Hume and Endogenous Money

An earlier version of this paper was presented at the 31st meeting of the Hume Society, Kieo University, Tokyo, Japan, August 1 – 7, 2004. It was originally a comment upon "Hume, Money as Sign, and Customs: A Reinterpretation of Hume's Monetary Positions", by Maria Pia Paganelli. I do not dispute the main points of Maria's excellent essay. Another influence upon my remarks below is the fine paper by Carl Wennerlind, published in the JPE. ("David Hume's Monetary Theory Revisited: Was He Really a Quantity Theorist and an Inflationist?", C. Wennerlind, JPE,, Feb. 05; No. 1; Vol. 113 p. 223 – 236) At the time of the Tokyo conference, Carl's paper was not yet public, but we had several discussions about it there, as well as at a previous meeting of the Hume Society, in Helsinki. I am responsible for remaining errors.

By Eugene Rotwein and Tom Velk

(Although Prof. Rotwein died in February 2001, I have used his unpublished notes on Hume's Monetary Theory, written at the time he began work on his thesis in 1946, to help construct this paper. I do this as part of my ongoing effort to recall attention to his important contribution to Hume scholarship. I hope that my own additions to Gene's thoughts are up to his standards.)

In Hume's essays money, near money, credit, banking and trading services appear in different forms and with varying priority in the progression of the linked elements forming his explanatory analysis of economic, political or social change, growth and evolution. At times Hume is telling us the "actual" history of such a specific past sequence; other times he is discussing a possible history. Still other times he writes about "miraculous" imaginary "thought experiments", in which money plays a role. Sometimes money is prior to other economic, political or social events, making it a cause. Other times money appears later in the chain of connected proceedings, making it an "effect". The sequence of related "objects" in some of Hume's stories circles back upon itself, and we might call this form of relationship a "feedback loop", where money, and the other elements might sometimes be considered either cause or effect, since priority in time depends on the point in the loop taken to be the starting point. The political, economic and social elements in any of these progressions of linked events, are in the most part what economists like to call "real events", not purely monetary, and are quite often associated with Hume's stories of evolutionary economic growth and development. As well, monetary changes are often dynamically interconnected with alterations in the relative importance of each component in the complicated motivational mélange making up Hume's psychological "causes of labour". When money is discussed as an effect, and when it does not have priority in the ranking of related events in a bit of economic analysis, economists say it is endogenous to the more dominant, more important, earlier events or processes under discussion. And so it seems fair to say Hume's money has endogenous dimensions in many of his discussions of it. When money is clearly prior to later, "downstream" processes, and so might be said to be exogenous, typically Hume is writing about thought experiments, rather than actual or probable historical sequences.

Economists use the terms exogenous and endogenous in the following ways: sometimes they are contrasting two cases; the exogenous one, where a causal impetus flows from a prior "upstream" element like the quantity or price or distribution of money, propagating

downward to shift some other "downstream" but important economic aggregate like general prices, income, wealth, output or; and the endogenous opposite, where the prior cause is a change in income, general prices, output, trade activity, or level of economic development, the impact of that initial impact is regularly associated with later "downstream" alterations in the equilibrium quantity of money, or some other important dimension of the market for money and credit.

A slightly different distinction is drawn between endogenous and exogenous money by economists who focus on the process of creation of money and credit, along with its "injection" into the economy on the one hand, and the downstream effects of that act of creation upon the list of other important economic aggregates already given, on the other hand. These economists are thinking about the claim that governments can and do create and destroy money and credit more or less at will – such acts being causal of important claimed consequential effects upon key targets of monetary and fiscal policy. The vision concerns exogenous "instruments" (e.g. the well-controlled quantity of money) and endogenous "targets" (e.g. the level of income and employment as well as the aggregate demand for goods, and the aggregate supply of goods.) Critics of this view sometimes say that governments cannot control the quantity of money and credit. For example, one case frequently made is that the international market for money and credit is so large, and so open to significant economic players that no nation's central bank has sufficient buying or selling power to cause its domestic quantity or price of money to be any different than the international market determines it to be. In this case, within each open, market oriented trading nation, the real interest rate and the quantity of real money ("real" meaning inflation and exchange rate adjusted) is the same as it is in all other connected nations. In an April 10th, 1749 letter to Montesquieu, (Rotwein, pg. 189) Hume writes: " It does not seem that money, any more than water, can be raised or lowered anywhere much beyond the level it has in places where communication is open, but that it must rise and fall in proportion to the goods and labour contained in each state."

Hume doubts that the Magistrate has the insight required to "model" a society so well as to be able to determine a successful strategy whereby an "instrument" like a tax, or subsidy or general economic program might be manipulated so as to bring about some desired "new equilibrium" for a specific "target variable". We are told that a policy intended "to promote archery, (ruled that) no bows were to be sold at a higher price than six shillings and fourpence … the only effect of this regulation must be, either that the people would be supplied with bad bows, or none at all" (From the History (of Henry VII,) quoted by Rotwein, pg. lxxix). "In another passage were he attacks the imposition of price-ceilings on farm commodities …'Parliament was not sensible that such an attempt was impracticable and that (even) were it possible to reduce the price of provisions by any other expedient than by introducing plenty, nothing could be more pernicious and destructive to the public' " (Rotwein, pg. lxxx) Elsewhere he notes that foundling homes have contrary effects upon good care for infants: " Of all the sciences there is none, where first appearances are more deceitful than in politics. Hospitals for foundlings seem favourable to the increase of numbers; and perhaps, may be so, when

kept under proper restrictions. But when they open the door to every one, without distinction, they have probably a contrary effect, and are pernicious to the state … the great difference, for health, industry, and morals, between an education in an hospital and that in a private family, should induce us not to make the entrance into the former too easy and engaging. To kill one's own child is shocking to nature, and must therefore be somewhat unusual; but to turn over the care of him upon others, is very tempting to the natural indolence of mankind." (Rotwein, "Of the Populousness of Ancient Nations", pgs. 127 – 8) "I shall conclude this subject with observing, that we have, with regard to taxes, an instance of what frequently happens in political institutions, that the consequences of things are diametrically opposite to what we should expect on the first appearance" (Rotwein, "Of Taxes", pg. 88)

Still another kind of endogenous element in the causal connections among money and other things is the case in which money and the set of "other economic variables" of interest to economists and policy makers are both best thought of as mutual "effects", together being driven by some third factor, or collection of factors, (the true "cause") perhaps leading to a special kind of confusion, in which it is believed, falsely, that cause is running from money to the other economic variables, or vise versa, when, in fact, money and the "other economic variables" are linked only in the sense that they are each sensitive to changes in the third element. As Hume puts it: "There are some kingdoms … where money is so scarce, that the landlords can get none at all from his tenants, … the prince can level few or no taxes, … such a kingdom has little force even at home; and cannot maintain fleets or armies to the same extent, as if every part of it abounded in gold and silver … the Austrian dominions in the empire are in general well peopled and well cultivated, and are of great extent; but have not a proportionate weight in the balance of Europe; Proceeding, as is commonly supposed, from the scarcity of money … To these difficulties I answer, that the effect, here supposed to flow from scarcity of money, really arises from the manners and customs of the people; and that we mistake, as is too usual, a collateral effect for a cause." (Rotwein, "Of Money," pgs. 40 – 1) "The want of money can never injure any state within itself; for men and commodities are the real strength of any community" (Rotwein, "Of Money" Pg. 45) "In the following essay ["Of Interest"] we shall see an instance of a like fallacy as that above mentioned; where a collateral effect is taken for a cause, and where a consequence is ascribed to the plenty of money; though it be really owing to a change in the manners and customs of the people." (Rotwein, "Of Money" pg. 46). Even among the nations connected together in a web of trade, and even in cases where the Magistrate has introduced policies to manipulate the outcome, the dominant factor fixing the quantity of money within each member of the group of states is its relative degree of economic development. In a letter to Oswald (November 1, 1750, pg. 197 in Rotwein) Hume writes; "I never meant to say that money, in all countries which communicate, must necessarily be on a level, but only on a level proportionate to their people, industry and commodities. That is, where the is double people &etc. there will be double money and so on; and that the only way of keeping or increasing money is, by keeping and increasing the people and industry; not by prohibitions of exporting money, or by taxes on commodities, the methods commonly thought of."

Even when accepting a point of correction to his specie flow argument, Hume is consistent in his view of money as endogenous to trade and development – because he makes a careful distinction between actual money, flowing about in a real world setting, and imaginary "miraculous" money, manipulated in a thought experiment. A bit further on in the letter to Oswald quoted immediately above, Hume writes; "You allow, that if all the money in England were increased four fold in one night, there would be a sudden rise of prices; but then, say you, importation of foreign commodities would soon lower the prices. Here, then, is the flowing out of the money already begun. But, say you, a small part of this stock of money would suffice to buy foreign commodities, and lower the prices. I grant it would for one year, till the imported commodities be consumed. But must not the same thing be renewed next year? No, say you; the additional stock of money may, in this interval, so increase the people and industry, as to enable them to retain their money. Here I am extremely pleased with your reasoning. I agree with you, that the increase of money, if not too sudden, naturally increases people and industry, and by that means may retain itself; but if it do not produce such an increase, nothing will retain it except hoarding. … My expression in the Essay needs correction, which has occasioned you to mistake it." (Rotwein remarks in his "Introduction" that Hume failed to make the changes.)

Another kind of endogenous money may appear in what modern economists call general equilibrium models, in which a great many closely interconnected variables take on an indefinitely long sequence of values, tracing out a mathematical simulation of the numbers that might characterize the historic record of such values for the real world economy that the model seeks to emulate. Today's world is full of such models; some of them predict future weather patterns, others fill in nightmare details for people who fear global warming, folks who worry about asteroid collisions and youngsters who play computer war games.

Such simulations might run completely on their own after a set of initial values is plugged in, or they might respond to a continually altered stream of inputs for a small subset of the long list of variables composing the entire model. These models are so complex that the various stages of their unfolding cannot be easily foreseen, although they are not random in their behavior - at least, not unless there are random elements purposely inserted into them. In any case, except for the initial values used to set off the models' wanderings, most of the resultant values for the interior variables of these general equilibrium models might well be said to be endogenous to the initial, exogenous settings - indeed, for models that cycle or grow without "blowing up", all values displayed during the indeterminately long run time of the model, excluding only the values of the variables first used to set up the initial state of the model, may be said to be endogenous. For Hume the historian, such a general equilibrium model, containing many chance elements, and allowing for many changes in fundamental rules of behavior, could be said to comprise his view of the historical process. History is driven by initial conditions, internal rules, change and occasional fundamental alterations in the rules of the game. It is not random, but it is so complex that, while tomorrow's outcomes might very well be hidden within some highly complete statement of today's state of the world, no student of the process is able to make dependable predictions of tomorrow's exact outcome, even

though a general tendency of events might be foreseeable. For Hume the historian, the state of the monetary institutions of Europe after the Spanish Conquests in the New World, a series of states determined by a complex sequence of interrelated actual events occurring in historical time, will be endogenous to all these factors; namely, initial values, rule changes and internal general forces moving the social, economic and political players. The long run playing out of these forces and institutions might be generally understandable, as in the case of Hume's belief that the specie flow mechanism might operate over a twenty-five year time span, but he does not - nor does he think he could do -- give us a picture of the state of affairs at every point along the path to the reestablishment of stable equilibrium. In the letter to Oswald quoted above, Hume allows for a very long lag before any kind of "exogenous" pure quantity theory end could be put to the consequences of an inflow of money, a time during which the new money might have non-neutral, non-inflationary, even "Keynesian" effects: "I agree with you, that the increase of money, if not too sudden, naturally increases people and industry, and by that means may retain itself; but if it do not produce such an increase, nothing will retain it except hoarding." There is no detail of the balance to be expected among this mix of "downstream" "increases in people and industry". And the next sentence tells us just how long a lag Hume expected might be appropriate before any quantity theory equilibrium might set in, assuming there are no "non-neutral" effects: "Suppose twenty millions brought into Scotland; suppose that, by some fatality, we take no advantage of this to augment our industry or people, how much would remain in the quarter of a century? Not a shilling more than we have at present." (Rotwein, "Hume to Oswald" Pgs. 197 – 8). That twenty-five year lag, and the implied shorter time between a money inflow and a mixture of "Keynesian" consequences, involving far more than mere uniform price adjustment, suggests that Hume thinks the simple quantity theory outcome, if it is to be expected in a thought experiment having the least little bit of "real world" detail, is distant in time if not in probability terms.

Indeed, Hume the economist and Hume the historian have two different kinds of historically endogenous monies in mind. As Economist Hume speaks about the evolution from simple agricultural society, as it becomes a trading community, he tells us that there are induced, endogenous changes, not merely in the quantity of money relative to the level of economic activity, but he tells us that the very nature of money changes too. That is, the simple society needs very little money to conduct its largely self-sufficient economic affairs, while in the more advanced state of existence, more money per unit of economic activity is needed. In the early states of Hume's story, trade is as often barter as not, while, once trade becomes important, money becomes more abstract, and eventually takes on, for external trade, an internationally acceptable character, usually specie gold or silver, while for internal trade it may have a fiat or paper dimension. These changes are endogenous to more fundamental changes in economic development, and the consequent quicker march of the spirits. Moreover, for the changes to move ahead at all, indeed for the evolution to continue, the community must not come to any final point of rest – for it is by continual advance and change that the causes of labor and the march of the spirits remain lively enough to keep investment going, and to prevent the reappearance of slothful consumption of capital. So here money and the financial dimensions of the evolving community are dependent not only upon past values for key

variables – one kind of endogenous dimension for money – but they require that the community never come to any final state of rest. Or at least, it would be consistent with Hume's analysis to say that the arrival at a temporary stage of apparent final rest would create a situation where money would continue to change, but now in a destructive pattern of excessive consumption, inadequate investment, decline, and dissipation.

Hume the Historian finds many examples to show that the changing nature of money, monetary laws and practices are endogenous to the evolution of the nation from barbarism to trade. For example, in the History, (Vol. II, Chapter XVIII, Pg. 351, Liberty Press version), he tells us that the crimes of cutting out tongues, and putting out eyes, were frequent during the reign of Henry IV. This "savage spirit of revenge denotes a barbarous people". In the very next paragraph, Hume writes, "Commerce was very little understood in this reign, as in all the preceding. In particular, a great jealously prevailed against merchant strangers; and many restraints were by law imposed upon them; namely that they should lay out in English manufactures or commodities all the money acquired by the sale of their goods; that they should not buy or sell with one another, and that all their goods should be disposed of three months after importation." Immediately in the next sentence, Hume tells us that this legislation falls of its own weight, being contrary to both good sense and inconsistent with the evolutionary alterations going on in the State, the nature of money and the financial process: "This last clause was found so inconvenient, that it was soon after repealed by Parliament."

In short, Hume says things about money that make me think he believes money to be, quite often at least, endogenous in all these senses above described.

There is another idea about money connected with Hume's discussions, referred to in modern parlance as its possible "neutrality". It is possible to discuss whether money is neutral or not independent of the ideas of exogenous and endogenous money. Money is said to be neutral if more or less of it has no effect upon the "real" outcome of the economic process. An example is Hume's overnight magical increase in the quantity of money, causing only a price level shift of all prices exactly in proportion to the quantity movement (e.g. a doubling of the quantity of money causes all prices to double, but nothing else changes), with relative prices and all other real dimensions of the economic order unchanged. Money could be neutral in this sense, even if the change in the quantity of money was endogenous or exogenous, at least in Hume's wide-ranging analysis. So if the people of a State newly venturesome and outward looking conquered new lands in order to find new gold mines, and did so, one might say the new money was endogenous to the quicker march of their spirits. Or we could think of major new gold mines discovered in the process to the westward march of expansion a newly emerging continental power. It is possible (albeit unlikely) that such new golden money would be neutral when it appeared in the markets of the imperial power. On the other hand, an inflation-minded government might redefine the monetary unit, declaring that one hundred units of the "old Franc" were now defined as one "New Franc" – prices would have a new decimal place, with a thousand old Franc pair of shoes now priced at ten New Francs, and so on for all prices. Although one might say that such an act of policy was endogenous to a government decision to confront the effects of past inflation, and create

a new monetary national order, a less inclusive use of Hume's wide spectrum of analyzed economic motivations would allow us to call the process an exogenous change in the quantity of money, with a likely outcome which we expect to be neutral – confined to prices. (A tough-minded Hume, were he still with us, might disagree, telling us that such governmental redefinitions of monetary units, commonplace in the twentieth Century, were typically taken in hopes of a non-neutral effect. That is, the hoped-for result of redefinition was to persuade the international currency market players that the government in question was serious in its intent to end inflationary finance, with positive consequences for international investment, capital flows, exchange rate stability and domestic productivity.) Hume discusses a number of cases in which new money, and especially near monies, money substitutes and governmental attempts to "dilute" specie money with paper, will cause non-neutral alterations all across the political, social and economic spectrum: "Public securities are with us become a kind of money, and pass as readily at the current price as gold or silver." After a series of remarks to the effect that such a situation has a few advantages ("What human evil is there, which is not attended with some advantage?" Hume's footnote, "Of Public Credit", Rotwein, pg. 93), Hume goes on at length to discuss the evil consequences of added money, almost all of them "non-neutral". "…national debts cause a mighty confluence of people to the capital" and they give the merchants there "advantages … above the rest of the Kingdom." Hume is "apprehensive" about "The immense greatness, indeed, of London, under a government which admits not of discretionary power, renders the people factious, mutinous, seditious, and even perhaps rebellious." Hume foresees changes in relative prices: "Public stocks, being a kind of paper-credit … banish gold and silver from the most considerable commerce of the state, reduce them to common circulation, and by that means render all provisions and labour dearer than they would otherwise be." ("Of Public Credit" Rotwein, pg. 95 – 6) "… this increase of prices, derived from paper credit, has a more durable and a more dangerous influence than when it arises from a great increase of gold and silver; Where an accidental overflow of money raises the price of labour and commodities, this evil remedies itself in a little time": the money flows out into all the neighboring nations; the prices fall to a level; and industry may be continued as before; a relief, which cannot be expected, where the circulating specie consists chiefly of paper, and has no intrinsic value" (Hume's footnote, "Of Public Credit", Rotwein, pg. 95 - 6). The distribution of income, the foreign share of national wealth, and the habits of the people are all changed, in a most non-neutral way, by the appearance of new money in a new quantity: "the taxes, which are levied to pay the interests of these debts, are apt to heighten the price of labour, or be an oppression on the poorer sort. … As foreigners possess a great share of our national funds, they render the public, in a manner, tributary to them, and may in time occasion the transport of our people and our industry. … The greater part of our public stock being always in the hands of idle people, who live on their revenue, our funds, in that view, give great encouragement to an useless and unactive life." ("Of Public Credit", Rotwein, pg. 95 – 6)

These neutrality subtleties aside, at least one of Hume's remarks, if pushed a bit, has him talking about money as an entire payments and credit system, a most decidedly non-neutral kind of money, deeply endogenous in that changes to such a property rights engine are likely to cause important downstream changes elsewhere in the economy,

which, in turn, change the payments system in a feed-back loop. Hume is here writing about Bank Credits, as they existed in his Scotland: "A man goes to the bank and finds surety to the amount, we shall suppose of a thousand pounds. This money, or any part of it, he has the liberty of drawing out whenever he pleases, and he pays only the ordinary interest for it, while it is in his hands. He may, when he pleases, repay any sum so small as twenty pounds, and the interest is discounted from the very day of the repayment. The advantages, resulting from this contrivance, are manifold. As a man may find surety nearly to the amount of his substance, and his bank credit is equivalent to ready money, a merchant does hereby in a manner coin his houses, his household furniture, the goods in his warehouse, the foreign debts due to him, his ships at sea; and can, upon occasion, employ them in all payment, as if they were the current money of the country. …His bank credit costs him nothing, except during the very moment in which it is of service to him …. Merchants, likewise from this invention, acquire a great facility in supporting each other's credit, which is a considerable security against bankruptcy. … several companies of merchants at Glasgow carried the matter farther. They associated themselves into different banks, and issued notes so low as ten shillings, which they used in all payment for goods, manufactures, tradesmen's labour of all kinds; and these notes, from the established credit of the companies, passed as money in all payments throughout the country, by this means, a stock of five thousand pounds was able to perform the same operations as if it were six or seven; and merchants were thereby enable to trade to a greater extend and to require less profit in all their transactions." (Rotwein, "Of the Balance of Trade", pgs 70 – 1) Hume is telling us that property can be valued, recorded, insured, exchanged, enforced and contracted for by intermediation of banks and other contract and property rights defining institutions, who are merchants, underwriters and judges of productivity and ownership. These functions of money, defined broadly to include the formation, recording, interpretation, insurance, enforcement, alienation and exchange of rights in contract and property are the key ideas of the economic "rule of law" – today thought to be central to the role of monetary institutions. Such activity and service is far from neutral in its effects upon specialization and productivity, as Hume plainly states.

The is even a passage in "On the Populousness of Ancient Nations" (pg. 146 in Rotwein) where Hume equates the positive contribution to growth and development made by bills of exchange to the gains from the discovery of the New World; "Our superior skill (in comparison with the Ancients) in mechanics; the discovery of new worlds, by which commerce has been so much enlarged; the establishment of posts; and the use of bills of exchange; These seem all extremely useful to the encouragement of art, industry and populousness. Were we to strike off these, what a check should we give to every kind of business and labour, and what multitudes of families would immediately perish from want and hunger?" (But The Great Man may have nodded a bit when he wrote the footnote found on page 93 of Rotwein, in "Of Public Credit" when he condemned "circulation", meaning the trading of securities. Hume says the only external benefit to "change alley" is to the jobbers of "coffee, and pen, ink, and paper"; indeed, Hume tells us he cannot "foresee the loss or decay of any one beneficial commerce or commodity, though that place (change alley) and all its inhabitants were for ever buried in the ocean.") The circular flow of mutually interdependent monetary causes and effects, with

important learning and feedback consequences, is a picture of endogenous, non-neutral money, viewed as a list of property rights functions of the highest importance to a trading society.

Of course, in the gold standard world in which Hume operated, central bank policy making of today's aggressive sort did not occur, and so he did not directly address the target and instrument version of the exogenous endogenous debate. But Hume did talk about Government created "near money" in the form of public debt, and he did discuss private credit creation by banks, that could be quite independent of local supplies of gold or silver, at least in the short run. "Public securities are with us become a kind of money, and pass as readily at the current price as gold or silver. … No merchant thinks is necessary to keep by him any considerable cash. Bank stock, or India bonds, especially the latter, serve all the same purposes; because he can dispose of them, or pledge them to a banker, in a quarter of an hour; and at the same time they are not idle, even when in his scritoire, but brings him in a constant revenue. In short, our national debts furnish merchants with a species of money, that is constantly multiplying in their hands, and produces sure gain, besides the profits of their commerce. This must enable them to trade upon less profit. The small profit of the merchant renders the commodity cheaper, causes a greater consumption, quickens the labour of the common people, and helps to spread arts and industry throughout the whole society." (Rotwein, pgs. 93 – 4, "Of Public Credit"). The kind of money described here is far from neutral – it has a real effect upon efficiency, productivity and the psychological causes of labour. That is, more money, when it takes this particular form of public credit, does not merely cause prices to rise, but, on the contrary, it causes economic activity to quicken, because the multitude of services provided by real money now come more cheaply, in greater abundance, and in a wider variety than previously was the case. The added quantity and quality of the public credit form of money have many advantages at this point in Hume's story, but he is only at the midpoint of a story with a feedback loop, that will take away more advantage than was initially given. Let us examine once again the argument quoted above, in the discussion of "neutral money".

"…in opposition to these … favourable circumstances …weigh the many disadvantages which attend our public debts, in the whole interior oeconomy of the state: You will find no comparison between the ill and the good which result from them. First, it is certain that national debts cause a mighty confluence of people and riches to the capital, by the great sums, levied in the provinces to pay the interest … the question is, whether, in our case, it is for the public interest, that so many privileges should be conferred on London, which has already arrived at such an enormous size, and seems still encreasing? … The immense greatness, indeed, of London, under a government which admits not of discretionary power, renders the people factious, mutinous, seditious, and even perhaps rebellious. But to this evil the national debts themselves tend to provide a remedy. The first visible eruption, or even immediate danger, of public disorders must alarm all the stockholders, whose property is most precarious of any; and will make them fly to the support of government, whether menaced by Jacobitish violence or democratical frenzy. Secondly, Public stocks being a kind of paper-credit, have all the disadvantages attending that species of money. They banish gold and silver from the most considerable

commerce of the state, reduce them to common circulation, and by that means render all provisions and labour dearer than otherwise would be. Thirdly, The taxes, which are levied to pay the interests of these debts, are apt either to heighten the price of labour, or be an oppression on the poorer sort. Fourthly, As foreigners posses a great share of our national funds, they render the public, in a manner, tributary to them, and may in time occasion the transport of our people and our industry. Fifthly, The greater part of the public stock being always in the hands of idle people, who live on their revenue, our funds, in that view, give great encouragement to an useless and unactive life." (Rotwein, pgs. 95 – 6, "Of Public Credit") We repeat the quotation at length to emphasize the special place money has in Hume's argument: in the middle. That famous passage describes a feedback loop, having new money at its midpoint hinge, with a surprising knot in the middle, the whole of the money story capable of being labeled an endogenous one.

Hume tells at least one more complex story for money – the reader may decide if it may be called an endogenous story. Monetary institutions, in Hume's vision, are a reflection, or at least bear the strong imprint, of the motivations of the empirical human beings who invent and operate them. The four major springs of action and the complex and sometimes inconsistent motivators found in the human nature of those who provide monetary services, as well as those who utilize them, allow governments to mismanage their debts, allow gambler-merchants to undertake risk for the pure enjoyment of it, allow societies to evolve from primitive beginnings as stationary, barely self-sufficient bartering farm cultures, having virtually no saving or investment beyond what is needed for simple replication, changing into dynamic, sophisticated, manufacturing and trading civilizations, capable of military conquests and economic imperialism. In telling his story of money's role in economic development of this type, Hume reminds us that the planned impact, the first effects and the final outcome of monetary and financial innovation is unlikely to be knowable early on, and, moreover, that the historical path ultimately traced out is generally quite unlike the one inaccurately foreseen by the political, social and economic actors who were active and present at the beginning of the process. Hume's unblinking view of Human Nature, his empirical method, and his habit of looking to history rather than teleological theory as a guide to analysis all cause him to tell a story about the impact of money, monetary innovation and monetary management by the Magistrate that is, from the point of view of this essay, difficult to categorize as exogenous or endogenous.

Hume's money facilitates trade and so expands commerce. It facilitates the collection of taxes and the accumulation of treasure. It is an aid in transforming a developing society, helping it to move from the agricultural to the industrial state of art. That transformation carries with it many other alterations, even including a gain in military capacity, if not prowess. Hume gives grudging approval to credit induced, short-run profit generating inflation, but in general he is wary of the destructive potential of excessive credit, especially government debt and bank debt. Even here, he qualifies himself, writing with admiration about the beneficial impact upon general trading activity of certain types of innovative Scottish bank credits. (See the bank credit discussion in Of the Balance of Trade, Rotwein, pgs. 70 –1)

Hume contrasts the consequences of using money rather than barter – more specifically, he claims that extremely simple societies, in which what little trade goes on does so by barter, evolve, if they are to develop at all, into communities more specialized, the specialization made possible, or at least advanced in degree, by trade conducted with money as an intermediate good. Here the use of money advances specialization and so may be thought to be a cause – but money also becomes cheaper and more efficient as a means of payment and store of value as specialization goes forward, and thus its quantity and price may be said to be an effect of the dynamic process of growth and development. Hume's historical stories in which simple agricultural societies evolve into trading and manufacturing communities, aided by a change in the mix of causes of labor, assisted by a hastening of the quick march of the spirits, presents a possible example in which money, interest rates and credit on the one hand, and income productivity and investment on the other, are all subsidiary effects, driven in the end by the altered political and social psychology of the innovating and more active citizenry.

He has a statement of the quantity theory of money. That is, he says that at times, more money simply means higher prices. When he writes in this fashion, we might say he sees an addition to the money stock as simply moving decimal places for the entire spectrum of prices. His statements about the effects of miraculous overnight increases in the quantity of money are stories about exogenous money, but as soon as he adds a realistic note, and talks about historical periods in which the quantity of money actually does increase significantly, as in the case of the importation of Spanish gold, the process of money's effects becomes more circular. For example, if we take Hume as saying that the Spanish magistrate's rapid march of the spirits, consisting of his thirst for conquest, treasure, political advantage and imperial expansion is the true causal factor, the consequent expansion in the quantity of money is an unlooked-for endogenous result. The reader is reminded of the time line Hume mentions in his letter to Oswald, quoted above. New money flowing into Scotland might take twenty-five years to come to a specie flow, quantity theory "equilibrium". Implicit in this long lag is a time when full quantity theory expectations are not met. Also implicit is the idea that they may never be, insofar as Hume's agreement with Oswald about the possible changes in work effort, employment and income resulting from the new money. It seems unlikely that Hume would have insisted, if pressed in argument, that had such changes occurred, they would be reversed somehow at the expiration of the twenty-five year waiting time.

Hume has a statement of the possibility of a pre-inflationary impact on quantity of output and level of demand, consequent upon the introduction of additional money into an economy. In this case, while prices eventually rise, implicitly they do not all rise in exactly the same proportion, and they do not rise at once. The so-called "real" impact (i.e. the change in output, demand, sectoral profit and loss, and the pattern of relative prices) of such a change in the quantity of money might well last for some time. To the extent that Hume tells us that the initial inflow of Spanish gold diminished the ardor for work, at least among those for whom monetary wealth quickly and easily accumulated, while simultaneously it was found that much of the gold moved out of Spain to her international suppliers, Hume might be read to say that the Spanish Crown's need for

even greater gold imports increased. And so a partly endogenous process is set up that creates, for a time, a relentless circle of ever greater imports of gold, having ever more destabilizing effects upon prices, productivity and the international distribution of real wealth and money.

Hume's quantity of money, when we find it distributed by processes in the real world, and not by overnight magic, is determined by the level of trade, and is always proportional to it: "Men naturally flock to capital cities, sea-ports and navigable rivers. There we find more men, more industry, more commodities, and consequently more money; but still the latter difference holds proportion with the former, and the level is preserved. (Hume's footnote goes on to say) It must carefully be remarked, that throughout this discourse, wherever I speak of the level of money, I mean always its proportional level to the commodities, labour, industry and skill, which is in the several states. And I assert, that where these advantages are double, triple, quadruple, to what they are in the neighboring states, the money infallibly will also be double, triple, quadruple." (Rotwein, Of the Balance of Trade, Pg. 66)

When Hume discusses international trade, he tells his readers it is a mistake for the Magistrate to design a national policy aimed at increasing a hoard of money treasure, by accumulating specie as a consequence of running a "favorable" balance of payments. He says the true wealth of a nation is in the skills, numbers and work ethic of its people and industry. If these real elements of wealth are protected and stimulated by prudent policy, money treasure will follow. This relation, showing that more money, or at least a larger fund of international reserves, is a consequence of economic health and activity, rather than the cause of it, is a statement about endogenous money.

Paper credit, and other "artificial" expedients might have short-term use as a stimulus to healthy economic activity, in a process in which Hume's normal causal relation, which moves from trade to money, is reversed. Even with some admitted benefits from clever financial innovations like Scottish bank credits, resort to paper credit creates an economic vulnerability, costly when inevitable eventual shocks occur: "We observed in Essay III ("Of Money") that money, when encreasing, gives encouragement to industry, during the interval between the encrease of money and rise of the prices. A good effect of this nature may follow too from paper-credit, but it is dangerous to precipitate matters, at the risk of losing all by the failing of that credit, as must happen upon any violent shock in public affairs." (Hume's own footnote, pg. 68, Rotwein, "Of the Balance of Trade")

Hume's famous "specie flow" argument states that, in a community of trading nations, there will be established, by flows of money among them, a single price for all (traded) goods. (Hume may not have thought deeply enough about the problem of non-traded goods, but that is not an issue here.) Thus any nation having prices that are higher than its neighbors will lose money as its citizens buy in the cheaper markets. As this goes on, the high price market loses money, and by the quantity theory, its prices fall. Equilibrium is reached when this loss of money causes the high priced nation's prices to fall – also the selling nation, previously having low prices and a relatively smaller quantity of money, has gained money, and lost goods – a process that will eventually, by the quantity

theory's operation, cause its prices to rise. Eventually, there will be no price-driven incentive to buy in one nation rather than another, because prices everywhere (for the same goods) are equal. The endogenous dimension of this argument is that the distribution of money – that is, the national total of money for each trading partner – is a consequence of the process of establishing market equilibrium for the prices of traded goods. The level of prices in the entire trading community, of course, would likely be determined by the aggregate quantity of money in the entire trading group – but the amount in any one nation would be a result of, not a cause of, its level of prices.

When Hume discusses real world economic history, the trade balance story becomes much more complex, but not necessarily any less a vision of the partially endogenous nature of money and the distribution of money among traders. His story of Spanish gold, and the short run failure of the quantity theory; his recognition that the Sovereign sometimes, perhaps unwisely, but nonetheless actually, is, intent on accumulating treasure and specie by policies aimed at a "favorable" balance of payments; his argument that, over the long run of early economic development, trade and industry expand with new money, but prices do not rise, are all examples of exceptions to the simpler specie flow story. It is interesting to note that, in Hume's essays, the specie flow discussion is less historically grounded than these examples of exceptions to the specie flow process.

There is a sense in which Hume's money is even more endogenous that it is for certain modern builders of economic models. Kenneth Boulding has written: "Economic models fall roughly into two categories – static or equilibrium models, which comprise by far the largest body of economic theory, and genuinely dynamic models, which are expressed in terms of difference or differential equations." (Kenneth Boulding "The Verifiability of Economic Images", pgs. 129 – 141, in Sherman Roy Krupp's <u>The Structure of Economic Science</u>, Prentice Hall, Englewood Cliffs, NJ, 1966, Library of Congress catalog card number 66-16395, pg. 137). Static models are typically in equilibrium, so that, for example, in such a model, supply will equal demand. In Hume, supply often does not equal demand, so that, for example, new money may sometimes upset an equilibrium for twenty five years, before the new money entering Scotland ceases to change prices and comes to rest in trading balances. Dynamic models, as Boulding says, capture change in the form of difference equations. But such equations cannot describe the change in economic manners and mores Hume says accompanies economic evolution. Finally, the economic actors in Hume's evolutionary world require constant evolution, investment and fundamental change if they are to remain themselves the "springs of economic action" they have become. Any settling down to a predictable world, even one undergoing Boulding-style dynamic change, threatens to re-establish the unhealthy indolence seen in Hume's "steady state", where persons who otherwise are the investing class become, as they were at the very beginning of an interval of true evolutionary developmental growth and change, destructive consumers of capital. The role played by money in Hume's more sophisticated evolutionary dynamic is important, but endogenous to the human motivational elements in the process. Neither standard equilibrium or difference equation dynamic models capture Hume's story, although either might show a kind of simple endogenous quality for money.

While Hume is not so consistently "laissez faire" as Smith, he does emphasize that real wealth is a consequence of real factors, like the quantity and quality of "human capital" (We don't like to say labor, because – and it's a topic for another paper – we don't think Hume is a labor theorist), the volume and technical ebullience of industry, the energy of entrepreneurs, the wisdom of the Magistrate, the Justice of the Laws, the stability of property and contract, and the natural endowment of the land. That is, national wealth does not consist in a hoard of gold. Wealth is not money. And wealth does not have a single source – and so the "economists" (the physiocrats) are to be pounded for their error in thinking so. When this is taken into account, one may say that money, for Hume, was deeply endogenous, since its quantity would be, in the end, determined by all these other factors, which determine a nation's true wealth, and so fix its potential rate and level of output and growth. At a minimum, the quantity of money going to be appropriate to whatever is the equilibrium level of income and wealth, especially within any single trading nation.

Was Hume inconsistent, sometimes being a simple quantity theorist, and sometimes something else? We don't think so. Hume's simple money stories are based on overnight miracles. They serve only to show that more money might sometimes mean only higher prices. When he writes about the dynamic connections linking money, trade, employment, investment, and the structure of relative prices, he is thinking about the world of economic objects that exist in real or at least possible history.

And so in conclusion we agree with the proposition that Hume's view is that money – more or less of it, better or worse types of it, larger or smaller international shares of it, more or less sophisticated versions and elaborations of it, public or private brands of it, long run or short run varieties of it, real or nominal quantities of it -- sometimes is a cause of downstream changes in the economy and sometimes is an effect of those changes. We agree with the notion that Hume is consistently "endogenous" in his view of money, despite his frequent restatements of the central contention of the Quantity theory – We understand such statements by him to be made in the manner of thought experiments, where the changes in the quantity of money are miraculous, overnight, instantaneous alterations in the state of an imaginary world. Whenever he speaks of real situations, having a footing in actual events, occurring in a universe peopled with human beings motivated by the springs of action and causes of labor so central to his view of human nature, governed by magistrates eager to buy favor from their people, or to gain short run advantage despite long run consequences, he writes about a form of money which is profoundly not neutral, whose connections with the rest of the economic universe are complex, and which is as much a "collateral effect" as it might be an initiating cause. We agree with the notion that the State, or the magistrate may sometimes attempt to make changes in money, credit and debt levels, but that consequent events may will operate in ways to nullify and counteract the initially hoped-for results of these changes. Such counteraction, nullification and reversal of the Central authority's initial intentions are a kind of endogenous process. In the end, the dimensions of Hume's market for money and credit are a consequence, not a determinator, of the economy's final equilibrium, which is determined by a concatenation of real factors, including historical, psychological and institutional pressures.

Appendix

Below are some selections, annotated by us, from Hume, further supporting the view that for him, money was endogenous to more fundamental "real" dimensions of the economic order, including the stage of economic development, the vigor with which the spirits were marching, the mix and relative influence of the various "causes of labor", the degree of international economic integration by trade, the balance between public and private credit creation, and the prudence or lack of it on the part of the Magistrate.

The following sequence of quotations is taken from a special issue, entitled "David Hume – Foundations of the Classical School of Economics" of the publication Economic Insights, published by the Federal Reserve Bank of Dallas. The comments that precede the quotations are our own: the Fed essay did not address the issue of endogenous money. The Fed volume contained a fine essay on Hume's economics by Robert L. Formain, Senior Economist at the Federal Reserve Bank of Dallas.

Here is Hume on the danger to commerce and industry arising from excessive public debt, a danger connected with money, interest rates and taxation. Here the monetary effects are endogenous to the excessive debt.

"But though the injury that arises to commerce and industry from our public funds will appear, upon balancing the whole, not inconsiderable, it is trivial in comparison of the prejudice that results to a state considered as a body politic, which must support itself in the society of nations, and have various transactions with other states in wars and negotiations. The ill there is pure and unmixed, without any favorable circumstance to atone for it; and it is an ill too of a nature the highest and most important.

We have indeed been told, that the public is no weaker on account of its debts, since they are mostly due among ourselves, and bring as much property to one as they take from another. It is like transferring money from the right hand to the left, which leaves the person neither richer nor poorer than before. Such loose reasoning and specious comparisons will always pass where we judge not upon principles. I ask, is it possible, in the nature of things, to overburden a nation with taxes, even where the sovereign resides among them? The very doubt seems extravagant, since it is requisite, in every community, that there be a certain proportion observed between the laborious and the idle part of it. But if all our present taxes be mortgaged, must we not invent new ones? And may not this matter be carried to a length that is ruinous and destructive?

In every nation there are always some methods of levying money more easy than others, agreeably to the way of living of the people, and the commodities they make use of…. Duties upon consumptions are more equal and easy than duties upon possessions. What a loss to the public that the former are all exhausted, and that we must have recourse to the more grievous method of levying taxes!

It will scarcely be asserted, that no bounds ought ever to be set to national debts, and that the public would be no weaker were twelve or fifteen shillings in the pound, land-tax, mortgaged, with all the present customs and excises. There is something, therefore, in the case, beside the mere transferring of property from the one hand to another. In five hundred years, the posterity of those

now in the coaches, and of those upon the boxes, will probably have changed places, without affecting the public by these revolutions…. The funds, created and mortgaged, will by that time bring in a large yearly revenue, sufficient for the defense and security of the nation: money is perhaps lying in the exchequer, ready for the discharge of the quarterly interest: necessity calls, fear urges, reason exhorts, compassion alone exclaims: the money will immediately be seized for the current service, under the most solemn protestations, perhaps of being immediately replaced. But no more is requisite. The whole fabric, already tottering, falls to the ground, and buries thousands in its ruins. And this, I think, may be called the natural death of public credit; for to this period it tends as naturally as an animal body to its dissolution and destruction."

—"Of Public Credit," Economic Essays, 207–14.

In the following discussion of paper money, both private and governmental, Hume seems to say that endogenously produced paper money has value, but exogenously produced public money – exogenous in the sense that it is likely to be produced in excessive amounts – is quite destructive. Hume goes even farther, and says that the best form of a public bank is one that "locks up" its treasure, in the manner of Henry Simons' 100 percent reserve bank, in order that the temptation to generate cheap money is best resisted. He makes the suggestion that a benefit of paper money is that it allows us to reduce the circulation, but not the domestic quantity, of precious metals. By pushing that remark a bit, we might say that Hume here is making a point about endogenous money, to the effect that the public will demand some fixed amount of "real money" (fixed by the degree of economic development and activity), and that any amount in excess of that actually needed may be safely withdrawn from circulation.

"This [the dearness of things due to excessive quantities of money] has made me entertain a doubt concerning the benefit of banks and paper-credit, which are so generally esteemed advantageous to every nation. That provisions and labor should become dear by the increase of trade and money is, in many respects, an inconvenience; but an inconvenience that is unavoidable, and the effect of that public wealth and prosperity which are the end of all our wishes. It is compensated by the advantages, which we reap from the possession of these precious metals, and the weight, which they give the nation in all foreign wars and negotiations. But there appears no reason for increasing that inconvenience by a counterfeit money, which foreigners will not accept of in any payment, and which any great disorder in the state will reduce to nothing. There are, it is true, many people in every rich state, who having large sums of money, would prefer paper with good security; as being of more easy transport and more safe custody. If the public provide not a bank, private bankers will take advantage of this circumstance; as the goldsmiths formerly did in London, or as the bankers do at present in Dublin. And therefore it is better, it may be thought, that a public company should enjoy the benefit of that paper-credit, which always will have place in every opulent kingdom. But to endeavor artificially to increase such a credit, can never be the interest of any trading nation; but must lay them under disadvantages, by increasing money beyond its natural proportion to labor and commodities, and thereby heightening their price to the merchant and manufacturer. And in this view, it must be allowed, that no bank could be more advantageous, than such a one as locked up all the money it received, and never augmented the circulating coin, as is usual, by returning part of its treasure into commerce. A public bank, by this expedient, might cut off much of the dealings of private bankers and money-jobbers; and though the state bore the charge of salaries to the directors and tellers of this bank (for, according to the preceding supposition, it would have no profit from its dealings), the national advantage, resulting from the low price of labor and the destruction of paper-credit, would be a sufficient compensation. Not to mention, that so large a sum, lying ready at command, would be a convenience in times of great public danger and distress; and what part of it was used might be replaced at leisure, when peace and tranquility was restored to the nation."

—"Of Money," Essays, Moral, Political, and Literary

In the following discussion of the effects of foreign trade, we see how thoroughly Hume believed that a concatenation of real factors, including especially the mix of elements making up the "causes of labor" and the "quick march of the spirits" are the real driving force in economic evolution and progress. Money is notable for its absence here. In other argumentation, Hume will say that economic growth and change, from the agricultural to the industrial state, is augmented and paralleled by a move from barter to money assisted trade, but still the monetary dimension is subsidiary to the real processes underway. And so we may say that in his understanding of the many changes resulting from the evolutionary changes in the mix of real factors governing the advancement of interdependent international trade, money is endogenous in the sense of being secondary, both in importance and in sequence.

"If we consult history, we shall find, that in most nations foreign trade has preceded any refinement in home manufactures, and given birth to domestic luxury. The temptation is stronger to make use of foreign commodities which are ready for use, and which are entirely new to us, than to make improvements of any domestic commodity, which always advance by slow degrees, and never affect us by their novelty. The profit is also very great in exporting what is superfluous at home, and what bears no price, to foreign nations whose soil or climate is not favorable to that commodity. Thus men become acquainted with the pleasures of luxury, and the profits of commerce; and their delicacy and industry being once awakened, carry them on to further improvements in every branch of domestic as well as foreign trade; and this perhaps is the chief advantage which arises from a commerce with strangers. It rouses men from their indolence; and, presenting the gayer and more opulent part of the nation with objects of luxury which they never before dreamed of, raises in them a desire of a more splendid way of life than what their ancestors enjoyed. And at the same time, the few merchants who possessed the secret of this importation and exportation, make great profits and, becoming rivals in wealth to the ancient nobility, tempt other adventurers to become their rivals in commerce. Imitation soon diffuses all those arts, while domestic manufacturers emulate the foreign in their improvements, and work up every home commodity to the utmost perfection of which it is susceptible. Their own steel and iron, in such laborious hands, become equal to the gold and rubies of the Indies.

When the affairs of society are once brought to this situation, a nation may lose most of its foreign trade, and yet continue a great and powerful people. If strangers will not take any particular commodity of ours, we must cease to labor in it. The same hands will turn themselves towards some refinement in other commodities which may be wanted at home; and there must always be materials for them to work upon, till every person in the state who possesses riches, enjoys as great plenty of home commodities, and those in as greater perfection, as he desires; which can never probably happen."

—"Of Commerce," Selected Essays, 163–64.

Here below Hume gives a clear account of the real factors he thinks to dominate the rate of interest. It is an "exogenous money" story. Hume says the mere quantity of money does not control interest rates. This is in contrast to the "exogenous money view" in some elementary presentations of the "targets and instruments" story of a central bank's process of manipulating the national total of money and credit. Economists having this latter understanding, think the quantity of money has immediate and inverse (i.e. more money, lower rates and vise versa) effects upon interest rates. In this excerpt, Hume has a quantity theory view of prices, which some might say places him in the "exogenous money" camp. But the more fundamental, "exogenous money" view he begins to elaborate here is that the quantity of money and the interest rate are independent of one another, even in the fairly short run. Elsewhere he will tell us that saving and investment, driven by the multifaceted "causes of labor", the balance of which

changes dramatically as economic evolution goes forward, is the true determinant of the rate of interest.

”Nothing is esteemed a more certain sign of the flourishing condition of any nation than the lowness of interest: and with reason, though I believe the cause is somewhat different from what is commonly apprehended. Lowness of interest is generally ascribed to plenty of money. But money, however plentiful, has no other effect, if fixed, than to raise the price of labor. Silver is more common than gold, and therefore you receive a greater quantity of it for the same commodities. But do you pay less interest for it? Interest in Batavia and Jamaica is at 10 percent, in Portugal at 6, though these places, as we may learn from the prices of every thing, abound more in gold and silver than either London or Amsterdam.

Were all the gold in England annihilated at once, and one and twenty shillings substituted in the place of every guinea, would money be more plentiful, or interest lower? No, surely: we should only use silver, instead of gold. Were gold rendered as common as silver, and silver as common as copper, would money be more plentiful, or interest lower? We may assuredly give the same answer. Our shillings would then be yellow, and our halfpence white; and we should have no guineas. No other difference would ever be observed; no alteration on commerce, manufactures, navigation, or interest; unless we imagine that the color of the metal is of any consequence…. If the multiplying of gold and silver fifteen times makes no difference, much less can the doubling or tripling of them. All augmentation has no other effect than to heighten the price of labor and commodities; and even this variation is little more than that of a name. In the progress towards these changes, the augmentation may have some influence, by exciting industry; but after the prices are settled, suitably to a new abundance of gold and silver, it has no manner of influence.

An effect always holds proportion with its cause. Prices have risen near four times since the discovery of the Indies; and it is probable gold and silver have multiplied much more: but interest has not fallen much above half. The rate of interest, therefore, is not derived from the quantity of the precious metals. Money having chiefly a fictitious value, the greater or less plenty of it is of no consequence, if we consider a nation within itself; and the quantity of specie, when once fixed, though ever so large, has no other effect than to oblige every one to tell out a greater number of those shining bits of metal for clothes, furniture, or equipage, without increasing any one convenience of life.”

—“Of Interest,” Selected Essays, 177–79.

In the excerpt below, Hume is quite clear in telling us that interest rates and profit are mutual causes/effects of one another, and no one way causal direction can be discovered between them. This is certainly an “exogenous money” view.

”Low interest and low profits of merchandise are two events, that mutually forward each other, and are both originally derived from that extensive commerce, which produces opulent merchants, and renders the monied interest considerable. Where merchants possess great stocks…it must frequently happen, that, when they either become tired of business, or leave heirs unwilling or unfit to engage in commerce, a great proportion of these riches naturally seeks an annual and secure revenue. The plenty diminishes the price, and makes the lenders accept of a low interest. This consideration obliges many to keep their stock employed in trade, and rather be content with low profits than dispose of their money at an under-value. On the other hand, when commerce has become extensive, and employs large stocks, there must arise rivalships among the merchants, which diminish the profits of trade, at the same time that they increase the trade itself. The low profits of merchandise induce the merchants to accept more willingly of a low interest, when they leave off business, and begin to indulge themselves in ease and indolence. It is needless, therefore, to inquire which of these circumstances, to wit, low interest or low profits, is the cause, and which the effect? They both arise from an extensive commerce, and mutually

forward each other."

—"Of Interest," Selected Essays, 184–85.

Hume has a clear picture of the way bad money, or at least junior money in form of innovative bank credits, might drive out good money, or at least specie, in "Of the Balance of Trade" (Liberty Fund Essays, pgs.319 – 320). He attributes the scarcity of specie in Scotland to the widespread use of what we would call letters of credit, that allow merchants to "coin their houses", and that allow the nation to virtually multiply its currency – 5 thousand pounds is enabled to perform the work or six or seven. Nonetheless, the cost in the form of lost specie troubles Hume. This is a story of endogenous money – a circular causal process is at work, with initial changes in the nature and effective quantity of money causing a cascade of downstream consequences, and eventually feeding back, in an important and partially offsetting way, to the structural makeup of the market for money and credit.

The Hume references above as quoted in the Federal reserve article having the general title "Selected Essays" are to: (1993), Hume, Selected Essays, ed. Stephen Copley and Andrew Edgar (New York: Oxford University Press)