

The Continental Dollar—Part 1: How Much Was Issued?*

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Abstract

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The Continental Dollar—Part 1: How Much Was Issued?*

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. However, the details of this story are less well known. Scholars even disagree over how much was issued—disagree by over 50 percent. Meaningful monetary analysis of the Continental Dollar cannot proceed given this confusion in the data. Evidence is gathered here to reconcile past estimates and establish the exact amount and time path of Continental Dollars emitted thereby overcoming the entropy that has crept into the historical record.

From 1775 through 1779 the U.S. Congress financed the American Revolution 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-inflation of prices in Continental Dollars and to hyper-depreciation of Continental Dollars in terms of specie dollars. 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 a currency after May of 1781 and were forgotten (Bezanson, 1951, pp. 12, 344; Breck, 1843, p. 16; Ferguson, 1961, p. 66; Webster, 1969, p. 502).

The accuracy of this story is less well established. For example, scholars disagree over how many Continental Dollars were issued—disagree by over 50 percent. Before meaningful monetary analysis of the Revolution can proceed, the amount and time path of the emission of Continental Dollars must be better established. The primary goal of this paper, Part 1 of a two-part study, is to do this for the years 1775 to 1781—the years between the first and last emission as presented in the various estimates in the literature and up to when Continental Dollars ceased to circulate as a currency.¹

This is also a story about how entropy crept into the historical record. The analysis traces how errors in early estimates of the emission of Continental Dollars were, for the most part, uncritically copied by subsequent scholars who in turn added their own errors to the estimates they had copied, and whose estimates were then in turn copied uncritically, for the most part, by later scholars who in turn added their own errors to the estimates they had copied, and so on, until now—some 230 years later—a plethora of different estimates exists side by side. Little has been done in the literature to reconcile these conflicting estimates. Thus, we are left today no longer knowing what it is we once knew. Scholars may be tempted to choose the estimates which are most convenient to their purposes—succumbing to the moral hazard that entropy fosters. As such, a secondary goal of this paper is to resolve this data confusion by reconciling past estimates thereby reintroducing structure to our knowledge of the emission of Continental Dollars. This reconciliation of past estimates also adds validation to the estimates offered here of the true amount and time path of the emission of Continental Dollars.

The Emission of Continental Dollars, 1775-1779

The total amount of Continental Dollars emitted by the U.S. Congress during the American Revolution has never been well established (Ferguson, 1961, p. 29, fn. 13). A variety of estimates have been offered in the literature, see Figures 1 and 2. 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; 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 Figures 1 and 2 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).² 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 omitted \$16 million that were in fact emitted between July 1775 and February 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 in 1884 omitted \$5 million from May 1776 that in fact were emitted. Phillips (1866, pp. 198-199) made several transcription errors and Bullock (1895, pp. 135-136) made an error in addition of \$9.95 million when summing his entries—errors left uncorrected by subsequent scholars. 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. The two remaining sources of

discordance across the literature are discussed in detail below.

Discarding the Very High \$357-\$387.5 Million Estimate

The very high estimate of \$357 to \$387.5 million reported by the *American Almanac* (1830, p. 183); Elliot (1843, p. 11); Gouge (1833, II, p. 250); and in 1924 by 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*. As such, this very high estimate should be discarded. The following analysis makes the case for its discard.

The yearly estimates summing to \$357 million for the total emission 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 minor typographical errors, these numbers citing only the *American Almanac*. Elliot (1843, pp. 10-11) in his report to the 28th Congress repeated these numbers and indicated that they came from Alexander Hamilton, Secretary of the Treasury, in 1790.³ Bronson (1865, pp. 115, 164) repeated these numbers citing Gouge and the *American Almanac*, but indicated that these numbers were reported by 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 with no caveat as to what it really meant. Bullock (1895, pp. 174, 177) repeated these numbers—citing Elliot. Bullock also assumed they came originally from Hamilton and measured total expenditures and not the emission of Continental Dollars *per se*. In 1924, Hepburn (1967, p. 16) repeated the cumulative total from these numbers citing only Gouge with no caveat

as to what it really meant.

Ferguson (1961, pp. 28-29, 64-65) 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 they originally came from a report ordered by 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 shows that such a committee was formed and delivered its report on the dates indicated with James Madison speaking for the committee (United States Congress, 1834, v. 1, pp. 1464, 1964). The report, however, is not in the congressional record. *The Papers of James Madison* indicates that Madison was on a committee on March 9, 1790 to inquire into the accounts of Robert Morris' administration and delivered a report on February 16, 1791. Madison, however, wrote only a brief summary with nothing related to the numbers at issue. The report itself is not reproduced therein. Madison, however, indicated that the committee had obtained a general account of receipts and expenditures from the Registrar of the Treasury and that those materials, unaltered, made up the bulk of their report to Congress (Hobson and Rutland, 1981, v. 13, pp. 95, 392-393).

The Registrar 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 incorporated material from the Secretary of War, Henry Knox, are tables reporting "An Estimate of the Expenditures and Advances made at the Treasury of the United States" separately for each year from 1776 through 1781. When the totals from each year are extracted and listed together in a single

tabulation, it replicates exactly that displayed in the *American Almanac* (1830, p. 183) and the copies of that tabulation 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 estimates of the emission of Continental Dollars.

The provenance of this report also explains some of the confusion over the report's ultimate author. While Nourse as Registrar 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 came from the period that was under the administration of Robert Morris. However, the information in question in the report is mixed in with 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 was assembled in 1790 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. This is corroborated by a statement made in the United States Congress (1834, v. 2, p. 1566) on May 11, 1790 which says that the Secretaries of War and Treasury laid a report before Congress “...of the sums of money, including indents and paper money of every kind...which have been received from, or paid to, the several States by Congress, from the commencement of the Revolution to the present time.” Given that this is the same report given to the Madison committee, the reference to “indents” and to paper monies of “every kind” affirms that

this evidence is not measuring the emission of Continental Dollars *per se*. As such, the very high estimate of \$357-387.5 million Continental Dollars emitted represents an error of definition and so cannot be reconciled with any of the other estimates in Appendix Table 1 except by being totally discarded—as the case made here supports doing.

The January 14, 1779 Emission

One last point of discrepancy exists, and it is by far the main source of variation in the estimates of total emissions reported across the remaining 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 Figures 1 and 2, and Appendix Table 1. For example, Nourse (1828, p. 7) and Michener (1988, p. 690) count the entire January 14, 1779 emission (\$50 million) 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 to evaluate congressional spending, money creation, and its impact on the economy. 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 one-for-one for old bills.

Most estimates in the literature attempt to identify 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.

For example, 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.⁴ 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 questionable 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.*” They are distinguishable from all other emissions of Continental Dollars.

Newman (1997, pp. 64-69) considers the emission of April 11, 1778 to include 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 authorizations are all indistinguishable from one another—all have printed on them “...according to a Resolution passed by Congress, at Yorktown, 11th April, 1778.” Again, they are distinguishable from all other emissions.

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 accords with how Ferguson (1961, p. 29, fn. 13) evaluated these emissions.⁵ 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 1.⁶ This is the number (\$8,500,400) for the January 1779 emission used in Figures 1 and 2 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.

An alternative residual-calculation method 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 that had been emitted to that date and was 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.⁷

Direct Evidence Corroborating the Above Estimate of the Amount of Currency Swapped

Direct evidence on the approximate magnitude of the above currency swap can be taken from the *JCC* and from the reports of the Registrar of the Treasury, Joseph Nourse, and the Continental Treasurer, Michael Hillegas. On January 14, 1786, Nourse reported the amount of Continental Dollars—face value—paid into the U.S. Treasury by month, year, and source from May 1779 through 1785 (*JCC*, v. 30, pp. 22-25). These amounts included bills sent back to the Treasury as part of the currency exchange of the emissions of May 20, 1777 and April 11, 1778 for the emission of January 14, 1779 (Grubb, 2007). Nourse also noted that his numbers were neither comprehensive nor complete.

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 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 (*JCC*, v. 30, pp. 22-25). 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) are the same individuals 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 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).⁸

In May of 1782, Michael Hillegas, Continental Treasurer under the administration of Robert Morris, reported a preliminary portion—reproduced in *The Papers of Robert Morris* (Ferguson, 1980, v. 5, p. 139)—of the report given by Nourse to Congress in 1786. This portion covered from November 25, 1780 through February 23, 1782. Hillegas' report is basically identical to Nourse's 1786 report for the period that the two reports overlap. However, Hillegas' report, unlike Nourse's 1786 report, identifies which of the remittances were of the bills of the May 20, 1777 and April 11, 1778 emission that

were being swapped for the bills of the January 14, 1779 emission. Comparing the two reports indicates that a substantial portion of the remittances of Continental Dollars into the U.S. Treasury in Nourse's 1786 report, for the period when the two reports overlap, represented remittance of the bills of the May 20, 1777 and April 11, 1778 emission.

The total sums that were eligible for exchange were estimated above to be about \$41.5 million. Nourse's 1786 report of remittances of Continental Dollars into the U.S. Treasury from 1779 through January 1, 1781 totaled \$34.4 million and through April of 1781 totaled \$39.9 million. If the amounts that Hillegas explicitly identifies as being exchanges of the May 20, 1777 and April 11, 1778 emissions for bills from the January 14, 1779 emission that were still taking place after April of 1781 are added, then this total rises to \$41 million. The closeness of these estimates (\$41.5 versus \$41 million), given that Nourse admits that his numbers are neither comprehensive nor complete, is further corroboration that of the \$50 million Continental Dollars authorized by Congress on January 14, 1779 only \$8.5 million should be counted as new, the rest (\$41.5 million) being merely a one-to-one currency swap of old bills for new.

Reconciliation of Past Estimates and the Exact Amount and Time Path of Emissions

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 completely eliminated—revealing a single consistent estimate (sans rounding errors) of \$200,000,000 Continental Dollars emitted from 1775 through 1779 and, as shown in the next section, still outstanding as of 1780, see Appendix Table 1.⁹ The corrected time path of bills emitted each year and the cumulative total Continental Dollars emitted and

still outstanding by month from 1775 through 1779 are shown in Figures 1 and 2 as the *JCC* estimate, respectively, and as the *JCC* column in Appendix Table 1.

The Continental Dollar, 1779-1781—the Continental-State Currency Experiment

Taxes to pull Continental Dollars out of circulation were not initiated in earnest until after 1780 (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" which 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 ongoing emissions of paper money to finance its war efforts. As far as states not taking 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 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 before 1780. On June 28, 1781 the Secretary of Congress, Charles Thomson, reported that \$195 million Continental Dollars were still outstanding at that time (Ferguson, 1973, v. 1, p. 194). Thus, it appears likely that the whole \$200 million of accumulated net new emissions—face value—was still outstanding as of spring 1780.

Continental Dollars began to depreciate in the marketplace in 1776.¹⁰ Figure 3 shows that this depreciation proceeded at a slow and steady pace from 1777 through late 1778 and accelerated thereafter. The depreciation rate derived from the Philadelphia price index, and possibly from the merchant account books, represents what was being experienced in contemporaneous consummated transactions. The other depreciation rates were created after 1780 to be retroactively applied to contracted debt obligations whose payments were not yet consummated. This action was taken and deemed necessary once states removed the Continental Dollar's legal-tender status as requested by Congress in 1780—discussed in more detail below.¹¹ Most of the depreciation shown in Figure 3 occurred after Congress ceased issuing Continental Dollars, i.e. after November of 1779.

[Place Figure 3 Here]

Congress recognized that the principal cause of the increasing depreciation of the Continental Dollar after 1776 was the excessive amount issued and currently outstanding. Congress' constant exhortations to the states to help reduce the quantity of paper money 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 Continental Dollars 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 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—who ignored Congress with impunity.¹² In Congress, efforts by some to create enforcement mechanisms were rebuffed by the majority—see the proposals made in April and May of 1781 that were subsequently rejected or buried in committee (*JCC*, v. 20, pp. 440, 445, 471, 495, 578).

Congress also faced the dilemma that 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, having been pledged to be destroyed upon redemption, could not be re-spent. 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; Webster, 1969, p. 111). In other words, Congress was viewed as partially, though perhaps temporarily, defaulting on the Continental Dollar. 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 paper money emissions of Congress but rather as paper money emitted by the various states. For example, in 1795, Oliver Wolcott Jr., the current Secretary of the Treasury, in direct reference to this Continental-State currency stated that "This species of paper has never been considered as forming any part of the debt of the United States." A similar conclusion was stated in 1802 by Albert Gallatin, the current Secretary of the Treasury (*American State Papers*, 1834, Class IX, Claims, v. 1, pp. 174, 215, 250).

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..." And while congressional authorization for these state bills made Congress the guarantor in case of state non-redemption, that guarantee held only during wartime and so lapsed at the Revolution's conclusion. Finally, the congressional

authorization also required that each state turn over four-tenths of any Continental-State currency emitted to Congress for Congress' use (*American State Papers*, 1834, Class IX, Claims, v. 1, pp. 174, 215, 250; 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 was short lived, not lasting past mid-1781 (*JCC*, v. 19, pp. 398-400, 411; v. 20, pp. 438, 577).¹³ Its short life 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).¹⁴ Because of this, it is sometimes assumed that 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 Registrar 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 Alexander Hamilton's report to Congress on May 11, 1790 (see *American State Papers*, 1832, Class III, Finance, vol. 1, p. 58; Elliot, 1843, pp 65-83; Syrett, 1962, v. 6, pp. 412-414; United States Congress, 1834, v. 2, pp. 1544, 1566).¹⁵

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, 1780.¹⁶ 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).¹⁷

These numbers are close to the amount of Continental Dollars (face value) Alexander Hamilton reported to Congress on May 11, 1790 as being remitted by the states to the U.S. Treasury during the period covered by the Continental-State Dollar experiment (*American State Papers*, 1832, Class III, Finance, v. 1, pp. 58-59; Elliot, 1843, pp. 73-76; Grubb, 2007; United States Congress, 1834, v. 2, pp. 1544, 1566). Hamilton's report starts in November of 1780 and reaches the \$31.8 and \$41.1 million

Continental Dollars remitted to the U.S. Treasury under the Continental-State mechanism estimated above by August and October-November of 1781, respectively—about when the experiment ended given the lag between when states pulled Continental Dollars out of circulation and when said Dollars showed up at the U.S. Treasury to be burned.¹⁸

While this reduction in the amount of 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). States had more to gain from issuing their own 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 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 issuing new Continental-State paper money evaporated quickly in 1781. On April 25, May 10, and May 20, 1781 Congress complained bitterly about this lack of interest by the states (*JCC*, v. 20, pp. 438-439, 495, 577-578). With the demise of state interest in issuing Continental-State currency went the ready market for Continental Dollars.

The End of the Continental Dollar as a Circulating Currency

By all accounts 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 (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. 185, 190-191; Ratchford, 1941, p. 38; Sumner, 1968, v. 1, p. 87; Tindall, 1988, p. 265; Walton and Rockoff, 2005, p. 126).

A definitive statement by Congress of such, however, cannot be found. Several proposals were put forward that might be interpreted as repudiation, but all were rejected or sent to committee never to reappear.¹⁹ Nothing close to a statement of repudiation was enacted in 1781 or in 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 to, would have 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). An unfulfilled quota, however, was not repudiation.

The cessation of Continental Dollars serving as a circulating currency circa May 1781 was driven by market forces and not by legal pronouncements *per se*. The coincidence of three factors caused its disappearance as a circulating currency. First, as discussed above, state interest in acquiring Continental Dollars through state taxes as a vehicle for being allowed to issue Continental-State currency dried up quickly in the

spring of 1781 and with it dried up a ready market for Continental Dollars.

Second, some states flatly refused to accept any more Continental Dollars in payment of state taxes once they had met their quotas set by Congress. Other states accepted them but only at rates higher than the 40 to 1 set by Congress in March of 1780, such as 75 to 1 set by Pennsylvania on December 23, 1780—in effect hedging against the risk of not being fully credited for taking on the quotas owed by other states (*Statutes at Large of Pennsylvania*, 1904 v. 10, pp. 249-251). For example, on February 8, 1783 Delaware enacted a law saying (*Laws of the State of Delaware*, v. 2, pp. 774-775):

Whereas it appears, that considerable balances of taxes directed by law to be raised within this state in Continental bills of credit, in the years One Thousand Seven Hundred and Seventy-eight, On Thousand Seven Hundred and Seventy-nine, and One Thousand Seven Hundred and Eighty, are yet due and uncollected: *And whereas* the said bills of credit have been called out of circulation, and this state hath paid to Congress their computed quota of all the said bills, for the purpose of sinking and destroying the same; whereby it is become inexpedient and useless to levy said balances in such bills;

Be it therefore enacted by the General Assembly of Delaware, That from and after the passing of this act, no Collector of the said taxes shall receive any of the bills aforesaid in payment of the taxes laid by law for the use of the Continent, or of this state...

Such actions reduced the ready market for Continental Dollars as well as undermined the universality of acceptance of Continental Dollars across states which had been one of the important attractions to using Continental Dollars as a circulating currency.

Third, in conjunction with Congress' March 18, 1780 resolution that partially, though perhaps temporarily, defaulted on the Continental Dollar and to be consistent with that act's recognition of depreciation, on March 20, 1780 Congress recommended that states "...revise their laws...making the continental bills of credit a tender in discharge of debts and contracts, and to amend the same in such manner as they shall judge most conducive to justice, in the present state of the paper currency..." (*JCC*, v. 16, p. 269)

From late 1780 through mid-1781 states complied by revoking their laws making the Continental Dollar a legal tender in their respective states. For example, Delaware passed its law revoking the legal-tender status of the Continental Dollar on November 8, 1780; New Jersey on January 5, 1781; Virginia on May 5, 1781; and Pennsylvania made its temporary suspension of legal-tender status permanent on June 21, 1781 (*Laws of the State of Delaware*, v. 2, pp. 718-719; *Acts of the Council and General Assembly of New-Jersey*, p. 157; Hening, v. 13, pp. 412-413; *Statutes at Large of Pennsylvania*, 1904, v. 10, pp. 204-205, 228-229, 247-249, 337-344).

Revocation of the legal-tender status of the Continental Dollar was neither a repudiation of the Continental Dollar nor the direct reason why the Continental Dollar ceased to circulate as a currency. Such a conclusion would be a misunderstanding of how legal tender laws impacted behavior. Legal tender laws did not set the value of exchange, enforce a fixed exchange rate, or otherwise support the use of Continental Dollars as a transaction medium in private voluntary contemporaneous exchanges. Market forces determined the pricing of voluntary contemporaneous exchanges. A quick look at the Philadelphia price index expressed in Continental Dollars in Figure 3 (above) confirms this. Individuals were free to negotiate whatever price they believed was warranted given the inflationary conditions of the currency in their private voluntary contemporaneous exchanges. As Benjamin Franklin rightly observed in 1788, “The making of paper with such a sanction [a legal tender law] is...a folly, since, although you may by law oblige a citizen to take it for his goods, you cannot fix his prices; and his liberty of rating them as he pleases, which is the same thing as setting what value he pleases on your money, defeats your sanction.” (Smyth, 1907, v. 9, p. 638)

What legal tender laws affected were the values in non-contemporaneous exchanges that ended up in court when one party sued the other for breach of contract. (Non-contemporaneous exchanges are when the payment by one party is at some future date from the initial contract or delivery of the goods involved for that payment.) When finding in favor of the plaintiff or creditor, courts would make the plaintiff whole by enforcing the payment promised. In cases where the defendant or debtor either could not deliver the specific payment promised, e.g. did not have the specific horse he promised to deliver, or where the contractual payment was vague regarding the monetary instrument, e.g. 16 dollars, the court had to assign a monetary substitute that would make the plaintiff whole. The presence of a legal tender law more-or-less tied the hands of the court. The money substitute had to be the designated legal tender at the rate set by law, and Congress had set that rate by printing it on the face of its Continental Dollars, i.e. one Continental Dollar equaled one specie dollar (Newman, 1997, pp. 58-68).

As inflation set in and the Continental Dollar depreciated against specie dollars, especially after 1778, people owing payments on contracts incurred prior to 1779 had an incentive not to pay and instead have their creditors sue them for breach of contract. If they lost in court, they would still come out ahead because judges—being constrained by legal tender laws—were likely to order restitution in Continental Dollars (the legal tender) at the rate printed on the Continental Dollar (one paper dollar equaling one silver dollar). Thus the debtor could satisfy the contract's completion by paying a vastly depreciated sum (in Continental Dollars) compared with the real value stipulated in the original contract. This incentive held for all contracts involving non-contemporaneous payments regardless of the type of payment originally contracted to be paid by the debtor,

i.e. whether it was to be in goods, Continental Dollars, other paper money, or specie money. This aspect of legal-tender laws was the issue underlying the debates over monetary powers at the 1787 Constitutional Convention (Grubb, 2006).

Expecting courts to order payment in Continental Dollars in order to make the creditor whole in breach-of-contract cases, debtors would seek to acquire Continental Dollars thereby sustaining a ready market for such dollars. If debtors could not acquire Continental Dollars at depreciated rates to pay off their creditors as ordered by the courts, then the benefits of this breach-of-contract gambit would have been lost. As such, when states revoked the legal-tender status of the Continental Dollar it removed another market demand for that currency and so helped drive it toward being a non-circulating currency.

The statutory language in the state laws repealing the legal-tender status of the Continental Dollar supports this interpretation of how legal tender laws operated. For example, the Pennsylvania statute, passed June 21, 1781, that permanently revoked the legal-tender status of the Continental Dollar explicitly referred to any contract made

...since the first day of January, one thousand seven hundred and seventy-seven in any foreign money...or in any commodity, and which have not since been paid...or discharged shall be deemed...due...and the same may be sued for and recovered in any court of justice within the commonwealth...in so much gold and silver money as shall be equal in value to the debt...according to the terms of the contract. (*Statutes at Large of Pennsylvania*, 1904, v. 10, pp. 338-339)

Finally, the removal of the legal-tender status of the Continental Dollar and the passage of laws in 1781 by states creating retroactive depreciation tables of Continental Dollars to specie dollars was not a coincidence. The first action directly led to the second action (for examples, see that for Delaware, New Jersey, and Virginia in *Laws of the State of Delaware*, v. 2, pp. 718-719, 749; *Acts of the Council and General Assembly of New-Jersey*, pp. 157, 160; Hening, v. 13, pp. 412-413, 471-473, respectively). For courts

to have guidance as to how to make the plaintiff whole in a breach-of-contract case, courts needed to know the approximate market value of Continental Dollars at the time of initial contracting. The retroactive depreciation tables gave them that guidance. The application of these depreciation tables eliminated, for the most part, any potential gain from depreciation via a court-ordered payoff of a contract in Continental Dollars.²⁰ As such, the demand by debtors for Continental Dollars in the marketplace disappeared.

What happened to the Continental Dollar after it ceased to circulate as a currency in 1781 will be addressed in Part 2 of this study.

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 Continental Dollar emissions has not been well established previously. The estimates presented here establish those series and improve their accuracy and trustworthiness. Meaningful monetary analysis of Congressional spending, money creation and its impact on the economy during the Revolution can now proceed on a more secure evidential foundation.

[Place Appendix Table 1 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: Cumulative Total Outstanding (Face Value),

1775-1781—Various Estimates

Sources and Notes: Derived from Appendix Table 1. Sources cited therein. JCC stands for the *Journals of the Continental Congress*. See Appendix Table 1 for more detailed and refined comparisons by authorized emission dates.

CONTINENTAL DOLLARS NEEDED TO EQUAL 1 DOLLAR IN SPECIE

200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
Par-

Depreciation of the Continental Dollar (Various Estimates)

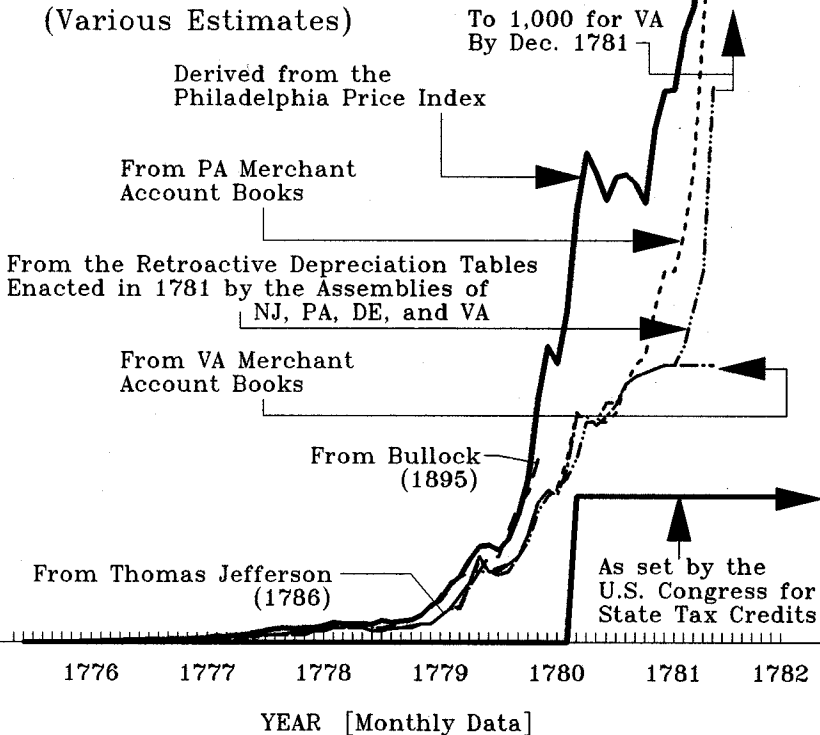


Fig. 3 The Depreciation of the Continental Dollar: 1775 through 1781

Sources: For the Philadelphia Price Index: Bezanson (1951, p. 344); for Jefferson: Boyd (1954, v. 10, pp. 42-43); Bullock (1895, p. 135); for the U.S. Congress rate set for State Tax Credits: *JCC* (v. 16, p. 264); for the PA and VA merchant account book rates and the PA Assembly Depreciation Rate: Webster (1969, pp. 501-502); for DE Assembly Depreciation Rates: *Laws of the State of Delaware* (v. 2, p. 749); for NJ Assembly Depreciation Rates: *Acts of the Council and General Assembly of New-Jersey* (p. 160); and for VA Assembly Depreciation Rates: Hening (v. 13, pp. 471-472).

Notes: Bullock (1895, p. 134) reports the highest depreciation rate he found in any state and his estimate stops in November of 1779. Jefferson's estimate also stops in November of 1779. 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 of 1781 except for the DE and NJ Assembly's Depreciation Rates which stop in July of 1780 and the VA Assembly's Depreciation Rate which continues through December of 1781. Slight variations occur across the NJ, PA, DE, and VA depreciation tables enacted in 1781, but they are not large enough to show up here and so these four estimates are presented here as one single line.

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 (1969)	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	8,500,400
				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	+52,780
+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).

Footnotes

¹ Part 2 evaluates what happened to the Continental Dollar after 1781. A preliminary version is in Grubb (2007).

² Only estimates that track emissions over some time interval, i.e. by year, month, or day, are included for reconciliation in Appendix Table 1.

³ Elliot (1843, p. 11) is the only source to report the highest estimate—\$387.5 million. It was mentioned in 1843 by Senator Woodbury who was a former Treasury Secretary.

⁴ Bronson (1865, p. 113) reached a similar conclusion about the amount exchanged (\$10 million) but then failed to deduct that sum from his table of emissions.

⁵ This number is close to the \$46,500,000 proposed in Congress on October 28, 1778 as the amount that had to be taken out of circulation to stop the counterfeiting problem (*JCC*, v. 12, p. 1073). The 6 could just be a typo for a 1. 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 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 \$8.5 million from the May 20, 1777 emission.

⁶ By contrast, Ferguson (1961, p. 29, fn. 13) assumed 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 deduced 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.

⁷ 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 as a net new emission of Continental Dollars. See also Bronson (1865, p. 113).

⁸ Ferguson (1961, p. 29, fn. 13) took 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) In reaching this conclusion, he missed both the extension into 1781 of the date over which exchanges could take place and the numerous statements of exchanges taking place after 1779 recorded in the *JCC*.

⁹ This value 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 million Continental Dollars that could be emitted before emissions were permanently discontinued (Ferguson, 1961, p. 46; *JCC*, v. 14, p. 1013; v. 15, pp. 1019, 1053, 1171, 1324). 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.

¹⁰ 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).

¹¹ Calomiris (1988, pp. 59, 60, 61, 62, 63) claimed that in mid-1779 Congress indexed wages, taxes, and loan principals “to the rate of bill creation.” He cited no source for his claim. Congress did raise salaries, wages, and so on to account for inflation, but this was done after the fact and 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 any time directly indexed salaries, wages, and so on to the ongoing rate of paper money creation cannot be found in the *JCC* records.

¹² 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 Registrar 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).

¹³ For example, Calomiris (1988, p. 59) and Michener (1988, p. 689) misinterpreted the Continental-State currency mechanism as being 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) said 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 was 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.

¹⁴ 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).

¹⁵ Elliot (1843, p. 11) reported 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) said that “\$4,468,625 of these new bills [Continental-State Dollars] were put into circulation” citing Harlow (1929, p. 62). However, Harlow (1929, p. 62) really 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 almost the total given by Elliot (1843, p. 11); Gouge (1833, II, p. 25); and Hepburn (1967, p. 16). Unfortunately, Harlow cited *JCC* (v. 19, pp. 399-400) April 15, 1781 as his source. It turns out there is no entry in the *JCC* for April 15, 1781—it was a Sunday and Congress did not meet—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 estimated the total emissions of Continental-State Dollars to be \$3,980,556. He arrived at this total by taking the number reported by Hamilton to Congress on May 11, 1790 of \$1,592,222 Continental-State Dollars (*American State Papers*, 1832, Class III, Finance, v. 1, p. 58; Elliot, 1843, p. 73) and assumed this was only the Federal Government’s share, i.e. four-tenths of the total emitted. Scaling up from four-tenths yielded \$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. Hamilton's statement is somewhat ambiguous as to whether the reported sum is the global total or just the Federal Government's four-tenths share. However, the \$80 million Continental Dollars that would have had to have been 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 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 (Grubb, 2007). The confusion can be straightened out by the report sent to Robert Morris 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 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 amount possible* that Congress could have gotten for the actual amount of Continental-State Dollars emitted by the states.

¹⁶ Ferguson (1961, p. 53) reported 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) left an erroneous impression that \$119 million Continental Dollars were turned in during the early 1780s through the Continental-State Dollar swap mechanism.

¹⁷ This is also consistent with the estimate given by Benjamin Franklin (\$30 million) for what had been called out of circulation in the early 1780s (Oberg, 1998, p. 231).

¹⁸ Hamilton's report deliberately excluded Continental Dollars remitted as part of the currency swap of the emissions of May 20, 1777 and April 11, 1778 for the emission of January 14, 1779 discussed above in regard to the Nourse and Hillegas reports on Continental Dollar remittances to the U.S. Treasury. See Grubb (2007).

¹⁹ For example, 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 to the emissions of May 20, 1777 and April 11, 1778 (discussed above). Some scholar may have erroneously interpreted this statement as a general repudiation of Continental Dollars. Similarly, a committee report was read in Congress on May 10, 1781 that said "...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. Again, some scholar may have erroneously interpreted this statement as a general repudiation of Continental Dollars (see also Harlow, 1929, p. 61). 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"—citing *JCC* (v. 19, p. 165). However, this was not 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 suggestion made in a committee report—a report that was sent back to committee and not subsequently acted on.

²⁰ See Figure 3 above and also fn. 11.