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THE CONTINENTAL DOLLAR:
HOW MUCH WAS ISSUED AND WHAT HAPPENED TO IT?

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ABSTRACT

The U.S. Congress issued paper money called Continental Dollars to finance the American Revolution. The story of the Continental Dollar is familiar to all -- excessive amounts were issued causing hyper-inflation. It became worthless and was forgotten. However, the details of this story, including its veracity, are less well known. Scholars even disagree over how much was issued. Evidence is gathered to establish the exact amount and time path of Continental Dollars emitted and then remitted to the U.S. Treasury and burned. Why some Dollars were hoarded rather than trashed between 1779 and 1790 is also documented.

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The Continental Dollar: How Much Was Issued And What Happened to It?*

The U.S. Congress issued paper money called Continental Dollars to finance the American Revolution. The story of the Continental Dollar is familiar to all—excessive amounts were issued causing hyper-inflation. It became worthless and was forgotten. However, the details of this story, including its veracity, are less well known. Scholars even disagree over how much was issued. Evidence is gathered to establish the exact amount and time path of Continental Dollars emitted and then remitted to the U.S. Treasury and burned. Why some Dollars were hoarded rather than trashed between 1779 and 1790 is also documented.

From 1775 through 1779 the U.S. Congress financed the American Revolution largely by issuing fiat paper money called Continental Dollars (Ferguson, 1961, p. 44). The basic story of the Continental Dollar is familiar to all—excessive amounts were issued leading to hyper-depreciation of Continental Dollars in terms of specie dollars and to hyper-inflation of prices in Continental Dollars. In 1780 Congress officially recognized the depreciation of the Continental Dollar by allowing current payments to the Federal Government to be credited at the rate of 1 dollar in specie being equal to 40 Continental Dollars. In effect, Congress partially defaulted on the Continental Dollar. In the marketplace Continental Dollars depreciated by even more. Soon they were worthless. “Not worth a Continental” became a common derogatory phrase (Atack and Passell, 1994, p. 72; Phillips, 1866, pp. 245-251). Continental Dollars ceased to circulate as currency after May of 1781 and were forgotten. In 1790 Congress finally redeemed what were left at 100 Continental Dollars to 1 dollar in government bonds. But few Continental Dollars (only 3 percent of the total emitted) were turned in and exchanged for government bonds, presumably because most had been trashed as worthless earlier.

The details, including the accuracy, of this story are less well established. Scholars even disagree over how many Continental Dollars were issued—disagree by

over 50 percent. In addition, what happened to the Continental Dollar after the last were emitted in 1779 is not well documented. Were most indeed trashed (thrown away or used as wallpaper), or were most remitted to the government and so redeemed somehow, or were most held as speculative investments into the 1790s? How Congress treated the future disposition of the Continental Dollar after 1779 is also not well understood. What signals of future redemption did it send between 1779 and 1790? What were the incentives to hold Continental Dollars as a speculative investment in this period?

Evidence is gathered to reconcile past estimates and establish the exact amount and time path of the emission of Continental Dollars. Evidence is also gathered to better establish what happened to the Continental Dollar after 1779. The amount remitted to the U.S. Treasury and burned between 1779 and 1790 is documented. Evidence is also presented to show why people may have held onto Continental Dollars as a speculative investment rather than trashing or remitting them—an investment that while not eventually paying off was not unreasonable given the information at the time.

The Emission of Continental Dollars, 1775-1779

The total amount of Continental Dollars emitted by the U.S. Congress during the American Revolution is not well established (Ferguson, 1961, p. 29, fn. 13). A variety of estimates have been offered in the literature, see Figure 1. For example, in the modern literature the total amount reported as emitted ranges from \$204 to \$250 million (e.g. see Atack and Passell, 1994, p. 71; Calomiris, 1988, p. 58; Ferguson, 1961, pp. 28-30, 67; Hughes and Cain, 2007, p. 79; Michener, 1988, p. 690; Newman, 1997, pp. 58-69; Perkins, 1994, p. 97; Swanson, 1963, p. 36; Tindall, 1988, p. 226). These estimates are derived from estimates ranging from \$191.5 to \$387.5 million found in the older

authoritative literature (e.g. see *American Almanac*, 1830, p. 183; Bolles, 1969, v. 1, pp. 31-88; Boyd, 1954, v. 10, pp. 42-43; Breck, 1843, pp. 8, 15; Bronson, 1865, pp. 88-89, 112-115; Bullock, 1895, pp. 135, 174, 177; Elliot, 1843, pp. 8-9, 11; Gouge, 1833, II, p. 25; Harlow, 1929, pp. 50-51; Hepburn, 1967, p. 16; Nourse, 1828, p. 7; Phillips, 1866, pp. 198, 199; Ratchford, 1941, p. 37; Sumner, 1968, v. 1, p. 98).

[Place Figure 1 Here]

Appendix Table 1 presents these estimates and reconciles them with each other and with the original evidence in the *Journals of the Continental Congress* (*JCC* hereafter).¹ Some of these estimates suffer from errors of addition, some from errors of omission, some from errors of transcription, and some from errors of definition. For example, Thomas Jefferson's 1786 table of emissions omits \$16 million that were in fact emitted between July of 1775 and February of 1777 (Boyd, 1954, v. 10, pp. 42-43). This error of omission was repeated in the report given to the 28th Congress in 1843 (Elliot, 1843). Elliot in turn is one of the primary sources used by Ferguson (1961). Bronson (1865, pp. 113-114) erroneously includes \$500,000 as a new emission by Congress on November 2, 1776 when in fact this sum, while mentioned, was not actually a new emission (*JCC*, v. 6, p. 918). Bolles (1969, v. 1, pp. 42-54) in his narrative account of emissions omits \$5 million from May of 1776 that in fact were emitted. Phillips (1866, pp. 198-199) makes several transcription errors and Bullock (1895, pp. 135-136) makes an error in addition of \$9.95 million when summing his entries—errors left uncorrected by subsequent scholars. Finally, the very high estimate of \$357 to \$387.5 million in the *American Almanac* (1830, p. 183), Elliot (1843, p. 11), Gouge (1833, II, p. 250), and Hepburn (1967, p. 16), besides having a somewhat mysterious provenance, appears to

count all U.S. Treasury disbursements measured in Continental Dollars as the unit of account and not the emission of Continental Dollars *per se*.² Correcting these errors, as well as accounting for the rounding of numbers by some scholars, goes some way toward reconciling the different estimates of total emissions given in the literature.

One point of discrepancy remains, and it is by far the main source of variation in the estimates of total emissions reported across the literature. Because of extensive counterfeiting, Congress on January 2, 1779 called in “...the whole emissions of May 20, 1777, and April 11, 1778.” These old bills were to be exchanged for new bills—with the old bills being “examined and burned.” On January 14, 1779 Congress authorized a total of \$50,000,400 in bills of a new design “...to be emitted for exchanging others, agreeable to the resolutions of the 2nd instant [the aforementioned May 20, 1777 and April 11, 1778 emissions], *or for supporting the war the ensuing year...*” (*JCC*, v. 13, pp. 22, 64-65—italics added) How much of this emission was swapped for old bills, thus not adding to the total emissions outstanding, and how much was new spending *for supporting the war the ensuing year*, thus adding to total emissions outstanding, was not recorded.

Lacking direct evidence on this division, guesses in the literature vary widely—see Figure 1 and Appendix Table 1. For example, Nourse (1828, p. 7) and Michener (1988, p. 690) count the entire January 14, 1779 emission as new when reporting the total amount of Continental Dollars emitted by Congress. In effect, they are reporting total printings of Continental Dollars or gross emissions (and do so correctly) rather than reporting total net new emissions outstanding. However, total printings *per se* are largely meaningless numbers for assessing the financial and economic impact of the Continental Dollar. Information on the total net new emissions outstanding is needed. And to assume

that none of the January 14, 1779 bills were swapped for old bills and so were all net new emissions is clearly erroneous as the *JCC* (v. 13, pp. 53, 98-99, 140, 255, 259, 302, 392, v. 14, p. 731, 774-775, 817, 820-821, 846, 881, 943; v. 15, pp. 1431, 1436) documents a considerable number of these new bills being exchanged for old bills.

Most estimates in the literature attempt to get at total net new emissions outstanding and do so by netting out some portion of the January 14, 1779 emission, i.e. guessing how many were swapped for old bills. For example, Harlow (1929, pp. 50-51) assumes that all \$50,000,400 was exchanged for old bills leaving no net new emissions from this authorization. No justification, however, is provided for this assumption.

One obvious question is how many old bills were eligible to be swapped for new bills? The authorizing legislation of January 2 and 14, 1779 explicitly lists the entire emissions of May 20, 1777 and April 11, 1778 and no other emissions as eligible for exchange. Thereafter, only these two dates were mentioned, and mentioned often, in reference to exchanging old bills for the new bills of the January 14, 1779 emission (see *JCC*, v. 13, pp. 21-22, 53, 65, 74, 98, 129, 140, 255-256, 259, 302; v. 14, pp. 557, 695, 731, 774-776, 795-796, 817, 820-821, 846, 881, 943; v. 15, pp. 1186, 1431, 1436, 1451-1452; v. 16, p. 312; v. 19, p. 430). Scholars, however, differ over how to interpret the emissions of May 20, 1777 and April 11, 1778 in terms of the total amounts eligible for exchange.

Bullock (1895, pp. 135-136) assumes that each authorization date represents a unique emission. Because only \$5 million was authorized on May 20, 1777 and another \$5 million was authorized on April 11, 1778, he assumes that only a total of \$10 million was eligible for exchange.³ Assuming all \$10 million was so exchanged would leave

\$40,000,400 out of the \$50,000,400 authorized on January 14, 1779 as a net new emission. This interpretation, however, is dubious merely on the grounds that Congress knew the size of the emissions authorized on May 20, 1777 and on April 11, 1778 and if they really only totaled \$10 million, the authorization of \$50 million to exchange dollar-for-dollar with this \$10 million would seem out of line. Congress had never authorized more than \$10 million in net new emissions on a single date before.

By contrast, Newman (1997, pp. 64-69) assumes that authorization dates do not represent unique emissions. A given emission represents all authorized amounts—even if authorized on different dates—that were printed with the same cut and in the same design and style, i.e. that were indistinguishable from emissions on other authorization dates. As such, he considers the emission of May 20, 1777 as including not only the amount authorized on May 20, 1777 (\$5 million) but also that authorized on August 15, November 7, and December 3 of 1777 and on January 8 and 22, February 16, March 5, and April 4 and 18 of 1778 (an additional \$11.5 million). The bills from these separate authorization dates are all indistinguishable from one another, e.g. all have printed on them “...*according to a Resolution of CONGRESS, passed at Philadelphia, May 20, 1777.*” And they are distinguishable from all other emissions of Continental Dollars.

Likewise, Newman (1997, pp. 64-69) considers the emission of April 11, 1778 as including not only the amount authorized on April 11, 1778 (\$5 million) but also that authorized on May 22, June 20, July 30, and September 5, 1778 (an additional \$20 million). The bills from these separate authorization dates are all indistinguishable from one another, e.g. all have printed on them “...*according to a Resolution passed by Congress, at Yorktown, 11th April, 1778.*” And they are distinguishable from all other

emissions of Continental Dollars.

In total, then, the emissions of May 20, 1777 and April 11, 1778 that were to be called in and exchanged for the new bills of the January 14, 1779 emission amounted to \$41.5 million. This interpretation also accords with how Ferguson (1961, p. 29, fn. 13) evaluated these emissions.⁴ If all of these amounts were so exchanged, that would leave \$8,500,400 out of the \$50,000,400 authorized on January 14, 1779 as a net new emission—an amount clearly within the \$5 to \$10 million typical of net new emissions authorized on specific dates by Congress, see Appendix Table 1.⁵ This is the number for the January 1779 emission used in Figure 1 for the *JCC* estimate.

The language of the authorizing emissions in the *JCC* supports Newman's (1997, pp. 64-69) interpretation. The May 20, 1777 emission differed from what was emitted before in that it had a new date (May 20, 1777) printed on the bills (*JCC*, v. 7, p. 373). The next nine emissions authorized (August 15, November 7, and December 3 of 1777; January 8 and 22, February 16, March 5, and April 4 and 18 of 1778) all carried the same instructional language, namely "...that the bills shall, excepting the numbers, be of the same tenor and date as the emission now executing, be numbered from the last number of each respective denomination of that emission progressively..." (*JCC*, v. 8, p. 646; v. 9, pp. 873, 993; v. 10, pp. 28, 83, 175, 223, 309, 365)

The April 11, 1778 emission also differed from what was emitted before it. The language of the authorizing legislation explicitly stated that for these bills "...new cuts be used for striking off and printing: That the form of the bills be as follows: ...according to a resolution passed by Congress, at York, 11 April, 1778." The next four emissions authorized (May 22, June 20, July 30, and September 5, 1778) all carried the same

instructional language, namely “That the bills shall, excepting the numbers, be of the same tenor and date as the emission directed on the eleventh day of April last, and be numbered from the last number of each respective denomination progressively...” (*JCC*, v. 11, pp. 524, 627, 731, v. 12, p. 884) This interpretation of what comprised a given emission also makes sense when it is considered that the point of the currency swap was to remove bills that were being counterfeited. As such, all bills from the same “cut” with the same design, style, tenor, and printed date, i.e. that were indistinguishable from each other, would have to be included in the recall-exchange or the point of the anti-counterfeiting exercise would be lost.

Finally, a residual calculation can be used to determine how much of the January 14, 1779 emission represented a net new emission of bills. On September 2, 1779 Congress stated that the total amount of Continental Dollars currently outstanding was \$159,948,880 (*JCC*, v. 15, pp. 1019, 1052-1053). This was the only time Congress made such a statement. The discrepancy between this number and the totals reported across the literature to that date can be used to adjust the guesses across the literature about how much of the January 14, 1779 emission should be counted as new. This residual method was used by Thomas Jefferson in 1786 (Boyd, 1954, v. 10, pp. 42-43) and Elliot (1843). However, because both Jefferson and Elliot erroneously omitted \$16 million of pre-1779 emissions, their residual estimate of how much of the January 14, 1779 emission represented a net new emission is off by exactly \$16 million. Applying this method with the correct emission numbers through September 2, 1779 yields \$8,447,620 out of the \$50,000,400 authorized on January 14, 1779 as being a net new emission ($\$50,000,400 - \$41,552,780 \text{ exchanged} = \$8,447,620 \text{ net new}$ —see Appendix Table 1).

If the entire emissions of May 20, 1777 and April 11, 1778, namely \$41,500,000, were exchanged as required by the authorizing legislation, the result would closely match the number derived from the above residual method—the difference being \$52,780 old bills exchanged in excess of the May 20, 1777 and April 11, 1778 emissions exchanged. That some “extra” old bills were so exchanged for new has some support. On February 9, 1779 a “...quantity of torn bills, was laid before Congress, soliciting that the same be exchanged [for new bills]...” (*JCC*, v. 13, p. 158) How many “torn bills” of other prior emissions were so exchanged is unstated, but the amount could easily account for the extra \$52,780 bills exchanged as calculated above.⁶

When the addition, omission, transcription, and definition errors are corrected and when the method for calculating the net new emission from the January 14, 1779 authorization described above is used, the discrepancies across the literature can be eliminated—revealing a single consistent estimate (sans rounding errors) of \$200,000,000 Continental Dollars emitted from 1775 through 1779 and still outstanding as of 1780, see Appendix Table 1.⁷ The corrected time path of bills emitted each year from 1775 through 1779 is shown in Figure 1 as the *JCC* estimate, and as the *JCC* column in Appendix Table 1. The corrected time path of the cumulative total of Continental Dollars emitted and still outstanding for net new emissions, and for gross emissions (printings) net of recorded currency swaps, is displayed in Figure 2 for the years 1775 through 1779.

[Place Figure 2 Here]

The Fate of the Continental Dollar, 1779-1781

The fate of the Continental Dollar after 1779 is not well established. Taxes to pull

Continental Dollars out of circulation were not initiated in earnest until after 1779 (Bolles, 1969, v. 1, pp. 194-198; Bronson, 1865, pp. 120-138; Bullock, 1895, p. 129; Ferguson, 1961, pp. 30-35, 53, 64-65; Harlow, 1929, p. 67; Ratchford, 1941, pp. 32-33, 37-38). Congress' authorizing legislation "pledged" the "thirteen United Colonies for the redemption of the bills of credit." Congress also stated that its bills were "emitted on the faith of the United States." While this was an obligation that bound Congress, i.e. the Federal Government, Congress did not have the power to directly tax the public (before 1789) and so could not, itself, directly redeem Continental Dollars from the public. Congress therefore asked the states to accept Continental Dollars in payment of state taxes and then to remit them to Congress as part of the funding-requisitions each state owed Congress (*JCC*, v. 2, pp. 103, 221-222; v. 3, pp. 457-459; v. 4, p. 339; v. 6, p. 1047).

The states, however, failed to provide the funds requested before 1780—which in part explains why Congress had to resort to ever-increasing emissions of paper money to finance its war efforts. As far as states not taking many Continental Dollars in payment of state taxes before 1780, this should not be surprising as Congress' own authorizing legislation set the redemption date of these emissions far into the future. For example, Congress set the initial payment (redemption) of its first emissions in the summer of 1775 as not being required until the end of 1779, those emitted in late 1775 as not being required until late 1783, and the redemption of the bills issued in early 1779 as not being required until 1797. (*JCC*, v. 2, pp. 103, 221-222; v. 3, p. 458; v. 13, p. 64) Thus, states may have seen no urgency, and certainly no value to themselves, in redeeming Continental Dollars (accepting them in payment of state taxes) before 1780. Thus, it

appears that the whole \$200 million of accumulated net new emissions—face value—was still outstanding as of spring 1780 (Ferguson, 1973, v. 1, p. 194).

Congress recognized that the principal cause of the increasing depreciation of the Continental Dollar after 1776 (see Figure 3 below) was the excessive amount issued and currently outstanding. Congress' constant exhortations to the states to help reduce the quantity of paper currency outstanding and to pay their funding quotas to Congress so Congress could have monies to spend in place of issuing more Continental Dollars had no effect (for examples, see Bolles, 1969, v. 1, pp. 55-56; *JCC*, v. 7, p. 36; v. 9, pp. 954-957, 989; v. 13, pp. 20, 492-493; v. 14, pp. 614-615, 720, 729-732; v. 15, pp. 1052-1062; v. 16, pp. 205-207, 216-217, 262-263; v. 17, pp. 782-783; v. 19, pp. 376-378, 398-400, 406-415; v. 20, pp. 438-440, 577; Oberg, 1998, pp. 229-232). Finally, on September 3, 1779 Congress set an absolute limit of \$200 million that could be emitted before emissions were permanently discontinued, a limit reached on November 29, 1779 (Appendix Table 1; *JCC*, v. 14, p. 1013; v. 15, pp. 1019, 1053, 1171, 1324).

Having permanently discontinued issuing Continental Dollars, Congress was now at the mercy of the states for its current and future revenue (Ferguson, 1961, pp. 46-47). It had no way to enforce its requisition requests on the states. States ignored them with impunity.⁸ In Congress, efforts by some to create enforcement mechanisms were rebuffed by the majority—for example, see the proposals made in April and May of 1781 that were subsequently rejected or sent to committee never to reappear (*JCC*, v. 20, pp. 440, 445, 471, 495, 578).

In addition, if the states paid Congress only Continental Dollars to meet their funding quotas, Congress would not have ready resources to meet current and near future

expenses. Continental Dollars so brought in could not be re-spent, having been pledged to be destroyed upon redemption. Besides, in the marketplace they had lost most of their value (see Figure 3 below) so, without imposing heavy-handed legal tender laws and price controls, Congress could not buy much by re-spending Continental Dollars as they came in—at least not until the quantity in circulation had been reduced enough to re-appreciate them (Ferguson, 1961, p. 45). As such, after November of 1779 Congress needed the states to make at least some of their payments to Congress in real resources or in specie so Congress could meet its current and near future expenses.

With the requisition act of March 18, 1780, Congress attempted to achieve both of these goals, namely induce states to make some specie payments to Congress as part of their funding quotas and to reduce the quantity of paper money outstanding from \$200 million Continental Dollars to \$10 million “Continental-State” Dollars (Ferguson, 1961, pp. 51-52; *JCC*, v. 19, pp. 164, 411; Ratchford, 1941, pp. 37-38). To achieve the first goal, Congress gave states a discount when requisitions were paid in specie. The act stated, “That the several states continue to bring into the continental treasury, by taxes or otherwise, their full quotas...as assigned...the 7th of October, 1779... That silver and gold be receivable in payment of the said quotas, at the rate of one Spanish milled dollar in lieu of 40 dollars of the bills [Continental Dollars] now in circulation. That the said bills, as paid in...be not re-issued, but destroyed.” (*JCC*, v. 16, pp. 263-265)

While stated as a discount for paying in specie, this act was widely regarded at the time as a “great and deliberate breach of public faith” by Congress (Bolles, 1969, v. 1, pp. 97-98, 135-136; Bullock, 1900, p. 72; Ferguson, 1975, v. 2, pp. 70-71; Phillips, 1866, pp. 160-166; Sumner, 1968, v. 1, pp. 87-89). For example, in an essay written March 30,

1780 defending the act, Webster (1969, p. 111) referred to all the “...*clamor* and exclamation on this subject [the March 18, 1780 act of Congress]...” In other words, Congress partially, though perhaps temporarily, defaulted on the Continental Dollar—no longer accepting it at face value but only at a rate of 40 Continental Dollars to 1 dollar in specie for requisition payments by the states to Congress. While Continental Dollars traded at an even greater discount in the marketplace, the 40 to 1 rate remained that at which Congress would credit the states for the payment of their quotas (taxes) owed to Congress from 1780 through 1789 (*Archives of Maryland*, v. 43, pp. 258-259; Boyd, 1953, v. 7, pp. 221-223; Bullock, 1895, pp. 136-138; Elliot, 1843, pp. 77-82; *JCC*, v. 16, p. 265; v. 23, pp. 560-561, 590).

Interestingly, the vote on the requisition act of March 18, 1780 split sharply on North-South grounds. Not only did all the states south of Pennsylvania (Delaware, Maryland, Virginia, North Carolina, and South Carolina) vote against the resolution, but every single delegate from these states voted against it [no vote from Georgia was recorded]. By contrast, not only did every single state north of Delaware vote in favor of the resolution (New Hampshire was divided), but every single delegate from these states, with the exception of Peabody of New Hampshire and Fell of New Jersey, voted in favor of it (*JCC*, v. 16, p. 267). The fact that by 1780 the war had shifted from the North to the South may explain some of this division of support in Congress.

To achieve the second goal, i.e. the reduction of the quantity of Continental Dollars outstanding, the requisition act of March 18, 1780 also stated that “...as the said bills [Continental Dollars] be brought in to be destroyed,...other bills be issued, not to exceed, on any account, one-twentieth part of the nominal sum of the bills brought in to

be destroyed.” (*JCC*, v. 16, p. 264) The new replacement bills were called “Continental-State” Dollars. Typically scholars have not counted these new bills as part of the emissions of Congress but rather as paper money emitted by the various states. The emissions of these new bills were by and at the discretion of each state individually (for example, see the case of Connecticut in Bronson, 1865, pp. 126-127). Each state was also directly responsible for the redemption of the bills it issued. The bills themselves were distinguishable by state, i.e. were state-specific. They had printed on them, “The possessor of this bill shall be paid [denomination of the bill] Spanish milled dollars, by the 31st of December, 1786, with interest, in like money, at the rate of five per cent per annum, by the State of [specific state issuing the bill], according to an act of the legislature of the said State...” The Congressional authorization also required that each state turn over four tenths of any Continental-State currency emitted to Congress for Congress’ use (Bolles, 1969, v. 1, pp. 94-96; Elliot, 1843, p. 73; Hepburn, 1967, pp. 16-17; *JCC*, v. 16, pp. 264-265; v. 19, p. 411).

Continental-State Dollars are seldom talked about or talked about correctly in the literature in part because the experiment seems to have been short lived, not lasting past mid-1781 (*JCC*, v. 19, pp. 398-400, 411; v. 20, pp. 438, 577).⁹ This appears to be due to massive confusion among the public and across the states regarding this currency. Some people treated it like the old Continental Dollar, refusing to price goods and taxes in the new currency and depreciating it toward that of the old Continental Dollar. Some states issued none of the new currency, e.g. Connecticut, Delaware, North and South Carolina, and Georgia. Rumors persisted that states would not accept these new bills in payment of their taxes, and so on (Bezanson, 1951, pp. 51-56; Bolles, 1969, v. 1, pp. 101, 140-141;

Bronson, 1865, p. 126; Phillips, 1866, pp. 171-172, 177, 182).¹⁰ Because of this, it is sometimes assumed little of this Continental-State currency was issued, thus by inference few Continental Dollars were called out of circulation via this mechanism.

Yet there appears to have been a fair amount of Continental-State currency issued, mostly in the second half of 1780 and first half of 1781—no evidence has yet been found of any issued after 1781. For example, on December 13, 1781 the state of Maryland reported that it had 73,082 Maryland pounds of Continental-State bills in circulation (*Archives of Maryland*, v. 48, p. 22). The total Continental-State bills issued across all the states in 1780 and 1781 is reported by the *American Almanac* (1830, p. 183), Elliot (1843, p. 11), Gouge (1833, II, p. 25), and Hepburn (1967, p. 16) to be \$2,070,485 and none thereafter. The original source of this estimate is a 1790 Congressional report prepared by the Register of the Treasury, Joseph Nourse (1999, v. 9, pp. 930-936). Based on a different source, Elliot (1843, p. 73), Ferguson (1961, p. 30), and Perkins (1994, p. 97) report a total of \$1,592,222 for the same period. This latter estimate is from Hamilton's report to Congress on May 11, 1790 (see Elliot, 1843, pp 65-83; Syrett, 1962, v. 6, pp. 412-414; United States Congress, 1834, v. 2, pp. 1544, 1566).¹¹

If these numbers are correct, then during 1780 and 1781 a total of either \$41,409,700 or \$31,844,440 Continental Dollars were called out of circulation via this mechanism—given the 20 to 1 emission rate allowed in Congress' requisition act of March 18, 1780.¹² The states were to send these old Continental bills to the U.S. Treasury to be destroyed. As such, by mid-1781 the amount of Continental Dollars still outstanding had been reduced by between 16 and 21 percent (from its peak of \$200 million at the start of 1780 to \$158.5 or \$168.2 million by mid-1781) via this mechanism

alone. This estimate accords closely with the guess made by the U.S. Treasury in its report to Congress on April 18, 1781 that roughly \$160 million Continental Dollars were still outstanding and unredeemed at that date (*JCC*, v. 19, pp. 405, 411; v. 20, p. 577).¹³

While this reduction in Continental Dollars outstanding could be considered quite an accomplishment, the mechanism for calling them out of circulation appears to have ended quickly with the demise (depreciation) of Continental-State currencies (for examples, see *Archives of Maryland*, v. 45, pp. 397-398; v. 48, p. 22; Bullock, 1895, p. 137; Sumner, 1968, v. 1, p. 86). Many states, such as Connecticut, New York, and Pennsylvania, preferred their own state paper money, which continued to be in circulation, to adding this new Continental-State money to the mix (Bezanson, 1951, pp. 51; Bronson, 1865, p. 127; Phillips, 1866, p. 182). Any connection to Congress and the old Continental Dollar did not inspire confidence. In addition, states had more to gain from issuing their own state paper money which they did not have to share with Congress, than in issuing Continental-State currency which by law they had to give four-tenths to Congress, even though the states and not Congress were obligated to redeem that portion (e.g. see New York State's address to Congress in *JCC*, v. 20, pp. 472-473, 577). In essence, state-government-interest in acquiring Continental Dollars as a vehicle for being allowed to issue new Continental-State paper money appears to have evaporated quickly in 1781—see the complaints in Congress on April 25, May 10, and May 20, 1781 of this lack of interest by the states (*JCC*, v. 20, pp. 438-439, 495, 577-578). With this evaporation of interest went any ready market for Continental Dollars.

Continental Dollars ceased to circulate as a currency around May of 1781. Newspaper price currents (price indices), merchant account books, George Washington's

account book, etc. all stop quoting prices in Continental Dollars in May 1781 (Bezanson, 1951, pp. 12, 344; Breck, 1843, p. 16; Ferguson, 1961, p. 66; Webster, 1969, p. 502). Some authors claim that this cessation was ordered by Congress and/or that Congress repudiated the Continental Dollar at this time or shortly after in 1783 and/or that the Continental Dollar was never redeemed after this time (for examples, see Bullock, 1895, pp. 137, 240; Ferguson, 1961, p. 51; Harlow, 1929, p. 61; Hughes and Cain, 2007, p. 83; Phillips, 1866, pp. 190-191; Ratchford, 1941, p. 38; Sumner, 1968, v. 1, p. 87; Tindall, 1988, p. 265; Walton and Rockoff, 2005, p. 126).

However, a definitive statement by Congress of such in May of 1781, or in 1783, cannot be found. Several proposals were put forward in 1781 that might be interpreted as repudiation, but all were rejected or sent to committee never to reappear again. Nothing close to a statement of repudiation was enacted in 1781 or 1783 (*JCC*, v. 20, 24-25). The requisition act of March 18, 1780 called on the states to bring in their monthly quotas of old Continental Dollars and replace them with Continental-State currency through April 1781—which, if the quotas were strictly adhered, would have fully removed the old Continental Dollar from circulation by that date (*JCC*, v. 16, p. 263; v. 20, pp. 438, 495). Of course, the states, as had become usual, did not fulfill their quotas (Ferguson, 1973, v. 1, pp. 194, 196; 1995, v. 8, pp. 57, 749; 1999, v. 9, pp. 139, 908; and fn. 8 above). Like all the other unfulfilled requests made by Congress, this unfulfilled request was not a repudiation of Continental Dollars still outstanding after April of 1781. It was a request, not a requirement. As shown below, Congress continued to debate the disposition of the remaining outstanding Continental Dollars for years to come.¹⁴

Finally, many authors assume that the remaining Continental Dollars, being near

worthless, were just trashed or thrown away after this time. For example, Breck (1843, pp. 15-16) concluded that shortly after May 1781,

Two hundred million lost all value, and were laid aside. The annihilation was so complete that barber-shops were papered, in jest, with the bills; and the sailors, on returning from their cruise, being paid off in bundles of this worthless money, had suits of clothes made of it, and with characteristic light-heartedness turned their loss into a frolic by parading through the streets in decayed finery, which in better days, had passed for thousands of dollars.

Similarly, Phillips (1866, p. 185) related the following story from a Tory newspaper in New York, the *Rivington's Gazette*, written on May 12, 1781:

The congress is finally bankrupt! Last Saturday a large body of inhabitants with paper dollars in their hats by way of cockades, paraded the streets of Philadelphia, carrying colors flying, with a dog tarred, and instead of the usual appendage and ornament of feathers, his back was covered with the congress' paper dollar. ...was directly followed by the jailor, who refused accepting the bills in purchase of a glass of rum, and afterwards by the traders of the city, who shut up their shops declining to sell any more goods but for gold and silver.

In another state, Phillips (1866, p. 185) related that (see also Ferguson, 1961, p. 66),

...the continental money was buried with honors. Its remains, deposited in elegant coffins, were followed to the grave by a numerous concourse; an eloquent oration was delivered narrating its services, as those of a former friend and benefactor. When the obsequies were concluded, the orator, holding to view a specimen of a new emission authorized by the state to replace the old continental, exclaimed "*be thou also ready; for thou shalt surely die!*" – a prophecy soon fulfilled.

But was such trashing of Continental Dollars just minor political theater and Tory propaganda representing trivial amounts of Continental Dollars or were they indicative of some mass orgy of destruction and so represented significant amounts of Continental Dollars disposed of as trash? The evidence below suggests that it was trivial.

Quantitative Estimates of Continental Dollars Redeemed by the States, 1779-1790

The total amount of Continental Dollars taxed out of circulation or otherwise removed from the public by the states, remitted to the U.S. Treasury, and burned between 1779

and 1790 is seldom discussed, and so the exact time series of outstanding balances of Continental Dollars still at large after 1779 is not exactly known. Yet the *JCC* and the records of the U.S. Treasury reported these amounts for 1779 through 1789 (Elliot, 1843, pp. 73-76; *JCC*, v. 30, pp. 22-25; United States Congress, 1834, v. 2, pp. 1544, 1566; see also Ferguson, 1980, v. 5, p. 139 and fn. 15 below). These numbers, slightly rearranged (put into chronological order), are reproduced in Appendix Table 2.

The first series was reported by Joseph Nourse to Congress on January 14, 1786 (*JCC*, v. 30, pp. 22-25). Nourse was registrar of the U.S. Treasury from 1781 to 1829. He reported the amount of Continental Dollars—face value—paid into the U.S. Treasury by month, year, and source from May 1779 through 1785. He also noted that his numbers were neither comprehensive nor complete. The second series was reported to Congress (United States Congress, 1834, v. 2, pp. 1544, 1566) on May 11, 1790 by Alexander Hamilton, Secretary of the Treasury. The actual report is reproduced in Elliot (1843, pp. 73-76). It reports the amount of Continental Dollars—face value—paid into the U.S. Treasury by month, year, and state from November 1780 through March 1789.

The two series overlap from November 1780 through February 1783, and except for a few minor omissions and discrepancies, report the same amounts.¹⁵ This cross-corroboration of numbers during the months and years the two series overlap gives some confidence to the numbers reported by each series when they do not overlap. Combining the two series gives a continuous quantitative monthly series from May 1779 through March 1789 of the amounts of Continental Dollars—face value—remitted by each state to the U.S. Treasury. Eliminating the overlap or duplication between the two series, yields a total of at least \$153.5 million Continental Dollars—face value—pulled out of

circulation, remitted to the U.S. Treasury, and burned by 1790. Interpreting this number, however, required some additional scrutiny.

Nourse reported total emissions (total printings) of Continental Dollars, not total net new emissions. He included the full authorization of January 14, 1779 (\$50 million) in his numbers without netting out bills that were directly exchanged for prior bills as directed by that legislation and discussed in the prior section (Appendix Table 1; *JCC*, v. 30, p. 25). Thus, the amount of Continental Dollars reported by Nourse as remitted to the U.S. Treasury included those sent back as part of the currency exchange of the emissions of May 20, 1777 and April 11, 1778 for the emission of January 14, 1779. As such, it does not represent a reduction in the amount of net new Continental Dollars outstanding.

Several pieces of evidence are consistent with this interpretation. In 1779 the *JCC* (v. 15, p. 1436) recorded the amount of new bills sent out between late June and early August of 1779 to be exchanged for old bills. This amount totaled \$15.2 million. Phillips (1866, p. 99) reports a statement in the Philadelphia newspaper, the *Pennsylvania Packet*, indicating that by January of 1780 a total of \$19.8 million old bills had already been exchanged for the new bills. These numbers are very close to the total Nourse reported (\$19.1 million) as being sent back to the Treasury for all of 1779 (Appendix Table 2). In addition, the individuals who received the new bills for exchanging in the various states as recorded in 1779 in the *JCC* (v. 14, pp. 817, 821; v. 15, p. 1436; along with scattered statements throughout v. 14 and 15) are the same individuals from the same states Nourse reported in 1786 as having remitted Continental Dollars to the U.S. Treasury in 1779 (*JCC*, v. 30, pp. 22-25).

The period over which bills from the May 20, 1777 and April 11, 1778 emissions

could be exchanged for bills of the January 14, 1779 emission was initially set as ending on June 1, 1779, but was continually extended by Congress. On July 2, 1779 Congress formally extended it to July 2, 1780 and on March 28, 1780 to January 1, 1781. As late as April 21, 1781 Congress was still dealing with, and as late as January 1782 the Treasury Department was still dealing with, destroying the exchanged sums from the May 20, 1777 and April 11, 1778 emissions (Ferguson, 1980, v. 5, p. 139; *JCC*, v. 13, p. 22; v. 14, pp. 695, 731, 774, 795-796; v. 16, p. 312; v. 19, p. 430).¹⁶

The total sums that were eligible for exchange were estimated above to be about \$41.5 million. Nourse's estimates through January 1, 1781 are \$34.4 million and through April of 1781 are \$39.9 million Continental Dollars returned to the U.S. Treasury. The closeness of these totals, given that Nourse admits that his numbers are neither comprehensive nor complete, is further indication that Nourse's numbers, at least into late-1780, included mostly the return of old Continental bills that were being swapped for new Continental bills and not a reduction in net new emission of Continental Dollars outstanding. As such, Nourse's numbers up to November of 1780 (up to where Hamilton's numbers start) are represented in Figure 2 above as part of the reduction of gross emissions (printings) rather than the reduction in net new emissions outstanding.

With the requisition act of March 18, 1780, states began to call in through taxes or other means Continental Dollars in order to be allowed to issue their own individual Continental-State currency. As discussed above, this was a short-lived experiment ending by mid-1781 and totaled between \$31.8 and \$41.4 million Continental Dollars called in. This action was a true reduction in the amount of net new Continental Dollars outstanding. Hamilton's numbers in Appendix Table 2 would appear to represent this true

net reduction and not count the currency swaps discussed above for Nourse's numbers. Hamilton's numbers begin in November of 1780 when most of the currency swap had been completed, and when the Continental Dollars remitted under the Continental-State scheme would have started rolling into the U.S. Treasury. Hamilton's total, starting in November of 1780, reaches the \$31.8 million and \$41.4 million amounts estimated above that were called in through the Continental-State currency mechanism by August and October-November 1781, respectively—about when the experiment ended.

An additional piece of evidence strongly supports this interpretation of Hamilton's numbers. In May of 1782, Michael Hillegas, Continental Treasurer under the administration of Robert Morris, reported a preliminary portion of the full report by Nourse listed in Appendix Table 2 (Ferguson, 1980, v. 5, p. 139). This portion covered from November 25, 1780 through February 23, 1782. With one notable exception—see fn. 15 above—Hillegas' report is basically identical to Nourse's 1786 report for the period the two reports overlap. Hillegas' report, unlike the 1786 report, identifies which of the remittances were of the bills of the May 20, 1777 and April 11, 1778 emission that had been called in so as to be swapped for the bills of the January 14, 1779 emission (discussed above). The discrepancy in Appendix Table 2 between Nourse's numbers and Hamilton's numbers for the period covered by Hillegas' 1782 report exactly matches the entries Hillegas identifies as being part of the currency swap.

In other words, the numbers that are left out of the Hamilton column compared with the Nourse column in Appendix Table 2 for the period November 25, 1780 through February 23, 1782 exactly match the numbers Hillegas identified in 1782 as being not a net reduction of Continental Dollars but merely part of a currency swap. As such,

Hamilton's numbers must have involved a deliberate removal of the Continental Dollars remitted as part of this currency exchange and, therefore, must capture the pure net reduction in the amount of Continental Dollars still outstanding.

The other sums remitted after 1781 were merely part of requisitions paid by the states to Congress under the 40 to 1 credit of Continental Dollars to specie dollars paid as part of each state's quota of payments to Congress (*JCC*, v. 22, pp. 83-86). Interestingly, both Nourse and Hamilton indicate that no Continental Dollars were remitted to the U.S. Treasury between late 1783 and mid-1786. Apparently, once the revolution was over and independence was officially recognized with the Treaty of Paris in late 1783, states saw no need to keep funding Congress—at least through remittances of Continental Dollars (Bronson, 1865, p. 169; Ferguson, 1961, p. 224; Ferguson, 1973, v. 1, pp. 194, 196; 1995, v. 8, pp. 57, 749; 1999, v. 9, pp. 139, 908; and fn. 8 above). Only when it became clear that there would be a reckoning of accounts between the states and the Federal Government did remittances of Continental Dollars pick up again—presumably as states worked to position themselves for credits with the Federal Government (see Jefferson's quote below from April 25, 1784; and the discussion of the final reckoning in Ferguson, 1961, pp. 205-219; Perkins, 1994, pp. 187-196).

As such, Hamilton's numbers are assumed to roughly represent the remittance and so reduction in the amount of net new Continental Dollars outstanding, and are so represented in Figure 2 above. Under these estimates and assumptions, the total amount of Continental Dollars still outstanding as of 1790 would be \$80.5 million (\$200 million of net new emission minus \$119.5 million remitted through 1789 as report by Hamilton, see Appendix Table 2, Bullock, 1895, p. 138), or \$88 million (\$241.5 million of gross

emissions minus \$153.5 million of gross remittances as the result of combining the Hamilton and Nourse reports, see Appendix Table 2). Because Nourse admitted that his numbers were neither comprehensive nor complete, the \$80.5 million will be taken as the better estimate.

Thus by 1790, 11 years after ceasing to issue Continental Dollars and seven years after the end of the revolution, Congress had managed to get the states to redeem in some manner and remove from the public roughly 60 percent of the net new Continental Dollars that had been emitted from 1775 through 1779 (\$119.5 million / \$200 million). This would appear to be quite an accomplishment, especially considering that the years 1785 through 1788 were depression years for the U.S. economy and considering that Congress' original authorizing legislation did not required redemption of Continental Dollars before 1797 for those issued in 1779.

The \$80.5 million Continental Dollars estimated above that were still outstanding and unredeemed in 1790 is consistent with and corroborated by other evidence. It is close to Congress' guess of \$78 to \$80 million still unredeemed and unfunded in 1791 (Bullock, 1895, p. 138; Elliot, 1843, p. 12, item #3; Sumner, 1968, v. 1, p. 98) and it is close to Hamilton's implied estimate for 1789.¹⁷ Congress' guess of how many Continental Dollars were exchanged for bonds at the 100 to 1 default rate set by the August 1790 Funding Act was \$6 million (face value), leaving something around \$72 to \$74 million (face value) as a total loss, i.e. never funded or redeemed (Elliot, 1843, p. 12, item #4; Sumner, 1968, v. 1, p. 98; United States Congress, 1834, v. 2, pp. 2243-2251).¹⁸

Apparently the requisition act of March 18, 1780 that set the default rate at 40 to 1 Continental Dollars to specie dollars in the payment of taxes by states to Congress led

some citizens to hold on to Continental Dollars instead of using them to pay state taxes. In many cases states would only accept Continental Dollars in payment of their taxes at rates far above 40 to 1 in specie, such as at 75 to 1 in Pennsylvania (Bronson, 1865, p. 128-136; Phillips, 1866, pp. 182-184; Sumner, 1968, v. 1, p. 95; Webster, 1969, pp. 171, 501-502). These holders of Continental Dollars were speculating that better days or a new political regime would un-default the Continental Dollar and redeem it at face value or at least at better rates than 40 to 1 or what prevailed in the marketplace. As such, 40 percent of the Continental Dollars were still outstanding by 1790. The same motive led people to purchase and hold Congress' interest-bearing debt, even though no interest had been paid for a number of years and it traded at 20 cents on the dollar in the marketplace in the late 1780s (Ferguson, 1961, pp. 251-285; Garber, 1991, pp. 91-92). They were speculating that better days or a new political regime would un-default these debts and redeem them at better rates.

Under the Funding Act of August 4, 1790, Hamilton and Congress thrilled the speculators in its interest-bearing debt by making interest payments on this debt's face value to the current holders of the debt. They disappointed the speculators in Continental Dollars by not only not un-defaulting the Continental Dollar but by increasing the default rate under which the Federal Government would accept Continental Dollars to 100 Continental Dollars for 1 dollar in interest-bearing bonds—basically close to nothing (Taylor, 1950, p. 62; United States Congress, 1834, v. 2, pp. 2243-2251).

Only \$6 million, of the \$80.5 million, Continental Dollars still outstanding in 1790 were so exchanged at the new 100 to 1 default rate between 1791 and 1797—when the exchange program was discontinued (Elliot, 1843, p. 12; Newman, 1997, p. 69;

Sumner, 1968, v. 1, p. 98). “The rest [\$75 million] seems to have remained in the hands of people who held it after the time fixed by the funding act, hoping that ultimately the notes would be redeemed in full.” (Bullock, 1895, p. 138) After 1797, they would be disappointed and nothing would be received. But why did people hold onto Continental Dollars for so long? Was their hope of future redemption at better rates reasonable?¹⁹

Speculative Holding versus Trash Deposal of Continental Dollars after 1779

Continental Dollars began to depreciate sometime in 1776.²⁰ Figure 3 shows that this depreciation continued at a fairly steady pace from 1777 through late 1778—with depreciation rates accelerating thereafter. Interestingly, the price of goods in Continental Dollars inflated at different rates over time than the price of specie in Continental Dollars. This observation is consistent with specie supplies not being in constant availability and/or money demand not being a constant (Calomiris, 1988).

[Place Figure 3 Here]

Despite this substantial and rapidly accelerating depreciation of Continental Dollars in the wartime marketplace, holders of Continental Dollars may not have considered such losses in current exchange value as being permanent, but only a temporary condition of the wartime and immediate-post-wartime economy. Once the economy returned to normal peacetime conditions, Continental Dollars might be redeemed by the government at face value. One reason for such a belief was that, unlike most colonial paper money, Continental Dollars were written by Congress to be an explicit contractual obligation to redeem a specific sum of specie—with such being printed right on the face of the bill. Printed on all Continental Dollars were statements such as the following printed on the \$80 note: “The Bearer is entitled to receive EIGHTY

Spanish *milled* DOLLARS, or an equal Sum in Gold or Silver according to a Resolution of Congress of the 14th January, 1779” (Newman, 1997, pp. 33-35, 59-68). This can be interpreted as the government setting a fixed exchange rate between specie and Continental Dollars that would be honored when conditions allowed. The only difference in contractual obligation between Continental Dollars and other government debts (bonds) was the non-payment of interest to holders of Continental Dollars—both debts had explicit specie redemption obligations attached to them.

The paper money issued by the individual colonies before the revolution, for the most part, was a different contractual obligation. It did not explicitly on its face promise redemption in specie, fix an exchange rate to specie, or guarantee convertibility to specie (Newman, 1997).²¹ Colonial bills of credit were, for the most part, non-interest-bearing contracts that the issuing government had agreed to accept at face value for payment of the taxes it levied, effectively redeeming them at face value but only for public liabilities (governmental taxes and fees). There was no requirement that they be equated to a certain amount of specie or that a government had to buy, sell, or exchange them for specie. If more of these bills existed than could be used to pay the colony’s internal taxes and so the bills lost their value or depreciated when used in the marketplace—that was just unfortunate for the bill holder. There was no contractual obligation of the issuing colony to restore that value in the future even if conditions allowed. Colonial bills of credit were truly fiat paper money. The marked difference in the contractual obligations stated on the Continental Dollar may have induced holders to regard it and its future redemption differently than that of traditional bills of credit from the colonial era.

a. Continual Agitation in, and Uncertainty by, Congress over Future Redemption

The possible redemption of Continental Dollars at face value, or at better rates than offered in the marketplace or by the states for tax payments, once the war was over was fostered by statements in Congress. This in turn may have prompted some to hold on to their Continental Dollars rather than remit or trash them.

As early as May 22 and September 2, 1776 such statements as “Whereas, the holders of bills of credit emitted by authority of Congress will be entitled, at certain periods appointed for redemption thereof to receive out of the treasury of the united colonies the amount of the said bills in spanish milled dollars, or the value thereof in gold or silver...” were made by Congress (*JCC*, v. 4, p. 382; v. 5, p. 724). The periods appointed for redemption were, for the most part, left vague—to be chosen by Congress in the future when conditions allowed (see also *JCC*, v. 4, pp. 49, 339-340).

Hope of future redemption could also be taken from the language of the supreme law of the land. The *Articles of Confederation* laid before Congress on November of 1777 said that “All bills of credit [Continental Dollars] emitted...under the authority of Congress...shall be deemed...a charge against the United States, for payment whereof the said United States and the public faith are hereby solemnly pledged.” (*JCC*, v. 9, pp. 924-925) The *U.S. Constitution* adopted by Congress in 1789 maintained this obligation. Article 6 of the *U.S. Constitution* states that, “All Debts contracted...before the Adoption of this Constitution, shall be as valid against the United States under this Constitution, as under the Confederation.”

Congress often considered recommendations about the future disposition of the Continental Dollar—though typically nothing definitive was decided. On December 29,

1778 a motion was made in Congress “Whereas a report hath circulated in divers parts of America, that Congress would not redeem the bills of credit issued by them...but would suffer them to sink in the hands of the holder, whereby the value of the said bills hath...depreciated; and lest the silence of Congress might give strength to the said report; *Resolved*, That the said report is false...” (*JCC*, v. 12, pp. 1261-1264) On June 14, 1779 a report was submitted to Congress recommending that the Treasury make up the difference in value in specie-denominated debts paid in depreciated Continental Dollar at the depreciation rate current at the time the debt was paid (*JCC*, v. 14, p. 732). And on September 13, 1779 the President of Congress, John Jay, issued a public statement wherein he declared that “Having shewn that there is no reason to doubt the ability of the United States to pay their debt...It must be evident to every man who reads the journals of Congress, or looks at the face of one of their bills [Continental Dollars], that Congress have pledged...the redemption of them...it is no more in their power to annihilate your money than your independence, and that any act of theirs for either of those purposes would be null and void.” (*JCC*, v. 15, pp. 1057-1060)

On August 26, 1780 Congress resolved that “...creditors...be entitled to receive the just value of the sums due...according to the current value of continental bills of credit compared with specie at the time the money became due...That all debts due to the United States for monies [Continental Dollars] received...shall be paid according to the just value of the money when it was received...” (*JCC*, v. 17, pp. 784-785) This position would be repeated several times throughout the 1780s, such as on March 16, 1781 and May 17 and June 3, 1784 (*JCC*, v. 19, p. 266; v. 26, pp. 395-396; v. 27, pp. 540-545). This position would seem to indicate that as long as holders of Continental Dollars could

prove that they had received them before November 1779, they would be entitled to a better rate of redemption than the 40 to 1 rate set by Congress in March of 1780 and better than any of the rates current in the marketplace or set by the states for payment of taxes in Continental Dollars at that time. Jefferson's table of depreciation did not exceed 40 to 1 until after November of 1779 (Boyd, 1954, v. 10, p. 43).

On April 12, 1781 a proposal was laid before Congress which stated "...with respect to the old Emissions [Continental Dollars], Congress may allow 20 years or more for the redemption of it. The faith of the United States pledged by Congress upon issuing those Bills will not be violated by Congress. ... Some who have lost by depreciation will have an opportunity of recovering their losses..." (*JCC*, v. 19, pp. 380-381) On April 18, 1781, the Congressional report from the Treasury restated that Congress had promised on April 10, 1780 "...that as soon as the state of the public finances would admit, they would make good to the line of the army...the deficiency of their original pay occasioned by the depreciation of the currency..." (*JCC*, v. 19, p. 413) And on April 25, 1781, Oliver Wolcott introduced a motion in Congress stating that the

...200,000,000 of dollars emitted [by Congress] before the 18th of March 1780 and hereby intended to be redeemed...shall be paid in Spanish milled Dollars or other gold and silver equivalent thereto, or in the Bills of credit emitted by Congress as aforesaid [the Continental-State currency]. ... that from and after the expiration of the aforesaid twenty years if any of the said Bills of credit emitted by Congress before the 18th of March 1780 and hereby intended to be redeemed, shall remain outstanding, the holder or holders of such Bills shall be entitled to and shall be paid by the Treasurer of the United States for the time being, the value thereof in gold and silver equal to Spanish Milled Dollars, or in Spanish milled Dollars according to the nominal value declared in the said Bills of credit, on demand...with Interest thereon. (*JCC*, v. 20, p. 439)

The motion was debated and rejected on May 2, 1781 (*JCC*, v. 20, p. 471).

Likewise, a motion proposed on September 18, 1782 that "Old Continental

Money” be credited to the states “...according to the current value thereof compared with Gold and Silver at the time when such State had delivered over its proportion...” was referred to committee and not acted on (*JCC*, v. 23, p. 591). On May 22, 1783 a motion was presented to Congress “...for calling in the old emission bills [Continental Dollars], ...and to give certificates to the possessors for the amount thereof in specie at the rate of one silver dollar for seventy five continental dollars, bearing interest at the rate of six per cent per annum...” (*JCC*, v. 24, pp. 357-358) This motion was also referred to committee and not acted on.

On May 17, 1784 a “Grand Committee” of Congress submitted to Congress the following resolution (written by Thomas Jefferson),

That all sums of Continental bills of credit *paid by or to any State*, ...shall be credited or debited in account according to the specie value of such bills at the time of payment, as settled by the legislature of the same state...on which payments an interest shall be allowed at the rate of six per centum per annum from the time of payment.

That all such bills *now in the treasury* of any state, shall be credited to such state at the value they bore in specie, at the time they were received by the State ...

That all such bills *now in the hands of individuals* shall be redeemed at the same rates... That the holders of such bills shall be at liberty to carry them to the loan officer of the United States within their State, who shall give them in Exchange for the same, a certificate expressing the sum in specie, which the United States owes in lieu thereof and the time from which it bears interest...where the said bills were received before that day, where received afterwards, the time of their actual receipt. The Loan officer shall require from the holder, the best evidence of the time of his receiving them which the nature of the case will admit...and giving thereto so much credit as in his conscience he shall think it deserves; ... These certificates shall be funded and paid as the other debts of the United States. (*JCC*, v. 26, pp. 395-396)

This motion was also assigned to committee and not acted on.

Similarly, on June 3, 1784, another report by a different committee was submitted to Congress that recommended, “That if bills of credit advanced to any State or person to

be expended for the use of the United States, shall have depreciated before the same were so applied, the receiver shall not be charged with the depreciation, if satisfactory evidence be given...that such bills had not been applied to any other use..." (*JCC*, v. 27, p. 541) This proposal does not appear to have been acted on by Congress. (See below for more details about this report and its influence on Thomas Jefferson.)

Finally, on July 29, 1785, regarding a motion to send commissioners out to the various states to settle the accounts between the states and Congress, an amendment was proposed, and its substance adopted, that said (*JCC*, v. 29, pp. 590-593),

Provided also, that nothing in this resolve contained, shall be construed to authorize the commissioners...to settle or liquidate any demand against the United States, for any sum or sums of continental bills of credit, emitted prior to the 18th of March, 1780, either in the hands of individuals states respectively, or of their citizens, until the United States in Congress assembled, shall have given a particular decision at what rate the same shall be redeemed by the United States.

In addition, petitions came into Congress from time to time, such as that of David Woelper on January 3, 1786, requesting a new settlement with regard to the depreciation of Continental Dollars from what the petitioner had accepted in a prior period. Congress stated that "the Committees of Congress uniformly reported against a revisal of settled accounts." (*JCC*, v. 30, p. 11) As such, there was an incentive not to settle one's account.

In conclusion, what Congress would do about the Continental Dollar was left continually undecided through the mid-1780s. Thus, hope of future redemption at better rates than in the marketplace remained (see also *JCC*, v. 24, p. 181). In addition, there was an incentive not to rush to settle an account too early, but to wait for better days.

b. Statements and Advice from Some Founding Fathers Regarding Future Redemption

Statements by some founding fathers also held out the possibility of redemption of the Continental Dollar by the Federal Government in the near future at face value or

better rates than were current in the marketplace, which in turn gave people an incentive to hold Continental Dollars rather than trash or remit them.

For example, Benjamin Franklin advised, in his famous essay *Of the Paper Money of America* written while in Paris sometime between 1780 and 1784, that,

First, The Quantity of Bills [Continental Dollars] borrowed before the Depreciation... The Principal of this Sum is considered as equal in Value to so many Dollars of Silver as were borrowed in Paper, and will be paid in Silver accordingly.

Secondly, The Quantities of Bills borrowed in different Stages of the Depreciation down to the present time. These Sums are by a Resolution of Congress to be repaid in Silver according to the Value they were in Silver at the Time they were lent... Thus those Lenders have their Property secured from the Loss by Depreciation subsequent to the Time of their Loan. (Oberg, 1998, p. 232)

From Paris, in a letter to Elias Boudinot on November 1, 1783, Franklin related a story of a Canadian merchant who showed him a considered amount of Continental Dollars he had received as payment for supplies he provided the American army during their Canadian campaign. Having been in prison in Britain since then, he had not been able to collect or redeem his Continental Dollars. Franklin advised the man to go to America and apply to Congress. Franklin thought the man was honest and the Continental Dollars were genuine issues of the first emissions. Franklin concluded by saying that, "I have therefore undertaken to forward his Papers, and I beg leave to recommend them to the speedy Consideration of Congress..." (Smyth, 1907, pp. 112-113)

Along a similar vein, Thomas Jefferson writing to James Madison from Annapolis on April 25, 1784 under the suspicion that future redemption would be at better rates than what prevailed currently in the marketplace reasoned thus (Boyd, 1953, v. 7, p. 120):

Would it not be well for Virginia to empower persons privately to buy up her quota of old Continental money. I would certainly advise this were I not afraid that possession of her quota on such easy terms would tempt her to refuse justice to the other states on this matter. ... If she would...do what is right, I should much

wish to see her adopt secret measures for the purchase. I think some states will do this, and I fear with unjust views.

Jefferson thought states might be able to arbitrage the difference between the rate at which Congress would credit them for remitting Continental Dollars and the rate at which they could acquire Continental Dollars in the marketplace from the public. In other words, a market for Continental Dollars might reappear soon.

From Annapolis, Jefferson wrote again to Madison on May 8, 1784 and in answer to Madison's question "Has any resolution been taken by Congress touching the old Continental Currency?" said (Boyd, 1953, v. 7, pp. 123, 232),

That question has been debated by a grand Committee upwards of a month. They yesterday came to the inclosed resolution. It was decided by only 6 votes against 5. I think it will gain strength in the House. The Southern and middle states I believe are for it, and I think one or two of the Eastern may perhaps come over. Yet there is far from being a certainty of this.

Foreign observers also noted the possibility of a future redemption as well as the uncertainty over its timing and manner. As one foreign observer put it on May 4, 1784, in reference to the Continental Dollar, "At present there are many private Gentlemen holding large sums of Paper money, that is to be called in. But when this will happen, at what rate it will be redeemed, congress do not yet agree upon." (Boyd, 1953, v. 7, p. 213)

On June 3, 1784 the Continental Congress received a committee report on settling the accounts of the State of Pennsylvania with the United States that recommended,

That all monies or articles supplied by the United States to any particular State, shall be charged to such State at their just value in specie, with an interest of six per cent per annum, from the date of such supplies, until the final adjustment and payment of account;...

That if bills of credit [Continental Dollars] advanced to any State or person to be expended for the use of the United States, shall have depreciated before the same were so applied, the receiver shall not be charged with the depreciation, if satisfactory evidence be given to the Commissioner by such receivers, that such bills had not been applied to any other use, (and were applied

to the purpose designed, as soon as occasion required); otherwise such receiver will be chargeable with such bills at their value when received... (*JCC*, v. 27, pp. 540-545)

No vote is recorded as to whether Congress accepted or rejected the resolutions of this committee. While directed only at the particular case of the State of Pennsylvania the general principle would appear to offer holders of Continental Dollars the expectation that this paper money would be redeemed in specie at the Continental Dollar-to-specie exchange rate current when the holders received their bills (with interest between then and final settlement). This was Jefferson's interpretation and the basis of his advice to holders of Continental Dollars.

On June 3, 1786 while in Paris, Jefferson advised a French correspondent,

It is six years since the paper money of New England has ceased to circulate as money. It is considered at present as making a part of the National debt, and that the holders of it will be entitled to receive from the public as much gold or silver as the paper money would have bought at the time it was received by the holder with an interest of 6 per cent per annum. But as yet no precise arrangements have been taken for the payment either of principal or interest. Most of the subjects of France, having paper money, have deposited it in the hands of the French minister or Consul at New-York, that payment may be demanded whenever it shall be provided by Congress. There are even speculators in America who will purchase it. But they give much less than it is worth. As for myself I do not deal in it. (Boyd, 1954, v. 9, pp. 604-605)

John Adams wrote to Jefferson on June 6, 1786 from Grosvenor Square, "Jews and Judaizing Christians are now Scheeming to buy up all our Continental notes at two or three shillings in a Pound, in order to oblige us to pay them at twenty shillings a Pound. This will be richer Plunder than that of Algerines or Loyds Coffee House." (Boyd, 1954, v. 9, p. 612) And in early 1786 Jefferson wrote about foreigners

...who have become bankrupt by unskillful attempts at commerce with America. That they may have some pretext to offer to their creditors, they have bought up great masses of this dead money [Continental Dollars] in America, where it is to be had at 5000 to 1 and they shew the certificates of their paper possessions as if

it had all died in their hands, and had been the cause of their bankruptcy. Justice will be done to all, by paying to all persons what this money actually cost them, with an interest of 6 per cent from the time they received it. (Boyd, 1954, v. 10, p. 26)

Finally, in a series of letters to French correspondents in 1786 Jefferson, who was still in Paris at the time, explained his current understanding of the likely redemption of Continental Dollars. On July 11, 1786 he wrote (Boyd, 1954, v. 10, pp. 127-128),

It is true that the United states, generally, and most of the separate states in particular, are endeavoring to establish means to pay the interest of their public debt regularly, and to sink it's principal by degrees. But as yet their efforts have been confined to that part of their debts which is evidenced by *certificates*. I do not think that any state has yet taken measures for paying their *paper money* debt. The principle on which it shall be paid I take to be settled, tho' not directly yet virtually, by the resolution of Congress of June 3, 1784, that is that they will pay the holder or his representative what the money was worth at the time he received it, with an interest from that time of 6 per centum per annum. ... whether the money was... Continental money, or Virginia money;...—I advise all foreign holders of paper money to lodge it in the office of their Consul for the state where it was received, that he may dispose of it for their benefit the first moment that payment shall be provided by the state or Continent [Continental Congress].

On November 6, 1786 he explained further that (Boyd, 1954, v. 10, p. 509),

Congress have as yet come to no resolution as to the general redemption of paper money. That it is to be redeemed is a principle of which there is no doubt in the mind of any member of Congress, nor of any citizen of the United States. A Resolution of Congress taken in a particular case, which stood on the same ground on which the general one will stand, founds a presumption amounting nearly to certainty that they will pay the holder of every bill what it cost him, or the persons whom he represents, at the time of receiving it, with an interest of 6 per Cent. They have of course established no rules of evidence as to the time of receiving the money.

Finally, on December 8, 1786 he explained even further that (Boyd, 1954, v. 10, p. 584),

As to the paper money in your hands, the states have not yet been able to take final arrangements for it's redemption. But soon as they shall have gotten their finances into some order, they will surely pay for it what it was worth in silver at the time you received it, with an interest. The interest on Loan office certificates is I think paid annually in all states; and in some of them they have begun to make payments of the principal. These matters are managed for foreigners by the Consul of their nation in America, where they have not a private

friend to attend for them.²²

The point of all this material is to establish beyond doubt, and contrary to that put forward by many scholars, that the disposition of the future redemption of Continental Dollars was an open question throughout the 1780s. Certainty over its future was continually avoided by Congress—though it sent reasonable expectations that redemption would happen in the near future when Federal finances were in better shape, and would happen, if not at face value, at least at a better rate for those who received their Dollars prior to 1780 than the 40 to 1 rate set by Congress in 1780. Such an expectation created an incentive to hold Continental Dollars for expected future redemption rather than to trade or remit them—given the likelihood that redemption would be at the rate in specie prevailing at the time the money was *last* received in payment. As such, the \$80.5 million Continental Dollars estimated as still outstanding and unredeemed in 1790 (40 percent of the total emitted) should not be a surprising sum.

Discrimination and the Reason for Irrevocable Default

In 1790, under the new *U.S. Constitution* that allowed Congress to create a direct tax revenue source for itself, Congress moved to directly fund (un-default) its obligations. How to pay its obligations generated a contentious debate in Congress over whether to credit current holders with the full face value of the obligation even if they had paid a pittance for it in the marketplace earlier, or whether original holders of the debt should be given something to make up for their loss when they were “forced” to sell the obligation at below face-value prices in the pre-1789 marketplace (Ferguson, 1961, pp. 273-284, 297-302; Perkins, 1994, pp. 221-231; Taylor, 1950, pp. 19-40). This issue is referred to as the debate over discrimination.

With regard to interest-bearing debt obligations (bonds), Congress decided that current holders would get full face-value—that is interest paid in specie, including arrears of interest, on the full face value in the form of a callable perpetuity—and original holders of the debt would get nothing.²³ With regard to non-interest-bearing debt obligations (the Continental Dollar), Congress decided that original holders would get nothing, and current holders would get less than 1 cent on the dollar of face value in the form of a required exchange for interest-bearing bonds. Continental Dollars not exchanged for these bonds would be worthless—an irrevocable default on the Continental Dollar.

The winning argument put forward for funding the interest-bearing debt at face value, with no discrimination between original and current holders, was that the new *U.S. Constitution* obligated the Federal Government to honor its prior obligations as originally contracted, i.e. honor the face value, and that such was absolutely necessary for reestablishing the creditworthiness of the government. Discrimination, besides being impractical, was at odds with honoring the obligation as a contract that was transferable in the marketplace and so at odds with upholding the public negotiability of government instruments (Taylor, 1950). But this argument holds equally well for paying off Continental Dollars still outstanding at face value to the current holders.

As presented in the last section, redemption of Continental Dollars in specie, if not at face value, at least at their specie value when last received by the current holder, was one predominant expectation among the public. But redemption of the Continental Dollar at its specie value when it was last received by the current holder would be analogous to discrimination in funding the bond debt by giving current holders interest

only on the purchase price or market price of the bond when last purchased and not on its face value. In both cases, it would be setting the specie value of the obligation at its market value when last purchased. If Congress was to deny discrimination in the redemption of its interest-bearing debt, consistency required that Congress also deny redeeming Continental Dollars at their market value in specie when last acquired. Thus, only Continental Dollars still outstanding and in the hands of their current holders could be considered for redemption, and only at either face value in specie or at nothing at all—or as close to nothing as one can get, i.e. an irrevocable default. As argued elsewhere (Grubb, 2007), redemption at face value was outside the revenue capabilities and asset position of Congress. Thus, nothing at all had to be the choice in 1790.

With its new power to directly tax the public, Congress could have directly accepted Continental Dollars at face value in payment of the taxes it levied on the public after 1789, effectively un-defaulting this debt—a promise Congress had made in 1779. In 1779 Congress asserted that “to raise the value of our paper money...and to redeem it, will not...be difficult.” Congress only asked for time and patience, and fixed January 1, 1797 for the full payment of this debt (Breck, 1843, p. 14). Instead, Congress decided in 1790 not to accept its Continental Dollars in payment of its taxes at any rate, because to do so would have substantially reduced Congress’ specie revenues in the near term and so undercut the credibility of its commitment to funding its interest-bearing debt through making regular interest payments in specie. Thus, the Continental Dollar had to remain unredeemed (at face value) in 1790. Grubb (2007) explains how an irrevocable default on the Continental Dollar could be done at this juncture without jeopardizing the Federal Government’s future creditworthiness. Adding to this explanation the necessity of being

consistent with its anti-discrimination position on funding its interest-bearing debt helps to build the case that the actions of Congress on the debt-funding issue in 1790 were rational, coherent, consistent, and not the product of capricious behavior.

Conclusion

The history of the Continental Dollar has been considered important to understanding the U.S. financial revolution that unfolded in the early decades of the Republic and for explaining the particular shape that revolution took. If nothing else, it influenced the debate over changing governmental monetary powers at the Constitutional Convention in 1787 (e.g. see Calomiris, 1988; Grubb, 2006). This history, however, has remained murky—suffering from serious entropy. The exact time series of emissions and redemptions of Continental Dollars, their totals, as well as the manner of emissions and redemptions, has not been consistently established or well understood. The estimates presented here, and the analysis of these estimates, will better establish these series as well as help reconcile the diverse estimates across the prior literature. In addition, the behaviors and motives of Congress and the public with regard to the redemption of Continental Dollars have been either ignored or explained in such a way that Congress and the public appear capricious and irrational. The evidence and analysis presented here helps turn their motives and behaviors into those of rational, coherent, and consistent actors. Such is needed if we are going to understand the U.S. financial revolution as something other than godlike heroes overcoming the ignorant and foolish.

[Place Appendix Tables 1 and 2 Here]

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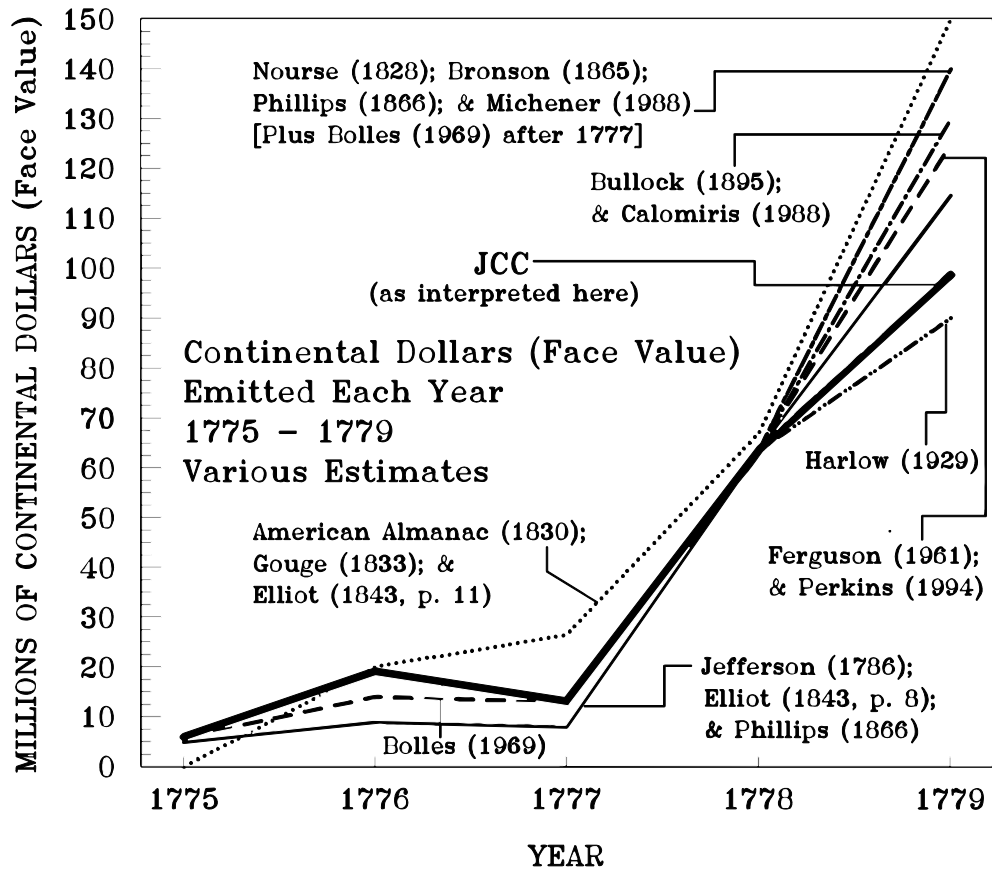


Fig. 1 Continental Dollars Emitted Each Year from 1775 through 1779

(Face Value): Various Estimates

Sources and Notes: Derived from Appendix Table 1. Sources cited therein. JCC stands for the *Journals of the Continental Congress*. Only yearly totals are shown because several sources only report yearly estimates. See Appendix Table 1 for more detailed and refined comparisons by authorized emission dates.

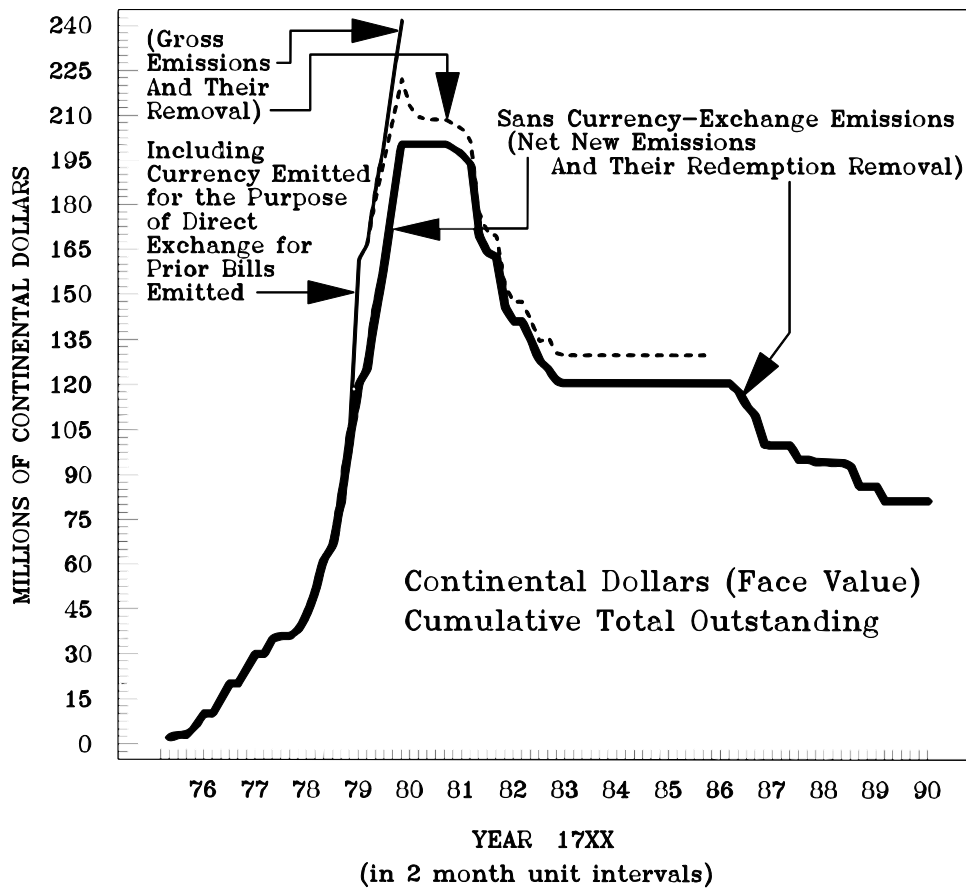


Fig. 2 The Continental Dollar, 1775-1790: Cumulative Outstanding

Totals Emitted and Removed—Face Value

Sources: Appendix Tables 1 and 2.

Notes: The net new emissions outstanding were constructed from the *JCC* column in Appendix Table 1 and the Hamilton (Elliot, 1843) column in Appendix Table 2. The gross emissions outstanding were constructed from the Nourse columns in Appendix Tables 1 and 2. See text for further explanations. The two-month unit intervals combine January with February, March with April, and so on.

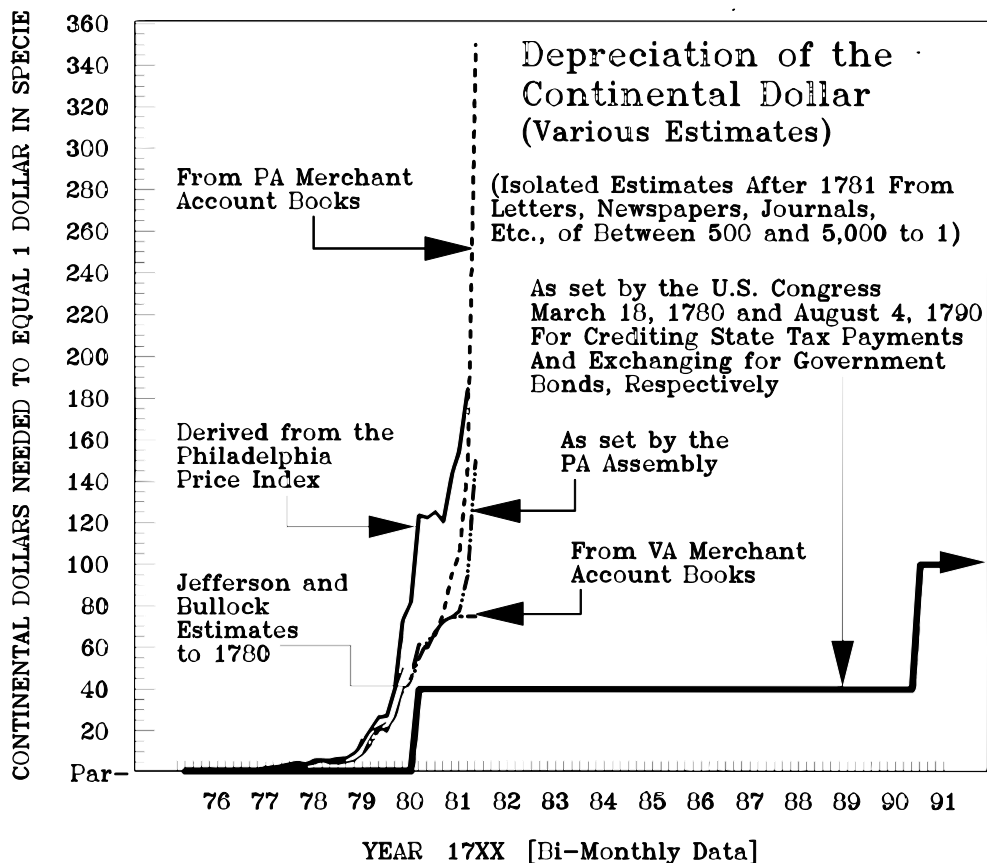


Fig. 3 The Depreciation of the Continental Dollar: 1775 through 1790

Sources: Bezanson (1951, p. 344); Boyd (1954, v. 10, pp. 42-43); Bullock (1895, p. 135); *JCC* (v. 16, p. 264); United States Congress (1834, v. 2, pp. 2243-2251); Webster (1969, pp. 501-502).

Notes: Bullock (1895, p. 134) reports the highest depreciation rate found in any state and stops in November of 1779—as does Jefferson’s estimate. The Philadelphia price index is a 15 commodity weighted arithmetic index for prices in Continental Dollars and stops in April 1781. The index as reported is divided by 100 to get the number reported here. The other estimates stop in May 1781. For the isolated exchange rates reported after 1781, see Bolles (1969, v. 1, pp. 117-146), Boyd (1954, v. 10, p. 26), Gouge (1833, II, p. 26), Phillips (1866, pp. 182-184), Sumner (1968, v. 1, pp. 95-96), and Webster (1969, p. 502).

APPENDIX

**Table 1. Continental Dollars Emitted by Congress, 1775-1780:
Reconciliation of Estimates (in face value)**

Listed By: Year Month [Day] ^a	20 th Congress 1828: Nourse (1828) & Bronson (1865) & Phillips (1866)	Thomas Jefferson's 1786 Table: Boyd (1954) & 28 th Congress Elliot (1843, p. 8) & Phillips (1866)	Bullock (1895) & Calomiris (1988)	[<i>American Almanac</i> (1830) { <i>AA</i> } & Gouge (1833) & Elliot (1843, p. 11)]; Plus Harlow (1929); Plus Ferguson (1961) & Perkins (1994); Plus Michener (1988); Plus Bolles	Newman (1997)	(<i>JCC</i>) <i>Journals of the Continental Congress</i>
1775			\$6,000,000	<i>AA</i> , Elliot, & Gouge = 0 Bolles, Ferguson, Harlow, & Michener \$6,000,000		
<i>June</i> [22 nd] [23 rd]	\$2,000,000	\$2,000,000			\$2,000,000	\$2,000,000
<i>July</i> [25 th]	1,000,000	?			1,000,000	1,000,000
<i>Nov.</i> [29 th]	3,000,000	3,000,000			3,000,000	3,000,000
1776				<i>AA</i> & Elliot = 20,064,667 Gouge = 20,064,465 Ferguson & Harlow = 19,000,000 Michener = 18,947,220 Bolles = 14,000,000		
<i>Feb.</i> [17 th]	4,000,000	4,000,000 ^b	4,000,000		4,000,000	4,000,000
<i>May</i> [9 th & 22 nd Or 27 th]	5,000,000	?	5,000,000		5,000,000	5,000,000
<i>July</i> [22 nd] & <i>Aug.</i> [13 th]	5,000,000	5,000,000	5,000,000		5,000,000	5,000,000
<i>Nov.</i> [2 nd]	500,000 ^c [Bronson only]					
<i>Nov.</i> [2 nd] & <i>Dec.</i> [28 th]	5,000,000	?	5,000,000		5,000,000	5,000,000

1777

AA, Elliot, & Gouge = 26,426,333
 Bolles, Ferguson, Harlow, & Michener =
 13,000,000

<i>Feb.</i> [26 th]	5,000,000	?	5,000,000		5,000,000	5,000,000
<i>May</i> [20 th]	5,000,000	5,000,000 ^d	5,000,000 [*]			5,000,000
[May 20th 1777 through April 18th 1778]					16,500,000 [#]	
<i>Aug.</i> [1 st] [15 th]	1,000,000	1,000,000	1,000,000			1,000,000
<i>Nov.</i> [7 th]	1,000,000	1,000,000	1,000,000			1,000,000
<i>Dec.</i> [3 rd]	1,000,000	1,000,000	1,000,000			1,000,000

1778

Ferguson = 63,400,000
 AA, Elliot, & Gouge = 66,965,269
 Harlow & Michener = 63,500,300
 Bolles = 63,500,000

<i>Jan.</i> [8 th] [22 nd]	1,000,000 2,000,000	1,000,000 2,000,000	3,000,000			1,000,000 2,000,000
<i>Feb.</i> [16 th]	2,000,000	2,000,000	2,000,000			2,000,000
<i>Mar.</i> [5 th]	2,000,000	2,000,000	2,000,000			2,000,000
<i>Apr.</i> [4 th] [11 th] [18 th]	1,000,000 5,000,000 500,000	1,000,000 5,000,000 [*] 500,000	6,500,000		5,000,000 [#]	1,000,000 5,000,000 500,000
<i>May</i> [22 nd]	5,000,000	5,000,000	5,000,000		5,000,000 [#]	5,000,000
<i>June</i> [20 th]	5,000,000	5,000,000	5,000,000		5,000,000 [#]	5,000,000
<i>July</i> [30 th]	5,000,000	5,000,000	5,000,000		5,000,000 [#]	5,000,000
<i>Sept.</i> [5 th] [26 th]	5,000,000 10,000,100 ^e	5,000,000 10,000,100	15,000,000		5,000,000 [#]	5,000,000 10,000,100

[Sept. 26 th 1778 through July 17 th 1779]				75,001,080
<i>Nov.</i> [4 th]	10,000,100	10,000,100	10,000,000	10,000,100
<i>Dec.</i> [14 th]	10,000,100 ^e	10,000,100	10,000,000	10,000,100

1779

95,051,695
 Bolles = 140,052,480
 AA, Elliot, & Gouge = 149,703,857
 Harlow & Michener = 90,052,080
 Ferguson = 90,099,600

Adjustment Guess Made for January 14, 1779:

In addition, on January 14, 1779 Congress voted \$50,000,400 to be exchanged for the May 20, 1777 and April 11, 1778 issues that were being counterfeited (*JCC*, v. 13, pp. 64-65). How much was actually exchanged and how much was a net new emission is unclear.) = the exchanged sum chosen by Jefferson and Elliot such that “C. Discrepancy [A – B]” equals zero (see below). * = emissions exchanged as interpreted by Bullock. ** = emissions exchanged as interpreted by Ferguson. # = emissions exchanged as interpreted by Newman. + = the total of all emissions in the style, tenor, and design of the May 20, 1777 and April 11, 1778 emissions designated for exchange, (plus) some unknown quantity of torn bills of other emissions exchanged.

Issued:	50,000,400 ^e	50,000,400	50,000,000	50,000,400	50,000,400	50,000,400
Exchanged:	-0 ^f	-25,552,780 [^]	-10,000,000 [*]	-15,300,000 ^{**}	-41,500,000 [#]	-41,500,000 ⁺
Equals Net						(plus)
New:	50,000,400	24,447,620	40,000,000	34,700,400 ^{**}	8,500,400	8,500,500
				Harlow = 0		(minus)
				Michener = 50,000,000		
				Bolles = 50,000,400		
				AA, Elliot, & Gouge = ?		

<i>Feb.</i> [3 rd]	5,000,160	5,000,163	10,000,000		5,000,160
[12 th]		5,000,160			
[19 th]	5,000,160				5,000,160
<i>Apr.</i> [1 st]	5,000,160		5,000,000		5,000,160
[2 nd]		5,000,160			
<i>May</i> [5 th]	10,000,100	10,000,100	10,000,000		10,000,100
<i>June</i> [4 th]	10,000,100	10,000,100	10,000,000		10,000,100
<i>July</i>			15,000,000		

[17 th]	15,000,280	15,000,280 ^d				15,000,280
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Comparison Interlude:

A. Totals so far—to Sept. 2, 1779:

				Ferguson = 186,101,360 ^g		
				Harlow = 151,501,260 ^g		
				Michener =		
201,501,660	159,948,883 [^]	191,500,000		201,448,480 ^g	155,001,480 ^g	160,001,166
202,001,660 ^c [Bronson]						(minus)

B. Total Congress Declared in Circulation on Sept. 2, 1779 (*JCC*, v. 15, pp. 1019, 1052-1053):

159,948,880	159,948,880	159,948,880	159,948,880	159,948,880	159,948,880
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C. Discrepancy [A – B] =

				Ferguson = +26,152,480		
				Harlow = -8,447,620		
				Michener =		(less than)
+41,552,780	+3 ^h	+31,551,120		+41,499,600	-4,947,400	+52,286
+42,052,780 ^c [Bronson]						

<i>Sept.</i>			15,000,000			
[17 th]	15,000,260 ^e	15,000,260				15,000,260

<i>Oct.</i>			5,000,000			
[14 th]	5,000,180	5,000,180				5,000,180

<i>Nov.</i>			20,050,000			
[17 th]	10,050,540	10,050,540				10,050,540
[29 th]	10,000,140	10,000,140				10,000,140

None thereafter except

1780 *AA*, Elliot, & Gouge =
82,908,320^p
1781 *AA*, Elliot, & Gouge =
11,408,095^p

Total	241,552,780	200,000,003 ^h	241,500,000	Harlow =	195,052,600 ⁱ	200,000,000 ^j
Implied				191,552,380		or
Or Reported				Michener =		200,052,780
1775-1781				241,500,000		(minus)
	242,052,780 ^c [Bronson]			Ferguson = 226,200,000		
				<i>AA</i> , Elliot, & Gouge = 357,476,541 ^{k,p}		
				Bolles = 236,552,480		

Corrected for Addition, Omission, and Transcription Errors:

	0	+15,999,997	-9,950,000 ^l		0	+5,000,180	0
	-500,000 ^c [Bronson]				+5,000,000 [Bolles]		

Then Re-Corrected using {C. Discrepancy [A – B]}, such that net new emissions for Jan. 14th 1779 are uniform at 8,447,620.^m

-41,552,780	-16,000,000	-31,552,380	Harlow =	-52,780	0 ⁿ
			+8,447,620		or
			Michener =		(less than)
			-41,552,380		-52,780
			Ferguson =		
			-26,252,780		
			Bolles =		
			-41,552,480		
			AA, Elliot, & Gouge = ?		

Final Corrected Total Amount (face value) Outstanding in 1780 (1781):^m

200,000,000	200,000,000	199,997,620 ^o	Harlow =	200,000,000	200,000,000
			200,000,000		
			Bolles = 199,999,700 ^o		
			Ferguson = 199,947,220 ^o		
			Michener = 199,947,620 ^o		
			(AA, Elliot, & Gouge = 357,476,541 ^p)		

Sources: American Almanac (1830, p. 183); Bolles (1969, v. 1, pp. 31, 38-54, 70, 74, 88); Boyd (1954, v. 10, pp. 42-43); Bronson (1865, pp. 88-89, 112-115); Bullock (1895, pp. 135-136); Calomiris (1988, pp. 57-58); Elliot (1843, pp. 8, 11); Ferguson (1961, pp. 29-30); Gouge (1833, II, p. 25); Harlow (1929, pp. 50-51); *JCC* (v. 2, pp. 103, 105, 207; v. 3, p. 390; v. 4, pp. 157, 339; v. 5, pp. 599, 651; v. 6, p. 918; v. 7, pp. 161, 373; v. 8, pp. 377-380, 597, 646; v. 9, pp. 873, 993; v. 10, pp. 28, 82-83, 174-175, 223, 309, 337-338, 365; v. 11, pp. 524, 627, 731; v. 12, pp. 884, 962, 1100, 1218; v. 13, pp. 64, 139, 209, 408; v. 14, pp. 548, 687-688, 848-849; v. 15, pp. 1019, 1053, 1076-1077, 1171-1172, 1285, 1324-1325, 1436); Michener (1988, p. 690); Newman (1997, pp. 58-69); Nourse (1828, p. 7); Perkins (1994, p. 97); Phillips (1866, pp. 198-199). Perkins (1994) simply repeats Ferguson (1961) and so is not listed separately in the table.

^a The difference in the [Day] reported by different scholars for what are the same emissions represents the difference between the [Day] that Congress first authorized the

emission versus a later [Day] when Congress commented on some aspect of the implementation of its initial authorization. The first date is used for the column derived directly from the *JCC*.

^b Jefferson's original entry was for \$1,000,000. This clearly appears to be a typo as Jefferson also lists this entry as being worth \$4,000,000 silver dollars with no depreciation. Elliot's (1843, p. 8) transcription of this table reports his number as \$4,000,000.

^c Bronson (1865, pp. 113-114) includes this \$500,000 in his list of net new emissions. He is the only scholar to do so. The *JCC* (v. 6, p. 918) indicates that this sum was mentioned but only as part of the \$5 million authorized, namely that part which was to be hastily emitted. It also indicates that this action was not followed through on. See also Bolles (1969, v. 1, pp. 49-50); Bullock (1895, p. 134); Phillips (1866, p. 57).

^d Phillips (1866, p. 199) erroneously transcribed the entry for May 20, 1777 as \$5,000,090 and erroneously transcribed the entry for July 17, 1779 as June 17, 1779.

^e Phillips (1866, p. 198) erroneously transcribed the entry for September 26, 1778 as \$10,000,000; the entry for December 14, 1778 as \$10,000,000; the entry for January 14, 1779 as \$50,000,100; and the combined entry for September 17, 1779 as \$15,000,360.

^f Bronson (1865, p. 113) claims to have omitted from his list of total emissions "...the \$10,000,000 less five dollars, authorized January fourteenth and May seventh, 1779, which were designed to take the place of the counterfeited emissions of May twentieth, 1777, and April eleventh, 1778." In fact, he seems not to have so subtracted that sum from his list of total emissions.

^g Because Jefferson's and Elliot's (1843, p. 8) numbers for 1779 and for September 26, 1778 through November 29, 1779 sum to the same total as those for Newman, Harlow, and Michener (and close to those for Ferguson once adjusted for rounding), the values reported by Jefferson and Elliot (1843, p. 8) were used to apportion Newman's, Ferguson's, Harlow's, and Michener's numbers for 1779 into before versus after September 2, 1779. Not enough information is given in Bolles, Elliot (1843, p. 11), and Gouge to do this kind of comparison.

^h Jefferson's Table omitted \$16,000,000 between 1775 and early 1777, designated as "?" in the table here [also so omitted in Elliot's (1843, p. 8) transcription], and his individual entries sum to \$200,000,003 not the total reported in his table (\$200,000,000), see Boyd (1954, v. 10, pp. 42-43). The "extra" three dollars in the February 3, 1779 entry is most likely just a transcription error. Elliot (1843, p. 8) transcribed Jefferson's table without the extra three dollars.

ⁱ Aggregating Newman's list of emissions can be done in two ways. Both start with the subtotal of \$71,500,000 emitted through Sept. 5, 1778. To this number add \$75,001,080 Newman reports for the period Sept. 26, 1778 through July 17, 1779 [the total for this period derived from the *JCC* is \$80,001,260]. Then add in the emissions after July 17, 1779 (\$40,051,120) as reported in Nourse (1828), Boyd (1954), and Elliot (1843, p. 8). Finally, add in the estimated amount of the Jan. 14, 1779 emission that was new (\$8,550,400). This yields a grand total of \$195,052,600 emitted, which is the method used and total reported here. Alternatively, to the \$71,500,000 emitted through Sept. 5, 1778 add the amount emitted through the rest of 1778 (\$30,000,300) as reported in Nourse (1828), Boyd (1954), and Elliot (1843, p. 8), and then add in the total Newman

reports for 1779 (\$95,051,695) [the total for this period derived from the *JCC*, sans the January 14th emission, is \$90,052,080]. This yields a grand total of \$196,551,995.

Whether Newman included in his 1779 total the estimated amount of the January 14, 1779 emission that was new (\$8,550,400) is unclear. If he did not, then adding that amount in would yield a grand total of \$205,052,395. Newman does not give enough detail in his accounting of separate emissions after Sept. 26th 1778 to identify where the problem lies and resolve the discrepancies in these different grand total estimates for him.

^j The first number is that reported by Congress as its total emissions (*JCC*, v. 15, p. 1019, 1036, 1053, 1055, 1171). The next number is derived from the estimate of the net new emission out of the January 14, 1779 emission derived above.

^k Gouge (1833, II, p. 25) reports the same total for his table of emissions as the *American Almanac* (1830, p. 183) and Elliot (1843, p. 11), even though his yearly numbers sum to \$357,476,339. The \$202 difference between Gouge's and *AA*-Elliot's summed totals comes from what they report for 1776. As such, Gouge's number for 1776 may just be a typo and it should really be the same as the *AA*-Elliot number for 1776.

^l Bullock's individual entries sum to \$231,550,000 and not to the \$241,500,000 he reported as the total—an error in addition that went uncorrected in Calomiris (1988).

^m As such, the January 14, 1779 adjustment is made uniform across estimates such that [$\$50,000,400 - \$41,552,780$ (exchanged)] = \$8,447,620 of net new emission. The remaining differences are due to rounding or minor transcription errors. This correction, when made to Bullock's estimate, solves the anomaly that Bullock himself puzzled over (Bullock, 1895, p. 136). This estimate also accords with Ferguson (1961, p. 45) who claims that \$41,500,000 was exchanged out of the \$50,000,400 authorized for exchange

which would then potentially leave \$8,500,400 as a net new emission. This estimate also accords with the limit set by Congress on September 3, 1779 of a maximum of \$200,000,000 Continental Dollars that could be emitted before emissions were permanently discontinued (Ferguson, 1961, p. 46). See also Jefferson's assessment (Boyd, 1954, v. 10, pp. 25, 42).

ⁿThe total emissions declared by Congress through Sept. 2, 1779 (\$159,948,880) when added to that emitted from Sept. 17th through Nov. 29th 1779 add up to \$200,000,000.

^oThe difference between the number listed and \$200 million is merely the result of rounding by these scholars.

^pThe exceptionally high total of \$357.5 million given by these sources and repeated elsewhere (see Bronson, 1865, p. 164; Bullock, 1895, pp. 174, 177; Ferguson, 1961, pp. 28-29; Hepburn 1967, p. 16) was originally derived from Nourse (1999, v. 9, pp. 930-936). Nourse indicated that these numbers are not emissions of Continental Dollars but all "Expenditure and Advances made at the Treasury of the United States." Continental Dollars were the unit of account in which these expenditures were kept no matter what form the payment took, e.g. by loan certificate, indent, and so on. Thus, these estimates erroneously include indents and loan certificates (all disbursements of the Treasury) mixed in with Continental Dollar bills of credit emitted (see also Bronson, 1865, p. 115; Bullock, 1895, pp. 134, 177; Ferguson, 1961, pp. 28, 64-65; Sumner 1968, v. 1, p. 98).

Table 2. Continental Dollars Paid by each State from 1779 through 1790 to the Federal Government as Part of Their Tax Revenues and Currency Swaps Owed to Congress that were Examined, Counted, and then Burnt by the U.S. Treasury (Face Value in Nominal Dollars)

Year	Reported by Joseph Nourse		Reported by Alexander
<i>Month</i>	(<i>JCC</i> , Jan. 14, 1786)		Hamilton, May 11, 1790
<i>Day</i>	From Whom Received	Amount	(<i>Elliot</i> , 1843, pp. 73-76) Received From Amount
1779			
<i>May</i>	Delaware State Treasurer	224,524	
	Pay Master—General’s Dept.	233,098	
	Pennsylvania State Treasurer	166,000	
<i>June</i>	New York—Loan Office	1,841,856	
	New Jersey—Loan Office	768,466	
	Pennsylvania—Loan Office	73,600	
	Delaware State Treasurer	150,003	
	Delaware—Loan Office	157,894	
	Pay Master—General’s Dept.	24,851	
	Board of War	83,233	
<i>July</i>	Rhode Island—Loan Office	746,372	
	Rhode Island State Treasurer	195,018	
	New Jersey—Loan Office	483,444	
	Pennsylvania—Loan Office	537,401	
<i>Sept.</i>	Massachusetts—Loan Office	6,635,550	
	Pay Master—General’s Dept.	15,335	
<i>Oct.</i>	New Jersey—Loan Office	554,505	
<i>Nov.</i>	New York—Loan Office	5,130	
<i>Dec.</i>	Pennsylvania—Loan Office	1,397,002	
	Virginia—Loan Office	4,848,100	
1780			
<i>Jan.</i>	Connecticut—Loan Office	1,592,159	
	Connecticut State Treasurer	1,367,537	
<i>Feb.</i>	Pennsylvania—Loan Office	6,220,313	
<i>Mar.</i>	Rhode Island State Treasurer	8,238	

	Pennsylvania—Loan Office	1,445,914		
	Delaware—Loan Office	3,899		
	South Carolina—Loan Office	1,814,471		
<i>June</i>	New Hampshire State Treasurer	200,000		
	New Hampshire—Loan Office	501,522		
	Pay Master—General’s Dept	8,893		
	Managers of the U.S. Lottery	184,513		
<i>Nov.</i>	New Jersey—Loan Office	949,430		
	Maryland—Loan Office	115,117		
25 th			New Jersey	949,430
25 th			Maryland	115,117
<i>Dec.</i>	New Jersey—Loan Office	237,840		
23 rd			New Jersey	237,840
1781				
<i>Jan.</i>	New York—Loan Office	599,396		
1 st			New York	599,396
<i>Feb.</i>	Pennsylvania—Loan Office	1,400,527		
13 th			Pennsylvania	1,400,527
<i>Mar.</i>	New Jersey—Loan Office	631,523		
23 rd			New Jersey	631,523
<i>Apr.</i>	Pennsylvania—Loan Office	2,599,987		
	Virginia—Loan Office	105,433*		
	Virginia—Loan Office	802,717		
3 rd			Pennsylvania	2,599,987
17 th			Virginia	802,717
<i>May</i>	Pennsylvania—Loan Office	1,999,995		
	Virginia—Loan Office	5,785,555		
	New Jersey—Loan Office	712,824		
15 th			Pennsylvania	1,999,995
29 th			Virginia	5,785,555
30 th			New Jersey	712,824
<i>June</i>	New Hampshire—Loan Office	2,299,769		
	Massachusetts—Loan Office	12,984,687 ^a		
11 th			New Hampshire	2,299,769
11 th			Massachusetts	12,984,001 ^a
<i>July</i>	Massachusetts—Loan Office	46,959*		

	Massachusetts State Treasurer	821,152*		
<i>Aug.</i>	New Jersey—Loan Office	1,456,417		
	Pennsylvania—Loan Office	28,323*		
	Pennsylvania—Loan Office	4,402,413		
<i>2nd</i>			New Jersey	1,456,417
<i>4th</i>			Pennsylvania	4,402,413
<i>Oct.</i>	New Jersey—Loan Office	1,139,180		
<i>6th</i>			New Jersey	1,139,181
<i>Nov.</i>	Massachusetts—Loan Office	16,876,618		
<i>6th</i>			Massachusetts	16,876,618
1782				
<i>Jan.</i>	Delaware—Loan Office	2,246,683		
	New York—Loan Office	1,373,811		
	New York—Loan Office	3,817*		
	South Carolina—Loan Office	221,387*		
<i>7th</i>			Delaware	2,210,000
<i>30th</i>			New York	1,373,811
<i>Feb.</i>	New Jersey—Loan Office	1,207,111		
<i>23rd</i>			New Jersey	1,207,111
<i>May</i>	Pennsylvania—Loan Office	3,367,670		
	Delaware—Loan Office	243,127		
<i>30th</i>			Pennsylvania	3,367,670
<i>June</i>	Pennsylvania—Loan Office	2,805,318		
<i>3rd</i>			Pennsylvania	2,805,318
<i>July</i>	Pennsylvania—Loan Office	5,009,343		
<i>30th</i>			Pennsylvania	5,009,343
<i>Aug.</i>	Pennsylvania—Loan Office	1,599,758		
	Massachusetts—Loan Office	38,725 ^b		
<i>7th</i>			Pennsylvania	1,599,758
<i>31st</i>			Massachusetts	387 ^b
<i>Sept.</i>				
<i>18th</i>			New Hampshire	2,900,231 ^c
<i>Nov.</i>	Pennsylvania—Loan Office	2,954,918		
<i>22nd</i>			Pennsylvania	2,954,918

<i>Dec.</i>	Pennsylvania—Loan Office	1,000,391		
	Pennsylvania—Loan Office	77,623		
6 th			Pennsylvania	1,000,391
19 th			Pennsylvania	77,623
1783				
<i>Jan.</i>	Pennsylvania—Loan Office	47,535		
	Pennsylvania—Loan Office	331,369		
20 th			Pennsylvania	47,535
29 th			Pennsylvania	331,369
<i>Feb.</i>	New Jersey—Loan Office	392,833		
21 st			New Jersey	392,833
<i>July</i>	New Hampshire State Commissioner	29,231 ^c		
1784	None		None	
1785	None		None	
1786				
<i>June</i>				
9 th			New York	2,759,217
<i>July</i>				
2 nd			New York	848,776
25 th			Maryland	827,490
<i>Aug.</i>				
2 nd			New York	2,151,478
22 nd			Maryland	430,969
22 nd			Maryland	473,779
<i>Sept.</i>				
5 th			Maryland	151,417
12 th			Maryland	26,650
16 th			Maryland	132,929
16 th			Virginia	2,880,720
<i>Nov.</i>				
1 st			Virginia	1,523,224
9 th			Maryland	62,481
<i>Dec.</i>				
7 th			Connecticut	8,102,425
13 th			Maryland	40,072

29 th	Maryland	21,750
1787		
<i>Jan.</i> 22 nd	Maryland	89,905
<i>July</i> 5 th	Virginia	2,048,160
<i>Aug.</i> 13 th 17 th	Rhode Island New Jersey	2,593,353 99,516
<i>Nov.</i> 13 th	Pennsylvania	857,827
1788		
<i>Mar.</i> 28 th	New York	172,677
<i>Aug.</i> 25 th	Connecticut	1,049,060
<i>Sept.</i> 5 th	Maryland	6,780,026
1789		
<i>Mar.</i> 18 th	North Carolina	5,066,861
Separate Sub-Totals:	<u>\$111,435,353^d</u>	<u>\$119,462,370</u>

Grand Combined Total (sans overlap): \$153,526,347

Continental Dollars Still Outstanding and Unredeemed as of 1790:

If the Jan. 14, 1779 exchanged currency and its destruction is included
in the totals— $(241,552,780 - 153,526,347) = \$88,026,433^e$

If the Jan. 14, 1779 exchanged currency is excluded (only net new emissions
and their removal)— $(200,000,000 - 119,462,370) = \$80,537,630$

Notes and Sources: Derived from Joseph Nourse, Registers Office, Board of the Treasury, January 14, 1786 report recorded in the *JCC* (v. 30, pp. 22-25); and Hamilton's

May 11, 1790 report to Congress (Elliot, 1843, pp. 73-76; United States Congress, 1834, v. 2, pp. 1544, 1566) “Schedule E. *Statement of the sums, in the old continental emissions, paid by the following States into the treasury of the United States, on account of their several quotas of the requisitions of Congress, of March 18, 1780.*” Both sources record no payments by Georgia and no payments for the years 1784 and 1785. See also Ferguson (1980, v. 5, p. 139) and fn. 15 below.

* Identified by Michael Hillegas, Continental Treasurer, in May of 1782 as being bills of the May 20, 1777 and April 11, 1778 emissions remitted as part of the authorized currency exchange for new bills during the period from November 25, 1780 to February 23, 1782 (Ferguson, 1980, v. 5, p. 139).

^a These appear to be the same entry. Which is correct and which is a typo is unclear.

^b These appear to be the same entry. Which is correct and which is a typo is unclear.

^c These might be the same entry, though that is not eminently clear. If they are, which is correct and which is a typo is also not clear. For the purpose of calculating the “Grand Combined Total (sans overlap)” they were counted as independent and separate entries.

^d Nourse indicated that his numbers were neither comprehensive nor complete. As such they represent a lower bound of what was actually removed and destroyed in this period.

^e Because the number in note d above is a lower bound, this value is biased high.

Footnotes

¹ Only estimates that track emission over some time interval, i.e. by year, month, or day, are included for reconciliation in Appendix Table 1.

² These high numbers for the emissions of Continental Dollars were first reported in the *American Almanac* (1830, p. 183)—with no reference source given. Gouge (1833, II, p. 25) repeated, with a minor typographical error, these numbers citing only the *American Almanac*. Elliot (1843, pp. 10-11) repeated these numbers and indicated that they came from Hamilton in 1790. Bronson (1865, pp. 115, 164) repeated these numbers citing Gouge and the *American Almanac*, but reported that these numbers came from the Secretary of War [Henry Knox] in 1790. Bronson also thought these numbers measured the “entire disbursement of the Treasury, [counted] in continental money...” and not the emission of Continental Dollars *per se*. In 1891, Sumner (1968, v. 1, p. 98) repeated the cumulative total from these numbers and, in 1895, Bullock (1895, pp. 174, 177) repeated these numbers—citing Elliot. Bullock assumed they came originally from Hamilton, and he took them as measuring total expenditures and not the emission of Continental Dollars *per se*. In 1904, Hepburn (1967, p. 16) repeated the cumulative total from these numbers citing only Gouge. In 1961, Ferguson (1961, pp. 28-29, 64-65) also repeated these numbers, but he took them as measuring total expenditures and not the emission of Continental Dollars *per se*. Ferguson (1961, p. 28) also indicated that these numbers originally came from a report ordered by the Committee of the *House of Representatives of the United States* on Robert Morris’ Memorial appointed on March 19, 1790 with the report published on February 16, 1791. The congressional record indeed shows that such a committee was formed on the date indicated and delivered its report on the date

indicated with James Madison speaking for the committee (United States Congress, 1834, v. 1, pp. 1464, 1964). However, no such report was recorded in the congressional record. *The Papers of James Madison* indicates that Madison indeed was on a committee on March 9, 1790 to inquire into the accounts of the department of finance under Robert Morris' administration, and that he delivered such a report on February 16, 1791. What Madison wrote therein, however, was only a brief summary with nothing related to the numbers at issue. The report itself is not reproduced therein. Madison, however, does indicate that the committee had obtained a general account of receipts and expenditures from the Register of the Treasury and that those materials, unaltered, made up the bulk of their report (Hobson and Rutland, 1981, v. 13, pp. 95, 392-393). The Register of the Treasury was Joseph Nourse, and his report for the "Madison" committee, ordered on March 19, 1790, was delivered by him to that committee on August 30, 1790. It is reproduced in the *Papers of Robert Morris* (Nourse, 1999, v. 9, pp. 905-940). In the portion of this report that incorporates material from the Secretary of War, Henry Knox, are tables reporting the "An Estimate of the Expenditures and Advances made at the Treasury of the United States" separately for each year from 1776 through 1781. The tables list each department's expenditures in continental dollars. These departments look primarily like military supply departments. When the totals from each year are extracted and listed together in a single table, it replicates that displayed in the *American Almanac* (1830, p. 183) and the copies of that table published by others thereafter. There can be no doubt that this 1790 report by Nourse (1999, v. 9, pp. 930-936) is the original source for this line of Continental Dollar estimates. Its provenance also explains some of the confusion over the report's ultimate author. While Nourse as Register of the Treasury

assembled the report in 1790, at that time his boss was Alexander Hamilton—the Secretary of the Treasury. Yet the information for the report comes from the period that was under the administration of Robert Morris. However, the information in question in the report is mixed in with the material from Henry Knox, Secretary of War—and may have ultimately come from him. Lastly, Madison was primarily responsible for obtaining the report, putting it before Congress, and getting it published. So is the “responsible” author Nourse, Hamilton, Morris, Knox, or Madison? Regardless of the answer, it is clear the information comes from 1790 and from the Morris administration of Congressional finances. It is also clear that it is counting the entire disbursement of “Expenditure and Advances made at the Treasury of the United States” measured in Continental Dollar units of account. It is not measuring the emissions of Continental Dollars *per se*.

³ Bronson (1865, p. 113) reached a similar conclusion about the amount to be exchanged (\$10 million) that should be deducted from the total authorized to arrive at net new emissions, but then he fails to so deduct that sum from his table of emissions.

⁴ This number is also close to the number (\$46,500,000) proposed in Congress on October 28, 1778 as the amount of currency that had to be taken out of circulation and destroyed to stop the counterfeiting problem. [The 6 in the above number could just be a typo for a 1.] (*JCC*, v. 12, p. 1073) By contrast, in 1780 Webster (1969, p. 92) claimed that the amount to be exchanged was only \$33 million, being \$8 million from the May 20, 1777 emission and \$25 million from the April 11, 1778 emission. As such, Webster’s numbers are the same as Newman’s (and that used here) for the April 11, 1778 emission, but he apparently omitted \$5.5 million from the May 20, 1777 emission. See also Phillips

(1866, p. 99) who indicated that the amount actually exchanged was already at \$19,847,268 by January of 1780.

⁵ By contrast, Ferguson (1961, p. 29, fn. 13) assumes that none were so exchanged after 1779 and that because only \$15.3 million were so exchanged in 1779 (*JCC*, v. 15, p. 1436), he deduces that the rest must have remained outstanding. Thus, his calculation would imply \$34.7 million net new emission out of that authorized on January 14, 1779.

⁶ This was not an unprecedented action. For example, on January 5, 1776 Congress authorized \$10,000 to "...be struck for the purpose of exchanging ragged and torn bills of the continental currency..." (*JCC*, v. 4, p. 32; v. 5, p. 697) No one counts this \$10,000 from January 5, 1776 as a net new emission of Continental Dollars (among the authors evaluated in Appendix Table 1). See also Bronson (1865, p. 113).

⁷ This value also concurs with that of Breck (1843, pp. 8, 15), Ratchford (1941, p. 37), Benjamin Franklin (Oberg, 1998, p. 231), Jefferson (Boyd, 1954, v. 10, pp. 25, 42), Webster (1969, p. 76), and with Congress' limit set on September 3, 1779 of a maximum of \$200,000,000 Continental Dollars that could be emitted before emissions were permanently discontinued (*JCC*, v. 14, p. 1013; v. 15, pp. 1019, 1053, 1171, 1324; Ferguson, 1961, p. 46). Also, the amount emitted between September 2, 1779, when Congress stated that there was \$159,948,880 in bills currently outstanding, and the last emission it made (November 29, 1779) exactly equals the amount needed to reach \$200 million from \$159,948,880, see Appendix Table 1.

⁸ States paid only a small fraction of the monies requisitioned by Congress. By June of 1781, of the \$3 million in specie value requisitioned in 1779, only 1.3 percent had been paid. Of the \$8 million in specie value requisitioned after 1780, only 13 percent had been

paid by November of 1783, only 18.6 percent by January 1, 1784, and only 25.5 percent by November 1, 1784. Derived from the reports of the Register of the Treasury, Joseph Nourse, reproduced in *The Papers of Robert Morris* (Ferguson, 1973, v. 1, p. 196; 1995, v. 8, pp. 57, 749; 1999, v. 9, pp. 139, 908).

⁹ For example, Calomiris (1988, p. 59) and Michener (1988, p. 689) misinterpret the Continental-State currency mechanism as being a net new addition to the outstanding stock of Continental Dollars (an increase in the nominal money supply). Calomiris (1988, p. 59) alluded to “an intention effectively to double the existing nominal bill supply.” Michener (1988, p. 689) says that “Had this plan been fully implemented, it would have...doubled the money supply.” This is clearly erroneous if the reference is to the nominal face value of the “Continental” paper money supply. The legislation explicitly entailed a net reduction of 20 Continental Dollars to each Continental-State Dollar issued. Only if the reference by Calomiris and Michener is to the depreciation-adjusted Continental Dollar money supply in 1780 using Congress’ 40 to 1 rate ($\$200 \text{ million}/40 = \5 million) versus the face value of Continental-State Currency ($\$10 \text{ million}$) would there have been a doubling of the *real* money supply if the Continental-State Dollar plan had been fully implemented. This, of course, ignores both the depreciation of Continental-State Dollars as more were issued, and the appreciation of the Continental Dollar as the quantity in circulation was reduced.

In addition, Calomiris (1988, pp. 59, 60, 61, 62, 63) claims that in mid-1779 Congress indexed wages, taxes, and loan principals “to the rate of bill creation.” He cites no source for his claim and it has yet to be found in the *JCC* or otherwise verified. Congress did raise salaries, wages, and so on to account for the fact of inflation, but this

was done after the fact and mostly after Congress had ceased issuing paper money (Bezanson, 1951, p. 37; Ferguson, 1961, p. 181; *JCC*, v. 16, pp. 344-345, v. 17, pp. 567-569; Sumner, 1968, v. 1, pp. 91, 96). That Congress at anytime directly indexed salaries, wages, and so on to the on-going rate of paper money creation cannot be found in the records. It is possible that Calomiris simply misinterpreted what the post-1778 tables of depreciation of Continental Dollars meant and how they were used.

¹⁰ For examples of these sorts of troubles and confusions for the state of Maryland see, *Archives of Maryland* (v. 43, pp. 205, 258-259, 277, 279, 297-298, 460; v. 45, pp. 73-74, 279, 382, 397-398, 441, 453, 577; v. 47, pp. 37, 84, 107, 131, 142-143, 230-231, 437; v. 48, pp. 21-22, 101, 165).

¹¹ Elliot (1843, p. 11) also reports estimates by Senator Woodbury, former Secretary of the Treasury, of \$2,070,240 and \$2,071,085 Continental-State Dollars emitted. By contrast, Ratchford (1941, p. 38) says that “\$4,468,625 of these new bills [Continental-State Dollars] were put into circulation.” He cites Harlow (1929, p. 62) as his source. However, Harlow does not say this. Harlow (1929, p. 62) said, “Less than half the authorized total—about \$4,468,625—was put into circulation...” Half of \$4,468,625 is \$2,234,313, which is just slightly more than the total given by Elliot (1843, p. 11), Gouge (1833, II, p. 25), and Hepburn (1967, p. 16), i.e. a total that is consistent with Harlow’s “less than half” statement. Unfortunately, Harlow cites *JCC* (v. 19, pp. 399-400) April 15, 1781 as his source of the above information. It turns out there is no entry in the *JCC* for April 15, 1781—it was a Sunday and Congress did not meet on Sundays—and none of Harlow’s numbers are mentioned on the pages of the *JCC* he cited. For another possible source of this \$4,468,625 number see Bronson (1865, p. 125) and Bullock (1895,

p. 138). Bronson (1865, p. 126) himself estimates the total emissions of Continental-State Dollars to be \$3,980,556. He arrives at this total by taking the number reported by Hamilton to Congress on May 11, 1790 of \$1,592,222 Continental-State Dollars (Elliot, 1843, p. 73) and assumes that Hamilton's number is only the Federal Government's share, i.e. four-tenths of the total emitted. Scaling up from four-tenths yields \$3,980,556 for the total emission of Continental-State Dollars. This also seems to be the source of Bullock's (1895, p. 138; 1900, p. 72) estimate of \$4 million Continental-State Dollars issued. And to be honest, Hamilton's statement is somewhat ambiguous as to whether the sum he reported was the global total or just the Federal Government's four-tenths share. As shown in the text, however, the \$80 to \$88 million Continental Dollars that would have had to be called out of circulation by the states in 1780 and 1781, given the 20 to 1 rate set by Congress, to be consistent with the \$4 to \$4.4 million Continental-State Dollars these authors say were emitted cannot be sustained by the direct evidence or made consistent with the other evidence these authors present. Finally, the confusion can be straightened out by looking at the report sent to Robert Morris, the Superintendent of Finance, by Charles Thomson, the Secretary of Congress, on June 29, 1781 (Ferguson, 1973, v. 1, pp. 193-194). Thomson reported \$195 million Continental Dollars outstanding, which if all were cashed in for Continental-State Dollars would yield \$9.75 million Continental-State Dollars of which Congress would get four-tenths or \$3.9 million Continental-State Dollars. As such the \$4 million is the *maximum* amount *possible* that Congress could acquire ($200,000,000 * 0.05 * 0.4 = 4,000,000$) of Continental-State Dollars and not what it actually did acquire. As such, Bronson (1865, pp. 125-126), Bullock (1895, p. 138, 1900, p. 72), and Ratchford (1941, p. 38) may have

simply confused the maximum possible amount that Congress could have gotten for the actual amount of Continental-State Dollars emitted in total.

¹² Ferguson (1961, p. 53) reports that about \$2 million Continental Dollars were withdrawn by January of 1781 with an additional \$29 million withdrawn by July of 1781, for a total of about \$31 million. Perkins (1994, p. 97) leaves the erroneous impression that \$119 million Continental Dollars were turned in during the early 1780s through the Continental-State Dollar swap mechanism. Perkins seems to have confused the total amount of Continental Dollars eventually remitted by 1790 (see Appendix Table 2) for that remitted under the Continental-State Dollar swap mechanism.

¹³ This is also consistent with the estimate given by Franklin (\$30 million) for what had been called out of circulation in the early 1780s (Oberg, 1998, p. 231).

¹⁴ On March 28, 1780 Congress ordered “That all bills of the said emissions not brought in by or before the said first day of January next [January 1, 1781], be afterwards irredeemable.” (*JCC*, v. 16, p. 312) This statement, however, only applied (explicitly stated as such by Congress) to the emissions of May 20, 1777 and April 11, 1778 that were to be exchanged for the emission of January 14, 1779. Some scholar may have erroneously interpreted this statement as a general repudiation of Continental Dollars, which it was not. It was just a termination date set to the bill exchange mentioned earlier.

Similarly, a committee report was read in Congress on May 10, 1781 which proposed that “...after the first day of July next, the said Bills [Continental Dollars] be not received in discharge of any tax, debt or contract, or be current in any of the United States.” (*JCC*, v. 20, p. 495) This report, however, was not acted on. In addition, this report appears to be written primarily as an inducement to get states to issue more

Continental-State currency. Again, some scholar may have erroneously interpreted this statement as a general repudiation of Continental Dollars, which it was not. It was just “advice” from a committee, as Harlow (1929, p. 61) rightly notes.

Finally, Harlow (1929, p. 61) said that “Less than a year from [March 18, 1780]...Congress officially rated the bills [Continental Dollars] at seventy-five to one.” He cites the *JCC* (v. 19, p. 165) as his source. However, this source does not represent an official Congressional adjustment to the redemption rate of Continental Dollars from the 40 to 1 rate set on March 18, 1780. The 75 to 1 rate was a suggested computation rate for determining the specie value of a sum of Continental Dollars in a lengthy committee report to Congress on the various debts outstanding. The report was referred to committee and not acted on. As such, Harlow appears to have misread his source here.

¹⁵ Another list was produced by Michael Hillegas, Continental Treasurer, under the administration of Robert Morris in May of 1782 (Ferguson, 1980, v. 5, p. 139). This list runs from November 25, 1780 through February 23, 1781. It also replicates and so corroborates the two lists reported in Appendix Table 2 for the period indicated. The one exception is the May 1781 amount for Virginia (\$5,785,555) which is missing from Hillegas list. As such, the Hillegas list is not reported or used in Appendix Table 2 since it is both redundant and incomplete.

¹⁶ Ferguson (1961, p. 29, fn. 13) takes the amount listed as sent out for exchange between late June and early August 1779 (\$15.3 million) as being all that was ever exchanged. (*JCC*, v. 15, p. 1436) He seems to have missed both the extension into 1781 of the date over which exchanges could take place and also the numerous statements of exchanges taking place after 1779 recorded in *JCC* when making his conclusion.

¹⁷ Hamilton estimated the total National Debt (state and national) to be \$77,124,465 for 1789/1790 (Taylor, 1950, p. 1; Syrett, 1962, v. 6, pp. 85-87). In this number Hamilton included \$2 million Continental Dollars. Thus, Hamilton clearly regarded Continental Dollars to be part of the National Debt. Hamilton also calculated the specie value of Continental Dollars at the default rate of 40 to 1 set by Congress in March 18, 1780—\$80,537,630 million Continental Dollars outstanding in 1790 converts to \$2,013,441 million when using the 40 to 1 default rate. This explanation is consistent with the \$80.5 million estimate here of the amount of Continental Dollars still outstanding in 1790. Hamilton, as Secretary of the Treasury, had access to all the relevant evidence presented here and so could have made the same calculation. If Hamilton was not simply dividing \$80 million Continental Dollars by 40 to get \$2 million Continental Dollars in defaulted value, then his \$2 million statement is a mysterious curiosity. If he really meant that only \$2 million Continental Dollars in face value were still outstanding at the time, then his proposed default on the Continental Dollar was an unnecessary act.

¹⁸ Ferguson (1961, p. 67) says in regard to the mass of Continental Dollars issued and outstanding prior to the 1790 default affirmation act, “Eventually the dead mass of currency was drawn in by the states. A good part of it was scattered or destroyed, and in 1790 only about \$6,000,000 remained in the hands of individuals.” Ferguson’s source for his \$6 million number is Elliot (1843, p. 12). As such, Ferguson clearly misinterprets his source here. The \$6 million was the number estimated to have been actually exchanged at the 100 to 1 default rate for bonds after 1790, not the amount outstanding at this date, which was estimated to be \$78 to \$80 million in the same source. In addition, in reference to 1780 and the withdrawal of old Continental currency, Ferguson (1961, p. 181) also

says that the “states absorbed nearly \$120,000,000.” This is clearly erroneous as it is inconsistent with all other evidence, and no other source shows that much absorbed in 1780. If by chance Ferguson really meant that the total absorbed by the states between 1780 and 1790 was \$120 million, then he would be very close to that estimated here in Appendix Table 2 and the evidence in his primary source (Elliot, 1843, p. 12, #3).

¹⁹ For example, Clement Biddle inquired in May of 1789, “Is there any demand for old continental money with you? I have about 30,000 dollars which I should be glad to get 3 dollars per thousand for.” (Bezanson, 1951, p. 327)

²⁰ The first statement of depreciation of the Continental Dollar reported in Congress occurred on January 11, 1776, with the next one—a more forceful statement—occurring on January 14, 1777 (*JCC*, v. 4, p. 49; v. 7, pp. 35-36; Phillips, 1866, pp. 44-46).

²¹ The few exceptions include Maryland’s paper pound from 1767-1774 which stated that it was redeemable in “bills of exchange payable in London, or Gold and Silver, at the rate of four shilling 6 pence sterling per dollar...” Maryland had purchased with prior tax revenue stock in the Bank of England and used the potential liquidation of said stock as its reserve to redeem its money in London at the stated fixed specie rate (Newman 1997, pp. 167-169). New Hampshire, New Jersey, and Rhode Island were at times also exceptions, see Newman (1997, pp. 225-235, 246-254, 378-389).

²² See also Boyd (1954, v. 10, p. 17; 1955, v. 12, p. 61).

²³ The subtleties are a little more complex than portrayed, but that complexity is not relevant to the story here. See Garber (1991).