The Massachusetts Paper Money of 1690

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Modern currency originates in the inconvertible, legal tender paper money that Massachusetts devised in 1690. The circumstances that led to its creation are more complex than the typical story of wartime specie shortage. Due to temporary political constraints of that turbulent period, the currency could be neither backed by land nor imposed on anyone, as was then standard. Instead, it had to be disguised from England as a simple, private-seeming IOU. By pleasing both its pay-demanding troops and England, the government maximized its probability of survival subject to the constraints.

"Monetary innovation, the development of new forms of money, has not received much systematic study from economic historians."[1]

When China invented paper money, it was first supported with convertibility; but later sellers were simply forced to accept it (or else). Our modern paper money has a much weaker legal status: it merely discharges preexisting monetary obligations such as contractual debts and taxes. Nobody is obliged to provide tangible assets for it: neither the government, because the relation to gold ended in 1971, nor sellers in the marketplace. It seems that no paper money was granted such a weak legal support before the 1690 Massachusetts currency. The idea spread from Massachusetts to the other American colonies in the following century and after the American Revolution, it spread to the rest of the world.[2] Economic historians have attributed the lack of convertibility of that 1690 currency to a specie shortage during a wartime emergency. This seems like a reasonable hypothesis since similar occurrences happened so many times *later*. Economic historians

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[1] Sylla, "Monetary Innovation."

[2] I review the inventions, reinventions and diffusion of paper moneys in Goldberg, "Inventions."

have also described this money as an obvious, natural development from earlier American convertible paper moneys.[3]

However, something is wrong with this account. Any previous government that issued emergency paper money to pay troops had also forced sellers to accept it. The Puritans were legendary for excessive regulation and they were particularly stringent during wartime. In the course of that war, their government killed America's first newspaper after one issue, restricted marine trade, searched and impressed goods, and opened private mail.[4] And yet, it gave sellers the freedom to reject its money—freedom which does not exist in some countries to this day. Even creditors were not compelled to accept the money, as was the case with earlier Massachusetts moneys. Moreover, the standard practice of land backing was also put aside. Effectively, the money was supported only by its acceptance for tax payments.

Why did Massachusetts break with monetary tradition and dare to support its first paper money with a flimsy law at such a critical time? I propose a political explanation to the paradox. The provisional, revolutionary Massachusetts government lobbied England to restore its charter. Its objective was to maximize its chances of surviving in power in both the short run and the long run subject to constraints. In the short run, the colony had to issue money to pay its troops and avoid a mutiny. In the long run, it needed a restored charter from England and so could not support its money in ways England considered illegal. In 1690 imposing money on creditors (let alone sellers) and land backing were temporarily considered illegal. The solution was to disguise the money as a private-seeming IOU and not to back it with land. It was seemingly not forced on anyone other than tax collectors and just "happened" to be convenient for use as money.

There is no direct evidence as to why this type of money was invented. Many unofficial documents of revolutionary Massachusetts (1689–1692) were deliberately destroyed, including evidence of a monetary ploy to fool the king, if there was such a ploy.[5] My hypothesis is therefore based on circumstantial evidence.

[3] Weeden, *Economic and Social History*, vol. 1, p. 330; Davis, *Colonial Currency Reprints*, vol. 1, p. 26; Nettels, *Money*, p. 250; Dorfman, *Economic Mind*, vol. 1, p. 106; Bailyn, *New England*, pp. 188–89; and Rabushka, *Taxation*, pp. 358, 360.

[4] Steele, *English Atlantic*, pp. 146–47; Moody and Simmons, *Glorious Revolution*, pp. 186–87, 254, 261, 321, 350; and United Kingdom, The National Archives, Public Records Office, Colonial Office [hereafter PRO CO] 5/855 #78, 103, CO 5/856 #145.

[5] For example, see the correspondence and diary of Cotton Mather (Steele, *English Atlantic*, p. 104).

Richard Sylla has developed a framework for analyzing the determinants of monetary innovation.[6] He argues that new forms of money are invented when profit-maximizing agents attempt to get around regulation. I generalize Sylla's framework: the profit to be maximized can be political (probability of ruling) rather than economic, and the constraining regulation is not necessarily a monetary one (here some of it concerns land).

SOME BASIC FACTS

Massachusetts lost both its charter and its mint in 1684 and became part of the royal Dominion of New England.[7] A land bank scheme was launched in 1686 but was aborted in 1688. Following the Glorious Revolution, the colonists deposed the governor in 1689, established a provisional government, fought Canada, and lobbied for charter restoration.

In October 1690 Massachusetts failed to occupy Quebec and returning troops demanded pay.[8] They received debentures which stated the colony's debt to them. The government's hopes for loot, tax receipts, or loans were in vain. Payments for previous expeditions had already been postponed and the government was under real threat of mutiny, desertion, and defection.[9] Allowing troops to pay taxes with debentures was not enough.[10] On 24 December 1690 an order authorized a committee to pay ₤7000 in "bills" to troops "who shall desire" to be so paid. Any payment to the colony (for example, taxes) could be discharged with the bills. Bills could be redeemed for specie or goods "as the Treasury shall be enabled."[11]

CONVERTIBILITY AND BACKING

The order promised convertibility into specie or goods if possible. Convertibility into (or backing with) land was not mentioned. I will

[6] Sylla, "Monetary Innovation."

[7] A classic reference for this period is Hutchinson, *History*, vol. 1. Also see Johnson, *Adjustment*; and Lovejoy, *Glorious Revolution*.

[8] The main contemporary source is Mather, *Pietas*, pp. 41–45. It is largely supported by contemporary letters.

[9] Mather, *Pietas*, p. 44; PRO CO 5/855 #94, 127, CO 5/1081 #188, CO 5/1306, p. 387; Massachusetts, Massachusetts Archives, Massachusetts Archives Collection [hereafter MAC], vol. 36, pp. 200–01. England's worst naval defeat (Chatham 1667) was caused by defecting sailors, angry for being paid with debentures (Pepys, *Diary*, vol. 8, pp. 236–37).

[10] Moody and Simmons, *Glorious Revolution*, p. 283.

[11] Massachusetts, Massachusetts Archives, Council Legislative Records [hereafter MACLR], vol. 6, pp. 170–71 (reprinted in Moody and Simmons, *Glorious Revolution*, pp. 290–91).

demonstrate that the promise was a dead letter and that land's absence is unusual, but can be rationalized on political grounds.

The Treasury was empty.[12] There is no evidence of conversion at the Treasury and no contemporary writer mentions this promise.[13] Patriots voluntarily gave their own specie for notes to support the notes' value, which indicates the Treasury's inability to do so.[14] Convertibility might have been credible if there was hope to obtain specie or goods, but this was not the case. The colony never had revenue from selling private goods. Its mint and privateering had been suppressed by England. The loss in Quebec proved that expected loot was unreliable. Tax receipts were expected to be in the new paper money rather than specie or goods, because taxpayers were happier to get rid of paper. Specie shipments from England were unthinkable. Proceeds from land sales could not be relied upon either (see below). Therefore, the promise of convertibility into movables was entirely not credible.

Land has always been a major security for debt repayment. The chronic specie shortage in the Anglo-American world expanded its use in the financial system, especially during wartime. Soldiers were sometimes paid with the land they defended or conquered,[15] or they received debentures which were convertible into land.[16] During Massachusetts' previous war, it promised land to troops before a critical battle and later promised land as security for the war's debts.[17] The colony did pay many wartime and other debts with conquered land in the 1680s.[18] Land backing was also used in Boston's financial institutions: a clearinghouse (1681–1683)[19] and the failed land bank scheme (1686–1688).[20]

Most of those involved in the 1690 paper money had active roles in the land-money tradition. For example, Magistrate Elisha Hutchinson, head of the paper money committee, was an officer in the bank. The

[12] Mather, *Pietas*, p. 43; PRO CO 5/856 #138; Davis, *Colonial Currency Reprints*, vol. 1, p. 189; and Nettels, *Money*, pp. 262–63.

[13] Davis, *Colonial Currency Reprints*, vol. 1, pp. 189–208; PRO CO 5/856 #131, 136, 138; Mather, *Pietas*, pp. 43–45; and Savage, *Account*.

[14] Mather, *Pietas*, p. 45.

[15] For colonial examples, see Trumbull and Hoadly, *Public Records*, vol. 1, pp. 70, 208, vol. 2, pp. 161–62, vol. 3, p. 234.

[16] PRO State Papers 128/42; PRO Exchequer 121.

[17] Bodge, *Soldiers*, p. 133; and Shurtleff, *Records*, vol. 5, p. 71. Nettels, *Money*, p. 251, speculated that receipts for these debts may have circulated as currency.

[18] For example, see Shurtleff, *Records*, vol. 5, pp. 343, 408–09, 441–42, 490, 515; MAC vol. 3, pp. 353a, 354, vol. 69, p. 173a, vol. 70, pp. 119–20, vol. 126, p. 269.

[19] Davis, *Colonial Currency Reprints*, vol. 1, pp. 112, 116; and Dorfman, *Economic Mind*, vol. 1, p. 94.

[20] On land banks in general, see Horsefield, *British Monetary Experiments*, chaps. 9–11, 14–17; and Davis, *Currency*, vol. 2, chaps. 1–3.

bank leader, John Blackwell, was the foremost financial expert in America and was surely consulted in 1690.[21] He had personally dealt with conversion of debentures into land in England and Ireland decades earlier.[22] Given the prevalent use of land, it is remarkable that land is *completely absent* from the records in 1689 and 1690. The colony's debts from the three expeditions of the period were secured solely by the expected loot of movables and tax revenues.[23]

The most likely reason for the lack of land backing relates to Sir Edmund Andros, governor of the Dominion of New England (1686–1689). He voided *all* the land titles in Massachusetts, arguing that with the charter's revocation all lands reverted to the Crown.[24] Andros's land policy killed Blackwell's land bank and led to a revolution that deposed him.[25] However, Andros's land policy was only overruled in September 1691 by the king. Until that point, it was doubtful whether the colony owned any land at all.

Land was still a major problem when paper money was created. In November 1690 and January 1691 the lobbyists in London asked for a blanket confirmation of all old land titles in a draft of a new charter. It was secured at the last moment.[26] In October 1691 chief lobbyist Increase Mather wrote the colony that a new charter was obtained. Before mentioning some of his greatest achievements such as an elected assembly, territorial expansion, and the first ever shipment of English ammunition, he began with "all men's properties are confirmed as before the judgment against the old charter."[27] The fact that he opened with "properties" (in other words, land) proves how critical the issue was to the colonists and attests its formerly uncertain standing.[28]

To return to the climate of late 1690, land anxiety must have been at its peak because Andros had been exonerated in England and was rumored to be returning as governor.[29] This startled the colonists to the point of publishing an insider account of Andros's reign in February

[21] He actively promoted that money right after it was issued (Davis, *Colonial Currency Reprints*, vol. 1, pp. 206–07).

[22] Dorfman, *Economic Mind*, vol. 1, p. 97; and PRO Exchequer 121/4/8 #35.

[23] MAC vol. 35, p. 52a, vol. 107, pp. 271a, 288a; and Moody and Simmons, *Glorious Revolution*, pp. 248, 256, 284.

[24] Barnes, *Dominion*, chap. 8; and Lewis, "Massachusetts," chap. 10.

[25] On the relation between the land policy and the bank, see Goldberg, "Property Rights."

[26] Moody and Simmons, *Glorious Revolution*, pp. 468–69, 518, 555–56; PRO CO 5/855 #130, CO 5/856 #158XXXI, 158XXXIV, 158XXXV, 183, 192, CO 391/7, p. 42; and Whitmore, *Andros*, vol. 2, pp. 283–84.

[27] Moody and Simmons, *Glorious Revolution*, pp. 620–21.

[28] Also, see how his son, Cotton, marketed his achievements back home (Whitmore, *Andros*, vol. 2, pp. 317, 326, 330).

[29] Hall, *Edward Randolph*, p. 131; and Lovejoy, *Glorious Revolution*, p. 342.

1691.[30] In the pamphlet, some of Andros's former councilors condemned his land policy and, breaking with custom, even dared signing the pamphlet.

In conclusion, as of December 1690, all of the colony's land apparently belonged to the king. He could have been angry at the colony for giving *his* land away, or for backing the colony's money with it. It was thus best to avoid any reference to land. Such caution is consistent with the reluctance of that provisional government to formally revive the old charter or even impose taxes before royal approval.[31] Neighboring colonies had reaped benefits from being friendly to the Crown while waiting for a charter.[32]

LEGAL TENDER FOR DEBTS?

Legal tender laws are very limited: they settle disputes about the medium of payment of an obligation that *already exists* (for example, a contractual debt that needs to be discharged after a commodity had been delivered). These laws do not force anyone to sell on the spot for legal tender currency (there is no debt to settle yet) and they do not outlaw the use of another medium of payment.[33] Massachusetts regularly made its money legal tender for debts. Until the prohibiting Currency Act (1751), only one other local money was not legal tender for debts.[34] Why was the 1690 currency an exception? Or was it? I will first discuss the absence of legal tender provisions regarding debts. I then show that a seemingly unrelated order practically made paper money legal tender for debts.

NOT LEGAL TENDER FOR DEBTS (*DE JURE*)

Since specie shortage hampered the settlement of debts, the colony opened a mint in 1652 and made its coins legal tender for debts. Any pound-denominated debt could be discharged by these coins at face value.[35] After the Restoration, the mint was seen as violating the royal prerogative and was often at the top of the list of the colony's

[30] Whitmore, *Andros*, vol. 1, pp. 133–47.

[31] Sosin, *English America*, pp. 216, 221; and Lewis, "Massachusetts," p. 334.

[32] These were Rhode Island and Connecticut in the 1660s (Hall, *Edward Randolph*, p. 11; and Lovejoy, *Glorious Revolution*, p. 128).

[33] For example, see United States, *United States Code* 31§5103; and Board of Governors of the Federal Reserve System, "Frequently Asked Questions."

[34] That was in the first issue of *provincial* notes (1702) and was fixed later (Goodell, *Acts*, vol. 1, pp. 504, 701).

[35] Shurtleff, *Records*, vol. 4, pt. 1, p. 84.

offenses.[36] The colony's agents had to beg pardon for this offense alone. The king was furious when he learned that coinage continued nevertheless.[37] The complaints referred to the coins' debasement, the absence of the king's portrait or name, and—more importantly—the legal tender status.[38] Only the king could force English subjects to accept certain objects in debt settlement. Later on in England, private bank schemes were not approved by Parliament because they asked that their notes be legal tender. The Bank of England gave up on this request to be approved.[39]

After losing both the charter and the mint, the colonists asked in vain to reopen the mint in 1686.[40] In 1689 Mather tried to revive the old charter, but he only managed to revive the details of the colony's offenses, including coinage.[41] He learned his lesson and only asked for coinage again in 1691, when he saw that the old charter could not be revived.[42]

Officially issuing paper money with a full legal tender status in 1690 while charter negotiations climaxed, would have been a colossal mistake. While England repeatedly objected to the Massachusetts coins, which were 22.5 percent debased, the paper money was 100 percent debased. The colony's leaders knew that the charter battle in London was already difficult enough.[43] Commissioner William Stoughton was among the agents who had begged the king to pardon the original coinage offense years earlier. Hutchinson, of the paper money committee, had helped Mather's lobbying in 1689 and witnessed firsthand the lasting damage of that old coinage offense. The conclusion was clear: while paper money had to be issued to please the troops, it had to *look* as if it was not money.

The solution was to make paper money look like a simple credit instrument that happened to be issued by a colonial government. This was not an illegal or sovereign-like move, as anyone was allowed to

[36] Ibid, vol. 4, pt. 2, p. 213; and PRO CO 1/41 #35, 50–51, CO 391/2, pp. 96, 104, CO 1/47 #44, CO 1/52 #4.

[37] PRO CO 1/41 #29–31, CO 1/42 #15I, CO 1/47 #79, CO 5/904, p. 177, CO 391/2, pp. 103, 240–41.

[38] Toppan, "Dudley Records," p. 244; and PRO CO 1/41 #50, CO 1/47 #44, CO 5/940, p. 139.

[39] Horsefield, *British Monetary Experiments*, pp. 126, 160, 211.

[40] Toppan, "Dudley Records," p. 244; and PRO CO 5/904, pp. 319–26.

[41] PRO CO 5/905, pp. 55–56, 79, 142; and Whitmore, *Andros*, vol. 2, p. 140, vol. 3, pp. 5, 16, 226.

[42] Moody and Simmons, *Glorious Revolution*, p. 514; and PRO CO 391/7, p. 76.

[43] See the General Court's letters to both the Crown and agents in late 1690 (Moody and Simmons, *Glorious Revolution*, pp. 288, 412–13).

issue IOUs.[44] A typical IOU had the following five features: it was convertible into specie or goods; it had a contract's indenture, that is, it was severed from a counterpart by a wavy line to assure authenticity;[45] it was not forced on anyone; the issuer was expected to accept it in offsetting debts owed to him, following the English setoff rule;[46] and finally, it was not called "money."

Massachusetts gave paper money all these features. First, it made an (empty) promise of convertibility (see above). The order stated that the notes merely postponed the *real* payment to a "convenient time." Second, the notes were indented. Third, the letter of the law did not force the money on any person. Nobody, including the troops, had to receive it or use it in any payment. Fourth, if taxpayers chose to pay taxes with the notes, the government had to accept them, thus offsetting its debts (notes) with its credits (taxes). Fifth, the notes were officially called "bills."[47] The convenient denominations and easy transferability did not disqualify the notes as IOUs; assignability of bonds was standard.[48]

Recall that the troops first received debentures, which could be used to pay taxes. The paper money order merely allowed them to convert these debentures into other debentures, which were conveniently denominated and easily transferable. This was effectively money, but not in the eyes of the Crown, because it lacked legal tender status for debts and the official name "money." The colonists had used hairsplitting rhetoric before when they ruled "according to the rules" of the revoked charter without formally reviving it.[49]

The government's fear was well founded. Its enemies told London of "a new mint raised here of paper money" which violated the prerogative.[50] And yet, there is no evidence that England compared

[44] For England, see Horsefield, *British Monetary Experiments*, pp. xii–xiv; for Massachusetts, see MAC vol. 36, p. 281, vol. 100, p. 389; and Moody and Simmons, *Glorious Revolution*, p. 121.

[45] Black, *Black's Law Dictionary*, "indent"; and Weeden, *Economic and Social History*, vol. 1, p. 330.

[46] For debt offsetting by a neighboring colonial treasury, see Trumbull and Hoadly, *Public Records*, vol. 1, p. 34, vol. 2, p. 142.

[47] Also see Nettels, *Money*, p. 276; and Rabushka, *Taxation*, p. 360. The name "bills of credit" was set in 1691 (Moody and Simmons, *Glorious Revolution*, pp. 296–97). The name "paper money" was locally frowned upon (Davis, *Colonial Currency Reprints*, vol. 1, pp. 189, 204).

[48] For example, see MAC vol. 36, p. 283, vol. 128, p. 121. Connecticut's treasury assigned bonds (Trumbull and Hoadly, *Public Records*, vol. 3, p. 224).

[49] Moody and Simmons, *Glorious Revolution*, p. 89. Similarly, the bills functioned *according to the rules* of money but were not formally money.

[50] PRO CO 5/856 #131, 136, 138; and Colonial Williamsburg, *William Blathwayt Papers*, vol. 5, #5, Foxcroft to Blathwayt, 16 April 1691.

paper money to the old illegal coins. *The trick worked; the colony got away with issuing paper money and got a good charter in 1691*.

The new charter did not allow coinage but it ordered sending new acts to England for approval. This guaranteed that the new charter could not be revoked (as was its predecessor), simply because the king disapproved of certain acts. With the risk of revocation removed, the colonists immediately resorted to their monetary tradition: in the *very first* legislative session under the new charter, all notes were formally made legal tender for debts and taxes.[51] In the worst case, the king could have vetoed it without endangering the charter. Since all earlier currencies were legal tender for debts and this change was made once the new charter arrived, political considerations must have been the only impediment to a formal full legal tender status in 1690.

LEGAL TENDER FOR DEBTS (*DE FACTO*)

On the same day that the paper money order passed, another, seemingly unrelated order passed as well. It did not refer to the war or to paper money. The order stated:

> Ordered that all country pay with one third abated shall pass as current money to pay all country's debts at the same prices set by this court.[52]

"Country pay" meant grain and other goods authorized as legal tender for taxes. Why is this *commodity money order* relevant? Recall that the paper money order offered troops "who so desire" paper money as wage payment. Consider, for example, a soldier who is owed 60s. According to the latest tax order of October 1690, barley was priced for taxes at 4s. per bushel. Since this pricing was adopted in the commodity money order, a debt of 60s. was worth 15 bushels of barley. But the commodity money order had "one-third abated," so the Treasury could discharge the debt with *ten* bushels. A soldier refusing a payment of 60s. in paper money (presumably worth 15 bushels in the market) faced the risk of getting only ten bushels.

This casts a shadow on the paper money order because it constitutes a penalty for troops who rejected paper money. In fact, by making grain legal tender for government debts, the commodity money order indirectly made *paper money* to some extent legal tender for government debts. To see why this is the case, note that if the abatement had been 100 percent rather than one-third, a soldier rejecting the notes

[51] Goodell, *Acts*, vol. 1, p. 36. It was probably done to solve contractual disputes.
[52] MACLR, vol. 6, p. 171 (reprinted in Moody and Simmons, *Glorious Revolution*, p. 292).

would have the government debt to him discharged with zero bushels. He would have lost his entire wage as a penalty for rejecting the notes. This is the meaning of legal tender: a creditor who rejects it is not getting paid in any other way. While the penalty was not 100 percent, it did apply to a huge debt (£40,000), which dwarfed any private debt in 1690 Massachusetts. Therefore, *de facto*, until the troops were paid, paper money *was* somewhat legal tender for debts. The magnitude of the abatement was set by precedent: there was a traditional one-third penalty for grain payments in tax orders, in order to encourage payment in specie.[53]

This order, which must have induced troops to accept paper money, has gone unnoticed by the government's enemies, England and monetary historians.[54] It is not surprising, since the order does not mention paper money and it is "buried" in the records between similarly looking orders regarding debt payments to specific individuals. Perhaps this was purposefully done. *If England had noticed the order, the whole ploy would have been considered another coinage offense*. Some later Anglo-American governments certainly displayed deceptive behavior, using other legal tricks to make paper money a *de facto* legal tender for debts.[55] Such a scenario is also consistent with other tricks used by the formidable political players who led Massachusetts.[56]

LEGAL TENDER FOR TAXES

With no backing with tangible assets and a limited legal tender status for the soon-to-be-discharged government debt, how could the government support the money's circulation indefinitely? While modern monetary theory shows that paper money may not need any legal support and can circulate based on self-fulfilling expectations, there is no evidence that the colonists knew of any such theory or past instances. The only thing the government could do was accept the money for taxes, which might have been necessary to maintain trust. But how could the colonists think it would be sufficient?

[53] Shurtleff, *Records*, vol. 5, *passim* (beginning in p. 139); and Moody and Simmons, *Glorious Revolution*, pp. 173, 224–25, 280, 283.

[54] Felt, *Historical Account*, put it in the errata (p. 250) but misdated it and thus took it out of context.

[55] England was reluctant to make the nominally private Bank of England notes legal tender, so it forced official debt collectors (rather than the creditors) to accept the notes (United Kingdom, *Statutes*, 52 George III, C. 50). Facing the constitutional prohibition on state legal tender laws, Kentucky enacted a two-year delay for lawsuits by creditors who rejected the state's favorite private paper money (Hurst, *Legal*, pp. 140–45).

[56] Hutchinson, *History*, vol. I, *passim*; Johnson, *Adjustment*, *passim*; and Sosin, *English America*, p. 11.

The chronic specie shortage forced colonies to accept tax payments in grain. The government regularly set grain prices for tax payments (for example, a 4s. tax liability could be paid with one bushel of barley).[57] People knew that tax laws thus put a lower bound on the value of grain that passed the Treasury's quality threshold. Other money producers understood how this mechanism increases the value of money. Mintmaster and Treasurer John Hull aggressively promoted tax payments in his coin rather than grain.[58] Blackwell's banknotes were made legal tender for taxes when the bank's directors controlled the government.[59] It is therefore not surprising that tax acceptance was trusted to be a sufficient anchor for the 1690 paper money. The only novelty of the 1690 money, compared to grain, local coins, and banknotes, was that, being intrinsically useless and unbacked, it took this mechanism to its mathematical limit.[60]

THE AFTERMATH

The new money had a rough start, falling at once to a discount of about one-third.[61] To enhance trust, the richest men gave some of their own specie for paper money at par, while Mather's son and Blackwell wrote open letters in support of the money. It soon returned to par and only the original recipients (the troops) were hurt by the discount.[62]

Perhaps the money's stabilization was not caused by those private efforts. The troops were hungry, frozen, and sick with smallpox. When buyers have zero bargaining power, theory expects sellers to make them indifferent between buying and not buying, which was achieved by the one-third discount on paper money: the troops could take paper as pay and receive one-third less in goods in the market; or they could reject paper and wait for a payment in goods with one-third abated (recall the commodity money order). This may explain the initial discount and its disappearance right after the first round of trade.

[57] Moody and Simmons, *Glorious Revolution*, p. 279. The first such law is from 1635 (Shurtleff, *Records*, vol. 1, p. 140).

[58] MAC vol. 100, pp. 239, 261; and Shurtleff, *Records*, vol. 5, pp. 156, 324, 376–77, 417.

[59] MAC vol. 126, pp. 103–07. Bank directors included President Joseph Dudley and Deputy President Stoughton.

[60] Unlike the tax-backing theory which concerns prices and takes the money's acceptance as given (for example, Smith, "Some Colonial Evidence"), the money's acceptance is the main issue here.

[61] This is an average of Mather, *Pietas*, p. 45; Savage, *Account*, p. 12; and PRO CO 5/856 #131, 136, 138.

[62] Mather, *Pietas*, pp. 44–45; and Davis, *Colonial Currency Reprints*, vol. 1, pp. 189–208.

Since the currency stabilized and the debt was £40,000, the £7,000 limit was removed in February 1691.[63] To compensate for this increase, a 5 percent discount was given to those paying taxes in paper money and liquidity was enhanced with smaller denominations.[64] In May, the upper bound was set at £40,000, which was the right amount as far as government debt was concerned. To compensate once more, tax payments in grain now had a one-third penalty. The printing plates were taken from the paper money committee to make the upper bound credible after it was reached.[65] In October, £10,000 in paper money tax revenues were publicly burned to maintain trust.[66] In 1692 under the new charter, paper money was strengthened so no more burning was needed: it completely substituted for grain as full legal tender. The remaining notes circulated at par as the general media of exchange and without further printing, until the eighteenth century.

CONCLUSION

The standard account of the 1690 Massachusetts money is of an emergency wartime issue due to a specie shortage. While the absence of land backing is unusual, one could relate it to the failures of land-based financial institutions in the 1680s or to the time it might have taken to establish a state land bank. Yet this does not account for the fact that Massachusetts avoided an easy and quick alternative to backing: *ordering* all sellers to accept the new money (at par). Their Canadian neighbors were doing so at the time.[67] As demonstrated above, Massachusetts had no scruples regarding totalitarian behavior during war. Finally, the standard account cannot explain why the money was not even imposed on creditors, as was standard practice in peacetime.

Once one recognizes the political situation, Massachusetts' seemingly paradoxical behavior makes sense. It faced a unique combination of imperial regulations: it could not formally issue legal tender money (let alone force it on sellers) *and* it could not back it with land. Formally issuing money would have violated the king's sovereignty. Backing it with his land would have added insult to injury. The government tried to maximize its survival probability. In the short run, this required

[63] This is an estimate of the debt from January 1691 (PRO CO 5/856 #131). Also see Mather, *Pietas*, p. 43.

[64] Moody and Simmons, *Glorious Revolution*, pp. 296–97.

[65] Ibid, pp. 311–12, 316; and MAC vol. 100, p. 472.

[66] Moody and Simmons, *Glorious Revolution*, p. 334; and Mather, *Pietas*, p. 45.

[67] Massachusetts knew about the Canadian (convertible) paper money in real time. See Goldberg, "Inventions."

pacifying the troops and in the long run it required securing an autonomous charter from the king. Stuck between a rock and a hard place, Massachusetts invented a currency that did not rely on land and seemed like a private IOU, although it really was an inconvertible legal tender. The particular combination of constraints produced a unique outcome.

The idea that lack of specie means no backing with *any* assets is obvious today due to numerous historical instances. However, it is anachronistic to assume that early Americans thought the same way. The 1690 currency was not a simple wartime substitution of convertibility with a legal tender law, as the colonists definitely had land in mind. The success of their innovation under unique circumstances illustrates a general principle in monetary theory: *it is not necessary to back money with assets, make it convertible, or force sellers to accept it*. Massachusetts inspired many other governments to easily abandon specie convertibility in favor of legal tender laws in times of crisis, typically without consideration for the old alternatives. It was a conceptual shift from tangible assets (specie, goods, land) to monetary obligations (taxes and debts) as the foundation of the monetary system. It was an important landmark in monetary history.

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