NBER WORKING PAPERS SERIES

ALEXANDER HAMILTON'S MARKET BASED DEBT REDUCTION PLAN

Peter M. Garber

Working Paper No. 3597

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 1991

Prepared for the Carnegie-Rochester Conference, November 17-18, 1990. This paper is part of NBER's research programs in Financial Markets and Monetary Economics and International Studies. Any opinions expressed are those of the author and not those of the National Bureau of Economic Research.

NBER Working Paper #3597
January 1991

ALEXANDER HAMILTON'S MARKET BASED DEBT REDUCTION PLAN

ABSTRACT

In 1790, Alexander Hamilton, the first Secretary of the Treasury of the United States, initiated a program to refund the U.S. debt. Debt that had sold at 75% discount two years earlier would be refunded at par into new funded debt of the new federal government. All foreign indebtedness would be repaid. I present evidence that Hamilton's actual refunding policy did not differ in nature from that envisioned under the recent Brady plan. I will show that the bond package for which the old debt exchanged had a market value well below par. Thus, a large part of the face value of the debt was effectively written off. I compare the Hamilton restructuring package to the recent Mexican restructuring package to find points of similarity to the Brady plan.

Peter M. Garber
Department of Economics
Box B
Brown University
Providence, RI 02912

In 1790, Alexander Hamilton, the first Secretary of the Treasury of the United States, initiated a program to refund the U.S. debt incurred by the Continental Congress during the Revolutionary War and the interregnum of the Articles of Confederation. Debt that had sold at 75% discount two years earlier would be refunded at par into new funded debt of the new federal government. All foreign indebtedness would be repaid.

The episode is remarkable for Hamilton's impassioned defence of the principle of payment in full of all sovereign obligations, even those of a predecessor State. It is even more remarkable in comparison with the prescriptions by the current Secretary of the Treasury for dealing with the sovereign debt problems of less developed countries. Under the Brady plan, part of the large bank debt of such countries would be eliminated with voluntary conversions into more senior claims with reduced par value or coupon interest payments. Thus, Hamilton's absolute prescription of full repayment of sovereign debt seems to have crumbled in more pragmatic hands.

Notwithstanding this appearance, I will present evidence that Hamilton's actual refunding policy did not differ in nature from that envisioned under the Brady plan. After the initial refunding package, of course, Hamilton's principles traditionally ruled U.S. finance; and to emphasize that hardly any contingency could shake the repayment directive, I will present an example of debt repayment during the War of 1812. I will, however, dwell mainly on discussing the nature of the U.S. debt prior to the Funding Act of August, 1790, and the means by which it was refunded. I will show that, though the old debt was indeed exchanged at par for a package of new securities, the package had a market value well below par. Thus, a large part of the face value of the debt was effectively written off. I will then briefly compare the Hamilton restructuring package to the recent Mexican restructuring package to find points of similarity to the Brady plan.

1. The Situation in 1790 and Hamilton's Argument for Repayment

During the Revolutionary War and under the Articles of Confederation, Congress lacked the power to tax to raise revenues. It had to depend on revenue quotas imposed on the states, but it had no enforcement power if a state did not meet its quota. Aside from debt issue, its only other source of revenue was the sale of land. As a result, the Congress had hardly enough revenue to pay the operating cost of a minimal government; and it could not service the debt, amounting to 31% of national income, cumulated during the war and its aftermath.[1]

The untenability of the financial situation of the national government provided one impetus for the Constitutional Convention of 1787. The new government, armed with a tax authority, began its operation in 1789. In 1790, the Congress imposed tariffs and excise taxes sufficient to operate the government, to pay interest on some debt, and to provide for the establishment and funding of

[1] This is the estimate of Barro (1987), p. 373.

a sinking fund intended ultimately to eliminate any class of debt defined as funded debt.[2] While all these measures might be expected to have had a positive impact on the market value of the outstanding debt, there was no direct provision for the servicing of this unfunded debt.

Nevertheless, Hamilton was adamant that the debt should be repaid because he believed that it was vital to a nation's survival to avoid a reputation for default. As Washington's aide-de-camp during the Revolutionary War, Hamilton had witnessed the near dissolution of the army at crucial moments because lack of credit prevented the acquisition of supplies. From this experience, Hamilton learned that credit was a key weapon of war that, like other weapons, had to be prepared in time of peace.[3] Throughout his voluminous writings on the public debt, the fostering of credit for war is the most important reason that he presents in arguing for debt repayment. For example, in the Second Report on the Public Credit of January, 1795, Hamilton stated, "There can be no time, no state of things, in which Credit is not essential to a Nation, especially as long as nations in general continue to use it, as a resource in war."[4]

---

[2] For a discussion of the sinking fund concept in the U.S. and Great Britain, respectively, see Calomiris (1989) and Bordo and White (1990).

[3] For a recent discussion of the effects of recurrent warfare on the desirability of repaying sovereign debt, see Grossman (1990).

[4] Second Report on Public Credit, January 16, 1795, The Papers of Alexander Hamilton, Vol. XVIII, January-July, 1795, p.125.

This sentiment was echoed even in newspapers that opposed the full repayment of the debt. For example, commenting on Hamilton's refunding plan, one writer states, "The consequences of a depreciated credit have been too recently felt to need a very particular description. War is a complication of calamities to the best appointed nation: To one destitute of finances and credit, it is almost certain ruin."[5]

2. <u>An Example of Financial Rectitude: Servicing the Louisiana Debt</u>

Asserting the absolute necessity of debt repayment, Hamilton argued that creditors should be faithfully paid even if they were nationals of an enemy country in wartime:

> The right to seize & confiscate individual property in National Wars excludes all those cases where the individual derives his title from the enemy sovereign or nation: ...a nation by the very act of permitting the Citizen of a foreign country to acquire property within its territory...tacitly engages to give protection and security to that property...[6]

The servicing of the Louisiana Stock illustrates the intense desire of Hamilton and his successors strictly to maintain the good credit of the United States. This requirement stemmed from the near fatal embarassments of the Revolutionary War, and the need to avoid them in future conflicts.

The Louisiana Six Percent Stock was issued in 1804 to finance the payment of $11,250,000 to France for the Louisiana territory.

---

[5] "The Observer, No. XVII", Pennsylvania Gazette, February 24, 1790.

[6] Second Report on Public Credit, p. 122.

The bankers for this issue were Hope and Company of Amsterdam and Francis Baring and Company of London; and $6,250,000 of the issue was to be distributed in London, with the rest distributed in Amsterdam.[7] The proceeds from the sale were delivered to the French. Table 1 indicates the Treasury's records of the amounts of the issue in London that was eventually "domesticated" or purchased by U.S. residents.

The possibility of a war between Great Britain and the U.S. became serious in 1811, and a large amount of this issue was sold back to U.S. residents in the next year and a half. Even so, almost $4 million of Louisiana Stock remained in London.

In the War of 1812, the U.S. again experienced great difficulties in borrowing. Though it did acquire substantial funds by selling 6 percent bonds at well below par, it also had to resort to some issues of circulating Treasury notes, a practice that had been considered poor financial policy since the circulation of the Continentals in the Revolution. To service the $4 million in Louisiana Stock held in London required $240,000 per year, or a total of about $600,000 during the two and one-half years of the war. Even in the midst of this war, the Treasury felt it vitally necessary to continue interest payments on its obligations held by foreigners, including those in London. Through an intensive British naval blockade and the burning of the Treasury building in 1814 by British troops, the Treasury regularly remitted bills to

[7] See Record Group 56 General Record of the Department of the Treasury, Documents about the Purchase of Louisiana.

Baring and Company to provide payment to the British holders of U.S. debt. Indeed, when some of the bills were not accepted in 1814, the Secretary of the Treasury wrote to Baring and Company,

> ... The non-acceptance of the bills as announced in your communication of 8th October would at any time afford cause for regret, but when it is considered that this circumstance is in some measure indicative of the fate of a much large remittance made to you on the 23d August, I am apprehensive that unless you shall have interposed your good offices on the occcasion by advancing the funds required to discharge the dividends on the Louisiana Stock payable on the first instance, the credit of the United States in Europe will be materially affected by the failure.[8]

3. Refunding the Foreign and Domestic Debts

The Debt in 1790

In his Report on Public Credit of January 9, 1790, Hamilton estimated the debt of the United States as in Tables 2, 3, and 4.[9] In addition, Hamilton estimated the debt of the states at about $26.6 million. This was relevant because of Hamilton's intention to have the Federal government assume the state debt.

---

[8] Letter from Treasury Secretary A.J. Dallas to Baring and Company, January 11, 1815, in "Letters to Foreign Bankers, April 28, 1803 to March 20, 1833, Record Group 56, General Records of the Department of the Treasury, U.S. National Archives.

[9] These data on the domestic and foreign debt can be found in Schedules B, C, and D of the report in American State Papers, Vol. 5, Finance, pp. 26-28 and in DeKnight, p. 20. In calculating the dollar value of the principal of the French loans, Hamilton apparently used the exchange rate of .1815 $/livre, the relative specie values. In converting the arrears to dollars, however, he apparently used the rate .1851 $/livre The exchange rate for the Dutch florin or guilder was .4 $/florin.

History of the U.S. Debt to 1790[10]

The bulk of the debt inherited by the new state was incurred in the Revolutionary War and in various refundings during the 1780's under the Articles of Confederation. The domestic debt instruments were defined in terms of dollars, which typically meant Spanish milled dollars.[11]

The foreign debt was denominated in terms of French livres tournois or of Dutch guilders. The value of the livre tournois depreciated rapidly in the key period of refunding from 1790-95 with the introduction of the inflationary assignat.[12]

The Domestic Debt

Initial Funding of the War: The Continentals

The Continental Congress, lacking a taxing power, funded the initial phases of the war with the emission of Continental money starting in 1775. These notes bore a promise of exchange into Spanish milled dollars in four installments beginning in November, 1789 and ending in November, 1782. Through 1781, the face value of these emissions totalled $360 million.

The value of the Continentals depreciated rapidly. By the end of 1776, they were discounted by 50%; and by March, 1780, the rate

[10] The information in this section is based on the history of the debt presented in DeKnight (1900).

[11] Spanish milled dollars contained 376 grains of fine silver. Though those generally in circulation averaged about 372 grains. Hamilton's Mint Act of 1792 set the silver dollar at 371.25 grains of fine silver.

[12] See White (1990) has recently describe the assignat depreciation. For a general discussion of French finance in this period, see also Bordo and White (1990).

of exchange was 40 Continentals to one silver dollar. By the end of 1781, the exchange rate was 1000 Continentals to one silver dollar; and the circulation of this currency had substantially ended.[13]

In 1780, an attempt was made to absorb the old Continentals with a new emission promising to pay Spanish milled dollars in 1786 along with 5 percent annual interest. The public could exchange old Continentals for the new issue at a rate of forty to one, approximately the exchange rate between Continentals and silver at the time of the offer. Bills of this new emission did not readily circulate as money; and in spite of the promised interest, its market price in specie fell to 1/8 of its face value.

Other Domestic Debt Instruments

In addition to the Continentals, Congress financed itself by issuing various other debt instruments. These included certificates issued by the Register of the Treasury, the Commissioners of Loans of the States, the Commissioners for the adjustment of accounts of the Quartermaster, Commissary, Hospital, Clothing and Marine Departments, the Paymaster General, and the Commissioner of Army Accounts. In addition, interest on these certificates had often been paid in further certificates known as "indents of interest".

Hamilton laboriously compiled data on these various instruments to compute the value of the domestic debt and arrears

[13] For a recent discussion of the Continental depreciation, see Calomiris (1988).

in his First Report on the Public Credit of 1790. Particularly noteworthy are the Loan Office certificates. These issues were entered at "specie value" in determining their contribution to the 1790 debt. Specie value meant the value in terms of specie at the time of issue. Since the pre-September, 1777 issues were issued at par, these are entered in Table 3 at their face value. Issues after March, 1778 ($59.8 million in face value) were severely discounted to a value of $5.15 million.

The issues from September, 1777 to March, 1778 were sold at a discount, so their face value of $3.46 million is entered at the discounted value of $2.54 million. Apparently, the new government intended to repay only the original market price as principal and not the contractual face value. Nevertheless, on the loans from this period, interest of 6% was allowed to accumulate on the initial face value. This led to a complication in the conversion offer of 1790: holders of certificates issued from September, 1777 to March, 1778 were reluctant to engage in the conversion, feeling that it disadvantaged them relative to other claimants.

Since the arrears of interest did not in turn earn interest, the domestic debt is understated from a current viewpoint.[14] For example, if the arrears on the entire $27,000,000 principal had started in 1782, the arrears would have cumulated an additional

[14] Using the pseudonym Civis, Hamilton stated that arrears of interest did not bear interest until they were funded on January 1, 1791. This policy continued for those certificates that were not converted. See Civis to Mercator for the National Gazette, September 11, 1792, The Papers of Alexander Hamilton, Volume XII, July-October, 1792.

$1.37 million in interest by 1790, at 6% interest. This amounts to 3.4% of the principal plus arrears of the domestic debt. Since the indebtedness of the states was about $26.6 million including arrears, an understatement of arrears of the same order of magnitude would have occurred.

The Foreign Loans

These loans were incurred during the war by the Contintental Congress and after the war under the Articles of Confederation to fund current expenditures of the government and to refund previously incurred debt. The French and Spanish loans and the Holland Loan of 1782 were war finance operations, with the lenders acting from political and not commercial motivations.

The successive Holland loans were undertaken to cover U.S. expenses in Europe or to meet interest payments falling due on previous foreign loans. These loans were commercially priced, and their sale generally entailed a 4.5% commission to the bankers. The terms for the Holland loan of 1784 were particularly burdensome, with the commissions, bonuses, lotteries and gratifications raising the yield to 6.65%. Typically, these loans carried a 5 percent annual interest payment. The maturities of the Holland loans generally were from ten to fifteen years, with redemption to occur with several equal annual installments usually spread over five years. Thus, most principal on the Holland loans was due in the mid- to late 1790's.

The French loans, made between 1777 and 1782, had maturities that required repayment from 1785 to 1795. On several issues the

U.S. failed to make timely payment on both interest and principal, and the foreign loans undertaken by the new government starting in 1790 were aimed primarily at gaining funds to pay off these earlier loans. The $6.3 million worth of French loans represented 60% of the foreign debt and generated almost all the arrears. The French loans plus arrears also amounted to 14% of the debt of the U.S. national government in 1790.

In 1787, 1788, and 1789, the U.S. missed scheduled principal repayments totalling 7.5 million livres ($1,388,888) on the 18 million and 10 million livre French loans, as well as the arrears of interest. Hamilton did not allow for any interest payments on the arrears of interest, so arrears effectively constituted a free loan to the U.S. If arrears of interest had paid the 5% annual interest standard in these contracts, the U.S. foreign indebtedness on January 1, 1790 would have increased by $285,810, 2.3% of the total. These arrears continued for several years after the passage of the funding act of 1790.

Refunding the Domestic Debt

Hamilton's proposal in the First Report on the Public Credit to refund the domestic debt at par generated a major public debate.[15] Since much of the existing debt had been resold by initial holders at heavy discount, many argued that only the debt

---

[15] The proposals to fund the foreign debt apparently raised little controversy. In the First Report on Public Credit (Works, Volume 3, p. 7), Hamilton claimed that there was general agreement on paying the foreign debt on the precise terms of the contracts.

still held by the initial holder should be redeemed at par, while debt which had been sold on secondary markets (to speculators and foreigners) should be redeemed at some market price.[16] Hamilton rejected this argument as proposing a breach of contract and insisted that all holders of debt be treated equally.[17] He later claimed the in any case there was never more that $3 million of U.S. debt floating in the stock markets and that it was questionable whether as much as one-third of the debt was in the hands of "alienees" when Congress began to deliberate on the Funding Act of 1790.[18]

Coincident with the formation of the new government in 1789, the First Report on the Public Credit in January, 1790, and its implementation in the Funding Act of August, 1790, the market values of U.S. domestic debt and state debts rose dramatically.

Table 6 presents a series of market prices for Continental Certificates and indents prior to and after the refunding offer. The certificates were "indented to December 31, 1787," so they carried arrears from that date. In January, 1788, both certificates and arrears carried bids of $11.67 per $100. By

[16] For example the Pennsylvania Gazette of January 13, 1790 argued for payment at market value. It invoked the widows and orphans of soldiers who had sold their claims below par and whom it would then be unjust to tax at high levels to redeem the claims of speculators at par. The Pennsylvania Gazette of January 27, 1790 also cites the New York Daily Gazette as being in opposition to the refunding proposal.

[17] Works, Vol. 3, p. 8.

[18] "The Vindication, No. IV", Collected Works of Alexander Hamilton, Vol. XI, February-June, 1792.

April, 1789, certificates rose to $23.33 and indents rose to $15.00. Throughout 1789, certificate prices rose steadily, reaching $35 at the promulgation of the First Report of Public Credit in January, 1790. Indent prices simultaneously rose to $27. At the time certificates carried two years arrears of interest, which, at the current indent price would be worth about $3.00. Evidently, the public in January, 1790 placed a 20% higher value on a dollar of principal claims than on a dollar of interest claims. At the time of the passage of the refunding act in August, 1790, certificates jumped to $52.50, rising to $66.83 in October. Indents rose substantially less to $33.33 in August, 1790 and to $35.42 in October. In summary, the series of events establishing the new government and the passage of acts to raise Federal revenue and to refund the debt multiplied the value of debt principal by five and one-half times and the value of interest arrears by three times.

The Funding Act passed in August, 1790 provided that the domestic debt could be converted to new issues of funded bonds. Three new types of bonds would be issued: 6% coupon bonds, deferred 6% coupon bonds, and 3% coupon bonds, all of which paid interest quarterly. The deferred 6% bonds would pay no interest until 1800, after which they would be identical to the 6% coupon bonds. The 6% and deferred 6% bonds were redeemable at the option of the government; but the sum of interest payments and principal repayments in any one year could not exceed $8 per $100 par value outstanding. The 3% bonds were redeemable at any time.

The conversion offer provided that a certicate of $1 principal or par value could be converted into $1 of principal in the new bonds, of which 2/3 was in the 6% coupon bonds and 1/3 was in the deferred 6% coupon bonds. One dollar in interest due on the domestic debt or in indents of interest was convertible into $1 par value of the 3% bonds.

Holders of the domestic debt had one year to subscribe to the new issues. The conversion was not compulsory, and non-subscribers were promised that they would be paid interest on the principal of their claims for 1791 as if they had subscribed--6% on two-thirds of their principal.[19]

Market prices for the new bonds are presented in Table 5. The first data on new bond prices that I have found after the beginning of the conversion are for November 10, 1790. On this date, the converted value of the $100 principal of domestic debt was $55.42. If all of the outstanding arrears were still attached to the original certificates, the typical $100 of debt would also have carried $47.60 of interest arrears. Converted into an equal par value of 3% bonds with a price of $35.42, the arrears on the hypothetical $100 certificate would have been worth $16.80.

The principal value plus arrears of $147.60 was then converted into a package of funded bonds worth $72.28 on November 10, 1790.[20]

---

[19] After 1791, however, no further provision was made to pay interest to non-subscribers until 1795, when the subscription offer was reopened for one year.

[20] Hamilton himself stated that at the time of the initial offer the package was worth $73. See Letter to George Washington, August 18, 1792, in <u>The Papers of Alexander Hamilton</u>, Vol. XII,

Almost all the principal and arrears of the old debt was due and payable before 1791. While Hamilton's scheme did redeem the old debt "at par" through the exchange, the value of this converted package was only 49 cents on the dollar on November 10, 1790. By January 1791, the market value of the conversion package for this hypothetical certificate rose to $92.73 or 63 cents per dollar of principal plus arrears.

In addition to the certificates, provision was made to convert the Continental bills of credit, $100 of Continentals being treated as $1 of specie principal in the conversion. Again, this could be subscribed for a package consisting of 2/3 six percent bonds and 1/3 deferred six percents with a value of $.55 on November 10, 1790 and $.72 on January 1, 1791.

The conversion package for state debt was slightly different. If $100 principal or interest of state debt was subscribed, the holder would receive a 3% coupon bond with a face value of $33.33. The remaining $66.67 would be converted to a 6% bond with a face value of $44.44 (=4/9 x $100) and to a deferred 6% bond with a face value of $22.22 (=2/9 x $100). The value of this package on November 10, 1790 was $48.76, and its value at the beginning of 1791 was $62.50 per $100. When the conversion of state debt was implemented beginning in January 1792, the package was worth $90.73. In the 1790 conversion package, holders of the state debt were offered a deal of about the same value as that offered to U.S. debt holders.

July-October, 1792.

Because of the nature of the conversion offer to state security holders, the market price of state debt after the offer should have been less than the value of the conversion package. Hamilton estimated that $26.6 million of state debt was eligible for conversion, but Congress authorized only $21.5 million of new bonds for the conversion package for state debts. Thus, it provided for funding only 81% of the state debt. If all of the state debt had been subscribed for conversion, the Funding Act prescribed that the conversion would proceed on a pro-rata basis, with $21.5 million of new bonds being exchanged for $26.5 million of the old. Partial over-subscriptions would be treated similarly. The authorized amount of new bonds was broken into quotas by state, with over-subscriptions adjusted pro rata on a state by state basis. In the event, all but three states undersubscribed the conversion, so $100 par value of old state debt was swapped for $100 par value of the new bonds. Massachusetts, Rhode Island, and South Carolina, however, oversubscribed their quotas by 12%, 72%, and 16% respectively, so subscribers in these states received proportionally less in par value of the new bonds for $100 par value of old bonds.

For comparison, from Table 6 the value of North and South Carolina debt, which had been $10 per $100 of par value on May 22, 1790, rose to $42.50 on December 4, $62 by January 1, 1791, and $70 by August 3, 1791. Table 7 presents the values of the various state debts on May 22, 1790.

Though the conversion offer expired after 1791, by January, 1792, $10.6 million of the eligible U.S. domestic debt and arrears had not been converted into the funded debt.[21] Of this amount $6.8 million was in the form of registered debt mainly in the hands of foreigners. Hamilton claimed that these holders wanted to convert to the funded debt and had submitted extensive subscription orders received after the expiration of the offer (and presumably after they observed the rise in the value of the funded issues). Hamilton proposed that the subscription be extended though September, 1792, and a sequence of acts extended the subscription deadlines through the end of 1794. Though no interest was paid on the bulk of the remaining unregistered and unfunded debt, there still remained $2.7 million of unfunded debt plus arrears on December 31, 1793 and $1.2 million ($176,000 registered) of principal and $376,000 of arrears by December 31, 1794.[22]

---

[21] See "Loans, January 23, 1792", in Hamilton's Works, pp. 286-296. Apparently, much of the remaining unfunded debt consisted of the Loan Office certificates issued between September, 1777 and March, 1778, on which interest of had been promised on the face and not the specie value. Hamilton stated that the promised interest then ranged from 6.2% to 10.47%, a potential yield that might discourage conversion.

[22] For these data, see "Report on an Account of Receipts and Expenditures of the United States for the Year 1793", The Papers of Alexander Hamilton, Vol. XVII, August-December, 1794, pp. 554-563, Schedule A of "Public Credit, 1795", American State Papers, Finance, p. 339, and Schedule of a Report by Oliver Wolcott, December 31, 1795, American State Papers, Finance, p. 378.

To provide for the elimination of the last of the unfunded debt, Hamilton proposed in the Second Report on Public Credit, January 16, 1795, that the subscription be reopened during the year of 1795. Loan Office issues bearing interest in nominal values would be paid off in specie principal plus arrears of interest immediately. For debt that remained unsubscribed, provision would be made to pay the interest due in 1795 plus 1/10 of the arrears. In response to this offer, an additional $387,764 of principal and arrears was subscribed between January and September, 1790.

Refunding the Foreign Debt: The Payment of the Debt to France in the Assignat Depreciation

In the deliberations on the repayment of the U.S. debt in 1790, the foreign debt was treated as senior to the domestic debt. While there was great controversy concerning the redemption value of domestic debt, there was little dispute that the foreign debt should be fully repaid. Among the foreign issues, the florin debt incurred in Amsterdam was in fact treated as most senior; this debt was fully serviced even in the period of the Articles of Confederation, and no payment was missed.[23]

The debt to France in livres tournois was not serviced under the Articles of Confederation. Arrears of up to six full years of interest payments had cumulated by 1790, and 7.5 million livres of scheduled principal payments (of 34 million livres outstanding) had not been made.

When Hamilton received authorization to begin repaying the French debt at the end of 1790, he contracted a series of loans

---

[23] Indeed, the florin debt did not sell at a large discount relative to the bonds of other countries. At the start of a series of sales of new refunding florin bonds in December, 1790, Hamilton inquired about the market prices of U.S. debt in Amsterdam. His agent William Short replied that 5% U.S. coupon bonds traded at prices between 99.5 and 100, compared to 102.5 for bonds of the Emperor (of Austria), 99 to 99.5 for Russian bonds, and 96 to 97 for Swedish bonds. Short also stated that new 5% issues could be marketed at par. See Letter from William Short, February 22, 1791, in The Papers of Alexander Hamilton, Volume VIII, February -July, 1791. For comparison, Homer (1977, pp. 161-2) lists British 3% consols in 1790 at 76 7/8 for a yield of 3.90%.

from Dutch bankers in florins. The proceeds from the loans were converted at the prevailing exchange rates into livres and delivered to the French Treasury from December, 1790 through September, 1792.

Simultaneous with the beginning of the U.S. debt repayment, the French revolutionary government began to fund itself by issuing assignats, which were made legal tender in payment of livre tournois indebtedness. The U.S. agents in Paris and Amsterdam responsible for contracting the debt issues and movement of funds, quickly noting that the U.S. gained from the assignat depreciation, recommended that the U.S. accelerate the payments of principal and arrears on the French debt before the French terminated the assignat inflation and redefined the livre tournois.[24]

Indeed, payments of overdue principal and interest arrears on the French debt were rapidly effected starting in December, 1790. Table 8 presents the schedule of livre payments to the French Treasury made from the proceeds of the florin loans, along with the florin/livre exchange rate at the time of each payment. The

---

[24] In a letter to Hamilton dated June 3, 1791, the U.S. agent William Short wrote, "As the exchange is becoming every day more disadvantageous in proportion as the assignats depreciate, many of them suppose it as a speculation , to hold back the payment as much as possible in order to take advantage of the depreciation.

The depreciation of the assignats so long as they continue to be a circulating medium is an advantage to those who have debts to pay to France by remittances from abroad. But this depreciation has been such for some time past as to give serious apprehensions that the time may come, that ere long, when it must be forced out of circulation. ... In such an event you will readily see the loss which the U.S. will sustain from not having extended to the utmost their payments under current circumstances." The Papers of Alexander Hamilton, Vol. IX, August-December, 1791, Letter from William Short, June 3, 1791.

exchange rate at specie values of the currencies was .454 florins/livre; but by Autumn, 1792, it had fallen to .274, a depreciation of 40%. The nearly 30 million livres repaid during these two years represented 68% of the principal and cumulated arrears of interest at the end of 1790. With these payments, all service payments on the French debt had been brought up to date.

The payments, undertaken at an average exchange rate of .339 florins/livre, had a total dollar value of $4,029,000. If the payments had occurred as scheduled at the pre-depreciation exchange rate of .454 florins/livre, their dollar value would have been $5,393,751. Thus, delaying the repayment beyond the contracted time had saved the U.S. Treasury $1,364,751. This meant that in dollar (specie) terms, there was only a 75% repayment of a major part (68%) of the French debt.

Hamilton, however, resolved not to take advantage of the assignat depreciation. In a letter to his agent, William Short, he wrote,

> "Mr. Ternant, shortly after his arrival, made a representation against the payment of monies due to France in its depreciated paper or assignats. You will readily conclude that the answer to such a representation could only be, that it was not the intention of the United States to take advantage of the circumstance of depreciation, and that an equitable allowance would be made for that circumstance in the final adjustment of payments which shall have been made."[25]

A correspondence ensued among Hamilton, Short, and Short's successor, Governeur Morris about the form of the "equitable allowance" to be made. Finally, the interchange converged to an

---

[25] The Papers of Alexander Hamilton, Vol. IX, August-December, 1791, Letter to William Short, September 2, 1791, p. 159.

adjustment that would be determined according to movements in the French price level so that the goods value of the final repayment would be held fixed.[26]

It appears that no "equitable allowance" for the large scale livre payments of 1790-92 was ever made. For the remnant of the debt, however, either payments or conversions were undertaken at the dollar/livre specie exchange rate of .1815. For example, Hamilton agreed to deliver substantial interest and principal payments due in 1793 and 1794 in the form of dollar claims on the U.S. Treasury at the specie exchange rate.[27] These funds were used to finance purchases in the U.S. by the French revolutionary government, mainly goods delivered to outfit French expeditions to quell unrest in Haiti in the early 1790's.

By the end of 1795, the balance due on the French loan, 11.16 livres tournois, was converted into two new issues of domestic (dollar denominated) bonds. The bulk of these bonds, $2 million in face value, yielded 5.5% coupon rates; a small portion, $176,000, carried 4.5% coupons.[28] The swap was undertaken at par value, where the dollar par value of the French debt was computed by multiplying the remaining principal by the specie exchange rate of

---

[26] This discussion can be found in a series of letters from Hamilton to Short and Morris dated September 2, 1791, July 25, 1792, and September 13, 1792; from Short to Hamilton dated June 3, 1791, November 8, 1791, November 22, 1791, and August 6, 1792.

[27] For an accounting of the 1794 payments, see "Public Credit, January 9, 1795", American State Papers, Vol. 3, Finance, pp. 340-41.

[28] For a description of these bonds, see DeKnight (1900), pp. 39-40.

.1815. The new dollar bonds themselves sold at par, so this final portion of the French debt was redeemed fully.

Thus, the promise to pay off the French debt on an equitable basis applied only to the approximately 32% unpaid by the end of 1792. The other 68% of the debt was paid at 75% of its specie value. The average unit of French debt was therefore redeemed at 83% of its specie value. Since interest lost on the many years of cumulated arrears was not added to the debt, the French lost approximately an additional 3% on the delays in servicing. Altogether, only about 80% of the French loans were repaid in specie value. Nevertheless, Hamilton refused to take the opportunity to pay even less.

4. <u>The Analogy to Current Practice: The Mexican Bank Debt Restructuring</u>

The Mexican bank debt restructuring provides an example to compare Hamilton's debt reduction plan to the Brady plan, announced in March, 1989, for restructuring debt using conditional funding by third parties. Under the Mexican plan, $45.8 billion of Mexican debt to banks would be converted into new securities. The remainder of the Mexican debt, about $55 billion, consisted of official credits, trade credits, and bond debt.[29]

Banks had three options for converting the debt. First, they could swap their $1 face value of bank debt for $.65 face value of a 30 year bond "Debt Reduction Bond" carrying an interest rate of

[29] These data are from the Bulow and Rogoff (1990).

LIBOR plus 13/16. Second, they could swap $1 face value of bank debt for $1 of a 30 year "Debt Service Reduction Bond" carrying a fixed annual interest rate of 6.5%. Finally, any part of the original bank loans not exchanged for these bonds would remain an obligation of the Mexican government, but the holders of these claims had to lend new money to the Mexican government equal to 25% of the remaining bank loans over three years.

To provide guaranteed repayment for part of its obligations under the Debt Reduction and Debt Service Reduction Bonds, the Mexican government provided collateral of $7 billion. This was partly converted into a 30-year U.S. Treasury discount bond that covered the principal payments, with the rest used to provide a two-year rolling guarantee on interest payments. Funds for the $7 billion guarantee were advanced mostly from the IMF, the World Bank, and the Japanese government; and these loans added to the official obligations of the Mexican government.

Of the $45.8 billion eligible for conversion, banks exchanged $22.8 billion at par for the Debt Service Reduction Bonds and $18.7 billion for $12.1 billion of Debt Reduction Bonds. Banks with $4.3 billion of claims opted to lend new money of $1.1 billion over the next three years. Effectively, this amounted to relending the interest on the remaining bank debt to Mexico.

In April, 1990, immediately after the conversion, the market prices of the Debt Service Reduction Bond and the Debt Reduction Bonds were 41.25 and 62.75, respectively. Since $1 of bank debt bought $.65 of Debt Reduction Bonds, exchanging $100 of debt under this option was worth $40.75; so the two bond options were approximately equivalent. The price of bank debt was $.40 per dollar.[30]

5. Conclusion: Hamilton Compared to Brady

The mechanics of the U.S. refunding of 1790 and the Mexican refunding of 1990 are similar in all but a few superficial dimensions. These similarities are presented in Table 9.

In both cases, there were different seniorities of debt, with different payoff rates. In both cases, the most senior foreign claims were serviced according to contract with no interruptions. Both the U.S. and Mexico added to the senior debt to refund or pay off the more junior debt. In the U.S. case, however, delays in paying the principal and arrears of interest on the debt to France resulted in a specie payment of only $.80/dollar because of the subsequent assignat depreciation.

In the case of the more junior claims, the U.S. offered an exchange package worth $.49 of U.S. debt and arrears in November, 1790 and $.63 in January, 1791. The initial exchange package offered for state debt was worth $.49/dollar in November, 1790 and $.63 in January, 1791; but when it was effected in 1792, price rises in the bonds increased the package's value to $.91/dollar. The two bond deals offered in exchange for holders of Mexican bank debt had a value of about $.41/dollar. Thus, the initial value of the U.S. deal amounted to a discount from the face value of the

[30]Salomon Brothers, Indicative Prices for Developing Country Credits.

debt of 51% versus 59% for the Mexican deal.

The final option of simply eschewing the conversion by retaining the original debt presents an apparent difference in the two schemes. The Mexican deal required additional payments of "new money" from those electing this option. Effectively, this means that little interest will actually be paid on the retained debt before 1993. Thus, there is an element of involuntariness in the Mexican options. Hamilton, on the other hand, stressed that the exchange had to be voluntary. Nevertheless, the refunding act provided only for the payment of interest for 1791, the year of the conversion, to the remaining holders of the old debt. No additional future commitment of funds was offered for paying off principal and cumulated arrears, long since due. No provision was made for payment of interest on cumulated arrears. Thus, the deal offered by Hamilton effectively coerced holders of the old debt into accepting zero interest on arrears (1/3 of the debt) and on 1/3 of the principal. Also, from the viewpoint of 1790, the deal would possibly force further cumulations of arrears after 1791.

There is then little difference between Hamilton's "voluntary" package and the Mexican deal under the Brady plan. Ex post, of course, successive U.S. Secretaries of the Treasury adhered rigorously to the contractual servicing arrangements for the U.S. debt; but the below par pricing of the 6% bonds in early 1791 indicated that this outcome was not certain in 1791. The still greater discount on the restructured Mexican package indicates even greater skepticism that Mexico will pay off its debt as agreed on paper. Nevertheless, the mechanics of these restructuring packages are remarkably parallel.

Table 1
Amount of London Louisiana Stock Domesticated

Year	Face Value	
1805-10	215,000	
1811	1,199,000	
1812	1,036,000	(280,000 after July 1)
1813	542,000	
1814	89,000	
1815	6,700	
1816	172,000	
1817	180,000	
1818	352,000	
Total	3,771,700	

Source: RG No. 53, Bureau of the Public Debt, Treasury Records, Volumes, 204,204A, 205. U.S. National Archives.

Table 2

Foreign Debt and Arrears--January 1, 1790

		$ US
Loan from Farmers-General of France		153,688.
French loan of 18,000,000 livres		3,267,000.
Loan from Spain in 1781		174,017.
French loan of 10,000,000 livres		1,815,000.
Holland Loan of 1782		2,000,000.
French loan of 6 million livres		1,089,000
Holland loan of 1784		800,000.
Holland loan of 1787		400,000.
Holland loan of 1788		400,000.
Total Principal of Foreign loan		10,098,705.
Due France for military supplies		24,332.
Arrears of interest Jan. 1, 1790:		1,640,069.
Of Which:		
5 Years interest on 6 Million Livres @ 5%	$277,777	
6 Years Interest on 18 Million Livres @ 5%	999,999	
4 Years Interest on 10 Million Livres @ 4%	296,296	
Spanish Loan --7 years Interest on $174, 000 @ 5% + Arrears through 1782	65,997	
Total Principal and Arrears		11,763,106

Table 3

Domestic Debt (Dollar Denominated)--January 1, 1790

I.	Principal of domestic debt		27,383,917.[31]
	Of which:		
	1. Registered debt	4,598,462	
	2. Certificates of Commissioner of Army Accounts	7,967,109	
	3. Certificates of Commissioners of the five departments	903,574	
	4. Certificates issued by State Commissioners	3,291,156	
	5. Loan Office Certificates --1781 (Specie value)	112,704	
	6. Loan office certificates (Specie value)		
	a. Issued before 9/77	3,787,900	
	b. 9/77 to 3/78 ($3,459,000 Nominal)	2,538,572	
	c. 3/78 to end of Loan Office ($59,830,212 Nominal)	5,146,330	
	7. Due Foreign Officers	186,247.	
II.	Arrears of interest to December 31, 1790[32]		
	Total Cumulated Interest:		$17,985,481
	1. Loan office debt	$9,534,478	
	2. Army debt	5,105,099	
	3. Certificates of State Commissioners	2,146,799	
	4. Certificates of Commissary, Quartermaster, Marine, Clothing and Hospital Departments	737,388	
	5. Registered debt	366,646	
	6. Due Foreign Officers	11,185	
	Less Previous Interest Payments		$4,944,127
	Total Arrears		$13,041,353

---

[31] The total is less than the individual components because of a subtraction of $960,915 received "on account of lands and other property, cancelled" and a deduction of a "specie amount, cancelled and registered" of $365,983. (American State Papers, Volume 3, p. 27.) There was also a "sundries" category of $187, 578.

[32] The Report on Public Credit, written in January, 1790, presented estimates of the interest due and payable on each class of domestic loan to the end of 1790, including arrears. Since no interest was paid during 1790, this estimate represents the end of year arrears.

Table 4
Total Domestic and Foreign Debt

1. Foreign Debt		11,736,106
Principal	10,098,705	
Arrears	1,640,069	
2. Domestic Debt		40,425,270
Principal	27,383,917	
Arrears	13,041,353	
	Total	52,188,376.

Table 5
Market Prices for Bonds*
(Dollars/$100 Par Value)

Date	6 Per Cent	Deferred	3 Per Cent
1790			
November 3	70		
November 10	68.75	28.75	35.42
December 4	70	32.5	37.08
1791			
January 1	87.5	42.5	42.5
February 2	86.25	45.4	45
March 2	86.25	45.4	45
April 2	85.8	45	45
May 4	85.8	45.4	45.8
June 1	85.8	45.8	46.6
July 2	90	50	50
August 3	102.5	65	62.5
September 3	105.8	63.75	62.1
October 1	102.5	60.8	57.5
November 2	107.5	66.25	61.25
December 3	110.8	66.25	63.33
1792			
January 4	116.25	70.8	70
February 1	127.5	77.5	76.66
March 3	123.33	75	71.66
April 4	105	62.5	60
May 2	105	62.5	60.8
June 2	112.5	68.75	66.66
July 4	106.66	65	62.5
August 1	106.66	65	62.5
September 1	110	67.5	65
October 3	110	67.91	65.42
November 3	106.66	66.25	63.33
December 1	106.25	66.25	62.5

*Prices were reported in terms of shillings and pence to the pound.

Sources: Gazette of the United States, various issues, November-December, 1790; "Report on the State of the Treasury at the Commencement of Each Quarter During the Years 1791 and 1792 and on the State of the Market in Regard to the Prices of Stock During the Same Years, February 19, 1793", in The Papers of Alexander Hamilton, Vol. XIV, February-June, 1793, pp. 123-127.

Table 6
Market Prices for Certificates, Indents and State Securities*
(Bids in Dollars/$100 Par Value)

Date	Continental Certificates*	Indents	State Securities**
1788			
January 19	11.66	11.66	
August 8	20		
November 14	20		
1789			
January 2	20.83	12.50	
April 10	23.33	15	
May 1	22.50	15	
June 5	23.75	15	
July 3	23.33	15	
August 7	20	15	
September 4	24.58	15	
October 2	25	15	
November 6	25.83	15	
December 4	32.50	17.5	
1790			
January 10	37.50	27.50	
February 5	35	25	
March 5	40	30	
April 9	35	27.50	
May 1	36.25	26.67	10
June 4	40	31.25	
July 2	41.67	32.50	
August 6	52.50	33.33	
September 3	58.75	33.75	
October 2	60.83	38.42	40
November 5	60	34.17	
December 4	63.33	37.08	42.50
1791			
January 1	75	42.50	62.50
February 2	77.50	45.41	55
March 5	78.75	45.42	62.50
April 2	78.75	45	60.83
May 7	80	45.42	61.66
June 4	80.83	46.67	62.50
July 2	85	50	65
August 3	95	62.50	70
October 5	92.50	52.50	--
November 5	90	55	--
December 3	97.50	57.50	--

Table 6
Continued

Date	Continental Certificates*	Indents	State Securities**
1792			
January 4	102.5	65	
February 4	110	66.67	
March 3	110	70	
April 4	95	60	
May 2	92.50	61.25	
June 2	92.50	66.67	

*The Federal Gazette lists "Continental Certificates Indented to December 31, 1787". I take this to mean that interest due through the end of 1787 had been paid in indents. Therefore, these cerfificates carried cumulated interest from the beginning of January, 1788.

**The Gazette of the United States, February 2, 1791, identifies these as securities of North and South Carolina.

Sources: The observation for January 19, 1788 was taken from The Independent Gazette. Observations from August 1, 1788 through September 3, 1790 on Continental Certificates and Indents were taken from various issues of The Federal Gazette. The remaining observations on Continental Certificates and Indents and all the observations on State Securities were taken from various issues of The Gazette of the United States.

Table 6
Market Value of State Securities--May 22, 1790
Dollars per $100 Par Value

State	Price
New Hampshire	17.50
Massachusetts	12.50
Rhode Island	1.25
Connecticut	12.50
New York	17.50
Delaware	20.00
Maryland	20.00
Virginia	18.00
North Carolina	7.50
South Carolina	10.00
Georgia	0.00

Source: Gazette of the United States.

Table 8
Payments on the French Debt 1790-1792

Date	Livre Tournois	Florins	Exchange Rate (Florins/Livre) (=.454 in Specie)
12/3/90	3,611,950	1,500,014	.415
6/10/91	2,696,629	1,005,000	.373
8/11/91-10/24/91	9,111,177	3,390,954	.372
11/10/91	1,540,909	567,825	.368
12/15/91-6/ 4/92	6,756,974	1,968,000	.291
9/ 6/92	6,000,000	1,641,250	.274
Total	29,717,639	10,073,043	.339

Sources: American State Papers, Vol. 5, "Loans, February 13, 1793, Schedule A". The Papers of Alexander Hamilton, Vol. XIII, November, 1792-February, 1793, January 3, 1793, Schedule A.

Table 9

U.S. vs. Mexican Debt Restructurings

Payoffs on $1 of Debt

	U.S.-1790	Mexico-1990
1. Senior Debt	Dutch Loans to 1788--100% of service payments as scheduled French Loans--Paid off at $.80/dollar	Official Credits; Bonds--100% of service payments as scheduled
2. Junior Debt	Domestic (Silver $ Denominated)	Bank Debt ($ Denominated)
a. Exchange Options	U.S. -- Value of bond exchange package $.49/dollar in Nov., 1790; $.63 in Jan., 1791	Debt Service--$.41/dollar Reduction
	State -- Value of bond exchange package 1790--$.49/dollar 1791--$.63/dollar 1792--$.91/dollar	Debt --$.41/dollar Reduction
b. Retain Debt	Promise of interest Payment for 1 year in 1791; No provision for principal and cumulated arrears in future; No interest on arrears Value = $.49 in Nov.,1790; $.63 in Jan., 1791	Previous restructurings had rolled interest into principal so no cumulated arrears. This option formally convert interest to principal for 3 more years. Value = $.40

References

Barro, Robert, Macroeconomics, New York: Wiley, 1987.

Bordo, Michael D. and Eugene N. White, "A Tale of Two Currencies: British and French Finance during the Napoleonic Wars", Draft, August, 1990.

Bulow, Jeremy and Kenneth Rogoff, "Sovereign Debt Repurchases: No Cure for Overhang", Working Paper, May, 1990.

Calomiris, Charles W., "The Motives of U.S. Debt-Management Policy, 1790-1880", Working Paper, July, 1989.

Calomiris, Charles W., "Institutional Failure, Monetary Scarcity, and the Depreciation of the Continental", The Journal of Economic History, Vol. XLVIII, No. 1, March, 1988, pp.47-68.

DeKnight, William F., History of the Currency of the Country and of the Loans of the United States, Washington: Government Printing Office, 1900.

Federal Gazette, various issues, 1788-92.

Gazette of the United States, various issues, 1789-92.

Grossman, Herschel I., "the Political Exonomy of War, Debt and Inflation", in William Haraf and Phillip Cagan, eds., Monetary Policy for A Changing Financial Environment", Washington: AEI Press, 1990.

Hamilton, Alexander, The Papers of Alexander Hamilton, New York: Columbia University Press, 1967, various volumes.

Hamilton, Alexander, The Works of Alexander Hamilton, Volume III, New York: Charles S. Francis, 1851.

Homer, Sidney, A History of Interest Rates, New Brunswick: Rutgers University Press, 1977.

Independent Gazette, various issues, 1788.

Pennsylvania Gazette, various issues, 1789-91.

U.S. Congress, American State Papers, Volume 5, Finance, Washington: Gales and Seaton, 1832.