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The transition to a monetary union in the United States, 1787–1795

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The US Constitution, written in 1787, adopted in 1788 and implemented by the federal government starting in 1789, created a framework for an American monetary union. It did so by authorising Congress, the national legislature, to coin money and regulate its value, and by prohibiting states of the union from coining money, emitting fiat paper money, or making anything but gold and silver a legal tender in payment of debts. As British colonies before 1776, or as sovereign entities within an American confederation from 1776 to 1788, all US states had exercised a number of monetary powers that the Constitution prohibited to them.

To implement a monetary union, Congress adopted the recommendations of treasury secretary Alexander Hamilton, in his 1791 Mint Report, which drew on earlier discussions in the Confederation Congress of the 1780s. The report defined a new national currency, the US dollar, in terms of fixed weights of both silver and gold in a ratio of 15 to 1. Gold and silver – specie and bullion – thus became by law the monetary base of the USA. During the 1790s, although some individuals and states continued for a time to keep accounts in older state pound/shilling/pence units, the dollar based on the two precious metals became the definitive unit of account for the entire country.

Only a handful of banks existed at the time, but soon there would be many more. These banks issued bank money, notes and deposits, convertible into the specie base. A few weeks after the Mint Report appeared, Congress authorised and President Washington approved legislation embodying another of Hamilton's recommendations, the establishment of a Bank of the United States (BUS). The BUS, a corporation modelled in part on the Bank of England, was up and running by the end of 1791. Like the Bank of England, it would develop central-banking functions.

Defining a unit of account is an essential ingredient of a monetary union. A monetary union can have one medium of exchange or several, as long as the several are defined in terms of the unit of account and have a fixed exchange rate with it and therefore with one another. A single currency, however, is advantageous in

[1] I am indebted to an anonymous referee, Farley Grubb, Ronald Michener, Peter Rousseau, David F. Weiman and Robert E. Wright for comments on earlier drafts of this article. Responsibility for any errors of fact or interpretation is, of course, mine.

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representing a stronger commitment to an ongoing monetary union and avoiding the transaction costs of converting currencies. Modern discussions of monetary unions also emphasise the importance, and perhaps the necessity, of common, centralised monetary policies as might be represented by those of a central bank.[2] The essential reason is to avoid the free-rider problems that can arise when one party to the agreement gains advantage by violating it and others do not retaliate. Since the early USA had multiple note-issuing banks and different state banking systems, a central bank with regulatory powers over note-issuing state banks usually served to make the US monetary union function better in years when it was present (1791–1811 and 1817–35) than in years when it was absent (1811–16 and 1836–63).[3]

The dollar monetary union, the emerging banking system, and the central bank were three of the components of the US financial revolution that occurred in the years 1789–95. The others were a funded national debt that included the assumption of state debts incurred in the War of Independence, the emergence of organised and active securities markets in leading US cities, and a proliferation of state-chartered business corporations (including banks) that sold tradable shares to investors.

[2] See the entry on 'monetary unions' in *The New Palgrave Dictionary of Money & Finance*, ed. P. Newman, M. Milgate and J. Eatwell (London, 1992), vol. 2, pp. 765–70.

[3] See, for example, Bray Hammond, *Banks and Politics in America, from the Revolution to the Civil War* (Princeton, 1957); Jane Knodell, 'The demise of central banking and the domestic exchanges: evidence from antebellum Ohio', *Journal of Economic History*, 58 (1998), pp. 714–30; and Knodell, 'Profit and duty in the exchange operations of the second Bank of the United States', *Financial History Review*, 10 (2003), pp. 5–30. Within the early US monetary union, convertible notes of individual banks tended to be valued at small discounts from par, with the discount varying in proportion to the distance of the bank from money centres and hence the cost of returning a note for redemption. (Banks sometimes made arrangements for par redemption of their notes in money centres, so a discount might reflect the distance of the note holder from such a centre.) For similar reasons there were domestic exchange rates between cities and regions, reflecting relative supplies of, and demands for, domestic exchange. These phenomena, representing real economic costs, do not mean that a monetary union was not present. The two Banks of the United States tended to make note-issuing banks (rather than the public) bear note-redemption costs, and their nationwide branch networks led them to dominate the domestic exchange business, which are two of the reasons for their political unpopularity. Discounts on notes away from the issuing bank as well as costs of domestic exchange typically were lower when the central banks were in existence. Discounts on banknotes have led some to contend that the early USA was not really a monetary union, but such arguments are tautological since monetary union is defined as the absence of such discounts. In a banking system with multiple note issuers, there are always costs of redeeming notes, just as there are costs of redeeming cheques drawn on multiple banks in banking systems today. It seems unreasonable to say that a monetary union exists when banks and central banks rather than recipients of notes and cheques bear the costs of redemption, and does not exist when the opposite is the case, and thus make the existence of a monetary union turn on the distributional issue of whether money issuers or users pay the costs of operating the payments system. Nonetheless, that is the contention of Arthur J. Rolnick, Bruce D. Smith and Warren E. Weber, 'Establishing a monetary union in the United States', in David E. Altig and Bruce D. Smith (eds.), *Evolution and Procedures in Central Banking* (Cambridge, 2003), pp. 227–55. One wonders whether the same sort of reasoning would lead to a conclusion that today there are no monetary unions because merchants accepting credit and debit cards as payments receive a discounted payment from the card-issuing companies.

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Although compressed into a far shorter time, the US financial revolution had many similarities to England's, which began a century earlier and took decades to complete.[4] Both financial revolutions were quantum leaps toward modernity. Both helped to make their countries into leading world economic and political powers. And both were politically controversial at home. Hamilton came to be viewed by his critics as an American Walpole, a sort of 'prime minister' leading the USA down a path toward, in Thomas Jefferson's words, 'a monarchy bottomed on corruption' instead of the virtuous republic intended to result from the American Revolution's successful overthrow of British rule.[5]

The dollar monetary union was the least controversial component of the US financial revolution. Oddly, its origins seem to be more controversial now, two centuries later, than they were when it came into being. No one then argued that banknotes and deposits convertible into a specie-based US dollar were a currency inferior to the heterogeneous state-issued fiat paper currencies that were displaced by the Constitution. Although banks in the 1780s and 1790s were novel institutions to Americans, no one then attempted to persuade others that the monetary clauses of the Constitution were a successful attempt on the part of self-interested parties to usurp the rights of states and transfer the profits of paper money issuing from state treasuries to bank owners and stockholders. Yet Farley Grubb now makes such arguments and allegations.[6]

This article is an attempt to understand why the dollar monetary union was less controversial at its origins than Farley Grubb would make it today. It proceeds in three steps, each of which answers a question or a set of related questions. First, what was the nature of the colonial and early US monetary system? And why has controversy continued for more than two centuries over colonial and state fiat monies issued before 1789 by American governments? Why did the Constitution ban state-issued fiat paper, opening the way to monetary union?

Second, what were the objectives of the US founding fathers in creating the dollar monetary union? Why did Hamilton and Jefferson, political leaders who agreed on few matters of public policy, agree so easily and support one another on the dollar monetary union?

Third, why did the states, which seemingly had the most to lose in the transition from state-issued fiat paper to the convertible US dollar, not register vociferous complaints – indeed, there were barely any complaints at all – in response to the

[4] P. G. M. Dickson, *The Financial Revolution in England: a Study in the Development of Public Credit, 1688–1756* (London, 1967); John Brewer, *The Sinews of Power: War, Money, and the English State, 1688–1783* (New York, 1989).

[5] Jefferson as quoted by Ron Chernow, *Alexander Hamilton* (New York, 2004), p. 398.

[6] Farley Grubb, 'Creating the US dollar currency union, 1748–1811: a quest for monetary stability or a usurpation of state sovereignty for personal gain?' *American Economic Review*, 93.5 (Dec. 2003), pp. 1778–98. For a counterargument, see Ronald W. Michener and Robert E. Wright, 'State "currencies" and the transition to the US dollar: clarifying some confusions', *American Economic Review*, 95.3 (June 2005), pp. 682–703.

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constitutional invalidation of state monetary sovereignty? Did the dollar monetary union specifically, and the US financial revolution in general, offer them benefits that outweighed the costs?

Given that we have come full circle, with the US dollar and other currencies of the world now being fiat paper detached from a specie base, a concluding section suggests that the answers to these questions are of more than historical interest. If fiat paper money is generally accepted now, it is certainly fair to ask, as Farley Grubb does, why it was not thought to be acceptable when the founders wrote the US Constitution.

I

In the British colonial era before 1776, Americans became practised monetary innovators.[7] They adopted and extended the use of wampum, the token money of native Americans made from sea shells which were strung together like beads to make smaller and larger money units. They gave monetary status to a variety of commodities, including tobacco, corn, rice and beaver pelts. And probably for the first time in the history of the western world, they made widespread use of fiat paper currencies.

Fiat paper currency, or bills of credit, took two forms, tax-anticipation script and loan-office notes. The first of these arose when a colonial government, short of funds to meet current demands for expenditure, would issue bills of credit and promise to levy taxes in the future to redeem the notes. Massachusetts made the first issue in 1690. Seven other colonies adopted the innovation by 1712, and the remaining five of the thirteen colonies followed between 1723 and 1755.

Colonial loan-office notes were a form of financial intermediation. They were issued as loans to landholders against mortgages on their lands and other assets. Interest on the loans became an important source of colonial government revenues, reducing the need to resort to taxation. The notes returned to the loan office as borrowers repaid their loans. Often they were reissued. South Carolina began the loan-office innovation in 1712, and all colonies apart from Virginia had adopted it by 1755.

Practically, bills of credit and loan-office notes were indistinguishable within a colony, with both circulating as paper currency. When received by colonial governments in tax or loan payments, they were often reissued for purposes similar to or different from the original purpose for issuing them. In a premodern economic world, the colonial economy, or economies, was unusual in growing at a rate of 3 per cent or more a year – we can infer that from a 3 per cent rate of population

[7] This and subsequent paragraphs draw on two earlier articles: Richard Sylla, 'Monetary innovation in America', *Journal of Economic History*, 42 (1982), pp. 21–30; and Sylla, 'Monetary innovation and crises in American economic history', in Paul Wachtel (ed.), *Crises in the Economic and Financial Structure* (Lexington, MA, 1982), pp. 23–40.

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growth – and it needed money stock expansion to allow that growth to occur and avoid the possibly depressing economic effects of deflation.[8]

Colonial American fiat paper money can best be viewed as a growth-accommodating local monetary supplement to the acknowledged monies of the world, gold and silver in the form of coins of various nations and empires, plate and bars of bullion. These precious-metal monies also circulated in the colonies, and were especially valuable as foreign exchange, although trade among colonies and with other countries typically was financed with bills of exchange drawn on colonial mercantile and foreign financial centres.[9] Although colonial governments did not formally promise to convert their fiat currencies into specie, in times of peace the issues and reissues of fiat paper were usually managed well enough to keep them roughly at par with specie values. In the New England and southern colonies, however, over-issuing of fiat paper in wartime exigencies led to large depreciations in terms of specie, unless – as happened in the Seven Years' War (called the French and Indian War in America) – the British greatly increased their specie spending in America at the same time. In the middle colonies, fiat paper held its value quite well in relation to specie for long periods. The conclusion of Farley Grubb and many earlier writers that colonial American fiat paper money worked tolerably well in many (but not all) contexts and served useful functions is thus well taken.

Problems with fiat paper money became more severe during the War of Independence and continued in the postwar confederation of the 1780s. The Continental Congress that formed an army and made George Washington its commander in 1775, and then declared independence from Britain in 1776, proceeded to issue and over-issue paper money, so-called Continental currency, until by 1780 the money had become virtually worthless. At the same time, the independent state governments that succeeded British colonial governments did the same. All this is understandable. Congress had no power of taxation, and revolutionaries almost never have good credit with arms-length lenders, leaving paper-money issues and forced loans as the remaining domestic options of revolutionary national public finance. The states did have tax powers, but had learned as colonies that financing wars by issuing fiat paper currency made more political sense than draconian tax increases. Politically motivated loans from other nations, particularly France, supplemented the American revolutionaries' domestic sources of finance.

Here should be raised a rather telling point that seems oddly overlooked in the voluminous literature of colonial and early US monetary history. The paper money of the American Revolution, whether issued by Congress or by states, at its inception was not fiat paper money at all. It explicitly stated that it was intended to be a convertible paper money. A typical early Continental note on its face said, for example: 'This Bill entitles the Bearer to receive EIGHT Spanish milled DOLLARS, or

[8] Sylla, 'Monetary innovation and crises'.

[9] John J. McCusker, *Money & Exchange in Europe and America, 1600–1775: a Handbook* (Chapel Hill, 1978).

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the value thereof in Gold or Silver, according to the Resolutions of the CONGRESS, held at Philadelphia, the 10th of May, 1775.' Later emissions said virtually the same thing, even after depreciation had set in: 'This Bill entitles the Bearer to receive Fifty Spanish milled DOLLARS, or the value thereof in Gold or Silver, according to a Resolution passed by CONGRESS at Philadelphia, September 26th, 1778.' A typical state note, this from South Carolina, said: 'This Bill intitles the Bearer to receive FOUR Spanish milled DOLLARS, or the Value thereof in Gold or silver, according to an Act of the General Assembly passed at CHARLES-TOWN, the 23rd Day of December, 1776.'

The South Carolina note also said on its face and on the obverse side that $4 were equivalent to £6 10s. in the South Carolina unit of account.[10] All the states, like their colonial predecessors, had local units of account expressed in pounds, shillings and pence. Each state's unit of account differed from others and from sterling, in terms of gold and silver. The Spanish silver dollar, however, was a common hard-money coin circulating in the USA before and after independence, and it became the model for the US dollar – see below, Section II.

That the monies of the American Revolution were not intended to be fiat paper is quite suggestive in the context of current debates on the transition to the dollar and a US monetary union. It suggests that in 1775 and 1776 American revolutionary leaders were in no sense wedded to the virtues of fiat paper money, as could be and has been inferred from colonial experience. It also suggests that they could gain credence about what had been only implicit with colonial paper, by being explicit about the intended convertibility of their paper money to a hard-money base. It suggests that the Spanish dollar, the most familiar coin, or its equivalent in other forms of silver and gold was to be that base, just as these precious metals had been the *de facto* monetary base of the colonial era. And it suggests that a US monetary union with convertible paper was not an invention of Constitution writers a decade later, but rather an idea that was prevalent at the time of the Declaration of Independence and probably even antedated it. During much of the colonial era, the fiat paper currencies issued by American governments, even when not explicitly stated to be convertible to specie, were in practice convertible at customary prevailing rates.[11]

The problem, of course, was that in practice neither the Congress nor the states were able to fulfill the convertibility promises they made in their Revolution-era paper-money issues. They lacked sufficient specie reserves and ways of gaining such reserves to allow them to honour their promises. Therefore, the currencies that they had meant *de jure* to be convertible currencies became *de facto* fiat paper currencies that lost much of their value in terms of hard money. Recognising the depreciation, Congress and state authorities wrote down the fiat currencies to small fractions

[10] The examples of the currencies quoted here are portrayed in Robert Garson, 'Coining money: the US dollar and American nationhood', *Journal of American Studies*, 35 (2001), pp. 25, 27.

[11] See Ronald Michener and Robert E. Wright, 'State "currencies" and the transition to the US dollar: clarifying some confusions', *American Economic Review*, 95 (2005).

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of their original values. At those reduced rates, Continental dollars became a component of the national debt.

In 1781, the wealthy merchant-revolutionary Robert Morris became Congress's Superintendent of Finance. One of his first recommendations was that Congress charter a bank that would issue convertible banknotes and serve as the government's bank. The Bank of North America (BNA) opened at the start of 1782, after the decisive American–French victory over Lord Cornwallis's British army at Yorktown ended the land phase of warfare, but almost two years before Britain recognised American independence in the Treaty of Paris. Most of the BNA's capital came from a specie loan from France, part of which Morris on behalf of Congress invested in BNA shares and then borrowed back from the bank. The BNA was the first US bank in the modern sense of the term. Since the power of Congress to charter a bank was unclear, several states also granted it a charter. After receiving wartime financial services from the BNA, Congress and Morris repaid BNA loans by selling the government's shares to private investors. By 1783, when the war officially ended, the BNA became a local commercial bank instead of a national public bank.

At the very time that the BNA was opening, Morris and his assistant, Gouverneur Morris (no relation), proposed to Congress a plan for a US monetary unit and a mint to produce an American coinage. The unit was based on the Spanish dollar, but was to be only one-1440th of the Spanish coin, a fraction selected because the pound/shilling/pence values of the various state currencies in terms of Spanish dollars were divisible into it. Robert Morris also proposed a decimal coinage, an idea that had been suggested by Jefferson in 1776. The plan went nowhere because of its complexity and Congress's weakness.[12]

Jefferson maintained an interest in monetary units as well as weights and measures. In 1784 he proposed a simpler plan than the Morris plan, making the US dollar much the same as the familiar Spanish dollar, but with a decimal coinage. Congress adopted Jefferson's plan in 1785, and authorised a national mint. According to Ferguson, 'Jefferson's admitted aim was "to get rid of" the state currencies, and he proposed to do so by introducing the Spanish milled dollar as the money unit.'[13] Again the weakness of the Confederation Congress led to inaction on implementation. The Morris and Jefferson proposals and congressional resolutions indicate, however, that before the Constitution was written, national leaders with a wide range of political views had agreed that the USA should have a national currency based on specie, that it should be a decimal currency, and that the confusion of separate state currencies ought to be ended rather than retained. A specie-based

[12] E. James Ferguson (ed.), *The Papers of Robert Morris*, vol. 4 (Pittsburgh, 1978), pp. 25–40.

[13] Ibid., p. 28. In correspondence with me, Farley Grubb interprets the 'to get rid of' phrasing of Jefferson as implying that Jefferson wanted the Spanish dollar to be only the unit of account, and would not have any reservations about states issuing paper money denominated in that unit. The passage from Jefferson may be ambiguous. He was a proponent of states' rights and yet he never went on record as objecting to the Constitution's ban on state fiat money issues.

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national currency was by no means a new idea, much less a sinister new idea, at the Philadelphia convention of 1787, although the convention appears to be the first occasion on which the prohibition of state currencies was voiced.

What changed between the early 1780s and 1787 was further experience with state fiat money issues. Seven states – Rhode Island, New York, New Jersey, Pennsylvania, North Carolina, South Carolina and Georgia – made further issues of fiat paper after 1783, when peace returned. Much but not all of the experience with these new issues was unfavourable, reminding Americans of the disastrous recent experiences with fiat paper depreciation during the revolution. Edwin Perkins reports that Pennsylvania's paper depreciated by 30 per cent relative to specie by 1788, and that New Jersey's depreciated by 25 per cent. North Carolina's two issues depreciated by 25 to 50 per cent, and Georgia's, by 75 per cent. New York and South Carolina issues, on the other hand, held their value at issue fairly well. Rhode Island's paper had the worst record, losing six-sevenths of its value within 15 months of its issue in 1786.[14]

The Rhode Island experience was particularly nettling to the writers of the Constitution and participants in the debates over ratification. A rural faction controlled the state legislature that issued the loan-office paper in 1786. The legislature declared its fiat paper to be a full legal tender, and then attempted to sink the state's debt in 1787 by requiring debt holders to exchange their securities for the fiat paper at par. When debt holders resisted this plan, the legislature cancelled the debts that were not presented for redemption in depreciated paper.[15] Others refusing to accept the paper were threatened with fines and other legal sanctions. These arbitrary measures of a democratically elected state legislature seemed a misguided if not illegal invasion of property rights to the writers of the Constitution, and it is likely that Rhode Island's actions had much to do with the document's ban on further state issues of fiat paper. The Rhode Island legislature's monetary measures were successfully challenged in Rhode Island courts as contrary to the state's Constitution, but not before numerous creditors had been deprived of their property. In the pamphlet

[14] Edwin J. Perkins, *American Public Finance and Financial Services, 1700–1815* (Columbus, OH, 1974), pp. 142–65. Perkins says the 'record of those monies as a store of value was reasonably good', although his account in most instances contradicts that contention. He appears to mean that the issues were ultimately redeemed when accepted by states in tax and loan payments after the Constitution went into effect. That is true, but it is a separate matter from the depreciation that occurred before the paper issues were redeemed.

[15] Ibid., pp. 154–57. A more detailed account of the Rhode Island experience, as well as those of Pennsylvania, New Jersey and New York, is given by John P. Kaminski, *Paper Politics: the Northern State Loan-Offices During the Confederation, 1783–1790* (New York and London, 1989). Like Perkins, Kaminski thinks that the experience with fiat paper money of the four northern states he surveys was reasonably good, although not on the criterion of currency stability, that is, lack of depreciation. Kaminski introduces a new criterion for 'success', namely, 'whether or not it [fiat paper] met the purposes of the politicians who advocated it' (p. 281). On that criterion, which says little about the *legitimacy* of politicians' purposes, perhaps most of history's fiat moneys might be considered successes.

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literature about ratification and in ratification debates, Rhode Island was cited numerous times in justifying the ban on state-issued fiat paper.[16] Those who sympathised with states' rights to issue such currency could do little more than remain silent. The ban, the ratification debates indicate, was not a very contentious issue, although some individuals and towns went on record as favouring state paper money. Ironically, Rhode Island, a state opposed to ratification of the Constitution to the bitter end, with its extreme monetary policies probably did more than any other state to help federalists achieve ratification.[17]

Grubb excuses what many saw as Rhode Island's excesses on the ground that merchant speculators by 1786 had purchased the state's wartime debt securities at deeply discounted prices. Therefore, little or no accounting loss resulted from the state forcing the speculators to accept deeply depreciated paper money in payment of them.[18] But if these actions were only fair play, one might ask why Rhode Island, shortly after it ratified the Constitution in May 1790, decided to reverse its earlier

[16] Governor Edmund Randolph of Virginia, speaking in the Virginia ratification convention on June 4, 1788, in response to a concern that only nine states needed to approve the Constitution for its ratification, said, 'Ought we have required, the concurrence of all the thirteen? Rhode-Island, in rebellion against integrity; Rhode-Island plundering all the world by her paper money, and notorious for her uniform opposition to every federal duty, would then have it in her power to defeat the Union, and may we not judge with absolute certainty from her past conduct, that she would do so?', *The Debate on the Constitution*, ed. Bernard Bailyn (New York, 1993), part 2, p. 603. In Massachusetts, 'Cassius VI' (*Massachusetts Gazette*, 18 Dec. 1787) said of the proposed constitutional ban on state fiat paper, 'The absolute necessity of power of this nature being vested in a federal head is indisputable. For want of such a power, what vile proceedings have of late disgraced almost every legislative measure of Rhode Island', *The Documentary History of the Ratification of the Constitution*, ed. Merrill Jensen, John P. Kaminski and Gaspare J. Saladino, 18 vols. to date (Madison, 1976–), vol. 4, p. 482. 'A Native of Virginia', 2 April 1788, said, 'The making of any thing but gold and silver a tender in payment of debts, and the impairing of the obligation of contracts is so great a political injustice, that the Constitution here requires the States, that they will forever relinquish the exercise of power so odious. This part of the clause would probably never have been introduced, had not some of the States afforded too frequent instances of unjust laws upon these subjects', *Documentary History*, vol. 9, p. 676. In Connecticut, 'The Landholder XII' (*Connecticut Courant*, 17 March 1788) excoriates Rhode Island's tender acts, saying, 'The rogues of every other state blush at the exhibition, and say you have betrayed by carrying the matter too far. The very naming of your measures is a complete refutation of antifederalism, paper money and tender acts, for no man chooses such a company in argument', *Documentary History*, vol. 17, p. 406. The *Pennsylvania Gazette*, 13 August 1788, citing a private letter noting that North Carolina had voted to reject the Constitution, said, 'North-Carolina and Rhode-Island have probably been permitted to withdraw from the union, on purpose to shew the other states the miseries they have escaped by adopting the government. An attachment to paper money and tender laws, appear in both these corrupted and deluded states, to be the cause of their opposition to the new constitution', *Documentary History*, vol. 18, p. 401. Unfortunately, the *Documentary History* volumes of the ratification debates in North Carolina and Rhode Island, states that experienced severe depreciation of their fiat paper and were the last two states to ratify, have yet to be published.

[17] See Kaminski, *Paper Politics*, p. 258.

[18] Grubb, 'Creating the US dollar currency union', fn. 17, pp.1789–90.

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actions and declare all of its earlier acts to redeem state securities with fiat paper money null and void. It then restored the redeemed securities to their owners after deducting the real (not nominal) value of the fiat paper they had received, and cancelled the forfeiture that had extinguished state debts not presented for redemption in state paper. The reason, of course, was that Congress was about to adopt Hamilton's proposal to assume state debts into the national debt, and Rhode Island, now a member of the union, desired to have as much as possible of its debts so assumed. In the end, most of the Rhode Island debt was so assumed, leading Kaminski to say that Rhode Island state creditors were 'treated justly'.[19]

The foregoing account of colonial and early US monetary experience leaves out much, but I think it is one upon which most recent scholars of the subject would broadly agree. Why then has early American fiat money always been a contentious subject, and still is, judging by Farley Grubb's recent work? One reason is that the data available from that early era are simply insufficient to answer many of the questions financial historians would like to answer. There are tolerably good records of the amount of fiat paper money outstanding at most dates, and the same could be said for price and exchange rate data. But data on the amount of specie in the country are not there, so it is not possible, at least without making heroic assumptions, to come up with estimates of the total money stock and its composition. Good output statistics are also lacking, and we have no idea of how much output passed through market exchanges as opposed to being consumed or invested by those who produced it. Cliometricians nonetheless have tried to use what data there are to test, for example, various theories of money.[20] But the data are simply insufficient to do that. One product of deficient data bearing on issues of economic and historical importance is endless controversy.

A second reason for continuing controversy is that there were many differences among colonies and states in the provisions authorising fiat money issues, and in the experiences that resulted from it. In some places and at some times, mostly in the middle colonies, fiat paper held its value in relation to specie for long periods; in others, mostly New England and southern colonies, it did not. In some places and at some times, it was a full legal tender; in others it was only a legal tender in public but not in private payments. Sometimes various commodities as well as fiat paper were granted legal-tender status, which truly complicates any attempt to estimate money stocks. Sometimes fiat paper was issued for long periods with little thought given to redeeming it; this was less a problem than it might seem because the colonial economy was expanding at high modern rates, leading to a growing demand for money. Sometimes the paper was redeemed by taxation relatively quickly and then reissued. Sometimes it was redeemed and not reissued. The record is so rich that, by

[19] Kaminski, *Paper Politics*, pp. 255–8.

[20] For an attempt to estimate one colony's money stock, see Farley Grubb, 'The circulating medium of exchange in colonial Pennsylvania, 1729–1775: new estimates of monetary composition, performance, and economic growth', *Explorations in Economic History*, 41 (2004), pp. 329–60.

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selecting parts of it, one can tell almost any story one wants to tell. And scholars like to generalise. One could, for example, contend that colonial fiat issues were not a full legal tender, and the good experience several colonies had with it in contrast with bad experience in, say, Rhode Island during the 1780s when fiat issues were made a full legal tender, demonstrates that full legal-tender status, not fiat money per se, was the problem. But this argument is suspect because many colonial fiat issues were a full legal tender, with both good and bad results. Some bad results provided a reason for the British to ban further legal tender issues in the Currency Acts of 1751 (which applied to the New England colonies) and 1764 (which applied to the rest of the colonies).

A third reason for controversy is that the dominant political economy changes from one historical era to another. When the dominant political economy supported the specie standard and convertible bank money from the 1790s to the 1930s, scholars selected from bad colonial and confederation experiences, ignoring good experience, to argue against any tampering with the specie standard.[21] After the Keynesian revolution in economic thought came along, scholars selected from good colonial experience, downplaying much of the bad experience, to argue that managed fiat money was good for prosperity and an antidote to depression.[22] When as now all money is fiat money and democracy has become something of an end itself instead of a means to the ends of good government and human happiness, a scholar such as Farley Grubb can question why the Constitution banned fiat money two centuries ago, and find in the ban a self-interested, anti-democratic plot. If anything, study of the debates over the Constitution and related writings from that era reveals that the views of the US founders were more balanced in weighing the pros and cons of fiat and convertible paper moneys than were the views of many subsequent interpreters.

II

As noted above, the Confederation Congress in 1785 adopted Jefferson's proposal for a decimal US dollar based on the Spanish dollar. No action, such as establishing a mint, was taken then to implement it because Congress lacked the resources. It remained for Hamilton, the architect and guiding force of the US financial revolution, to complete the work after the Constitution went into effect. This he did in his Mint Report transmitted to Congress on 28 January 1791. Hamilton provided Jefferson with an advance copy, which Jefferson wrote Hamilton on 24 January that he had 'read over with a great deal of satisfaction'.[23] Jefferson's satisfaction derived

[21] Charles J. Bullock, *Essays in the Monetary History of the United States* (New York, 1900); Horace White, *Money and Banking* (Boston and New York, 1911).

[22] Richard A. Lester, *Monetary Experiments – Early American and Recent Scandinavian* (Princeton, 1939).

[23] Harold C. Syrett (ed.), *The Papers of Alexander Hamilton* (New York, 1962–86), vol. 7, p. 451. The final version of Hamilton's Mint Report is in the same volume, pp. 570–607.

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from Hamilton's adopting, extending and refining the essence of Jefferson's earlier plan for the US dollar. With minor revisions Congress adopted Hamilton's plan in 1792, and established a US mint. Hamilton and Congress defined the dollar as 24.75 grains of pure gold and 371.25 grains of pure silver, adopting bimetallism at a silver–gold mint ratio of 15:1, roughly the market ratio at that time. None of this was controversial. Gold and silver had always been the *de facto* monetary base of the country, in the colonial period and the Confederation. In the federal union, they became the monetary base by law.

A monetary union was an explicit goal of Hamilton's plan, which implicitly served the further goal of national unification. He wrote at the beginning of the report:

> The unequal values allowed in different parts of the Union to coins of the same intrinsic worth; the defective species of them, which embarrass the circulation of some of the States; and the dissimilarity in their several Monies of account, are inconveniences, which if not to be ascribed to the want of a National Coinage, will at least be most effectually remedied by the establishment of one . . . [24]

Since the Constitution had already taken from the states the right to issue new fiat paper money, once the US dollar was adopted as the national unit of account in 1792, all that remained to achieve monetary union was for the old, pre-1788 state issues to be retired. In some states it happened quickly. In others it took two to three decades, longer than the recent transition to the euro, although amounts outstanding during those decades were not large. Moreover, because the US mint ran into problems in supplying the country with an adequate supply of dollar coins, the legal-tender status of foreign gold and silver coins lasted until the 1850s, far longer than the few years Hamilton had contemplated in his report, and foreign coins continued to be a significant part of the circulating medium. Nonetheless, for most American governments, businesses and individuals, the new dollar in the 1790s became the preferred unit of account.

The US monetary union was a relatively non-controversial act of national sovereignty on which most national leaders of the 1780s agreed. To give a monetary union full sway, the Constitution also granted Congress powers to regulate domestic as well as international commerce, and removed from the states the power to lay duties on imports from or exports to other US states and other countries. Congress could lay taxes on imports to the USA, but not exports. All import duties (and also internal taxes) had to be uniform throughout the country. The USA was to be a common market, an internal free-trade area with free movement of economic resources, as well as a monetary union.

For Hamilton, these measures were parts of a more comprehensive plan of financial, economic and political unification. Other parts of Hamilton's plan, though related to the monetary union, were more controversial. One was the assumption of

[24] Ibid., vol. 7, p. 571.

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state debts. Another was the Bank of the United States. What role did these measures play in Hamilton's overall plan? And how did they relate to the monetary union?

In the 1780s, the national government as well as all the states had large debts left over from the Revolution. Under the Confederation the states had the power to tax and the power to emit fiat paper. Both powers were applied to debt reduction. Shays's rebellion – a taxpayers' revolt in Massachusetts in 1786 – demonstrated the hazards of a state using its taxing powers in a heavy-handed way to redeem its debts. Rhode Island in 1786, as already mentioned, furnished an example of the heavy-handed use of fiat paper essentially to redeem debts by repudiating them. Rhode Island's actions were likely instrumental in the Constitution's ban on further state fiat issues. Shays's rebellion, apart from adding to the impetus for constitutional reform, did not result in any action at Philadelphia to address the financial problems of indebted states.

Under the Confederation, Congress could do little to service its own debts. Chastened by the collapse of its wartime paper money, Congress decided to issue no more of it. And it had no power to tax. Congress could only levy requisitions – requests – for funds from state governments and hope that the states would comply. Hamilton later, in his unfinished 1795 'Defence of the Funding System', described the requisition system as one of 'imbecility and injustice' because it neither provided the national government with the funds it needed nor (essentially because of free-rider problems) allocated national revenue burdens equitably among states.[25]

The Constitution solved the national revenue problem by giving the new federal government the power to tax. It did so by giving federal and state governments, apart from import taxes reserved for the federal government, concurrent access to the same tax bases. This was a plan, Hamilton said, that while 'most expedient . . . involved inherent and great difficulties. It may not unaptly be styled 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 powers of taxation.'[26] Though little remarked on by later historians, the primary motivation for Hamilton's controversial plan of assuming state debts into the national debt was not to enhance federal power. Rather, it was designed to prevent a potentially ruinous competition of the federal and state governments for the same tax bases. If states had their fiscal burdens lightened by debt assumption, they would not miss being unable to issue fiat paper money, and they would not have to raise state taxes in ways that might threaten the union just as it came into being.

In fact, the controversial assumption of state debts did more than remove much of the obligation of states to service their debts. In the early 1790s settlement of Revolutionary War accounts that attempted to equalise the costs of independence across states according to population, the so-called creditor states received balances

[25] Ibid., vol. 19, p. 22.
[26] Ibid., vol. 19, p. 23.

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due from so-called debtor states in the form of federal debt securities. These assets provided the states with interest revenues, reducing both their need to tax and any regrets they might have had over losing the authority to issue fiat paper money. Strictly speaking, the amounts due to creditor states should have come from debtor states that had paid less than their fair shares of the costs of defeating Great Britain. But Hamilton expediently did not enforce that obligation, so even the debtor states had their fiscal burdens lightened by federal assumption of state debts. 'It is curious fact which has not made its due impression', Hamilton commented in the 1795 'Defence', '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'.[27]

If the pre-constitutional, pre-assumption situation had remained intact, Hamilton argued that the first threat of war 'would have convinced us of the ineligibleness of our situation, of the weakness and embarrassment incident to fifteen or perhaps to 50 different systems of finance'.[28] Thus the assumption of state debts by the federal government eased the path to monetary union. And the monetary union made national debt management, with three federal securities all denominated in dollars, much easier than it would have been if the new nation had a different unit of account in every state instead of one national unit.

In Hamilton's overall plan, the relationship of the Bank of the United States to the US monetary union is more easily understood than the relation to it of assumption. Hamilton had studied financial history and was one of the few Americans of that era who understood the role of banks and bank money in a modern economy. While Washington's aide de camp and a colonel in the continental army, Hamilton had called in 1780 for the establishment of a 'Bank of the United States' to stabilise the currency and aid the war effort. That was before any modern bank had appeared in the USA. He made a similar recommendation to Robert Morris, the superintendent of finance, in 1781, even outlining a complex bank charter. Morris and Congress then founded the BNA, a much less ambitious institution than the one proposed by Hamilton. In 1784, Hamilton was a co-founder of the Bank of New York, the country's second or possibly third bank, one in Boston starting at virtually the same time. His first actions after becoming secretary of an empty US treasury in September 1789 were to arrange loans from the BNA and the Bank of New York to begin to pay the new government's unpaid bills.

Little more than a year later, his debt funding and assumption proposals enacted, Hamilton in December 1790 proposed to Congress that it establish a Bank of the United States as a public or national bank. His proposal followed the model of the Bank of England, although with innovations such as partial government ownership and the possibility of opening branches around the country. He used the proposal to tutor Congress and the country on the nature of bank money and how it differed

[27] Ibid., vol. 19, p. 35.
[28] Ibid., vol. 19, pp. 24–5.

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from fiat paper money. In the context of this article, his words are worth quoting at some length:

The establishment of Banks in this country seems to be recommended by reasons of a peculiar nature. Previously to the revolution circulation was in a great measure carried on by paper emitted by the several local governments . . . This auxiliary may be said to be now at an end. And it is generally supposed, that there has been for some time past, a deficiency of the circulating medium . . .

If the supposition of such a deficiency be in any degree founded, and some aid to circulation be desirable, it remains to inquire what ought to be the nature of that aid.

The emitting of paper money by the authority of Government is wisely prohibited to the individual States, by the National Constitution. And the spirit of that prohibition ought not to be disregarded, by the Government of the United States.[29] Though paper emissions under a general authority, might have some advantages, not applicable, and be free from some disadvantages, which are applicable, to the like emissions by the States separately; yet they of a nature so liable to abuse, and it may even be affirmed so certain of being abused, that the wisdom of the Government will be shewn in never trusting itself with the use of so seducing and dangerous an expedient. In times of tranquility, it might have no ill consequence, it might even perhaps be managed in a way to be productive of good; but in great and trying emergencies, there is almost a moral certainty of its becoming mischievous. The stamping of paper is an operation so much easier than the laying of taxes, that a government, in the practice of paper emissions, would rarely fail in any such emergency to indulge itself too far, in the employment of that resource, to avoid as much as possible one less auspicious to present popularity . . .

Among other material differences between a paper currency, issued by the mere authority of Government, and one issued by a Bank, payable in coin, is this – That in the first case, there is no standard to which an appeal can be made, as to the quantity which will only satisfy, or which will surcharge the circulation; in the last, that standard results from the demand. If more should be issued, than is necessary, it will return upon the bank. Its emissions . . . must always be in a compound ratio to the fund [specie reserves] and to the demand: Whence it is evident, that there is a limitation in the nature of the thing: While the discretion of the government is the only measure of the extent of the emissions, by its own authority.

This consideration further illustrates the danger of emissions of that sort, and the preference, which is due to Bank paper.[30]

Hamilton's Bank Report thus makes the case for a paper currency consisting of banknotes and deposits convertible into gold and silver, 'the money of the world' as he described them elsewhere in the report, as a better alternative than an inconvertible paper currency issued by government.[31]

[29] This sentence indicates that Hamilton, one of its writers, was not among those who believed that the Constitution removed the right of the federal government to issue fiat money, although some readers of the records of the 1787 debates in Philadelphia, for example Bray Hammond, *Banks and Politics in America from the Revolution to the Civil War* (Princeton, 1957), ch. 4, infer that the delegates intended to do that. Farley Grubb in his contribution here agrees with Hammond's interpretation of the Philadelphia convention debates.

[30] Syrett, *Papers of Hamilton*, vol. 7, pp. 320–2.

[31] Ibid., p. 316.

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The Bank Report was controversial, but not because it held that bank money convertible into a specie base was preferable to fiat currency issued by government. No one objected to that aspect of the report. What did seem controversial was whether the federal government had a right to charter the bank or indeed any other corporation, an issue that arose with respect to the BNA a decade earlier and was solved by having several states also charter the BNA. James Madison in Congress in 1791 argued that the Constitution did not give Congress the power to charter a bank. Like Madison, other members of the constitutional convention served in the first Congress of 1789–91; unlike Madison, many of them voted for the BUS, which handily received the approval of both the Senate and the House. President Washington thereupon asked Edmund Randolph, the attorney general, and Jefferson, the secretary of state, for their opinions. Each agreed with Madison's position that the BUS was not explicitly authorised by the Constitution. Washington then asked Hamilton for his opinion, sharing with him the Randolph and Jefferson opinions. Hamilton's landmark response, a sweeping discussion of the Constitution's explicitly stated powers and of related powers implied but not stated by it, persuaded the president to approve the bill.[32] Hamilton got his bank, and the doctrine of implied powers that he used to win his case would come to be regarded as a fundamental principle of constitutional law.

The BUS was a crucial element of Hamilton's plan for a financial revolution, as well as an immediate source of loans to meet interest payments on the national debt before revenues became adequate for that purpose. Private investors subscribing to the $8 million in shares of BUS stock reserved for them could pay with $6 million of national debt securities – shades of the Bank of England – and $2 million of specie. In that way, the BUS supported the national debt, and the interest on the debt supported the Bank. The IPO sold out quickly on 4 July 1791, and the BUS opened in Philadelphia in December, with branches established in Boston, New York, Baltimore and Charleston the following year. The example of the BUS encouraged states to charter more banks. The numbers of state banks rose from three in 1790 to 20 by 1795. Thus, by 1795 the USA had a banking system of 25 banks including the

[32] A full account of all the reports, debates and opinions regarding the BUS is in M. St Clair Clark and D. A. Hall, *Legislative and Documentary History of the Bank of the United States* (Washington, 1832; reprint New York, 1967), ch. 2. Forrest McDonald, *Alexander Hamilton* (New York, 1979), ch. 9, argues that the Virginians Madison, Randolph and Jefferson did not have strong feelings about the constitutionality issue, but based their opposition to the BUS on a presumed threat by congressmen from Pennsylvania, where the BUS would be based in Philadelphia, to use its presence there as a lever to prevent the national capital from moving from Philadelphia in 1800 to a new federal district carved out of Virginia and Maryland, as had been agreed in 1791 in order to secure votes needed to pass the federal assumption of state debts. Support for McDonald's argument is perhaps furnished by the closing paragraph of Jefferson's opinion against the BUS: 'unless the President's mind, on a view of everything, which is urged for and against this bill, is tolerably clear that it is unauthorized by the constitution; if the *pro* and the *con* hang so even as to balance his judgment, a just respect for the wisdom of the Legislature, would naturally decide the balance in favor of their opinion . . . ', Clark and Hall, *Legislative and Documentary History*, p. 94.

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BUS and its branches. All of them would keep their accounts in the new national currency, the US dollar.

The federal government subscribed for $2 million of BUS stock, paying for it with a loan from the BUS. It was the first of many loans to the government. The government paid the BUS 6 per cent interest on the loan and agreed to repay it in equal instalments over ten years. The main intent of the government in taking a stake in the BUS was to launch the national bank and to circulate its banknote currency as quickly as possible, for the benefit of the treasury and the country. But Hamilton also noted that to the extent dividends on BUS shares exceeded the interest on the government's loan from the BUS, which they invariably did because of expanding loan demand and the typical balance-sheet leverage of banks, the government would make a 'positive profit'. Hamilton was teaching by example. He wanted state governments, which previously had been suspicious of banks and reluctant to charter them, to learn that chartering and investing in more banks and other corporations could well be profitable activities. The lesson was not lost on the states – see Section III below.

By 1792, the US monetary union that most of the founding fathers desired was more or less a reality. Few of them may have understood that more controversial measures such as the federal assumption of state debts and the launching of a BUS were integral components of making the convertible-dollar monetary union work. But the gears of the machine that was the financial revolution were beginning to mesh. There was no longing for the old system of state-issued fiat paper money. Moreover, if states wanted to establish loan offices along with banks, nothing stopped them from doing that, as long as the loans were made in specie or convertible bank notes rather than fiat bills.

After a speculative bubble inflated early in 1792, the USA experienced its first financial panic and securities-market crash. These were embarrassments to the new financial system and to Hamilton. They produced much railing against banks, speculators and stockjobbers. But acting as a central banker, Hamilton in cooperation with existing banks deftly managed the crisis with timely liquidity injections, and it quickly passed with minimal damage to the booming US economy.[33] The new financial system had been tested for the first time, and it passed the test.

III

Why did US states and state leaders remain strangely silent about the loss of monetary sovereignty that came with the ratification of the Constitution? They lost the profits that came from stamping paper, declaring it to be money, and purchasing goods and services with the paper. They lost the interest income that came from stamping pieces of paper as loan-office notes and lending them to citizens on

[33] David J. Cowen, *The Origins and Economic Impact of the First Bank of the United States, 1791–1797* (New York, 2000).

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mortgage security. They lost the ability, if indeed they thought they had it, to fight state depressions by expanding their monetary issues, thus exercising 'democratic' control over state economic and political destinies. That was a lot to give up, so it is surprising that anti-federalists, who expressed many other reservations about the cession of state sovereignty to a federal union, made few protests about ceding monetary sovereignty.

Monetary sovereignty was not the only area in which states ceded authority to the federal union under the Constitution. States lost the right to tax imports from and exports to other states and other countries. The right to tax imports was exclusively the federal government's. That loss of states was offset, of course, by the federal commitment to take over the costs of defending the states and the country against foreign and other incursions. Before the Constitution, such defence costs periodically had loomed large in state budgets. And longer term, of course, there were economic advantages of a state having unimpeded access to an expanding nationwide market area.

Other advantages the states gained by acceding to a monetary union were mentioned earlier. The controversial assumption of state debts by the federal union, not usually connected with the goal of monetary union although it was so intended in Hamilton's thinking, reduced states' revenue requirements. And for the creditor states, assumption added to revenues by providing interest income from federal securities received in the settlement of state accounts from the War of Independence.

A more important reason why states did not protest the loss of monetary sovereignty is that the loss did not amount to much, if anything at all, in terms of state revenue. That possibility was suggested in two studies that John Legler, John Wallis and I carried out more than a decade ago.[34] Both studies indicated that in the first half of the nineteenth century, a number of states relied on banks for significant proportions – at times up to half – of state revenue. Most state revenues derived from banks came from taxes on them or investment income from them. Tax revenues came from annual taxes on bank capital, and from the fees and bonuses state legislatures charged banks in return for charters of incorporation and charter renewals. Investment income came from dividends on bank stock, interest on state deposits in banks, and sometimes from the income of banks wholly owned and operated by states.

The studies also found that states benefited from banks in a version of what today would be called 'off-budget financing', that is, states would demand as a condition of granting a charter or a charter renewal that a bank seeking the charter would have to

[34] Richard Sylla, John B. Legler and John Joseph Wallis, 'Banks and state public finance in the new republic: the United States, 1790–1860', *Journal of Economic History*, 47. 2 (June 1987), pp. 391–403, and John Joseph Wallis, Richard Sylla and John B. Legler, 'The interaction of taxation and regulation in nineteenth-century US banking', in Claudia Goldin and Gary D. Libecap (eds.), *The Regulated Economy: a Historical Approach to Political Economy* (Chicago, 1994), ch. 4, pp. 121–44.

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provide financial aid to institutions and enterprises that states wanted to support. By inducing banks to provide such support, states avoided the need to support them through state budgets, thus keeping taxes lower than they otherwise would have been. The fact that most early US banks were state-chartered corporations, in contrast with banks in other countries where non-corporate proprietorships and partnerships were the rule, made such practices possible. A charter of incorporation, whether in Europe (where there were fewer of them) or America, was a potentially profitable privilege granted by the state for which it could demand compensation in a number of ways. The fact that the US economy was expanding more rapidly than other economies meant that demand for banking services expanded faster than states could meet it by chartering more banks. That made banking a highly profitable activity. So new banks were willing to pay states for their corporate banking privileges. Less often, established banks were willing to pay states not to charter new competitors. Over the early decades of US history, democratic political pressures increased access to bank charters. By the 1830s, these pressures culminated in free banking, a term in the US context connoting the chartering of banks under general incorporation laws rather than by special legislative acts.

State legislators obviously learned that bank chartering could become a revenue source. But how soon? The evidence is that they were not aware of the possibilities in the 1780s, but became aware of them in the 1790s when Hamilton delivered his lesson about the profit possibilities of government investment in BUS stock and other securities created during the financial revolution.

New York was the first state to act. From 1784, when the Bank of New York was organised, until 1791, the state had rebuffed several requests from the bank for a charter, so it operated for seven years as an unincorporated joint-stock bank. In 1791, shortly after Congress and the president approved the legislation creating the BUS, New York granted a corporate charter to the Bank of New York. This was for defensive reasons. The BUS had the power to open branches nationwide and would certainly open one in New York City. Unless the state wanted to cede the ground of banking to the federal government, it needed to have its own bank – hence the change of heart about the charter.[35] Despite such worries, New York (along with several states) invested in the IPO of the BUS in 1791, and in 1811, when Congress narrowly voted down renewal of the BUS charter, New York still held $60,800 of BUS stock.[36]

New York invested in its own state banks as well as in the BUS. In 1792, New York exercised a charter option by making an investment of $50,000 in the stock of the Bank of New York, and it authorised a $20,000 investment in the newly chartered Bank of Albany, an option it exercised in 1797. The Bank of New York became the depository for state funds. The bank held and collected the interest on

[35] Robert E. Wright, *Banking and Politics in New York, 1784–1829* (Ann Arbor, 1996), ch. 4.

[36] Joseph Stancliffe Davis, *Essays on the Earlier History of American Corporations* (Cambridge, MA, 1917), vol. 2, p. 107.

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nearly $2 million of the new US debt that the state owned, and it made loans to the state. Thus, the Bank of New York became the state's fiscal agent in the 1790s, just as the BUS was the fiscal agent of the federal government. When New York state chartered the Bank of Manhattan in 1799, it wrote into the charter an option to buy $50,000 of stock in it, exercising that option after 1800.[37]

There were similar developments in other states. In Massachusetts, the handsome profits of the Massachusetts Bank chartered in 1784 aroused republican opposition in the early 1790s. The state in 1791 tried to tax the bank, but that was overturned in the courts. A more significant action was chartering a new bank, the Union Bank, in 1792. In an unsuccessful attempt to stave off that potential competition, the Massachusetts Bank, taking its cue from Hamilton's charter for the BUS, offered the state the opportunity to purchase a 20 per cent stock interest in it. The Union Bank charter instead gave the state the option to invest $200,000–400,000, a quarter to a half of the capital initially authorised, in the new bank's shares. Massachusetts exercised those options, taking the first $200,000 during 1793–5, and the second $200,000 in 1795–6. The Union Bank became the state's depository, and the state wrote into the charter that it could borrow $100,000 from it on demand at 5 per cent interest, repayable in annual installments for up to five years. Also in the charter was a directive to the bank to lend up to one-fifth of its capital outside of Boston, preferably to Massachusetts farmers, in one-year loans upon real estate security.[38] In short, a state bank issuing convertible bank money could be made to function in very much the same manner as a colonial or state loan office issuing fiat paper currency. An added advantage of banks was that their lending for profit was likely to result in lending decisions that were more economically efficient than those of politicians operating colonial and state loan offices.

Not to be outdone by New York or Massachusetts, Pennsylvania chartered the Bank of Pennsylvania in 1793 with an authorised capital of $3 million. By the charter, the state took $1 million of that, paying for it with $375,000 in specie, $375,000 in the new US debt that it owned, and – taking a cue from Hamilton's BUS – the balance with a loan from the bank. In an echo from the colonial and confederation eras, the charter required the bank to lend to the state an additional $500,000 for the establishment of a loan office enacted in subsequent separate legislation. To the relief of the bank, the state abolished the loan office a year later on the grounds that it had been found 'inexpedient and not to answer the purposes intended by the legislature'.[39] Like the Bank of New York and the Union Bank of Boston, the Bank of Pennsylvania became the state's fiscal agent.

On smaller scales, similar actions occurred when banks were chartered in other states. New Hampshire in 1792 invested in its first bank, located in Portsmouth. Maryland chartered the Bank of Columbia in 1793 to aid in the formation of the

[37] Ibid., vol. 2, ch. 2.
[38] Ibid., vol. 2, ch. 2.
[39] Ibid., vol. 2, p. 96, citing and quoting Pennsylvania statutes.

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new federal district and national capital being laid out on the banks of the Potomac. The state did not invest in the bank, but the charter authorised the Washington commissioners to subscribe for one-fifth of the stock, and the commissioners actually did subscribe for more than a tenth of it. Connecticut authorised a state subscription to the Hartford Bank in 1792, as did Maryland in the case of the Bank of Baltimore chartered in 1795; both subscriptions were made in 1803. In Rhode Island, the organisers of the Providence Bank chartered in 1791 reserved 10 per cent of the shares for the state, but the state did not subscribe.[40]

States' fiscal interests in banks became greater in the early decades of the nineteenth century, but the precedents were established in 1791. The catalyst was the BUS, which represented to state leaders almost an invasion of their territory by an agent of a new, superior, and somewhat suspect federal government. The BUS, however, also demonstrated to them how they might benefit financially by imitating the federal government's investment in it, and therefore suffer no loss from the cession of monetary sovereignty to the federal union. It is likely that Hamilton intended the BUS to have that effect, for part of his genius was to create incentives that would induce others – state governments chartering banks and other corporations, entrepreneurs forming corporations and other enterprises, and private investors organising securities markets – to complete the financial revolution he had initiated.

Hamilton was not the only one to understand that states could use banks to accomplish the purposes of colonial and state fiat currencies. Writing to Rufus King on 7 August 1791, a month after the IPO of the BUS had been heavily oversubscribed in one hour, Boston federalist and business leader Christopher Gore also saw it clearly:

> Some who were shut out from the national bank will be very solicitous of reaping the profits heretofore experience'd from the State Bnk [sic]. The State legislatures are all organiz'd bodies & disciplin'd to counteract the operations of the federal government – it is now a war of words only – we may have to deprecate a different kind of warfare. We well know the State Legislatures are generally dispos'd to discern & oppose the power & influence of the nation; but their meanness & parsimony interfere with their views & besides they are without a military check. Give them a State Bank to recur to and this great evil will be remov'd. The State Bank will continue for a long time to afford great profits to the proprietors of their stock. The State Legislatures will be proud of imitating the conduct of Congress in having a bank under their patronage & having a continuance of this badge of Sovereignty, the emission of money, & the interest of the Commonwealth & the Bank will be made to combine . . .[41]

State legislatures, as Gore predicted, were quick to grasp that, with a strong say in how US banking developed, they had not given up the profits of money issuing when the US dollar monetary union came into being.

[40] Ibid., vol. 2, ch. 2.
[41] Quoted in ibid., vol. 2, pp. 54–5.

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IV

The transition to the US dollar monetary union more than two centuries ago was relatively non-controversial. Before and after 1789, the acknowledged monetary base of the colonies and the USA was gold and silver. Colonial and state fiat currency issues were local supplements to that base, prompted for the most part by monetary strains that rapid population growth – 3 per cent or more per year in the colonial era – placed on economic expansion. Fiat money issues were also induced by British colonial policies that frowned on the establishment of colonial mints and banks, and on the accumulation of specie in America. Fiat supplements were rather easily abandoned in the constitutional settlement. That settlement, as it was implemented, reduced the revenue needs of states while at the same time increasing state revenues derived from interest on the national debt and from banks.

The US founding fathers believed that a national currency was an expression of sovereignty. It would as well promote national unity by providing Americans with one currency for all. A common currency reduced transactions costs, made price comparisons among different states and regions easier, and facilitated capital mobility across regions unhindered by the possibility that exchange rate changes would reduce or eliminate returns to investment. With one currency, and freed by the Constitution from political constraints on interstate commerce, the US economy in time became one of the largest free-trade areas in world history. In defining the US dollar in terms of gold and silver, the founders were basing US currency on the acknowledged moneys of the world. That facilitated the new nation's international commerce as well as a persistent inflow of foreign capital. Judging by a recent survey of the effects of monetary unions, which finds that, other things held constant, 'currency union seems typically to be associated with a significant increase of trade, ranging from over 30% up to 90%', the economic intuition of the US founders, tutored as they may have been by Adam Smith, was not misplaced.[42]

US states on net did not lose much of consequence when the Constitution took away their power to issue fiat currencies. They soon were to realise that the power to incorporate banks and other companies, which they retained, could serve just about every purpose that fiat currency served. And they gained the advantages of a monetary union. That in essence is why the loss of monetary sovereignty by states was non-controversial.

States did lose something, however, at least potentially. They lost the ability to use independent monetary policy and exchange-rate changes to alleviate local distress produced by economic shocks of various kinds. If, for example, the agricultural terms of trade turned against a state or region because of such a shock, being part of a monetary union meant that currency devaluation could not be used to

[42] Andrew K. Rose, 'A meta-analysis of the effect of common currencies on international trade', NBER Working Paper 10373 (Cambridge, MA, March 2004), p. 13.

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cushion losses of bank reserves. Banking panics might result, and we know the USA had such panics in the nineteenth and early twentieth centuries, especially during the periods when there was no central bank. Financial crises themselves could have been independent sources of shocks. States in a monetary union lacked the power to alleviate such shocks with state monetary expansions and lender-of-last-resort actions, as Farley Grubb and others have argued.[43] But would US states, if they had had their own currencies from the 1790s to the early twentieth century, also have had the knowledge, ability and will to undertake such modern economic-policy actions with any great effectiveness? That is debatable, and probably to be doubted.

Since fiat currency issued by American colonies and states before 1788 was a supplementary local currency in a monetary system based on gold and silver, not a fiat-based monetary system, it hardly represented a leap toward modernity that was set back by the US constitutional settlement for a century and a half. Modern financial technologies – insurance of bank liabilities and the tools of fiat monetary management by independent central banks, for example – make fiat-based monetary systems in principle, if not always in practice, effective. Those technologies were either not available or just beginning to emerge two centuries ago. Such considerations make it unlikely that the USA would have been better served by having every state issuing its own fiat currency instead of joining the US dollar monetary union. None of the leading founders – Franklin, Washington, Adams, Jefferson, Madison and Hamilton – although they disagreed among themselves on many things, favoured retaining state monetary sovereignty with fiat paper currencies. They were nation builders, and the monetary union was a component of nation building.[44] Given their successes and subsequent efforts in history to emulate them, it seems odd two centuries later to be second-guessing the motives for and the results of the US-dollar monetary union.

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[43] Hugh Rockoff, 'How long did it take the United States to become an optimal currency area?', in Forrest H. Capie and Geoffrey E. Wood (eds.), *Monetary Unions: Theory, History, Public Choice* (London, 2003).

[44] On nation building, see Max M. Edling, *A Revolution in Favor of Government: Origins of the US Constitution and the Making of the American State* (Oxford, 2003).

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