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The value of having a single currency, the optimal size of currency unions, and the cost of forming such unions, is an unresolved debate. An important aspect of this debate is the empirical success claimed for currency unions such as the United States. The fact that otherwise-sovereign states within the United States are not legally allowed to issue their own currency, thus creating a single currency zone for the whole United States based on the U.S. dollar, is commonly used as an example for emulation and as justification for policy choices, such as the current move toward a European currency union based on the Euro.

The benefits of this constitutionally created U.S. currency union and, by analogy, the benefits for other politically manufactured currency unions are assumed to be obvious, namely a reduction in monetary instability and exchange-rate transactions costs within the union thereby stimulating long-run economic growth. These alleged benefits for the U.S., however, are not derived from market evidence, but from simple theoretical assertions and from a historical literature that has taken as fact the rhetoric of the winning side at the U.S. Constitutional Convention. Independent of theory and rhetoric, little is known about how and why the U.S. currency union was created, and about how this


2 Recently some scholars have challenged the notion that the United States really achieved an optimal currency zone with its Constitutionally mandated currency union. See ROCKOFF, How Long Did It Take.
union performed in relation to the next best alternative. Even exactly when the U.S. dollar was adopted by market participants for private transactions is not known.

These deficiencies are addressed here. Market-generated quantitative data on the choice of currency for spot transactions, the choice of currency for forward transactions, exchange rates by currency, and price indices by currency from 1748 through 1811 are used to determine when the transition from state-issued currency to the U.S. dollar occurred and to assess the non-wartime performance of prices, exchange rates, and purchasing power parity before versus after this transition. This evidence indicates that the formation of the U.S. currency union had more to do with usurpation of state sovereignty for the personal gain of merchant-bankers than with solutions to monetary instability and transaction costs within the union. A concise history of 18th-century American monetary regimes is provided first.

Setting the Stage: 18th-Century American Monetary Regimes

The British Crown did not permit its colonies to mint coins or establish banks, nor did it permit its coins to be exported from England. The North American
colonies imported foreign coins through their trade surplus with the Caribbean and Southern Europe. Much of this specie, however, was re-exported, largely as a result of the mercantile policies that held the colonies in a chronic current-accounts trade deficit with the mother country. Colonists constantly complained that they lacked a sufficient circulating medium of exchange, especially with which to pay taxes, since taxes could not be paid through merchant-store book credit or with barter goods. Initially, some colonies allowed non-specie
commodity monies, such as paper tobacco contracts or tobacco leaf, to fill this void.

In 1690 Massachusetts issued small-denomination bills of credit (paper money) to its soldiers participating in King William’s War. These bills could be used to pay taxes levied by Massachusetts and began to circulate as a medium of exchange within the colony. Soon thereafter other colonies adopted this innovation, e.g., South Carolina in 1703, New York and New Jersey in 1709, Rhode Island in 1710, North Carolina in 1712, Pennsylvania in 1723, Maryland in 1733, Georgia in 1735, and the last being Virginia in 1755. These colonies issued bills not only to meet emergency wartime expenses, but also to meet normal peacetime expenses. Some used the ability to issue and redeem bills of credit as an active monetary policy for ameliorating the short-run effects of macroeconomic and foreign-trade shocks. For example, the Pennsylvania legislature reacted to the 1772 credit crisis by moving from a retractionary to an expansionary paper money policy. Benjamin Franklin observed that the injection of paper money “gave new life to business” and “promoted greatly the settlement of new land”.

Finally, several colonies also issued bills of credit in exchange for mortgages on land in their respective colonies, i.e., subjects mortgaged privately owned land to their colonial government for cash. The interest on these “land bank” loans was an important source of income for some colonial governments.

Each colony’s bills of credit, with the exception of Maryland after 1764, were denominated in pound units, e.g., New York pounds, Virginia pounds, and so forth, earned zero nominal interest, and circulated at market-determined rates of exchange. Colonial governments never entered the market to buy or sell their paper money for specie neither to affect nor in reaction to exchange rate movements. By the middle of the 18th century, colonial government bills of credit comprised a substantial portion of the money supply within their respective colonies. Pennsylvania’s bills of credit were so extensively used within that colony that the legislature had to pass, and frequently renew, an act authorizing the exchange of “torn or ragged” bills for new bills. Prices within each colony were quoted in their respective paper currencies (bills of credit).

4 NUSSBAUM, A History of the Dollar, p. 27. See also especially ERNST, Money and Politics in America, pp. 197-350; GRUBB, Two Theories of Money Reconciled; KEMMERER, The Colonial Loan-Office System; LESTER, Currency Issues to Overcome Depression in Pennsylvania; LESTER, Currency Issues to Overcome Depressions in Delaware, New Jersey, New York, and Maryland; NEWELL, From Dependency to Independence.

Early experiments with paper money in Europe had been disastrous. The collapse of John Law’s paper-money banking scheme in 1720 soured European states on paper money and contributed to prohibitive legislation, e.g., the Bubble Act. A few of the early experiments in America were also not successful. Rapid inflation in South Carolina caused the British Parliament to prohibit South Carolina from further issuances of paper money after 1731. The colony was allowed, however, to keep its existing money in circulation and to issue near substitutes. The cost of King George’s War, as well as mismanagement, led to heavy depreciation of the Massachusetts pound and, in 1748, caused Massachusetts to renounce paper money and return to a specie standard for the rest of the colonial period. The Crown’s response to this crisis was the Currency Act of 1751 which allowed colonies to issue paper money as long as it met two conditions: 1) that it not be legal tender, and 2) that ample provisions (taxes) be put in place to redeem each issue “within as short and reasonable a time as may be, not exceeding five years at the farthest.” While this Act only applied to New England, the Currency Act of 1764 extended it to all colonies. Some colonies, such as Maryland, Pennsylvania, and New York, had instituted such policies on their own accord well before 1760.

Each colonial government that issued paper money accepted its own issue for payment of the taxes it levied and land mortgages it held at an announced rate, \( X \), relative to specie, e.g., a tax payment of \( X \) paper pounds being equivalent to a tax payment of one pound sterling. Typically \( X \) was greater than one (see Figure 3 below). As such, each colony’s paper money was defacto legal tender for payment of that colony’s public debts (taxes). In 1773, the Crown officially recognized this defacto legal-tender status, but retained the ban on paper money being made legal tender for private debts. Each colony could maintain the market value of its paper money over the long run by the timely injec-

Pennsylvania between the Seven Year’s War and the revolution specie accounted for 22 percent, and paper money for 78 percent, of transactions involving currency, see GRUBB, The Circulating Medium. The amount of specie, both in total and relative to paper, that circulated as currency in the other colonies is not currently known.

tion and then redemption of its paper money at the announced rate \( X \) via taxation – thereby controlling the quantity of paper money in circulation. The presence of competitive currency substitutes induced most colonies to follow a stable path with regard to the relative value of its own paper money.

During the revolution, the Articles of Confederation – the first U.S. government – allowed both individual states and the Continental Congress to issue their own paper money. Beginning in 1775 the Continental Congress issued bills of credit – Continental dollars – that depreciated to zero by April of 1781 and ceased thereafter to circulate. Each of the 13 states also issued their own paper currencies that, while also depreciating, held their value to a greater extent than did the Continental dollar.

After hostilities ended, states began to levy substantial taxes to redeem rapidly the bills of credit they had issued during the revolution. The resulting sharp monetary contraction produced substantial price deflation. The scarcity of a circulating medium became so acute that a few states resorted to accepting farm produce and land claims as tender for public debts. After the Treaty of Paris, 7 of the 13 states (Pennsylvania, North Carolina, and South Carolina in 1785; Rhode Island, New York, New Jersey, and Georgia in 1786) returned to issuing their own pound-denominated paper money, usable – as during the colonial period – to pay taxes levied and land mortgages held by the issuing state. In addition, states, such as Maryland and Massachusetts, were debating

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9 Philip L. MOSSMAN, The American Confederation: The Times and Its Money, in: Philip L. MOSSMAN (ed.), Coinage of the American Confederation Period, New York: The American Numismatic Society 1995, p. 7, claims that Maryland and Vermont also issued new paper money in 1786. This claim is clearly erroneous in the case of Maryland. While the Maryland State House of Delegates passed legislation in late 1785 to issue new paper money, powerful and wealthy merchants in the Maryland State Senate blocked the enactment of this legislation, until the adoption of new U.S. Constitution in 1787 made the issue moot. Maryland’s last emission of paper money was in 1781, some of which continued to circulate and be accepted by the state for payment of its taxes well after the Treaty of Paris, see BEHRENS, Paper Money in Maryland, pp. 68-87. Likewise, the case for Vermont cannot be confirmed in other sources.
whether to issue new bills of credit, but failed to enact such legislation before
the new Constitution banned such emissions. These states were clearly engaged
in active monetary policy intended to affect their state’s economy. By replacing
old bills issued during the revolution that were now being rapidly taxed out of
circulation with new issues, these states ameliorated the circulating-medium
scarcity within their borders. States that refrained from such action experienced
greater deflation and the political unrest it spawned, such as Shay’s Rebellion
in Massachusetts early in 1787.10

After the complete collapse of the Continental dollar, the Continental Con-
gress turned to Robert Morris to restore the confederation’s finances. Morris
opened the Bank of North America (BNA hereafter) in 1782. The bank, head-
quartered in Philadelphia, was intended to be the federal government’s bank
with branches throughout the states. It accepted private and federal government
deposits of specie, kept accounts in dollar units, and issued dollar-denominated
bank notes as claims against deposits and as loans both to the federal govern-
ment and to private citizens. Morris and Congress asked the states not to permit
other banks to be established during the war, and asked the states to accept
BNA bank notes in payment for each state’s taxes and then to remit these notes
to the U.S. Treasury to cover payments each state owed the federal govern-
mern. The bank notes were intended to be the circulating medium for the na-
tion. Only Connecticut, however, accepted BNA bank notes for payment of its
taxes.11

In 1787 a Constitutional Convention was held in Philadelphia. This Con-
vention crafted a new U.S. Constitution to replace the Articles of Confedera-
tion. In Article I, Section 10, Clause 1, this new Constitution stated: “No State
shall enter into any Treaty, Alliance, or Confederation; coin money; emit Bills of Credit; make any Thing but gold and

10 See BEHRENS, Paper Money in Maryland, pp. 78-87; BOUTON, Tying Up the
Revolution; HAMMOND, Banks and Politics, pp. 3-39; KAPLAN, The Bank of the
United States, p. 15; PERKINS, American Public Finance and Financial Services, pp. 137-
186; George David RAPPAPORT, Stability and Change in Revolutionary Pennsylvania,
University Park, PA: Pennsylvania State Univ. Press 1996; Figure 5 below. In both states,
the upper legislative house (Senate) was blocking the paper money bills passed by the
lower legislative house.

11 See FERGUSON, The Power of the Purse, p. 123; Lawrence LEWIS JR., A History of the
Bank of North America, Philadelphia: J. B. Lippincott 1882, pp. 13-85; NEWMAN, The
Early Paper Money of America, pp. 356-364; RATNER / SOLTOW / SYLLA, The
Evolution of the American Economy, p. 87; SCHWARTZ, The Beginning of Competitive
Banking, p. 417; VER STEEG, Robert Morris, Revolutionary Financier, pp. 66-69, 84-87.
While Congress declared the dollar in decimal units to be the official monetary unit of the
United States in July of 1785, this declaration had little effect on market transactions.
silver Coin a Tender in Payment of Debts; pass any Bills of Attainder, ex post facto Law, or Law impairing the Obligation of Contract, or grant any Title of Nobility."

This clause created a currency union within the United States. After 1787 states could not issue new bills of credit. Outstanding state bills could continue to circulate until they were redeemed and destroyed by their respective states.

Though not explicitly stating so, the U.S. Constitution also forbade the federal government from issuing bills of credit. At the Convention, the Constitution’s construction was understood to be such that any powers not explicitly granted to the federal government were denied to the federal government, and any powers not explicitly denied the states were granted to the states. The proposal to allow the federal government to emit bills of credit by inserting such a clause into the Constitution was voted down by the Convention delegates.

In 1791 Congress chartered the First Bank of the U.S. (FBUS hereafter). This bank issued dollar-denominated bank notes and, under Alexander Hamilton’s guidance, tried to do what Morris had attempted to have his BNA do, but on a much larger scale, namely, make FBUS bank notes the chief circulating medium of the nation. While unconstitutional in terms of how the Constitution was designed by founders such as James Madison, the FBUS was deemed constitutional (but not without considerable and continuing controversy) and saved from President Washington’s veto under the aegis of Hamilton’s reinterpretation of the Constitution as rendering “implied powers” to the federal government. State-chartered banks, numbering 28 by 1800, also issued dollar-denominated bank notes, backed by fractional reserves in specie, which circulated as a medium of exchange along side BNA and FBUS bank notes and specie coinage. In 1792 Congress passed the Mint Act, which officially fixed the weight and fineness of the U.S. specie dollar, thus legally distinguishing it from

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13 At the Constitutional Convention, Robert Morris wanted to propose that the Constitution authorize the chartering of a bank by the federal government. Morris was talked out of making such a proposal by his protégé and assistant on banking matters, Gouverneur Morris, who considered such a proposal so controversial that its very mention might kill the chances of getting the Constitution ratified. See HAMMOND, Banks and Politics, p. 105. Thus, no vote at the Convention was taken regarding allowing the federal government to charter a bank, which in turn led to the on-going controversy regarding the Constitutionality of the FBUS and Second Bank of the U.S., see KAPLAN, The Bank of the United States, pp. 22-25.
the Spanish dollar. The U.S. Mint did not coin U.S. dollars in any quantity until after mid-1794.

In summary, the U.S. Constitution legally forced a transition in the circulating medium of exchange. It led not only to a common monetary unit of account within the U.S. (the U.S. dollar), but also to a transformation of the monetary system. Prior to its adoption, the monetary system consisted of specie (foreign coins) and individual colony/state-issued pound-denominated bills of credit backed by the issuing state’s future taxes and publicly-held land mortgages. These bills of credit circulated at market-determined rates of exchange with one another and with specie currencies. After the adoption of the U.S. Constitution, the monetary system was transformed into one consisting of U.S. dollar and foreign specie coinage, and a plethora of federal- and state-chartered bank-issued U.S. dollar-denominated bank notes backed by fractional reserves in specie. While bank notes could be exchanged at face value for specie at the bank of issue, except during liquidity crises, elsewhere they circulated at market-determined discounts off their face value. Therefore, the reduction in transaction costs and exchange-rate risks associated with moving to a single currency were not as great as is commonly assumed. Constitutionally, bank notes could not be declared legal tender for all debts, though governments could make them defacto legal tender for public debts by accepting them in payment for taxes. This new government-chartered, but privately owned and operated, bank-based monetary system reduced the government’s ability to directly influence the nation’s money supply. The U.S. produced little specie, had limited specie reserves, had no ability to sterilize specie inflows, had no regulation of banking specie-reserve to bank-note-loan ratios, and was a “small” open economy on a specie exchange-rate standard. As such, the transition to the U.S. dollar eliminated government monetary tools and exposed the U.S. to unmediated macro-trade shocks. The unregulated banking money multiplier also amplified the effect of such shocks. When facing a recession, banks reduced new loans and called in old loans to protect their specie reserves. These actions further reduced the money supply and exacerbated the recession. By contrast, under the

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14 See BERRY, Western Prices, pp. 357, 392-393, 402-405; Beatrice G. REUBENS, State Financing of Private Enterprise in Early New York, unpublished Ph.D. Thesis, Columbia Univ., 1960, pp. 43-44; ROCKOFF, How Long Did It Take; George SELGIN, The Suppression of State Banknotes: A Reconsideration, in: Economic Inquiry 38, Oct. 2000, pp. 600-615. FBUS bank notes held their value and were not heavily discounted in exchange, in part because they were accepted at face value in payment of U.S. federal government customs taxes. This was the same mechanism used by the colonies to control the value of their bills of credit. See COWEN, The Origins, p. 139.
prior system states could engage in active monetary policy – adjusting their paper money supplies by altering the speed of new issues and redemption of old issues – to ameliorate, in the short run, the effects of macro-trade shocks. In addition, given that most taxes earmarked for redeeming state bills of credit were commodity sales taxes, such as on tobacco exports, tax payments would vary positively – the amount of paper money left in circulation would vary inversely – with fluctuations in macro-business conditions, thus providing automatic stabilization. Finally, for states that employed “land banks”, distressed citizens could mortgage land – their most illiquid asset – to the state for cash, thereby expanding the money supply and ameliorating the recession.

When Did Markets Make the Transition to the U.S. Dollar?

Assessing the performance of the medium of exchange before versus after the transition to the U.S. dollar requires determining exactly when this transition occurred, something that is not well established in the literature. Bank and federal government account books were kept in dollars as early as 1781 (Spanish dollars prior to 1792). Many merchant account books, however, were kept in state currency well after 1805, and as late as the 1820s several state treasuries were still receiving and burning the pound-denominated bills of credit issued prior to 1787. Because accounting units can differ from transacting units, account books provide little help for determining the transition to the U.S. dollar. Newspaper quotations of average commodity prices suffer a similar problem.

No study of frequent and numerous individual private-market transactions has been made to determine what monetary unit was in use. This deficiency is ad-

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15 The divergent effect of these two monetary regimes is illustrated in the 1784 financial crisis, see RAPPAPORT, Stability and Change, pp. 165-173. See also FRIEDMAN, A Monetary and Fiscal Framework; GIRTON / ROPER, Theory and Implications for theoretical discussions.

addressed here by examining the Philadelphia market for immigrant servant contracts.

This market has several unique and attractive features for identifying the transition to the U.S. dollar. First, it was a private market with all transactions taking place in Philadelphia. In this period, Philadelphia was the largest U.S. city, the seat of the federal government, the headquarters of both the BNA and the FBUS, and the location of the U.S. Mint. Thus, the transition to the U.S. dollar should have occurred relatively early in Philadelphia. Second, the transacting parties came from a wide cross-section of the community. The sellers were merchants and ship captains who were familiar with transatlantic commerce. The buyers were middle-income artisans, merchants, and farmers who hailed from Philadelphia and nearby rural counties. Third, over 2,800 individual contract sales were recorded. These sales occurred, more or less continuously, across the key years of monetary transition, namely, from 1787 through 1804. Finally, each contract sale involved both a current and a forward exchange. The current exchange was the money recorded at the time of sale that was paid by the buyer of the servant to the merchant who imported the servant. The forward exchange was the contractually specified payment to be made by the buyer of the servant to that servant at contract completion.

17 Approximately 45 percent of the buyers were from Philadelphia and 21 percent were farmers, see Farley GRUBB, Immigrant Servant Labor: Their Occupational and Geographic Distribution in the Late Eighteenth-Century Mid-Atlantic Economy, in: Social Science History 9, Summer 1985, pp. 249-275.

18 See Book A of Redemptioners, 1785-1804, unpublished Manuscript held by the Pennsylvania Historical Society, Philadelphia. Contracts for adults typically lasted three years. By law, all servants received end-of-contract payments of two suits of clothes, one of which was to be new. Roughly 20 percent of the servants, however, explicitly contracted for the option of choosing to take the clothes or a specified sum of cash. The cash sums equaled about a month’s pay for an unskilled laborer. In addition, roughly 23 percent of the contracts included a supplemental end-of-contract cash payment added to these customary freedom dues. These immigrants were not ignorant peasants, but highly literate and skilled German workers who were engaging in sophisticated contracting. They negotiated prices for a myriad of contingency clauses and negotiated cash versus credit prices that accurately reflected default risks and the opportunity cost of capital. They were advised on local Pennsylvania conditions by the German Society of Pennsylvania – which also provided free language translation services. For an economic, legal, and documentary analysis of this market, see Farley GRUBB, The Auction of Redemptioner Servants, Philadelphia, 1771-1804: An Economic Analysis, in: Journal of Economic History 48, Sept. 1988, pp. 583-603; Farley GRUBB, German Immigrant Servant Contracts Registered at the Port of Philadelphia, 1817-1831, Baltimore: Genealogical Publishing, 1994; Farley GRUBB, The Disappearance of Organized Markets for European Immigrant Servants in the United States: Five Popular Explanations Reexamined, in: Social Science History 18, Spring 1994, pp. 1-30; Farley GRUBB, The End of European Immigrant
The records of these transactions report the choice of monetary units used in exchange, as opposed to monetary units used for accounting. The German Society of Pennsylvania had the transactions recorded as they transpired for the sole purpose of providing legal protection to all parties against fraud. Four examples follow:

**Johann Friederich Shetzig bound himself to the forgoing [Samuel Wallis of Muney Township Northumberland County State of Pennsylvania] to serve him four years to have [at end of his contract] customary freedom suits & fifteen Spanish dollars. Consideration [sale price]: 20.16.11 [Pennsylvania] pounds. (10 April 1788)**

**Caspar & Maria Catherine Souerland bound themselfs servants to Hierominus Warner Philadelphia brassfounder, to serve him two years & three months each, the husband to have thirty dollars the woman two guineas in lieu of their freedom suits. [Consideration:] 31.10.- [Pennsylvania] pounds. (18 March 1797)**

**John Valentine Unger bound himself servant to Peter Biessler of Leacock Township County of Lancaster farmer, to serve him three years, to have one shilling every week during his servitude & customary freedom suits and five dollars. Consideration: 20 guineas. (26 August 1800)**

**Joseph Obloue, bound himself servant to Samuel Huffsey, of Fairfield Township, Cumberland County, farmer, to serve him three years & six months, to have customary freedom suits, & five [Pennsylvania] pounds in money. Consideration: 70 dollars. (23 June 1804)**

Of the contracts that specified end-of-contract cash payments, 40 percent specified those payments in a different monetary unit than that specified for the beginning-of-contract sale price. This divergence would not occur if the recorder were employing a common monetary accounting unit.

The unique and attractive features of these data are also its drawbacks – meaning that nothing else comparable for other locations and markets is currently known that could be used to establish the representativeness of these data. Being part of the international sector, transactions in this market relative

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19 Book A of Redemptioners. By custom, unless otherwise explicitly indicated by the modifier “specie” or “sterling”, the symbol and designation for a “pound” referred to Pennsylvania pounds and not pounds sterling.
to those in a purely local market may have been bias against using Pennsylvania pounds, a non-convertible paper currency, compared with using U.S. specie dollars or bank notes that were convertible on demand into specie. Therefore, if this market were reluctant to shift from state currency to U.S. dollars, it would be strong evidence of a broader reluctance to shift.

The choice of monetary units for current transactions (the sale price) is shown in Figure 1. Before 1795 current transactions were almost exclusively denominated in Pennsylvania pounds. This finding indicates that the efforts in the mid-1780s by Robert Morris, through the BNA, to establish dollar-denominated bank notes as the chief circulating medium of exchange in the U.S. had little effect on current transactions in the marketplace. Morris, himself, remarked that his bank notes were “constantly returned upon me for payment [in specie] instead of being absorbed by the taxes” 20. This finding is also consistent with the observation that Morris had to press customers to accept bank notes instead of specie and with the BNA’s issuance in 1789 of bank notes in denominations of 1/90th of a dollar 21. This odd denomination only makes sense when it is noted that 1/90th of a dollar equals one pence in Pennsylvania pounds. Issuing bank notes in the denomination of Pennsylvania paper currency indicates that the BNA was struggling to get its bank notes to displace Pennsylvania pounds in the marketplace. This struggle will be used to explain why the Constitutional Convention strongly favored a constitutional ban on state-issued bills of credit.

20 See VER STEEG, Robert Morris, Revolutionary Financier, p. 119. In a letter to Morris, Alexander Hamilton remarked “Your Notes though in Credit with the Merchants by way of remittance do not enter far into ordinary circulation, and this principally on account of their size; which even makes them inconvenient for paying taxes”. See BOUTON, Tying Up the Revolution, p. 107.

21 See Thomas M. DOERFLINGER, A Vigorous Spirit of Enterprise, Chapel Hill, NC: Univ. of North Carolina Press 1986, pp. 302-304; LEWIS JR., A History of the Bank of North America, pp. 41-42; Eric P. NEWMAN, Franklin and the Bank of North America, in: Numismatist 69, Dec. 1956, pp. 1369-1370; RAPPAPORT, Stability and Change, p. 146; VER STEEG, Robert Morris, Revolutionary Financier, pp. 116-118. The reluctance to use BNA’s bank notes may have also been due to questions about the bank’s long-run viability. Europeans were refusing to invest in the bank’s stock, and Jeremiah Wadsworth of Connecticut, the single largest BNA stockholder, raised concerns, publicly, that the amount of loans given to bank directors to speculate in western lands threatened the solvency of the bank. See BOUTON, Tying Up the Revolution, pp. 295-301, 307. 
The transition from Pennsylvania pounds to U.S. dollars for current transactions began in 1795 and took several years to complete. The use of dollars climbed from 3 percent of current transactions in 1795 to 65 percent by 1798 and finally to 95 percent by 1802. The Pennsylvania pound ceased to be used in current transactions after 1798. While states could not constitutionally issue new bills of credit after 1787, old state bills could continue to circulate until that state redeemed them through taxation. The evidence here indicates that the retirement of the Pennsylvania pound did not effectively alter the marketplace in terms of a circulating medium of exchange until 1796. Foreign coins, almost exclusively gold guineas, while absent from current transactions prior to 1795,
rose to rival U.S. dollars in frequency of use in 1796-1797 and 1800. The increased use of foreign coins may have filled the gap between the retirement of the Pennsylvania pound and the availability of U.S. dollar-denominated bank notes and specie coinage. After 1801 the use of foreign coins fell to under 7 percent of current transactions.

The rapid disappearance of the Pennsylvania pound as a circulating medium of exchange after 1796 fits the issue-redemption pattern of state currencies in this period. In the early 1780s, states that issued bills of credit typically legislated specific taxes lasting 10 to 12 years that were calculated to raise enough to redeem that particular currency issue – the date of issue was typically printed on the money. These taxes could be paid in the state’s currency or in specie. The currency so redeemed would be burnt by the state. Acceptance of state-issued currency still outstanding after the tax period earmarked to redeem that currency was contingent on new authorization by the state legislature. If authorized, it would still be accepted by the state in payment for some taxes and then burnt. Given that the last issues of state currencies were in 1785-86, they would be expected to dominate the paper medium of exchange into the mid-1790s as long as the market preferred state currency to dollar-denominated bank notes. By 1797, however, the volume of state currency left unredeemed was too small, and its future redemption too uncertain, to allow it to dominate the medium of exchange.

Changes in the estimated volume of U.S. dollar-denominated specie and bank notes in circulation is also consistent with the mid-1790s being the pivotal period for the transition to dollars for current transactions. Between the periods 1792-95 and 1796-1800, dollar-denominated coinage issued by the U.S. Mint increased by over fourfold, and between 1790 and 1795 the number of banks and the amount of dollar-denominated bank notes in circulation increased sixfold. The result was over a two and one-half fold increase in the total volume of money in circulation per capita. Finally, an unprecedented eight-month peacetime break in the monthly price index constructed for Philadelphia between 1720 and 1861, with an unprecedented change in index value across this break, occurs between April 1794 and January of 1795. Given that newspaper prices for a given date were reported in a single currency, this break is consistent with

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22 See BEHRENS, Paper Money in Maryland, pp. 68-87; SYLLA, Long-Term Trends, pp. 843-844. The timing for the disappearance of the Pennsylvania pound is also consistent with the scarcity of paper money that led to the August 1794 Whiskey Rebellion in Western Pennsylvania. See BOUTON, Tying Up the Revolution, pp. 9, 20-21, 402-440.
the mid-1790s being the period of transition to the U.S. dollar for current transactions.$^{23}$

**Figure 2: Currencies Used in Forward Market Transactions (3-Year Forward Contracts), 1787-1804**

![Graph showing currencies used in forward market transactions.](image)


Compared with current transactions, the transition to U.S. dollars in forward transactions was neither as abrupt nor as complete, see Figure 2. The evidence also suggests that there was a high degree of uncertainty in the marketplace over the near-future availability and value of different mediums of exchange. While dollars were not used in current transactions before 1796, they accounted for 14 to 24 percent of forward transactions before 1794, rising to 35

percent between 1794 and 1797. By 1802, when dollars had risen to account for over 95 percent of current transactions, they still accounted only for 75 percent of forward transactions. Prior to 1795, the dominant currency in forward transactions was foreign specie, principally gold guineas and pound sterling. Even among dollar-denominated forward transactions, market participants were more likely to explicitly specify that these dollars be in specie, as opposed to bank notes. Pennsylvania pounds were of secondary importance in forward transactions, except during the transition years of 1794 through 1797 when their usage rivaled that of dollars and foreign coinage.

The evidence in Figures 1 and 2 indicates that prior to 1795 the BNA and FBUS, were unsuccessful at getting their bank notes to penetrate the market to any great extent as a medium of exchange either for current or forward transactions. For contemporaneous exchanges, market participants judged the Pennsylvania pound to be relatively superior in terms of expected very-near-term acceptability and stability of value. Uncertainty over the availability and acceptability of Pennsylvania pounds three-plus years into the future, given some uncertainty over the redemption time-path of the Pennsylvania pound post-1787, led market participants to turn to specie coinage, as opposed to dollar-denominated bank notes, as the superior medium for forward commitments. Market participants apparently had little faith, pre-1795, in the dollar monetary system being foisted on them by the federal government and its banks. Given that during the transition to the U.S. dollar the economy was flooded with dollar-denominated bank notes (over a six-fold increase between 1790 and 1795) and then experienced an unprecedented peacetime run-up in prices, the market resistance pre-1795 to using dollars in future commitments seems prescient. This market-revealed evidence indicates that the U.S.-dollar currency union was not readily embraced, welcomed, or supported by market participants. Private traders saw few benefits in this currency union and only grudgingly shifted to U.S. dollar-denominated transactions when a lack of alternatives was forced on them by the new Constitution. Given the limited amount of specie dollar coinage, the transition to the U.S. dollar could not have been accomplished without legally (constitutionally) eliminating rival non-dollar paper currencies and without flooding the economy with dollar-denominated paper money – bank notes. Understanding why the market expected few benefits from a U.S. dollar currency union requires assessing the performance of the next-best alternative to this union, that is the performance of the system of colony / state-issued paper currency, which is taken up next.

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24 See HEPBURN, A History of Currency, p. 87; figures 4 and 5 below.
Figure 3 presents monthly data on sterling exchange rates for colony/state-issued paper money from 1761 through 1790, and for the national government’s paper Continental dollar issued during the revolution. Figure 4 presents monthly data on commodity prices for Philadelphia, New York City, and Charleston, South Carolina, and Figure 5 presents yearly data on farm produce prices for rural Massachusetts, the York River Basin in Virginia, and the Western Shore of the Chesapeake in Maryland, from 1761 through 1811. While the sources do not identify the currencies used, the original evidence behind these indices confirms that shifts in currency usage occurred where unprecedented peacetime breaks were left in the indices with unprecedented peacetime shifts in index values. These breaks correspond with the currency regime shift found in Figure 1. These series represent the extent of our current knowledge on prices and exchange rates in these periods based on relatively consistent, continuous, and thick data. These six colonies/states represented two-thirds of the U.S. population and an even higher share of its wealth in this period, and the delegates from these states would be the ones to lead the charge to ban state-issued currency at the Constitutional Convention.

25 The Philadelphia index consists of 20 commodities, namely, beef, bread, corn, flour, molasses, pitch, pork, rum, salt, sugar, tar, wheat, cotton, gunpowder, indigo, rice, staves, tobacco, turpentine, and wine. The basic secular pattern in prices holds even when examining only domestically traded goods. Given the close attention paid to maintaining consistency in commodity measurements over time, this is probably the single best long-run price index. For the New York City and Charleston indices, the degree of consistency of commodities used over time is difficult to determine. See BEZANSON et al., Prices in Colonial Pennsylvania, pp. 292-304; COLE, Wholesale Commodity Prices, pp. 120-122, 135, 155-156.

26 BEZANSON et al., Prices in Colonial Pennsylvania, p. 2, kept prices in the prevailing currency, but did not report what currency was in use in the tabulated indices. The price indices were then spliced together across currency regimes by using the exchange rate at the point of currency transition. For the transition from Pennsylvania pounds to U.S. dollars in 1794-95, ibid., pp. 336, 340, used the official exchange rate of one dollar equaled 0.375 of a Pennsylvania pound which also equaled 0.22 of a pound sterling. See also Anne BEZANSON, Prices and Inflation During the American Revolution: Pennsylvania, 1770-1790, Philadelphia: Univ. of Pennsylvania Press, 1951, p. 11; MCCUSKER, Money and Exchange, p. 10. The same exchange rate is revealed in the market transactions in Figure 1 for the years 1794 through 1796. For otherwise identical contracts, those whose prices were denominated in Pennsylvania pounds versus U.S. dollars versus pounds sterling would be equivalently priced if the exchange rates listed above held.
Figure 3: The Value of a Unit of American Paper Currency: 1761-1790

Notes: For the Virginia, Maryland, Pennsylvania, and New York pound, and for the Continental dollar, the original data are reported monthly. In place of missing monthly data, which are a rare occurrence, linear interpolations are used. For display purposes, these series are presented as centered four-month moving averages. The small dotted line spans the period during which no observations of Pennsylvania pounds are reported, which is also the period spanned by the American Revolutionary War. For the South Carolina and Massachusetts pound, monthly exchange rates are so intermittent that only yearly averages are considered reliable and reported here. Because Massachusetts stopped issuing paper money after 1750, the Massachusetts pound exchange rate is the unit-of-account legal rate of pounds sterling to the Massachusetts pound. For all series expressed in pounds, the specie per-denomination-unit par reference is pounds sterling. The original sources report this data as the number of pounds of each respective currency needed to purchase 100 pounds sterling. After dividing these numbers by 100, the inverse yields the value of a unit of paper currency per the same unit of pound sterling specie. For the Continental dollar, the specie per-denomination-unit par reference is the Spanish dollar, which the original source expresses in terms of the number of Continental dollars needed to purchase a Spanish dollar. The inverse of these numbers yields the value of this paper money per the same unit of Spanish dollar specie.

Data Sources: BEZANSON, Prices and Inflation During the American Revolution, pp. 65, 346; MCCUSKER, Money and Exchange, pp. 142, 165, 185-186, 199, 211-212, 224.
Figure 4: Price Indices for Philadelphia, New York City, and Charleston SC, 1761-1811

Notes: The original data are reported monthly. For display purposes all series are presented as centered six-month moving averages. The dashed line spans the American Revolutionary War when observations of prices are scanty. The only peacetime breaks in the series occur in late 1794 for the Philadelphia series, in 1792 and late 1796 through early 1797 for the New York series, and between 1791 and 1796 for the Charleston series. The Philadelphia series is a 20-commodity unweighted geometric wholesale price index. The New York City series is produced by splicing together a 15-commodity arithmetic wholesale price index using variable group weights for 1761 through 1786, a 71-commodity arithmetic wholesale price index using variable group weights for 1787 through 1796, and an “all”-commodity arithmetic wholesale price index using variable group weights for 1797 through 1811. The base year for the New York City series is standardized following the procedure in COLE, Wholesale Commodity Prices, p. 122. The Charleston series is a weighted “all”-commodity arithmetic wholesale price index.

Data Sources: BEZANSON et al., Prices in Colonial Pennsylvania, p. 388; COLE, Wholesale Commodity Prices, pp. 120-122, 135, 155-156.
Figure 5: Farm Price Indices for York River Basin, Virginia; Western Chesapeake Shore, Maryland; and Rural Massachusetts, 1761-1811

Notes: The original data are reported annually. The Massachusetts series is an “on-the-farm” agricultural arithmetic commodity index weighted by the share of each commodity in total receipts for the year 1800. The Virginia and Maryland series are unweighted geometric indices combining corn, wheat, and tobacco prices. The sources do not identify the currencies used. The currency regime breaks are taken from Figures 1 and 4.

Data Sources: Winifred B. ROTHENBERG, A Price Index for Rural Massachusetts, 1750-1855, in: Journal of Economic History 39, Dec. 1979, pp. 983-984. The Maryland and Virginia indices are constructed by the author from original raw price data provided by Lorena Walsh (personal communication).

Figure 3 shows that from 1761 to 1775 (1766 to 1775 for Virginia), the exchange rates for colonial paper currencies were remarkably stable, possessed little or no trend, and showed no signs of inflationary crisis. It also shows that from 1784 to 1790, the exchange rate for the Pennsylvania state pound was also remarkably stable, possessed little or no trend, and showed no signs of infla-
tionary crisis. By contrast, during the revolution, the national government’s paper Continental dollar collapsed rapidly in value and never recovered. Figures 4 and 5 show that prices in colonial/state currencies, both before and after the revolution, were remarkably stable and, while experiencing some positive trend, showed no signs of inflationary crisis relative to prices in Continental dollars during the revolution or to prices after the transition to the U.S. dollar. In fact, the transition to the U.S. dollar was accompanied by the largest inflationary jump ever experienced in peacetime between 1720 and 1860 (based on the Philadelphia price index) dwarfed only by the wartime inflations of the Continental dollar during the revolution and of the U.S. dollar during the War of 1812. Finally, while prices immediately after the revolution were higher than in the early 1770s, with the highest being in South Carolina and Virginia where the war had been concentrated at its end, they were rapidly returning to early 1770s levels. This evidence indicates that colony/state paper currencies were relatively well managed during peacetime, and that the market’s preference for state currency post-revolution was prudent given the recent experience with the national government’s paper Continental dollar.

Table 1 analyzes the colonial data in Figures 3, 4, and 5 in more detail by testing for stationarity in the price and exchange rate series and, in combination with English price data, by testing for stationarity in the yearly deviations from purchasing power parity (PPP). For testing purposes yearly data are used, and the data are extended back to the end of King George’s War (1748) for New York, Pennsylvania, and South Carolina, and as far back as these data are available for the other three colonies. The end of King George’s War is an appropriate point from which to start the statistical analysis not only because data are fewer and less reliable before 1748, but because 1748 is arguably a turning point in colonial monetary behavior. The wartime inflation immediately prior to 1748 caused Massachusetts to go off paper money shortly after 1748 and led the British Parliament to pass the Currency Act of 1751 regulating paper money in the New England colonies. While Augmented Dickey-Fuller tests are not always reliable with short spans of data, they are useful confirmation of the visual impressions given in the figures.

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27 See BEZANSON et al., Prices in Colonial Pennsylvania, pp. 388-391; BEZANSON, Prices and Inflation During the American Revolution, p. 344.
Table 1: Tests for Stationarity of Prices, Exchange Rates, and Purchasing Power Parity, 1748-1775

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Regression: \[
\ln(y_t) - \ln(y_{t-1}) = a_0 + a_1 \ln(y_{t-1}) + a_2 \text{time} + a_3 D + k \text{ lags of the dependent variable} + e_t.
\]

Notes: Data are yearly. time runs from 0 though n for each sample, respectively. Exchange rates are colonial pounds per 100 pounds sterling. D is a structural break dummy variable coded as one for Massachusetts and Virginia for the years 1769-1775 and 1766-1775, respectively, and zero otherwise. F-test is the relevant Dickey-Fuller F-test. y for PPP (purchasing power parity) equals \[(\text{England's Price Index} \times \text{Exchange Rate}) / \text{Colony's Price Index}\] for each colony, respectively. k was increased until a unit root could be rejected or, if a unit root could not be rejected, until k > n was statistically insignificant at the 0.1 level. For the Virginia and Maryland Price Indices and the Massachusetts and Maryland Exchange Rates, while time is statistically insignificant at the 0.1 level, if it is retained in these regressions stationarity is rejected.

Data Sources: BEZANSON et al., Prices in Colonial Pennsylvania, pp. 425, 433; COLE,
Table 1 shows that between 1748 and 1775 prices, exchange rates, and PPP for all six colonies are stationary (above the 0.1 significance level using Dickey-Fuller critical values). In other words, they exhibit post-shock mean reversion. Stationarity is probably the best that could be expected of a well-managed paper-currency regime in this world. In addition, exchange rates in all six colonies exhibit no trend. While prices have a positive trend (excepting Maryland and Virginia that have no trend), these trends are less than that exhibited by English prices. The immediate aftermath of the Seven Year’s War and the passage of the Currency Act of 1764, caused only Virginia to experience a structural break in its exchange rate series. Virginia was the primary cause for the passage of the Currency Act of 1764 and was more at odds with this Act’s requirements than were the other colonies. Massachusetts (a non-paper money colony) also exhibits a structural break around 1769 in its exchange rate series, most likely related to escalating political turmoil in that colony – the Boston Massacre would occur early in 1770. The performance of the colonies issuing paper money is not readily distinguishable from the performance of those on hard currency, namely Massachusetts and England. In fact, it may have been better given that the coefficients on the ln(yt-1)s for the colonies on paper money are between -0.45 and -0.84, whereas they are between –0.87 and –1.1 for those on hard currency. As such, the use of an “inside” paper money not
tied directly to specie may have helped temper the sharpness of the impact of real trade shocks relative to those on hard currency only.

Given stationarity, why not just adopt one common currency? The answer appears to lie in individual colonies/states retaining the flexibility to engage in unilateral short-run monetary action when emergencies demanded such action. For example, during the Seven Year’s War and during the revolution individual colonies charted a far more independent course with regard to their currencies than they did during peacetime. In addition, the fluctuations in monthly exchange rates from 1761 through 1775 are not perfectly correlated. The correlations between monthly \( \ln(\text{Exchange Rate}_t) \)s range from a high of 0.88 for New York versus Pennsylvania to a low of 0.49 for Maryland versus Virginia, and between monthly \( \ln(\text{Exchange Rate}_t) - \ln(\text{Exchange Rate}_{t-1}) \)s range from a high of 0.31 for New York versus Maryland to a low of 0.03 for New York versus Virginia.

The evidence presented here indicates that in the quarter century prior to the revolution colonial paper money performed remarkably well. The chief advocates of banning state-issued paper money at the Constitutional Convention – Robert Morris, Benjamin Franklin, and James Wilson – had not only lived through this era, but had lived under the best of these paper money regimes, namely the Pennsylvania pound, and had commercially prospered under it. Why they advocated banning state-issued paper money and why Convention delegates came to regard paper money as “the mark of the Beast in Revelation” cannot be traced to their experiences with colonial paper money.  

Table 2 analyzes the data in Figures 3, 4, and 5 from the Treaty of Paris (1784) to the War of 1812 in more detail by testing for stationarity in the price and exchange rate series and, in combination with English price data, by testing for stationarity in the yearly deviations from purchasing power parity (PPP). The data “span” for the period of state-issued currency, 1784-1794, including years where data are missing, is too short for testing purposes. Thus, tests are performed on the entire data sample, 1784-1811, with a structural break for each state positioned at the point of transition from state currency to the U.S. dollar. For comparison purposes, tests are also reported on the sub-sample of years, 1796-1811, covering the U.S. dollar regime. Again, while Augmented

29 See FARRAND, The Records, vol. 2, p. 310. LESTER, Currency Issues to Overcome Depression in Pennsylvania, p. 375, found that there seems to have been general agreement among contemporary writers that currency issues and the paper standard were managed very successfully in colonial Pennsylvania for over half a century after 1723. See also BEHRENS, Paper Money in Maryland, p. 58; BOUTON, Tying Up the Revolution, p. 333; FERGUSON, The Power of the Purse, p. 244.
Dickey-Fuller tests are not always reliable with short spans of data, they are useful confirmation of the visual impressions given in the figures.

With few exceptions, Table 2 shows that between 1784 and 1812 prices, exchange rates, and PPP for all six states are stationary (above the 0.1 significance level using Dickey-Fuller critical values). In other words, they exhibit post-shock mean reversion. The exceptions include rejection of stationarity in South Carolina for PPP post-1795 and failure to reject the presence of a drift factor in some of the PPP series. The fact that PPP holds relatively strongly before the transition and that the direction of price trends differs across states after the transition to the U.S. dollar undercuts the argument that the switch to the U.S. dollar was about decreasing transactions costs. Of greater interest is the fact that most of the coefficients on the ln(y_{t-1})s in Table 2 are less than -1.0. This finding indicates that substantial oscillatory overshooting or excess volatility in the post-shock mean reversion process was present and widespread. Because the coefficient on ln(y_{t-1}) for English prices is greater than -1.0, the oscillatory volatility in America is not a direct outcome of English price behavior. This increased volatility in U.S. prices is illustrated more simply in Table 3 that examines the year-to-year deviations in the price indices. With only 3 exceptions out of 12 comparisons, the standard deviation of the yearly change in prices in all six American locations is significantly greater for prices in U.S. dollars between 1797 and 1811 than for prices in either of the two periods prior to the transition to the U.S. dollar. Finally, the dramatic jump in prices during the transition to the U.S. dollar – illustrated in Figures 4 and 5 – is not a direct outcome of the behavior of English prices. Tests on English prices in Table 2 reject the presence of a structural break prior to 1799, whereas the transition to the U.S. dollar, with its associated jump in prices, occurs three or more years prior to 1799.

Nor were the short-run movements in American prices simply reflecting that of British prices – America’s primary trading partner. For example, the correlation coefficients between British and American prices for the period 1760 through 1775 range from a high of 0.69 for British to Charleston prices to a low of 0.19 for British to New York prices. For the period 1784 through 1793, they range from a high of 0.56 for British to Massachusetts prices to a low of -0.20 for British to Virginia prices. And for the period from 1797 through 1811, they range from a high of 0.59 for British to Massachusetts prices to a low of -0.40 for British to Charleston prices.
Table 2: Tests for Stationarity of Prices, Exchange Rates, and Purchasing Power Parity, 1784-1811

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<th>State / Period / Series</th>
<th>k</th>
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<th>(a_1)</th>
<th>(a_2)</th>
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<tr>
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<tr>
<td>With (D = 1793-1811)</td>
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<td>-1.211</td>
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<tr>
<td>Price Index 1784-1811</td>
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<tr>
<td>With (D = 1795-1811)</td>
<td>1</td>
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<td>-3.69</td>
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<td>3.75</td>
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<td>Price Index 1784-1811</td>
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<tr>
<td>With (D = 1796-1811)</td>
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<tr>
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<td>Price Index 1784-1811</td>
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<tr>
<td>With (D = 1796-1811)</td>
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<td>8.903</td>
<td>-1.786</td>
<td>-3.53</td>
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<td>PPP 1796-1811</td>
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<td>2.976</td>
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<tr>
<td>1796-1811</td>
<td>3</td>
<td>8.737</td>
<td>-1.410</td>
<td>-4.54</td>
<td>-0.001</td>
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<td>England</td>
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<td>Price Index 1784-1811</td>
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<tr>
<td>With (D = 1799-1811)</td>
<td>1</td>
<td>3.461</td>
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<td>-4.43</td>
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<td>4.115</td>
<td>-0.870</td>
<td>-5.38</td>
<td>0.005</td>
<td>3.22</td>
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Regression: \([\ln(y_t) - \ln(y_{t-1})] = a_0 + a_1\ln(y_{t-1}) + a_2\text{time} + a_3D + k\text{ lags of the dependent variable} + e_t\)

Notes: Data are yearly. Price data are missing for South Carolina during 1792-1795 and for New York during 1784 and 1792. State currency exchange rate data are missing except for the Pennsylvania pound during 1784-1790. The exchange rate before 1791 is the number of Pennsylvania pounds needed to purchase 100 pounds sterling. U.S. dollar exchange rate data...
are available only after 1795 and are the number of U.S. dollars needed to purchase 100 pounds sterling. This rate is derived by applying the Baltimore-White paper currency market adjustments to the true mint parity in OFFICER, Between the Dollar-Sterling Gold Points, pp. 51-57, 80-84. If the U.S. exchange rate is taken to be either the legal or true mint parity rate unadjusted for paper currency discounts, then PPP fails to be stationary. \textit{time} runs from 0 though \textit{n} for each sample, respectively. \(D\) is a structural break dummy variable coded as one for the years indicated and zero otherwise. \textit{F-test} is the relevant Dickey-Fuller \textit{F-test}. \(y\) for PPP equals \((\text{England's Price Index} \times \text{Exchange Rate})/\text{State's Price Index}\) for each state, respectively. \(k\) was increased until a unit root could be rejected or, if a unit root could not be rejected, until \(k > n\) was statistically insignificant at the 0.1 level. For the Virginia Price Index 1796-1811, while \textit{time} is statistically insignificant at the 0.1 level, if it is retained in the regression stationarity is rejected.

\textit{Data Sources:} BEZANSON et al., Prices in Colonial Pennsylvania, p. 388; BEZANSON, Prices and Inflation During the American Revolution, p. 346; COLE, Wholesale Commodity Prices, pp. 121-122, 135, 156; OFFICER, Between the Dollar-Sterling Gold Points, pp. 54, 82-84; ROTHENBERG, A Price Index for Rural Massachusetts, pp. 983-984; SCHUMPETER, English Prices, p. 35. See Figure 5 for the source of the Virginia and Maryland Price Indices.

While real shocks to the American economy could have been greater during 1797-1811 than during either 1750-1775 or 1784-1793, this possibility seems unlikely. The long list of crises between 1750 and 1775 and between 1784 and 1793, e.g., the aftermath of King George’s War, the Seven Year’s War, the Stamp Act, the Townsend Duties, the 1768-1769 import boycotts, the Boston Massacre, the financial panic of 1772, the closing of Boston harbor, the weather impact caused by the 1783 Laki Fissure volcanic eruption, Shay’s Rebellion, the Whiskey Rebellion, and so forth, makes the period from 1797 through 1811, even considering the 1807 embargo, look comparatively quiet.

The exchange rate, price, and PPP evidence indicates that colony/state-issued paper currencies were relatively well managed during peacetime. The Constitution’s ban on state-issued paper money and subsequent transition to the U.S. dollar circa 1795 produced a marked deterioration in monetary performance – an initial inflationary spike and an increased oscillatory volatility in nominal values. As such, the market’s preference for state-issued paper currencies post-revolution was prudent given the recent experience with the Continental dollar, and prescient given the inflationary spike and volatility of prices accompanying the forced switch to U.S. dollars.
<table>
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<tr>
<th>Colony / State</th>
<th>Colonial Currency 1750-1775</th>
<th></th>
<th></th>
<th>State Currency 1785-1792</th>
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<td></td>
<td>STD</td>
<td>SE of STD</td>
<td>STD</td>
<td>SE of STD</td>
<td>STD</td>
<td>SE of STD</td>
<td>STD</td>
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<tr>
<td>Massachusetts\textsuperscript{a}</td>
<td>0.1584</td>
<td>0.0363</td>
<td>0.0791</td>
<td>0.0147</td>
<td>0.0956</td>
<td>0.0184</td>
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<td>New York City, NY\textsuperscript{b}</td>
<td>0.0643</td>
<td>0.0080</td>
<td>0.0511</td>
<td>0.0095</td>
<td>0.0933</td>
<td>0.0145</td>
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<td>Philadelphia, PA</td>
<td>0.0417</td>
<td>0.0065</td>
<td>0.0758\textsuperscript{a}</td>
<td>0.0176</td>
<td>0.0801\textsuperscript{a}</td>
<td>0.0099</td>
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<td>Western Shore Chesapeake, MD\textsuperscript{c}</td>
<td>0.0609</td>
<td>0.0171</td>
<td>0.0461</td>
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<td>0.1369</td>
<td>0.0227</td>
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<tr>
<td>York River Basin, VA\textsuperscript{d}</td>
<td>0.0663</td>
<td>0.0117</td>
<td>0.1104</td>
<td>0.0185</td>
<td>0.1893</td>
<td>0.0404</td>
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<td>Charleston, SC\textsuperscript{e}</td>
<td>0.1420</td>
<td>0.0151</td>
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<td>0.0166</td>
<td>0.1151</td>
<td>0.0174</td>
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</tbody>
</table>

\textsuperscript{a} Not statistically different from one another above the 0.1 significance level.
\textsuperscript{b} For the Colonial Currency period, only data for 1751-1775 are available.
\textsuperscript{c} For the Colonial Currency period, comparable data are only available for 1771-1775. See Figure 5.
\textsuperscript{d} For the Colonial Currency period, only data for 1756-1775 are available. See text for discussion.
\textsuperscript{e} For the State Currency period, only data for 1785-1791 are available.

Notes: STD = standard deviations of $\ln(\text{Price Index}_n) - \ln(\text{Price Index}_{n-1})$. SE = standard errors of the STDs and are derived from the variances around the STDs generated by bootstrap resampling techniques. With the one exception noted above, per row any two STDs are statistically different from one another above the 0.1 significance level. Currency divisions are taken from Figures 1, 4, and 5. Because of uncertainty over what currency dominated transaction usage in the market (as opposed to newspaper usage) in each index between 1793 and 1796, and to avoid biasing the estimates by erroneously including in the volatility measure the large price-index jump that occur during the transition to the U.S. dollar, state currency measures were only carried through 1792, and U.S. dollar measures were taken to begin in 1797.

Data Sources: See the notes to Tables 1 and 2 and Figures 4 and 5.
Performance under the U.S. dollar regime deteriorated because the shift to the U.S. dollar was also a shift to a monetary system of bank notes supported by fractional (specie) reserves in an unregulated environment. The U.S. Constitution caused governments at all levels to surrender paper-money-making power to private bankers. Given the unregulated specie-reserve to bank-note-loan ratio and the inability to sterilize gold inflows, the U.S. dollar regime amplified the effect that specie-flow shocks, caused by the Napoleonic wars and Britain moving off the gold standard after 1797, had on U.S. nominal values. President John Adams noted this in 1799 when he wrote, “the fluctuations of our circulating medium have committed greater depredations upon the property of honest men than all the French piracies”. By contrast, the prior system of colony/state paper currencies had dampened such shocks.

Rhetoric Versus Reality at the Constitutional Convention

In light of the evidence presented above, the frequency and stridency of the anti-state-currency rhetoric at the Constitutional Convention can only be viewed as surprising. On issues having little to do with paper money, speakers would find some off-hand way to insinuate that states managed their paper currencies irresponsibly. State-issued paper currency became a rhetorical code.

32 See HAMMOND, Banks and Politics, p. 36. LESTER, Currency Issues, p. 373, concluded that the price level in Pennsylvania was more stable during the fifty years following the first Colonial currency issue in 1723 than the American price level has been during any succeeding fifty-year period.
33 In support of the proposition that an executive veto not be too easily overridden, Madison recorded that Gouverneur Morris dwelt on the importance of public credit: “He recited the history of paper emissions, and the perseverance of the legislative assemblies in repeating them, with all the distressing effects”. On the proposition that the federal government not be allowed to interfere with the government of the individual states in any matters of internal police where the welfare of the United States was not concerned, Madison recorded, “Mr. Gouverneur Morris opposed it. The internal police, as it would be called & understood by the States ought to be infringed in many cases, as in the case of paper money & other tricks by which the Citizens of others States may be affected”. For these
phrase for evil. Scholars have frequently accepted this Convention rhetoric as an accurate reflection of economic facts. For example, the Convention rhetoric has led scholars to hypothesize that delegates who were debtors should have opposed the Constitutional ban on state-issued paper money because inflationary issues of state monies could have relieved their financial situation. In a statistical analysis of delegate votes on this issue, however, Robert A. McGuire and Robert L. Ohsfeldt found, to their surprise, that debtors were largely indifferent to such a ban. By contrast, the evidence here indicates that debtor-

34 Throughout the Convention and the ratification debates, and in most historiography up to the present day, Rhode Island was frequently held up as the archetype example of irresponsible state government regarding paper money. However, it should be noted that Rhode Island was the only state not represented at the Constitutional Convention, had initially voted not to ratify the new Constitution, and prior to the Constitutional Convention was the only holdout from approving the Continental Impost, which required a unanimous vote, and so helped to destroy the Articles of Confederation. As such, much of the whipping-boy rhetoric pointed at Rhode Island was political retribution. Robert Morris even stated that Rhode Island would one day regret her breach of our union, see VER STEEG, Robert Morris, Revolutionary Financier, p.186. Rhode Island issued paper money in 1786, which, until 1789, was made legal tender for both private and public debts. This paper money was to be used to retire the state’s wartime debts by requiring holders of the state’s revolution-era securities to swap them at face value for these newly issued bills of credit. By August 1787, Rhode Island’s paper money was trading relative to face value at 7 to 1. As such, Rhode Island was accused of defrauding creditors. BISHOP, Why Rhode Island, however, shows that the legal tender clause was seldom enforced, and that little fraud occurred. The post-1786 harsh Federalist rhetoric against Rhode Island came from wealthy merchants who had acquired Rhode Island’s wartime securities in the market at 8 to 1, and who had hoped, through their control of Rhode Island’s legislature, to get the state to increase taxes thereby enabling the state to redeem the securities at 1 to 1. Electoral defeat in 1786 and the subsequent adoption of the paper money policy thwarted their plan of speculative enrichment. While these merchants lost the opportunity to reap speculative profits through the forced swap of wartime securities purchased at 8 to 1 for paper money that traded at 7 to 1, they suffered no accounting loss. See also FERGUSON, The Power of the Purse, pp. 243-247; PERKINS, American Public Finance and Financial Services, pp. 154-157, 173-186; VER STEEG, Robert Morris, Revolutionary Financier, pp. 129-131.

indifference is no surprise. Debtors had nothing to gain from state-issued paper currencies because states managed their currencies responsibly.

What has escaped attention is that it was not until near the end of the constitution-revision process that any proposal to ban state-issued paper money appeared. The Articles of Confederation were silent on state-issued paper money. In the numerous amendments to the Articles proposed between 1781 and 1786, state-issued paper money was never mentioned. In the report of the 1786 Annapolis Convention, the precursor to the Constitutional Convention, state-issued paper money was never mentioned. In the many plans proposed at the Constitutional Convention from its beginning in May through early August, e.g., the Virginia Plan, the Pinckney plan, the New Jersey plan, the Alexander Hamilton plan, and so on, state-issued paper money was never mentioned. On July 26th the Convention delegates turned all these various plans over to a Committee on Detail to craft a draft constitution. The Committee consisted of John Rutledge of South Carolina, Edmund Randolph of Virginia, James Wilson of Pennsylvania, Oliver Ellsworth of Connecticut, and Nathaniel Gorham of Massachusetts. Buried in the back of the Committee’s last draft, in James Wilson’s handwriting, appears for the first time a clause banning state-issued paper money. This was the same James Wilson who, at Pennsylvania’s ratifying convention, would say, “If only the following lines … [banning state-issued paper money] … were … in this Constitution, I think it would be worth our adoption”. This draft was typeset and submitted to the Convention on 9 August and from then until the Convention ended on 17 September the Pennsylvania delegation blocked all efforts to temper or remove this clause. The Committee on Style packaged the ban on state-issued paper money with the other clauses restricting state sovereignty and moved it to its present position toward the front of the Constitution.


36 This is the same James Wilson who within the decade would default on hundreds of thousands of dollars of loans, would be arrested twice, would flee and, in his own words, would be hunted like a wild beast. See M. E. BRADFORD, Founding Fathers: Brief Lives of the Framers of the United States, Lawrence, KS: Univ. Press of Kansas, Second Edn., 1994, p. 93.

What was the real purpose of Wilson’s ban on state-issued paper money, and of the barrage of anti-state-currency rhetoric presented at the Constitutional Convention by the Pennsylvania delegation? The story begins in 1785, when the Pennsylvania legislature was considering a new issue of Pennsylvania pounds. This new issue was to help ameliorate the sharp deflation produced by the rapid retirement of wartime bills of credit, see Figure 4. Robert Morris and James Wilson, board members of the BNA, vehemently opposed the new issue. As was argued above, Morris could not get his BNA bank notes into wide circulation given the market’s preference for state-issued paper currency. Coincident with this new issue of Pennsylvania pounds, the six-month dividend declared on the BNA’s stock collapsed from 9.5 percent in mid-1784 to 3 percent by mid-1785, where it stayed until 1791, see Figure 6. Not until Pennsylvania pounds had disappeared from circulation did it recover to a steady return of 6 percent. Morris clearly associated competition from Pennsylvania’s state currency with the initial dividend collapse in the bank’s stock value, and associated the removal of this competition with the subsequent revival of the value of BNA’s stock. Figure 6 indicates that other possible events cannot explain the timing of these changes in BNA’s stock value.

Robert Morris and other bankers in this period did not fully understand how fractional reserve banking worked. Thomas Willing, the president of the BNA and subsequently the first president of the FBUS, explained to some would-be Massachusetts bankers in 1784 that “the business was as much a novelty to us … as it can possibly be to you. It was a pathless wilderness, ground but little known to this side the Atlantick. No book then spoke of the interior arrangement or rules observed in Europe … All was to us a mystery.” The BNA was run like a private club. Of its non-government loans, over 70 percent went to Philadelphia merchants, and over 50 percent went to the bank’s

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39 That Morris was concerned about BNA’s stock value can be seen in his initial promise that few will find Other parts of their Fortunes to Yield them so large or certain an income as the Stock they have in the Bank. See BOUTON, Tying Up the Revolution, p. 92.
own shareholders. James Wilson borrowed over $100,000, well in excess of his assets, and the bank repeatedly extended the loan when he could not repay on schedule. To the Pennsylvania legislature, Morris admitted that the “circulation and amount of bank paper is little understood.” Bankers also believed they needed, and fought for, monopoly position in the market through aggressive efforts to eliminate competitors.

In retaliation for Robert Morris’ political meddling in the state-currency issue the Pennsylvania legislature revoked the BNA’s state charter. From mid-1785 to March 1787, when the state legislature reinstated the bank’s charter, the BNA fought for its charter. Over this period, the level of rhetoric, verbosity, and factional polarization escalated. The bank worked to acquire supporters, some newly elected to the state legislature, such as George Clymer, Robert Morris, Thomas Mifflin, and Benjamin Franklin (all BNA stock holders). In addition, the BNA provided Franklin with a loan for the express purpose of his purchase of BNA stock and made Franklin’s son-in-law a director of the bank. The bank also worked to gain popular support. It was strongly defended in the Pennsylvania Gazette, Franklin’s newspaper, and by pamphleteer Thomas Paine, who had switched sides, some say for pay, from opposing to supporting the bank.

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40 See DOERFLINGER, A Vigorous Spirit, pp. 304-305; HAMMOND, Banks and Politics, p. 66; RAPPAPORT, Stability and Change, pp. 146, 201, 233-236. BRADBURY, Legal Privilege, p. 155, concluded that Morris and his small circle of Philadelphia speculators largely ran the bank to suit themselves. See also BOUTON, Tying Up the Revolution, pp. 196, 201; VER STEEG, Robert Morris, Revolutionary Financier, pp. 85, 196; fn. 21.


42 See BOUTON, Tying Up the Revolution, pp. 184-188; BRADBURY, Legal Privilege; NEWMAN, Franklin; RAPPAPORT, Stability and Change, pp. 159-221; WILSON, The Bank of North America.
Figure 6: Bi-Yearly Dividend Return on Bank of North America Stock, 1782-1802

Notes: For 1782 and 1792-1802, only the yearly return is known. For these years, the bi-yearly return is taken to be half the yearly return.


To win broad support, the bank’s advocates could not boldly say they opposed state-issued paper currency because the bank could not successfully compete against state currency in the marketplace. Instead, they had to argue that as a general proposition all state currency was inherently unsound, fraudulent, and prone to bouts of wild inflation, a position which they knew to be untrue. For example, Morris had spoken approvingly, as late as 1781, and Franklin had been a long-time advocate and defender of colony/state paper money. Only with their investment in the BNA, and the failure of BNA bank notes to displace state currency in the marketplace, did they change their tune. When
state legislator William Findley pointed out that he had observed no deprecia-
tion in the state’s new 1785 issue of paper currency, that it enjoyed rapid circu-
lation, and that everyone was willing to accept it, Morris rejoined that rapid cir-
culation was an infallible sign of a lack of confidence 43.

Two months after the BNA had regained its Pennsylvania state charter, the
Constitutional Convention convened in Philadelphia. Pennsylvania sent the
single largest delegation, and it was stacked with supporters of the BNA fresh
from their battle with the Pennsylvania state legislature 44. Of Pennsylvania’s
eight delegates, seven were stockholders in the BNA, George Clymer, Thomas
FitzSimons, Benjamin Franklin, Thomas Mifflin, Gouverneur Morris, Robert
Morris, and James Wilson. The same seven had been vocal supporters of the
bank in the Pennsylvania legislature. Robert Morris, FitzSimons, and Wilson
were also board members of the bank. Gouverneur Morris, who hailed from
New York, was added to the Pennsylvania delegation at the behest of Robert
Morris. Gouverneur Morris was Robert Morris’ assistant on banking matters.
Considering the frequency and single-note refrain of Gouverneur Morris’
speeches at the Convention, it is hard not to consider him Robert Morris’ attack
dog on the issue of paper money. Finally, the eighth delegate, Jared Ingersoll,

43 See Richard T. HOOBER, Franklin’s Influence on Colonial and Continental Paper Money,
in: Numismatist 69, Dec. 1956, pp. 1357-1362; VER STEEG, Robert Morris,
Revolutionary Financier, pp. 39, 63, 91. Robert Morris said that paper money was being
pushed from hand to hand, like the lighted stick in the play of ‘Jack’s alive, and alive like
to be,’ each holder fearing that it should die in his hands. See WILSON, The Bank
of North America, p. 20. BRADBURY, Legal Privilege, p. 156, concluded that in the
struggle to recover their charter Morris and his followers obscured the pursuit of their
economic self-interest. Supporters of the bank also boldly asserted that bank notes would
absolutely always be redeemed in specie, see EICHOLZ, The Bank of North America, pp.
98-99, 104-107; VER STEEG, Robert Morris, Revolutionary Financier, pp. 66-69.

44 Similar events occurred in Maryland. In 1782 James McHenry introduced a bill in the
Maryland Senate to establish a bank. The Senate passed the bill, but the Maryland House
of Delegates rejected the bill. The same effort was tried again in 1784 with the same
result. In 1785, the House of Delegates proposed that the state issue a new emission of
paper money. The Senate blocked this proposal. This stalemate continued through 1787.
Interestingly, one of the leaders of Maryland’s delegation to the Constitutional Convention
was James McHenry, the leading advocate for the blocked banking bill. This was the same
James McHenry who argued the pro-Constitution case before the Maryland ratifying
convention. Finally, members of the Maryland Senate also worked to prevent the election
of anti-bank/pro-state-paper-money delegates to the state’s ratifying convention. See
BEHRENS, Paper Money in Maryland, pp. 79-87; BRADFORD, Founding Fathers, pp.
117-118; Alfred Cookman BRYAN, History of State Banking in Maryland, in: Johns
Hopkins University Studies in Historical and Political Science 17, nos. 1-3, 1899, pp. 17-
19.
while not directly connected with the BNA, had been involved in proposing a bank. The Pennsylvania delegation was the most vocal at the Convention, with Gouverneur Morris and Wilson being the two most frequent speakers. The single-minded intention of the Pennsylvania delegation is illustrated by Wilson’s post-Convention comment that “If only the following lines ... [banning state-issued paper money] ... were ... in this Constitution, I think it would be worth our adoption”. Until the Constitutional Convention, none of these individuals had participated in the constitution-revision process. For example, Pennsylvania’s delegation to the 1786 Annapolis Convention consisted only of Tench Coxe.

The same strident, and relatively vacuous, rhetoric used by this group just months earlier in the fight to save the BNA’s state charter was transferred to the Constitutional Convention. The Pennsylvania delegation was joined by several anti-state-paper-money delegates from other states, such as Alexander Hamilton from New York, Gunning Bedford from Delaware, and Elbridge Gerry from Massachusetts. Hamilton and Bedford had stockholder connections to the BNA. Hamilton had previously proposed banking schemes, had corresponded with Robert Morris on banking issues, and would implement Robert Morris’ financial blueprint with the FBUS in 1791. Gerry opposed state-issued paper money because he held large quantities of old Continental bills of credit and feared their non-redemption if the national government lost money-making power to the states.

The arguments presented at the Convention against state currency are surprisingly empty of reasoning. No statements, let alone analysis, about banks, bank notes, seigniorage, transactions costs, cross-state exchange rate costs, etc. were offered. Only simplistic, emphatic, and absolute statements were made asserting that state currency was inherently fraudulent and evil. George Read


from Delaware stated that to allow the government to emit bills of credit was “as alarming as the mark of the Beast in Revelations.” Oliver Ellsworth “thought this a favorable moment to shut and bar the door against paper money. The mischiefs of the various experiments which had been made [the revolutionary wartime inflations], were now fresh in the public mind and had excited the disgust of all the respectable part of America.” Roger Sherman from Connecticut also “thought this a favorable crisis for crushing paper money.” John Langdon from New Hampshire would “rather reject the whole plan [of government] than allow the government to emit bills of credit.” Hamilton explained in the ratification debate that he thought states should be prohibited from issuing bills of credit because such a power was “incompatible … with the principles of good government,” and not because such a power was “incompatible with the interests of the union”. Convention delegates who opposed state-issued bills of credit also constantly conflated in their arguments ex-post facto and legal tender powers with the power to emit bills of credit, even though these powers were considered and voted on as separate Constitutional clauses at the Convention. For example, James Madison noted the sentiments of Pierce Butler from South Carolina as “that paper was a legal tender in no Country in Europe. He was urgent for disarming the Government of such a power [to emit bills of credit].”

Only a few delegates challenged the anti-state-paper-currency faction in terms that saw through their rhetoric. For example, regarding Gouverneur Morris’ insistence on an absolute prohibition on government bills of credits, Madison asked, “Will it not be sufficient to prohibit the making them a tender? This will remove the temptation to emit them with unjust views. And promissory notes in that shape may in some emergencies be best.” Madison was proposing the system that had worked well since the end of King George’s War. Making government-issued paper money legal tender only for payment of that government’s taxes provided effective market controls that prevented the mismanagement of such money. In reply, Gouverneur Morris boldly stated, “The Monied interest will oppose the plan of Government, if paper emissions be not prohibited.” While Madison went along with the prohibition on paper money, as late as 1831 he still believed that the Constitutional prohibition on making pa-

per money legal tender for private debts solved all the problems raised by the anti-state-paper-currency faction 50.

The lack of reasoned argumentation for prohibiting state currencies and avoidance of any discussion about banks by the anti-state-money faction explains Madison’s seemingly contradictory behavior post-Convention. In the ratification debates, Madison made, in Federalist XLIV, the single most articulate defense of the new Constitution’s prohibition on state-issued bills of credit. His initial arguments repeat the tenor of the rhetoric presented at the Convention, namely, he trumpeted “the pestilent effects of paper money … on the industry and morals of the people, and on the character of Republican Government”, and he conflated legal tender and ex-post facto laws with the emission of paper money through raising the fear that states could engage in “retrospective alterations in its [their paper money’s] value”. As at the Convention, however, being dissatisfied with the soundness of these arguments, Madison reached for a new reason that was not presented at the Convention, namely, the transactions-cost argument for moving to a common currency. He argued that “Had every State a right [to issue bills of credit] … there might be as many different currencies as States; and thus the intercourse among them would be impeded”. Within a few years of ratification, however, when Hamilton, Robert Morris’ successor, unveiled plans for the creation of a national paper currency based on FBUS bank notes, thereby revealing the true intentions of the anti-state-money advocates at the Convention, Madison became one of the most ardent opponents of the FBUS. Banks and bank-note currencies were not mentioned in the Constitution nor debated at the Convention or during the ratification process 51. By Madison’s understanding, this made a federally-chartered bank unconstitutional. Madison thought he had voted for a specie-only currency union.

The absolute, uncompromising, and argumentively-superficial position held by the anti-state-money faction makes sense if their goal were something other than establishing principles of sound monetary management. The suggestion here is that these delegates sought the elimination of state paper money in

50 See FARRAND, The Records, vol. 2, p. 309; vol. 3, p. 495. In the ratification debate, some anti-federalists also saw through the charade of equating legal tender laws with paper money in general. For example, see anti-Federalist paper Agrippa XVIII, in: Massachusetts Gazette, May 5, 1788, attributed to James Winthrop in BAILYN, The Debate on the Constitution, vol. 2, p. 159. See also fn. 34.

order to increase the ability of the *BNA*, and subsequently the *FBUS*, to provide and control the paper medium of exchange for the nation and so empower and enrich themselves as stockholders of these banks. If these delegates had simply said their goal was to eliminate state-currency competition with *BNA* bank notes in order to enhance the power and profitability of the *BNA*, they would not have carried the day. That the purpose of these delegates was not just to transfer sovereign power over monetary issues from the states to the federal government, but to enhance the power and profitability of the *BNA*, can be seen in their opposition to a clause allowing the federal government only, and not the states, to issue bills of credit. If Congress could issue paper money, that would also undercut the power and profitability of the *BNA*. Thus, to succeed in their design, these delegates had to muddle the debate with strident and grand-standing rhetoric of dubious merit and by conflating ex-post facto and legal tender laws with the emission of paper money.

The Convention’s anti-state-money rhetoric continued through the debates over ratification. Even so, occasionally supporters of the new Constitution admitted that the problem facing the nation in 1787 was deflation and a general scarcity of money rather than some general inflationary tendency generated by

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52 The Freeman’s Journal, 17 October 1787, made a similar charge, see JENSEN, The Documentary History, vol. 2, pp. 182-185. See also fn. 13.

53 ROLNICK / SMITH / WEBER, In Order, argue that the Constitution’s ban on state-issued paper money was enacted to prevent ruinous competition among states in the race to collect seigniorage income from the citizens of other states. There are several empirical and theoretical drawbacks to this view. First, the seigniorage issue was never mentioned at the Constitutional Convention or in the subsequent ratification debates, see BAILYN, The Debate on the Constitution; FARRAND, The Records; JENSEN, The Documentary History. Second, there is no credible evidence that paper currency circulated freely as a medium of exchange within the general population of neighboring colony/states that also issued their own paper money, see GRUBB, The Circulating Medium. Third, the delegates prevented the national government from being allowed to issue paper money, which would be inconsistent behavior if seigniorage competition across states was the key problem, see FARRAND, The Records, vol. 2, pp. 308-310. Finally, ROLNICK / SMITH / WEBER, In Order, pp. 7-8, create the seigniorage problem by assuming fixed exchange rate regimes. However, colony/states did not maintain fixed exchange rates for their paper money. They never entered the market to buy or sell their paper money for specie neither to affect nor in reaction to exchange rate movements, nor did they effectively enforce legal tender laws where enacted. Just as stable prices do not imply price controls, stable exchange rates do not imply fixed exchange rate regimes. Colonies maintained stable exchange rates by maintaining stable long-run money supplies, a policy they could opt out of at any time, see GRUBB, Two Theories of Money Reconciled. Specie coins circulated as currency globally, but fiat paper money did not. Colony/state paper money never circulated as currency anywhere in Europe, Canada, or the Caribbean.
irresponsible state-issuances of paper currency. Because the new Constitution was presented as a complete package for ratification, the clause prohibiting state-issued bills of credit was not, by itself, objectionable enough to stop ratification. The lack of widespread objection to this Constitutional prohibition may have been due to the fact that only 7 states had issued bills of credit after 1784, with 3 of them, New York, North Carolina, and Rhode Island, also being the last 3 of the 13 states to ratify the new Constitution. Given that only 9 states were required to ratify the Constitution for it to be made operational in place of the Articles of Confederation, these last 3 states were faced with a fait accompli.

Assuming that the 6 states who had not issued paper money post-revolution could not muster sufficient objection to the paper-money ban to stop them from voting for the Constitution, only 3 of the 7 states who had issued paper money post-revolution would have to be won over to get the 9 needed for ratification. The BNA’s control of Pennsylvania’s ratification process delivered Pennsylvania’s vote for the Constitution. As one observer noted, “[T]he advocates of this system … are under the influence and direction of the Bank.” Two other paper-money states who were among the first 9 to vote for the Constitution were Georgia and South Carolina. Acute panic caused by Indian warfare on their frontiers led them to vote for the Constitution in hope of gaining aid from the rest of the union. Joseph Clay of Savannah observed, “The new plan of government for the Union I think will be adopted with us readily; the powers are great, but of two evils we must choose the least. Under such a government we should have avoided this great evil, an Indian war.”


55 See JENSEN, The Documentary History, vol. 2, pp. 19-25. The lack of opposition may have also been due to the irregular procedures pushed on ratifying conventions by the Federalists, see BOUTON, Tying Up the Revolution, pp. 321-371, 449; and in some states to merchant-bankers working to prevent pro-state-paper-currency advocates from being elected to their state’s ratifying convention, see fn. 44.

Finally, while a few questioned how states could finance their expenditures if emitting bills of credit were prohibited, such questions yielded little opposition to the Constitution, perhaps because states had alternatives to issuing bills of credit that were close substitutes for financing their expenses. States were allowed to charter banks as a revenue-generating device, which they increasingly did after the 1790s. The prohibition against state-issued bills of credit was a sovereign power states were willing to relinquish considering that the Constitution gave states considerable sovereign power over most other matters internal to each state, most notably slavery – as General Pinckney of South Carolina and Abraham Baldwin of Georgia pointed out during the Constitutional Convention ⁵⁷.

Conclusion

Scholars who trumpet the Constitutionally-created U.S. dollar currency union and the financial revolution led by Robert Morris and Alexander Hamilton as being key to American economic growth are too sanguine ⁵⁸. They forget to ask: What was the opportunity cost? The suggestion here is that the relevant opportunity cost was a world where the words “emit Bills of Credit” are absent from Article I, Section 10, Clause 1 of the U.S. Constitution, but the words “No State shall … make any Thing but gold and silver Coin a Tender in Payment of Debts” are retained. This next-best alternative would have produced a system of states issuing their own paper currencies that would not have yielded an inferior macroeconomic outcome. The debate is not about banking per se, but about whether banks should have sole unfettered paper-money-creation power. Stripped of this power, banks would still have proliferated and prospered in the Republic as financial intermediaries ⁵⁹. State currencies could have functioned

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as bank reserves, as government bonds did later under the National Banking Act, and as loans to the national government. The national government would not have been deprived of its borrowing capabilities or its creditworthiness, which rested ultimately on its power to enact and credibly enforce tax payments – powers given to it by the new Constitution. Being protected from state paper currency depreciation by the Constitution’s “gold and silver” legal tender clause, foreign creditors would not have been less inclined to invest in the U.S. The only significant difference would be that state governments instead of private banks would have gotten the seigniorage income from creating an “inside” paper money.

In 1787 would-be bankers saw paper-money-creation power as a profit bonanza whose potential could be reaped only if they could be rid of competing government paper money. The U.S. dollar currency union was a counter-revolution led by merchant-bankers intent on usurping state and federal sovereign power over monetary matters to enhance their personal power and wealth. As Robert Morris confided in a letter to Silas Deane, “The present opportunity of improving our Fortunes ought not to be lost, especially as the very means of doing it will contribute to the Service of our Country at the same time.” The chance timing of events circa 1787 gave merchant-bankers the opportunity to get rid of their principal money-creating competitor and to have said carved into the “stone tablets” of the U.S. Constitution, thus making the return of this competitor extremely difficult.

What does this tale imply about current discussions of politically-created currency unions? Probably the most important implication is that the true motives for monetary unification may have more to do with politics and income redistribution than with efficiency gains, and that to deflect attention from these profit- and power-maximizing motives efficiency gains will be overemphasized. The evidence here also indicates that for a politically-manufactured currency union to get its new untried currency into wide circulation, the old currency will have to be physically (legally) expunged from the marketplace. Market forces alone are unlikely to lead to the new currency dominating hand-to-hand transactions. Efforts to make the new currency dominant may also lead

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60 SELGIN, The Suppression, presents a similar story about the suppression of state bank notes in favor of national bank notes in 1864.

61 VER STEEG, Robert Morris, Revolutionary Financier, p. 17. See also BOUTON, Tying Up the Revolution, p. 134; FERGUSON, The Power of the Purse, pp. 70-105, 118; VER STEEG, Robert Morris, Revolutionary Financier, p. 196. Morris ended up with investments of around eight million acres of western lands, see BOUTON, Tying Up the Revolution, p. 377.
to an increase in the quantity of money resulting in some initial depreciation. How these implications will play out with the Euro can be currently observed.