Financial Foundations: Public Credit, the National Bank, and Securities Markets

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The financial foundations of the United States and its federal government were created in three years, 1790-1792. Before 1790, the government was effectively bankrupt. Without tax revenues until late in 1789—after the newly created Treasury Department opened in September of that year, it managed to collect by year end a grand total of $162,200 in custom duties—the U.S. government was in default on almost all of its large domestic debts left over from the Revolution, as well as on most its foreign debts incurred in the struggle. The new nation lacked a national currency, a national bank, a banking system, and regularly functioning securities markets. It had only a couple of dozen business corporations the states had chartered during the 1780s.

The financial revolution of 1790-1792 changed all that. In 1793, the government collected almost $4.7 million in tax revenue, more than enough to fund government operations and meet interest payments on the national debt. By 1793, a federally chartered Bank of the United States had opened at Philadelphia with branches in several cities, as had the U.S. Mint to produce silver and gold coins in the newly defined dollar unit of account. Several states had chartered ten more banks to join the first three bank start-ups of the 1780s, one of which operated without a corporate charter until 1791. Along with the national bank and its branches, these banks were interacting with one another as a banking system.

Forty-four new business corporations, including the banks, received charters in 1790-1792: more in three years than the total of seven in the entire colonial era and the 24 of the 1780s. Securities markets in Philadelphia, New York, and Boston priced every business day the $63 million of restructured domestic U.S. debt that began to appear in late 1790, as well as the $10 million in stock of the Bank of the United States and the stock of state banks and non-banking corporations.[1] These markets had even survived

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their first bubbles, panics, and crashes in 1791 and 1792 (Sylla, Wright, and Cowen 2009). Financially, by 1793 the United States looked surprisingly modern. In 1789 it was decidedly pre-modern.

Because of the events of 1790-1792, from that time forward Americans and most of their historians could assume, correctly, that a modern financial system always existed in their country. But too often incorrectly, they also assumed there was nothing special, unique, or even good about it. Since modern economies by definition have modern financial systems, much of U.S. financial historiography has focused on the unseemly, negative features of these systems. Taxes and public spending are too high. The national debt is too big and ought to be reduced. Large banks are a threat to economic stability and perhaps even the people's liberties. Banks take too many risks and too often fail. Stock markets are the dens of speculators and thieves, and too often they crash. Business corporations have too many privileges and too much influence in American life.

These widely trumpeted opinions of our time are nothing new. They have been voiced throughout U.S. history since 1790. But they were not voiced in America before 1790, or in most other countries until long after 1790.

The United States was one of the first nations to modernize its finances. Only two nations did so earlier—the Dutch Republic (the modern Netherlands) about two centuries before the United States, and Great Britain starting perhaps a century earlier. Neither modernized as completely as the United States did 1800, and neither did it within three years, or even three decades (Rousseau and Sylla, 2003, 2005; Sylla 2009).

This chapter attempts to answer several questions. How did so much modernizing economic and financial change happen so quickly at the start of U.S. history? What were the specific choices made and actions taken during 1790-1792 that made it happen? How were they challenged? How were they defended? Did the financial revolution happen as easily as is sometimes assumed from its sheer rapidity? And finally, what difference did

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Corporate Development, 1801-1860." Any opinions, findings, and conclusions expressed in this chapter are those of the author and do not necessarily reflect the views of the National Science Foundation.

[1] An additional $12 million of foreign debt raised the total national debt to approximately $75 million as of 1790. Most of the foreign debt was owed to France, for French loans during the War of Independence and arrears of interest on those loans.

the financial revolution make for what happened after it occurred? In particular, what was its impact on the growth of the U.S. economy?

1. Hatching and Shaping the Plan

The origins of the financial revolution of the early 1790s can be traced to the seemingly insurmountable financial difficulties of the last years of the War of Independence. Then, the Confederation Congress saw its paper money become worthless and, having no tax powers, it struggled to find ways to pay its army and its debts (Ferguson 1961). Congress appointed Robert Morris, a wealthy merchant and financier, to be Superintendent of Finance in 1781. Morris managed to fund the decisive Yorktown campaign and victory in October of that year, and to persuade Congress to charter the first American bank, the Bank of North America, shortly thereafter. But Congress failed to enact most other financial reforms Morris recommended, and he resigned in frustration in 1784.

Financial difficulties in countries are common, particularly during times of war, and there were lots of such times during the eighteenth century. Financial revolutions, however, are rare. How, then, did the financial difficulties experienced by Americans during the War of Independence lead to a financial revolution a decade later?

Subsequent events would reveal that the initial plans for a U.S. financial revolution were hatched in several letters—more accurately essays—on political economy that Alexander Hamilton wrote between late 1779 and early 1781. Hamilton at the time was a lieutenant colonel in the Continental Army and the principal aide de camp to General Washington, the American commander. In his long letters to U.S. leaders, Hamilton demonstrated an unusual understanding of financial history, gained from his recent study of the works of Malachy Postlethwaite, David Hume, Richard Price, Adam Smith, and others (McDonald 1979, 35). The letters indicate that Hamilton knew quite a lot about the successful financial revolutions of the Dutch and the British, and the aborted efforts of John Law in France. From those histories he drew the conclusion that finance was the key both to state power and economic growth. Applying his historical understanding to the situation of the United States, he began to formulate plans for what would become the US financial revolution a decade later. In 1789, as the first Secretary of the Treasury of the new federal government, Hamilton would execute a more refined version of a plan he had hatched a decade earlier and then developed during the 1780s.

The setting for Hamilton's letter-essays was the dire situation of the American revolutionaries in 1779-1781. The war had dragged on for five years. Paper "Continental Currency," first authorized and issued by Congress in 1775, and then issued to excess by 1778-1779, was well on its way to becoming worthless by 1780. Taxation then was in the hands of the states. To meet the requisitions of Congress, states were supposed to levy wartime taxes payable in Continentals as well as in their own state paper currencies. That would support the values of the paper currencies by making them acceptable as a means of paying taxes and by reducing the amounts outstanding. But taxes levied and collected by the states were woefully inadequate to the task, so Continental paper dollars depreciated to the point where it took about 40 paper dollars to purchase a dollar in hard-money coins by the start of 1780, and about 100 paper dollars to buy a dollar in specie by the beginning of 1781 (Perkins 1994, 97). Borrowing, an alternative to taxation and money printing as a method of public finance, also proved difficult both at home and abroad, in part because ineffective taxation and excessive money printing undermined whatever confidence lenders might otherwise have had in the revolutionary cause.

In his first letter on the dire U.S. financial situation (undated, but thought to have been written between December 1779 and March 1780), Hamilton argued that the main solution to the wartime financial problems of the Americans had to be a foreign loan, most likely from France which already supported the American cause financially and militarily: "The most opulent states of Europe in a war of any duration are commonly obliged to have recourse to foreign loans and subsidies. How then could we expect to do without them…." Part of the loan might used to buy up superfluous paper currency, but Hamilton thought it would be better to turn it into merchandise (military supplies) overseas and import the supplies to aid the undersupplied Continental Army. If that were done, the Americans might be able to carry on the war for two or three more years. By itself, however, a foreign loan would do little to restore the currency to a sound basis (Syrett 1961-87, II, 234-51, quote at 237-38).[i]

A better plan, Hamilton reasoned, was to have Congress charter for ten years what he already in 1780 called a "Bank of the United States," and use the foreign loan to provide some of the bank's capital, with the rest to come from subscriptions to the bank's stock by private investors. The way to restore private confidence in paper money was to have the Bank's notes replace fiat paper money such as Continentals. The Bank would hold specie reserves (gold and silver coins) and its notes would be convertible into hard money. Bank paper money convertible into specie would achieve the goal of currency stability. The U.S. government would own part of the Bank and share in its profits. And it would receive a large loan from the Bank, at 4 percent interest, to finance the ongoing war.

As precedents for his plan, Hamilton referred to John Law's failed plans for financial reforms in France, which nonetheless had some good features: "It will be our wisdom to select what is good in [Law's] plan and in any others that have gone before us, avoiding their defects and excesses." He also drew on the experience of the Bank of England, a "striking example" of how far paper credit could be increased "when supported by public authority and private influence." He admired how British public debt was absorbed and managed by the Bank of England, which strengthened the Bank and enhanced the ability of the British government to borrow. Unlike the Bank of England, however, Hamilton's proposed Bank of the United States was not to have exclusive privileges. While Hamilton supported increased state power, he was opposed to monopoly as inimical to economic growth: "Large trading companies must be beneficial to the commerce of a nation, when they are not invested with [exclusive privileges]; because they furnish a capital with which the most extensive enterprises may be undertaken (Syrett 1961-87, II, 245, 249, 250).

Hamilton's first letter on financial reform foreshadowed several of the key elements of modern financial systems, most notably a *central bank* issuing paper money (bank notes) convertible into specie, which the bank would hold as reserves. It was a plan to *stabilize the currency* of a country whose paper currency had lost most of its value. The bank would also lend to the government, thus strengthening *public finances* and supporting *a public debt market*. It would be a *corporation* without exclusive privileges, and such enterprises would foster economic growth.

Hamilton addressed a second letter-essay in September, 1780, to James Duane, a New York delegate to the Continental Congress. In it Hamilton's political economy advanced to a higher plane. The fundamental problem of the United States was that the national government did not have sufficient vigor, and especially sufficient means, to meet public exigencies. The national government needed to be altered. It needed to have the power of the purse: "All imposts [import taxes] upon commerce ought to be laid by Congress and appropriated for their use, for without *certain revenues* a government can have no power; that power, which holds the purse strings absolutely, must rule."

There were two sets of remedies. First, the national government had to have the power to govern and wage war. Hamilton asserted that Congress, having declared the independence of the United States, already had such powers, but—fearful of state objections—Congress was too timid to use them. Recognizing that few would agree with his bold call for Congress to assert sovereign powers, Hamilton recommended that Congress immediately convene a convention of the states to provide the national government with competent powers. This, in 1780, appears to be the first call by any American for a constitutional restructuring of U.S. government, and issues of public finance were at the heart of it. Passages in the letter, in fact, sound a lot like Article I, Section 8, of the U.S. Constitution written seven years later (Syrett 1961, II, 400-18, quote at 404).[2]

Second, to supply the army, Hamilton proposed to Duane a four-step approach: a foreign loan (most likely from France), pecuniary taxes, a tax in kind, and a bank founded on public and private credit. In connection with the bank proposal, Hamilton discussed the origins of modern banking in Venice, the Banks of Amsterdam and England, and the flaws in John Law's system in France. The bank he outlined was similar to the Bank of

[2] Compare Article I, Section 8, with this from Hamilton's 1780 letter to Duane: "Congress should have complete sovereignty in all that relates to war, peace, trade, finance, and to the management of foreign affairs, the right of declaring war and raising armies, officering, paying them, directing their motions in every respect, of equipping fleets and doing the same with them, of building fortifications arsenals magazines &c., &c., of making peace on such conditions as they think proper, of regulating trade, determining with what countries it shall be carried on, granting indulgences laying prohibitions on all articles of export or import, imposing duties granting bounties & premiums for raising exporting importing and applying to their own use the product of these duties, only giving credit to the states on whom they are raised in the general account of revenues and expences, instituting Admiralty courts &c., of coining money, establishing banks on such terms, and with such privileges as they think proper, appropriating funds and doing whatever else relates to the operations of finance, transacting every thing with foreign nations, making alliances offensive and defensive, treaties of commerce, &c., &c." (Syrett 1961, II, 408).

the United States proposed in the earlier letter, but now Hamilton says that it should have three branches in three different states. Later, Hamilton's 1790 proposal for a Bank of the United States, enacted with a Hamilton-drafted congressional charter in 1791, permitted the bank to have branches, and the Bank would open several branches ranging from Boston to Charleston in 1792.

A third Hamilton letter-essay was to Robert Morris in April, 1781, shortly after Congress had appointed Morris as its Superintendent of Finance to salvage revolutionary finances after the collapse of paper Continentals.[3] After stressing the crucial importance of finance—"Tis by introducing order into our finances—by restoring public credit—not by gaining battles, that we are finally to gain our object" (Syrett 1961, 606)—Hamilton said he intended to give Morris some ideas he had on financial administration, and a plan that, while "crude and defective," might be a "basis for something more perfect." First, he estimated the revenue capacity of the country and compared it with an estimate of necessary civil and military expenses. The latter greatly exceeded the former, leaving a revenue shortfall that had to be financed. Foreign loans might help, but could not do it all. So a plan had to be devised, and Hamilton's plan calls, as did the plans outlined in his two previous letters, for establishing a national bank. He goes on to discuss the pros and cons of national banks in theory and in history, including a statement of how banking development and the expansion of credit promote both state power and economic growth:

> The tendency of a national bank is to increase public and private credit. The former gives power to the state for the protection of its rights and interests, and the latter facilitates and extends the operations of commerce among individuals. Industry is increased, commodities are multiplied, agriculture and manufactures flourish, and herein consist the true wealth and prosperity of a state.
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> Most commercial nations have found it necessary to institute banks and they have proved to be the happiest engines that ever were invented for advancing trade. Venice Genoa Hamburgh (sic) Holland and England are examples of their

[3] In the September 1780 letter to Duane, after recommending that Congress appoint "great officers of State" to execute its decisions—the idea of an executive branch—Hamilton endorsed Robert Morris to head the department of finance (Syrett 1961, 408-09).

> utility. They owe their riches, commerce, and the figure they have made at different periods in a great degree to this source. Great Britain is indebted for the immense efforts she has been able to make in so many illustrious and successful wars essentially to that vast fabric of credit raised on this foundation. Tis by this alone she now menaces our independence (Syrett 1961, II, 618).

Much of the remainder of Hamilton's letter to Morris is given over to proposing and discussing twenty articles, "only intended as outlines," that would comprise the national bank's charter. The bank would be, for example, by law a *corporation*, which seemed so obvious to Hamilton and to a businessman such as Morris that it "needs no illustration," although in America as elsewhere there were few business corporations then. The letter ends with a brief discussion of the national debt after the war is over. The debt would not present a problem, Hamilton said, because the country's growth and a good financial administration will easily enable the United States to pay it off in a matter of decades. In fact, properly managed, it will be "a national blessing…a powerful cement of our union" (Syrett 1961, II, 635).

Morris replied to Hamilton that he had been thinking along similar lines, although the Bank of North America (BNA) that he soon proposed to Congress was more realistic and less ambitious in scale and scope than the national bank Hamilton recommended (Syrett 1961, II, 645-46). Interestingly, the proceeds of a foreign loan, as in Hamilton's plans, did become the source of most of BNA's capital.

Hamilton's letter-essays of 1779-1781 dealing with finance, state power, and economic growth touched on all the main components of modern financial systems—government revenues and public debts, money, banking and central banking, corporations, and, at least implicitly, the securities markets that would arise to give liquidity to government debt and corporate securities, that is, bonds and stocks. They demonstrate an unusually modern grasp of the role of finance in political and economic history. They also foreshadow the financial revolution Hamilton would execute a decade later as Treasury Secretary.

The remarkable aspect of Hamilton's early letter-essays on political economy and finance is their demonstration of his historical learning, the lessons for the United States he saw in financial history, and his grasp of the components of a modern, articulated financial system, and the support each component gives to the others. On the basis of the limited historical evidence and other information available to him, Hamilton drew the right conclusions. He also realized that in America public opinion, not just the views of leaders, mattered for policy change. With that in mind, Hamilton in 1781-1782 published six essays entitled *The Continentalist* in a New York newspaper. These essays were simpler versions of the ideas embodied in his three letter-essays to leaders.

By the time Hamilton became Secretary of the Treasury a decade later, the plans that he started to shape in 1779-1781 were more refined. In the interim, Robert Morris appointed Hamilton receiver of Continental revenues for New York State, an experience that provided lessons in the difficulties of financing a national government by means of requisitions from states. As Congress's Superintendent of Finance from 1781 to 1784, Morris tried without success to implement many of the financial reforms that Hamilton would successfully implement a decade later. It is one thing to have a plan, and quite another to be able to execute it. Likely the different outcomes resulted from the constitutional changes of 1787-1788. (Hamilton, as we have seen, called for such changes in 1780.)[4]

In September 1789, shortly after approving Congress's bill establishing the Treasury Department, President Washington nominated Hamilton to head it, with Congress approving the nomination the same day. Hamilton immediately arranged loans from the Banks of North America and New York that financially launched the new federal government. Revenues from recently enacted duties on imports and tonnage were still absent, and one of Hamilton's early tasks as Treasury Secretary was to organize the system for collecting federal revenues.

Having developed his financial plan for the country over the course of the previous decade, Hamilton now was in a position to execute it, with the help of his allies in and out of Congress. That was not to prove so easy: each step of the implementation featured political controversy; partisan attacks became increasingly bitter. As leaders took positions in favor of or against Hamilton's program, the U.S. financial revolution

[4] Ver Steeg (1954) provides a full account of Morris's financial program and its relationship to Hamilton's.

soon engendered the two-party system of politics that ever since has been a staple of American life.

Despite the political divisions, the financial revolution happened, and with great rapidity. By the time Hamilton retired as Treasury Secretary in 1795, the finances and debt management of the new federal government would be firmly established, and the U.S. economy would have a modern, articulated financial system jump-starting and sustaining its growth.

II. Executing and Implementing the Plan

Ten days after becoming Secretary of the Treasury in 1789, Hamilton was directed by the House of Representatives to prepare a plan "for the support of the public credit, as a matter of high importance to the national honor and prosperity." He delivered his report in January 1790. On the basis of fairly solid information, Hamilton estimated the debts of the United States, including arrears of interest, at $54.1 million, of which $11.7 million was owed to foreign governments and investors, and $42.1 was owed to domestic creditors. In addition, he estimated from less solid information that state debts incurred mostly during the War of Independence, including arrears of interest, were $25 million. Because they had been incurred in the common cause, Hamilton argued that the state debts ought to be assumed by the federal government. The grand total of the national debt estimated by Hamilton amounted to $79.1 million (Syrett 1962, VI, 87-88), about 40 percent of estimated GDP in 1790 (Johnston and Williamson 2009).

If the United States were pay interest on this mass of debt on the terms under which it had been borrowed, Hamilton calculated that the annual expenses would come to $4.587 million--$4.045 million on the domestic debt and $0.543 on the foreign debt. Could the government, with tax revenues just beginning to trickle in, have paid this huge annual interest expense along with its annual operating expenses, which he estimated at $0.6 million?[5] Hamilton thought that to do so "would require the extension of taxation to a degree, and to objects, which the true interest of public creditors forbids" (Syrett 1962, VI, 88). Therefore, he recommended that interest on the foreign debt be paid in full, but

[5] Hamilton was too optimistic with his $0.6 million estimate of federal operating expenses. In the governments first full year of operation, 1790, domestic operating expenditures came to $0.829 million.

that domestic debt holders voluntarily agree to have the full value of their debts funded by a new loan at a reduced rate of interest amounting essentially to 4 percent instead of the original 6 percent.[6] That would reduce the annual interest on the domestic debt to a little over $2.7 million, potentially manageable, instead of $4 million.

To induce domestic creditors to make the voluntary conversion, Hamilton offered call protection—only a small amount of the debt could be retired annually even if market interest rates declined, as he confidently predicted they would. To give the creditors further assurances, he proposed a federally administered sinking fund to apply surplus revenues and money borrowed at home or abroad to open-market purchases of public debt "until the whole of the debt shall be discharged" (Syrett 1962, VI, 107; Sylla and Wilson 1999). Investors thus could count on the government not merely to pay interest on its debt, but ultimately to redeem it. And the government gained the ability to conduct open-market purchases to support debt prices.

After half a year of protracted debates in Congress and some side deals to attract the needed votes, Congress essentially adopted Hamilton's proposal. The most crucial of the side deals involved federal assumption of state debts. As Thomas Jefferson, the Secretary of State, reported on a 1790 conversation with Hamilton, "He [Hamilton] opened the subject of the assumption of state debts, the necessity of it in the general fiscal arrangements and it's (sic) indispensible necessity toward a preservation of the union: and particularly of the New England states, who had made great expenditures during the war... [and who] would make it a sine qua non of a continuance of the Union" (cited by Elkins and McKitrick 1993, 155). But most southern members of the House of Representatives were opposed to assumption, and in early votes they had prevented it from passing. At Hamilton's behest, Jefferson hosted a dinner for Hamilton and Madison in June, 1790, at which Madison, a member of the House from Virginia, agreed to twist the arms of some southern Congressmen to switch their votes to favor assumption in return for Hamilton arranging a move of the national capital from New York to a new

[6] Hamilton in his January 1790 Report on Public Credit laid out a menu of debt management options for Congress to consider. Congress adopted one of them with a minor modification that was more generous to public creditors than Hamilton's proposal. But it was also less generous because Congress reduced the rate of interest the government would pay on the new debt representing arrears of interest to 3 percent, whereas Hamilton had proposed that arrears receive the same interest rate as the original principal sums borrowed. See Swanson and Trout 1992.

capital city on the Potomac River (after a ten-year stay in Philadelphia to secure Pennsylvania's support for the deal). This is how Washington, D.C., came to be, and how Hamilton obtained federal assumption of state debts (McDonald 1978, Chap. VIII; Elkins and McKitrick 1993, Chap. III; see also the further discussion of assumption in Section III below).

U.S. foreign debt, owed mostly to France, would be discharged by new foreign loans, arranged primarily through Dutch bankers. This roll-over of the foreign debt was completed by 1795. Interest on the domestic federal debt—the new loan took the form of three new securities: a 6 percent bond (6s), a 3 percent bond (3s), and a 6 percent bond with interest deferred (deferreds) for ten years, with public creditors receiving a package of the three yielding 4 percent interest in exchange for the old debt—began to be paid quarterly in 1791. Assumed state debts were funded by a similar exchange, but interest payments were delayed until 1792, with interest accrued to 1792 being added to the principal.

Exchanges of old debt for new debt went smoothly. By September 1791, $31.8 of an eventual total of $64.5 million had been converted. From then to the end of 1793, and additional $26.2 million was exchanged. By the end of 1794, a month before Hamilton stepped down as Treasury Secretary, $63.1, or 98 percent of the total domestic debt, had voluntarily been exchanged for the new 6s, 3s, and deferreds (Bayley 1884, 403). Substantial increases in the market values of the three federal debt securities in the early 1790s aided the conversion process by confirming predictions Hamilton had made when he unveiled his plan for supporting public credit.

Even with interest charges on domestic debt reduced from $4 to $2.7 million, adding in the interest on the foreign debt ($0.5-0.6 million in 1790) raised projected total annual interest to $3.2 million. Adding further to that amount a conservative estimate of ordinary federal operating expenses of at least $0.8 million (see footnote 4), the annual cost of Hamilton's program adopted by Congress in 1790 would come to more than $4 million by 1792, when it became fully operational.

Where was the money to come from to cover $4 million or more of government expenditures? In the early 1790s, Hamilton recommended some increases and extensions of the import duties levied in the original tariff of 1789. He also persuaded Congress to enact some excise taxes. But rates of taxation were kept low. The purpose of the tariff was revenue, not protection, and Hamilton knew that Americans detested taxes of any kind. The key to the success of Hamilton's bold gamble to establish public credit solidly and quickly would not be tax increases. Instead, it would be a higher rate of economic growth—rising American incomes would draw in more imports and swell customs collections—plus an ability of the Treasury to borrow what was needed to cover shortfalls of tax revenue that might arise before growth generated enough tax revenue to pay the expenses of the federal government.

That is why two other financial foundations—the Bank of the United States and the securities markets—were so important to Hamilton's plan. As he had outlined to Robert Morris nearly a decade before: a national bank would "increase public and private credit," with public credit giving "power to the state for the protection of its rights and interests," while private credit "facilitates and extends the operations of commerce among individuals." The Bank would be a source of loans to the government to cover revenue shortfalls, and it would lend also to the private sector to extend commerce and facilitate growth. Securities markets operated in a similar way: their existence increased the power of the state to borrow by selling debt securities. At the same time securities markets offered private investors liquidity and income, and provided corporate entrepreneurs with a means of raising equity and debt capital. In Hamilton's plan, visionary for its time, state power and economic growth indeed went hand in hand. Each was needed for the other to succeed.

In his January 1790 report, Hamilton asked Congress to ask him to prepare a proposal for a national bank. Congress obliged in August. The Bank Report came in December. Hamilton listed three principal advantages of the Bank, the first of which emphasized its contributions to economic growth. Bank lending to business would create bank or credit money in the form of bank notes and deposits, augmenting the money supply, and "thus by contributing to enlarge the mass of industrious and commercial enterprise, banks become the nurseries of national wealth...." The second and third advantages were governmental: the Bank would be a source of loans to the government, "especially in sudden emergencies," and it would facilitate the payment of taxes, both by lending to those who owed taxes and by increasing "the quantity of circulating medium and the quickening of the circulation" (Syrett 1963, VII, 309).

The Bank of the United States, as proposed by Hamilton, was to be a private corporation chartered by Congress, to avoid "a calamitous abuse of it" when "temptations of momentary exigencies" might lead to inflationary excesses "should the credit of the Bank be at the disposal of the Government" (Syrett 1963, VII, 331). Here Hamilton espoused what later would be called central bank independence. But he called for the U.S. government to own 20 percent of the Bank's $10 million of capital stock, to be purchased initially by a loan from the Bank and repaid over ten years, and for the government to have some oversight of it. So it was really a mixed private-public corporation, but one whose levers Hamilton could employ in central banking operations.

Private investors owning the majority of the Bank's stock could pay for one-fourth in specie and three-fourths in the recently issued U.S. 6s. The latter provision increased the demand for 6s, market prices of which rose to par. So the Bank supported the public debt, just as the debt supported the Bank.

The Bank would also be allowed to open branches, although Hamilton thought it advisable to wait until the institution was firmly established in one place, and the managerial issues posed by a branch bank were well understood, before it opened branches. He saw the advantages of a large, well-managed branch bank as being greater lending capacity and less danger of bank runs. In the Bank Report Hamilton formalized the above-mentioned provisions and others into twenty-four articles of a proposed constitution, which became the basis for the Bank's charter enacted by both houses of Congress in January and February 1791.

That was not quite the end of the story. The president had to approve the Bank bill, and Washington hesitated when three of his trusted advisors, Madison in Congress, and Jefferson and Randolph in the cabinet, argued that the Bank was not authorized by the Constitution. Hamilton effectively countered their argument in a defense of the Bank that set forth the doctrine of implied constitutional powers. Washington signed the bill. But Hamilton's victory may have been part of a complex deal to approve the Bank while assuring the southerners who had tactically opposed it that the national capital, as earlier agreed, would move to the Potomac by 1800 (McDonald 1979, 199-210).

The Bank had its public offering of stock, heavily oversubscribed, in July 1791, and it opened in Philadelphia in December. Several branches—New York, Boston, Baltimore, and Charleston—opened in 1792. By its model and its expanding presence, the Bank prompted states to charter more banks of their own, ensuring a rapid expansion of the U.S. banking system. Some states such as New York did this for defensive reasons; they feared that if they did not charter state banks, the federal bank's branches would dominate banking in those states. Other states such as Rhode Island chartered a bank for just the opposite reason; they thought it would help attract a branch of the federal bank (Sylla 1998, 2008). The three state banks existing in 1790 thus became 20 by 1795, and 28 by 1800. These state banks interacted with one another and with the five branches of the Bank of the United States in a rapidly developing nationwide banking network.

U.S. securities markets also expanded rapidly as a result of Hamilton's program. How could they not? The debt restructuring created more than $60 million (par value) of new U.S. 6s, 3s, and deferreds, while the Bank added $10 million of equity shares (par $400 per share) between 1790 and 1794. Markets, even nascent stock exchanges, for all these new securities began actively to trade the new federal securities and Bank stock in several cities—Philadelphia, New York, and Boston in 1790, followed closely by Charleston and Baltimore—almost as soon as they appeared (Sylla 1998, Wright 2002, 2008). These markets also facilitated the finances of state governments, which owned securities paying interest and dividends. Banks and other business corporations, which the states increasingly chartered, raised capital by issuing securities, and like state governments some of the corporations earned income by investing in securities.

Financial development unleashed by Hamilton's financial revolution apparently raised the rate of growth of the U.S. economy to modern levels in the early 1790s, as was intended (see section IV). And it is a good thing that it did because increased growth was the key to solving rather pressing financial problems that Hamilton's program created for the government. Recall that the federal government needed to finance at least $4 million of spending by 1792, that is, $3.2 million of interest payments on its debt and at least $0.8 million in operating expenses. It was able to do this, which led later scholars of the era to assume it was not much of a problem at all. For example, Elkins and McKitrick

(1993, 226) contend that after Congress enacted excises Hamilton proposed in early 1791,

> [T]he first phase of Hamilton's financial program was complete. The federal government now had an income sufficient to cover current expenses and to pay full interest on the entire debt. This meant that the tax potential which had long impressed European financiers was no longer a projection but a fact, and as Hamilton's predictions about the Treasury's ability to meet its obligations without undue strain were borne out, the price of federal securities would continue to move toward par. They would thus be less and less viewed as an item for speculation.

While Hamilton certainly wanted people at the time to think that federal finances were fundamentally sound—that was part of his strategy—he should not be allowed to keep scholars two centuries later under that illusion.[7] He did give a number of hints as to the direness of fiscal outlook around the time he came into office. Writing in October 1789 to Lafayette in France, Hamilton asked if France could delay payments of the debt the United States owed to it, and make it look as though it was a French idea: "I venture to say to you, as my friend, that if the installments of the Principal of the debt could be suspended for a few years, it would be a valuable accommodation to the United States…. Could an arrangement of this sort meet the approbation of your Government, it would be best on every account that the offer should come unsolicited as a fresh mark of good will" Syrett, V, 426). A day later he communicated the same ideas to William Short, an American representative in Europe, implying that Short should hint to France that "a voluntary and unsolicited offer" to delay debt payments would be most welcome (Syrett, V, 429-30).

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[7] About the only one who did not succumb to the illusion of fiscal soundness in the early 1790s was Riley, who noted that in 1792, "interest payments on the American debt amounted to $3.2 million, a figure equivalent to 87 percent of tax revenues totaling $3.67 million. Debt charges including redemptions equaled no less than $7.26 million, or 198 percent of tax revenues…. [S]uch ratios … exceeded current levels among even fiscally straitened European governments" Further, "When one strikes a balance on the liquid and potential assets and liabilities of the federal government in the years to 1796, one must acknowledge the calculation points to insolvency' (Riley 1980, 188-91).

The closest Hamilton came to revealing the unpromising fiscal outlook in a public document is in the January 1790 Report on Public Credit. After noting that the annual interest on the public debt, domestic and foreign, according to the original terms of borrowing would be $4.6 million, Hamilton goes on:

> The interesting problem now occurs. Is it in the power of the United States, consistently with those prudential considerations, which ought not to be overlooked, to make a provision equal to the purpose of funding the whole debt, at the rates of interest which it now bears, in addition to the sum which will be necessary for the current service of the government.
>
> The Secretary will not say that such provision would exceed the abilities of the country; but he is clearly of the opinion, that to make it, would require the extension of taxation to a degree, and to objects, which the true interest of the public creditors forbids. It is therefore to be hoped, and even to be expected, that they will cheerfully concur in such modifications of their claims, on fair and equitable principles, as will facilitate to the government an arrangement substantial, durable and satisfactory to the community (Syrett, VI, 87).

Hamilton here is saying, in other words, that public creditors, in their own long-term interest and in that of the country, should be willing to accept what later would be called a "haircut," a reduction of what they were contractually owed, because the government did not have sufficient funds to pay all of what it owed, and if it tried to obtain the funds by raising taxation the result could easily be a taxpayers' revolt that ended up in their getting even less than Hamilton was prepared to offer. The haircut did not reflect a write-down of debt principal, which was fully funded. Rather, by reducing the interest paid on the new debt in effect from 6 to 4 percent, Hamilton's restructuring of the national debt gave investors a package of securities that had a lower market value than it would have had if 6 percent had been paid on all of it (Garber 1991).

Less than three months later, on March 29, 1790, Hamilton formally wrote to President Washington that the Treasury did not have enough money to pay the members of Congress and their staffs, the salaries of other government officials, the requirements of the War Department, and an interest payment in arrears on Dutch loans. It therefore needed to obtain a loan of $100 thousand. Two days later, the President authorized the loan (Syrett, VI, 328, 333). The new government of the United States was living from hand to mouth.

Just how tenuous was the fiscal situation of the federal government in the early 1790s, and just how much Hamilton counted on economic growth to change that situation is evident in the following table, which shows federal revenues from sources other than loans growing year by year from 1789 to 1800.[8]

Table 2.1. Federal Tax Revenues by Year, 1789-1800

Year	Revenue (000)	Year	Revenue (000)
1789	162	1795	6,115
1790	1,640	1796	8,378
1791	2,648	1797	8,689
1792	3,675	1798	7,900
1793	4,653	1799	7,547
1794	5,432	1800	10,849

Sources: 1789-1793: Van Eeghen Papers, Archives of the University of Amsterdam; 1794-1800: Historical Statistics of the United States (2006, 5-80).

Revenues (excluding loans) grew 3.3-fold from 1790, the first full year of revenue collection, to 1795, or 26 percent per year. Most of this revenue (100 percent in 1790, 91 percent in 1795) was from duties on imports and tonnage. Although some duties were added (as were excises, which raised $209 thousand in 1792, their first year, and $338 thousand in 1795), and other duties were increased, these innovations cannot account for the entire revenue upsurge. Nor can the outbreak of the French Revolutionary Wars in

[8] Scholars may have been fooled by a quirk in virtually all reports of federal fiscal data, which lump the years 1789-1791 together seemingly as one year. The table here is based on quarterly and half yearly financial reports from 1789 through 1793 that I discovered in the Van Eeghen documentary collection of early Americana, located in the archives of the University of Amsterdam. Dutch investors in America such as the Van Eeghens, as a part of their due diligence, gathered whatever intelligence they could obtain in the United States and sent it back to the Netherlands to be pasted in scrapbooks for future reference. Van Eeghen & Co. in the later nineteenth century donated their scrapbooks to the university. The quarterly and half yearly statements of federal revenues and expenses are printed sheets that I surmise were created by the Treasury for the information of Congress at the time. In the United States they do not appear to exist, probably because they were regarded as ephemera that could be discarded after more up-to-date statements appeared. The Dutch did Americans a favor by preserving a part of early U.S. financial history that apparently was not preserved in America.

1793, often cited as an unexpected source of prosperity for the United States, since the most rapid gains in revenue were from 1789 to 1793.

It is therefore difficult to avoid a conclusion that the upsurge in revenue was due in good part to a higher real rate of economic growth along with a rising price level that resulted from monetary expansion rooted in both domestic (bank expansion) and foreign (capital inflows as foreign investors purchased American securities) sources (Rousseau and Sylla 2005; Rousseau in this volume). A part of the growth resulted from expanding exports (Goldin and Lewis 1980). More rapid growth also led to more taxable imports, which is why expanding trade was an essential ingredient of Hamilton's fiscal planning (Irwin in this volume).

As happened often in later U.S. history, economic growth ratified the risky bets on the future of entrepreneurs. In the early 1790s, the main entrepreneur was the Secretary of the Treasury, who bet that his comprehensive program of financial innovation and reform would jump-start economic growth and make it possible for the federal government to pay much more interest on its debt than seemed possible when the decisions were made to make those payments in 1790. Hamilton won his bet, but it was by no means the easy win historians often assume it was. Hindsight is 20-20, but a look at the government's finances during 1790-1792, when the future was unknown, indicates that some good things had to happen for Hamilton's bold debt-funding gamble to succeed.

III. The Financial Policy Debate of the 1790s

There was a high-level financial policy debate of sorts in the mid 1790s. On one side was Albert Gallatin, a Republican congressman from western Pennsylvania and future Treasury Secretary in the Jefferson and Madison administrations. Gallatin was the Republican opposition's financial expert, a role that corresponded to Hamilton's role in the Federalist Party. The two parties had formed either to support Hamilton's financial policies or to oppose them, although both had precursors in the Federalist vs. Anti-Federalist debates over the Constitution. Gallatin in 1796 presented his reasoned critique of Federalist financial policies along with extensive data drawn from government documents in *A Sketch of the Finances of the United States* (Adams 1960, III, 69-206).

Although Gallatin most likely was unaware of it, Hamilton essentially responded to Gallatin's critique before Gallatin wrote and published it. In a lengthy but never completed essay, "The Defence of the Funding System," dated July 1795, six months after stepping down as Treasury Secretary, Hamilton reviewed the decisions he had made while in office and the reasons he had made them (Syrett 1973, XIX, 1-73). The two essays deal with the same issues—taxes and spending, public debt management, the Bank, securities markets, the economic and political effects of the measures adopted. We therefore can read them as a policy debate, even though the two debaters were not on a platform confronting one another. Gallatin's is the more polished of the two, but Hamilton's rough draft is the more penetrating because he had made the key policy decisions, and he used "The Defence" to explain them in considerable detail.

Like other Republican leaders, Gallatin thought most public debts were bad, and his principal charge against Hamilton's policies was that the assumption of state debts in 1790 had made the national debt larger than it needed to be by at least $10.9 million. Most state debts, $18.3 million, were assumed in 1790, and each state's debt assumed by the federal government was charged to it in a settlement of state accounts to equalize across states the per capita costs of financing the War of Independence. The settlement of state accounts was not completed until a few years after 1790. When it was completed, creditor states—ones that had contributed more than their fair shares of the war costs—were found to be owed $3.5 million. The debtor states that had contributed less than their fair shares had an equivalent negative balance. Creditor states were issued some $4 million in new federal bonds to cover the $3.5 million in their favor plus arrears of interest. That swelled the amount of state debt assumed to $22.5 million. The debtor states for political reasons were forgiven the corresponding balances they owed.[9]

With elaborate arithmetical calculations, Gallatin demonstrated that if assumption had been postponed until the settlement of accounts had occurred, the states could have been put in exactly the same position as they were with a federal assumption of only $11.6 million. Hence the national debt was $10.9 million larger than it needed to be. So why was the federal assumption of state debts done in 1790 instead of waiting until the

[9] Perkins (1994, Chapter 9) provides a good treatment of how the settlement of state accounts took place in the early 1790s.

settlement of state accounts had been completed? Gallatin listed the ostensible reasons as, first, some states were heavily burdened by their debts in 1790 and could not realistically wait for a final settlement to occur, if indeed they could be sure it would ever occur; second, the new federal government would be strengthened if more state creditors depended on it for debt payments; and third, it might be easier for the federal government to pay the debts. Gallatin's own view was darker. The additional debt had weakened, not strengthened, the union and had rendered additional taxes necessary. He also suspected that "some influential characters [most likely including Hamilton] whose wish was to increase and perpetuate the debt," had pushed for a quick assumption, possibly to foster "private interest and speculation" (Adams 1960, III, 131).

In "The Defence," Hamilton essentially agreed with the ostensible reasons for assumption as set forth by Gallatin. Some states were heavily burdened with debts in 1790, and were not in a position to wait for a final settlement accounts that possibly might never occur. If those states had to resort to higher taxes to service their debts, the result might be more taxpayer revolts such as Shays' rebellion in Massachusetts in 1786. If that did not happen, Hamilton thought that higher taxes in the heavily indebted states would promote emigration from them to lightly taxed states, making the debt burden yet more difficult to bear. Hamilton also agreed with Gallatin that assumption tended "to strengthen our infant Government by increasing the number of ligaments between the Government and the interests of Individuals," but that "this was the consideration upon which I relied least of all" (Syrett 1973, XIX, 39-41). Why? The tendency of having more domestic creditors to give support to the federal government was offset by the necessity of resorting to unpalatable modes of taxation that "jeopardized [the government's] popularity and gave a handle to its enemies to attack." And in any event the increased ligaments between the federal government and domestic creditors would be temporary as foreign investors purchased more of the debt and as the debt was gradually paid down, both of which Hamilton expected to happen.

Hamilton also agreed with Gallatin's point that the federal government, having sole access to customs and tonnage duties, could more easily pay debts. But his strongest reason for favoring assumption in 1790 was that he feared conflicts over tax bases between state and federal governments if both had large debts to service. The

Constitution had given the states and the federal government concurrent powers over all tax bases except imports, a plan that involved "inherent and great difficulties" even though it was a better plan than the alternatives. Hamilton saw these difficulties as "the Gordian knot of our political situation."

> To me there appeared but one way of untying or severing it, which was in practice to leave the states under as little necessity as possible of exercising the power of taxation. The narrowness of the limits of its exercise on one side left the field more free and unembarrassed to the other and avoided essentially the interference and collisions to be apprehended *inherent* in the plan of concurrent jurisdiction (Syrett 1973, XIX, 23).

If the state debts had not been assumed, Hamilton wrote, the United States as a nation and all public creditors would have been subject to "the weakness and embarrassment incident to fifteen or perhaps to 50 different systems of finance" (Syrett, XIX, 25). His assumption plan, in contrast, had three advantages: it lightened the burdens of all citizens; it equalized the burdens of the citizens of one state with those of another; and it brought immediate relief to the states with the heaviest debt burdens while facilitating the eventual settlement of state accounts. "It is curious fact which has not made its due impression," Hamilton wrote in 1795, "that in every state the people have found relief from assumption while an incomparably better provision than before existed has been made for the state debts" (Syrett XIX, 35).

Recent research on state taxation during the 1780s and 1790s confirms Hamilton's point: "[S]tate governments were relieved of both payments on Congress's requisitions and on their own state debts. Freed from these expenses, the state governments could reduce direct taxation by as much as 75 to 90 percent" (Edling and Kaplanoff 2004, 736). The federal government was able to relieve the states from the necessity of raising taxes, indeed to allow them substantially to lower taxes, without resorting to direct taxes such as the property and poll taxes that were the mainstays of state revenues. The fear that the federal government would resort to direct taxes—Hamilton's Gordian Knot of concurrent federal and state tax bases—led to the Constitution's stricture that federal direct taxation had to be apportioned to the states on the basis of population. Still, the fear that the federal government might tax citizens in a direct way persisted into the ratification debates and beyond.

Since Hamilton believed that there was one national debt that had been incurred in the common cause of independence, he scoffed at the notion Gallatin at least came close to promoting, namely that the debt had been increased by assumption: "Assumption did nothing more than transfer the particular debts to the Union…. The MASS OF PUBLIC DEBT remained the same, on the infallible evidence of a mathematical axiom that WHOLE cannot be greater that ITS PARTS" (Syrett XIX, 44).

A minor aspect of Gallatin's critique of Treasury Department management is interesting in the light of recent research findings. Gallatin in his close perusal of the Treasury's accounts had noticed that expenditures on debt reduction were made by the sinking fund in 1791 and 1792, and later repaid from the proceeds of foreign loans arranged by Dutch bankers *before* the foreign loans had been received in the Treasury. He charged that "the transaction was illegal, but no otherwise criminal than as it was illegal." But he then went on to say, "…the result of the purchases made at that period was useful by accelerating the raising of the price of stock to its nominal value" (Adams 1960, III, 110-12).

What Gallatin apparently did not know, in part because Hamilton had not wanted it to be widely known, was that the Dutch funds were used to repay domestic bank loans incurred to finance Hamilton's open market purchases of government securities during two financial crises—the collapse of the Bank scrip bubble in August and September 1791, and the collapse of securities prices in the financial panic of March and April of 1792 when panicked selling caused market prices of U.S. debt securities to fall 25 percent in two weeks. Well aware of the collapses of French Mississippi and the British South Sea bubbles in 1720, Hamilton knew that financial modernization carried with it an increased probability of financial crises. He had given some thought to how a finance minister or central banker ought to react such crises. When the 1791 and 1792 crises broke out, Hamilton fought them in modern ways by making open market purchases of securities, fostering banker-dealer cooperative agreements to increase market liquidity, and encouraging banks to keep lending (Sylla, Wright, and Cowen 2009).

Gallatin certainly knew about and mentioned the 1792 crisis, but he did not make the connection it had with the financial operations of the Treasury (Adams 1960, III, 134-35). The 1791 and 1792 financial crises ended quickly as a result of Hamilton's actions, with seeming little or no disruption of the economic expansion taking place at the time. But the Republican opposition had a field day, claiming that Hamilton's policies were turning the country into a nation of stock-jobbers and speculators, and that Hamilton abetted speculative activity by illegally committing the proceeds of foreign loans before they had been received. When his enemies in Congress, including Gallatin, questioned the financial transactions, Hamilton coyly responded that the expenditures were for reducing the public debt, which everyone would agree was a good thing. He did not mention that the Treasury's purchases of U.S. debt helped to bail out the banks, brokers, and dealers of Wall Street and Chestnut Street during two financial meltdowns. After the crisis wound down, in May 1792 a number of the securities dealers Hamilton had bailed out joined with others in the Buttonwood Agreement that marked the founding of the New York Stock Exchange and a better trading system for securities (Sylla 2005; Sylla, Wright, and Cowen 2009).

Gallatin, contrary to the views of many in his Republican party, agreed with Hamilton that the Bank of the United States, as well as banks in general, were useful for making loans to the government as well as to the private sector. As Treasury Secretary, he would later argue unsuccessfully for the Bank to be re-chartered in 1811. But he felt that Federalist administration had abused the Bank by borrowing too much from it instead of reducing expenditures and raising taxes. The heavy borrowing from the Bank, Gallatin contended, had created an apprehension that it "might become a political engine in the hands of the government," and also reinforced the conviction among many (mostly in his Republican party) that Congress did not by the Constitution have a right to incorporate such an institution (Adams 1960, III, 135-36).

Hamilton earlier had addressed both of these issues, in the Bank report and in his lawyerly opinion that the Bank's did not violate the Constitution. But once he had decided to fund all federal and state debts at par, revenue shortfalls gave him no choice other than to borrow a lot from the Bank, which is why he fought so hard for its establishment. By 1796, as Gallatin noted, the government had borrowed $6 million, 60 percent of the institution's capital, and the Bank asked for much of it to be repaid. Wolcott, Hamilton's successor, against his own and Hamilton's wishes, was forced to sell nearly half of the government's shares in the Bank to pay down the loans (Cowen 2000, 215). This weakened the ties between the government and the national bank, probably making it easier for anti-Bank forces to prevail when the Bank's charter came up for renewal in 1811.

Gallatin closed his *Sketch* with a challenge to the view that the debt funding plan "had created a large productive capital which did not exist before." His view was that "every nation is enfeebled by a public debt," and that the best policy was to extinguish public debt as quickly as it was feasible to do so by cutting spending and increasing taxes. He lamented the fact that foreign investors had purchased so much of the U.S. debt and other American securities, which only led the American sellers "to consume, to spend more, and they have consumed and spent extravagantly."

> Taking in the great number of elegant houses which have been built within a few years in all the large cities, and which, however convenient to the inhabitants, afford no additional revenue to the nation, it may be asserted that the greater part of the capital thus drawn from Europe for purchases of stock has been actually consumed, without leaving in its stead any other productive capital, and thus as the nation still owes the whole, it has been impoverished even by the only consequence of the funding system that has made any temporary addition to the apparent wealth of the country. That wealth is, in a great degree, consumed and destroyed, and the whole debt remains to be paid (Adams 1960, III, 149).

Substitute China for Europe in this passage, and Gallatin's message would seem rather similar to arguments one often hears today, more than two centuries later. Other passages in his essay indicate that he would subscribe to "crowding out"—the idea that public borrowing and spending reduces private investment—as well as Ricardian equivalence—the notion that people react to increases in public debt by increasing their savings in order to be able to pay the increased taxes necessary to service a larger public debt.

The solution to the problem, Gallatin argued in a way that foreshadowed Jefferson's and his policies as Treasury Secretary after 1800, was to get rid of the debt as quickly as possible. One way of doing that would be to sell land to pay down the debt. Another would be to exchange public land for debt. But even if that were done, there would still be a need for more revenue, as the Treasury had converted the 6 percent debt to 8 percent annuities in the mid 1790s in a plan drawn up by Hamilton and implemented by Wolcott, which raised the annual cost of servicing the debt. And the deferred 6 percent component of the debt would commence paying interest in 1801. Tax increases were therefore necessary. But, Gallatin wrote, customs duties were already as high as they should be, and excises were disliked and had a low revenue potential. Therefore, "the other general species of American capital, the other great branch of national revenue, lands, must be resorted to; must be made to contribute by direct taxation (Adams 1960, III, 168). Gallatin, in short, called for a national property tax. Whereas Hamilton had severed the Gordian Knot of concurrent federal and state tax bases, Gallatin recommended that it be retied.[10]

Hamilton disagreed with most of Gallatin's analysis. Sales of American securities to foreign investors, far from encouraging lavish consumption, brought in capital that made the U.S. economy grow faster:

> Whoever will impartially look around will see that the great body of the new Capital created by the Stock has been employed in extending commerce, agriculture, manufactures, and other improvements. Our own *real* navigation has been much increased. Our external commerce is carried on much more upon our own capitals than it was…. Settlements of our waste land are progressing with more vigour than at any former period. Our Cities and Towns are increasing rapidly by the addition of new and better houses. Canals are opening, bridges are

[10] In 1798, the federal government, suffering from reduced customs collections as a result of French predations on U.S. international commerce and a lack of access to European capital because the Amsterdam market had been cut off after the French revolutionaries overran the Dutch Republic, imposed a direct tax during the Quasi War with France. It did so again during the War of 1812 with Great Britain. The two direct taxes were highly unpopular and politically divisive, as Hamilton had surmise they would be.

> building with more spirit & effect than was ever known at a former period. The value of lands has risen everywhere.
>
> These circumstances (though other causes may have cooperated)…are imputable in a great degree to the increase of Capital in public Debt and they prove that the predictions of its dissipation in luxurious extravagance have not been verified…. The universal vivification of the energies of industry has laid the foundations of benefits far greater than the interest to be paid to foreigners can counterbalance as a disadvantage (Syrett 1973, 65-66).

For Hamilton, public debt was indeed a blessing. Since it was traded in the markets of Europe, it was relatively easy for Europeans threatened by wars to emigrate to America and bring their capital with them. All they had to do was to purchase the U.S. stock in European markets, and easily convert it to cash on arrival in America by utilizing U.S. securities markets. Americans enjoyed a similar advantage from liquid securities markets: "All property is capital," wrote Hamilton, and "that which can quickly and at all times be converted to money is active capital. It is nearly the same thing as if the possessor had an equal sum of money on hand" (Syrett 1973, 67).[11] In fact, owners of government debt used it as collateral for bank loans; by 1792 the 6 percent debt was accepted at par value as collateral for such loans (Sylla 1998).

It was a great policy debate between the top financial and economic experts of the two contending political parties of the 1790s. Gallatin and Hamilton were not directly addressing one another, but one would hardly know that.

IV. Growth

So who won the debate? Gallatin with his view that Federalist financial policies had saddled the country with excessive debt that was enfeebling it, with the only solutions being to cut spending, impose a national property tax, and extinguish the debt? Or Hamilton, who viewed his planned financial revolution as having the salutary effects on public credit, state power, and economic growth that he long had predicted they would have?

[11] On the early integration of U.S. and European securities market, see Sylla, Wilson, and Wright (2006).

It is the nature of such policy debates that the winners and losers cannot be known at the time they take place. The debate is about the future, not known at the time and only revealed by the passage of time and the march of events. There were neither GDP and industrial production data nor stock market indices in the 1790s, so Gallatin and Hamilton could not use such data to score debating points. Gallatin in 1796, however, did not counter the optimistic view that Hamilton and others took of the U.S. economy's progress. Rather, in general terms, he endorsed it: "[I]n proportion to our population, we [are] one of the first commercial nations … we are by far the first agricultural nation …[but] we are not yet a manufacturing nation" (Adams 1960, III, 168). The country had too much debt, however, and the blame for that, Gallatin implied without naming names, could be laid at Hamilton's doorstep.

Various analyses, data sets, and estimations of GDP and its components developed much later to describe early U.S. economic growth, tenuous as they are and not always agreeing with one another, tend to support Hamilton's optimistic view of the economic changes taking place. North (1961, 53) relying heavily on balance of payments data, called the period 1793-1808 "years of unparalleled prosperity." He traced the prosperity to Hamilton's policies and the trade boom in neutral America created by European wars. The latter was a temporary factor that went away after Jefferson's embargo in 1808. Goldin and Lewis (1980), also relying on international trade data, estimated U.S. real per capita income growth in the range of 1.03 to 1.51 percent per year from 1793 to 1800, and in the range of 0.84 to 1.32 percent per year from 1793 to 1807.

Several attempts have been made to estimate U.S. GDP (total and per capita, nominal and inflation-adjusted) annually, back to 1790. These estimates rely on modern-type GDP series that begin for years around 1840, benchmark GDP estimates between 1790 and 1840, interpolations between benchmark years using annual series that relate to components of GDP, and assumptions about the relationship of non-agricultural productivity (about which little is known, especially before 1820) to agricultural productivity (about which more is taken to be known).[12] The three real GDP per capita series in Carter et al. (2006, Table Ca9-19, p. 3-23ff.) all indicate rapid growth at modern

[12] See Carter et al. 2006, vol. 3, 3-16 to 3-19, for a good discussion of the problems of estimating annual GDP series in the "Statistical Dark Age: 1790-1840." The various series follow in Table Ca-19 starting on 3-23.

rates ranging from about 1 to 3 percent per year from 1790 into the first years of the nineteenth century, and considerably slower growth from then until around 1820. Indeed, two of the series (Ca11 and Ca16) show almost no growth of per capita GDP in these two decades, but the text discussing these series indicates that this is based on the assumption that non-agricultural productivity experienced no growth because that is what agricultural productivity did. Still a third series (Ca17, the Berry series) indicates per capita growth of about 1 percent per year from a peak in 1801 to a peak in 1822. An accompanying series (Ca19) on industrial production, one of the components of non-agricultural production, grows at 5.4 percent per year from 1790 to 1802, and at 3.7 percent per year for the next two decades; these rates are well above the rate of population growth, which was just under 3 percent per year. This raises doubts about the assumption that non-agricultural productivity did not grow.

An updated version of series Ca16 in Carter et al. (2006) is that of Johnston and Williamson (2009) indicates rapid growth in real GDP per capita of 2.72 percent per year from 1790 to an 1802 peak, slower but still modern growth of 0.85 percent per year from 1802 to 1814 (peak to peak), and then essentially no growth in the decade after 1814.[13] Overall, this series, which can be said to make use of the latest information relevant to GDP estimation, shows per capita real GDP growing at a rate of 1.27 percent per year during the three decades 1790-1820. The rapid economic growth of the 1790-1802 might be confirmed, or at least supported, by a recently compiled stock market index extending back to 1791, which claims to have discovered America's first bull market, 1791-1803, when US equity prices rose 47 percent (Taylor 2009).[14]

Although the various estimates of historical GDP do not entirely agree on the precise rates of early U.S. growth, they do agree that the rates from the 1790s onward were "modern," that is, in the vicinity of 1 percent or more per capita in real terms. They also agree that there was a tendency of U.S. growth to accelerate gradually over time, as one might expect if an initially small but rapidly growing modern sector—the

[13] U.S. GDP and other macroeconomic data from 1790 to 2007, updated annually, are from Johnston and Williamson (2009), at http://www.measuringworth.com/growth, a site that also features graphing capabilities and a calculator allowing computation of growth rates between any two years.
[14] The 12-stock index is not adjusted for inflation, which was some 3 percent per year in the 1790s, and it shows price appreciation, not dividends. No doubt it will be extended and refined to show real appreciation and real returns. The index, series SPXD, is available from http://www.globalfinancialdata.com.

commercial and industrial activities that most utilized bank credit and capital markets—gradually became a larger and larger component of the entire economy. By extension, they also agree that the United States was growing considerably faster than the economy of Great Britain, which from all the discussions of the first industrial revolution one might have thought would have been the fastest growing economy. In fact, what some regard as the best estimates of British growth (output per person) also show a gradual acceleration, but it was from a rate of 0.35 percent a year during 1781-1801 to 0.52 percent a year during 1801-1831 (Crafts 1987; Sylla 2009). If these estimates are accurate, the celebrated first industrial revolution in its early decades had a fairly muted impact on average British incomes. And it appears that British growth during the first industrial revolution was at roughly half the rate of growth of the U.S. economy during the same era.

Gallatin and Hamilton agreed that there was considerable prosperity in the United States at the time of the Gallatin-Hamilton debate. But would it last? Did it mark the beginning of modern economic growth, the sustained growth that lasted for decades and centuries? We now know that it did. GDP per capita grew at long-term rates of about 1 percent or more per year from 1790 to 1860, with little variation among sub-periods of any length. By 1860, thanks to its rapid growth, the United States had a larger GDP than the U.K., the mother country and the workshop of the world, and (although this is more controversial) essentially the same GDP per capita according to Officer and Williamson (2009).

Did U.S. policies, including those that produced the financial revolution of the 1790s, make the country grow faster than its neighbors and other "new" countries? The evidence to answer this question is limited. But what there is suggests an answer of "yes." Angus Maddison's estimates for benchmark dates of 1700 and 1820 indicate that in 1700 Mexico's GDP per capita was 107 percent of the U.S. (colonial) level; in 1820, it was 60 percent of the U.S. level. Maddison also reports similar data for "other Western offshoots" besides the United States, with that category including Canada, Australia, and New Zealand. In 1700, these other offshoots (dominated by Canada, as Westerners had yet to settle Australia and New Zealand) had GDP per capita that was 76 percent of the level Maddison estimated for the colonial United States; by 1820, the other offshoots were only 60 percent of the U.S. level (Maddison 2001, Table B-21, 264).[15] The faster growth of the early United States in comparison to the growth of its northern and southern neighbors and other "new" countries suggests that U.S. policies launched in the 1790s did make a difference in relative economic performance.

V. Conclusion

What were the alternatives to Hamilton's public credit, banking, and capital market policies? As regards public credit, the two alternatives discussed at the time were to give debt holders a worse deal than Hamilton did by repudiating some of the debt on grounds of financial exigency, or to retire the debt rapidly by raising taxes—at both the state and federal levels with no federal assumption of state debts, or at the federal level with assumption. The former, repudiation, was never a serious option as it violated most leaders' sense of honor and would have made future borrowing capability problematic. Rapid debt retirement by means of raising taxes was tried by Massachusetts in the 1780s, and led to Shays's Rebellion. That enhanced the appeal of Hamilton's approach, which involved funding the entire debt at a reduced rate of interest with a blend of new and liquid federal securities (6 percents, 6 percent deferreds, and 3 percents), along with a gradualist approach to debt retirement based on economic growth increasing federal tax revenues as the U.S. population and economy expanded (Perkins 1993, chaps. 7-10).

Federal assumption of state debts was a closer call, and succeeded only by means of linking it to other issues such as the location of the country's temporary and permanent capital cities. Without assumption, as Hamilton argued in his 1796 "Defence of the Funding System" (Syrett, XIX, 1-73), the United States would have had 1) multiple systems of state and federal public finance, 2) weaker governments and capital markets, and 3) greater conflicts between heavily and lightly debt-burdened states that might have threatened to break up the Union. With assumption, those problems went away and the burdens on state public finance were greatly reduced. Eventually, the ability of the states to borrow on their own for internal improvements and other purposes was greatly

[15] For Canada, Maddison does not have a separate number for 1700, but for 1820, he reports one. It indicates that Canada then had a GDP per capita that was 71 percent of the U.S. level. See Maddison 2001, Table TA1-c, 185.

enhanced as the pristine public credit of the federal government and the well-functioning securities markets engendered by Hamilton's policies rubbed off on them.

The alternative to the Bank of the United States was, of course, no central bank. One need not speculate on the alternative because subsequent U.S. history gives examples. Congress allowed the first Bank to lapse in 1811 when its twenty-year charter expired and was not renewed. That added to the financial embarrassments of the federal government during the War of 1812, as well as economic instability. Both paved the way for Congress in 1816 to re-establish a central bank in the form a new and larger second Bank of the United States, again with a twenty-year charter. Under the leadership of Nicholas Biddle after 1823, the second Bank and the U.S. economy thrived. When Congress voted to renew the Bank's charter in 1832, President Andrew Jackson vetoed the renewal and prevailed. That left the United States without a central bank from 1836 to 1914.

The absence of a central bank did not prevent the U.S. economy from growing to become the world's largest in the long interim. But banking panics and economic recessions were more frequent than they had been in the early decades when a central bank was present. Also during the long interim, other leading countries established central banks and experienced greater economic stability than did the United States. The U.S. financial panic of 1907 set in motion a sequence of events that led to establishment of a third Bank of the United States, better known as the Federal Reserve System, in 1914. Once again banking panics and financial crises became less frequent. The advent of the Fed was a vindication of Hamilton's original U.S. financial architecture.

Hamilton's public-debt restructuring and Bank injected tens of millions of dollars of high-grade debt and equity securities into securities markets from 1790 to 1795 while he was Treasury Secretary. Federal bonds and Bank stock became the national-market securities traded in all markets that were established quickly in the country's leading cities. In each city, the national-market securities were joined by a growing list of local securities—those of banking, insurance, transportation, and other corporations chartered by the states, and also in time a host of state and local governmental debt securities. The presence of capital markets from the start encouraged the formation of corporations (Wright in this volume). It also encouraged foreign investors to purchase American securities, thereby transferring capital to the United States, by assuring them that liquid markets for their investments existed in the new country (Sylla, Wilson, and Wright 2006). Absent Hamilton's policies, capital markets most likely would have emerged and developed much more gradually in U.S. history, as they did in other countries. It was a great advantage, both economic and political, for the United States to have modern capital markets virtually from the nation's founding.

Hamilton's strategic planning and execution paid off for the U.S. government and the American economy. On any fair assessment he deserves the place he occupies in the pantheons of the American founders and world statesmen. It was he who first realized the strategic dependence of state power *and economic growth* on financial development. It was he who first saw that financial modernization, and hence state power and economic growth, would be difficult to achieve without changing the form of American government. It was he who worked as hard as anyone to bring about U.S. constitutional change. It was he who then deftly executed his well-conceived plan for a financial revolution in the first term of Washington's administration, and defended it when political opposition and events threatened to, and sometimes did, erode the institutions he created. Part of his genius as a political entrepreneur was to base his plan on precedents with which many Americans were familiar. The federal revenue system based on import and excise taxes was a post-colonial version of what the colonies, and then the states, had long used. The Bank of the United States was modeled to an extent on the Bank of England, an institution with which many Americans were familiar. It made sense, as both Jefferson and Hamilton realized, to model the silver U.S. dollar on the Spanish peso that had long been the most commonly encountered coin in the thirteen colonies and states. Hamilton's system, while innovative in both some of its particulars and its sweeping comprehensiveness, was not wholly new. That served to enhance its appeal and make it a practical success.

A century ago, the noted American historian Charles Beard (1913, 100; 1915, 131) was not far off the mark when he described Hamilton as "the colossal genius of the new system," the one who "displayed that penetrating wisdom which placed him among the great statesmen of all time." Compared to when Beard wrote, economists and historians now have a better understanding of the importance of financial development for economic growth, together with a vastly larger store of historical data on the long-term performance of the U.S. economy. They also have more knowledge of what Hamilton did at the beginning of U.S. history, how he came to do it, and what the effects of his policies were. Their findings serve to reinforce Beard's assessment of Hamilton's key role in developing the institutions that raised the trajectory of U.S. economic growth. He established the financial foundations that would make the United States the most successful emerging market in the nineteenth century, and the economic colossus of the next that some would call "the America century."

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