



Colonial New Jersey's Paper Money, 1709–1775: Why Ronald Michener Insists on Using Uncorrected Data—A Reply

Farley Grubb¹

[LINK TO ABSTRACT](#)

Ronald Michener (2019a) takes issue with my approach to and analysis of colonial New Jersey's paper money (Grubb 2016a). He objects to how I calculate the money's asset present value when that money is hypothesized to be zero-coupon and interest-bearing bonds. He objects to how I calculate the money's market exchange value. He questions my exchange rate data on colonial New Jersey's paper money, and he objects to the econometric treatment I apply to my model of that money's performance. He, however, presents no new data constructions, nor presents any new explanations for the patterns in the data, nor does he present any new hypotheses or do any hypothesis testing to account for the level and movement in the value of colonial New Jersey's paper money.

The back story

Readers should be aware that the exchange here between Michener and myself is not a one-off affair but has gone on for approximately 20 years. It is a one-sided war: I write original research papers, and Michener attacks them. Michener's comment here is his sixth published comment on my research that has appeared

1. University of Delaware, Newark, DE 19716.

in a scholarly journal (the other five being: Michener 2018; 2019b; Michener and Wright 2005; 2006a; b)—with four of the six appearing in *Econ Journal Watch*. These comments were on my original research articles (Grubb 2003; 2004; 2018a; Celia and Grubb 2016), and in response to Michener’s five prior comments I have published five rejoinders (Grubb 2005; 2006a; b; 2018b; 2019c).

If I am not mistaken, Michener’s six published comments on my research represent a majority of Michener’s published papers in scholarly journals over the last 20 years. And if I’m not mistaken, there has not been an original research paper on colonial or Revolutionary era paper money that I have submitted to or published in a scholarly journal over the last 20 years that Michener has not rejected as a referee and/or written and submitted a comment on—referee reports and comment submissions that have been often disregarded by editors. An earlier incarnation of Michener’s comment here (2019a) was rejected by the editors of the journal publishing my paper on which Michener’s comment is based (Grubb 2016a).

Besides what has already been cited above, my original research papers on colonial and Revolutionary era paper money that I have submitted to or published in scholarly journals that I suspect Michener also rejected as a referee or failed to get his comments published after my paper was published include: Grubb 2006c; 2008; 2012; 2015; 2016b; c; 2017; 2019a; b; and Cutsail and Grubb 2017; 2019. I have never submitted or written a comment on any original research paper published by Michener. Michener and I were Ph.D. students in economics at approximately the same time at the University of Chicago. While readers might conclude that Michener’s 20-year obsession with me is unnatural, unseemly, and weirdly personal, I could not possibly comment.

Preliminaries

Michener’s (2019a) comment is over twice as long as my original publication (Grubb 2016a) on which Michener is commenting. It addresses much that is not in that article—most of which Michener has published before. Regarding my article, he repeats claims he has published before, and repeats them without taking into consideration the replies that cast doubt on the value of his claims. I will not address his review of the field, his comments on the research of other scholars, or his dislike of cliometrics and econometrics—two terms he mistakenly equates.² I

2. Econometrics are statistical application methods for testing hypotheses in economic theory. Whereas, cliometrics is the application of explicit economic theory and quantitative data, not always statistical, to historical issues. While econometrics are often used in cliometric studies, econometric applications are

will also not repeat my published assessment of Michener's claims regarding my research, but only summarize them and cite where the reader can read my prior published replies in full.

Variable construction

Regarding colonial New Jersey's paper money, Michener (2019a, 192–193) claims I incorrectly constructed that money's asset present value (APV). He says I constructed it as an average utility measure. He says I should have constructed it as a marginal utility measure, and thus I am erroneously inflating its value. He also claims I incorrectly constructed that money's market exchange value (MEV), erroneously deflating its value by deducting the transaction, transportation, and time costs involved in executing the exchange through to consummation. He claims the result of my erroneously inflating APV and deflating MEV is the striking coincidence of levels for the two series (see Grubb 2016a, 1223, Figure 2). He, however, does no recalculation to show what he thinks the values should be or show whether such changes would alter the coincidence in APV and MEV levels.

Regarding the APV construction, nowhere do I say I constructed APV as an average utility measure. Michener made that up. In addition, Michener commits a fundamental error in microeconomic theory. He conflates average utility with the *average* of the marginal utilities, and conflates marginal utility with the *marginal* of the marginal utilities. This is explained in detail in my previously published reply to Michener (Grubb 2019c, 401–402). My construction of APV stands as correct regarding levels.

Regarding the MEV construction, Michener himself (2019a, 185–186) claims that exchange rates need to be adjusted for transaction and risk costs to get the effective exchange rate. I even use material Michener cites in his past publications to, in part, justify the average adjustment I make. For Michener to say in the same comment both that such adjustments to the exchange rate data to get my MEV measure should not be done (Michener 2019a, 193), and that such adjustments are necessary to get effective exchange rates (*ibid.*, 185–186), should tell the reader something. My construction of MEV stands as correct regarding levels.

Finally, Michener (2019a, 210) claims I constructed APV as a function of the current paper money supply (M), thus making M and APV mechanically related. This in turn invalidates any estimated relationship between M and any variable with APV in it. He is disputing my APV analysis because he does not want anyone

neither necessary nor sufficient for a study to be sound cliometrics.

to think about colonial paper monies in asset terms. Michener wants everyone to think of colonial paper monies only as pure fiat currencies.³

Michener leaps to this conclusion by looking at my formula for APV and seeing M in the denominator of that equation (Grubb 2016a, 1224). Michener, however, does not evaluate the complete formula. All M is doing in the formula is weighting the individual yearly redemption contributions (RED) across the window of redemption years (T). It turns yearly raw RED amounts into their percentage contributions to the time-discounting calculation. For any given M , APV can take on any value from zero to 100 percent of face value depending on how the legislature sets and executes the length of the redemption window (T) and where, within that window, yearly redemption amounts (RED) are lumped. Therefore, to assert that APV and M are mechanically related, you need to show that M and T are mechanically related, and that M and RED are mechanically related. Michener does not do this. Even a cursory look at how New Jersey structured its paper money redemptions over time indicates that such mechanical connections are not there (Grubb 2015; 2016c). I explain this in more detail in a prior published reply to Michener (Grubb 2019c, 402–403). Therefore, APV is not constructed in such a way that it is mechanically or serially correlated with M , and so Michener's (2019a, 209–211) objection to my econometric specification in my

3. This view also shows up in Michener's assessment of Federal Reserve notes as toilet paper (Michener 2019a, 192 n.10). Therein, Michener states that "Federal Reserve notes have commodity value as toilet paper, but they do not fluctuate in value as the price of toilet paper changes." This appears to be his only effort to dismiss my model of money in equations (1) and (2) of Grubb (2016a, 1217–1218) wherein I decompose the market value of the money 'thing' into its real commodity or asset value when not used as money and its transaction premium. Setting aside the fact that if the price of toilet paper tracks the general price index then Michener's claim above is problematic, and setting aside the fact that no one has seen anyone use Federal Reserve notes as toilet paper, Michener's statement shows that he does not understand my model of money because his example actually proves the efficacy of my model. Federal Reserve notes are considered a fiat currency. If you take a Federal Reserve note to the Fed and ask for its real non-money value, they will just give you another Federal Reserve note of equal denomination. Its market value is overwhelmingly tied to its transaction premium and not its real commodity value when not a money. That a fraction of a percent of its market value is real commodity value (toilet paper) means that fluctuations in its value are driven by fluctuations in its transaction premium and imperceptibly affected by fluctuations in the market value portion that is comprised of real commodity value. This result is precisely what my model captures. It distinguishes between fiat and asset monies and measures the extent of a money's fiat-ness.

The proper analogy to colonial paper money is not a current Federal Reserve note, but a U.S. saving bond if that bond was tradeable. The value of a saving bond at any point in time before its maturity date is not its face value but is its real asset present value in Federal Reserve notes when time-discounted from its maturity date. As such, its current market value is predominately determined by its APV , just as colonial paper monies were. If saving bonds were tradable, then some small transaction premium contribution to its current market value might exist depending on its usage in trade compared with other media of exchange. The structure of 'money' matters. Michener chooses to ignore that, as well as all the colonial laws dealing with the structure and timing of face-value redemption of colonial bills, but then he admits that colonial bills were "called in and burned" like bonds (Michener 2019a, 190).

Table 3 (Grubb 2016a, 1229) is erroneous.

My Table 3 (Grubb 2016a, 1229) is estimating the determinants of the transaction premium attached to colonial New Jersey's paper money, namely the gap between MEV and APV. Michener redoes this regression by dropping APV from the construction of the transaction premium, leaving only the money's market exchange value (MEV) as the dependent variable (Michener 2019a, 210). Michener asserts that his specification is measuring the "Determinants of the transaction premium." Yet he no longer has a transaction premium measure as the dependent variable. Thus, his claim is erroneous. He is estimating something else, not the transaction premium. Michener (*ibid.*) justifies his removal of APV from the dependent variable construction because APV and M (one of the independent variables) are correlated in the raw data—claiming that they are mechanically or serially related in construction. However, his assertion that these two variables are mechanically or serially linked in construction was shown above to be erroneous. This leaves only his simple correlation coefficient between APV and M in the raw data as his objection. However, if only variables that are completely uncorrelated are allowed to be regressed against each other, then all econometrics collapses to irrelevance. As such, Michener's argument for rejecting what I did is spurious.

Finally, Michener's specification and results from redoing my Table 3 as his Table 8 (Michener 2019a, 210), where he shows no statistical relationship between MEV and M, is old news. It has already been estimated and published by me. MEV can be used as an inverse proxy for prices in a quantity-theory-of-money estimation. I have estimated that effect elsewhere and found little relationship between MEV and M (Cutsail and Grubb 2017; Grubb 2016b, 182; 2019a). Michener makes no new discoveries or contributions here.

Econometrics

Michener claims that the econometrics I report in my Table 2 (Grubb 2016a, 1227) are wrong, and when he redoes them his way he gets nonsense—wanting the reader to conclude that my whole approach is nonsense. He claims (2019a, 180, 192–193) that "The heart of his [Grubb's] paper lies in using econometrics," and that "Grubb...grounded his analysis in econometrics"—implying that my whole approach rises and falls with the success or failure of the econometrics. Michener also claims that his alternative econometric specifications when using uncorrected data—data and specifications that yield no statistically significant results on the APV variable—are preferable.

If I'm not mistaken, Michener has never published applied econometric estimates in any of his prior work on colonial paper money, except in his comment

on my analysis of colonial Virginia's paper money just published (Michener 2019b), work by him that spans over 30 years of research on the topic. His objections here (2019a) are the same as in that prior (2019b) comment on my research. In his comment here, as well as in past papers, Michener has expressed a disdain for applied econometrics, holding that it is a methodology that has no value and should not be used.

Nowhere do I say the econometric applications in Table 2 (Grubb 2016a, 1227) are the "heart" of my paper—as Michener (2019a, 192) claims it is. Michener made that up. The 'heart' of my paper is equations (1) and (2) and the data as displayed in Figures 2 and 3 (Grubb 2016a, 1217–1218, 1223, 1225). As such, Michener is trying to distract the reader away from the core of my paper and into Michener's econometric hash. Nothing Michener does to my econometric analysis changes the results derived from equations (1) and (2) and displayed in Figures 2 and 3. The econometric results could be entirely eliminated and the results displayed in Figures 2 and 3 would still stand. Finally, if you use Michener's uncorrected data and redraw Figures 2 and 3 (something Michener fails to do), nothing perceptible changes. The coincidence between the levels and movement of APV and MEV for New Jersey's paper money is unmistakable and undeniable. Nothing else, and certainly nothing else offered by Michener, tracks the level and movement of MEV as does my modeled APV.

The data for colonial New Jersey's paper money regime span only 67 years, and the key variables, namely the market exchange value (MEV) and asset present value (APV), are measured with error. Applying time series econometrics to such a short data span using variables measured with error can only be illustrative and ancillary at best. Trustworthy standard errors are difficult to generate under these circumstances. A person would be foolish to "ground his analysis in econometrics," or make econometrics the "heart" of his analysis, or dwell exclusively on statistical significance under these conditions. The same can be said for anyone who would make such an econometric exercise the core of their comment. The econometric exercises in Table 2 are only illustrative of and ancillary to the core results displayed in Figures 2 and 3 (Grubb 2016a, 1223, 1225, 1227).

Michener wants to redo the econometrics in my Table 2 (Grubb 2016a, 1227) in order to produce no statistically significant relationship between MEV and APV because he does not want anyone to think of colonial paper money in asset terms. Doing so is easy given the nature of time series econometrics. One way to do this is to load the right-hand side of the regression with time variables, which Michener does in his Tables 2 and 3 (Michener 2019a, 197–198), thereby diluting the influence of the non-time variables.⁴ Doing so also violates the model

4. Any univariate time series can be closely approximated by a function of continuous and discrete time

being estimated. I am estimating a decomposition model. It is an identity (see the equations in Grubb 2016a, 1217–1218; 2016b, 163; 2018a, 127). You cannot add time variables to it without violating the model. It would be like adding a time trend to purchasing power parity, which is also an identity. Doing so invalidates the purchasing power parity model.

Another simple way to produce no statistically significant relationship between MEV and APV would be to add erroneous observations to the data set. Doing so would increase the standard errors and drive the estimated coefficients toward statistical insignificance. Now doing so would be an obvious trick that most readers would see through and reject. But what Michener does by refusing to correct the exchange rate data is the same thing. By not removing errors in the data, and assuming such errors are random, the standard errors are increased thus driving the estimated coefficients toward statistical insignificance.

Michener's primary econometric objection boils down to whether the exchange-rate data are correct or whether there are errors in it that need correcting, and then whether my corrections are justified. I will turn to that next. While Michener has been doing research on colonial paper money for over 30 years he has never indicated that he has previously looked into the exchange rate data, verified its construction and sources, or attempted to correct any errors therein.

Michener refused to track down and examine the sources in his library cited in Grubb (2016a, 1221) that I used to correct the exchange rate data.⁵ He demanded that I do that for him and show him exactly how I made the corrections. I refused and said I was not Michener's research assistant. All the sources were published and were in Michener's university library. I saw no reason to have to explain to Michener how use a library, how to read English, and how to use his hand calculator to do long division—the only techniques needed to figure out what I did.

The editor of this journal then asked if I would track down the sources again in my library, re-verify them, and explain to him what I did. I did so. The editor then passed that information on to Michener—information Michener then used to pre-emptively craft counter arguments to my likely reply to his comment (Michener 2019a, 202, 205, 206). I will repeat and expand on that information in what follows.

variables. Regressing this time series on these time variables can produce a close fit, but it does not mean anything. All it does is re-describe the time series in a different mathematical way.

5. Michener (2019a, 201) claims that “nowhere” did I “specify” these errors but only provided a “huge” list of sources referencing where they might be, implying that it was too difficult for anyone to figure out and verify what I did. I, however, explicitly stated that I made corrections to the years 1739, 1741, and 1762 (Grubb 2016a, 1219). The sources I cite in Table 1 amount to three lines and six items all with explicit pages listed (Grubb 2016a, 1221). The items and pages that correspond to the three years listed for which I made corrections are even fewer. It took under half a day in the library, and only a hand calculator, to figure out what I did regarding data corrections.

Exchange rates

John J. McCusker (1978) reports exchange rates for the monies used by individual American colonies and select European counties, by month, for each year from 1600 through 1775. McCusker's exchange rate compilation is the definitive source used by scholars for exchange rates between the paper monies used by individual American colonies and English pounds sterling. McCusker's data compilation was a colossal undertaking for a single individual. It used a massive number of disparate original and secondary sources, sorted the data by month, year, colony, and country, and transformed irregular information as stated in original and secondary sources into a standard format. Given the nature of this data compilation exercise, it would not be surprising to discover some errors in the data reported in McCusker (1978).

Colonial New Jersey's paper money exchange rate to pounds sterling

McCusker's (1978, 172–174) exchange rates for colonial New Jersey's paper money to pounds sterling are supposedly market exchange rates. He presents his rates as $\#\mathcal{L}_{\text{NJ}}$ needed to purchase $100\mathcal{L}_s$ (\mathcal{L}_{NJ} = New Jersey paper pounds; \mathcal{L}_s = pounds sterling). This is the standard format most historians use when reporting exchange rates for colonial New Jersey. For discussion convenience, I will convert everything to $\#\mathcal{L}_{\text{NJ}}$ needed to purchase $1\mathcal{L}_s$ from here on.

For colonial New Jersey's paper pounds after 1723, par (face value) was set at $1.33\mathcal{L}_{\text{NJ}} = 1\mathcal{L}_s$, or $1\mathcal{L}_{\text{NJ}} = 0.75\mathcal{L}_s$. The par rate was printed on the face of each New Jersey bill and was the rate used by New Jersey's provincial government when redeeming its paper money (Grubb 2015, 16, 18; Newman 2008, 249–259). This par rate was also Queen Anne's 1704 Proclamation rate. New Jersey's provincial government did not redeem its bills on demand, but only at designated future dates (Grubb 2015; 2016a).

Original sources report exchange rates in three different ways. Historians compiling exchange rates transformed this original source information into $\#\mathcal{L}_{\text{NJ}} = 1\mathcal{L}_s$.

(a) The most common listing of exchange rates in original sources is as $\#\mathcal{L}_{\text{NJ}} = 1\mathcal{L}_s$, such as $1.5\mathcal{L}_{\text{NJ}} = 1\mathcal{L}_s$. No transformations are required to present these exchange rates in the way historians typically do. Except for an occasional transcription error (which are known to have occurred), few errors occur with these sources in the McCusker data.

(b) Occasionally, original sources list exchange rates as $xx\mathcal{L}_{\text{NJ}} = yy\mathcal{L}_s$. To get

the exchange rates as historians like to present them they have to do some long division, so that $(xx / yy)\text{£}_{\text{NJ}} = 1\text{£}_s$. Occasionally, the historians who do this make long division errors and so report the wrong exchange rate. Considering that most historians who compiled the exchange rates reported in the secondary sources did so in the era before hand calculators, such errors may not be surprising.

(c) Finally, original sources occasionally report exchange rates as the percentage of a £_s needed to purchase 1£_{NJ} . Par is $1\text{£}_{\text{NJ}} = 0.75\text{£}_s$, or at par 1£_{NJ} trades at 75 percent of 1£_s . Thus, if 1£_{NJ} trades at 70 percent, then $1\text{£}_{\text{NJ}} = 0.70\text{£}_s$, or $1.4286\text{£}_{\text{NJ}} = 1\text{£}_s$. To get the exchange rates as historians like to present them, historians have to do long division and realize they are dealing with an inverse interpretation from method (a) above. The historians who did these exchange-rate compilations, especially considering that most were done pre-1979, occasionally made errors in doing the long division and in realizing the inverse reporting in the original source, and thus sometimes reported the wrong exchange rates.

My corrections to the McCusker data on colonial New Jersey exchange rates

1739

For 1739, McCusker (1978, 172) made an error when he reported an exchange rate of $1.70\text{£}_{\text{NJ}} = 1\text{£}_s$ for May of that year, which he derived from Lewis Morris (1852, 49). Morris was Governor of New Jersey. In a letter written on 26 May 1739 from Perth Amboy to the Lords of Trade in England, Morris said that $1000\text{£}_{\text{NJ}} = 550\text{£}_s$, which is the same as $1.818\text{£}_{\text{NJ}} = 1\text{£}_s$. Apparently, McCusker occasionally had problems doing long division. This same error shows up in Richard Lester's book (1970/1939, 127). McCusker may have just copied Lester's long division error here for his entry for May 1739. I changed McCusker's rate for May 1739 to the correct rate of $1.818\text{£}_{\text{NJ}} = 1\text{£}_s$.

1741

For 1741, McCusker (1978, 172) lists one rate for January, one rate for April, one rate for June, and one rate for August. Those rates were $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$, $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$, $1.25\text{£}_{\text{NJ}} = 1\text{£}_s$, and $1.40\text{£}_{\text{NJ}} = 1\text{£}_s$, respectively. The only published source McCusker (1978, 174) lists for where he took these rates for the year 1741 is Morris (1852, 133). Yet, Morris lists rates for 1741 in his August 1741 letter without giving exact months for each rate. Morris merely references a "2 to 3 months time" between the rates he lists (Morris 1852, 134). Morris also lists the rates on page 134,

not on page 133 as cited by McCusker.

McCusker also reports the average of these rates for 1741 as being $1.425\text{£}_{\text{NJ}} = 1\text{£}_s$. The actual average for his four reported rates is $1.4125\text{£}_{\text{NJ}} = 1\text{£}_s$. It looks like McCusker had a transcription error in writing down the average, mistakenly dropping the “1” in the true average so $1.4125\text{£}_{\text{NJ}} = 1\text{£}_s$ was erroneously recorded as $1.425\text{£}_{\text{NJ}} = 1\text{£}_s$. Alternatively, there may have been several rates used in a given month for the months when rates were reported and including them in the average might explain why the average reported is not the simple average of his four reported rates for 1741. This possibility, however, is inconsistent with how McCusker arrives at yearly averages for other years (see the discussion of 1762 below). Thus, it is likely that McCusker just made a transcription error here in reporting the average for 1741.

For January 1741, McCusker reports an exchange rate of $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$. This rate does not come from any published sources he cites for where he says he took the data for 1741. So where is it from? The source of this rate appears to be Donald Kemmerer (1956, 119) where Kemmerer reports that the *Boston Evening Post* of 12 January 1741 listed New Jersey’s paper money exchange rate as $1.60\text{£}_{\text{NJ}} = 1\text{£}_s$. Thus, McCusker’s reported rate for January appears to be a recording error. I changed it to the rate as listed in Kemmerer (1956, 119) being $1.60\text{£}_{\text{NJ}} = 1\text{£}_s$ as opposed to McCusker’s $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$.

For April, June, and August of 1741, McCusker reports exchange rates of $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$, $1.25\text{£}_{\text{NJ}} = 1\text{£}_s$, and $1.40\text{£}_{\text{NJ}} = 1\text{£}_s$, respectively. These three rates do not come from any published sources he cites for where he says he took the data for 1741. So where do they come from? The source of these rates appears to be Kemmerer (1956, 120) where Kemmerer reports, “During the preparation for the West Indian expedition, while supplies were being accumulated in quantity, the supply of English bills of exchange was such, and the demand for specie so great that the New Jersey exchange rose sharply. The number of paper pounds needed to buy £ 100 sterling went from 170 to 150, then to 125 at the peak, after which the rate dropped to 140, 150 and finally back to 170 again.” Kemmerer also says that, “Morris’ explanation [for this pattern] was that the specie had left the province.” Kemmerer does not give the months for the rates he lists. It appears that McCusker may have just taken the middle three rates as listed by Kemmerer above, $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$, $1.25\text{£}_{\text{NJ}} = 1\text{£}_s$, and $1.40\text{£}_{\text{NJ}} = 1\text{£}_s$, and arbitrarily placed them in April, June, and August of 1741, respectively.

Kemmerer (1956, 120) lists the source for the New Jersey exchange rates to pounds sterling that he reports for 1741 as being *N.J. Archives*, VI, 134. This source is *Documents Relating to the Colonial History of the State of New Jersey*, VI (1882, 130–137). This is the same exact source as Morris (1852, 132–137). McCusker cites Morris (1852, 133) as his source for the 1741 exchange rates. So both Kemmerer

and McCusker are citing the same source for their 1741 exchange rates. This source is a letter written by New Jersey Governor Lewis Morris from Trenton to the Lords of Trade in England and dated 16 August 1741. Therein, Morris never mentions any of the exchange rates that Kemmerer and McCusker report for 1741, at least not in the form that Kemmerer and McCusker report them. Morris makes no statement that in 1741 exchange rates were $1.50\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, $1.25\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, or $1.40\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, or that, as Kemmerer (1956, 120) stated it, “the number of New Jersey paper pounds needed to buy £ 100 sterling went from 170 to 150, then to 125 at the peak, after which the rate dropped to 140, 150 and finally back to 170 again.” Let me repeat that—there is no statement in the original source cited by Kemmerer and McCusker for the exchange rates these two scholars report. Kemmerer and McCusker transformed what was in the original source into their reported exchange rates, a transformation that turns out to be math errors on their part. Kemmerer erroneously interpreted the statement by the original writer about these exchange ratios and McCusker appears to have just copied Kemmerer’s error.

Two things indicate that something is fishy in how Kemmerer and McCusker transformed Morris’ statements into their exchanges rates. First, Kemmerer’s reasoning for the movement in New Jersey’s exchange rates in 1741 gets the logic backwards. Kemmerer (1956, 119–120) claims that specie got scarcer, therefore, the number of New Jersey bills needed to buy specie (pounds sterling) got fewer! His reasoning amounts to a basic error in supply and demand (Kemmerer has demand curves sloping up and supply curves sloping down here). He puzzlingly refers to the low number reported, “125,” as the “peak” number of New Jersey pounds needed to purchase 100 pounds sterling. It appears that Kemmerer just mistakenly calculated up as down and down as up when speaking about the ratio of New Jersey pounds to pounds sterling here.

Second, in all the monthly exchange rates reported by McCusker (1978, 172–174) for New Jersey between 1703 and 1775 the only rate reported above the par rate of $1.33\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, namely a number for £_{NJ} lower than $1.33\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, is for June 1741, out of a total of 44 monthly rates reported. This makes McCusker’s $1.25\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ rate for June 1741 a dubious entry. An above par (face value) rate is irrational in that New Jersey pounds did not have face value redemption or payoff dates in specie equivalents until well into the future. No one would pay more now for a bill that would pay less 12 years from now. It would be irrational non-maximizing behavior.⁶

6. This same anomaly shows up in McCusker’s data for Pennsylvania. Out of 568 monthly exchange rates reported for the Pennsylvania paper pound from 1720 through 1775, only one is reported as above par, and that one is for June 1741. By contrast, out of a total of 99 monthly exchange rates reported for the Maryland paper pound from 1734 through 1764, no rates are reported above par, including the rate for June of 1741. In addition, out of 527 monthly exchange rates reported for the New York paper pound from

My guess is that McCusker simply copied Kemmerer's reported exchange rates for 1741 and then cited Kemmerer's original source without looking deeper into it. He then arbitrarily chose months in 1741 to place these individual rates in—based on Morris's August-dated letter and Morris's 2 to 3 month statement regarding the other rates he mentioned in his August letter.

So what does Morris (1852, 132–137) actually say about the exchange rates between New Jersey paper pounds and pounds sterling for 1741? As Governor of New Jersey, Morris was explaining to the Lords of Trade in England the status of New Jersey's paper pounds in 1741 in part to explain New Jersey's contribution to funding the Crown's expedition against the Spanish in the West Indies. New Jersey had printed 2,000 \pounds_{NJ} in paper money to pay “for victualling and transporting the troops raised in this Colony sent against the Spaniards.” The problem to be explained to the Lords of Trade was that 2,000 \pounds_{NJ} did not buy 2,000 \pounds_S worth of provisions and troops, not just because par exchange was $1\pounds_{NJ} = 0.75\pounds_S$, but because specie (pounds sterling) was scarce due to the demands of the war and that meant that $1\pounds_{NJ} < 0.75\pounds_S$ in the marketplace. Foreign expeditions were funded in specie. New Jersey paper pounds had to be exchanged for specie, and with specie acutely scarce due to wartime demands it took more \pounds_{NJ} to buy \pounds_S than normal. This was an acute crisis over the first half of 1741. Morris pointed out to the Lords of Trade that New Jersey had not altered its currency, only that the exchange rate was free to move with the scarcity of specie and the shifting trade balances between New Jersey and England.

Morris (1852, 133) said that he had discussed this with the New Jersey assembly in January and April of 1741 and that the assembly pointed out that there had been no alteration in its currency, but only “that bills of exchange [pounds sterling] had got to a higher rate than they had been, and that the Exportation being Encreas'd, the course of Exchange had fallen to 50 pr cent, & that the Increase of the Exportation was the chief cause thereof.”

In other words, bills of exchange (pounds sterling) had become more expensive to buy, namely it took more \pounds_{NJ} to buy \pounds_S than before such that exchange had fallen to 50 percent.⁷ Thus, $1\pounds_{NJ}$ now got you only 50 percent of $1\pounds_S$, i.e.,

1709 through 1775, no rates are reported above par, including the rate for June of 1741. And out of 304 monthly exchange rates reported for the Massachusetts paper pound from 1720 through 1749, no rates are reported above par, including the rate for June of 1741. Plus, out of 43 monthly exchange rates reported for the North Carolina paper pound from 1715 through 1774, no rates are reported above par, including the rates reported in 1741 (McCusker 1978, 140–141, 163–165, 184–185, 202–203, 217–219). It appears that McCusker made the same source interpretation error for Pennsylvania as he made for New Jersey regarding the June 1741 exchange rate. This error does not show up in the other colonies' exchange rates because different original and secondary sources were used for those other colonies by McCusker.

7. The assembly said that exchange had “fallen.” There is no way to interpret the assembly's “50 pr cent” exchange rate statement as $1.5\pounds_{NJ} = 1\pounds_S$ and be consistent with their use of the word “fallen” as referring to

$1\text{£}_{\text{NJ}} = 0.50\text{£}_s$ as opposed to the par amount of 75 percent of 1£_s . Doing a little long division yields, $2.00\text{£}_{\text{NJ}} = 1\text{£}_s$. Morris (1852, 133) goes on to point out that the “owner of the bill [a New Jersey paper pound] could not have purchas’d so much silver and gold for his 20 shillings [1£_{NJ}], ... as when silver pass’d at $6^s 10^d$ per ounce,—which was the nominall [face] vallue his bill was struck at....” Morris went on to say that he thought the reason for this was not that British factors were exporting too many bills of exchange, but instead was due to an acute scarcity of specie caused by the war with Spain.

Morris then states that:

...it seems plain to me that if a guinea [an English gold coin] was at any time before that current at 30 shillings in bills of credit [New Jersey paper pounds], that, when it was current at 5 pounds in y^e same bills, it required 5 pounds to purchase that guinea which 30 shillings of the same currency or bills would have done before, w^{ch} must make those bills (whatever nominall vallue was Impress’d upon them) of so much less reall vallue than they were before.⁸

The falling of Exchange from 70 to 50 and after that so low as even to 25 p^r cent in 2 or 3 months time, and its rise again to 40, and rising, seems to be too sudden to be owing to the increase of Exports [of bills of exchange] as our Council [the New Jersey Assembly] says, or the Contrary; and is said to be chargeable to another account viz. the want of specie [specie scarcity caused by wartime demands]... (Morris 1852, 134)

So how did Kemmerer and McCusker derive their 1741 exchange rates from the above passage? It appears they simply disregarded the first paragraph and then added a “1” to the percentage statements in the second paragraph—assuming that number went in front of £_{NJ} in the exchange rate statements, thus the exchange rate in 1741 would go from $1.70\text{£}_{\text{NJ}} = 1\text{£}_s$ to $1.50\text{£}_{\text{NJ}} = 1\text{£}_s$ to $1.25\text{£}_{\text{NJ}} = 1\text{£}_s$ to $1.40\text{£}_{\text{NJ}} = 1\text{£}_s$ over a 2 to 3 months’ time period over the first half of 1741. This matches the rates reported in Kemmerer and the last three rates for 1741 reported by McCusker.

numerical direction.

8. This paragraph is an initial ballpark estimate used by Morris to illustrate what had happened due to the war panic during the first half of 1741 that he then explains in more detail in his following paragraph. This paragraph is smoking-gun evidence showing that Kemmerer, McCusker, and Michener are wrong in their transformation of the exchange rate statements made by Morris in Morris’ following paragraph. Kemmerer, McCusker, and Michener completely ignore this paragraph in Morris’ letter. There are 20 shillings in a pounds, therefore 30 shillings in New Jersey paper money = 1.5£_{NJ} , i.e., $30 / 20$. A guinea = 1.05£_s (McCusker 1978, 11). Using Morris’ actual numbers in this paragraph, Morris is saying that the exchange rate had gone from $1.5\text{£}_{\text{NJ}} = 1.05\text{£}_s$ to $5\text{£}_{\text{NJ}} = 1.05\text{£}_s$ over the relevant period. Doing a little long division yields Morris’ exchange rate going from $1.43\text{£}_{\text{NJ}} = 1\text{£}_s$ to $4.76\text{£}_{\text{NJ}} = 1\text{£}_s$. These rates are clearly within the range of exchange rate movements I use in my corrections to the McCusker data for 1741 when using the complete information Morris gives in his following paragraph, and it is outside the narrow range insisted on by Michener (2019a, 202, 204). See the material linked to footnote 9.

As such, Kemmerer and McCusker made a fundamental error in interpreting and transforming ratios. It is clear from the passages quoted above that what Morris means by “falling of exchange” from 70 percent to 50 and then to a low of 25 is that it takes more and more £_{NJ} to buy 1£_{S} , not less and less as Kemmerer and McCusker’s transformations yield. Kemmerer and McCusker got it upside down.

So what are the correct exchange rates to be derived from Morris (1852, 134) for 1741? In August 1741, Morris said that there had been an acute exchange rate crisis over the prior 2 to 3 months caused by an acute scarcity of specie money brought on by the war with Spain. He says that a New Jersey paper pound fell from 70 percent of a pound sterling to 50 percent of a pound sterling, to a low of 25 percent of a pound sterling, and then rose back to 40 percent of a pound sterling. Note that Morris never says that a New Jersey paper pound was worth 75 percent or more of a pound sterling. Par was 75 percent and any percentage above 75 percent would be an above-par exchange rate. Morris’s rates are all below-par rates. New Jersey paper pounds were depreciating substantially in the first half of 1741, only to recover some by August. They were still, however, trading at a depreciated rate in August 1741 relative to par.

Assuming that Morris’s last rate that he mentions is for August (the date of his letter), implies that the prior three rates occurred between April and August of 1741, given his “2 to 3 months time” statement. He does not say exactly which months these other rates are from. While Morris gives four rates in this April to August window, McCusker only lists three. Why McCusker did not list all four is unknown. McCusker also arbitrarily places his two pre-August rates in the months he did between April and August. I am only interested in a yearly average, and so the exact month each rate is for is not relevant to my data correction.

Morris’s sequence of four rates from April to August 1741 corresponds to $1\text{£}_{\text{NJ}} = 0.70\text{£}_{\text{S}}$, $1\text{£}_{\text{NJ}} = 0.50\text{£}_{\text{S}}$, $1\text{£}_{\text{NJ}} = 0.25\text{£}_{\text{S}}$, and $1\text{£}_{\text{NJ}} = 0.40\text{£}_{\text{S}}$, respectively. Doing a little long division transforms these rates into how McCusker reports rates, namely into $1.43\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, $2.00\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, $4.00\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, and $2.50\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, respectively.⁹ I replaced McCusker’s three exchange rates listed for 1741 in April, June, and August, respectively, with these four rates derived from Morris. Adding the rate of $1.60\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ for January 1741 from the *Boston Evening Post* yields five rates for 1741, the average of which is $2.306\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ —which is the rate I used for 1741.

9. See footnote 8.

1762

McCusker (1978, 173–174) lists two exchange rates for 1762, one for March and one for September, $1.7625\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ and $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, respectively. He calculates the average exchange rate for 1762 as $1.7688\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ $[(1.7625 + 1.775) / 2]$. He cites two published sources for where he took the rates for 1762, namely Kemmerer (1956, 131) and Joseph Sherwood (1851, 147).

Sherwood (1851, 147) lists two rates for all of 1762, namely $1.75\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ and $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, without reference to their month of observation. Kemmerer (1956, 131) lists two rates for 1762 and indicates that both are from March of 1762, namely $1.75\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ and $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$. McCusker appears to have taken Kemmerer's two rates for March of 1762 and reported their average for March of 1762, namely $1.7625\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ $[(1.75 + 1.775) / 2]$. Then McCusker appears to have taken Sherwood's second rate ($1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$), considered it an independent observation from that reported in Kemmerer, and arbitrarily placed that rate in September of 1762. As such, McCusker appears to be double counting the $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ rate, counting this single observation in both March and September of 1762.

This outcome in McCusker also shows that McCusker is reporting the average rate per year as the simple average of the monthly rates he reports and not as the average of the individual rate observations. His average for 1762 is $1.7688 = [(1.7625 + 1.775) / 2]$, with the first number being the average of the two rates reported in March $[(1.75 + 1.775) / 2]$. If McCusker had reported the yearly average as the average of all three rates he took from his sources that yearly average would have been $1.7667 = [(1.75 + 1.775 + 1.775) / 3]$.

I removed the $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ from September of 1762 from the McCusker data as being an erroneous double counting of that one rate, being already counted in March of 1762. That leaves McCusker reporting only two rates for 1762, $1.75\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ and $1.775\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$, which averages to $1.7625\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$ for the year 1762 for these two independent observations.

Sherwood (1851, 137) reports one more exchange rate unnoted either by McCusker or Kemmerer, or anyone else that I have found.¹⁰ In a letter dated 17 August 1762, Sherwood mentions an exchange of $287.34\text{£}_{\text{NJ}}$ for $152.46\text{£}_{\text{S}}$. Doing a little long division renders this to be $1.88\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$. However, Sherwood also states that a deduction of 66£ had to be made to execute this exchange. He does not state whether this 66£ is in pounds sterling or in New Jersey paper pounds. A biased-low deduction would be to assume that it is in New Jersey paper pounds, i.e., 66£_{NJ} . In other words, you had to pay an additional 66£_{NJ} to exchange $287.34\text{£}_{\text{NJ}}$

10. There is a source citation error in my prior work, i.e., Grubb (2014, 17; 2016a, 1221), where I only cited page 147 rather than both pages 137 and 147 in Sherwood (1851).

for 152.46 £_s . If this cost is deducted from the exchange transaction then the actual exchange rate is $2.3176 \text{£}_{\text{NJ}} = 1 \text{£}_s$, namely $[(287.34 + 66) / 152.46]$.

Thus, I have three exchange rates for 1762, $1.75 \text{£}_{\text{NJ}} = 1 \text{£}_s$, $1.775 \text{£}_{\text{NJ}} = 1 \text{£}_s$, and $2.3176 \text{£}_{\text{NJ}} = 1 \text{£}_s$. The average of these exchange rates is $1.9475 \text{£}_{\text{NJ}} = 1 \text{£}_s$ for 1762 which is what I used.¹¹

Michener's reasons for rejecting my data corrections

Michener's (2019a, 198–205) arguments for rejecting my data corrections include: (a) that my data corrections place exchange rates off trend, (b) that the exchange rate spike I generate with my correction for 1741 is not observed in the exchange rate series for other colonies' paper monies, (c) that the exchange rates for Virginia's paper money were above par between 1769 and 1772, and (d) that Governor Morris in 1743 equated exchange at 60 percent with $1.6 \text{£}_{\text{NJ}} = 1 \text{£}_s$.

Regarding (a): Throwing out data because it is off-trend means acute monetary shocks, booms, and recessions no longer exist in the data and so cannot be explained. Michener (2019a, 183) himself claims that "wild" swings in exchange rates occurred in colonial America. But here he wants to claim that any off-trend or wild exchange rate observations should be eliminated. Doing such also means that Michener is artificially increasing the error variance in the data and so erroneously driving estimated coefficients toward statistical insignificance (which appears to be his goal).

Regarding (b): New Jersey's Governor, Lewis Morris, makes it clear that the exchange-rate panic in early 1741 is a localized New Jersey paper money phenomenon. It was directly linked to the 2,000 £_{NJ} New Jersey paper pounds newly emitted to fund New Jersey's participation in the West Indies expedition against the Spanish—paper pounds that had to be quickly converted to specie in New Jersey to be used for that funding.

Regarding (c): The Virginia rates listed above par are for raw rates unadjusted for the transaction, transportation, and time costs required to consummate the exchange. Once adjustments are made for these costs, the effective exchange rates for Virginia's paper money are all below par (Grubb 2018a, 130).

Regarding (d): This 1743 statement by Morris does not appear in Morris (1852), but does appear in Morris (1993, 262).¹² Morris's 1743 statement, however, does not prove much. If exchange at 60 percent means $1 \text{£}_{\text{NJ}} = 0.6 \text{£}_s$, then $1.67 \text{£}_{\text{NJ}} = 1 \text{£}_s$, which by Michener's standards of closeness cannot be distinguished from

11. See footnote 8 regarding the range that exchange rates can take.

12. Michener (2019a, 216) mistakenly lists Eugene R. Simmons as the editor of the 1993 Morris volume; the editor's name is Eugene R. Sheridan.

exchange at 60 percent meaning $1.6\text{£}_{\text{NJ}} = 1\text{£}_{\text{S}}$. Morris also provides no sequence of exchange rates in his 1743 letter to determine the direction exchange rates are moving relative to specie scarcity. Finally, the smoking-gun evidence provided by Morris in his 1741 letter, evaluated in footnote 8 above, shows that Michener is dead wrong on this issue.

By Michener insisting that no corrections to McCusker's data are ever needed and that McCusker's data should be used only as McCusker originally reported it, Michener is in effect repudiating basic mathematical theory and basic economic theory. For Michener, demand curves slope up, financial panics do not exist, and long division no longer holds (so that 1000 divided by 550 now equals 1.70). Michener's desperate desire to inflate standard errors (by not correcting erroneous data) in order to drive coefficient estimates on APV toward statistical insignificance led him to this sad state.

References

- Celia, James, and Farley Grubb.** 2016. Non-Legal-Tender Paper Money: The Structure and Performance of Maryland's Bills of Credit, 1767–1775. *Economic History Review* 69(4): 1132–1156.
- Cutsail, Cory, and Farley Grubb.** 2017. The Paper Money of Colonial North Carolina, 1712–1774. *NBER Working Paper* 23783. National Bureau of Economic Research (Cambridge, Mass.). [Link](#)
- Cutsail, Cory, and Farley Grubb.** 2019. The Paper Money of Colonial North Carolina, 1712–74: Reconstructing the Evidence. *Journal of the North Carolina Association of Historians* 27: 1–31.
- Grubb, Farley.** 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, Farley.** 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, Farley.** 2005. 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, Farley.** 2006a. Theory, Evidence, and Belief—The Colonial Money Puzzle Revisited: Reply to Michener and Wright. *Econ Journal Watch* 3(1): 45–72. [Link](#)
- Grubb, Farley.** 2006b. Benjamin Franklin and Colonial Money: A Reply to Michener and Wright—Yet Again. *Econ Journal Watch* 3(3): 484–510. [Link](#)
- Grubb, Farley.** 2006c. The U.S. Constitution and Monetary Powers: An Analysis of the 1787 Constitutional Convention and the Constitutional Transformation of the U.S. Monetary System. *Financial History Review* 13(1): 43–71.
- Grubb, Farley.** 2008. The Continental Dollar: How Much Was Really Issued? *Journal of*

- Economic History* 68(1): 283–291.
- Grubb, Farley.** 2012. State Redemption of the Continental Dollar, 1779–90. *William and Mary Quarterly* 69(1): 147–180.
- Grubb, Farley.** 2014. A New Approach to Solving the Colonial Monetary Puzzle: Evidence from New Jersey, 1709–1775. *NBER Working Paper* 19903. National Bureau of Economic Research (Cambridge, Mass.). [Link](#)
- Grubb, Farley.** 2015. Colonial New Jersey’s Paper Money Regime, 1709–1775: A Forensic Accounting Reconstruction of the Data. *Historical Methods* 48(1): 13–34.
- Grubb, Farley.** 2016a. Colonial New Jersey Paper Money, 1709–1775: Value Decomposition and Performance. *Journal of Economic History* 76(4): 1216–1232.
- Grubb, Farley.** 2016b. Is Paper Money Just Paper Money? Experimentation and Variation in the Paper Monies Issued by the American Colonies from 1690 to 1775. *Research in Economic History* 32: 147–224.
- Grubb, Farley.** 2016c. Colonial New Jersey’s Provincial Fiscal Structure, 1709–1775: Spending Obligations, Revenue Sources, and Tax Burdens During Peace and War. *Financial History Review* 23(2): 133–163.
- Grubb, Farley.** 2017. Colonial Virginia’s Paper Money Regime, 1755–1774: A Forensic Accounting Reconstruction of the Data. *Historical Methods* 50(2): 96–112.
- Grubb, Farley.** 2018a. Colonial Virginia’s Paper Money, 1755–1774: Value Decomposition and Performance. *Financial History Review* 25(2): 113–140.
- Grubb, Farley.** 2018b. Colonial Maryland’s Post-1764 Paper Money: A Reply to Ron Michener. *Econ Journal Watch* 15(2): 168–178. [Link](#)
- Grubb, Farley.** 2019a. Colonial American Paper Money and the Quantity Theory of Money: An Extension. *Social Science History* 43(1): 185–207.
- Grubb, Farley.** 2019b. Creating Maryland’s Paper Money Economy, 1720–1740: The Confluence of Political Constituencies, Economic Forces, Transatlantic Markets, and Law. *Journal of Early American History* 9(1): 34–58.
- Grubb, Farley.** 2019c. Colonial Virginia’s Paper Money, 1755–1774: A Reply to Michener. *Financial History Review* 26(3): 401–408.
- Kemmerer, Donald L.** 1956. A History of Paper Money in Colonial New Jersey, 1668–1775. *Proceedings of the New Jersey Historical Society* 74: 107–144.
- Lester, Richard A.** 1970 [1939]. *Monetary Experiments: Early American and Recent Scandinavian*. Princeton, N.J.: Princeton University Press.
- McCusker, John J.** 1978. *Money and Exchange in Europe and America, 1600–1775*. Chapel Hill, N.C.: University of North Carolina Press.
- Michener, Ronald W.** 2018. Reconsidering Colonial Maryland’s Bills of Credit 1767–1775. *Econ Journal Watch* 15(2): 158–167. [Link](#)
- Michener, Ronald W.** 2019a. Re-examination of the Empirical Evidence Concerning Colonial New Jersey’s Paper Money, 1709–1775: A Comment on Farley Grubb. *Econ Journal Watch* 16(2): 180–217. [Link](#)
- Michener, Ronald W.** 2019b. A Re-examination of the Empirical Evidence Concerning Colonial Virginia’s Paper Money, 1755–1774: A Comment on Grubb. *Financial History Review* 26(3): 389–399.
- Michener, Ronald W., and Robert E. Wright.** 2005. State “Currencies” and the Transi-

tion to the U.S. Dollar: Clarifying Some Confusions. *American Economic Review* 95(3): 682–703.

Michener, Ronald W., and Robert E. Wright. 2006a. Miscounting Money of Colonial America. *Econ Journal Watch* 3(1): 4–44. [Link](#)

Michener, Ronald W., and Robert E. Wright. 2006b. Farley Grubb's Noisy Evasions on Colonial Money: A Rejoinder. *Econ Journal Watch* 3(2): 251–274. [Link](#)

Morris, Lewis. 1852. *The Papers of Lewis Morris, Governor of the Province of New Jersey, from 1738 to 1746*. New York: George P. Putnam.

Morris, Lewis. 1993. *The Papers of Lewis Morris, Volume III: 1738–1746*, ed. Eugene R. Sheridan. Newark, N.J.: New Jersey Historical Society.

New Jersey Historical Society. 1881–1905 (*N.J. Archives*). *Documents Relating to the Colonial History of the State of New Jersey*, vols. 3–27. Trenton, N.J.: New Jersey Historical Society.

Newman, Eric P. 2008. *The Early Paper Money of America*, 5th ed. Iola, Wis.: Krause.

Sherwood, Joseph. 1851. Letters of Joseph Sherwood (Agent for New Jersey in Britain, 1761–1766). *Proceedings of the New Jersey Historical Society*, 1st series, vol. 5, no. 3: 133–153.

About the Author



Farley Grubb is professor of economics at the University of Delaware, NBER research associate, and Financial History Series editor for Routledge, Taylor & Francis Group. He earned his Ph.D. in economics at the University of Chicago. He took multiple graduate courses in economics from each of the following: Gary S. Becker, Robert W. Fogel, Robert E. Lucas, Douglass C. North, and George Stigler. He has published numerous articles in refereed journals and edited volumes on the economic history of colonial and Revolutionary-era America, in particular on contract labor (indentured servitude and convict labor) and on monetary institutions and their performance. His email address is grubbf@udel.edu.

[Go to archive of Comments section](#)

[Go to March 2020 issue](#)



Discuss this article at Journaltalk:
<https://journaltalk.net/articles/6002/>