventually quicken under the impact of the monetary stimulus. In this way, such rule-induced corrections would ensure that money acts to smooth cyclical fluctuations in spending and that long-run aggregate demand grows at the same trend rate as real output such that prices remain stable.

The fifth milestone, and the one that more than any other turned the tide in favor of the classicals, was the stagflation experience of the 1970s. That episode saw the simultaneous appearance of rapid monetary growth, rising

³³ As did a related critique attributing high rates to the inflationary anticipations of the public. Embodied in the inflation-premium component of interest rates and fueled by premonitions of policy permissiveness, such anticipations would be realized if the central bank, in a misguided attempt to lower rates, subsequently engineered rapid monetary expansion.

unemployment, and accelerating inflation—an impossible combination according to the predictions of John Law and the Keynesian school. This experience did much to discredit mercantilist beliefs that money stimulates trade and that the price level is independent of the money supply.

Natural Rate Hypothesis

The sixth milestone was the monetarists' natural rate hypothesis according to which unemployment returns to its natural equilibrium level regardless of the inflation rate. Milton Friedman (1968) and Edmund Phelps (1967) established this conclusion with the aid of an expectations-augmented Phillips curve. They showed that when inflationary expectations are incorporated into the Phillips curve, no permanent inflation-unemployment trade-offs remain to be exploited. True, like David Hume, they acknowledged that short-run trade-offs might still exist. Unanticipated rises in inflation, by lowering real wages, could stimulate employment and output temporarily. But once the increased inflation was fully perceived, anticipated, and therefore incorporated into nominal wage rates, the resulting rise in real wages would restore unemployment to its natural equilibrium level. In this way, the adjustment of expected to actual inflation transforms downward-sloping Phillips curves into a vertical line at the natural rate of unemployment. The classicals were right. Inflationary stimuli are temporary, never permanent. One cannot use a higher stable rate of inflation to peg the unemployment rate at arbitrarily low levels since there are no permanent employment gains to be had at any steady rate of inflation. Such gains can be had, if indeed they are available at all, only at the cost of ever-accelerating inflation.

Many Keynesians eventually came to accept the natural rate hypothesis. Even so, they still contended that disinflation was too costly to pursue. Their fear stemmed from early versions of the expectations-augmented Phillips curve.³⁴ Those versions embodied the assumption that agents revise their inflationary anticipations downward in mechanical, or adaptive, error-learning fashion only when actual, reported inflation turns out to be lower than expected. Accordingly, if the authorities sought to eradicate inflationary expectations—an absolute requirement of any successful disinflationary policy—they would have to force actual inflation below expected inflation thereby inducing the latter to adjust toward the former as it converged on the desired target rate. This sequence required the central bank to employ contractionary monetary policy to raise unemployment above its natural level. The resulting excess unemployment would put downward pressure on the actual rate of inflation to which the expected rate would adjust with a lag. Through this long and painful error-learning adjustment process, both actual and anticipated inflation eventually would be squeezed out of the economy, albeit at the cost of much lost output and employment.

³⁴ See Taylor (1997, pp. 278–79).

Rational Expectations Lower the Cost of Disinflation

The seventh monetarist/new classical milestone disposed of this Keynesian concern. Pairing John Muth's (1961) seminal work on rational expectations with Friedman's natural rate hypothesis, Robert Lucas (1972) and Thomas Sargent and Neil Wallace (1975) showed that if expectations are formed rationally rather than mechanically then disinflation need not be a painful drawn-out process. On the contrary, the unemployment cost of disinflation might be far less than Keynesians feared. For if people formed their anticipations rationally, they would take into account all systematic, and therefore predictable, future disinflationary policy actions and embody them in their price forecasts. Provided policymakers behaved in a nonhaphazard, credible fashion, actual and expected rates of inflation and disinflation would coincide such that no gap would develop between them. With no gap, there would be no need for excess unemployment to generate it. Consequently, inflation, actual and expected, would be brought to its zero target level with no cost in terms of excess unemployment. In actuality, of course, this conclusion proved to be a bit too facile and sanguine. In a world in which wages and prices are to some degree sticky or inflexible such that markets fail to clear instantaneously, even rationally expected disinflation would incur some unemployment cost. Nevertheless, the analysis showed that these costs could be much lower than Keynesians feared.

Time Inconsistency Case For Rules

The last milestone was the time inconsistency argument which strengthened the classical case for rules by showing how they reinforce policy credibility. Enunciated by Finn Kydland and Edward Prescott (1977) and by Robert Barro and David Gordon (1983a, b), the argument is simplicity itself. Suppose a discretionary, fine-tuning central bank wants to eradicate inflationary expectations so it can have a favorable temporary inflation-unemployment trade-off to exploit. The bank announces its intention to pursue a policy of price stability. It assumes people will believe the announcement and revise their inflation predictions accordingly. The announcement, however, lacks credibility. Private agents realize that once they formulate and act upon such new price predictions, the bank will be tempted to renege on its promise and create a surprise inflation in order to boost output and employment. Such knowledge induces the rational public to discount the announcement and to maintain inflationary expectations at levels high enough to remove the bank's temptation to cheat. The result is that equilibrium unemployment is no lower than it otherwise would be, and yet equilibrium inflation is too high. What prevents inflation from immediately dropping to zero at the natural rate of unemployment is the central bank's inability to promise credibly not to create surprise inflation. Needed is something to convince the public that the central bank will not succumb to the temptation to inflate. That something is a monetary rule replacing the bank's discretionary power with a

precommitment binding it irrevocably to price stability.³⁵ In demonstrating as much, the time inconsistency argument reinforced the classical case for rules.³⁶

The cumulative effect of the foregoing developments was to shift mainstream monetary opinion away from the extremes of Keynesian mercantilism toward classical monetarism. Not all Keynesian doctrines were abandoned, of course. Nor were all monetarist ones embraced. On the contrary, mainstream opinion assimilated an eclectic amalgam of competing views. But a new consensus definitely had emerged. After four or five decades of mercantilist dominance, the classical view was at the wheel once again.

4. CONCLUSION

Three centuries of monetary controversy and experience have established certain hard-won classical truths. Inflation and deflation are monetary rather than cost-push phenomena. There are no long-run inflation-output trade-offs to exploit; central banks cannot permanently peg real variables at disequilibrium levels. Attempts to do so produce explosive, ever-worsening inflation or deflation. Money-stock changes at best affect output and employment temporarily. The output effect vanishes when prices adjust; all that remains is a changed rate of inflation. Stability of the value of money is a prerequisite of an efficiently functioning real economy. All nonnegligible inflation rates violate this prerequisite and are therefore harmful. Monetary rules contribute to such stability.

Presently these truths are in the driver's seat. The proof is that many central bankers now view their primary mission as providing a stable price-level environment within which businesspeople can receive accurate market signals and allocate resources efficiently. Still the classical wisdom, though ruling, is hardly secure. For mercantilist views continue to abound. Even today, some economists still insist that it is better to live with inherited inflation than to fight it because disinflation is too costly to pursue. Others echo Steuart's cost-push theory, attributing the disinflation of the 1990s to such nonmonetary forces as increased global competition, rapid technological progress, falling computer and health-care costs, weakened power of labor unions, and the like. Still others evoke the Steuart-Keynes image of liquidity traps in holding that monetary policy is powerless to stimulate the currently depressed Japanese economy. Commentators even parrot Law's monetary theory of interest when they cite Japan's low interest rates as proof that the country is awash with money when the opposite is true. And always there are those who argue that, with prices

³⁵ Alternatively, an established reputation as a zealous inflation fighter would do.

³⁶ The time consistency case for rules differs a bit from Friedman's argument. He sees rules as overcoming the central bank's inability to predict the short-run impact of its actions. By contrast, the time inconsistency argument holds that rules are good for commitment reasons even when central bankers have full knowledge of the impact of their moves.

determined by real considerations, monetary policy should be free to pursue nonprice objectives such as achieving full employment and maximizing real growth.

The challenge then is to ensure that the classical truths will not be forgotten. But that is a tall order given that memories fade, that central bank leadership changes, that the current generation of economists familiar with the Keynesian-monetarist controversy is passing from the scene, that revisionist scholars can be counted upon to reinterpret the record radically, and that future generations may well be as reluctant as the present one to study the lessons of the past. The task of countering these influences and preserving the classical wisdom falls to the doctrinal historian. As curator of the stock of eclipsed and unfashionable ideas, he has his work cut out for him.

An even more important challenge is to embed, or lock, the classical truths into enduring institutional arrangements that allow no room for mercantilist policy alternatives. To this end, proponents of the classical view propose a variety of possible arrangements. These include (1) congressional mandates for price stability, (2) formal contracts between elected governments and central banks fixing quantitative targets for price-level behavior, (3) guaranteed independence for central bankers to insulate them from the political pressure to inflate, and (4) the appointment of conservative, inflation-averse central bankers committed to the goal of price stability. The trouble is, however, that none of these proposed arrangements can assure that classical policies will reign supreme for all time. Mandates can be changed, contracts terminated, guarantees revoked, and appointments altered. The upshot is that it is too early to declare a permanent victory for the classical view. Indeed, there may always be a market for the opposing view that central banks need not and must not be bound to the goal of price stability. For better or worse, that view will challenge the classical view whenever the public perceives unemployment or sluggish real growth rather than inflation to be the dominant economic problem.

Still, the inherent cyclical nature of ideas suggests an inevitable classical response to that challenge. Classicism, in short, will return to prominence to be confronted anew. For history shows it to be nothing if not resilient. Over long spans of time, it has proved resistant to the kinds of economic shocks that occasionally propel mercantilists to prominence. That is one of the chief insights of doctrinal history.

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