Gresham's Law or Gresham's Fallacy?*

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If a mint issues two distinct types of silver dollars, one containing, say, half as much silver as the other, will both coins be used as a medium of exchange? According to the popular version of Gresham's law—perhaps the most generally accepted and frequently cited proposition in economics—the answer is no; only one of the coins will circulate because bad money drives out good. In this case that means the lighter-weight silver dollar (*bad* because overvalued at the mint) will circulate while the heavier-weight coin (*good* because undervalued at the mint) will be hoarded.

Not all proponents of Gresham's law would agree with that answer, however. Many would likely say instead that to determine what happens to our two silver dollars they need more information, for they favor a more careful version of the law, one that includes an important qualification. Bad money drives out good, according to this version, but only when the ratio of the face (or par) values of the monies (the par price) is somehow the fixed rate at which these monies exchange. When that qualifier is true and the par price of the two monies differs from their market price, the good money disappears because selling it at its intrinsic value is more profitable than using it at face value as a medium of exchange. (See, for example, Friedman and Schwartz 1963, p. 27, n. 16.)

Neither of these versions of Gresham's law is adequate to answer our question about silver dollars or the more general question about what happens when the par and market prices of two monies differ. The short version of the law is simply contradicted by history. There have been many periods when bad money has not driven out good, periods when undervalued currency has instead circulated side by side with overvalued currency. But the qualified version of the law is not adequate either. It cannot explain the numerous exceptions to the popular dictum or predict a general result because it relies on the existence of a fixed rate of exchange that is different from the market price. We have found no evidence that such a fixed rate of exchange ever existed, and that is not surprising since it is hard to believe it ever could exist. If such a rate ever were managed—through a mint policy or a legal tender law, for example—it would imply potentially unbounded profits for currency traders at the expense of a very ephemeral mint or a very naive public.

We propose a more feasible qualification to the popular version of Gresham's law, one that depends on fixed transaction costs rather than a fixed rate of exchange. Bad money will drive good money out of circulation, we argue, but only when use of the good money at its market (nonpar) price is too expensive. Generally, since small change is expensive to use at a nonpar price, we expect small denominations of the money undervalued at the mint to be scarce while large denominations circulate at a premium. History seems to support our new version of Gresham's law.

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Gresham's Law—Two Inadequate Versions

First we describe several historical episodes that contradict the popular, unqualified version of Gresham's law. (For a variety of instances in which that version of the law appears to work, see Laughlin 1903, pp. 423–28.) We then consider in detail the argument that these are not true exceptions to Gresham's law because they do not take account of the fixed rate of exchange qualification.

Some Historical Exceptions

Finding exceptions to the popular version of Gresham's law is not difficult. Examining only the nineteenth-century U.S. experience and one seventeenth-century English experience with bimetallism, we discover several instances where bad money did not drive out good. What makes these exceptions so damaging to the proposition is that they occurred during periods for which Gresham's law is often cited.

□ *1792–1853—Two U.S. Exceptions*

The period between 1792 and 1853 contains two clear exceptions to Gresham's law. One is the U.S. experience with the Spanish milled dollar. This was a heavier coin than the U.S. silver dollar, containing about 373.5 grains of pure silver compared with 371.25 grains in the U.S. dollar, and over this period it had legal tender standing. However, it was not driven out of circulation. The Spanish dollar was popular in the U.S. colonial period and remained current at least until the dramatic increase in world gold production in the late 1840s. Laughlin (1896, p. 54) estimates that there were over 5 million Spanish dollars and parts of dollars in 1830, 22 percent of the value of all coins circulating in the United States. From 1792 to 1811, Taxay (1966, p. 125) reports, the Spanish dollar circulated at a premium over the U.S. dollar, a premium ranging from 0.25 percent to 1 percent. It continued to circulate at a premium in later years, according to William H. Crawford, secretary of the Treasury in 1819 (quoted in Laughlin 1896, p. 53, n. 1): "Spanish milled dollars compose the great mass of foreign silver coins which circulate in the United States, and generally command a premium when compared with the dollar of the United States." In this instance, the bad money (U.S. silver coins) failed to drive out the good (Spanish dollars). Instead of being exported or hoarded, this good money circulated at a premium.

The other exception to Gresham's law during this period involves just monies coined by the U.S. mint. These were gold and silver coins, whose relative status (as good and bad money) in these years changed. This change provides a test of Gresham's law that it appears to fail.

For its first 42 years, the U.S. mint overvalued silver. On April 2, 1792, Congress passed a coinage act establishing a national mint and authorizing the issuance of gold and silver coins.[1] The act established a ratio of 15 to 1, the par price, between silver and gold coins, which was the market price in 1792. Soon after the passage of the act, however, the market price for gold rose, and it remained higher than the par price until June 24, 1834, when the second major coinage act raised the par price to 16 to 1. Between mid-1792 and mid-1834, therefore, gold was the undervalued (good) money and silver was the overvalued (bad) money.

After mid-1834 and until the early 1850s, when Congress reduced the silver content of all small-denomination coins, the status of gold and silver currency was reversed. The ratio of 16 to 1 was higher than the market price for gold and remained so for the rest of the century. Thus gold became the mint's overvalued money and silver the undervalued.

Gresham's law would predict from these facts that the only current coinage would be silver before 1834 and gold thereafter. But the Gresham's law prediction would be wrong.

Between 1793 and 1846,[2] the U.S. mint coined a substantial amount of undervalued bullion. The accompanying table presents the dollar values of gold and silver coins minted during the two subperiods. When gold was undervalued at the mint (1793–1833), 25 percent of the coinage was still gold; when silver was undervalued at the mint (1834–46), nearly half—45 percent—of the coinage was silver. If there was an obvious profit to be made coining silver and melting gold coins before 1834 and coining gold and melting silver coins thereafter, the opportunities do not appear to be reflected in U.S. coinage statistics.[3]

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[1] Gold coins were issued in the larger denominations, the largest being the $10 coin, the eagle, and the smallest being a quarter eagle. Silver coins were issued in the smaller denominations: the half disme (comparable to our nickel), the disme (comparable to our dime), the quarter, the half-dollar, and the dollar. The act also allowed individuals to bring unlimited amounts of gold and silver bullion to the mint and have it coined without charge; if they demanded immediate exchange, a charge of 0.5 percent would be levied.

[2] The dramatic increase in world gold production in the late 1840s led to large amounts of gold being coined at the U.S. mint. Since Gresham's law cannot be credited with the discoveries that led to the increased gold production, we consider the coinage data only through 1846.

[3] Proponents of Gresham's law might argue that even though gold was minted it never circulated; it was only exported to countries that valued gold by weight. However, estimates of exported coins before 1834 suggest that roughly the same dollar amount of silver was exported as gold. Data on gold and silver exports as of January 1, 1834, and on annual gold prices and gold and silver coinage are contained in an Appendix that is available from the authors on request.

U.S. Coinage of Gold and Silver, 1793–1846

Period	Dollar Values			Percentages of Total Minted	
	Total	Gold	Silver	Gold	Silver
1793–1833 (Gold Undervalued)	$48,100,975	$11,825,892	$36,275,083	25%	75%
1834–46 (Silver Undervalued)	$73,331,479	$40,534,060	$32,797,419	55%	45%

Source of basic data: U.S. Department of the Treasury 1981, pp. 16–17, 25–27

□ *Two Later Nineteenth-Century U.S. Exceptions*
Continuing on in U.S. history, we find two more exceptions to the simple version of Gresham's law, most notably, experiences during the early part of the greenback era (1862–79) and the time just after the Bland-Allison Act of 1878.

Greenbacks were legal tender notes issued by Congress to help finance the Civil War. To be consistent with Gresham's law, they should have driven both gold and silver out of circulation, for greenbacks were the bad money of their day. By the act of February 25, 1862, Congress was authorized to issue $150 million worth of greenbacks. The two subsequent acts of July 11, 1862, and March 3, 1863, authorized an additional $300 million. Because of speculation on the outcome of the war and resumption, the gold price of these notes fell from their par value when first issued to 91 cents on the dollar by June 27, 1862, and to 84 cents by July 22, 1862. Six months later it had fallen to 68 cents, and by July 22, 1864, it had fallen below 40 cents. (For a complete list of daily price quotes for greenbacks, see Mitchell 1903, Appendix A, Table 2.) Over most of the early Civil War years, therefore, specie was the undervalued money and greenbacks were the overvalued money (in this instance, overvalued by the U.S. Treasury, which was accepting all legal tender money at par).

Did greenbacks drive out specie? Some textbooks claim they did (Prager 1982, p. 32, for example), but Moses, writing in 1892, makes it clear that in the West, despite the presence of greenbacks, gold remained the unit of account and a medium of exchange. He says that a contributor to the *San Francisco Daily Herald* wrote that greenbacks were also current there, but at a discount (Moses 1892, p. 18): "A writer in this journal, February 16, 1863, found very little difficulty arising from the use of legal tender notes; for they had a market value, and most people were ready to receive them at that value." In the East it appeared that the money system was reversed. There, according to Moses (1892, p. 15), greenbacks were accepted as the unit of account and specie circulated at a premium.

The other nineteenth-century U.S. example we present that contradicts Gresham's law is the coexistence of the trade and Bland dollars in the early 1880s. Both of these were U.S. silver dollars, but the lighter-weight Bland dollar failed to drive out the heavier-weight trade dollar.

The trade dollar was authorized by the U.S. coinage act of 1873 for a very specific purpose: to increase trade with China, a nation that particularly favored silver. The act authorized the minting of dollars containing 420 grams of silver, more than any other silver coin in existence, and by 1878 close to 36 million had been minted. Because Congress had intended the trade dollar only for export, it revoked the trade dollar's legal tender status in 1876. Nevertheless, in 1877 many of these dollars were circulating in the United States.

In 1878, under the Bland-Allison Act, Congress authorized the minting of another silver dollar, the so-called Bland dollar. (Congress had suspended the minting of all silver dollars except the trade dollar in 1873.) The new dollar was to contain less silver than the trade dollar (only 412.5 grams), but it was given legal tender status.

The mint was allowed to issue from 2 million to 4 million such dollars per month; within two years almost 50 million had been coined.

By 1880, therefore, the United States had two silver dollars of different weight. If Gresham's law had been operative, the trade dollar should have disappeared. In fact, both coins circulated (Laughlin 1896, pp. 255–58). The Bland dollar was current at par; the trade dollar apparently circulated at its gold price, which varied around 93 cents. Contrary to Gresham's law, the lighter-weight Bland dollar not only failed to drive out the heavier-weight trade dollar but also managed to circulate at a higher price than the heavier-weight dollar.

□ *One Irresistible English Exception*

Finding exceptions to Gresham's law in nineteenth-century U.S. history has not been very hard. Although we suspect that many more exceptions could be found in other periods as well as in other countries, we did not investigate all the possibilities. The examples we have described are enough to make our point that bad money does not necessarily drive out good money. We did, however, come across one other exception that deserves mentioning because it is such an obvious contradiction to the popular version of Gresham's law. This exception occurred in seventeenth-century England, when the English mint began producing a new gold coin along with the silver shilling. The new coin, known as the guinea, quickly became the undervalued currency at the mint but circulated at a premium.

The guinea was first issued in 1663 at the mint price of 20 shillings, yet it never circulated at that price. The significance of a mint price in seventeenth-century England was similar to what it was to become in nineteenth-century America. The guinea, although not inscribed with any shilling denomination, was legal tender for all payments, including taxes, at 20 shillings. In 1663 this mint price was well below the guinea's market price; that is, the guinea was undervalued at the English mint, and the shilling was overvalued. Gresham's law, however, apparently did not operate. Consider the account of Charles Jenkinson (1805, p. 78), the first earl of Liverpool, on the price at which the guinea circulated:

> A Guinea . . . was ordered in the Mint Indenture to pass for 20*s*.; but it immediately became current at a higher rate, by general consent, without any authority from Government. Mr. Locke, and other writers, who lived during these times, asserts, that during the reigns of Charles II. and James II. the Guinea passed at from 21*s*. to 22*s*.; and Mr. Locke further adds . . . that the Gold Coins varied in their value "according to the current rate;" that is, according to the relative value of Gold to Silver at the market. The subjects of this country paid no attention on this occasion to the rate set upon these Coins in the Mint Indenture.

For many years, the premium was no more than 2 shillings, but by 1690 the guinea was trading for 30 shillings, that is, with a 10-shilling premium. Part of the reason for the premium was that the public commonly clipped the hammered silver coins. This led to the recoinage act of 1692, which called in all shillings to be reminted and milled (grooved on their edges) so that they could not be profitably clipped. The premium on the guinea fell from 10 to 1.5 after this recoinage of the shilling. The price of 21.5 shillings was then made the new mint price, which remained above market rates thereafter.[4]

A Questionable Qualification

Many advocates of Gresham's law would probably object that we have misunderstood their proposition, that the law is really more complicated than the simple popular version. That is, bad money drives out good only if there is a fixed rate of exchange at par. They would argue that we have not uncovered any true exceptions to the law because we ignored this fixed rate of exchange qualification; we have instead only uncovered periods when the rate of exchange was not fixed.

In a sense, these advocates would be right. Over these periods a fixed rate did not exist, but we do not believe it did or would in any period. Claiming that the simple form of Gresham's law applies only under a fixed rate of exchange is not a complete explanation of what happens when the market and par prices of two monies differ. One must also explain how the fixed rate prevails when it is not the market rate. Two explanations of how this occurs have been offered, one based on a mint exchange policy, the other on an implication of legal tender laws. Both explanations, however, are suspect because there has never been either a mint policy or a legal tender law that fixed the exchange rate. Moreover, we doubt such a fixed rate is even feasible since it leads to potentially unbounded losses for the mint or the public.

If a mint is to fix the exchange rate at par so that

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[4]Sir Isaac Newton, who was master of the mint in the early part of the eighteenth century, is frequently blamed for England's conversion to a gold standard because he had convinced the English authorities to lower the legal price of the guinea to 21 shillings. The blame seems misplaced. The legal price of the guinea had been above the market price well before Newton took office, and silver had been leaving the country at least as early as the turn of the century. Newton estimated that in 1717 the guinea was worth only about 20.8 shillings in the market, and he recommended that the legal price be dropped from 21.5 to 21.0 (Breckinridge 1903, p. 45). He effectively saved the English Treasury 0.5 shilling on each guinea it received for taxes. Newton may thus properly be blamed for raising taxes, but not for the silver exportation that had been going on long before he came to office.

Gresham's law applies, the mint must be willing to exchange on demand one money for the other at the par price. We refer to this as a *liberal coinage policy.* That mints really operated under such a policy, though, is doubtful for two reasons. One is that we know of no mints that did. Consider, for example, Section 14 of the U.S. Coinage Act of 1792 (Laughlin 1896, pp. 300–301): "As soon as the said bullion shall have been coined, the person or persons by whom the same shall have been delivered, shall, upon demand, receive in lieu thereof coins of the *same* species of bullion which shall have been so delivered, weight for weight, of the pure gold or pure silver therein contained" (emphasis added). Thus at least while this act was binding, the U.S. mint did not exchange gold for silver on demand at the price of 1 ounce of gold for 15 ounces of silver. Individuals bringing silver bullion to the mint could expect only silver coins in return; likewise, those bringing gold bullion could get only gold coins. Furthermore, we have been unable to find records of any mint that even tried to operate under a liberal coinage policy. Of course, a few such mints may have existed, but even if they did, that would not be enough to justify the innumerable references to Gresham's law.

The second reason to doubt that mints operated under a liberal coinage policy is that we can easily construct models in which such a policy is not feasible. (An example is given in the Appendix of this paper, which is available on request.) These models demonstrate what seems quite obvious. If there is a large enough outstanding stock of both commodity monies available when the mint offers a bargain price for one of the monies, then the mint will quickly run out of resources. In such a situation, assuming the mint has limited resources, the liberal coinage policy will quickly be revoked or the mint will quickly go out of business.

Some advocates of the qualified version of Gresham's law recognize that mints did not fix the exchange rate of two monies at par. They claim, however, that legal tender laws did. In this claim, too, currency traders are supposedly offered the possibility of large profits, but now it is by trading with a general public who are accepting all currency at the par price rather than the market price. Laughlin (1903, p. 431) describes the view that profits can be obtained in this way: "Supposing the kinds of money in question to have a ratio to each other in the market different than they have in the legal ratio, then it will be seen at once that the cheaper will not drive out the dearer unless they are equally a legal tender for common uses. The opportunity to earn the profit obtained by changing one for the other depends on their being equally acceptable at some places of receipts."

This legal tender explanation for Gresham's law is just as suspicious as the explanation based on a liberal coinage policy. Like mint policies, legal tender laws did not fix the exchange rate of two monies at their face value. Legal tender laws say that the public must accept in payment for all transactions (debts, taxes, and purchases of goods and services) particular monies at their legal (par) price. No provision in such laws, though, prevents the public from implicitly quoting prices in the legally overvalued money. If prices are quoted in the bad money, merchants and creditors would be more than willing to accept the good money at par. They would be willing, in fact, to pay a premium to those consumers and debtors who used the good money. These informal arrangements would not be in violation of the legal tender laws, and they would leave little, if any, profitable opportunities for currency traders. Thus legal tender laws provide no reason for good money to disappear from circulation.

That they provide no rationale for Gresham's law is also not surprising. If legal tender laws somehow fixed the price at which the public minted and exchanged monies, currency traders could earn potentially unbounded profits at the expense of a very simple-minded public. As long as the public naively minted good money to use at par, currency traders' opportunities would be unlimited.

Gresham's Law Revised—Denomination Determines Good Money's Fate

We have cited historical examples to show that there are numerous exceptions to the popular claim that bad money drives out good. We have also argued that the explanations offered for these exceptions are not convincing. Nevertheless, we do not mean to imply, as others have suggested, that bad money never drives out good. We do mean to point out, though, that when it does and how it does still require explanation.[5] What can confidently be expected to happen when two monies exist and their market and par prices differ? We offer a version of Gresham's law that relies on fixed transaction costs rather than a fixed exchange rate and that predicts what happens much better than current explanations.

A New Qualification

In arguing against the coinage act of 1853 to reduce the weight of U.S. small-denomination silver coins, Andrew

[5]In an attempt to salvage the fixed exchange rate version of Gresham's law in their model of commodity money, Sargent and Wallace (1983, pp. 178–81) impose quite restrictive legal restrictions. In their model, by allowing the public to use only paper receipts (for gold and silver) instead of coins as a medium of exchange, the government can influence which commodity is used in exchange and which is used in production. However, such legal restrictions have seldom been imposed; they probably never have been before the twentieth century.

Johnson (quoted in Laughlin 1896, p. 85 and its n. 2) anticipated a Modigliani-Miller kind of irrelevance theorem:

> Congress can not regulate the value of the coin. . . . If we can, then . . . I ask the House and the country if the philosopher's stone has not been discovered? . . . The commercial world will take the coins for what they are intrinsically worth, and not for what the legal stamp represents them to be worth.
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> . . . So far as coin is concerned, the changing of our standard of gold and silver has no more effect upon the gold and silver coinage of the United States than a change in the standard of weights and measures would have upon the price of our cotton or wheat.

Johnson's version of the Modigliani-Miller theorem is that mint prices are irrelevant to what becomes the rate at which two currencies exchange; the market can easily price coins by their weight instead of by their face value.

Johnson's argument evidently did not convince many in Congress because the act was passed and the silver content of small-denomination coins was reduced. Presumably to Johnson's surprise, the intent of the law was realized. The new lighter-weight coins had no trouble circulating at their par value. While the older, heavier-weight coins disappeared from circulation, the newer coins were quite visible.

Hence, just as the unqualified version of Gresham's law ascribes too much power to government decrees, Johnson's irrelevance claim ascribes too little. A crucial question thus seems to be, Why does undervalued money circulate side by side with overvalued money in some economies but not in others? Our answer depends partly on the existence of a legal tender law, but mostly on the costs of using a currency at a nonpar price.

A legal tender law plays a role in answering our question because it determines which money serves as the unit of account, that is, which money is used at par prices. The reasoning is the same as that which we used earlier to explain why this law does not require currency to exchange at par. According to a frictionless general equilibrium theory, what serves as the unit of account, or numeraire, is indeterminate; one good serves this function as well as another. If both the undervalued and the overvalued currency must be accepted for all payments at their par values, however, agents will set their price in the overvalued currency and be more than willing to accept the undervalued at par. A legal tender law can thus be viewed as placing transaction costs on undervalued money when it is used as the unit of account, thereby breaking the indeterminacy implied by general equilibrium theory in favor of the overvalued money.

Even though the existence of a legal tender law might explain which money becomes the unit of account, it does not predict when undervalued money circulates at a premium and when it does not. We argue that whether or not a currency circulates at a premium depends on the costs incurred in paying such premiums. Clearly, if the costs are zero, Johnson would have been right. The transaction costs of paying a premium may easily not be zero, though, especially for small-denomination currency. And when costs are nonnegligible, the public will usually be better off bundling small-denomination currency, that is, accumulating and using large quantities of it. As a result, small-denomination coins will more or less disappear from circulation.

This tendency for small-denomination currency to disappear stems from the fact that paying premiums on small-denomination currency tends to be more costly than paying them on large-denomination currency. That is, there are economies of scale in using currency at nonpar prices. It is unlikely that currency systems will have a continuum of denominations: there have rarely been fractional coins smaller than a penny. This means that paying the fractional part of any premium usually involves some rounding. And that becomes especially costly on small denominations. Consider a silver dollar, for example, that is worth 104.2 cents in gold. The silver dime is then worth 10.42 cents and the silver nickel 5.21 cents. Rounded up, the premium on the silver dollar would be 5 cents. The premium on a dollar's worth of dimes or nickels (used in individual transactions), though, would be even more: as much as 10 cents (1 cent on each dime) or 20 cents (1 cent on each nickel). Generally, the smaller the denomination, the more costly it is to pay the fractional part of a premium.

Because of this additional cost, traders are not likely to pay premiums on individual small-denomination coins. Thus the public is not likely to use these coins as a medium of exchange and is, rather, likely to collect them into large quantities that will exchange at a full premium; that is, individual units of small-denomination currency will tend to be bundled and taken out of circulation.

Confronting History

To test our version of Gresham's law, we return to three of the nineteenth-century U.S. periods we examined earlier, all of which had some type of legal tender law. In these periods, currency overvalued at the mint tended to be the unit of account. Undervalued large-denomination currency circulated at a premium while undervalued small-denomination coins disappeared.

During the silver standard period (1792–1833), of the undervalued currency, only the large denominations

seem to have circulated. At that time, undervalued large-denomination currency consisted of gold coins and Spanish dollars that contained more silver than the U.S. dollar. While most of the gold was exported, the Spanish dollar circulated for many years at a premium (Taxay 1966, p. 231; Laughlin 1896, p. 53, n. 1). The small change available during this period consisted of U.S. silver coins and a substantial amount of Spanish coins. The small-denomination Spanish coins contained less silver than the U.S. coins (just the opposite relationship to that between the Spanish and U.S. dollars), and, as our hypothesis predicts, the undervalued small U.S. coins had trouble circulating. Robert Patterson, director of the U.S. mint, provides evidence of this in his April 2, 1807, letter to President Jefferson (quoted in Taxay 1966, p. 126):

> Small Spanish Silver coins are extremely plenty, . . . and as their nominal and circulating value is considerably above their real intrinsic value, they will neither be sent to the Mint, used in Manufactures, nor carried out of the country, but indeed are daily increasing by importation. Small Coins of the U. States will therefore be less necessary for the sake of change, while foreign small silver continues to be a circulating medium. We lately struck at the Mint nearly a quarter of a million of Silver dismes: it is however with the *utmost difficulty,* that we can prevail upon any of the Banks to accept of them, and in fact nearly half the number still remain in our vaults. [Emphasis added]

Patterson's letter suggests that at least small transactions were implicitly stated in Spanish prices; that is, small Spanish silver coins circulated at their nominal value. For U.S. silver coins to circulate, therefore, they would have had to exchange at a premium, and that probably was not worth the effort for most people. That the mint had difficulty getting banks to use this money, therefore, is consistent with our version of Gresham's law.

Our other two periods also generally support our prediction for undervalued large- and small-denomination currency. In both periods the undervalued small-denomination currency tended to disappear from circulation. After silver became the undervalued currency in 1834, the United States developed a small-change shortage that led to an 1853 act authorizing the mint to produce lighter-weight silver coins. The problem recurred when greenbacks were introduced in 1862. These notes depreciated so much that small-denomination silver coins again became undervalued, and again they disappeared. Yet in at least one of these periods, some undervalued large-denomination currency managed to circulate, and not at face value. The undervalued silver dollars did not circulate much in either period. According to Laughlin (1896, p. 82), they completely disappeared well before the 1853 act. However, as noted earlier, in the East during the greenback era, while the overvalued greenbacks exchanged at par, an undervalued money, gold, "was the fancy stock" (Moses 1892, p. 15): it circulated at a premium.[6]

Summary

Standard economic theory predicts that in equilibrium only one price for a good can prevail. Thus when the par price of two monies is not the same as the market rate of exchange, either one of the monies does not circulate at par or one does not circulate at all. The popular claim is that, when the par price is out of line with the market price, the money overvalued at the mint drives out the undervalued money. This claim has become generally accepted and is known as Gresham's law.

We have argued that the popular version of this proposition does not deserve its status as a law because it has too many unexplained exceptions. An examination of only a small part of U.S. and English coinage history reveals episodes that do not conform to the claim's prediction. In many instances, both bad and good money appear to have been current.

Moreover, the qualified version of the law is unsatisfactory. Its explanation for the apparent exceptions to the simple version, based on the lack of a fixed rate of exchange, is suspect because it is doubtful that such a rate ever existed or ever could have existed. There is no evidence that any mints ever fixed the exchange rate at par, and it is unlikely that mints would ever try. Nor did legal tender laws fix exchange rates, and we doubt they ever could.

We have gone on to present a new version of Gresham's law that seems more reasonable and works much better than current versions: Bad money drives good money out of circulation only when the costs of using the good money at a premium are significant.

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[6]Some of the Bland dollar experience does not seem consistent with our explanation. The Bland dollar was the overvalued money in the 1880s, and it circulated at par as we predict. The undervalued gold currency also circulated in this period. However, it did so at par, not at a premium. (See Laughlin 1896, pp. 255–58, for one explanation of why this occurred.)

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