

BULLIONISTS' EXCHANGE RATE DOCTRINES AND CURRENT POLICY DEBATES*

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Almost seven years have elapsed since the U. S. abandoned the moribund Bretton Woods system of pegged exchange rates for a regime of flexible exchange rates. During that time the country has experienced double-digit inflation, rapid currency depreciation, mounting trade deficits, and a skyrocketing price of gold. The policy debates generated by these events have tended to crystallize around the following questions. What caused the fall of the dollar on the foreign exchanges? How can that fall be reversed and the currency strengthened? Can exchange rate movements be counted upon to correct trade balance deficits? Can currencies remain persistently under- or overvalued on the foreign exchanges thereby justifying corrective government intervention? How is the soaring price of gold related to exchange rate depreciation? Do exchange rates and the price of gold indicate how well the monetary authorities are doing in the fight against inflation?

Bullionists' Answers Many answers have been given to the foregoing questions. Few commentators, however, have noticed that some of the best answers were advanced more than 170 years ago by the so-called bullionist writers in the famous early 19th century Bank Restriction Controversy over the causes of the fall of the paper pound and the rise in the price of gold following Britain's decision to leave the gold standard for floating exchange rates during the Napoleonic wars. The bullionists, whose ranks included such luminaries as David Ricardo (1772-1823), Henry Thornton (1760-1815), John Wheatley (1772-1830), William Blake (1774-1852), Francis Horner (1778-1817), and Thomas Malthus (1766-1834), were the monetarists of their day. Like modern monetarists, they sought to refute the non-monetarist contention that the fall of the pound and the rise in the price of gold were real phenomena that had nothing to do with money. That is, they sought to refute the Bank of England's contention that the depreciation of the pound was due to special

factors beyond its control, namely autonomous real disturbances to the balance of payments.

The Bank adhered to a balance of payments theory of exchange rate depreciation. Similar to modern government officials who attribute the fall of the dollar largely to excessive oil imports and the associated transfer of wealth to the OPEC nations, the Bank of England blamed the fall of the paper pound on extraordinary food imports necessitated by domestic crop failures as well as on military outlays abroad and remittances to Britain's continental allies. Nothing was said about money. By contrast, the bullionists blamed the fall of the pound on the inflationary policies of the Bank of England itself. They contended that the Bank had taken advantage of the suspension of the gold standard to expand its note issue recklessly. This overissue of money, they thought, was largely if not solely responsible for the rise in the prices of goods, gold, and foreign exchange experienced by Britain in the first two decades of the nineteenth century. In so arguing, the bullionists forged the links of the monetarist theory of the money-price-exchange rate mechanism.

Basic Analytical Framework The bullionists' basic analytical tool was the distinction between *real* and *nominal* exchange rates, or what modern economists refer to as the terms of trade and the purchasing power parity, respectively. According to the bullionists, these variables constitute the two components of actual quoted exchange rates. The real exchange rate, they explained, expresses the relative real price of goods at home and abroad. That is, assuming all goods are traded, it expresses the relative price of one country's output in terms of the other country's output. Being a real economic variable, it is determined by real (i.e., nonmonetary) factors such as tastes, technology, and resource endowments and, therefore, is affected by temporary

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disturbances to those factors. Also, as the relative real price of goods, it influences the demands for exports and imports, adjusting to bring the two into balance. In other words, it operates to equilibrate the balance of payments. It possesses a long-run natural equilibrium value of unity determined by the arbitrage condition that the real price of goods must be everywhere the same so that there exists no advantage to buying in one market over another. Because commodity arbitrage is not instantaneous, however, transitory departures from real exchange rate equilibrium may occur from time to time. In particular, exogenous real disturbances to the balance of payments—e.g., crop failures, unilateral transfers, war and the associated military expenditures abroad—may cause the real exchange rate to deviate temporarily from its long-run normal equilibrium level. But such deviations will be automatically self-correcting by the feedback effect of the real exchange rate on exports and imports. Thus a shock to the balance of payments that depreciates the real exchange rate will, by raising the relative real price of goods abroad and lowering it at home, act to stimulate exports and check imports thereby equilibrating the balance of payments and restoring the real exchange rate to its equilibrium level.

Nominal Exchange Rate In contrast to the real exchange rate is the bullionists' concept of the nominal exchange rate or purchasing power parity. A purely nominal variable that has no effect on real economic variables, the nominal exchange rate consists of the ratio of nominal general price levels expressing the relative purchasing power of the two currencies as determined by relative demand-adjusted money stocks. Given the foreign price level and the domestic demand for money, the nominal exchange rate varies solely with changes in the domestic money stock. Unlike the real exchange rate, which is self-correcting, the nominal exchange rate can remain permanently depreciated as long as the domestic money stock is excessive. Therefore, persistent exchange rate depreciation is a sure sign of an excess issue of currency. As summarized by the prominent bullionist writer William Blake in 1810,

The *real* exchange depends on the proportion between the foreign payments which a country has to make, and the payments it has to receive. The *nominal* exchange depends on the comparative value of the currencies. The *real* exchange has an immediate effect on exports and imports. The *nominal* exchange, whether favorable or unfavorable, has no effect whatever upon exports and imports. The *real* exchange cannot be permanently favorable or unfavorable, whatever be the state of the currency. The *nominal* exchange may continue for any length of time favorable or unfavorable

provided the value of the currency continues to be depreciated. Now the *computed* exchange depends upon the combined operation of the *real* and *nominal* exchange.¹

Blake's analysis can be summarized by the equation

$$(1) E = RN$$

that expresses the actual observed exchange rate *E* as the product of its real (*R*) and nominal (*N*) components, both of which contribute to exchange rate movements in the short run. In the long run, however, the real exchange rate is self-correcting (i.e., returns to its equilibrium level) and cannot be the source of persistent exchange rate depreciation. Only the nominal exchange rate can remain permanently depreciated. And since the nominal exchange rate is determined by the money stock, it follows that persistent exchange rate depreciation is a sure sign of an excess issue of currency.

Policy Analysis Having developed the real/nominal exchange rate framework, the bullionists employed it in their policy analysis. Two versions of the framework were utilized. The strict version fixed the real exchange at its equilibrium level so that only the nominal component contributed to exchange rate movements. By contrast, the moderate version permitted temporary movements in the real component of the exchange rate. On the basis of these frameworks the bullionists reached at least six conclusions relevant to current exchange rate debates.

Monetarist Policy Conclusions First, the fall of the paper pound following the move to floating exchange rates was due entirely to excessive note issues by the Bank of England. Real disturbances to the balance of payments played at best a temporary role, producing transitory deviations of the exchange rate from its purchasing power parity path dictated by the nominal exchange rate. Although the bullionists were referring to such real shocks as (1) extraordinary food imports occasioned by domestic crop failures, (2) overseas military expenditures, and (3) remittances to foreign governments, they undoubtedly would have reached the same conclusion regarding the effect of petroleum imports and OPEC wealth transfers on the depreciation of the dollar. They would have argued that, in the long run at least,

¹ William Blake, *Observations on the Principles Which Regulate the Course of Exchange and on the Present Depreciated State of the Currency* (London, 1810; reprint ed., New York: Burt Franklin, 1969), pp. 86-88.

these real shocks wash out and the exchange rate returns to its nominal path. That is, they would have pointed out that only the nominal component of the exchange rate can be continually depreciated. And since that component itself is determined by the money stock, it follows that the persistent depreciation of the currency, whether the U. S. dollar in the 1970's or the British pound in the early 1800's, is basically due to excessive monetary growth.

The bullionists' second policy conclusion was that monetary contraction was the only way to strengthen the pound. Accordingly, they advocated monetary restriction roughly in proportion to the depreciation of the exchange rate. If the pound was depreciated five percent relative to its pre-Napoleonic war level, this was a sure sign that the money stock was five percent in excess of what it would have been under the gold standard and should be contracted. Monetary contraction was all that was needed to restore the pound to its prewar level. Nonmonetary policies aimed at improving the real exchange by encouraging exports and discouraging imports are useless, they thought. The real exchange rate is automatically self-correcting and cannot be the source of persistent exchange rate depreciation. Only the nominal exchange rate can remain depreciated. Therefore, only the nominal exchange rate requires correction by the policy authorities. And this can be accomplished by reducing money growth to a rate consistent with a zero rate of inflation. Were they alive today, the bullionists would advocate a permanent reduction in the rate of growth of the domestic money stock as the means of strengthening the dollar.

Currency Depreciation and the Trade Balance

The bullionists' third conclusion was that exchange rate depreciation has no lasting effect on the trade balance. Only deviations of the real exchange rate from its equilibrium level can influence the trade balance and these deviations are bound to be temporary. The self-correcting real exchange rate invariably returns to equilibrium. And when it does, actual observed exchange rate movements merely reflect changes in the nominal price level and have no effect on the real trade balance. In short, while deviations from purchasing power parity can affect the trade balance, movements along the purchasing power parity path itself have no such effects. The nominal exchange rate (i.e., the purchasing power parity) is neutral in its impact on real economic variables.

The fourth conclusion reached by the bullionists was that persistent undervaluation of the currency is impossible. This conclusion involved direct applica-

tion of the concept of the self-correcting real exchange rate. When the real exchange returns to its equilibrium, the actual observed exchange rate accurately reflects the domestic purchasing power of the currency, i.e., the external and internal values of the currency coincide. Because the exchange rate tends to conform to the purchasing power parity path dictated by economic fundamentals—i.e., the underlying monetary conditions in each country—there is little need for policy intervention aimed at preventing undervaluation. Some extreme bullionist writers (David Ricardo, John Wheatley) even denied that the currency could *ever* be over- or undervalued, even in the short run. According to these writers the real component of the exchange rate is always in equilibrium. Therefore the exchange rate itself is always at the purchasing power parity and no corrective intervention is ever warranted. This argument, it should be noted, implies that the exchange rate plays no role in the balance of payments adjustment process. Indeed, the strict bullionists argued that international adjustment in response to real shocks is achieved via shifts in demand and alterations of income and expenditure without affecting the exchange rate.

Rising Price of Gold The bullionists' fifth conclusion referred to the rising price of gold that accompanied the depreciation of the pound following Britain's 1797 move to floating exchange rates. They concluded that the cause of the rise in the sterling price of gold was the Bank of England's inflationary overissue of notes, the same factor responsible for the rise in the paper pound price of all goods and foreign currencies. They pointed out that under floating exchange rates the price of gold is determined by the quantity of paper money bidding for that precious metal. Thus the rise in the paper pound price of gold meant that a larger quantity of pound notes was bidding for the fixed world stock of gold. They were careful to note, however, that gold was not selling at a premium abroad. In particular, they pointed out that while the sterling price of gold had advanced sharply, its price in terms of stable (noninflated) Dutch guilders had remained relatively flat. They used this argument to refute the Bank of England's contention that the rising sterling price of gold had nothing to do with overissue of notes but instead reflected a shortage of gold caused by an increasing world gold demand for a fixed world gold supply. The Bank's contention, which implied a universal rise in the price of gold, was effectively refuted by the bullionists who presented evidence of a

largely unchanged foreign currency price of gold. Thus the rise in the domestic- but not the foreign-currency price of gold reflected an overissue of paper pounds rather than a world shortage of gold. From this, the bullionists concluded that money growth in Britain had been excessive relative to money growth abroad. Were the bullionists alive today, they undoubtedly would point out that although the price of gold in dollars has skyrocketed, its price in terms of stable Swiss francs has until very recently remained relatively flat. And they would conclude from this that money growth in the U. S. has been excessive relative to money growth in Switzerland.

Indicators of Monetary Policy Finally, the bullionists concluded that the state of the exchanges and the price of gold together constituted the best existing indicators of the ease or tightness of monetary policy. Exchange depreciation and a rise in the price of gold signified that money was excessive and should be contracted. Conversely, exchange appreciation and a falling price of gold signified tight money. Although the bullionists considered other potential indicators of monetary policy, they rejected them as inferior to the exchange rate and the price of gold. For example, they rejected the general price level as an indicator on the grounds that it was not readily measurable (price index numbers being little known at the time). Similarly, they rejected the money stock as an indicator on the grounds that money stock information was incomplete, inaccurate, and unavailable, and moreover, that it failed to capture the money demand factor influencing inflation and therefore was an inadequate measure of monetary policy. By contrast, the exchange rate and the price of gold are both readily available and embody all the monetary conditions producing inflation. As such, they were accepted as the best existing indicators of how well the monetary authorities were doing.

This conclusion has relevance today when financial innovation and interest rate ceilings are distorting the monetary aggregates in unknown ways, thereby making it difficult to judge whether monetary policy is tight or easy. In such situations, when the monetary aggregates are giving conflicting and confusing signals, the authorities might well consider watching the exchange rate and the price of gold.

Current Relevance of Bullionists' Doctrines The preceding has examined the exchange rate doctrines of the early 19th century bullionist writers. What were they trying to tell us and how do their doctrines apply today? Their main message was that persistent exchange rate depreciation is primarily a monetary phenomenon. Temporary real shocks have at best a transitory impact on the exchange rate while permanent real shocks are likely to be dominated by monetary disturbances. Persistent exchange rate movements are for the most part dictated by monetary factors determining the nominal exchange rate rather than by real factors determining the real exchange rate. If the bullionists' analysis is at all correct, then it follows that the post-1976 fall of the dollar stems primarily from monetary causes and requires a monetary cure, namely putting the domestic money stock on a permanent noninflationary path. On this point the bullionists were in perfect agreement with their modern monetarist counterparts.

Monetary Approach to Exchange Rates That the bullionists advocated monetarist policy prescriptions is not surprising considering that they anticipated much of the modern monetarist analysis of exchange rates. This is not to say, however, that the older and modern versions are identical. On the contrary, the modern version contains a crucial element missing from the older version, namely an analysis of exchange rate expectations, generally regarded as a major determinant of exchange rate movements in the short run. The bullionists also lacked sophisticated empirical techniques to rigorously test their theories. Nevertheless they did develop, refine, and coordinate the essentials of the modern monetarist analysis of exchange rates. Consisting of the quantity theory of money, the purchasing power parity doctrine, and the concept of the self-correcting real terms of trade, these essentials provide a powerful analytical framework capable of accounting for a large part of exchange rate movements. Moreover, the bullionists applied their analysis to policy problems much like those facing us today. For these reasons their advice may still be useful. Finally, it is worth noting that, although they were unable to rigorously test their doctrines, recent empirical work offers some support for their theories.