# Summer 2023 Handbook

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# Background Information

## About

In the American Revolution, despite long odds (I'm sure Vegas would have rewarded those who bet on an American victory in 1776 handsomely), the colonies scraped together victories against a superior enemy, leading to independence and the beginning of America as a nation. But how did the colonists achieve this victory? Certainly, they had some advantages; fighting on home turf meant the colonists possessed superior understanding of the battlefield geography and avoided the complexity of transatlantic supply lines. Yet, without money, which paid for soldiers' wages and military supplies, it would have been impossible to even wage war and benefit from their advantages.

Here's an excerpt from Hall and Sargent 2014 that describes how the American Revolution was financed.

**3. A reputation poisoned**

Thirteen states and the Continental Congress financed the American revolution by issuing interest bearing debts and paper monies. Paper monies were known euphemistically as 'bills of credit'.[12] The Continental Congress issued so much non-interest bearing paper money that it depreciated markedly vis a vis the prevailing unit of account, the Spanish dollar, a silver coin. See Fig. 1. The Continental Congress first issued bills of credit on June 22, 1775. Into early 1776, these bills were accepted and traded near their face value. But during 1776, emissions occurred faster than the states redeemed and returned them via state taxes, so that by December there was nearly $25,000,000 in circulation and the paper currency had lost 1/3 of its value. By November 1779, the total nominal amount outstanding was $199,990,000 and 50 Continental dollars purchased 1 Spanish dollar. In March 1780, the Continental Congress threw in the towel, recognized the depreciation of Continental dollars, and accepted 40 Continental dollars in place of 1 Spanish dollar in remittances.

The Continental dollar continued to be traded during the 1780s. Purchasers hoped that the government would raise sufficient revenue, perhaps through the sale of Western lands, to redeem these bills at or near par.[13]

Although they were never declared legal tender, seignorage from Continental bills of credit yielded nearly $40 million dollars of specie and accounted for 84% of all Continental revenue between 1775 and 1781. The remaining 16% came primarily from requisitions from the states and gifts from abroad. The Continental government raised about $47 million in Spanish dollars via taxes and seigniorage over these 7 years, while it spent nearly $85 million net of interest payments and accrued about $41 million in specie-denominated debt and interest in arrears.[14] Most expenditures were for the war, but the newly formed government also spent over $10 million establishing government entities such as the Post Office, making payments to the Native Indian population, and financing diplomatic ventures.[15]

By 1782, with its ability to print money exhausted and hamstrung in its ability to tax under the Articles of Confederation, the Continental Congress's revenues plummeted. The Continental Congress was unable to raise sufficient revenue to pay the interest payments on its debt, much less any promised principal payments. In 1784, it owed $2 million in promised interest payments (not including those in arrears), but received only $723,000 in revenue. As illustrated in Fig. 2, unable to borrow any further, the government set spending equal to revenue, deferring nearly all interest payments. Hence, Fig. 2 does not reveal the Gallatin–Barro tax smoothing pattern that we will observe later in Fig. 10 for the Louisiana Purchase and the War

(*footnote continued*)
expenditures, as in the settings of Sleet (2004) and Sleet and Yeltekin (2006). In other settings, such adverse effects substantially alter incentive feasible allocations and the history-contingent debt contracts that support them. See Atkeson (1991), Phelan and Townsend (1991), and Thomas and Worrall (1990).

[12] For a related discussion, see Sargent (2006).

[13] For example, see Francis White's advertisement on page 3 of the August 12, 1786 issue of the *Pennsylvania Packet*. For further discussion of the Continental Dollar during the 1780s and 1790s, see Grubb (2008).

[14] About $18 million of this debt was in the form of certificates of indebtedness, an I.O.U. issued by Army quartermasters as payment for supplies and services. These certificates were not recorded in the Continental accounts until 1783 when they were exchanged for final settlement certificates.

[15] For further details on the sources and calculations behind these figures, see Hall and Sargent (2012).

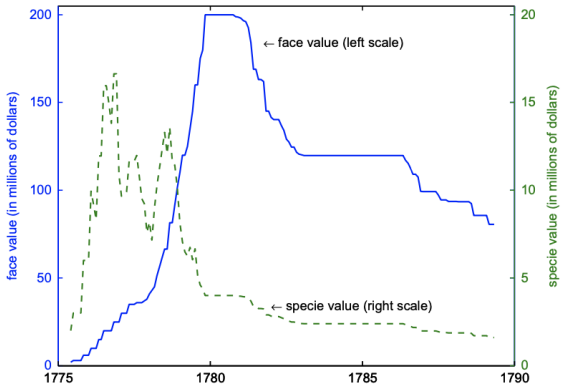


**Fig. 1.** Face and specie value of the outstanding continental dollars.
*Source*: The face value is from Grubb (2011); the specie value is computed using the price level from Bullock (1895, p. 135).

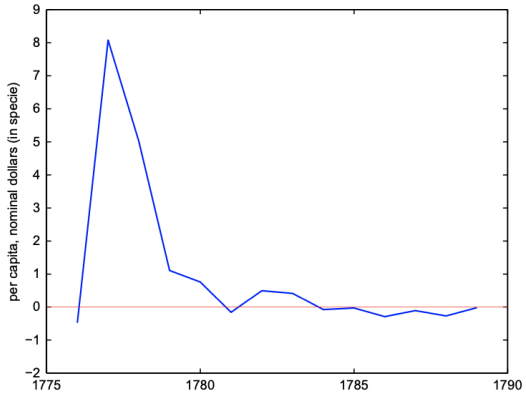


**Fig. 2.** Per capita continental Government primary deficit.
*Source*: Authors' calculations.

of 1812 and Fig. 12 for the Union during the Civil War.[16] Over the next seven years, the interest-bearing debt grew to $53 million, largely through the accumulation of interest payments in arrears.

Throughout the 1780s, repayment of the Revolutionary debt remained in doubt, as indicated by its being traded at about 20% of its face value. The domestic debt was divided between explicit loans from the Continental government, known as the loan office certificates, and the final settlement certificates, which represented promises to civilians and soldiers to redeem unpaid bills and wages. Ferguson (1961, p. 252) argues that the loan office certificates were the "best part of the debt" and consistently traded at higher prices than the final settlement certificates. Most speculative trade occurred in final settlement certificates, particularly those issued to Revolutionary soldiers and officers who typically sold their securities soon after receiving them. As we will see below, Hamilton ultimately treated owners of loan office certificates and final settlement certificates equally.

This is a pretty complicated passage, so here's a summary

1. The Continental Congress compensated people for goods and services provided in service of the Revolution through interest bearing debt and paper money (Continental Dollars). The Continental Congress did not exist before the revolution, so there was no existing currency it could use to pay people!
    a. Interest bearing debt, as the name suggests, periodically paid interest to the debtholder and promised to repay the amount of the original debt at a later date
        i. Example: I provide 500 Spanish dollars worth of services to the Continental Congress in 1777, and they issue interest bearing debt on this $500 due in 5 years paying 5% interest, with these terms noted on a certificate of debt ownership
            1. Note that unpaid interest is called interest in arrears

    ii. From 1778 to 1782, I am paid 25 Spanish dollars in interest annually
    iii. In 1782, I am also paid 500 Spanish dollars (the original debt amount)
  b. Paper money (also known as Continental Dollars) was a piece of paper issued by the Continental Congress
    i. The key difference between paper money and interest bearing debt is that paper money is not interest bearing
    ii. Example: I provide 500 Spanish dollars worth of services to the Continental Congress in 1777, and they issue paper money with value of 500 Continental dollars
    iii. Ideally, I should be able to purchase 500 Spanish dollars worth of goods in the general economy using this piece of paper that the Continental Congress issued
      1. Note that no interest will be paid on this debt
    iv. However, due to inflation caused by overissuance of Continental Dollars, 1 Continental Dollar eventually became worth much less than 1 Spanish Dollar
      1. For example, in the excerpt, in 1780, the Continental Congress began accepting 40 Continental Dollars for 1 Spanish Dollar
2. By 1781, the debt had grown to 41 million Spanish dollars, but because the Articles of Confederation limited the Continental Congress's ability to tax, it was often unable to pay the interest that it owed on the interest bearing debt (see the example about 1784 in the fourth paragraph)
  a. Thus, by 1789, the debt had grown to 53 million Spanish dollars
3. The economy was hesitant that the debt would ever be repaid, so throughout the 1780s, a certificate of debt issued by the Continental Congress promising the return of 100 Spanish dollars plus associated interest could only be redeemed for around 20 Spanish dollars worth of goods and services. 100 Spanish dollars refers to the par, or face value of the certificate (how much the "face" of the certificate says one is owed) and 20 Spanish dollars the specie or market value of the certificate (how much it is actually worth)

The Department of the Treasury was created by the first session of Congress in 1789 and President Washington appointed Alexander Hamilton as the first Secretary of the Treasury. In 1790, Hamilton presented his *First Report on the Public Credit*, which basically figured out how much debt the United States owed and how it could be repaid in order to establish the American government's position as a worthy borrower. If you are a fan of the musical Hamilton, you may recognize some of the details of his plan.

Hamilton proposed that the American government should pay off both the debt that the Continental Congress (its immediate predecessor) and the state governments owned. This brought the total face value of debt owed to 74.3 million Spanish Dollars by September of 1790. History textbooks often emphasize the value of the colonies' alliance with France, and indeed without French military and logistical support the war's outcome might have turned out very differently. The French and other European powers such as the Dutch and Spain also provided loans during the war and the sum total of this debt, including interest, amounted to around 14

million by 1790. However most of the debt that the US owed was to its constituents. The excerpt below from Hall and Sargent 2014 describes Hamilton's 1790 plan in more detail.

### 3.1. *Hamilton haircuts*

Following the recommendations of Hamilton (1790), the Funding Act of August 4, 1790 authorized the newly created Treasury to issue three new loans: a consol, known as the 6% stock, that paid a 6% coupon; a consol, known as the 3% stock,

[16] In those two figures, temporary positive surges in the net-of-interest deficit are followed by a string of small or moderate net-of-interest surpluses, as prescribed by Gallatin.



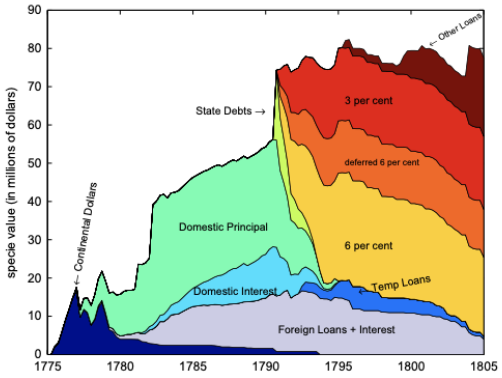


**Fig. 3.** Federal debt by type loan.
*Source*: Calculated using data from Bayley (1882).

that paid a 3% coupon; and a consol, known at the deferred 6% stock, that paid a 6% coupon but with interest payments deferred until 1801. For every $100 in face value of domestic Continental debt (i.e., the loan office certificates and final settlement certificates) redeemed, creditors received $66.67 in the 6% stock and $33.33 in the deferred 6% stock. Indents of interest (i.e., interest payments in arrears) were exchanged for the 3% stock at par. The Federal government assumed the States' debts. Owners of state debts received 4/9 in the 6% stock; 2/9 in the deferred 6% stock; and 3/9 in the 3% stock. To compute the amount owed to a state creditor, the government added the principal and the accumulated unpaid coupon payments. Relative to par values, Hamilton's rescheduling administered substantial haircuts to domestic creditors[17]; but relative to the heavy discounts on U.S. bonds that prevailed in the mid 1780s, Hamilton and the Congress treated bond holders well, especially relative to how they treated owners of Continental dollars, who were offered one dollar in specie for every 100 Continental dollars exchanged.

With the assumption of the State debts bringing the face value of the debt to $74.3 million in species (about 35% of GDP), the refinancing of the domestic debt into the three new bonds began in September 1790.[18] As illustrated in Fig. 3, Continental loans and the associated interest in arrears comprised about 55% of the government's obligations. The share in State debt was 25%. Principal and unpaid interest owed to foreigners comprised 19%, with the outstanding Continental currency, now valued at one cent on the dollar, making up the final 1%.

Grubb (2008) estimated that the face value of the Continental dollars outstanding and unredeemed in 1789 was $80,527,630. See Fig. 1. Had Hamilton and the Congress decided to redeem these bills at face value, the Federal debt would have doubled. Senator Woodbury, the former Secretary of the Treasury, reported that about $6 million of the Continental bills of credit were ultimately redeemed under this Act.[19] Thus, about $74 million of the bills were never redeemed in the forlorn hope that they would ultimately be honored at a better ratio than 1–100.

As shown in Figs. 4 and 5, the market value of the outstanding rose in anticipation of the refunding. Despite these large capital gains to government creditors, the new bonds they received had market values well below par. Sylla et al. (2006) report that on December 31, 1790, $100 in face value of the 6% stock traded in Philadelphia for $90 and the deferred 6% and the 3% stock both traded for $45 per $100 in face value. Hence owners of the existing Revolutionary debt received substantial haircuts, and much of the debt was effectively written off.

The differential treatment across classes of creditors was considerable. An owner of a loan office certificate with a $100 face value received assets that on December 31, 1790 were worth $75 in specie. In contrast, the bearer of $100 in unpaid Continental interest received assets worth only $45. State creditors received less for their principal but more than Continental creditors owning indents for unpaid interest. See Table 1.

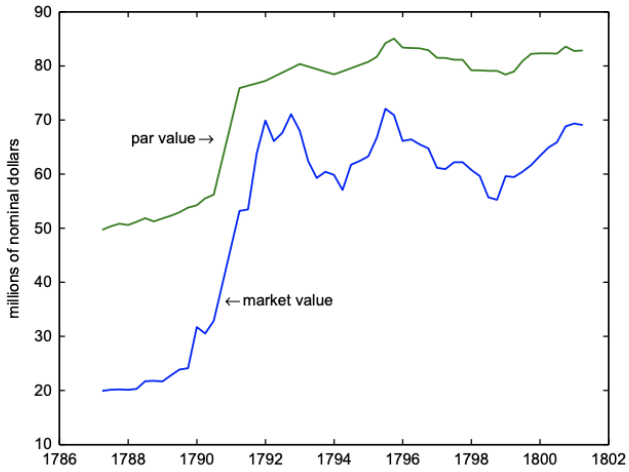


**Fig. 4.** Quantity of the federal debt: principal outstanding and market value.

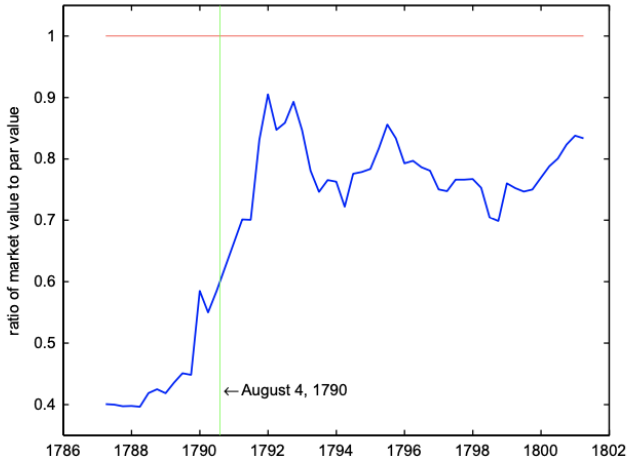


**Fig. 5.** Ratio of the market value to the par value of the outstanding debt.

**Table 1**
Market value of exchanged assets for $100 of face value of a continental security.
Authors' calculations using Philadelphia prices on December 31, 1790 from Sylla et al. (2006).

| Continental loan | Market value of exchanged assets |
|---|---|
| Loan office certificate | $75.00 |
| State debt (principal or interest) | $65.00 |
| Interest in arrears | $45.00 |
| Continental dollars | $1.00 |

Note that even though under Hamilton's plan, someone who owned $100 in loan office certificates would only be able to redeem it for around $75 at the market, investors were willing to accept this. This is because many of them (who we call speculators) had purchased $100 worth of debt for just $20 (a great discount) before Hamilton's plan, when there was doubt about whether the government would ever repay the debt, and turning a $20 investment into a $75 investment was still a great investment. Even for individuals who did not speculate and held onto their debt, Hamilton's plan allowed them to exchange their debt for much more than they would have been able to exchange it for prior.

Hamilton paid people back in the form of consols - these are government debt certificates that take the form of “perpetual bonds”, although the government can choose to redeem it. Let us break down what this means

- Normally, a bond (of some face value) with associated interest is issued, and owners of this bond receive. At the maturity date of the bond, the face value (or principal) of the bond is paid back.
    - Let’s say we have a bond of face value $500 that pays 5% interest and has a maturity date of 5 years. In years 1-5, you (the bond owner) receive $25 in interest, and in year 5, you receive $500 as well (the face value of the bond)
    - Note the similarity to the interest bearing debt example!
- A Perpetual Bond has **no maturity date**. That means in our example, from years 1 - **forever (or when the government chooses to redeem the debt)**, each year, you will be paid $25. If the government chooses to redeem the debt, you will be reimbursed $500.
    - Note that 1) the government might not choose to redeem the debt and 2) if it does, the date is not fixed whereas in a normal (non-perpetual bond), the maturity date is known.

**Consols** (originally short for consolidated annuities, but subsequently taken to mean consolidated stock) were government debt issues in the form of perpetual bonds, redeemable at the option of the government. They were issued by the Bank of England and the U.S. Government. The first British consols were issued in 1751.[1] They have now been fully redeemed. The United States government issued consols from 1877 to 1930, which have likewise been redeemed.

## Where we come in

I hope you enjoyed that brief history lesson. Before I proceed, I think it is important to place our project in the broader context of government spending. The American government affects the economy through fiscal and monetary expenditures; fiscal expenditures refer to government decisions about taxes and spending, while monetary expenditures refer to decisions made by the central bank (Federal Reserve system). Our project is concerned with early American fiscal history, as we consider decisions made by the American government on how it will spend its revenue, accrued largely from taxes, on debt repayment. We are able to do so because we have large datasets that represent a significant portion of the interest paying debt redeemed after Hamilton’s 1790 plan and the debt that was paid to colonists for goods and services provided during the Revolution.

In 1913, Charles Beard asked (and answered) the question “What were the economic interests of the men who drafted and ratified the US Constitution?” in his seminal work *An Economic Interpretation of the Constitution of the United States.* Charles Beard concluded that

many delegates to the Constitution Convention in the summer of 1787 as well as many of the delegates to subsequent state conventions that ratified the Constitution owned Confederation and States securities that were issued to finance the Revolutionary War. Thus they had a financial interest to draft and ratify a document that strongly supported the interests of public creditors. In particular, the US Constitution granted the new federal government the power to collect customs revenue.

With the benefit of more detailed data, Forrest McDonald (1958) revisited this question. In contrast to Beard, he concluded that most of the delegates to the Constitutional Convention and the various state conventions were motivated by what they viewed as best for their individual states and the federation of all 13 states rather than their personal financial interest.

You might wonder, why do we care about the decisions of men from nearly two and a half centuries ago? There are many different answers to this question, but I will share the one that I find most convincing (and in my opinion, most relevant for our daily lives).

At the Supreme Court, the 9 justices decide how to interpret the Constitution and apply it to laws that govern our lives as American citizens or residents. There are many different methods of interpreting the Constitution, although there are 7 most commonly accepted ones. One of these interpretations is known as textualism, where “a judge looks to the meaning of the words in the Constitution, relying on common understandings of what the words meant at the time the provision was added.” Understanding what words meant to the drafters of the Constitution relies on understanding their motivations (such as economic motivations) and tells us not only what those words might have meant to them, but also whether we even want to abide by that interpretation.

Beyond the question of the Founding Fathers’ economic motivations, there are other questions that we care about. Who were the individuals that provided goods and services in support of the Revolution? How much support did they provide? What common characteristics did they share that might explain their support? More individuals than just the Founding Fathers owned debt as a consequence of their economic activities of the 1770s and 1780s.

During the period of economic turmoil in the 1780s, who kept the debt that had been issued to them? Who didn’t? Who were the buyers of this debt, and what were the characteristics of all these groups of people? Understanding the characteristics of these individuals also helps us better understand who Hamilton planned to pay back under his 1790 plan. Most importantly, by paying back the debt, Hamilton hoped to ensure that America established itself as an entity who would repay back incurred debts, allowing it to ensure that during future crises, it would have a way of securing additional funds (in the form of incurred debt). The value of this cannot be emphasized enough; by choosing to repay all of its debts as opposed to defaulting on it, America ensured that it would be able to borrow money in the future when it needed to make large purchases, such as the Louisiana purchase or engaged in costly conflicts such as the War of 1812. Who were the individuals who Hamilton viewed as responsible for future funding that the government might need, which consequently motivated him to ensure that they received payments for the debt they owned?

## Additional Resources

Some additional resources you may find helpful are the following books: Charles Beard’s *Economic Interpretation of the Constitution*, Forrest McDonald’s trilogy on the Constitution (*We*

*the People, E Pluribus Unum* and *Novus Ordo Seclorum)* and James Ferguson's *Power of the Purse*. In addition, the following academic papers do a good job of putting what Hamilton did in the context of broader American fiscal history: *Beard and the Constitution: The History of an Idea* by Richard Hofstadter and