



*Econ Journal Watch,
Volume 3, Number 1,
January 2006, pp 45-72.*

Theory, Evidence, and Belief— The Colonial Money Puzzle Revisited: Reply to Michener and Wright

FARLEY GRUBB*

There's letters seal'd: and my two schoolfellows,
Whom I will trust as I will adders fang'd,
They bear the mandate; they must sweep my way,
And marshal me to knavery. Let it work;
For 'tis the sport to have the engineer
Hoist with his own petar: and 't shall go hard
But I will delve one yard below their mines,
And blow them at the moon: O, 'tis most sweet
—*Hamlet*, Act III, Scene IV

Preface

Econ Journal Watch contacted me for the first time about this exchange just one month before this appears. I had about two weeks to write this reply such that it would appear along with the Michener and Wright comment published here, rather than in the subsequent issue. Because I believe for readers' sake that authors should reply and should follow hard on the heels of their attackers, I have had to work in sudden haste. I apologize in advance for the reply's rough and unpolished hue. This

*Department of Economics, University of Delaware.

The views expressed herein are those of the author and do not necessarily reflect the views of the National Bureau of Economic Research. Editorial assistance from Tracy M. Cass is gratefully acknowledged

Michener and Wright comment on my article in *Explorations in Economic History* was rejected by *Explorations in Economic History* for reasons unknown to me by referees unknown to me. Given that this Michener and Wright comment is being published here I feel I owe it to these unknown referees to defend their judgment and integrity.

INTRODUCTION

AMONG THE GENERAL POPULACE OF COLONIAL AMERICA DID cash transactions take place predominantly in specie or in the paper money of particular colonies? To what extent did one colony's paper money circulate freely as a media of exchange among the general populace of other colonies? Answering these questions is important for defining the proper geographic unit for monetary analysis, i.e. the individual colony, some subset of colonies, or just the entire globe; for analyzing how the colonial paper money system worked; and for assessing the political problems with that system. Lacking quantitative evidence, modern scholars have relied on literary sources and anecdotal quotes from the colonial period to answer these questions. These sources, however, are ambiguous, and modern scholars have come down on one side or the other (and sometimes on both sides) depending on which of these anecdotal quotes they select to champion.

Many of these literary sources and anecdotal quotes are also highly partisan, biased, polemical, and full of subterfuge. Taking them at face value can be misleading. Some colonial writers used the assertion of specie plentitude as a tool to argue against the emission of paper money that they opposed on other grounds. And other colonial writers used the assertion of specie scarcity and/or that their colony's paper money had disappeared into other colonies as a tool to argue for emissions of more paper money that they desired on other grounds. In addition, colonial merchants involved in international trade and in cross-colony trade handled significant amounts of specie passing through the colonies (imports then exports of specie) and dealt in the exchange of one colony's paper money for another colony's paper money. Their experiences were different from, and the anecdotal evidence from this group is unrepresentative of, the general populace. My recent examinations of the context, representativeness, polemical bias, motivations, relevance, and veracity of this body of evidence has led me to

conclude that the claims for specie-plenitude and cross-colony circulation of paper money *among the general populace* cannot be credibly sustained. In addition, based on an extensive survey of pamphlets, broadsides, and other literary sources on money from 18th-century colonial America, Christine Desan (2005) recently concluded that the preponderance of evidence falls on the specie-scarcity side.

Ronald W. Michener and Robert E. Wright (2005, 2006) and Ronald W. Michener (1987, 1988) passionately disagree. They believe that the colonies were awash in specie, enough to dominate the media of exchange most of the time, and that paper money flowed freely and extensively across colonial borders as a circulating media of exchange. Michener and Wright, however, do not grasp or care about the issues mentioned above. They frequently conflate evidence on monetary usage among merchants dealing in international and cross-colony trade with what was going on among the general populace. And Michener and Wright typically select only the anecdotal evidence that supports their beliefs—seldom parsing it to determine the context, representativeness, polemical bias, motivations, and veracity of this evidence. The anecdotal evidence that contradicts their beliefs they typically ignore. For example, Brock (1975)—Michener and Wright’s definitive authority on colonial money—presents as many or more anecdotal quotes on specie scarcity as on specie plenitude. Michener and Wright simply ignore the specie-scarcity quotes.

The ambiguity of the literary and anecdotal evidence on money from colonial America cannot even be completely suppressed by Michener and Wright (2006). In their zeal to attack Grubb (2003, 2004, 2006) and promote their two beliefs, they present evidence for one belief that contradicts the evidence they just presented for their other belief. For example, Michener and Wright’s evidence for cross-colony circulation of paper money is frequently based on colonists’ claims of specie scarcity—contradicting Michener and Wright’s claim of specie plenitude.

The attack here by Michener and Wright (2006) is not an isolated event. Over the last 20 years the debate over colonial money has become strident, in no small part due to Michener and Wright. For example, see Michener’s attack (1987) on Bruce Smith (1985a, 1985b) and Smith’s reasons for not replying (2000); Michener’s attack (1988) on Charlie Calomiris (1988a) and Calomiris’ reply (1988b); Michener and Wright’s attack (2005) on Farley Grubb (2003) and Grubb’s reply (2005a); and now this exchange. In addition, other writers on colonial money have privately related stories to me of being accosted by Michener after they published a book or article touching on colonial money, e.g. Newell (1998). Why such

strong passions, such vituperative verve? Why do Michener and Wright wage such unrelenting and uninvited war against all who do not blindly accept their beliefs—especially given such ambiguity in the colonial literary evidence on these issues?

I cannot hope to uncover the full mystery of this or debunk everything they say—not to say that it cannot be debunked. But space and time limit this discourse. All I can do is give examples. This restricted outcome may be a deliberate strategy of Michener and Wright. Their tactic is to bury their opponent in a pile of anecdotal quotes, more than their opponent can sift through and deconstruct. It is far easier for them to grab another quote out of context from some website or secondary source, than it is for their opponent to take the time to track it back to its original source and determine the context, veracity, relevance, and motivations of the writer. Michener and Wright's response to being challenged on this is to up the ante by accusing those who question the veracity of their evidence of the same behavior they are engaged in and then pile on more unparsed anecdotal quotes. Such strong passions, such strong wills-to-believe are typically driven by theoretical and not by empirical considerations. So the search for why must begin there.

THEORY TURNED INTO IDEOLOGY

The story begins when West (1978) found no correlation between changes in the amount of paper money issued by a colony and changes in prices in that colony. Was this a violation of the classical quantity theory of money? A spate of new research into colonial money tried to explain West's finding. One line of research focused on the possibility that money demand was not invariant over time and might be systemically related to changes in the supply of colonial paper money (Smith 1985a, 1985b; Wicker 1985). This line of research assumed that the colonial institutional setting led to a violation of the assumptions underlying the classical quantity theory of money.

Now the classical quantity theory of money was a more-or-less sacrosanct theory at the University of Chicago, at least in the late 1970s and early 1980s among many of my and Michener's fellow graduate students there. It was truth with a capital "T". Thus Michener's attack (1987) on Smith (1985a, 1986b) is not surprising. Michener (1987) offered an

explanation of West's findings (1978) that did not violate the classical quantity theory of money—based on the simplistic currency substitution models that were often used as teaching tools in economic graduate programs in the late 1970s and early 1980s.

In particular, a colony's paper money was not the only money available. International monies, gold and silver specie coins, also flowed in and out of a colony and were used as money. Thus a colony's total money supply was the sum of that colony's paper money and the amount of specie coins in that colony. If exchange rates are perfectly fixed between a colony's paper money and international specie coins, and if the colony's money demand is perfectly invariant, and if there is a large reservoir of specie in the colony at all times (enough to fully offset any changes in paper money), and if transactions and information costs are zero, then changes in a colony's paper money supply will be fully offset by counter-flows of specie coins into or out of the colony leaving the colony's total money supply perfectly constant. The result of such a set of circumstances is that there will be no correlation between changes in the colony's paper money supply and changes in prices in that colony. Thus, West's findings are explained without violating the classical quantity theory of money.

While "saving" the classical quantity theory of money, this model also makes it a useless empirical tool for studying colony-specific shocks, because only the global money supply matters. It also implies that a colony's paper money supply should circulate freely in all other colonies—actually freely around the globe the same way that specie coins did. Any location's money supply is determined solely by its money demand, a demand that is assumed to be invariant. The assumptions used by Michener also constrain the quantity theory of money to hold perfectly even in the short-run.

Structured as a logical argument, Michener's model is as follows:

- If (A):
- (i) There is a perfectly fixed exchange rate between a colony's paper money and foreign specie monies (they are perfect substitutes), and
 - (ii) money demand is invariant over time even in the short-run, and
 - (iii) there is a large reservoir of specie in the colony at all times, and
 - (iv) transaction and information costs are zero,

Then (B): Changes in the paper money supply will be unrelated to changes in prices.

West (1978) showed that (B) is true. Because (B) is true, Michener deduced that (A) must also be true, i.e. as theory it must be the truth with a capital “T”. In Michener’s world, evidence to show that (A) is true or research to investigate whether (A) is true is unnecessary and any evidence that shows that (A) is not true must be wrong—because theory tells us that (A) must be true. As such, evidence on (A) is not and should not be taken seriously and is only offered when some misguided empiricist wants some evidence—because theory has already told us that (A) must be true.

Anyone who dares to claim that (A) is not true or who offered evidence that (A) is not true must be wrong and must be attacked and dispatched. Calomiris (1988a) and Smith (1985a, 1985b) did not hold that (A) was true, and so were attacked by Michener (1987, 1988). Grubb (2003, 2004, 2005a, 2005b, 2006) offered evidence that is inconsistent with (A) being true, and so he too must be attacked and dispatched, see Michener and Wright (2005, 2006). Michener and Wright must find some way to discredit any evidence that shows that (A) is not true, even if that means discrediting all evidence—for evidence is not really necessary in their world. Belief in (A) overpowers all.

Michener’s Logical Fallacy

Freshmen logic teaches us that given the true proposition—“If (A) is true, then (B) is true”—it does not follow logically that you can conclude “If (B) is true, then it must follow that (A) is also true.” To so deduce that (A) is true is to commit a fallacy of logic. Intuitively, this is because the true proposition—“If (A) is true, then (B) is true”—does not rule out many other circumstances (C), (D), (E), etc. that could also make (B) true. Thus, the truth of (B) cannot be used to deduce the truth of (A). It could just as easily be that (D) is true rather than (A). Yet this is exactly the logically fallacy that Michener has fallen into. Covering up this error of logic may explain why Michener has to defend his position so stridently.

THE EVIDENCE—DO MICHENER AND WRIGHT CARE?

In the rest of this reply I will show that Michener and Wright are only interested in evidence in so far as it can be used as superficial propaganda for their theory of colonial money. They are not interested in the integrity of evidence, or history, for its own sake. Their belief in (A) overpowers all else.

Setting the Tone—Michener and Wright's Opening Contradiction

Leopards do not change their spots and so I suspect neither would Michener and Wright (2006). And right at their opening, in footnote 1, they do not disappoint. Michener and Wright assert that “Most historians now argue that, for the most part, it [the colonial money supply] was adequate.” As proof for this assertion they cite McCusker and Menard (1985, 338) and Perkins (1994, 54) in their footnote 1. They also deduce right after this sentence that “adequate” means a lot of specie in circulation, more specie than paper money.

Now if you actually read McCusker and Menard (1985, 338) their conclusion that “the colonists’ stock of money was adequate. . . .” is derived from Hamilton’s estimate were he implies that 83 percent of the money supply was paper money and only 27 percent was specie money (Ferguson 1973, vol. 1, 35). Not only does this directly contradict how Michener and Wright characterize “adequate money supply” in their paragraph, but later in Michener and Wright (2006), recycled from Michener (1987, 278), they trash and reject Hamilton’s estimate because it shows too little specie to paper money.¹ Michener and Wright (2006) appealing to McCusker and Menard (1985, 338) as support for their position and then trashing the evidence that generated that support is contradictory. They cannot have it both ways.

¹ Michener and Wright (2006) and Michener (1987, 278) argue that Hamilton’s estimates of the magnitudes of specie (x) and paper money (y) in the pre-revolutionary economy are off by some factor, i.e. $a*x \neq x$ and $b*y \neq y$. Michener and Wright infer from this that it must also be true that $(x/y) \neq (a*x/b*y)$. But clearly this is only true if $a \neq b$, something Michener and Wright do not know. By contrast, if Hamilton’s error is purely the result of sampling the population of transactions and he just got the scalar wrong when aggregating up to the national level, then it is likely that $a = b$, and thus his implied ratio of specie to paper money is still correct.

Michener and Wright (2006) also cite Perkins (1994, 54) as concurring with their position here and quote him as saying “there is little reason to believe that the population of British North America suffered much, if at all, from an inadequate money supply” (Michener and Wright 2006, fn. 1). Now Perkins does not quite say this. Michener and Wright have misquoted him. Perkins says “inadequate monetary system” not “inadequate money supply.” The difference is subtle but important. Perkins is not talking about the money supply at all here, or implying that there is a lot of specie in circulation. He is merely noting that the colonies experienced real economic growth and a high standard of living, and whatever monetary system they had did not inhibit that. This is classic Michener and Wright behavior—repeated often throughout their work.

The Unit-of-Account Doomsday Weapon

Michener and Wright could always counter those who disagreed with them based on anecdotal evidence by simply piling on more anecdotal evidence that favored them—since there is tons of such on both sides of the debate. Faced with quantitative evidence that disagreed with them (Grubb 2003, 2004, 2005a, 2006), they needed a different strategy. That is when they came up with the unit-of-account doomsday weapon. They could dismiss any evidence that disagreed with them simply by declaring it to be unit-of-account evidence and not media-of-exchange evidence. They offer no criteria for determining when a record reflected unit-of-account money and when it reflected media-of-exchange money, except that any evidence that disagreed with them must be unit-of-account evidence, and any evidence that agreed with them must be media-of-exchange evidence. They do not actually know whether or when any given piece of evidence is being expressed in unit-of-account terms, they just assert that it is. Without a time machine, who can prove them wrong? This is a doomsday weapon in that it can be used to eliminate all evidence on the media of exchange, which would be fine with Michener and Wright because they already know the truth from their theory—who needs evidence anyway?

What is missing in Michener and Wright’s analysis is any model for determining what money the unit of account will be in, when and why this unit will shift to being a different unit of account, when and why multiple units of account will exist in society at large or within the same individual transaction, and so on. Related to this is Michener and Wright’s failure to

craft any testable hypotheses or do any hypothesis testing regarding unit-of-account usage.

For example, one model might suppose that the whole point of using a unit of account is to translate all other values into it for comparison purposes across space and time, as illustrated in Michener and Wright (2006, Appendix 3, William Pollard Letter). As such, there should be only one unit of account across society and any change in the unit of account should be a discrete complete shift. Multiple units of account simultaneously used by society at large, and within the same transaction, should not be observed. Under such a model, were rewards in runaway-servant ads expressed just in units of account? The evidence in Grubb (2004, 340) rejects this. There were at least three monetary units in use in society over the relevant period often used in the same year and by varying degrees. In addition, multiple monetary units show up often in the same transaction.

Now let's suppose an alternative model. Following Michener and Wright-style logic, because unit-of-account monies were all fixed one to the other in coin-rating tables in almanacs (see Michener and Wright 2006, Figures 2 and 3) the choice of particular monies for use as a unit of account was indeterminate or a random act, i.e. since all unit-of-account monies were perfect substitutes it would not matter which was used. Under this model, were rewards in runaway-servant ads expressed just in units of account? Again, the evidence in Grubb (2004, 340) rejects this. The coin-rating tables list a dozen or more monetary units, but the runaway reward evidence at best only reveals three monetary units in substantial use. In addition, even if one confines the potential units of choice to these three, the evidence in Grubb (2004, 340) rejects any random pattern of selection over space and time.

Finally, let's go at it a different way. There are four *indisputable* markers or point estimates from non-runaway-reward sources between 1730 and 1775 that deal with the ratio of specie to paper money as media of exchange in Pennsylvania. (Indisputable here means that even Michener and Wright have not disputed or have accepted these estimates in their published work to date.) What are the chances that Grubb's evidence (2004, 340) could hit all four media-of-exchange markers on the nose as a random accident—using random as our model of unit-of-account choice? The first indisputable marker is that, as Benjamin Franklin put it, there was next to no specie in Pennsylvania in the late 1720s (Lester 1938; McCallum 1992; Michener and Wright 2006; Nussbaum 1957, 27). The second marker is from Pelatiah Webster who estimated that 50 to 60 percent of the money in

Pennsylvania in 1774 was paper money (Webster 1969, 142). Grubb's evidence (2004, 340) hits both these markers pretty much on the nose. Suppose we use 10 percentage point increments as our margin of error for randomness. Then even with just these two markers, the chances that Grubb's evidence is really just unit-of-account evidence that happens by chance to hit these media-of-exchange markers is $(0.1 * 0.1)$ or 0.01—very improbable.

Now let's add in two more indisputable markers. Virtually all sources agree that specie flowed in during King George's War increasing the specie to paper money ratio only to flow back out afterwards decreasing the specie to paper money ratio. And this pattern repeated itself during the Seven Year's War. What are the chances that Grubb's evidence (2004, 340) captures this rise then fall in the specie to paper money ratio during both these wars as a random accident? Given that the other two possible patterns would be no change and an inverse movement to what did happen, let's use one-in-three as our margin of error for randomness. Grubb's evidence (2004, 340) hits these two markers on the nose. Combining hitting these two markers with hitting the two markers mentioned above means that the chances that Grubb's evidence is really just unit-of-account evidence that happens by random chance to hit all four media-of-exchange markers is $(0.1 * 0.1 * 0.34 * 0.34)$ or 0.001—extremely improbable. In conclusion, declaring some evidence to be units of account rather than media of exchange in order to dismiss it simply because one does not like the outcome is not sound empirical methodology.

Were Exchange Rates Fixed?

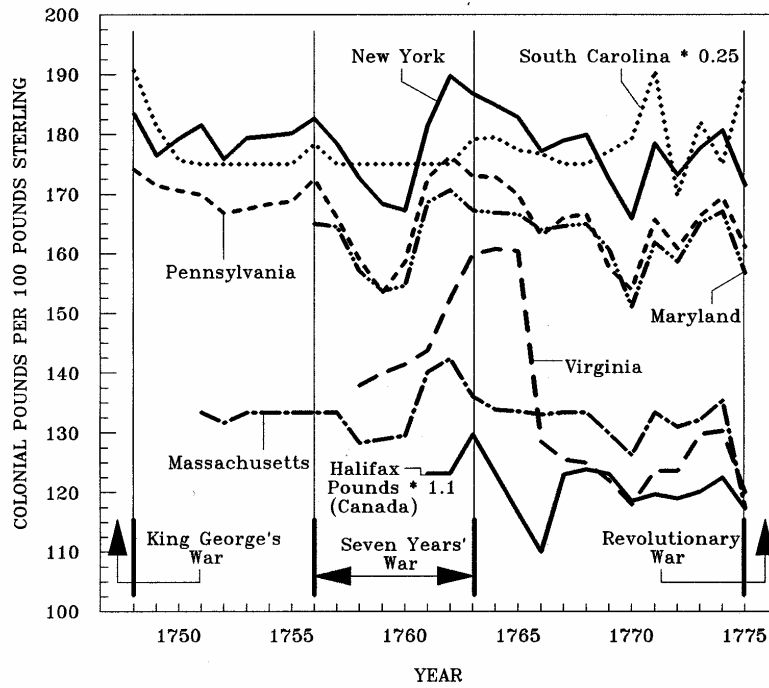
Michener and Wright assume that exchange rates were universally fixed in the colonial period. They focus less directly on this in Michener and Wright (2006) than they do in their prior work (Michener and Wright 2005, Michener 1987), but they assume it nonetheless for without this assumption their two core beliefs, that paper money circulated as media of exchange freely across colonial borders and that specie dominated the media of exchange, are jeopardized. If exchange rates were flexible then cost wedges arise between the paper monies of the various colonies, inhibiting their use as media of exchange outside the colony of issue, and specie flows become non-frictionless producing a time-dimension in the monetary equilibration process, i.e. short-run specie scarcity could occur.

The problem with Michener and Wright's fixed-exchange-rate-regime hypothesis is that there is no mechanism by which colonial governments could maintain fixed exchange rates in their paper monies. Colonial governments never redeemed on demand their paper money for specie or the paper money of other colonies, nor did they enter the market at their discretion to buy and sell their paper money for specie or the paper money of other colonies to defend a fixed exchange rate. Colonial governments did not have specie or foreign-exchange reserves as modern central banks do. Elsewhere Michener and Wright (2005) and Michener (1987) acknowledge this problem, but argue nevertheless that fixed exchange rate regimes were created, maintained, and enforced by custom or by agreements among merchants in the marketplace. However, they present no direct evidence of such a merchant cartel or discuss how it could rationally work. Instead, they deduce such from coin-rating tables published in almanacs, e.g. see Michener and Wright (2006, Figures 2 and 3). Rates of exchange are typeset in these almanac tables and so appear fixed and constant.

There are two problems with using this almanac coin-rating evidence to infer fixed exchange rate regimes. First, publishing exchange rates at a point in time does not make for fixed exchange rate regimes, no more than the currency-exchange table in today's *Wall Street Journal* proves that all the listed currencies are under fixed exchange rate regimes. Second, these almanac coin-rating tables are for unit-of-account exchange rates and not media-of-exchange exchange rates (Michener and Wright are hoisted on their own petard here). Thus, this evidence reveals nothing about what the exchange rates were among the media of exchange—which is all that matters for monetary behavior.

Finally, the universally used and accepted time-series on exchange rates in colonial America for the last quarter century (McCusker 1978) shows no such fixity or constancy in exchange rates, see Figure 1 below. Even the one exchange rate that we know has to be a pure unit-of-account exchange rate (because there was never any paper money issued in it)—the Halifax pound—is not perfectly constant or fixed. This evidence that exchange rates were flexible destroys Michener and Wright's core model of the colonial monetary system, and with it their core contention that all monies were perfect substitutes and so flowed freely and extensively all over.

Figure 1: Exchange Rates Between Colonial Pounds and Pounds Sterling, 1748-1775



Notes: Except for Lower Canada (Montreal and Quebec) where the unit of account money was called “Halifax pounds”, each Colony refers to the exchange rate between in that Colony’s pounds and pounds sterling, e.g. “New York” refers to New York pounds to pounds sterling.

Source: McCullough (1984, 266-68); McCusker (1978, 141-142, 164-165, 185-186, 198-199, 211-212, 223-224).

Oh Those Irrational Colonists—The Pennsylvania Evidence circa 1750

Michener and Wright (2006), citing Brock (1975, 354, 386), claim that 80 percent of the money supply in Pennsylvania circa 1750s was specie—contradicting and so discrediting the estimates in Grubb (2004) based on runaway rewards. Their point estimate and its source, recycled from Michener (1987, 282), is one they place great faith in. The original source for this 80 percent estimate is a single anecdotal quote taken from a letter Richard Hockley wrote to Thomas Penn in 1753. Hockley was the Pennsylvania receiver of quit rents for Penn who was the proprietor of the province. In reference to these quit rents, Hockley said that “full four fifths of the money recd into your Office is Gold and Silver. . . .” (Michener and Wright 2006). Michener and Wright lift material from an unpublished working paper of mine where I deconstruct this quote and in a preemptive strike attempt to discredit it (Michener and Wright 2006, fn. 15). Therefore, it is only fitting that the reader should see some of my original work.

Most quit rents, payments to the Lord Proprietor of Pennsylvania (the Penn family), were required to be paid in sterling (specie). Such payments, after all, were to be remitted to the Penn family in England (see *Pennsylvania Gazette*, January 25, 1739). Only with the Pennsylvania Legislature’s Currency Bill of 1739, did the Proprietor agree, after much debate and assured compensation, to take Pennsylvania paper money instead of sterling in payment of quit rents, but only “upon grants made before the year one thousand seven hundred and thirty-two and upon all grants afterwards, according to the tenor of the said grants . . .” (*Statutes at Large*, vol. 4, 324; vol. 5, 14; *Pennsylvania Gazette*, September 13, 1739).

Based on the correspondence between Hockley and Penn, most quit rents on grants made after 1732 were required to be paid, by explicit contract, in sterling. For example, Hockley wrote to Penn on February 26, 1752 that “I have agreed with . . . the people at Reading for 100 lotts of 5 acres each at 15/ sterling [quit rent] per lot which will make 75 pounds sterling per annum. . . .” (*Penn Manuscripts*, vol. 5, 215). Property-sale advertisements tell the same story, as the following advertisement from the *Pennsylvania Gazette* (February 26, 1754) illustrates: “To be sold by John Snowden, sadler, living in Market street, Philadelphia, a good brick house...subject to a ground rent of Four Pounds, Ten Shillings, a year, and a quit rent to the proprietaries, of Two Shillings, and Six pence, Sterling, per annum...” For other examples, see the *Pennsylvania Gazette* issues 9/15/1737, 11/29/1744, 5/28/1747, 8/13/1747, 5/3/1750, 7/5/1750, 9/28/1752, 10/12/1752, 9/27/1753, 11/21/1754, 12/5/1754, 2/4/1755, 6/12/1755,

12/13/1759, 1/28/1762, 3/18/1762, 7/8/1762, 6/7/1764, 10/25/1764, 5/23/1765, 6/20/1765, 8/8/1765.

Between 1750 and 1765, 80 percent of the property sales advertised in the *Pennsylvania Gazette* that were listed as subject to quit-rent payments, and that enumerated that payment, explicitly indicated that said payments were required to be made in sterling. This is exactly the same percentage as the “four fifths” quoted above. Therefore, by contractual design the proportion of quit rents collected in specie is unrepresentative of the ratio of specie to paper money circulating as a media of exchange within the colony.

Lastly, while Hockley was an avowed opponent of paper money and openly lobbied Penn to resist approving of said (*Penn Manuscripts*, vol. 5, 183; vol. 6, 17, 67), he nevertheless had to admit to Penn on October 10, 1751 that “money [meaning specie for quit rents] is become very scarce. . . .” and again on May 11, 1753 that “in answer to your orders of making seizures for neglect of payment of your quit rents . . . [I] thought it not so prudent at a time when the country was clamouring for more money. . . .” (*Penn Manuscripts*, vol. 5, 183; vol. 6, 59, respectively).

Michener and Wright (2006, fn. 15) dismiss this analysis by saying that any agreement between Penn and the Pennsylvania assembly to pay quit rents in specie if so contracted after 1732 was overridden by Pennsylvania’s legal tender law which allowed payment in overvalued bills of credit. Their proof of this consists of saying, “According to Hutson (1970, 431), the post-1732 tenants persisted in using the legal tender provisions to pay quit rents. . . .” (Michener and Wright 2006, fn. 15). However, Hutson (1970, 431) does not say this. Hutson’s actual statement is ambiguous over whether it is pre- or post-1732 quit-rent contracts to which he refers legal tender laws thwarting. If it was the post-1732 quit-rent contracts of which tenants were thwarting payment in specie by using the legal tender law to pay in paper money, then Hockley’s statement that “four-fifths” were paid in specie (quoted above) cannot be right. Michener and Wright’s interpretation of Hockley’s statement and Hutson’s statement are mutually contradictory. Michener and Wright cannot have it both ways.

In addition, Michener and Wright’s interpretation implies that the colonists were irrational fools. First, it implies that Hockley in his quit-rent contracts as well as property sellers in their newspaper listings, both cited above, were knowingly writing nonsense. Second, it implies that anyone who paid their quit rent in specie rather than in overvalued bills of credit, the 80 percent Hockley claimed paid him in specie, were fools.

To further support their point Michener and Wright (2006, Appendix 1) cite a Massachusetts pamphleteer, material recycled from Michener (1987, 295), who in 1749 wrote, “At *New York* and *Philadelphia* Silver is their Medium, and mill’d Dollars pass current at a known determinate Rate, and other foreign Coins in proportion: Paper Bills are sometimes the Instrument in Payment, but the Proportion is small compar’d with the Silver. . . .” The quotation is taken from the pamphlet *A Brief Account of the Rise, Progress, and Present State of the Paper Currency of New-England* written by an unnamed author and printed in Boston in 1749 (Davis 1964, vol. 4, 377-405).

The pamphlet is a polemic against paper money and its purpose is to convince Massachusetts residents that they should swear off paper money and return to a pure specie monetary standard. The three sentences in the pamphlet that immediately precede the passage quoted by Michener and Wright are instructive. They are: “I think therefore we may rest satisfy’d, no stable Currency can be projected, other than that of Silver and Gold. And here I expect to be ask’d: Why may not *New-England* have a Currency of Bills of Credit, as well as *New-York* and *Pennsilvania*? I answer” (Davis 1964, vol. 4, 387). There is no evidence in the pamphlet that the author knew the true state of affairs in New York and Pennsylvania. The author says nothing about these colonies in the rest of the pamphlet. As such, and given the polemical purpose, the author’s claim that specie was the primary media of exchange in Pennsylvania in the late 1740s lacks credibility. Another polemical pamphlet that Michener and Wright (2006) use uncritically is Hanson (1787). Partisan polemical tracts should not be mistaken for truth or taken at face value.

Finally, Michener and Wright (2006, Appendix 1) present evidence that the governor of Pennsylvania in the early 1750s resisted approval of new paper money emissions by the Pennsylvania assembly because he thought there was lots of specie in the colony and so paper money was not needed. Michener and Wright take this evidence at face value. And yet, Brock (1975, 354-362)—Michener and Wright’s definitive source on colonial money—shows that this talk of specie abundance was disingenuous, even calling it political “subterfuge.” Penn knew that the temporary inflow of specie during the war would soon be gone and specie scarcity would return (which is also consistent with Grubb’s (2004, 340) new evidence series). In London on October 9, 1749 Penn wrote to his governor in Pennsylvania, “[E]very one is sensible that in two or three years almost the whole of the Gold and Silver that during the war was brought

into the Colonys will be shipped hither, and wee shall have little but paper left. . . .” (Brock 1975, 356).

Yet, Penn and his governors argued against new paper money emissions. The reason was that they wanted more shared control with the assembly over the spending of the paper money authorized. But they could not come right out and say that because as the governor explained “such an amendment ‘would raise a great ferment among the people, and be considered . . . as a violent attack upon their liberties and priviledges” (Brock 1975, 357-358). So instead, the governor resisted the paper money bills (disingenuously) on the grounds that they were not necessary given the supposed abundance of specie in the province. Brock (1975, 362) concluded that even by 1752 “The assembly was yet in the dark as to the real reason for the governor’s refusal of their paper money bill.” Taking anecdotal evidence at face value is often misleading, something Michener and Wright do not seem to grasp or care about.

Retaliatory Strikes Turn into Self-Refutations—The Jones and Mazzei Mess

Michener and Wright (2006) spill a lot of ink over two issues (1) how to interpret Jones (1980) and (2) how to interpret Mazzei (Marchione 1983, v. 1, 325-326). Michener (1987, 275) was the first to introduce Jones into this debate by manipulating her evidence to support his claim that far more specie was in the colonies than paper money circa 1774—far more than even Jones (1980, 132) claimed. Figuring out how Michener manipulated Jones’ evidence to make it fit his view is not easily done. In Grubb (2004, 342-343) I figured that out and showed how it was done. Then I showed that plausible alternative assumptions could yield very different results—even one that hit my estimate of the ratio of paper money to specie based on runaway ads on the nose. The point being that the Jones evidence can be plausibly manipulated to say almost anything, from a money supply of almost no specie to one that is like 80 percent specie. The whole reason for searching for alternative money supply estimation methods was because evidence such as Jones (1980) does not yield the definitive answer that people like Michener wanted it to.

Michener and Wright misunderstood what I was doing and thought that I was asserting that my manipulation of Jones was the only plausible manipulation. And so they embarked on a lengthy diatribe of re-manipulation to show that I am wrong. But in the process they have shown

exactly what I was showing, and better than I did, namely that the Jones evidence can be made to say almost anything and so is pretty useless for determining the composition of the money supply. Since Michener (1987) was the first to argue that Jones (1980) could be so used to determine the composition of the money supply, I take their analysis here as self-refutation, and as such Michener (1987) should not have introduced the Jones evidence in his cause in the first place and that he will not again in the future.

The debate over quoting Mazzei is most interesting. Michener and Wright accuse me of being intentionally misleading by inserting [colony] into the quote “state [colony] paper money circulated freely only within it . . .” (Grubb 2004, 339). Michener and Wright point out that Mazzei was referring to paper money during the revolution. However, before the Treaty of Paris recognized U.S. sovereign independence (1783), U.S. states were still colonies—albeit colonies in rebellion. Apparently, Michener and Wright are unaware of this. Second, if anything, state/colony paper money issued during the revolution should have circulated more freely in other states/colonies than it did before the revolution—a condition that makes Mazzei’s quote here so interesting—an issue that Michener and Wright sidestep. Third, in their commentary on this quote, Michener and Wright do not make a distinction between paper money circulating “freely” among the general populace versus just within merchant communities dealing with cross-state/colony trade.

But the debate over quoting Mazzei goes deeper. Michener and Wright’s attack on me over the use of Mazzei is actually a classic Michener and Wright tactic, namely preemptively accusing your opponent of what you yourself have done. Michener (1988, 687) was the first to introduce Mazzei into the debate over colonial money in his attack on Calomiris (1988a)—using Mazzei to support Michener’s claim that specie dominated the money supply of the colonies. Michener (1988, 687) wrote, “Much of the prewar money supply consisted of specie. ‘In 1773,’ wrote one observer, ‘all transactions were made almost entirely in specie.’” The observer was Mazzei. This statement didn’t sound right when I first read it. How did this Italian know so much about colony money supplies? And Brock (1975, 1992) showed that all the major colonies except Massachusetts had issued significant amounts of paper money after 1760 and/or had significant amounts outstanding in this period. So I tracked down and read the treatise that was the original source of Michener’s quote.

This is when I decided to never cite or quote evidence from Michener until I had tracked down the original source and confirmed it. For

the actual sentence in question in Mazzei read, “In 1773, the year disorders began, that is, ten years after the end of the previous war, all transactions were made almost entirely in specie, which, however, did not abound.” Michener had truncated and mis-punctuated the sentence in a way that substantially altered its meaning in reference to the issue addressed. It is hard to think that anyone is that incompetent. If a student of ours had done this, we all know what we would call it. I did not raise this issue in Grubb (2004), but I did quote Mazzei to let Michener, who had been stalking my working papers and publications, know that I knew what he had done—possibly the only person who knew. In his zeal to attack me, however, Michener fell for the bait provided in Grubb (2004, 342) and reported in Michener and Wright (2006, fn. 13) the larger Mazzei quote and so provided his own self-incrimination.

What I did raise in Grubb (2004, 342) was what I also discovered, namely that Mazzei was writing about Massachusetts and not about all the colonies. Besides only mentioning Massachusetts in his treatise and doing so in the antecedent sentence to the one in question, Mazzei’s phrase above “In 1773, the year disorders began . . .” can only sensibly be referring to Massachusetts, e.g. the Boston Tea Party and consequent closing of Boston harbor by the British. Massachusetts had not issued new paper money since before the Seven Years War. Its lack of paper money *and* lack of specie in 1773 is both not surprising and a refutation of the Michener and Wright model of colonial money. Its lack of paper money in 1773 is also not representative of the rest of colonial America in this period.

On top of that, beside the ambiguity over specie scarcity or plenitude in the sentence by Mazzei quoted above, Mazzei also says in his treatise that “The extremely unfavorable trade the American States had with England . . . was responsible for their never having an abundance of specie. . . .” and “since for the above reason specie was often lacking, it had to be made up by bills of credit, that is, paper money. . . .” and “[B]efore communication between the two countries [England and America] was cut off, America was left almost entirely without hard money” (Marchione 1983, v. 1, 325-326). While one might be able to make Mazzei say anything one wants on the composition of colonial money via selective quotation, on balance he seems to come down on the side of specie scarcity and specie not being the dominant money supply within the colonies.

Anecdotal Quotes versus Archival Context—The Fitzhugh and Callister Examples

The Michener and Wright strategy is to pile on anecdotal quotes—any that give the appearance of supporting their beliefs—without deconstructing the context, veracity, or bias of their sources. Their tactic is to overwhelm their opponent who could never fully assess all the anecdotal quotes they pile on. I will give two examples that I have had time to parse.

In Appendix 2 on cross-colony circulation of paper money, Michener and Wright (2006) present evidence from Maryland merchants Henry Callister and William Fitzhugh as proof of their contention that Pennsylvania paper money circulated freely and extensively in Maryland. These are not new discoveries but evidence cited and recycled from Michener (1987, 236, 244). Michener also berated me with this evidence a while back, touting it as definitive proof of his contention. Having learned from the Mazzei quote above not to trust Michener and Wright evidence until I had verified it in the original source, I spent months hunting down and reading the Callister and Fitzhugh papers and ledger books in the archives.

Regarding Callister, Michener and Wright quote from McCusker (1978, 193) “In January 1762, Henry Callister, an Eastern shore tobacco merchant and planter, wrote a correspondent: ‘When I said currency, which does not imply Maryland [paper] money, of which there is hardly any current—I think I was yet more particular, for I spoke of money and exchange as current in Pennsylvania, which is our current money at present.’” However, when this quote is put in context it implies little about the circulation of Pennsylvania currency in Maryland. In 1762 Callister was in Townside [Crumpton] Maryland, 9 miles from Delaware and 15 miles by cart trail from the Delaware River port of Duck Creek. He was shipping wheat to, and importing goods from, Philadelphia. He engaged in frequent correspondence with Philadelphia merchants, such as Robert Greenway (*Callister Papers*, Tyler 1978). As such, Callister was likely to have had extensive dealings in Pennsylvania currency and would have found it useful if he could lay his hands on any.

By 1762, Callister was also desperate for payment of any kind from his customers. He went bankrupt at year’s end. The quoted passage above was directed to Nathan Wright, Callister’s storekeeper. Wright had asked what Callister would accept in payment for Callister’s goods, i.e., was only Maryland money acceptable or would any money do; was corn, wheat, or tobacco acceptable as payment; were bills of exchange acceptable as

payment; and so on. Callister's response was that he would take almost anything, i.e., any money, bills, or goods (*Callister Papers*, material just prior to the letter of January 18, 1762 quoted from above). In the rest of Callister's rather extensive correspondence with Wright, there is no indication that Pennsylvania currency was ever in frequent use in Maryland. On the rare occasion when Pennsylvania currency was offered as a means of payment by Maryland customers, it was regarded as unusual (*Callister Papers*).

The claim that the evidence in the account books of William Fitzhugh (*William Fitzhugh Ledgers*), a prominent merchant on Maryland's western shore, shows that Pennsylvania paper money circulated freely as currency in Maryland is just plain wrong. Fitzhugh kept his accounts in Maryland pound units-of-account. For "cash" transactions that were not in Maryland pounds, he meticulously recorded what currencies were used, e.g., dollars, pistoles, sterling, Pennsylvania paper pounds, Virginia paper pounds, and so forth. He also recorded the rate of exchange he used to translate these other media of exchange into Maryland pounds for accounting purposes. Between 1761 and 1764, out of well over 1,000 cash transactions, only 8 and 13 (well under 2 percent for either) were in Pennsylvania paper pounds and in Virginia paper pounds, respectively (no other colony's paper monies were recorded as being used). In addition, most of Fitzhugh's transactions in Pennsylvania and Virginia paper pounds can be traced directly to his travels to, or trade with merchant from, these two colonies. Based on this evidence, Pennsylvania and Virginia paper pounds did not freely circulate as media of exchange in Maryland.

What I learned from this exercise is that Michener and Wright make no distinction between merchants dealing with cross-colony trade and the general populace—conflating one with the other. Second, even with their merchants dealing in cross-colony trade, the evidence for paper money "circulating freely" in other colonies was not strong. And lastly, I learned that Michener and Wright do not go to the archives and do not labor over the extent of the manuscript sources they cite. It was at this point that in an e-mail reply to Michener I asked him to stop accosting me with ersatz anecdotal quotes pulled from websites and secondary book sources until he had hunted down the original sources and evaluated the context, veracity, relevance, and motivation of the writers—that what took Michener only a day or two to find and toss at me took me months to properly evaluate in the archives. He stopped e-mailing such evidence to me and took the route we have here now.

The Maryland Dollar Gambit

Michener and Wright (2006) try to explain away the finding in Grubb (2004, 340) that shows a rise in the use of specie, in particular Spanish silver dollars, in the decade before the Revolution—rising from 10 percent in 1765 to almost 50 percent in 1775—by arguing that the reference to “dollars” in Pennsylvania runaway ads is not to specie but to Maryland paper money. Michener and Wright, however, are caught in a conundrum here. They note that the rise in the use of “dollar” rewards begins when Maryland started issuing paper money that listed “dollar” values on it, and they assert that this money circulated into Pennsylvania. They give the impression that Pennsylvanians switched to “dollar” rewards because they had this flood of actual Maryland paper dollars in hand as a media of exchange to offer.

However, such a claim would overturn their assertion that all rewards are just unit-of-account money. In other words, if the switch to “dollars” by Pennsylvanians was caused by a flood of Maryland paper dollars into Pennsylvania so that they could then be offered as rewards, as Michener and Wright imply, then Grubb’s (2004) argument that rewards reflect media-of-exchange and not unit-of-account money is upheld by Michener and Wright. As such, the whole edifice of Michener and Wright’s objection—that Grubb confuses media-of-exchange with unit-of-account money—collapses. In addition, if they claim that dollars are actually Maryland paper dollars and not specie, then the media of exchange in Pennsylvania would be all paper and little specie, which would overturn another of their paramount claims—that specie dominated the money supply at all times in the colonies. To avoid this possibility they also have to claim at the same time that the reference to “dollars” in this period is not to the actual Maryland paper money but only to “dollar” unit-of-account money. They cannot have it both ways—a true dilemma for them.

For the moment let’s grant Michener and Wright their assertion that a “dollar” reward was just a unit-of-account expression. Why would Pennsylvanians switch increasingly to that unit of account from 1765 through 1775? Michener and Wright (2006) mention the convenience of dollar-conversion to other currencies—the mathematics of easy division—but this was always true. So why did they not switch earlier and why at best only half way by 1775? The best answer Michener and Wright can give is that while Pennsylvanians placing ads for runaways did not actually have Maryland paper dollars, the supposed increasing presence of this media of

exchange in their economy made it beneficial to switch to “dollar” units of account.

This suggests some testable (falsifiable) hypotheses. (Michener and Wright (2006) never suggest or craft any testable or falsifiable hypotheses, which appears to be their goal, i.e. to prevent all testing of their theory by denying any evidence that could be used to so test it.) One test would be to look at the usage of currency in Maryland. Following Michener and Wright logic, Marylanders after 1767 in all their accounting documents should switch over more completely than Pennsylvanians did to using “dollar” units of account. Second, Pennsylvanians living in counties bordering Maryland compared with Pennsylvanians living in say Bucks and Northampton Counties (about 77 and 114 miles from the Maryland border, respectively) should switch faster and more completely into using “dollar” units of account. Third, Marylanders who advertised rewards for runaways in both the *Maryland Gazette* (Annapolis) and the *Pennsylvania Gazette* should be more likely to use “dollar” rewards than Pennsylvanians just advertising in the *Pennsylvania Gazette*.

Michener and Wright’s hypothesis is falsified by all three tests. Pennsylvanians who lived the farthest away from Maryland [Berks, Bucks, and Northampton Counties] nevertheless used “dollar” rewards in their ads as much if not more than Pennsylvanians who lived on the border with Maryland [Chester, Lancaster, Bedford, Cumberland, and York Counties] (Grubb 2004, 341). In addition, 99 Marylanders placed the same ad for their runaway in both the *Maryland Gazette* and the *Pennsylvania Gazette* between 1767 through 1775. Only 12 percent of the rewards they offered were in dollars (the rest were in pounds or in “the currency where taken” with one offering a pistole). This is a lower (not a higher) percentage in dollars than what Pennsylvanians offered when only advertising in the *Pennsylvania Gazette* (Grubb 2004, 340-341).

Finally, looking at a sample of Maryland merchant and government records from 1767 to 1775 reveals that “dollar” units of account were hardly ever used, just Maryland pounds. For example, one can see this in the account books and convict auction records of James Cheston, of Cheston, Stevenson, and Randolph, a convict merchant in Annapolis and Baltimore (*Cheston-Galloway Papers*), and in the Baltimore County Court Convict Records from 1770-1774 (*Baltimore County Court*).

While Michener and Wright’s hypothesis (2006) is falsified by these tests, there is one hypothesis that this evidence does not falsify, and that is Grubb’s hypothesis (2004) that “dollars” in Pennsylvania runaway ads refers to specie not Maryland paper dollars, and that specie availability

differed across colonies due to differing short-run fluctuations in international trade flows. And why didn't Marylanders use dollars as a unit of account after 1767? In part, it may have been because those "dollar" Maryland bills of credit issued after 1767 were not redeemable in silver dollars in Maryland, but only in London. In addition, these bills reported on their face a value both in dollars and in pounds (Newman 1997, 167-169). In conclusion, Michener and Wright could have easily crafted testable (falsifiable) hypotheses and readily tested them against the evidence. However, they did not, nor have they in the past.

Straw Men, Misdirection, and Things I Never Said

Michener and Wright (2006) accuse me of many things I never said or did. For example, I never estimated or asserted "chronic scarcity of specie in Pennsylvania before 1723" going back into the 17th century. In my estimate of Pennsylvania's total money supply (Grubb 2004, 334-335) I did not "implicitly" assume that the velocity of circulation of specie was the same as for paper money. I explicitly stated it—nothing is hidden there. I did not claim that the velocity of circulation of Pennsylvania paper money in the late 1780s was higher than that of specie (Grubb 2005a, 1343). I only said that people at the time seemed to think that the velocity of circulation of Pennsylvania paper money was quite high. As a student of McCloskey, I am not devoted to "sign econometrics" as anyone who has read my research knows. Michener and Wright simply use this assertion—that someone is devoted to "sign econometrics"—to dismiss any econometric results that do not support their beliefs. Michener and Wright (2006) mischaracterize my statement on "ubiquitous use" of unit-of-account money (Grubb 2004, 331) and my estimate of real money balances over time—erroneously splicing one of my estimates with a different one they made up. I actually estimate that the long-run trend in per capita real money balance in Pennsylvania was approximately zero (Grubb 2004, 350; 2005b, Fig. 1).

As in Michener and Wright (2005), Michener and Wright (2006) spend a lot of time attacking Grubb (2006) which is a chapter in an edited volume that is still unpublished. This volume has languished in limbo for a few years due to editorial problems unrelated to my chapter. As such, it is the ideal target, the ideal straw man, for Michener and Wright to attack because the reader cannot consult the work to see if Michener and Wright are justified in their attack and I, as the author, cannot reproduce the

material here without violating faith with the volume's editors and publisher. All I can do is hope the reader will find the work when it is finally published, read it, and then for themselves judge the soundness of the research and the validity of Michener and Wright's attack.

Michener and Wright (2006) complain that various servant records produce different results when used to make monetary inferences, claiming that this invalidates all servant records—as though any record that has a servant in it must be the exact same kind of record. But not all servant records are identical. They differ by who is recording them, by what purpose they serve, by what group gets included in the record, and so forth. For example, the *Record of Indentures* (1771-1773) was recorded by the mayor's office as a contract registration exercise whereas the *Book A of Redemptioners* (1785-1804) was recorded under the auspices of the German Society of Pennsylvania as an honesty-in-contracting monitoring device for German immigrant servants. Because of these differences I would not expect them to reflect monetary usage in the same way (see also Grubb 1989, 1994). As I have said before, records must be scrutinized closely and evaluated on a record by record basis before using them, something Michener and Wright do not grasp or do not care about.

CONCLUSION

If there is a lesson here it is to side with Hume and Popper rather than with Plato and Hegel, for economics is first and foremost an empirical science and not an ideology (Grubb 2001), and to seek out the original sources of anecdotal quotes, deconstruct their meaning, and determine the context, veracity, representativeness, relevance, bias, and motivations of the writers—especially when dealing with colonial money.

REFERENCES

- Baltimore County Court (Convict Record), 1770-1774.** Unpublished Manuscript, Microfilm #CR 40,516-2. Annapolis, MD: Maryland Hall of Records.
- Book A of Redemptioners, 1785-1804.** Unpublished Manuscript. Philadelphia: Historical Society of Pennsylvania.
- Brock, L. V.** 1975. *The Currency of the American Colonies, 1700-1764*. New York: Arno Press.
- Brock, L. V.** 1992. The Colonial Currency, Prices, and Exchange Rates. Introductory Comments by Ron Michener. *Essays in History* 34: 70-132.
- Callister Papers.** Unpublished Manuscript. Baltimore: Maryland Diocesan Archives of the Protestant Episcopal Church.
- Calomiris, C. W.** 1988a. Institutional Failure, Monetary Scarcity, and the Depreciation of the Continental. *Journal of Economic History* 48(1): 47-68.
- Calomiris, C. W.** 1988b. The Depreciation of the Continental: A Reply. *Journal of Economic History* 48(3): 693-698.
- Cheston-Galloway Papers.** Unpublished Manuscript #1994. Annapolis, MD: Maryland Hall of Records.
- Davis, A. M.** (ed.) 1964. *Colonial Currency Reprints, 1682-1751, Vol. 4*. NY: Augustus M. Kelly.
- Desan, C.** 2005. The Practice of Value before the Coming of Capitalism: Early American Money and Finance as a Form of Governance. Unpublished Working Manuscript. Cambridge, MA: Harvard Law School.
- Ferguson, E. J. ed.** 1973. *The Papers of Robert Morris, 1781-1784 Vol. 1*. Pittsburgh, PA: University of Pittsburgh Press.
- Grubb, F.** 1989. Servant Auction Records and Immigration into the Delaware Valley, 1745-1831: The Proportion of Females Among Immigrant Servants. *Proceedings of the American Philosophical Society* 133(2): 154-169.
- Grubb F.** 1994. *German Immigrant Servant Contracts Registered at the Port of Philadelphia, 1817-1831*. Baltimore: Genealogical Publishing Co.

- Grubb, F.** 2001. Social Science versus Social Rhetoric: Methodology and the Pacific Labor Trade to Queensland, Australia. *Historical Methods* 34(1): 5-36.
- Grubb, F.** 2003. Creating the U.S. Dollar Currency Union, 1748-1811: A Quest for Monetary Stability or a Usurpation of State Sovereignty for Personal Gain? *American Economic Review* 93(5): 1778-1798.
- Grubb, F.** 2004. The Circulating Medium of Exchange in Colonial Pennsylvania, 1729-1775: New Estimates of Monetary Composition, Performance, and Economic Growth. *Explorations in Economic History* 41(4): 329-360.
- Grubb, F.** 2005a. State 'Currencies' and the Transition to the U.S. Dollar: Reply—Including a New View from Canada. *American Economic Review* 95(4): 1341-1348.
- Grubb, F.** 2005b. Two Theories of Money Reconciled: The Colonial Puzzle Revisited with New Evidence. NBER Working Paper #11784.
- Grubb, F.** 2006. The Constitutional Creation of a Common Currency in the U.S., 1748-1811: Monetary Stabilization Versus Merchant Rent Seeking," in Jurgen Nautz and Lars Jonung, eds., *Conflict Potentials in Monetary Unions [Beihfte der Vierteljahrshefte fur Sozial-und Wirtschaftsgeschichte]* Stuttgart: Steiner Verlag. Forthcoming.
- Hanson, A. C.** 1787. *Remarks on the Proposed Plan of an Emission of Paper, and on the Means of Effecting it, Addressed to the Citizens of Maryland, by Aristides.* Annapolis, MD: Frederick Green.
- Huston, J. H.** 1970. The Campaign to make Pennsylvania a Royal Province, 1764-1770, Part I. *Pennsylvania Magazine of History and Biography* 94(4): 427-463.
- Jones, A. H.** 1980. *Wealth of a Nation to Be.* New York: Columbia University Press.
- Lester, R.** 1938. Currency Issues to Overcome Depression in Pennsylvania, 1723 and 1729. *Journal of Political Economy* 46(3): 324-375.
- Marchione, M. ed.** 1983. *Philip Mazzei: Selected Writings and Correspondence: Volume I, 1765-1788.* Prato, Italy: Edizioni Del Palazzo.
- Maryland Gazette.** Various Issues.

- McCallum, B. T.** 1992. Money and Prices in Colonial America: A New Test of Competing Theories. *Journal of Political Economy* 100(1): 143-161.
- McCullough, A. B.** 1984. *Money and Exchange in Canada to 1900*. Toronto: Dundurn Press.
- McCusker, J. J.** 1978. *Money and Exchange in Europe and America, 1600-1775*. Chapel Hill, NC: Univ. of North Carolina Press.
- McCusker, J. J. and R. R. Menard.** 1985. *The Economy of British America, 1607-1789*. Chapel Hill, NC: university of North Carolina Press.
- Michener, R.** 1987. Fixed Exchange Rates and the Quantity Theory in Colonial America. *Carnegie-Rochester Conference Series on Public Policy* 27: 233-308.
- Michener, R.** 1988. Backing Theories and the Currencies of Eighteenth-Century America: A Comment. *Journal of Economic History* 48(3): 682-692.
- Michener, R. W. and R. E. Wright.** 2005. State 'Currencies' and the Transition to the U.S. Dollar: Clarifying Some Confusions. *American Economic Review* 95(3): 682-703.
- Michener, R. W. and R. E. Wright.** 2006. Miscounting Money of Colonial America. *Econ Journal Watch* 3(1): 4-44.
- Newell, M. E.** 1998. *From Dependency to Independence: Economic Revolution in Colonial New England*. Ithaca, NY: Cornell University Press.
- Newman, E. P.** 1997. *The Early Paper Money of America*. Iola, WI: Krause Publications, 4th edn.
- Nussbaum, A.** 1957. *A History of the Dollar*. New York: Columbia University Press.
- Penn Manuscripts: Official Correspondence, Vols 5 and 6.*** Unpublished Manuscript. Philadelphia: Historical Society of Pennsylvania.
- Pennsylvania Gazette.*** Various issues.
- Perkins, E. J.** 1994. *American Public Finance and Financial Services, 1700-1815*. Columbus, OH: Ohio State University Press.
- Record of Indentures of Individuals Bound Out as Apprentices, Servants, Etc., and of German and Other Redemptioners in the Office of the Mayor of the City of Philadelphia October 3, 1771 to***

- October 5, 1773.** Unpublished Manuscript. Philadelphia: City Archives of Philadelphia.
- Statutes at Large of Pennsylvania, Vols. 1-8.*** 1896-1976. Harrisburg, PA: State Printer of Pennsylvania.
- Smith, B.** 1985a. American Colonial Monetary Regimes: The Failure of the Quantity Theory and Some Evidence in Favor of an Alternative View. *Canadian Journal of Economics* 18(3): 531-565.
- Smith, B.** 1985b. Some Colonial Evidence on Two Theories of Money: Maryland and the Carolinas. *Journal of Political Economy* 93(6): 1178-1211.
- Smith, B.** 2000. *Personal Correspondence, Sept. 19, 2000.* Available from the author of this Reply here upon request.
- Tyler, J.W.** 1978. Foster Cunliffe and Sons: Liverpool Merchants in the Maryland Tobacco Trade, 1738-1765. *Maryland Historical Magazine* 73(3): 246-279.
- Webster, P.** 1969 [1791]. *Political Essays on the Nature and Operation of Money, Public Finances and Other Objects.* New York: Burt Franklin.
- West, R. C.** 1978. Money in the Colonial American Economy. *Economic Inquiry* 16(1): 1-15.
- Wicker, E.** 1985. Colonial Monetary Standards Contrasted: Evidence from the Seven Years' War. *Journal of Economic History* 45(4): 869-884.
- William Fitzhugh Ledgers, 1761-1774.*** Unpublished Manuscript #1831. Baltimore: Maryland Historical Society.

ABOUT THE AUTHOR

Farley Grubb is Professor of Economics and NBER Research Associate, University of Delaware, Newark, DE 19716 USA. [Link](#) to online vita; e-mail: grubbf@lerner.udel.edu.

[GO TO COMMENT BY MICHENER AND WRIGHT](#)