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Shortchanged: Uncovering the Value of Pre-Removal Cherokee Property

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By Matthew T. Gregg*

One of the key issues during the negotiations to remove the Cherokees from their remaining southeastern land base was the amount Congress would compensate them for their land cession. The U.S. Senate eventually agreed to cap this expenditure at $5 million. While the exact market value of the four-state land base is hard to measure, data from land, Surveyor General’s Office,
and deed records may be used to generate a conservative estimate of the value of Cherokee property in Tennessee, North Carolina, Alabama, and Georgia, in 1838, the year that the remaining Cherokees were forced into forts and camps. The resulting estimate suggests that the Cherokees were shortchanged by the federal government, but not by a sensational amount. Although using completely different techniques, this estimate is surprisingly similar to Principal Chief John Ross's conjecture in 1838 that the value of ceded Cherokee land was roughly $7.23 million.

John Ross, principal chief of the Cherokee Nation, met with President Andrew Jackson on February 5, 1834, in Washington, D.C., to discuss possible terms under which the Cherokees might retain a portion of their lands in the Southeast or exchange them for compensation in the form of cash payments and land west of the Mississippi River. Because Jackson insisted that the Cherokees had to relinquish their claims to their remaining ancestral homeland in the Southeast, Ross changed strategies in this bargaining game. He suggested $20 million as a starting point for negotiations regarding the sale of the land. Jackson considered the $20 million figure "preposterous" and suggested that the discussions should simply end if that was the best Ross could offer. Ross changed his strategy again, suggesting that the matter of a sum to be offered for the Cherokee lands in the Southeast be left to the U.S. Senate to decide. Jackson accepted this proposal, and the matter was forwarded to the Senate Committee on Indian Affairs for consideration. The committee returned with an offer of a maximum sum of $5 million to reimburse the Cherokees for relinquishing their lands.¹

The present study is an effort to estimate the market value of the 7,882,240 acres ceded by the Cherokee Nation in the states of Tennessee, North Carolina, Alabama, and Georgia (see map on p. 324). According to the terms of the Treaty of New Echota, which was negotiated between a small faction of the Cherokees called the Treaty Party and the United States in late December 1835, the Cherokees were to receive $5 million for complete removal by late May 1838. Despite the vast literature on Cherokee removal, the difference between the market and government-set price for Cherokee land has yet to be critiqued. Mining the deed records, the surveyor general records, and the land records in each state is surprisingly helpful in ascertaining the implicit value of Cherokee public property at the time of removal. The following pages illustrate the method used to estimate this value.
In an attempt to alter the 1835 treaty stipulations, Principal Chief John Ross wrote the lone account of the cost of Cherokee removal in a memorandum to the Senate Indian Affairs Committee in 1838. Although relying purely on conjectures, Ross decomposed the removal costs in terms of three rough categories: public property losses (e.g., all claims to their southeastern land base); destruction of private property (e.g., land improvements, ferryboat income, and spoliations); and direct removal expenses (e.g., transportation and subsistence during emigration, rations for one year after removal, and personal property abandoned). He considered the total cost of removing the Cherokees at $13.19 million, of which $7.23 million, or 55 percent, was in terms of the implicit value of ceded Cherokee public property.\(^2\) Hugh L. White, chair of the Senate Committee on Indian Affairs, quickly rejected this request. However, this estimate nonetheless represents the lone numeric conjecture on the implicit value of their homeland. By determining the sales prices generated
from disposing ceded Cherokee land to U.S. citizens, it is now possible to determine the legitimacy of Ross's estimate.

The market value of the Ocoee Land District in Tennessee will first be examined. The Tennessee state government created the Ocoee Land District on October 18, 1836, from the ceded portion of Cherokee Nation. The initial sale of 160-acre plots at $7.50 per acre began in October 1838 at the land office in Cleveland. Lots were expected to be paid in full after three months, and if paid in full, settlers could purchase an additional 160 acres at the same price. After five months the per-acre price for a 160-acre lot dropped to $5.00, then continued to drop at two-month intervals until the price fell to $0.01 per acre, or to the highest bid, after nineteen months. Prices per acre ranged from $105 for one lot to a low of $0.025 for another, with a median price of $0.12 per acre. The individual sales data for these tracts have fortunately been published and are readily available to the public.  

The market value of the Ocoee District in 1838 is computed by finding the discounted value of the stream of payments from these land sales, adjusting for inflation. From 1838 to 1903 a total of 3,935 individual entries with complete sales price, purchase date, and acreage exist while 881 entries contain incomplete information due to either missing data or illegible writing. The missing data on the price, date of sale, and acres sold are replaced with the median price of $0.12 per acre, the median sales year of 1841, and the median acreage per lot at 80 acres. The stream of land sales is deflated to 1838 and discounted at 5 percent, which is equivalent to the interest the Cherokees earned on money invested by the U.S. Treasury after removal. Using this method, the market value in 1838 for Cherokee land in Tennessee is estimated at $357,478.87.

Next, the value of ceded land in North Carolina receives similar analysis. In North Carolina, ceded Cherokee land was auctioned in Franklin, North Carolina, between September 3 and September 22, 1838. Roughly 1,112 square miles were surveyed and conveyed into legal possession of the State of North Carolina. The land was converted into 1,401 tracts over thirteen districts, and two appointed commissioners recorded the sales price, land quality, and number of acres sold. The state divided the land into lots ranging in size between fifty and four hundred acres. The price of each lot was determined by a set of five categories used to describe the land quality, as the highest-quality land sold for $4.00 per acre and the lowest-quality for $0.50 per acre. The credit terms were loose, as a down payment of only one-eighth the purchase price was needed.
An abstract of the sales that were made by Commissioners Samuel F. Patterson and Charles L. Hinton is available through the Southern Historical Collection at the University of North Carolina at Chapel Hill. From these data, the market value of 1,401 tracts, which totaled 216,348.8 acres, equaled $330,225.50.

Land office data also can be adopted to estimate the value of ceded land in Alabama. Because Alabama is a public land state, ceded Cherokee land reverted back into the United States’ public domain. DeKalb and Cherokee Counties were both created from Cherokee land in the same legislative act on January 9, 1836. In 1835 some Cherokees lived in other counties in Alabama, such as Jackson, Morgan, Blount, and St. Clair, but the land formerly occupied by Cherokees was cut from most of these counties and added to Cherokee and DeKalb Counties when they were formed. It was not until 1840 that the land office in Florence, Alabama, commissioned a survey of the land.

The value of land ceded in Alabama can be calculated using data found at the federal government’s land office web site on the Internet at <www.glorecords.blm.gov>. The present study focuses
This map illustrates the section of northeastern Alabama ceded by the Cherokees before removal. The cross-hatching represents the Cherokees' property (Source: S. Doc. 17, No. 8, 25th Cong., 3d Sess.).
on land sales from 1843, the first year this tract was open for disposal, to 1861, the last year land was sold under the 1820 Land Act price of $1.25 per acre. The terms of credit were far looser than the federal government's conditions. While the U.S. government at this time required western land purchases to be paid in full with cash, an Alabama settler had to make a down payment of only $0.10 per acre, plus pay a survey fee of $6.00, and then pay the remainder of the purchase in three years. The market value, discounted at 5 percent and deflated to 1838, for the 449,988 acres sold during this period was $433,885.83.

Similarly, the market value of ceded Cherokee land in Georgia may be calculated, but doing so requires a more complicated mathematical analysis. Cherokee land in Georgia, which was divided into 18,309 land lots of 160 acres each, 35,000 gold lots of 40 acres each, and fractional lots, was distributed to fortunate entrants in three land lotteries in 1832 and 1833. Although fortunate drawers in the Cherokee land lotteries were legally forbidden to move onto lots that were still occupied by Cherokees, after grants were issued for these lots in 1835 and 1836, they had the option of selling their lots. Thus, these lotteries facilitated the creation of a market for Cherokee land in anticipation of Cherokee removal. The creation of this market allows for the estimation of the market value for Cherokee land in Georgia, which, in this case, is computed by estimating the conditional mean value of owning plots with the potential of subsurface gold, plots with preexisting improved acres, plots with the potential for land improvements, and fractional lots surrounded by major waterways and other natural boundaries, while controlling for county-specific effects like soil quality and market access.

To conduct this estimation procedure, a land sample is constructed by matching surveyor’s plats that indicated improved acreage on either land or gold lots with deeds representing their sale. Due to the destruction of courthouses containing deed books in Cobb, Walker, Paulding, and Union Counties, the matching of deeds with surveyor’s plats was restricted to seven of the eleven counties created from Cherokee removal (including Walker County, which was organized in 1833). In total, there were ninety-eight matches from these two sources.

An Ordinary Least Squares (OLS) regression model is estimated to determine the conditional correlations in the data. Since the relationship between improved acres and per-acre prices in the data is increasing at an increasing rate, the dependent variable—per-acre price—is transformed by taking its natural logarithm. The inde-
Dependent variables of interest include a variable identifying the gold lots and a variable comprising the number of improved acres on the lot. Other variables are included to control for location-specific variations, such as market access, soil fertility, and other unobserved differences across counties, which should influence the sales price. Therefore, the following regression model is used to compute the determinants of the market value of Cherokee land:

$$\ln \text{Price}_i = \beta_0 + \beta_1 \cdot \text{Acres}_i + \beta_2 \cdot \text{Gold}_i + \sum \beta_{3j} \cdot \text{Location}_{ji} + u_i$$

where $\ln \text{Price}_i$ is the logged per-acre price deflated to 1838, Acres$_i$ is the number of improved acres, Gold$_i$ is a dummy variable set equal to 1 if the lot is a gold lot and 0 otherwise for the $i$th lot, and Location$_{ji}$ represents county dummy variables that are equal to 1 for specific county of residence, 0 otherwise. The coefficient on the gold dummy variable estimates the conditional mean price of a gold lot, controlling for improved acreage and location-specific effects. The error term, $u_i$, is assumed to be uncorrelated with the variables included in the model and is normally distributed with a zero mean and constant variance.
Using the land sample, it is possible to assess the value of gold in Georgia. The regression results are shown below: 

\[
\ln(\text{Price}) = 0.383 + 0.020 \text{ Acres} + 1.176 \text{ Gold} + \ldots \\
(0.315) \quad (0.009) \quad (0.372)
\]

\[N = 98, \ R^2 = 0.275\]

The estimated standard errors of the coefficients are in parentheses. Each variable listed above is statistically significant at typical significance levels. Therefore, there is strong statistical evidence that improved acres and the probability of finding gold strongly affected per-acre prices. The R-squared statistic implies that these variables explain 27.5 percent of the variation in per-acre prices, which is relatively low but typical for a cross-section of data. Interpreting the estimated coefficients as approximate percentage increases in the sales price per acre, this model suggests that ten acres of improved land increased the sales price per acre by 20.0 percent, on average. Also, the probability of finding gold increased the average sales price by roughly 117.6 percent, which reflects the inflated expectations for gold deposits.
The conditional mean value of a gold lot can be found by taking the anti-log of the regression model. Thus, controlling for improved acres and land location characteristics, the (conditional) mean of a gold lot was $3.03 per acre. In other words, an acre in northwestern Georgia on a gold lot was valued at $3.03 more than an identical acre on a non-gold lot. The total market value of gold lots in Georgia is the product of the conditional mean, the number of gold plots, and the number of acres per gold lot, or $3.703 per acre* 35,000 lots* 40 acres per lot, which equals $4.242 million.

After removal, Georgia settlers quickly learned that the amount of subsurface gold was nonexistent. Therefore, the actual value of gold deposits in Georgia after removal was probably close to zero. However, the market price in 1838 would have reflected both the actual amount of gold and the Georgians' expectations of finding gold. Thus, market prices reflected the expected marginal value of gold. For example, from 1800 to 1833, the original U.S. price for an ounce of gold was $19.39. If Georgia settlers believed that there was a 15 percent chance of finding at least one ounce of gold in an acre, then the market value for one acre in a gold lot would have equaled $2.91, controlling for other factors. Therefore, the positive and high value of gold in Cherokee Georgia in 1838 is consistent with the knowledge about the scarcity of gold found after removal.

Although not included in the total estimate of ceded Cherokee land, the market value of the fractional lots, which were mostly surrounded by major waterways, can be roughly estimated in an auxiliary regression. Because the total acreage in Cherokee Georgia was known to equal 4,366,554 acres, the acreage contained in fractional lots can be deduced using a back-of-the-envelope method. As the fractional lots and a small number of undrawn lots from the two previous lotteries were disposed in the final land lottery in 1833, the difference between the total acreage in Georgia and the total acreage surveyed into gold lots (40 acres per lot times 35,000 lots) and the acres surveyed into land lots (160 acres per lot times 18,309 lots) should approximately equal the amount of land held in fractional lots. According to this approach, 37,114 acres existed after the land and gold lotteries in the form of fractional lots. According to an auxiliary regression that included a fractional lot dummy variable, among other variables, the incremental value of an acre in a fractional lot was $1.75 in 1838. Thus, the total market value of the fractional lots, which may reflect the influence of improved soil fertility and market access on land values, was roughly $64,000. Because the exact number of undrawn lots cannot be determined,
the estimated value of fractional lots is not included in the aggregated value of ceded Georgia land.

Next, the market value of the improved acreage in Cherokee Georgia is estimated. By taking the anti-log of the regression model, an additional improved acre, controlling for county-specific heterogeneity and the possibility of finding gold, increased the per-acre price by $1.02. Because surveyors did not record all the improved acres on Cherokee lots, there can be no precise estimate of the number of lots with improvements and the total amount of improved acreage. The only reported figure about Cherokee land improvement is located in the 1836–1838 Cherokee Property Valuations, which totaled the number of improved acres in Cherokee Georgia at 35,285 acres. Assuming this number is valid, the total market value of Cherokee improved acres was $35,990.70.

The final component of estimating the market value of Georgia land is the value of unimproved but tillable acres. According to the 1835 Cherokee Census enumerators, 1,707,900 acres in the Cherokee Nation in Georgia were tillable. Deducting the total amount of improved acres yields a total of 1,672,615 unimproved but tillable acres. The market value of an average unimproved yet tillable acre can be estimated from an Ordinary Least Squares regression of logged per-acre prices on improved acres, unimproved acres, and six county dummies. The OLS results are as follows:

\[
\ln(\text{Price}) = 2.166 + 0.0101 \cdot \text{Improved Acres} - 0.011 \cdot \text{Unimproved Acres} + \ldots \\
(0.63) \quad (0.007) \quad (0.004)
\]

\[
N = 98, \quad R^2 = 0.292
\]

Both improved and unimproved acres are statistically significant at typical significance levels. Taking the anti-log suggests that an additional unimproved acre yielded a market price of $0.99 per acre. Therefore, the estimated market value of the unimproved acres in Georgia is estimated at $1,655,888.85. Adding the value of gold and the value of improved and unimproved acreage together generates the estimated total market value of Cherokee land in Georgia at $5,933,879.50 just prior to removal.

The estimated market value of Cherokee land may now be gauged. Summing the values estimated above for cessions in Tennessee, North Carolina, Alabama, and Georgia gives a total value of $7,055,469.70 or $0.90 per acre in 1838 for the land ceded by the Cherokees in the Treaty of New Echota. This estimate is interpreted from two perspectives. Data limitations would indicate that
the $7.1 million figure should be regarded as a conservative estimate. For example, the Cherokees ceded some 711,680 acres in North Carolina; however, the 216,000 acres sold at auction represented what North Carolina surveyed for sale in 1838 as the State only surveyed what was believed to be marketable at auction. Certainly, the remaining 496,000 acres had some intrinsic value for the State of North Carolina. If those acres were valued at $0.52, or half the average price per acre of Cherokee land in North Carolina, then the estimated market value of Cherokee land would have been closer to $7.31 million. Also, in Tennessee many of these plots, which sold for as little as a penny per acre, could have been subsequently resold. A similar argument can be made with regard to the sale of land in Alabama. When land sales ended in 1861 at the onset of the Civil War, more than five hundred thousand acres in Alabama were still unsold.

There are also at least two reasons to believe the estimated value of Georgia land should include an error band. First, we have excluded the value of any acres deemed untillable by the Cherokee Census enumerators. Although this land was distributed via the lotteries to fortunate drawers, its value remains unknown. Second, it is difficult to place an accurate figure on the market value of land with the potential for gold deposits. The value of the gold lots undoubtedly dropped once citizens corrected their expectations of finding gold. This would have resulted in a precipitous drop in the value of Cherokee land in Georgia once the market adjusted. Therefore, the value of Cherokee land in Georgia depends heavily on the time horizon. The further we move away from the removal date of 1838, the smaller the value of Cherokee land in Georgia becomes.

Regardless, the value of ceded southeastern land should be compared to the value of the land acquired in the Treaty of New Echota. In return for signing this agreement, the Cherokees obtained fee simple title to three tracts located west of the Mississippi River. The main tract for mass settlement in present northeastern Oklahoma contained roughly five million acres and was partially occupied by a small subset of Cherokees called “Old Settlers,” who had removed themselves from the Southeast throughout the first two decades of the nineteenth century. Thinking that this tract might be too small for the newly coalesced Cherokee Nation, the federal government agreed to deduct $500,000 from the removal fund in return for eight hundred thousand acres of unsettled land in present Kansas called the “Neutral Lands.” The government also furnished a large tract, called the “Cherokee Outlet,” to encourage the continued pursuit of
hunting in present western Oklahoma. With approval from the federal government, the Outlet’s eight million acres could be used to establish Cherokee settlements, to lease for ranching purposes, or to sell either back to the United States or even to other tribes. Another tract, called the “Cherokee Strip,” was eventually formed from a thin slice of the northern portions of mainland Cherokee Nation and the Cherokee Outlet as a result of a surveying error in the Kansas-Nebraska Act. The Strip, along with the Neutral Lands and the Cherokee Outlet, were all divested back into the United States’ public domain by the end of the nineteenth century.\(^{18}\)

While some believe that the Cherokees were given poor terms of trade for these future land sales, the government eventually spent $12.82 million from 1867 to 1894 on these four Cherokee land cessions. The government paid the Cherokees $1.14 million out of the proceeds from the Osage diminished reserve cession to allow the Osages to move to a small section of the Cherokee Outlet. In 1883 the Cherokees received $300,000 for allowing the settlement of the
Pawnees, Poncas, Nez Perces, Otoes, and Missourias in the Cherokee Outlet. The government also spent $1.45 million on the sale of the Cherokee Strip and the Neutral Lands, whose terms of initial divestment were both contained in the June 19, 1866, treaty. The chief asset obtained from removal was the Cherokee Outlet, of which the remaining 8,144,682.91 acres were sold back to the United States government in 1892 for $8,595,736.12. The amount unpaid was placed in a 5 percent interest-bearing fund, which generated an additional $1.32 million in income from 1895 to 1921.19

The difference between the sales price of $5 million and the estimated value of ceded Cherokee land in the Southeast suggests that the federal government shortchanged the Cherokees in the range of $2.1 million. This shortfall was partially offset by the value of the above-mentioned four tracts located west of the Mississippi River, whose value, deflated and discounted to 1838, was $907,000. This shortfall was also offset by the implicit value of their new homeland in present northeastern Oklahoma.

With this said, there are two ways to interpret this estimate. First, in terms of 2008 dollars, the underpayment for Cherokee lands in the Southeast represents a substantial amount of lost income. Using the 2008 CPI, the present value of this shortfall is equivalent to $50.13 million. Alternatively, if the difference was invested in a 5 percent interest-bearing bond that compounded annually, the value of this fund would be have grown to $8.4 billion by 2008. Yet, compared to the numerous romanticized accounts of the “Trail of Tears,” the market value of the Cherokee property was relatively close to the government’s purchasing price. Since some have suggested that the market value of pre-removal Cherokee Nation land was near $20 million, the actual difference between the purchasing price and the market value of Cherokee Nation land seems surprisingly close.

The death toll, uncompensated private property, increased political instability, and unfunded direct removal expenses comprise other equally important removal costs. Nevertheless, computing the implicit market value of ceded Cherokee property reveals that the federal government was willing to pay unsurprisingly less than the land’s implicit market value but surprisingly close to the actual value of the land base. In fact, the results here reveal that John Ross’s conjecture regarding the value of Cherokee land was on par with its actual market value. If the unsold tracts in North Carolina are added to our lower-bound estimate, then our estimate is almost identical to that of Ross’s 1838 claim.


ENDNOTES

*Matthew T. Gregg is Assistant Professor of Economics in Rogers Williams University in Bristol, Rhode Island. He would like to thank David Wishart, Professor of Economics in Wittenberg University, as a part of this paper is based on collaborative work in estimating the total economic cost of Cherokee removal. Courtesy photo on page 320 depicts a scene in New Echota, Georgia.

1 For a detailed account of this encounter between Ross and Jackson, see Robert V. Remini, Andrew Jackson and the Course of American Democracy, 1835–1845 (New York: Harper & Row, 1984), 293–96.

2 Letter from John Ross to Hugh L. White, Folder 7, Box 95, Samuel L. Southard Papers, Department of Rare Books and Special Collections, Princeton University Library.


6 Sale Book of Cherokee Lands made at Franklin, N.C., Southern Historical Collection, Wilson Library, University of North Carolina at Chapel Hill.

7 Annie Koger Young, Alabama’s DeKalb County (Centre, Ala.: Young, 1980), 38–39; Mattie Lou Teague Crow, History of St. Clair County (Alabama) (Huntsville, Ala.: The Strode Publishers, 1973), 13; Mrs. Frank Ross Stewart, Cherokee County History (Centre, Ala.: Stewart, 1958), 42.


10 Of the ninety-eight lots that were matched, one is a land lot in Cass County, three are land lots and four are gold lots in Cherokee County, fourteen are land lots and two are gold lots in Floyd County, thirty-eight are gold lots in Forsyth County, six are land lots in Gilmer County, ten are gold lots in Lumpkin County, and the remaining twenty are land lots in Murray County. Twelve of the fifty-four gold lots are fractional lots, all located in Forsyth County, ranging in size from 17 acres to 55.75 acres. Cherokee, Floyd, Forsyth, Gilmer, Lumpkin, and Murray Counties, Microfilm Nos. AH 787, AH 789, GRG2-2257, GRG 2-2259, GRG 2-2260, GRG 2-2268, GRG 2-2273, RSH 2558-9, RHS 3606, 2622-23, RH 4068-69, Records of the Surveyor General Department, 1832–1838, Georgia Department of Archives and History.

11 These standard errors were corrected for heteroskedasticity using heteroskedastic-consistent standard errors. There were six location dummies added to the model to represent lots in Murray, Floyd, Forsyth, Cherokee, Lumpkin, and Gilmer County, respectively. Their values were not reported here but are available upon request.

12 The corrected coefficient on the gold dummy is corrected for bias. Specifically, $\ln(Y) = a + b*\text{acres} + c*\text{gold}$, where gold is a dummy variable, can be rewritten as $Y = (1+g)e^{(a+bX)}$ where $c = \ln(1+g)$. Since $E(\exp(c)) = \exp(c+0.5\text{Var}(c))$, then the bias-corrected coefficient on the gold dummy is computed as $\exp(c - 0.5\text{Var}(c))$. See Peter E.

13 Cadle, Georgia Land Surveying History and Law, 278. Data on the amount of gold mined after removal do not exist. A federal mint began operations in Dahlonega, the county seat for Lumpkin County, in 1837 and roughly $6 million was processed during its twenty-two years of existence. See David Williams, The Georgia Gold Rush: Twenty-Niners, Cherokees, and Gold Fever (Columbia: University of South Carolina Press, 1993).


17 The location dummies reflecting Forsyth, Floyd, Cherokee, Lumpkin, and Gilmer Counties were jointly significant at the 5 percent level.


19 The cession of the Cherokee Outlet had an indirect cost of terminating the leasing income obtained by the Cherokee Strip Livestock Association during the 1880s. For example, prior to the cession in 1892, the Cherokees received annual leasing income of $100,000 from 1883–1887 and $200,000 from 1888–1892. Under perfect competition, the stream of leasing payments would have equaled the present value of the stream of economic rents from owning the Cherokee Outlet, which is reflected in its market price. However, given the lack of bargaining power of the Cherokees in the process to alienate the outlet, the total cost of selling the Cherokee Outlet was most likely greater than the direct government outlays. See Joe B. Milam, “The Opening of the Cherokee Outlet,” The Chronicles of Oklahoma 9 (1931): 268–86. The cost figures are taken from U.S. Treasury Department Records, Combined Statement of Receipts, Expenditures and Balances of the United States Government (Washington D.C.: GPO, 1867–1893).