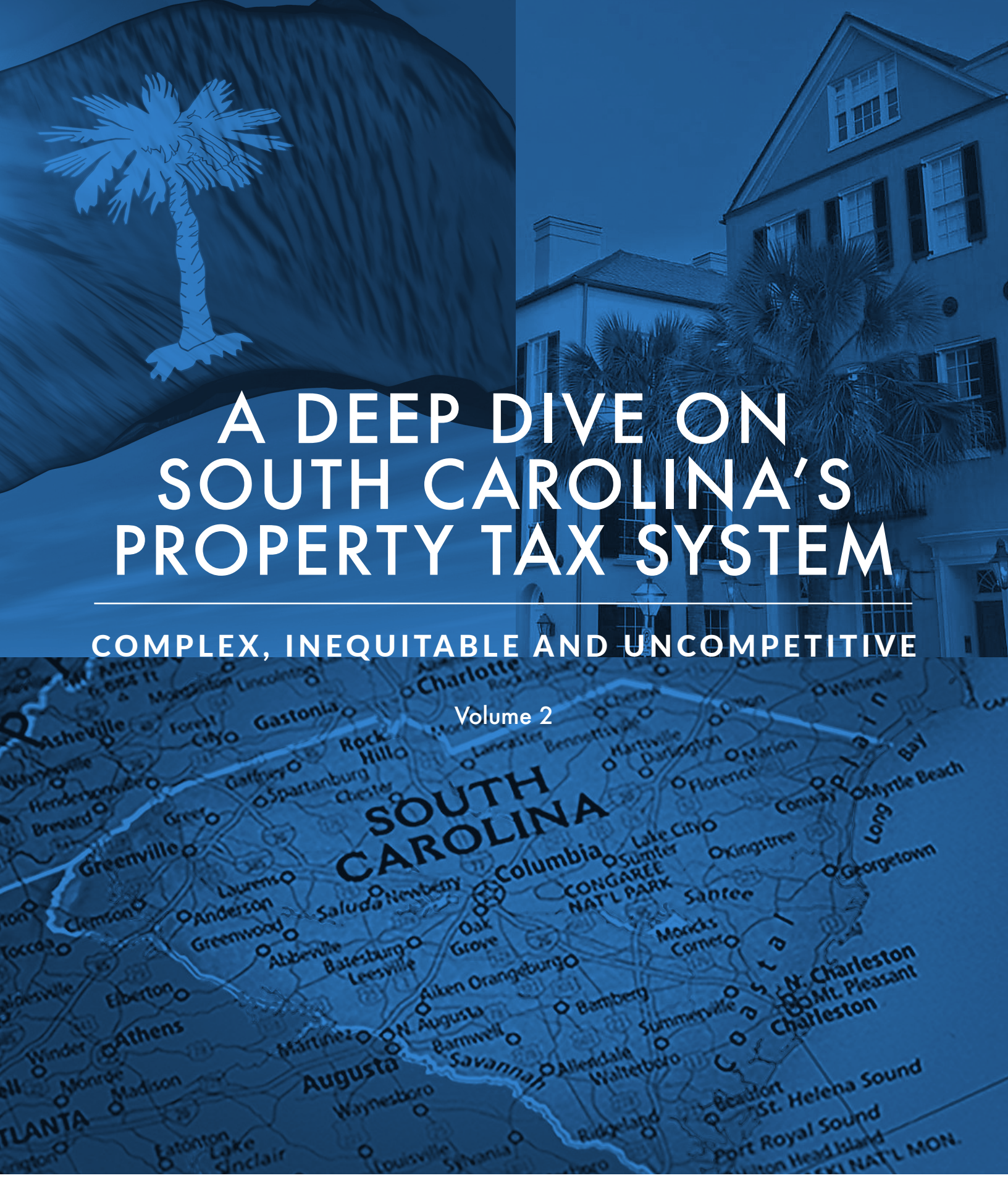

A DEEP DIVE ON SOUTH CAROLINA'S PROPERTY TAX SYSTEM

COMPLEX, INEQUITABLE AND UNCOMPETITIVE

Volume 2

SOUTH CAROLINA CHAMBER FOUNDATION

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LINCOLN INSTITUTE OF LAND POLICY

A Deep Dive on South Carolina's Property Tax System

Complex, Inequitable and Uncompetitive

Volume 2

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A Deep Dive on South Carolina's Property Tax System

Complex, Inequitable and Uncompetitive

Volume 2[1]

[1] Volume 1 summarizes the chapters in Volume 2. Volume 1 also includes key findings, the executive summary, and policy options. Some material, such as the definitions section, appears in both volumes.

Chapter 2:

Property Tax Assessment Practices in South Carolina

by

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With Appendix B by Bethany Paquin

Introduction

This chapter describes how the property tax is administered in selected counties in South Carolina and evaluates the effect of the 5-year reassessment cycle on the equity of the property tax across different land use types and within specific land use categories. The first section provides an overview of the legal framework for the property tax in South Carolina. The second section summarizes variations in property tax administration among selected counties. The third section discusses the 5-year reassessment cycle and provides preliminary insights into how it affects property tax equity.

An Overview of the Legal Framework for Administering the Property Tax in South Carolina

The property tax in South Carolina is an ad valorem tax applied to all real property, personal property used in business, and certain other types of personal property like motor vehicles, boats, and airplanes. The South Carolina Constitution provides for property taxation based on "fair market value" (Article X, Section 1). All real property is to be valued "at its true value in money that is the price that the property would bring following reasonable exposure to the market where both seller and buyer are willing" (SC Code §12-37-930). Personal property is to be valued on its actual value (SC Const. Article III, Section 29). "All property must be assessed uniformly and equitably throughout the State" (SC Code §12-43-210 (A)).

Classes of property and mandated fractional assessment ratios are defined in the South Carolina Constitution. The classification system defines which assessment ratio to apply to the fair market value of a property. This determines the final assessed value for property tax purposes. In addition, the classification system is used to determine whether property will be valued by the county assessor (most real property), the county auditor (personal property including vehicles), or the Department of Revenue (specified real and personal property under South Carolina Code 12-43-540). Table 2.1 summarizes the assessment ratios defined in the Constitution (Article X, Section 1 Taxation and assessment).

Table 2.1 South Carolina Assessment Ratio and Appraisal by Class of Property, 2018

Property Classification	Assessment Ratio	Appraised By
Owner-Occupied	4.0	County Assessor
Agricultural (Private)	4.0	County Assessor
Agricultural (Corporate)	6.0	County Assessor
Commercial/Rental	6.0	County Assessor
Personal Property (Vehicles)	6.0	County Auditor
Other Personal Property	10.5	County Auditor
Fee-in-Lieu	NA*	NA
Manufacturing	10.5	Department of Revenue
Utility	10.5	Department of Revenue
Business Personal	10.5	Department of Revenue
Motor Carrier	9.5	Department of Revenue

Source: South Carolina Revenue and Fiscal Affairs Office (2018)

*Assessment ratios for Fee-in-Lieu are negotiable and vary by agreement. The minimum ratio is 4.0 percent.

The State Constitution gives the General Assembly the authority to "change the ratios as set forth in Section 1, but only with the approval of at least two-thirds of the membership of each house." (SC Const. Article X, Section 2 (d)).

The South Carolina code requires that "once every fifth year each county or the State shall appraise and equalize those properties under its jurisdiction. Property valuation must be complete at the end of December of the fourth year" and taxpayers must be notified of any change in classification or value greater than $1,000 (§12-43-217 (A)). The newly appraised values are implemented in the fifth year; however, a county can postpone the implementation of new values resulting from the reassessment for not more than one tax year. For tax purposes "Each political subdivision shall value real property by a method in which the value of each parcel of real property, adjusted for improvements and losses, does not increase more than fifteen percent every five years" (SC Const. Article X, Section 6) unless there is an assessable transfer of interest.[1]

An *assessable transfer of interest* (ATI) is a transfer of an existing interest in real property that subjects the real property to appraisal (SC Code §12-37-3130 Definitions). Four pages in SC Code §12-37-3150 list 11 specific types of transfers that qualify as ATIs and 14 specific types of transfers that do not qualify as assessable transfers of interest. For example, a valid ATI occurs if there is a conveyance by deed or if there is a change of use from agricultural real property that is subject to the rollback tax. Alternatively, an ATI does not occur if there is a transfer through a foreclosure or a transfer of ownership interest among members of an affiliated group, like a transfer within a corporation or a family. If a transaction qualifies as an ATI, then the assessor must reappraise that property in the year of the transfer and record the new appraisal as the fair market value of the property as of December 31 of the year of the transaction.

The assessor's office in each county is responsible for appraising all real property except those properties valued by the Department of Revenue (DOR). The DOR is responsible for valuing real and personal property for manufacturing, utility, railroad, pipeline, and motor carrier businesses and is responsible for valuing other business personal property as defined by statute. The auditor in each county is responsible for valuing vehicles and personal property like boats, airplanes and some personal property used by businesses, including rental residential properties.

The assessor's office in each county also carries out specific activities that are the result of changes to the property tax system since the passage of Act 388. Specifically, local assessors must address a potentially significant increase in the number of applications for residency, which qualifies homeowners for a 4 percent assessment ratio for owner-occupied residences. In addition, there is an increased workload resulting from the requirement to reassess ATIs in the year of the transaction.

The assessor's office is also responsible for identifying properties that are exempt from property taxation, and therefore exempt from appraisal. The exemptions are defined in §12-37-220: General Exemption from Taxation. In addition, the assessor must implement a series of property tax relief provisions that are administered through the valuation process. For example,

- §12-43-224 provides for special assessment of undeveloped acreage subdivided into lots
- §12-43-225 provides for multiple lot discounts

§12-37-3135 provides for a 25 percent reduction in a property's ATI fair market value for properties assessed at 6 percent if the buyer files an application with the county assessor.

[1] See also Section 12-37-3150 of the South Carolina Code which also requires that "Any increase in the fair market value of real property attributable to the periodic countywide appraisal and equalization program implemented pursuant to Section 12-43-217 is limited to fifteen percent within a five-year period …"

An Overview of Property Tax Administration in South Carolina

This section compares property tax administration practices in South Carolina for each of ten case study counties including:

- the composition of the property tax base; and
- assessment administration approaches.

The ten case study counties were identified by the South Carolina Chamber Foundation and South Carolina Realtors to reflect a representative cross section of the 46 counties in the state. The case study counties include

- eight of the 20 most populous counties and two of the 11 least populated counties in the state;
- four urban and five rural counties and one described as rural/urban mix;
- four tier 1 counties based on unemployment and per capita income, two tier 2 counties, two tier 3 counties and two tier 4 counties;
- seven counties with just one school district, and one county each with two, four, and five school districts.

A detailed description of each county is provided in Appendix A and summarized in Chapter 1.[2] Appendix B describes property tax administration in Tennessee. Some features of Tennessee's system may serve as a model for South Carolina.

Composition of the Property Tax Base

To compare the composition of the property tax base across the ten case-study counties, information was solicited from the assessor and auditor in each county. They were provided with a standard template and asked for information on the appraised and assessed value for each land use classification in the constitution.

This data collection effort faced several challenges. First, the valuation process in South Carolina is shared between three different organizations, as mentioned earlier in this chapter. As a result, no single entity has complete information for the property tax roll in an individual county.

Another complicating factor is that no two counties use the same land use codes for classifying properties for tax purposes. Allendale County has 135 different land use codes and they generally follow the categories described in the State Constitution. For example, land use code 100 includes all types of owner-occupied residential properties, which are assessed at 4 percent. Land use code 200 includes all types of residential properties that are non-owner occupied, which are assessed at 6 percent.

Comparatively, Greenville County has 119 land use codes, but all single-family residential properties, whether owner-occupied or rented, fall into land use code 1100. Horry County has 225 land use codes and all single-family residential properties, both owner-occupied and rental, fall into land use code 101. York County has 23 land use codes and there is one code for residential improved properties that are assessed at 6 percent and another for residential improved properties that are owner-occupied and assessed at 4 percent.

Another obstacle to collecting information was a lack of standardized language. In the context of this effort, everyone agreed that the meaning of the terms *Appraisal* and *Fair Market Value* is the *estimated*

[2] The detailed descriptions of individual counties in Appendix A are based on information obtained through in-person interviews with assessors in the 10 case study counties during two visits the author made to South Carolina in June and July 2019. The author made additional contacts with assessors and auditors in each county by e-mail and phone to obtain requested information.

market value of a property; however, there was variation in the interpretation of the term *Taxable Value*. In some cases, it was used interchangeably with the term *Assessed Value,* which is the value multiplied by the assessment ratio to determine the property tax liability for each property. Alternatively, Taxable Value has been used to refer to the capped or limited value resulting from the 15 percent assessment limit. The SC code, however, defines the capped or limited value as the Property Tax Value (SC Code §12-37-3155).

The data collection effort was challenging because no one entity has sufficient information to complete the entire template on property-tax-base composition. As a result, the top portion of the template, Real Property Valued by County Assessor, is provided by the assessor's office. When data were provided for the lower panel in the template, Other Real and Personal Property Valued by County Auditor and State Department of Revenue, it was often missing information on the number of parcels and appraised values. At the time of publication four counties (Charleston, Edgefield, Greenville, and Richland) had provided all the information requested on the composition of the property tax base in 2018. Allendale and York counties provided assessed value for all property types, but appraised value for only real property. Two counties (Horry and Sumter) provided appraised and assessed value for real properties valued by the county assessor. Florence and Orangeburg did not provide information on the composition of their tax base.

The templates for each county are included in the individual write-ups in Appendix A. The goal is to compare the share of appraised value and the corresponding share of assessed value for each land use classification in each county. These differences, if viewed through the lens of uniformity and equity, indicate whether property taxes paid are consistently proportional to the appraised value for each classification.

A couple of themes emerge when looking at the data for the four counties that provided full information as presented in Table 2.2. The Primary Residential share of total assessed value is 9 to 15 percent ***lower*** than its share of total appraised value. Alternatively, the Other Residential share of assessed value is 1 to 3 percent ***higher*** than its share of appraised value and the Commercial share (which includes rental residential properties in Edgefield and Richland counties) of assessed value is 2 to 7.5 percent ***higher*** than its share of appraised value. Charleston County has nearly 33 percent of its assessed property tax base in Other Residential property which is typically rental property with an assessment ratio of 6 percent. Greenville County has nearly 27 percent of its assessed value in commercial property while the share for Richland County is nearly 39 percent.

Table 2.2 Selected Land Use Shares of Appraised and Assessed Values by County, 2018

PROPERTIES VALUED BY COUNTY ASSESSORS						
	Primary Residential		**Other Residential**		**Commercial**	
	Appraised Value (%)	Assessed Value (%)	Appraised Value (%)	Assessed Value (%)	Appraised Value (%)	Assessed Value (%)
Allendale	NA	14.9	NA	8.4	NA	3.7
Charleston	45.9	33.8	29.8	32.9	17.8	19.7
Edgefield	55.6	41.7	NA*	NA*	17.1	19.2
Greenville	54.6	41.6	7.3	8.4	23	26.9
Richland	51.1	42.4	NA*	NA*	31.2	38.7
York	NA	39.1	NA	8.2	NA	17.4
PROPERTIES VALUED BY AUDITORS AND DEPARTMENT OF REVENUE						
	Vehicles		**Manufacturing**		**Utilities**	
	Appraised Value	Assessed Value	Appraised Value	Assessed Value	Appraised Value	Assessed Value
Allendale	NA	8.2	NA	30.2	NA	21
Charleston	2.4	5.9	0.2	0.4	1.6	3.1
Edgefield	12.4	13.9	3.3	6.6	5.8	11.4
Greenville	9	11.1	1.8	3.6	1.9	3.7
Richland	8.8	11.8	1.7	3.5	4.3	9.3
York	NA	9.7	NA	3	NA	14

Source: Data provided by assessor and/or auditor in each county.

Note: Each value is the percentage of total land use in the county. For example, Primary Residential property in Allendale is 14.9 percent of total assessed value in the county.

*For Edgefield and Richland Counties "Other Residential" is included with "Commercial."

Similar trends emerge when looking at properties valued by the county auditor and the Department of Revenue. Specifically, the Vehicles share of assessed value is between 1.5 and 3 percent ***higher*** than its share of appraised values, while the Manufacturing and Utilities share of assessed value is approximately twice as ***high*** as their share of appraised value.

Allendale and York counties did not provide data that allowed the comparison of appraised and assessed values across all land uses, but they did provide information on assessed value for all land uses. Allendale County has a much different property tax base composition than the other four counties providing data for all land uses. Specifically, Primary Residential properties account for less than 15 percent of the assessed value in Allendale County, but average 39.7 percent of the assessed value in the other five counties providing data. Alternatively, manufacturing and utility properties account for 30.2 and 21.0 percent of assessed value in Allendale County, respectively, but average just 3.4 and 8.3 percent of assessed value for the other five counties, respectively.

Two counties, Horry and Sumter, provided appraised and assessed value data for real property valued by the county assessor. According to the data in Table 2.3, the Primary Residential share of assessed value in both counties is significantly lower than its share of appraised value. Alternatively, the Other Residential share of assessed value in both counties is significantly higher than its share of appraised value, and the same is true for commercial properties in Sumter County.

Table 2.3 Selected Land Use Shares of Appraised and Assessed Values in Horry and Sumter Counties, 2018

PROPERTIES VALUED BY COUNTY ASSESSORS						
	Primary Residential		**Other Residential**		**Commercial**	
	Appraised Value	Assessed Value	Appraised Value	Assessed Value	Appraised Value	Assessed Value
Horry	35.5	30.8	36.4	47.2	21.4	21.1
Sumter	63	53.3	11.3	14.8	24.1	30.5

Source: Data provided by assessor and/or auditor in each county.

As a result of the classified property tax system in South Carolina, and other features of the property tax, the burden of financing locally provided goods and services through the property tax has shifted, sometimes significantly, from owner-occupied residential properties to non-owner-occupied residential properties as well as commercial, manufacturing, and utility properties.

Valuing Personal Property for Property Tax Purposes

While household goods are generally exempt from property taxation, South Carolina taxes some personal property, including vehicles, boats, and aircraft as well as business personal property, including personal property in rental residential property. The county auditor values some personal property for tax purposes, including vehicles, while the Department of Revenue values business personal property.

Table 2.4 presents information on personal property taxes in states neighboring South Carolina. Most of the neighboring states tax motor vehicles, albeit the details vary on what is included and what is not. But nationally only 11 other states have an ad valorem property tax on motor vehicles like the treatment in South Carolina (Walters 2015). Similarly, all neighboring states tax machinery and equipment, but again the details on what is included and what is not vary from state to state.

Table 2.4 States Neighboring South Carolina and Personal Property Taxes*				
State	**Year**	**Are Motor Vehicles Taxed?**	**Is Inventory Taxed?**	**Are Machinery and Equipment Taxed?**
Florida	2017	No	No	Yes
Georgia	2017	Yes	Yes	Yes
Kentucky	2017	Yes	Yes	Yes
North Carolina	2017	Yes	No	Yes
South Carolina	2017	Yes	No	Yes
Tennessee	2017	No	No	Yes
Virginia	2017	Yes	Yes	Yes
West Virginia	2017	Yes	Yes	Yes

Source: ***Significant Features of the Property Tax***. https://www.lincolninst.edu/research-data/data-toolkits/significant-features-property-tax/topics/taxable-personal-property, Lincoln Institute of Land Policy and George Washington Institute of Public Policy. (Personal Property Tax; accessed: 09/08/2019)

*Visit Significant Features of the Property Tax at Lincolninst.edu for an explanation on how each of these items is included in the property tax base in each state.

Department of Revenue Valuing Personal Property for Tax Purposes

South Carolina Code §12-4-540 enumerates the types of properties to be valued by the Department of Revenue (DOR). This responsibility includes determining appraised and assessed values for corporate headquarters, corporate office facilities, distribution facilities, and the real and personal property owned by or leased to the following businesses—manufacturing; railway; private carlines; airlines; utilities (including water, heat, light and power, telephone companies, cable television, and sewer); pipeline; and mining. In addition, the DOR is responsible for the appraisal and assessment of certain business personal property of merchants.

Business personal property valuation: Business Personal Property Tax (BPP) is a tax on the furniture, fixtures, and equipment that are owned and used in a business. Any assets that are claimed on the business' income taxes should be reported on the BPP tax return. The BPP tax return is due four months after the business' accounting closing period. For example, if a business has a December accounting closing period, then the return is due April 30 of the following year. On the return, the business owner reports the total cost of the assets, the income tax depreciation, and the net depreciated value. The Department of Revenue then sends assessed values to the county where the business is located. The county will send a BPP tax notice after September 1. The payment is due on or before the following January 15 of each year.

Utility real and personal property valuation: The DOR uses the *unit valuation method* for determining the value of real and personal property for utilities and railroad transportation property. A unit appraisal of a business is an appraisal of the integrated business as a whole without any reference to the value of its component parts. This is in contrast to a fractional appraisal, which is a valuation of one of the parts without reference to the value of the whole, and a summation appraisal, which is a valuation of the whole derived by adding two or more fractional appraisals.

The unit valuation method is the most frequently used method for valuing utilities because it accurately estimates the value of the company or unit in its entirety. Typically, public utility properties extend into

several taxing jurisdictions and retain/optimize their value by integrating the operation as a system or unit. The individual portion of the system that is located within a designated taxing district has a value that is contributory to the entire system.

From this integrated perspective, any one particular component or asset in this system of many property items defies individual or segregated valuation. Any single component cannot reflect the value it contributes to the overall system of all the assets assembled to assure the long-term viability of the entire utility entity. As a result, there are three steps to valuing a utility or railroad property using the unit valuation method:

1. Identify the unit or total assemblage of assets to be appraised;
2. Form an opinion of the total unit's value by the appropriate approaches to value; and
3. Allocate a portion of the total unit value to the appropriate assessing tax district(s).

The "Unit Method" is then implemented through a combination of traditional valuation techniques (including the cost, sales comparison, and income approaches to valuation) depending on the nature of the business being valued. Real property that is valued by the Unit Method is excluded from the 15 percent assessment limit in §12-37-3140.

Table 2.5 reports how many states appraise certain types of property at the state level.

Table 2.5 Number of States That Centrally Assess Properties, by Type of Property

Property Type	Number of States
Commercial Airlines	22
Railways	33
Railroad Cars	29
Gas Utilities	27
Natural Gas Pipelines	27
Oil Pipelines	27
Water Utilities	20
Electric Utilities	27
Telecommunications Companies	29
Mines	10

Source: Dornfest, et al., 2019

Manufacturing personal property valuation: SC Code §12-37-930 requires that the fair market value of manufacturing machinery and equipment used in the conduct of the manufacturing business "must be determined by reducing the original cost by an annual allowance for depreciation…" according to a detailed schedule of depreciation rates enumerated in the legislation. The DOR can permit an adjustment in the depreciation allowances enumerated in the law, with the total allowance not to exceed 25 percent, based on documentation of "extraordinary obsolescence." Once these values are determined they are combined with estimates of the assessed value of manufacturing real property and sent to the auditor in each county to determine tax liabilities.

Once the Department of Revenue values these various types of properties the assessed values are transmitted to each county. Statutory tax rates are then applied to each of these assessments by the county

auditor to determine property tax liabilities for each property. A summary of assessed values of centrally assessed properties is provided in Table 2.6 for our 10 case study counties.

Table 2.6 Department of Revenue Assessed Values by Property Type, 2017

County	Manufacturing ($)	Utility/Railroad ($)	Business Personal ($)	Motor Carrier ($)
Allendale	4,808,400	5,589,897	611,440	37,816
Charleston	16,390,592	124,575,460	97,925,140	3,410,055
Edgefield	5,038,150	9,608,170	2,023,070	99,000
Florence	34,240,279	30,772,676	21,347,024	2,703,560
Greenville	68,551,830	100,992,313	114,666,430	9,904,074
Horry	9,877,848	38,508,060	62,019,518	6,153,025
Orangeburg	22,688,920	49,506,813	15,789,710	2,643,391
Richland	64,594,651	134,183,460	68,400,660	1,973,067
Sumter	9,783,930	19,726,850	15,565,822	4,088,208
York	41,974,652	198,449,077	40,622,850	1,988,651

Source: Prepared by the SC Department of Revenue

County Auditor Valuing Personal Property for Tax Purposes

In South Carolina, personal property subject to the property tax encompasses all things other than real estate that have value. Specifically, taxable personal property valued by the county auditor includes motor vehicles, recreational vehicles, aircraft, and watercraft (including boats, motors, and personal recreational vehicles such as wave runners, jet skis, and the like). Personal property taxation also applies to equipment, furniture, fixtures, and machinery primarily used by businesses and rental residential properties.

Owners are required to file an annual personal property tax return with the county auditor.

Vehicle Valuation: Virtually all motor vehicles registered in a county are subject to property taxation. Vehicles are defined to include:

- Cars and trucks
- Big Trucks and utility trailers
- Campers, recreational vehicles, and motor homes
- Motorcycles
- Watercrafts and motors
- Pontoon boats and house boats
- Commercial boats
- Documented vessels
- Aircraft

The process for determining the fair market value of vehicles is the same across all counties in South Carolina and is based on the same general set of information. First, for motor vehicles, the auditor receives a list of motor vehicles registered in the county from the South Carolina Department of Motor

Vehicles. Second, the auditor estimates the fair market value of each vehicle by consulting the Motor Vehicle Values manual prepared by the Department of Revenue, which contains information on values of most makes of motor vehicles. If the manual does not have the required information for a specific vehicle, the auditor can consult other national sources of information including the NADA Vehicle Guide. Individuals have the right to apply for a high-mileage discount if they qualify according to the High-Mileage Chart prepared by the Department of Revenue.

Similarly, county auditors receive a list of boats registered in the county along with information on the value of most makes of boats from the South Carolina Department of Natural Resources. This information is used to estimate the fair market value of boats. If the value of a motor vehicle or boat is not included in the information provided by the state, other national sources can be used to determine the fair market value of the property.

The assessment ratio is then multiplied by the estimated fair market value to produce the assessed value which is the base for determining tax liability.

Personal Property Valuation: South Carolina Code of Regulations, Chapter 117-1840.1 provides: "The fair market value of merchants' furniture, fixtures, and equipment shall be the depreciated value as shown by the merchants' records for income tax purposes, provided however, that in no event is the original cost of the property to be reduced by more than ninety percent of the original capitalized cost." This information is provided by the South Carolina Department of Revenue.

The county auditor is responsible for valuing business personal property not valued by the Department of Revenue as defined in §12-39-70 according to the North American Industrial Classification System Manual. According to the York County Auditor's Web page, operationally that means personal property of businesses that have a retail license are valued by the South Carolina Department of Revenue and personal property of all other businesses is valued by the auditor's office.

At the time of publication, six of the 10 case study counties provided data on the assessed value of vehicles and other personal property as determined by the county auditor and summarized in Table 2.7. The relative importance of vehicles as a share of the county property tax base varies significantly across counties reporting information, from 13.9 percent in Edgefield County to 5.9 percent in Charleston County. The relative importance of other personal property also varies across counties providing information, but the share in each county is less than 2 percent of total assessed value in the county. This is consistent with the general national trend of declining importance of personal property in the property tax base across states over the last several decades.

Table 2.7 Assessed Value of Personal Property Determined by County Auditors, 2018

County	Vehicles ($)	Share of County Property Tax Base (%)	Other Personal Property ($)	Share of County Property Tax Base (%)
Allendale	1,871,631	8.2	63,350	0.3
Charleston	233,566,623	5.9	71,467,020	1.8
Edgefield	11,379,337	13.9	866,570	1.1
Florence	NA	NA	NA	NA
Greenville	266,284,340	11.1	7,793,689	0.3
Horry	NA	NA	NA	NA
Orangeburg	NA	NA	NA	NA
Richland	170,730,590	11.8	8,423,180	0.6
Sumter	NA	NA	NA	NA
York	134,972,244	9.7	13,886,858	1.0

Source: Data provided by county assessor and/or auditor

Valuing Real Property for Tax Purposes

Most real property in South Carolina is valued for property tax purposes by the county assessor.[3] The Department of Revenue is also charged with valuing real property for manufacturing, commercial headquarters, and utilities.

The process of determining property tax liabilities for each property starts with the assessor estimating its "true value in money" or "the price which the property would bring following reasonable exposure to the market, where both the seller and the buyer are willing, are not acting under compulsion, and are reasonably well informed of the uses and purposes for which it is adapted and for which it is capable of being used." (South Carolina Code §12-37-930) This is referred to as the Fair Market Value or Appraised Value of a property and those values remain in place for a period of five years until such time as the county implements a new county-wide reassessment.

Between the five-year intervals for county-wide reassessment, the Fair Market Value stays the same unless there is an Assessable Transfer of Interest, or ATI. ATIs trigger a reassessment in the year of transfer that becomes the new Fair Market Value as of December 31 of that year. Assessors expressed concerns that this undermines the equity of the property tax because significant numbers of properties could be reassessed in each of the five years during the reassessment cycle, be given a new effective date for the Fair Market Value and result in parcels on the property tax rolls with divergent effective dates for their appraisals. Such inequities are avoided in other states when the assessor reassesses the property at the time of sale but trends the value back to the same specific date as all other properties on the tax roll.

[3] §12-43-330 says that "Property exempt from taxation is also exempt from assessment. Property exempted from ad valorem taxation by Section 12-37-220 is also exempt from assessment."

The South Carolina Code, §12-37-3150 defines 11 circumstances where the transfer of ownership of a property qualifies as an Assessable Transfer of Interest in real property and 14 circumstances that do not qualify as an Assessable Transfer of Interest. Counties with dynamic real estate markets often deal with as many as 20,000–30,000 ATIs annually. In one case a county hired an attorney to help determine those transfers that are an ATI and require reassessment and those that are not.

In addition, other situations can trigger a reassessment of an individual parcel during the course of a five-year reassessment cycle. For example, new construction, reconstruction, major additions to the boundaries of the property or a structure on the property, remodeling, or renovation and rehabilitation could impact the estimate of Fair Market Value. The value of any new construction and/or additions or renovations is added to the previous estimate of Fair Market Value in the year of the construction at actual cost. A new estimate of Fair Market Value is certified December 31 of the year in which the construction took place. Again, multiple properties on the tax roll will have different effective dates for the estimate of Fair Market Value undermining the equity of the property tax.

Once every five years each county or the state shall appraise those properties under its jurisdiction. Property valuation must be complete at the end of December of the fourth year and the county or state will notify taxpayers of any change in value if the change is $1,000 or more. In the fifth year the county or state will implement the newly appraised values. (§12-43-217)

South Carolina assessors utilizes the three standard approaches to estimating the market value of individual properties that do not sell during the tax year:[4]

- the sales approach;
- the cost approach; and
- the income approach.

The valuation process used most frequently in South Carolina is the ***cost approach*** to valuation.

The cost approach is based on the idea that the value of a property can be determined by the value of the land and the replacement cost of the structures less depreciation reflecting the loss in value of the structure because of physical deterioration and functional and economic obsolescence. The appraiser determines the replacement cost of a new structure that would be functionally the same as the property being valued and then adds the value of the land (Eckert 1990, 82–83).

The cost approach to valuation can be based on a set of tables with information on the cost of construction and depreciation, formulas, or a combination of both tools. Initially cost models tended to rely on tables of information, but more recently cost model software is becoming available that incorporates formulas because they are faster and can incorporate local market information (Eckert 1990).

The cost approach used most widely in South Carolina, however, is not the standard cost approach that relies on national sources or developers to determine costs. In South Carolina most assessors use what is commonly referred to as a "Market Driven Cost Approach," a "Modified Cost Approach," or a "Market Calibrated Cost Approach." While this modified approach functions like a traditional cost approach, and often starts with cost and depreciation tables from Marshall & Swift, the cost and depreciation information are modified to reflect local market conditions. For example, in a county with 500 sales per

[4] There is an exception for valuing agricultural land that qualifies for preferential treatment (see §12-43-230 for the definition "agricultural real property"). For both private and corporate agricultural land receiving preferential treatment, "The fair market value for agricultural purposes determined for the 1991 tax year is effective for all subsequent years." (§12-43-220(d)(2)(B)(i))

year, the assessor makes adjustments to the cost estimates from traditional sources until they produce values that are similar to that of the 500 qualified sales. Once recalibrated with the new sales information, the cost system is applied to the remaining properties in the county to ensure each property is assessed at market levels.

Under the cost method, once the cost of structures is determined, the assessor then determines the market value of the land by examining sales of comparable vacant land sales. If enough vacant land sales are not available from the local neighborhood, assessors in South Carolina often estimate land values based on land/improvement ratios from adjoining neighborhoods.

The ***sales approach*** to valuation involves a comparison between a property being valued and similar properties that sold recently in arm's-length transactions (sales between willing buyers and willing sellers who are unrelated). There is an assumption that, if the real estate market is competitive, the property being valued would sell for a price similar to comparable arm's-length transactions.

This method is generally used for valuing properties when frequent sales of similar properties are available. It is often used for valuing residential, small apartment, and commercial properties. It is based on the principle that the value of a property tends to be similar to the cost of buying an equally desirable substitute property. Adjustments may be made to reflect differences between the property being valued for tax purposes and the comparable sales being used to determine value. Such adjustments may reflect physical differences (e.g., square footage, lot size, number of garages, baths, bedrooms, and so on), economic conditions (age and condition of the property), location, time of sale, financing, and so on. Since no two properties are identical, all differences, minor and major, between a comparable sale and the property being valued are enumerated and evaluated. For example, if a property that sold had a 2-car garage and the property being valued had a 1-car garage, an appropriate adjustment would be made to the sales price to reflect this difference. Adjustments can be expressed on a lump-sum or percentage basis and are applied to the properties that sold (Eckert 1990).

There are two approaches to implementing a sales approach to valuation used in South Carolina. A manual approach to the comparable sales method involves looking for sales of properties that are comparable to the property being valued and then adjusting for differences between the two properties to arrive at an estimate of the market value of the subject property. This is used in smaller jurisdictions or jurisdictions with a relatively stable real estate market and few annual sales. The assessor might have to consider sales from several years to obtain sufficient comparables.

Alternatively, in jurisdictions that have a high volume of sales, the assessor can apply the sales comparison approach using a statistical model, employing multiple regression analysis, to estimate the coefficients of variables representing individual characteristics of the properties that sold and then using those coefficients to estimate the value of properties that have not sold (Eckert 1990).

Finally, the ***income approach*** to valuation can be used to estimate the market value of investment properties, including industrial properties, commercial buildings, larger apartment buildings, and other rental residential properties. For these properties, the market value is estimated by looking at the relationship between the net income generated by the property and the relevant capitalization rate.

The income approach looks at the relationship between the underlying asset and the stream of income it generates. For example, if you put $1,000 in a bank account and the interest rate is 5 percent, then the bank will pay you $50 per year in income. The fundamental relationship in this example is

Income = value x interest rate.

This same relationship is used to determine the value of the underlying asset when the interest rate and annual flow of income are known, but the market value of the asset is not known. Rearranging the above relationships yields

value = income/interest rate.

Thus, if a property yields an annual net income of $1 million and the applicable interest (capitalization) rate is 10 percent, the value of the property for tax purposes would be $10 million ($1 million/0.1 = $10 million) (Eckert 1990).

When applying the income approach to valuation, the first step is to estimate annual net income for the property being valued. This requires information on the income and operating expenses for the property. Typically, this information is obtained from information requests sent to the property owner by the assessor. Property owners in South Carolina, however, are generally not required to provide this information to the assessor. Alternatively, these data can be estimated based on tables with representative estimates of income and expenses for various business types.

The second step is to estimate the capitalization rate to be applied to the annual net income. Just as fluctuations in construction costs influence the value of property using the cost approach, market trends in the rate of return on money invested, expectations of future market conditions (i.e., rents, vacancy, etc.), or other lease agreements and other variations in capital costs and risk estimates will influence the determination of the appropriate interest rate to use in capitalizing net income. As a result, different capitalization rates may be used on similar properties in different neighborhoods or towns or may be utilized for the same property over time as market conditions change. Estimates of typical capitalization rates applied to various types of properties can be purchased from private providers based on information gathered from a wider geographic area.

County Assessors

County assessors value all real property for tax purposes except properties valued by the Department of Revenue and agricultural properties.[5] The author surveyed how assessors from the 10 case study counties valued real property for tax purposes. Table 2.8 summarizes the responses received to date.

Of the 8 counties presented in Table 2.8, half have some form of a cost model as the basis for estimating fair market values of individual residential parcels and half have some variant of the sales approach for estimating fair market values of residential properties. The four counties using the cost approach all use some variation of the Market Calibrated Cost Approach, which incorporates local market information to calibrate both the cost estimates and depreciation allowances to better reflect market conditions. The results of these modified cost models are often compared to comparable sales and further adjusted by assessment/sales ratios computed for neighborhoods or specific land uses in other cases.

[5] Agricultural values are established by legislation and the current value is the agricultural use value from 1991.

Table 2.8 Property Tax Administration in Selected Counties, 2019

County	Reassessment Year	CAMA Model	Data	Determining Land Values	Total Number of Parcels	Annual Sales	Value Tax Exempt Properties
Allendale	2018	Comparable Sales	For residential properties use comparable sales. For commercial properties use comparable sales and cost model using Marshall/Swift cost and depreciation tables.	Market values	9,000	20-25 true sales	No
Charleston	2019	Market / Sales	Seven different regression models for different neighborhoods in various communities in the county.	Multiple Regression Analysis	195,000	14,000	No
Greenville	2019	Cost	For residential use modified cost based model starting with Marshall/Swift cost tables and then using market determined cost tables based on sales. Adjust by neighborhood using sales ratio study. Commercial properties valued based on income tables and can be refined by using local market information.	Vacant land sales by neighborhood. If not sufficient market information estimate land value based on land improvement ratios.	205,000	10,000	No
Horry	2018	Cost	For residential properties, cost based approach using Marshall/Swift cost and depreciation tables to estimate FMV which is then modified based on local market data and A/S ratios for each neighborhood. Test cost based values with actual sales. Commercial properties based on Marshall/Swift cost tables and straight line method. These estimates can be refined based on local market information.	Vacant land sales by neighborhood. If not sufficient market information estimate land value based on land improvement ratios.	265,000	20,000-30,000	No
Orangeburg	2017	Market / Sales	For residential use a sales/market based regression model to calibrate coefficients. Try to confirm price with cost approach using Marshall Swift for average house. For commercial properties use cost approach and Marshall Swift. Try to use comparable sales, but sales are rare.	Vacant land sales used to determine land values. If not sufficient look to neighboring jurisdictions	65,000	712	No
Richland	2018	Cost	For residential properties use property characteristics and Marshall Swift cost and depreciation tables. For commercial properties use potential income estimates, vacancy rates, and COSTR cap rates for metro area.		170,000	20,000	Yes
Sumter	2015	Comparable Sales	Residential properties are valued using comparable sales approach. For commercial property the income approach is generally used. Marshall/Swift income and expense tables are used to estimate gross and net income. Marshall/Swift depreciation tables are used to adjust for economic, functional, and physical depreciation.	Vacant land sales	64,000	1,500-2,000	No
York	2019	Cost	For residential cost tables used based on square feet and quality. Cost tables based on local market analysis using sales and regression analysis. For commercial property cost basis using Marshall Swift values.	Vacant land sales	121,000	6,000-7,500	No

Source: Data provided by county assessor

For the four counties using some variant of the sales approach, the two smaller counties, Allendale and Sumter, use a comparable sales approach to valuing residential properties, while the two larger counties, Charleston and Orangeburg, use a regression model to estimate fair market values of residential properties. Because of limited sales in Allendale County, the assessor uses sales from the previous three to five years.

For commercial properties, counties use a combination of cost and income approaches, sometimes testing the results with actual comparable sales if available. Three counties use some variation of the income approach to valuation. Two of the three seem to use income and expense tables for specific industries, the third did not specify, but taxpayers are not required by law to provide income and expense information. Four counties use some variant of the cost model. Two start with Marshall & Swift cost and depreciation tables and then adjust for local market conditions. The other two appear to rely solely on Marshall & Swift cost and depreciation tables.

Under the cost approach, for both residential and commercial properties, once the cost of structures is determined the assessor then determines the market value of the land by examining comparable vacant

land sales. If there are insufficient vacant land sales in the local neighborhood, assessors in South Carolina often estimate land values based on land/improvement ratios from adjoining neighborhoods.[6]

Department of Revenue

The Department of Revenue is responsible for valuing real and personal property for manufacturing, utility, railroad, pipeline, and motor carrier businesses. As discussed above, all but manufacturing properties are valued by the Unit Method and allocated to individual counties. The Department of Revenue values personal property used for manufacturing separately from real property used for manufacturing and then combines them for a final estimate of value. Unless otherwise stipulated, the assessed values provided to counties by the DOR are a total of real and personal manufacturing property. Values are updated by the DOR according to the 5-year reassessment cycle of each county.

The DOR presents manufacturing values by tax account, not for individual parcels. Fair Market Value is estimated first and then multiplied by the appropriate assessment ratio to determine the assessed value, which is then sent to each county auditor to determine the property tax liability.

The DOR does not collect information on sales of manufacturing properties so they could not provide a sales file to include with the sales information provided by the assessors. Because they do not collect sales information, they do not calculate assessment/sales ratios for manufacturing properties.

Quality of Assessment and the 5-Year Reassessment Cycle

The property tax is the most difficult state and local tax to administer because it is the only major tax whose base, the market value of unsold properties, must be estimated, rather than observed. Assessing property requires highly trained and experienced personnel. This final section summarizes the outcome of that process for five case study counties that provided the requested data.

Given the requirement that "All property must be assessed uniformly and equitably throughout the State" (§12-43-210) state statute requires the Department of Revenue to "make sales ratio studies in all counties of the State" to determine if a county needs to reassess properties to comply with this requirement. Prior to 2008, these assessment/sales ratios were calculated annually. Since 2008, they are only calculated in the year a county does a reassessment. The International Association of Assessing Officers, however, recommends that "Regardless of the reappraisal cycle, ratio studies made by assessors should be conducted at least annually" (IAAO 2013, 10).

Property sales files were requested from each of the 10 case study counties for 2015 and 2018 in order to consider the impact of the 5-year reassessment cycle on the uniformity and equity of the property tax. A starting hypothesis is that, over 5 years, markets within a county change at different rates for different land use types and different locations. This causes the selling price of parcels to diverge by varying degrees from the estimated fair market value implemented in the first year of the 5-year cycle. To test this hypothesis, three standard metrics for measuring assessment quality were computed for 2 years of sales in the reassessment cycle.

Three indicators of assessment uniformity are important in assessment/sales ratio studies. First, the level of appraisal in relation to market values should be measured. Second, the variability or uniformity of

[6] Bell and Bowman (2008) analyzed three different methods used to value land for property tax purposes when there are insufficient vacant land sales and found the land/improvement ratio method had the greatest variation, or was the least accurate, of the three methods based on examination of coefficients of dispersion and price related differentials.

appraisals around a measure of central tendency should be checked. (This is a measure of *horizontal* equity.) Finally, the variability of appraisals relative to the value of properties should be evaluated. (This is a measure of *vertical* equity.) Such an analysis proceeds as follows:

1) The first step is to determine the level of appraisal or how close appraised values are to actual market values. Three measures of central tendency are typically computed:

    a) an average assessment/sales ratio, which is the mean of the assessment/sales ratios for sales within each property type;
    b) the median of the individual ratios, which is the value in the middle of the ratios when sorted into ascending or descending order; and
    c) the weighted average, which is the total of assessed value divided by the total sales value of all the properties.

In practice the median ratio is most often used, although some jurisdictions use the mean ratio.[7]

According to the IAAO *Standard on Ratio Studies* the appraisal level for each type of property should be between 0.90 and 1.10 of actual market value, unless stricter standards are imposed locally (IAAO 2013).

2) The next step is to determine the extent to which similar properties are treated the same. This is a measure of *horizontal uniformity*, where properties of equal value are treated equally, which measures how individual properties are clustered around the measure of central tendency. The most commonly used measure of horizontal uniformity is the Coefficient of Dispersion (COD).[8] The International Association of Assessing Officers recommends the following standards for specific ranges of the COD by type of property:

    a) Single-family residential (including residential condominiums) in newer or more homogeneous areas—5.0 to 10.0
    b) Single-family residential in older or more heterogeneous areas – 5.0 to 15.0
    c) Other residential in rural areas or seasonal or recreational residents or manufactured housing, or 2–4-unit family housing—5.0 to 20.0
    d) Income producing properties in larger areas represented by large samples—5.0 to 15.0
    e) Income producing properties in smaller areas represented by smaller samples—5.0 to 20.0
    f) Vacant land—5.0 to 25.0
    g) Other real and personal property—varies by local conditions (IAAO 2013).

3) The final step is to determine if there is a systematic bias in valuing high- or low-valued properties. The statistical measure used to gauge *vertical assessment uniformity* is the Price-Related Differential (PRD).[9] The PRD tests to see if higher and lower valued properties are assessed at the same level. According to the International Association of Assessing Officers (IAAO 2013) the PRD for each type of property should range between 0.98 and 1.03 to indicate

[7] Bell and Bowman (1991) found that while there are differences when using the mean vs the median ratio, the differences often are not critical. This analysis uses the median ratio.
[8] The coefficient of dispersion is the average absolute deviation of individual-parcel appraisal/sales ratios from the median ratio, expressed as a percentage of the median ratio (Eckert 1990).
[9] The Price Related Differential is calculated by dividing the mean appraisal/sales ratios of a number of properties that actually sold by the weighted (or aggregate) mean ratio (Eckert 1990).

vertical uniformity in assessments. A PRD greater than 1 indicates an undervaluation of high value properties, while a value less than 1 indicates undervaluation of low valued properties.

The Data

While data was requested from all 10 case study counties, at the time of publication only 5 counties are included in the analysis—Allendale, Charleston, Greenville, Horry and York counties. Five counties have not provided data for this analysis to date.

It is difficult to compare results of this analysis across counties for a variety of reasons. For example, of the responding counties, no two counties have the same list of land use codes. Allendale (135 land use codes) and York (23 land use codes) have land use codes that approximate the land use categories identified in the Constitution. Greenville (118 land use codes) and Horry (225 land use codes) have a wide range of land use categories that are more difficult to align with the land use categories in the Constitution. Charleston County provided data for 7 different categories of residential land uses and agricultural properties. This variation in classification codes across counties is unusual and complicates transparency across counties.

Another issue that complicates cross-county comparisons is when apparently similar land use categories contain different information. For example, Allendale County land use code 100 contains owner-occupied residential properties with assessment ratios of 4 percent and land use code 200 contains non-owner-occupied residential properties with assessment ratios of 6 percent following the categories in the Constitution. Greenville County, on the other hand, puts both owner-occupied and non-owner-occupied residential properties in land use code 1100, which includes 88 percent of all sales used in this analysis for 2018. York County has land use codes for Residential Improved (RI), which is non-owner-occupied residential properties and Residential Improved Occupied (RIO), which is owner-occupied residential properties. The vast majority of residential properties in York County's data set provided for this analysis are classified as Residential Improved Letter (RIL), which have an assessment ratio of 6 percent. When an owner-occupied residential property sells in York County, it immediately loses its preferential treatment until the new owner reapplies for reclassification as an owner-occupied property. These properties all go into the RIL, which accounts for 77 percent of all sales analyzed in 2018, until the application is submitted and reviewed by the assessor. Only then is the use class changed to RIO. As a result, it is impossible to construct land use categories that are consistent across counties based on the information provided. The issue could be corrected if a standard set of land use codes were used by all counties.

Valuation terminology also varies across counties. Everyone agrees that the starting point for the valuation process is to determine the *Fair Market* or *Appraised Value* of a property. Because of the 15 percent assessment limit, however, the appraised value is not always the starting point to calculate the assessed value of a property. For properties subject to the assessment limit there is also a capped value which can be referred to as the capped or limited value. The South Carolina Code §12-37-3135 defines this value as the ***property tax value*** which "means fair market value as it may be adjusted downward to reflect the limit imposed pursuant to Section 12-37-3140(B)." This is the legal definition of the value to which the assessment ratio is applied to determine the assessed value for each property. Sometimes, however, this capped value is referred to as the taxable value of a property, even in the definitions on one assessor's Web page. Other times, *taxable value* is used interchangeably with *assessed value,* which is the value the auditor uses to calculate property tax liabilities.

Another complicating language issue is what is meant by a "sale." For example, the law requires that all Assessable Transfers of Interest (ATIs) be revalued in the year of the transfer. However, not all ATIs are actual sales. There are within-family transfers, intercompany transfers, foreclosures, and transfers where significant cash value is not exchanged. Ownership might change, but there is no formal arm's-length

market transaction. Alternatively, there are market transactions that are labeled “true sales” because they involve a formal market exchange. But some “true sales” may not accurately reflect actual market value of a property. For example, a sale by a bank of a foreclosed property or a sale involving multiple lots may not reflect actual market value of the properties involved in the transaction. They are “true sales” but not “arm’s-length” sales.

For this analysis, counties were asked to provide a file of “arm’s-length” sales between a willing buyer and a willing seller. Some of the files provided contained arm’s-length sales and some contained all true sales. The challenge is determining true sales versus arm’s-length sales. The data provided was often not sufficient to make these determinations.

Non-arm’s-length sales, or sales misclassified as arm’s-length, become outliers when assessment/sales ratios are calculated in what is basically a comparison of apples to oranges. Similarly, if there is a change in land use (which is not always detectible from the data available) during the period analyzed, the assessment/sales ratio will be an outlier. As a result, following IAAO (2013) guidelines, in an effort to remove outliers that distort the calculation of the metrics used to measure assessment quality in the 2 years examined, properties with an assessment/sales ratio of 2.5 and greater and 0.5 and less were omitted from the analysis.

Five counties provided sales data for 2015 and 2018—Allendale, Charleston, Greenville, Horry, and York counties. These data often included “true” sales and not just arm’s-length sales. Therefore, some adjustments had to be made to the data before the analysis was attempted. For example, any property that had a land use code suggesting it was a property exempt from property taxation was omitted; duplicate entries for the same Parcel Identification Number were identified and omitted depending on the circumstances; outliers were omitted; and properties where there was some sort of data entry mistake were also omitted.

Table 2.9 reports for each of the 5 counties how many sales were in the initial sales file sent by the assessor and how many sales were used in the analysis after adjustments were made for the 2015 and 2018 data files. Three of the five counties reporting results use over 95 percent of the provided sales data (Allendale, Charleston, and York) in both 2015 and 2018. Less than 90 percent of the sales are used for the analysis of residential and commercial properties in Horry County in both 2015 and 2018. Less than 90 percent of the sales are used in 2018 for Greenville County. In all three cases, a large number of properties are coded as residential vacant property and the 2015 estimate of Fair Market Value is based on that land use classification. However, the actual sale price in 2015 and 2018 reflects the sale of a developed property. As a result, the sales price is many times larger than the estimated Fair Market Value and the resulting assessment/sales ratio is below 0.5, and these parcels are excluded from the analysis.

Table 2.9 Total Sales Provided and Sales Used for Analysis for 2015 and 2018, by County

	2015			2018		
County	**Total Sales**	**Useable Sales**	**% Useable**	**Total Sales**	**Useable Sales**	**% Useable**
Allendale	22	22	100.0%	32	32	100.0%
Charleston	9,183	8,971	97.7%	8,859	8,680	98.0%
Greenville	10,614	9,762	92.0%	10,221	8,339	81.6%
Horry	9,024	6,922	76.7%	11,819	10,301	87.2%
York	5,988	5,771	96.4%	7,524	7,170	95.3%

Source: Data provided by the county assessor and author's computations based on assessor sales files.

The sales were then sorted by land use code and put into groups for analysis of similar types of properties. Even then there were several land use classes that did not have enough sales to carry out the analysis.

The Results

The first step in the analysis is to calculate an assessment/sales ratio for each parcel included in each land use category. Once the assessment/sales ratios were computed, the median and mean ratios were calculated. The absolute difference between each individual assessment/sales ratio and the median ratio were calculated and the average variation from the median ratio calculated. The COD and PRD were then computed. The results of this analysis for each county providing data are summarized in the descriptions for the individual counties in Appendix A.

As mentioned previously, the different land use codes used in each county made it impossible to construct groups of parcels in each county that had consistent definitions across counties. Because of this and the wide range in the number of land use codes across counties, it is difficult to summarize the results of the analysis here.

For illustrative purposes, Table 2.10 presents findings for two general classes of property in the five counties that provided complete information.[10]

Counties providing data generally included one class of residential property that had most, or the plurality, of all parcels in the sales file for each year used in this analysis. For example,

- In Allendale County we reported the results for land use code 100 which is owner-occupied residential properties.
- In Charleston County we reported the results of the analysis for owner-occupied residential properties which included 4,404 sales in 2015, or 49 percent of all sales that year, and 4,234 sales in 2018, or 49 percent of total sales analyzed.
- In Greenville County we reported analysis for land use code 1100, which contains single family residential properties including both owner-occupied and non-owner-occupied properties. This class included 8,388 sales in 2015 or 87 percent of all sales analyzed and 7,236 sales in 2018 or 88 percent of sales analyzed.

[10] Results for all land use classification for these counties can be found in the individual county descriptions in Appendix A.

- In Horry County there are 30 different land use codes for residential property. We reported the results for land use code 101, single family residential properties, for this analysis. This included 2,816 sales, or 31 percent of all parcels analyzed in 2015 and 3,866 sales, or 33 percent of all parcels analyzed in 2018.
- In York County there is a land use code for owner-occupied and non-owner-occupied residential properties, but because of how sales are coded, most of the residential properties are included in the category for residential properties that are in limbo, RIL, as their final land use code is being determined, We reported the RIL results because in 2015 this land use code included 4,488 sales, or 78 percent of all sales analyzed and in 2018 it included 5,497 sales, or 77 percent of all sales analyzed.

For commercial properties, the only land use class generally consistent across the reporting counties was vacant commercial property. Allendale and Charleston counties did not report information on vacant commercial sales in 2015 or 2018. In Greenville County the land use code for vacant commercial property is 6800. In 2015, there were 38 sales in this category and in 2018 there were 40 sales. In Horry County, general vacant commercial land is code 300. In 2015 there were 40 sales in this land use code and in 2018 there were 49 sales. Finally, in York County land use code CV is commercial vacant property. In 2015, there were 27 sales in this category and in 2018 there were 26 sales.

Table 2.10 reports median ratios, CODs, and PRDs for each land use for each county (when available) for 2015 and 2018. Allendale did not have enough sales to calculate these metrics in 2015 for residential properties. Allendale and Charleston counties did not report sales for vacant commercial land in both 2015 and 2018.

Table 2.10 Appraisal Outcomes for Properties Providing Sales Files for 2015 and 2018, by County

Residential Properties						
	2015			2018		
County (1)	Median Appraisal/Sales Ratio (2)	COD (3)	PRD (4)	Median Appraisal/Sales Ratio (5)	COD (6)	PRD (7)
Allendale	NA	NA	NA	0.985	14.65	1.027
Charleston	0.899	11.43	1.007	0.794	13.89	0.999
Greenville	0.941	12.38	1.024	0.783	16.31	1.012
Horry	0.915	13.43	1.026	0.807	13.45	1.009
York	0.937	4.94	1.008	0.96	4.46	1.000
Vacant Commercial Properties						
Allendale	NA	NA	NA	NA	NA	NA
Charleston	NA	NA	NA	NA	NA	NA
Greenville	0.997	35.52	1.102	0.907	36.69	1.189
Horry	1.205	32.73	1.045	0.933	34.65	1.018
York	0.938	22.27	1.027	0.973	11.75	1.102

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

The first aspect of appraisal outcomes to consider is the level of appraisals to determine how close the estimated Fair Market Value is to actual market value, or sales price. For residential properties in 2015,

all four counties had median appraisal/sales ratios that were consistent with IAAO standards. By 2018, however, all the median ratios had declined (except for York County) and were no longer consistent with IAAO standards. This represents a deterioration in appraisal quality, in part due to the 5-year reassessment cycle.

The 2015 results are mixed for the three counties with results derived from vacant commercial land. Greenville and York counties had median appraisal/sales ratios consistent with IAAO standards, but the ratio for Horry County exceeded the standards. By 2018, the median ratios for Greenville and Horry counties had declined, but both were consistent with IAAO standards. The median ratio in York County improved and remained consistent with the IAAO standards.

The second aspect of appraisal outcomes to consider is the horizontal equity of the appraisals, or the degree to which individual appraisal/sales ratios are clustered around the median ratio. This is measured by the COD as described above. For residential properties in all counties reporting results, the COD is generally consistent with the IAAO standards. The coefficients did increase slightly from 2015 to 2018 for all counties except York County, indicating that the horizontal equity of appraisals deteriorated somewhat over this period.

The results for vacant commercial property were not as satisfying for the three counties reported in the table. In 2015, the COD for each of the three counties was outside the IAAO standards, significantly for Greenville and Horry counties. This indicates a degree of horizontal inequity greater than that for residential properties. In addition, by 2018 the CODs in Greenville and Horry counties increased, further undermining horizontal equity. The COD improved in York County bringing it in compliance with the IAAO standards.

The final aspect of appraisal outcomes to consider is the degree of vertical equity of the appraisals, or the extent to which appraisal/sales ratios move in relationship to the value of a property. This is measured by the PRD as described previously. For residential properties in the four counties reported in the table, the PRDs in 2015 and 2018 were consistent with IAAO standards. There was no bias in the appraisals in terms of vertical equity.

Again, the results are mixed for vacant commercial property. In 2015, the results for Greenville and Horry counties indicate a slight degree of *regressivity* in the appraisal indicating that low valued properties tend to be slightly over valued compared with high valued properties. York County's results were consistent with IAAO standards. By 2018, appraisals had deteriorated further in Greenville county indicating that *regressivity* of appraisals increased somewhat. This was the case in York County as well, and by 2018 the results did not comply with IAAO standards indicating slight *regressivity*. Horry County results indicated improvement with regard to vertical equity and they are now in compliance with IAAO standards.

Conclusion

The property tax is the most difficult state and local tax to administer because it does not have a readily observable base like income or sales taxes. The tax base has to be estimated by the county assessor. This chapter described how that challenge is met in the case study counties that were examined. It also provides information on the variation in outcomes across counties and over time.

Counties in South Carolina use standard methods of valuation to estimate the Fair Market Values of properties. For the five county results presented here, the results for residential properties are generally consistent with IAAO standards of performance in 2015 and 2018, with the exception of the level of assessments in 2018. The results are mixed, and less consistent with IAAO standards, for vacant commercial properties in both 2015 and 2018 for the three counties reported.

For the counties reported in Table 2.10 there is evidence that the 5-year reassessment cycle contributes to a deterioration in the level of appraisals as well as the horizontal and vertical equity of those appraisals between 2015 and 2018. Specifically, there is decline across the board in median assessment/sales ratios, some CODs, and some PRDs over the period examined. These results suggest the 5-year reassessment cycle undermines the equity of the property tax in terms of level of assessment, the dispersion of ratios around the mean, and in two cases the vertical equity of assessments.

Appendix A: The Experience in Ten Case Study Counties

Introduction

For the purposes of this project, the South Carolina Chamber Foundation and the South Carolina Realtors identified ten case study counties that are representative of property tax policies and practices across the 46 counties in the state. This appendix includes a narrative report and supporting tables for each case study county. The narrative for each county includes four types of information as follows:

- a description of key geographic, demographic, and economic characteristics, as well as information on the general status of the real estate market
- a brief overview of how the property tax is administered, with a focus on how assessors determine their estimates of market value for real property
- a snapshot of the composition of the property tax base in each county using data supplied by the county assessor and the county auditor, and
- an analysis of the extent to which the 5-year reassessment cycle undermines assessment quality, uniformity, and the fairness of the property tax.

Allendale County

Geographic, Demographic, and Economic Characteristics

Allendale County lies in the Lower Savannah portion of South Carolina along the Georgia/South Carolina border. It is the smallest of the ten case study counties and the smallest county in South Carolina, with a 2018 estimated population of 8,903. From April 1, 2010, to July 1, 2018, the population in Allendale County fell by 14.6 percent, the largest decline of the three case study counties that lost population during this period. Of the ten case study counties, Allendale had the second highest percentage of residents that were 65 years old or older (20.1 percent).[11] It also had the lowest labor force participation rate with just 41.6 percent of the population aged 16 or greater in the civilian labor force.

In Allendale County, 66.1 percent of houses are owner-occupied, which statistically is in the middle range when compared to the other case study counties. The county has the lowest median value owner-occupied housing unit of $52,100, the lowest median household income of $23,331, and the lowest per capita income of $13,439 compared to the other case study counties. More than a third of the population (36.7 percent) lives below the poverty line. There were only 7 building permits issued for new construction in 2018, suggesting a stable housing market in the county. Allendale is a rural county with the lowest population density of the case study counties at just 25.5 people per square mile.

Property Tax Administration

The assessor values approximately 9,000 real property parcels in Allendale County. The county conducted a reassessment in 2018 with implementation of new values in the 2019 tax year. The prior reassessment was implemented in 2014.

Residential properties are valued based on comparable sales. In this approach, the property being appraised is compared with similar properties that have recently sold. The comparable properties' sales

[11] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

prices are then adjusted for differences from the property being valued. Finally, the market value of the property being valued is determined based on the modified sales prices of comparable properties. Sales prices of comparable properties are usually considered the best indication of market value (Eckert 1990, 153). Because of the limited real estate activity in the county (20 to 30 useable sales annually) comparable sales are collected from the previous 3–5 years.

Whenever possible, commercial properties are also valued based on comparable sales. For commercial properties, sales from the previous 6–7 years might be used. If sufficient comparable sales are not available, commercial properties can also be valued by the cost approach using Marshall & Swift cost and depreciation tables.

Because of the relatively stable real estate market in the county, few properties are subject to the 15 percent assessment limit imposed by Act 388. Similarly, the county assessor receives few requests each year for properties to be classified as owner-occupied residences. Finally, most sales in the county are between family members and cannot be considered arms-length transactions. The county receives assistance from QS1, a data company in Spartanburg, to process the reassessments and store property tax roll data.

Composition of the Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county assessor provided information on aggregate appraised value and aggregate assessed value, organized by property use category, according to classifications in the state constitution. The top panel in Table A1 references real property valued by the assessor and the lower panel references other real property valued by the Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue.

Unlike the property tax in the other case study counties, approximately two-thirds of the assessed value in Allendale County is property valued by the Department of Revenue and the county auditor, not real property valued by the assessor. More than 50 percent of the assessed property tax base is in real and personal property for manufacturing and utilities. Just over one-third of the property tax base is real property valued by the assessor and nearly 44 percent of that value is in owner-occupied residential properties.

Effect of the 5-Year Reassessment Cycle

Legitimacy and fairness concerns require that the property tax be administered uniformly within each jurisdiction. Uniformity is important because the assessed values calculated for individual properties determine the distribution of the responsibility for funding local government activities among taxpayers. Ideally, everyone should feel they are paying their fair share of the property tax burden.

A hypothesis presented here is that the quality of assessments deteriorates during the 5-year reassessment cycle because real estate markets grow at different rates for different types of properties and in different neighborhoods, thereby moving away from uniformity of assessments and undermining the equity of the property tax.

Table A1 Allendale Property Tax Base Composition by Property Type, 2018

Real Property Valued by County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	88,849,357	52.0	3,385,640	14.9
Other Residential	32,178,734	18.8	1,904,420	8.4
Agriculture (Private)	26,526,280	15.5	1,064,220	4.7
Agriculture (Corporate)	8,794,935	5.1	527,840	2.3
Commercial	14,606,503	8.5	831,580	3.7
Subtotal	170,955,809	100.0	7,713,700	34.0
Other Real and Personal Property Valued by County Auditor and State Department of Revenue				
Property Classification	Total Appraised (Fair Market) Value	Percent Total Appraised Value	Total Assessed Value	Percent Total Assessed Value
Personal Property (Vehicles)	NA	NA	1,871,631	8.2
Other Personal Property	NA	NA	63,350	0.3
FILOT	NA	NA		0.0
Manufacturing	NA	NA	6,845,070	30.2
Utility	NA	NA	4,771,560	21.0
Business Personal Property	NA	NA	611,440	2.7
Railroads, Private Carlines, Airlines and Pipelines	NA	NA	811,626	3.6
Subtotal	NA	NA	14,974,677	66.0
TOTAL	NA	NA	**22,688,377**	**100.0**

Source: County assessor and/or county auditor

To test this hypothesis, three measures of the quality of assessment were computed for 2015 and 2018 files, representing true arms-length sales provided by the Allendale County assessor. Three measures of assessment quality were compared for the two years—a measure of central tendency (the median appraisal/sales ratio), the dispersion of ratios around the median ratio, and the degree of bias in valuations based on whether the property is high-valued or low-valued.

The assessor in Allendale provided selected information for 22 sales in 2015 and 32 sales in 2018.[12] Information for each parcel included a unique *Property Identification Number* (PIN), the land use class, the sales amount, the sales date, and the appraised value from 2014 which reflects the new values established during the 2013 reassessment. Allendale County has 135 land use codes that closely follow the real property classifications identified in the State Constitution. For example, properties with a classification in the 100s are owner-occupied residential properties, 200s are non-owner-occupied residential properties, 300s are commercial properties, and 800s are either privately owned agricultural properties, privately owned timber properties, or corporate owned agricultural and timber properties.

The parcels in each file had to be rearranged for the analysis, which was carried out for each land use type, to the extent there were enough sales for the analysis. For example, in 2015 sales fell into four different land use categories, but only non-owner-occupied residential properties had sufficient sales for the relevant analysis. There were 17 arm's-length sales of rental residential properties in Allendale County in 2015. The *Coefficient of Dispersion* (COD) was 23.38, slightly higher than the target range identified by the International Association of Assessing Officers (IAAO 2013). The *Price-Related Differential* (PRD) was 1.210 indicating a slight degree of regressive assessment outcomes.

In 2018, sales fell into five different land use categories with enough sales in three of those categories to carry out the desired analysis. Table A2 presents those findings. For owner-occupied residential properties the median appraisal/sales ratio was 0.985, very close to the desired target of 1.0. The COD was 14.65 and the PRD was 1.027, both within the standards set by the IAAO (2013). The median ratio for rental residential properties was 0.861 and the COD was 24.56, both somewhat outside the IAAO targets. The PRD was 1.025, again within the IAAO target range. The final category was farmland. The *fair market value* (FMV) for farmland is based on agricultural land values determined by the Department of Revenue in 1991. In this case, the appraised value is only a fraction of the actual sales price, illustrated by a median of just 0.084. The COD is 9.48, well within the IAAO target range, and the PRD is 1.096, slightly outside the IAAO target range.

In 2018, there were five agricultural land sales with data on FMV, assessed value, and actual sales price. The aggregate FMV for the five agricultural properties that sold in 2018 was $67,496 and their aggregate assessed value was $2,700. The aggregate FMV is 7.8 percent of the aggregate sales value of the properties and the assessed value is only 0.3 percent of aggregate sales price. In other words, for the five agricultural properties that sold in 2018, fully 99.7 percent of the true market value, reflected by actual sales, escapes property taxation. The results are consistent across years and land use categories but should be interpreted with caution because of the limited number of sales. Overall, however, the results generally meet IAAO standards.

[12] In 2018, two observations were deleted: 1) 104-01-03-001 because it was misclassified as 316 when it was really 206 and the property parcel did not exist in 2014; and 2) 109-01-02-030 which is a farm with a home site on it.

Table A2 Allendale Summary by Land Use Type, 2015 and 2018

	2015				2018			
Land Use	**Parcels**	**Median**	**COD**	**PRD**	**Parcels**	**Median**	**COD**	**PRD**
100 series	2	NA	NA	NA	11	0.985	14.65	1.027
200 Series	17	0.783	23.38	1.21	14	0.861	24.56	1.025
300 Series	1	NA	NA	NA	1	NA	NA	NA
600 Series	NA	NA	NA	NA	1	NA	NA	NA
800	2	NA	NA	NA	5	0.084	9.48	1.096
Total Sales	**22**				**32**			

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

Charleston County

Geographic, Demographic, and Economic Characteristics

Charleston County lies in the Low Country, or Coastal, region of South Carolina. It is the third largest county in South Carolina, with a 2018 estimated population of 405,905. The population of the county increased 15.9 percent from April 1, 2010 to July 1, 2018, the third largest increase in the case study counties. Of the ten case study counties, Charleston had the fourth lowest percentage of its residents that were 65 years old or older (16.4 percent). [13] It had the second highest labor force participation rate with 65.0 percent of the population aged 16 or greater in the civilian labor force.

Charleston County had the highest median value of owner-occupied housing units in the study at $273,100, the second highest median household income of $57,882, and the highest per capita income of $35,587. Just 13.3 percent of the population lives below the poverty line, the third lowest level of any county in the study. Charleston County had 3,969 building permits issued in 2018, the third highest of the case study counties, which suggests a vibrant real estate market. It is an urban county with a population density of 382.3 people per square mile, the second highest in the study.

Property Tax Administration

The assessor values slightly more than 195,000 taxable real property parcels in Charleston County. During the 2019 reassessment, residential properties were valued using a multiple regression model. The model initially uses data from actual sales and then extrapolates values for residential properties that did not sell. A number of different models were used for different areas of the county. Commercial properties were valued using the income approach.

In 2018, there were approximately 14,000 *Assessable Transfers of Interest* (ATIs) in Charleston County, about 7 percent of the total number of parcels in the county. These properties were reappraised to determine the estimated FMV as of December 31, 2018.

Because of the relatively dynamic real estate market in the county, many properties were not affected by the 15 percent assessment limit imposed by Act 388 because they were reappraised when they were transferred as a valid ATI. The new estimates of market value became effective December 31 of the year of the assessible transfer and take effect in the next tax year. Also, because of the dynamic real estate

[13] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

market, there are numerous requests for residency status in the county.[14] There are seven full-time staff in the assessor's office processing applications for residency. Determining residency requires significant information from the applicant, including recent income tax returns, that must be reviewed and evaluated.

Composition of the Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county assessor provided data for the top panel in Table A3, reporting the aggregate appraised value and the aggregate assessed value by property category. The second panel in the table references other real property valued by the Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue.

When looking at the property tax base in Charleston County, primary residential properties account for 45.9 percent of total appraised value in the county, but just one-third of total assessed value in the county, which is the base for determining property tax liabilities. Alternatively, other residential properties account for 29.8 percent of appraised value, but 32.9 percent of assessed value. Commercial properties account for 17.8 percent of appraised value and 19.7 percent of assessed value.

In the second panel, vehicles account for 2.4 percent of appraised value, but 5.9 percent of assessed value. Nonvehicle personal property accounts for 2.1 percent of total appraised value, but 4.0 percent of assessed value.

Effect of the 5-Year Reassessment Cycle

Three measures of the quality of assessment were computed for 2015 and 2018 using true sales provided by the Charleston County assessor.[15] Three different measures of assessment quality were compared for the two years—a measure of central tendency (the median appraisal/sales ratio), the dispersion of ratios around the median ratio, and the degree of bias in valuations based on whether the property is high-valued or low-valued.

The assessor in Charleston provided selected information for 9,183 true sales in 2015 and 8,859 true sales in 2018. Each file included a unique *Property Identification Number* (PIN), the land use class, the sales amount, date of sale, the 2015 estimate of FMV (except for properties that qualified as an ATI and had a new FMV determined in the year of transfer), a jurisdiction code, and a several codes for the type of property represented by each sale (for example, government owned, religious, city owned, ATI partial exemption).

[14] The number of applications for residency status has grown substantially because of Act 388 and the exemption of the education operating and maintenance portion of the property tax.

[15] 2015 was the first tax year to use the new values produced in the 2014 reassessment and 2018 was the fourth year in the current 5-year assessment cycle.

Table A3 Charleston County Property Tax Composition by Property Type, 2018

Property Classification	Total Appraised (Fair Market) Value ($)	Share of FMV (%)	Total Assessed Value ($)	Share of Assessed Value (%)	Appraised By
Primary Residential	33,228,205,681	45.9	1,328,889,020	33.8	County Assessor
Other Residential	21,546,961,189	29.8	1,292,790,030	32.9	County Assessor
Agriculture (Private)	53,096,033	0.1	2,123,830	0.1	County Assessor
Agriculture (Corporate)	6,219,055	0.0	373,130	0.0	County Assessor
Commercial	12,884,672,515	17.8	773,081,050	19.7	County Assessor
Personal Property (Vehicles)	1,748,486,316	2.4	233,566,623	5.9	County Auditor
Other Personal Property	713,827,518	1.0	71,467,020	1.8	County Auditor
FILOT		0.0		0.0	NA
Manufacturing	133,966,762	0.2	14,066,510	0.4	DoR
Utility	1,175,749,524	1.6	123,453,700	3.1	DoR
Business Personal Property	823,501,905	1.1	86,467,700	2.2	DoR
Railroads, Private Carlines, Airlines, and Pipelines	65,763,830	0.1	6,780,360	0.2	DoR
TOTAL	72,380,450,328	100.0	3,933,058,973	100.0	NA

Source: County assessor and/or county auditor

To create the work file for the analysis, the first step was to sort all the parcels by land use code. Then, each class of property was pasted into its own tab in an Excel file. Charleston County provided sales for several different residential land use codes (that is, residential single family, residential multi-family, residential townhouses, residential condos). For these categories the data were divided into owner occupied properties subject to a 4 percent assessment ratio and non-owner-occupied properties subject to an assessment ratio of 6 percent. Five commercial properties were included in the 2018 sales file. In addition, several individual properties with other land use codes were also included in the original data set (for example, specialty commercial/condo, vacant commercial, specialty apartment) but were not included in the analysis.

Each land use category was then examined to identify duplicate entries with the same PIN number. A unique PIN number may have multiple entries for a variety of reasons and the reason for the duplication determined how the issue was resolved. For example, all the information in each of multiple entries for the same PIN could be identical. In this case the entry simply appears in the file twice and one can be cut and pasted into a tab for deletions. Alternatively, all the information for multiple entries could be identical except the sale amounts. This suggests the property was flipped in the year examined and both sales were kept in the file. However, if the sales price difference was $1,000 or less it was assumed the property was not flipped and both entries were removed from the analysis.

The purpose of the analysis is to better understand the effect the 5-year assessment cycle has on the equity of the property tax by comparing the sales amount in each year with the estimated FMV of the property at the beginning of the cycle. Since Charleston County did its most recent reassessment in 2014 (certified as of December 31, 2014) for implementation in tax year 2015, it was assumed that there was not much difference between appraised value and the sales amount in 2015, but by 2018 there would be more significant differences between the sales amount and the estimate of FMV.

Over that 5-year period there are several other factors that might influence the relationship between the estimate of FMV and the sales amount of an individual property. For example, a property could sell in 2016 or 2017 and receive an updated estimate of FMV effective December 31 of the year sold. So, for many properties the analysis could be comparing the sales amount with an updated estimate of FMV. Also, there could have been a change in zoning or land use, a parcel could have been split or combined so it may not have existed at the beginning of the reassessment cycle, buildings could have been added, remodeled or demolished, all of which would affect market value and would be reflected in the sales amount, but not the estimate of FMV as of December 31, 2014. Finally, there could simply be incorrect data entries.

In other words, there are factors that could affect the difference between the sales amount and the estimated FMV other than the 5-year cycle. To the extent such factors exist, they can result in appraisal/sales ratios that are outliers for purposes of the analysis (outlier ratios are very low or high ratios compared to other ratios in the sample). The accuracy of ratio study statistics used to evaluate assessment outcomes could be compromised by the presence of outliers. One extreme outlier could have a significant effect on certain statistical measures. To minimize this affect, extreme appraisal/sales ratios of 2.5 and greater, or 0.5 or less, were eliminated.

After cleaning the data, the analysis was performed on 8,971 parcels that sold in 2015 (97.7 percent of the number of parcels in the original work file) and 8,680 parcels that sold in 2018 (98.0 percent of the number of parcels in the original file).

Three traditional measures of assessment uniformity were calculated for each land use and each year by an appraisal/sales ratio study. The first step was to determine the typical appraisal level for each land use category. This is calculated statistically using a measure of central tendency. The median appraisal/sales ratio is the preferred measure of central tendency in most ratio studies. (Eckert 1990, 527; Bell and Bowman 1991, 357).

The median ratio is the midpoint, or middle ratio, when appraisal/sales ratios are arrayed in order of magnitude. It divides the ratios into two equal groups and is not affected by extreme values (Eckert 1990, 527). If the appraised value of each property exactly equaled the actual sales amount, each appraisal/sales ratio would have a value of 1.0 and the median ratio would have a value of 1.0. If the median ratio is higher than 1.0 it means more parcels have appraised values higher than the actual sales amount and if the median ratio is less than 1.0 it means more parcels have appraised values lower than the actual sales price. The following table presents results for the analysis of sales files from 2015 and 2018.

Table A4 Charleston County Summary by Land Use Type, 2015 and 2018

Land Use	Parcels	Median Ratio	COD	PRD	Parcels	Median Ratio	COD	PRD
101 Res Single 4%	4,405	0.899	11.43	1.007	4,234	0.794	13.89	0.999
101 Res Single 6%	990	0.926	16.43	1.033	965	0.789	17.64	0.989
120 Res TWH 4%	484	0.888	9.23	1.007	551	0.789	12.49	0.997
120 Res TWH 6%	160	0.91	13.77	1.026	201	0.76	16.91	0.963
130 Res 2–3 Fam 4%	39	0.932	13.77	0.996	16	0.682	18.63	0.99
130 Res 2–3 Fam 6%	80	0.853	20.27	1.036	59	0.682	27.71	1.1
160 Res Condo 4%	586	0.888	11.51	0.997	684	0.758	14.3	0.983
160 Res Condo 6%	530	0.898	12.33	0.998	622	0.768	16.43	0.951
170 Res Row House	9	1.047	12.87	1.015	10	0.8	18.26	1.066
500 General Commercial	NA	NA	NA	NA	3	0.801	8.57	0.937
905 Res Vacant Lot	635	0.922	20.44	1.039	447	0.85	24.18	1.038
TOTAL SALES	**7,918**				**7,792**			

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

The results for 2015 are generally consistent with IAAO standards across all land uses. About half the median ratios for 2015 are only slightly outside the IAAO target range. Overall, however, it seems the quality of appraisal declined across all land uses during the 5-year reassessment cycle. The median appraisal/sales ratio computed for each land use declined from 2015 to 2018 and all are significantly outside IAAO standards, thereby indicating assessments are moving further away from actual market values. Similarly, the *coefficients of dispersion* (COD) increased for all land uses from 2015 to 2018 indicating increased dispersion of appraisal/sales ratios. Finally, the results for the *price related differential* (PRD) were mixed with six PRDs staying essentially the same from 2015 to 2018, two declining, moving from equal assessments to somewhat progressive assessments and one deteriorating, moving from equal assessments to a slightly regressive assessment.

Uniformity of appraisal *between* land use categories can be considered by looking at variations in the median ratios for each group. Value uniformity relates to the consistency and equity of values. It is important to ensure, for example, that residential and commercial properties are appraised at similar percentages of market value. For example, in 2015, single family, townhouse, and condo residential properties with assessment ratios of 4 percent had median appraisal/sales ratios lower than land uses with assessment ratios of 6 percent. Multi-family residential properties with a 4 percent assessment ratio had a higher median appraisal/sales ratio in 2015 than similar properties with a 6 percent assessment ratio. Alternatively, in 2018, single family and townhouse properties with a 4 percent assessment ratio had slightly higher median appraisal/sales ratios than those with a 6 percent assessment ratio.

In addition, the spread between the highest and lowest median ratios was slightly higher in 2018 than 2015. Specifically, the highest median ratio in 2015 was for residential row houses (1.047) and the lowest was for multi-residential properties with a 6 percent assessment ratio (0.853), a difference of 22.7 percent of the lowest median ratio. Alternatively, in 2018, the highest median ratio (0.850) was for residential vacant lots and the lowest was for both multi-family residential property groups at 0.682. This is a

difference of 24.6 percent of the lowest median ratio. These results confirm the deterioration in equity in the property tax across land use categories between 2015, the first year of the new property values, and 2018, the fourth year of the reassessment cycle.

The second step in the process for understanding the effect of the 5-year assessment cycle on uniformity is to look at uniformity of appraisals *within* each land use category. The *coefficient of dispersion* (COD) is the most used measure of within-class uniformity. The COD is based on the average absolute deviation of individual parcel ratios from the median ratio. The COD is calculated by dividing the average absolute deviation of the appraisal/sales ratio for each parcel and the median ratio by the median ratio and multiplying by 100 (Eckert 1990, 534).

The International Association of Assessing Officers (IAAO 2013) publishes target standards for uniformity within land use classes. Specifically, the following standards are recommended for the COD:

- Single-family homes and condominiums: CODs of 5 to 10 for newer or similar residences and 5 to 15 for older or more heterogeneous areas
- Income-producing properties: CODs of 5 to 15 in larger, urban areas and 5 to 20 in other areas
- Vacant land: CODs of 5 to 15 in very large areas with active markets, 5 to 20 in large to mid-size areas with slower development, or 5 to 25 in rural or seasonal recreation areas
- Rural residential, seasonal, and manufactured homes: CODs of 5 to 20
- Rural vacant land with little development: CODs of 5 to 30 (IAAO 2014).

Table A4 reports the COD for each land use class in 2015 and 2018. Generally, CODs in 2015 are within IAAO standards. However, the CODs are higher across all land uses in 2018 than in 2015, with some falling outside IAAO standards. This suggests that within-class uniformity declined during the reassessment cycle, thereby undermining the equity of the property tax.

A final aspect of assessment uniformity relates to equity between lower and higher value properties. Appraisals are considered *regressive* if high-valued properties are under appraised relative to low-valued properties and progressive if high-valued properties are over appraised relative to low-valued properties.

The most frequent statistic for measuring assessment regressivity or progressivity is the price-related differential (PRD). The PRD provides a simple gauge of price-related bias. It is calculated by dividing the mean appraisal/sales ratio by the weighted mean. According to IAAO standards, the PRD should be between 0.98 and 1.03. PRDs below 0.98 indicate assessment progressivity, the condition in which assessment ratios increase with price. PRDs above 1.03 indicate assessment regressivity, in which assessment ratios decline with price (Eckert 1990; IAAO 2014).

The results are somewhat mixed between 2015 and 2018. In 2015 seven of the ten land uses reported had PRDs consistent with the IAAO standards and the other three land uses were slightly higher than 1.03 indicating only slightly regressive assessments. In 2018, six of the 11 land uses reported had PRDs that were essentially the same as they were in 2015. Four land uses had PRDs that deteriorated between 2015 and 2018 with one becoming somewhat more progressive regarding appraisals (single family residential properties with 6 percent assessment ratio).

In Charleston County, there is strong and consistent evidence that uniformity and fairness of assessments eroded during the 5-year reassessment cycle, thereby undermining the equity of the property tax.

Edgefield County

Geographic, Demographic, and Economic Characteristics

Edgefield County lies in the Central Savannah region of South Carolina along the Georgia border. It is in the bottom third of counties in South Carolina in terms of population, with a 2018 estimated population of 27,052. Population in Edgefield County was relatively stable from April 1, 2010 to July 1, 2018 and only increased by 0.3 percent during this period. Of the ten case study counties, Edgefield County had the fourth highest percentage of residents that were 65 years old or older (18.8 percent).[16] It had the second lowest labor force participation rate with 50.2 percent of the population aged 16 or greater in the civilian labor force.

Edgefield County had the highest home ownership rate of the case study counties at 74.8 percent. The county had the third lowest median value of owner-occupied housing units at $123,000, the fifth highest median household income of the case study counties at $47,500 and the fifth lowest per capita income of $23,084. The county has 17.3 percent of the population living below the poverty line, which is around the middle of the case study counties. Edgefield County had 114 building permits issued in 2018, the third lowest of the case study counties, suggesting a relatively stable real estate market in the county. It is classified as a rural county, with a population density of just 53.9 people per square mile, the second lowest in the study. While the northern portion of the county is relatively stable, the southern portion is experiencing growth because of its proximity to Augusta, Georgia.

Property Tax Administration

The assessor values approximately 22,000 taxable real property parcels in Edgefield County. There are generally between 200 and 300 sales annually. The most recent reassessment was in 2015 and took effect in tax year 2016. Residential properties are valued using a comparable sales approach. In this approach the property being appraised is manually compared with similar properties that have recently sold. The sales prices of the comparables are then adjusted for differences from the property being valued. Finally, the market value of the property being assessed is determined based on the modified sales prices of the comparable properties. Sales prices of comparable properties are usually considered the best indication of market value (Eckert 1990).

For commercial properties the income approach to valuation is typically used. Marshall & Swift income and expense tables are used to estimate gross and net income for commercial properties. Depreciation tables from Marshall & Swift are then used to adjust the estimated values for economic, functional, and physical depreciation. Land values are based on actual sales of vacant land in subdivision developments in the southern portion of the county, while land values in the northern part of the county are relatively stable and change little.

There are approximately 300 *Assessable Transfers of Interest* (ATIs) processed in Edgefield County annually. There has been an increase in the number of applications for primary residency and the office devotes one full-time employee to processing and verifying primary residency applications.

Composition of Property Tax Base

The first place to begin in comparing the case study counties is to look at the composition of the property tax base in each county. The county auditor provided Table A5, which reports the number of parcels, the aggregate appraised value, and the aggregate assessed value organized by property use category according to classifications in the state constitution. The top panel in the table references real

[16] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

property valued by the assessor and the lower panel references other real property valued by the Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue.

When looking at real property in Edgefield County, the real property valued by the assessor accounts for more than three-fourths of appraised real property value, and almost two-thirds of assessed value. Primary residential properties (owner-occupied properties) account for nearly 56 percent of appraised value, but less than 42 percent of assessed value, which is the base for determining property tax liabilities. Alternatively, manufacturing and utility real and personal property account for 9.1 percent of FMV in the county, but 18 percent of assessed value.

No additional data was provided.

Table A5 Edgefield County Property Tax Base Composition by Property Type, 2018

Real Property Valued by County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	851,872,000	55.6	34,074,880	41.7
Other Residential	none	NA	none	NA
Agriculture (Private)	51,999,250	3.4	2,079,650	2.5
Agriculture (Corporate)	1,103,166	0.1	66,190	0.1
Commercial	261,705,000	17.1	15,702,300	19.2
Subtotal	1,166,679,416	76.2	51,923,020	63.6
Other Real and Personal Property Valued by County Auditor and State Department of Revenue				
Personal Property (Vehicles)	189,655,616	12.4	11,379,337	13.9
Other Personal Property	825,304	0.1	866,570	1.1
FILOT	15,363,928	1.0	921,833	1.1
Manufacturing	51,260,076	3.3	5,383,380	6.6
Utility	88,496,190	5.8	9,292,100	11.4
Business Personal Property	14,622,666	1.0	1,535,380	1.9
Railroads, Private Carlines, Airlines and Pipelines	3,978,947	0.3	378,000	0.5
Subtotal	364,202,727	23.8	29,755,600	36.4
TOTAL	1,530,882,143	100.0	81,678,620	100.0

Source: County assessor and/or county auditor

Florence County

Geographic, Demographic, and Economic Characteristics

Florence County lies in the Pee Dee region of South Carolina. It has the thirteenth highest population of any county in South Carolina, with a 2018 estimated population of 138,159. This is near the middle when compared with the populations of other case study counties. The population was relatively stable from April 1, 2010 to July 1, 2018, increasing by just 0.9 percent. Florence County is also near the middle of the 10 case study counties in terms of the percentage of residents that were 65 years old or older (17.0 percent).[17] Similarly, the county is near the middle of the 10 case study counties when it comes to its labor force participation rate, with 60.3 percent of the population aged 16 or greater in the civilian labor force.

Florence County has a home ownership rate of 65.8 percent, the fourth lowest among the case study counties. The county is near the middle of the case study counties with a median value of owner-occupied housing units of $128,400, the fourth lowest median household income of the case study counties of $43,310 and has the fourth lowest per capita income of $23,797. The county has 18.6 percent of its population living below the poverty line, the fourth highest of the case study counties. Florence County had 463 building permits issued in 2018, the fifth lowest of the case study counties, suggesting a relatively stable real estate market. Florence is classified as a rural county, with a population density of 117.1 people per square mile, the fifth lowest in the study.

No additional information was provided.

Greenville County

Geographic, Demographic, and Economic Characteristics

Greenville County lies in the Upstate region of South Carolina, along the North Carolina border. It is the largest county in South Carolina with a 2018 estimated population of 514,213. The population of the county increased 14.0 percent between April 1, 2010 and July 1, 2018; the fourth largest increase of the case study counties. Greenville County had the third lowest proportion of residents that were 65 years old or older (15.8 percent). [18] It had the third highest labor force participation rate with 63.7 percent of the population aged 16 or greater in the civilian labor force.

Greenville has a median value of owner-occupied housing units of $165,600, which is near the middle when compared to the other case study counties. It also has the third highest median household income of $53,739 and the third highest per capita income of $29,132. Just 12.4 percent of the population lives below the poverty line, the second lowest level of any county in the study. Greenville County had 4,669 building permits issued in 2018, the highest of the case study counties, suggesting a vibrant real estate market. It is an urban county and has a population density of 574.7 people per square mile, the highest in the study.

Property Tax Administration

There are more than 205,000 taxable real property parcels valued by the assessor in Greenville County. In the 2019 reassessment, residential properties were valued by a modified cost approach. Marshall & Swift cost tables were initially used to generate an estimate of *fair market value* (FMV), which was then

[17] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.
[18] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

modified, as needed, for each neighborhood based on market data, including assessment/sales ratios for each neighborhood. Land values were estimated for each neighborhood based on actual vacant land sales. If there were insufficient vacant land sales, then land values were estimated based on land/improvement ratios from adjoining neighborhoods.[19]

Commercial properties are valued based on income tables from Marshall & Swift that could be adjusted with market information for different land use types. Again, estimates of FMV can be refined with local market information. Similarly, land values are estimated for each neighborhood based on actual vacant land sales. If there are insufficient vacant land sales, then land values are estimated based on land/improvement ratios from adjoining neighborhoods. If a commercial property owner appeals their appraisal, they must provide data on income and expenses. The provided data is supplemented by data services that provide estimates of income and expenses by type of commercial property (for example, apartments, hotels, motels, some downtown retail, chain stores, chain restaurants, and the like).

In 2018, there were approximately 10,000 *Assessable Transfers of Interest* (ATIs) in Greenville County. These properties were reappraised in 2018, which can be a time-consuming process.

Because of the relatively dynamic real estate market in the county, many properties were not affected by the 15 percent assessment limit imposed by Act 388. They were reappraised when they were transferred as a valid ATI. The new estimate of market value becomes effective December 31 of the year of the assessible transfer and takes effect in the following tax year. Also, because of the dynamic real estate market, there are numerous requests for residency status in the county.[20] Two full time staff in the assessor's office work on processing applications for residency.

Composition of the Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county assessor provided data for the top panel in Table A6, reporting the number of parcels, the aggregate appraised value, and the aggregate assessed value organized by property category. The top panel in the table references real property valued by the assessor and the second panel references other real property valued by the Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue.

When looking at real property in Greenville County, real property valued by the assessor accounts for 85 percent of the FMV, but just 77 percent of assessed value, which is the base for determining property tax liabilities. Within that share of the property tax base, primary residential (owner-occupied) properties account for nearly 55 percent of the FMV, but less than 42 percent of assessed value. On the other hand, commercial properties account for 23 percent of appraised value but nearly 27 percent of assessed value.

[19] Bell and Bowman (2008) analyzed three different methods used to value land for property tax purposes when there are insufficient vacant land sales and found the land ratio method had the greatest variation based on examination of coefficients of dispersion and price related differentials.

[20] The number of applications for residency status has grown substantially because of Act 388 and exemption of the education operating and maintenance portion of the property tax.

Table A6 Greenville County Property Tax Base Composition by Property Type, 2018

Real Property Valued by County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	24,900,657,878	54.6	996,029,080	41.6
Other Residential	3,341,740,059	7.3	200,514,590	8.4
Agriculture (Private)	22,891,820	0.1	933,340	0.0
Agriculture (Corporate)	439,870	0.0	210	0.0
Commercial	10,513,283,744	23.0	645,363,420	26.9
Subtotal	38,779,013,371	85.0	1,842,840,640	76.9
Other Real and Personal Property Valued by County Auditor and State Department of Revenue				
Property Classification	Total Appraised (Fair Market) Value	% Total Appraised Value	Total Assessed Value	% Total Assessed Value
Personal Property (Vehicles)	4,120,280,833	9.0	266,284,340	11.1
Other Personal Property	74,225,609	0.2	7,793,689	0.3
FILOT		0.0		0.0
Manufacturing	810,404,382	1.8	85,092,460	3.6
Utility	864,506,762	1.9	90,773,210	3.8
Business Personal Property	843,740,105	1.8	88,592,711	3.7
Railroads, Private Carlines, Airlines and Pipelines	145,681,189	0.3	13,925,892	0.6
Subtotal	6,858,838,880	15.0	552,462,302	23.1
TOTAL	45,637,852,251	**100.0**	2,395,302,942	**100.0**

Source: County assessor and/or county auditor

In the second panel, vehicles account for approximately 9 percent of appraised value, but 11.1 percent of assessed value, while manufacturing and utility real and personal property account for 3.7 percent of appraised value, but 7.4 percent of assessed value.

Effect of the 5-Year Reassessment Cycle

Legitimacy and fairness concerns require that the property tax be administered uniformly within each jurisdiction. Uniformity is important within each jurisdiction because values set for individual properties determine the distribution of responsibility for funding local government activities among taxpayers. Everyone should feel they are paying their fair share of the property tax burden.

A hypothesis presented here is that the quality of assessments deteriorates during the 5-year reassessment cycle because real estate markets grow at different rates for different types of properties and for properties in different neighborhoods, thereby moving away from uniformity of assessment and undermining the equity of the property tax.

To test this hypothesis three measures of the quality of assessment were computed for the 2015 and 2018 files, which represent true sales provided by the Greenville County assessor. Three measures of assessment quality were compared for the two years—a measure of central tendency (the median appraisal/sales ratio), the dispersion of ratios around the median ratio, and the degree of bias in valuations based on whether the property is high-valued or low-valued.

The assessor in Greenville provided selected information for 206,266 parcels on the 2015 property tax roll. One column included information on whether the parcel was a true sale in 2015. Sorting the initial data file on that information identified 10,614 useable true sales that could be used to perform the analysis. The 2018 tax roll provided by the assessor included selected information for 207,700 parcels, including 10,222 true sales. This reflects the dynamic real estate market in Greenville County during this period. Each file included a unique *Property Identification Number* (PIN), the land use class, the sales amount, the 2015 appraisal, a jurisdiction code, and a code for the type of transaction represented by each sale. See Table A7 for sales transaction codes.

The code for the type of transaction classifies each sale by the purpose or nature of the sale. While all sales will be Assessible Transfers of Interest, they will not all be true sales, and not all true sales will be arm's-length transactions. For example, a transaction code of 09 indicates a family transfer while a code of 11 indicates an intercompany transfer, neither of which would be a true sale. All the parcels in the work file had transaction codes of 01, 02 or 03 and were classified as true sales.

For an assessment/sales ratio study, however, sales must be arm's-length sales. An arm's-length sale is one that is between unrelated parties who are not under abnormal pressure from each other or a third party (Eckert 1990). In other words, to determine the accuracy of appraisals with absolute certainty, it is necessary for all properties in the population to have been sold in arm's-length, open-market transfers between a willing seller and a willing buyer (IAAO 2013). Any transaction related to a foreclosure would not be an arm's-length transaction.

Table A7 Greenville County Sales Transaction Codes

Code	Transaction Type
01	Cash (land and building)
02	Cash and assumption of mortgage (land and building w/current balance)
03	Cash (land)
04	Cash and assumption of mortgage (land w/current balance)
05	Assumption of mortgage (original mortgage is 6 months within deed date)
06	Assumption of mortgage (original mortgage is greater than 6 months from deed date)
07	Love and affection
08	Exchange of poverty
09	Family transfer
10	Deed of distribution
11	Intercompany transfer
12	Partial interest
13	Master deed (foreclosure)
14	Tax sale deed
15	Quitclaim
16	Cash and other consideration (for example, other property, assumption of mortgage w/o amount)
17	Corrective deed
18	More than one piece of property transferred by deed
19	Contract sale
20	Condemnation or governmental purchase
21	Gift

Source: County assessor

The county also assigns a jurisdiction code to each parcel. The codes indicate which level of government has responsibility for valuing each type of property, and which properties are exempt from taxation and why. See the list of jurisdiction codes in Table A8. Jurisdiction codes 5, 6, 7, 8, and 9 indicate properties that are exempt from property taxation because they are owned by municipal, county, state, or federal governments, or are otherwise exempt. These exempt properties were identified and removed from the work file for each year.

Table A8 Greenville County Jurisdiction Codes

Code	Jurisdiction
1	County Juris
3	Dept of Revenue Juris
5	Exempt
6	Municipal Owned
7	County Owned
8	State Owned
9	Federal Owned

Source: County assessor

The parcels in each file were rearranged for the analysis, which was carried out for each land use type, to the extent there were enough sales for the analysis. To create the work file, the first step was to sort all the parcels by land use code. Then each class of property was pasted into its own tab in an Excel file. One tab included all properties with an exempt land use code, but these were not included in the analysis. Greenville uses 120 different land use codes to classify properties for tax purposes. The land use classifications are described in Table A9.

Table A9 Greenville County Land Use Codes

		Primary Use	LUSE	
Residential	Res	Single Family	1100	Res
	Res	SF- w/ Auxiliary Use	1101	Res
	Res	MH w/Land	1170	Res
	Res	MH on MH File	1171	Res
	Res	Residential Vacant	1180	Res Vac
	Res	Homeowners Assoc. Prop	1181	Res
	Res	Common Areas	1182	Res
Comm Vacant	Comm	Commercial Vacant	6800	Vac Comm
Comm Common	Com	Commercial Common	205	comm common
Agricultural	Ag	Ag Vacant	9170	Ag
	Ag	Ag Improved	9171	Ag
Multi Family	Mul Fam	Duplex	110	Multi Fam
	Mul Fam	Mplex	112	Multi Fam
Group Hse	Ghous1	Group Hse Converted	113	Multi Fam
Apartments	Apt1	Apartment-Convent (C, D)	120	Multi Fam
	Apt6	Apt- High Rise (A, B)	120	Multi Fam
	Apt2	Apartment Subsidized (E)	122	Multi Fam
MH Park	MH Park	Mobile Home Park	130	Multi Fam

Health Care	Hcare4	Nursing Home	140	Health Care
	Hcare5	Assisted living	141	Health Care
	Hcare6	Converted Res	142	Health Care
	Hcare3	High-rise Retirement w/Dining	143	Health Care
	Apt5	Apt-rooming/B&B	230	Lodging
Hotel	Hotel1	Luxury	240	Lodging
	Hotel2	Full Service Upscale	240	Lodging
	Hotel5	Extended stay	250	Lodging
	Hotel3	Mid-Service	270	Lodging
Motel	Motel1	Motel Economy	271	Lodging
	Motel2	Motel Budget	272	Lodging
	Motel3	Motel Low Cost	273	Lodging
	Auto5	Car Wash Full Service	300	Auto
	Auto3	Car Wash Self Service	301	Auto
	Auto4	Car Wash-Auto	301	Auto
	Auto8	Serv Station-Gas	310	Auto
	Auto12	Cashier Booth-Gas	320	Auto
	Auto11	Serv Garg-Body Shop	330	Auto
	Auto6	Mini Lube	331	Auto
	Auto7	Service Center	332	Auto
	Auto2	Dealership/Maint/Service	350	Auto
Auto	Auto1	Dealership/Showroom	360	Auto
Parking	Park1	Parking Garage	370	Auto
	Park2	Parking-Basement Level	370	Auto
	Park3	Parking Lot	371	Auto
Office	Offc4	Office-Medical	410	Office Med
	Offc2	Office-Dental	409	Office Dental
	Offc10	Vet Clinic	411	Office Med
	Hcare7	Rehab Center	413	Office Med
	Offc11	Vet Clinic Converted/Res	414	Office Med
	Offc7	Office High Rise	420	Office
	Offc1	Office-General	421	Office
	Offc3	Office-Convert/Res	423	Office
	Offc8	Office Inter/Whse	424	Office
	Offc12	Office Retail Strip	425	Office
Bank	Bank1	Full-Service	430	Bank
	Bank2	Branch	431	Bank
Market	Mrk1	Conv. Store-Super	510	Retail
	Mrk2	Conv. Store	511	Retail
	Mrk4	Mom/Pop Grocery	512	Retail
	Mrk6	Super Market	513	Retail

Retail	Rtail1	General	520	Retail
	Rtail2	Drug Store	523	Retail
	Rtail7	Strip Center	521	Retail
	Rtail3	Show Room	522	Retail
	Rtail5	Discount	530	Retail
	Rtail6	Discount Warehouse	531	Retail
Lumber	Lumb1	Lumber-Showroom/Retail	532	Retail
Shopping Ctr	Shopc1	Shop Ctr/Neighborhood	550	Retail
	Shopc2	Shop Ctr/Mall	560	Retail
	Rtail8	Anchor Retail	561	Retail
	Rtail4	Department Store	570	Retail
B/B	B/B1	Barber/Beauty-Convert	580	Retail
	B/B2	Barber/Beauty-Convent	581	Retail
	L/mat3	Laundry/Cleaner Full Service	590	Retail
Laundry	L/mat2	Laundromat (Self)	591	Retail
Restaurant	Rest1	Fast Food	610	Restaurant
	Rest4	Truck Stop	611	Restaurant
	Rest2	Full Service	620	Restaurant
	Rest3	Cafeteria	620	Restaurant
Bar	Bar1	Neighborhood	630	Restaurant
	Bar2	Night Club	631	Restaurant
	Bar3	Rest/Lounge/Sports	632	Restaurant
	Rec1	Bowling Alley	710	Recreation
	Rec2	Gym/Athletic Club	720	Recreation
	Rec5	Health Club	721	Recreation
	Rec3	Skating Rink-Ice	730	Recreation
	Rec4	Skating Rink-Roller	730	Recreation
Theatre	Thea1	Movie Theatre	740	Recreation
	Thea4	Theatre-Play/Dining	741	Recreation
Recreation	Rec101	Golf-A	750	Recreation
	Rec102	Golf-B	750	Recreation
	Rec103	Golf-C	750	Recreation
	Rec104	Golf-D	750	Recreation
	Rec6	Club House/Golf	751	Recreation
	Rec13	Golf-Putt Putt	752	Recreation
	Rec12	Golf-Par 3	753	Recreation
	Rec7	Country Club	754	Recreation
	Rec8	Horse Arena	755	Recreation
	Rec	Community Recreation	770	Recreation
	Rec14	Theme Park	780	Recreation
	Rec16	Tennis/Racquet	790	Recreation

Religious	Church	Religious/Church	810	Gov/Service
Government	Gov1	Government-Post Office	821	Gov/Service
Schools	Sch	Schools	850	Gov/Service
Daycare	Dayc1	Day Care Conventional	851	Gov/Service
	Dayc2	Day Care-Converted Res	852	Gov/Service
Frat Organ	Frat Or	Fraternal Organizations	860	Gov/Service
Funeral	Funer1	Funeral Home Conventional	872	Gov/Service
	Funer2	Funeral Home Converted	873	Gov/Service
Comm	Comm1	Broadcasting Facility	890	Gov/Service
		Utility Facility	891	Gov/Service
Warehouses	Sto16	Mini-Warehouses	910	Storage/Whse
	Stor2	Golf Storage/Service	920	Storage/Whse
	Sto10	Truck Terminal	930	Storage/Whse
	Stor1	Warehouse General	940	Storage/Whse
	Stor5	Warehouse Distribution	950	Storage/Whse
	Flex	Multi-Purpose	960	Storage/Whse
Industrial	Indus1	Industrial Light	970	Storage/Whse
	Sto17	Hangars	980	Storage/Whse
	Sto15	Cold Storage	990	Storage/Whse

Source: County assessor

Given the limited number of sales in many of the individual land use categories, sales were grouped into broader categories for purposes of analysis (for example, all 100s, all 200s, and so on).

Each land use category was then examined to identify duplicate entries with the same PIN number. A unique PIN number may have multiple entries for a variety of reasons and the reason for the duplication determined how the issue was resolved. For example, all the information in multiple entries for the same PIN could be identical. In this case the entry simply appears in the file twice and one can be cut and pasted into a tab for deletion. Alternatively, all the information for multiple entries could be identical except for the sales amounts. This suggests the property was flipped in the year examined and both sales are kept in the file. However, if the sales price difference is $1,000 or less it is assumed the property is not being flipped and both entries are removed for the analysis.

The purpose of the analysis is to better understand the effect of the 5-year assessment cycle on the equity of the property tax by comparing the sales amount in each year with the estimated FMV of the property at the beginning of the cycle. Since Greenville County did its most recent reassessment in 2014, certified as of December 31, 2014, for implementation in tax year 2015, the assumption is there will not be much difference between appraised value and the sales amount in 2015, but by 2018 there will be more significant differences between the sales amount and the estimate of FMV.

The problem is that during that 5-year period there are several other factors that might influence the relationship between the estimated FMV and the sales amount of an individual property. For example, a property could sell in 2016 or 2017 and receive an updated estimate of FMV effective on December 31 of the year sold. So, for many properties the analysis could be comparing the sales amount with an updated estimate of FMV. Also, there could have been a change in zoning, a parcel could have been split or combined so it may not have existed at the beginning of the reassessment cycle, buildings could have been added, remodeled or demolished. All these factors can affect market value, which would be reflected

in the sales amount, but not the estimate of FMV from December 31, 2014. Finally, there could simply be data entry errors.

In other words, there are factors that could affect the difference between the sales amount and the estimated FMV other than the 5-year cycle. To the extent such factors exist they could result in appraisal/sales ratios that are outliers in the analysis (outlier ratios are very low or high ratios compared with other ratios in the sample). The accuracy of ratio study statistics used to evaluate assessment outcomes could be compromised by the presence of outliers. To minimize this affect, extreme appraisal/sales ratios of 2.5 and greater, or 0.5 or less, were eliminated.

After cleaning the data, the analysis was performed on 9,762 parcels that sold in 2015 (92 percent of the number of parcels in the original work file) and 8,339 parcels that sold in 2018 (81.6 percent of the number of parcels in the original file).

Three traditional *measures* of assessment uniformity were calculated for each land use and each year by an appraisal/sales ratio study. The first step was to determine the typical appraisal level for each land use category. This was calculated statistically using a measure of central tendency. The median appraisal/sales ratio is the preferred measure of central tendency in most ratio studies (Eckert 1990; Bell and Bowman 2008).

The median ratio is the midpoint, or middle ratio, when appraisal/sales ratios are arrayed in order of magnitude. It divides the ratios into two equal groups and is not affected by extreme values (Eckert 1990, 527). If the appraised value of each property exactly equaled the actual sales amount each appraisal/sales ratio would be 1.0 and the median ratio would be 1.0. If the median ratio is higher than 1.0 it means more parcels have appraised values higher than the actual sales amount and if the median ratio is less than 1.0 it means more parcels have appraised values lower than the actual sales price. The following table presents results for the analysis of sales files from 2015 and 2018.

In 2015, the median ratio was outside the IAAO target range for just three land uses. However, in terms of the measure of central tendency, the median appraisal/sales ratio for each land use, except for restaurants (code 600), is lower in 2018 than 2015 and only four are still in compliance with the IAAO standards. This means that appraisals are falling further from actual market value during the 5-year reassessment cycle, thereby undermining the equity of the property tax.

Table A10 Greenville County Summary by Land Use type, 2015 and 2018

	2015				2018			
Land Use	**Parcels**	**Median Ratio**	**COD**	**PRD**	**Parcels**	**Median Ratio**	**COD**	**PRD**
100	67	0.96	23.92	1.399	33	0.745	36.64	1.3
300	26	0.822	31.1	1.009	17	0.715	49.64	1.281
400	102	0.957	23.15	1.032	100	0.86	26.74	1.155
500	69	0.868	30.49	1.179	63	0.821	30.21	1.107
600	21	0.905	16.9	1.082	16	0.962	33.81	1.172
900	68	0.894	26.03	1.106	44	0.754	28.17	1.067
1100	8,388	0.941	12.38	1.024	7,236	0.783	16.31	1.012
1180	752	0.974	23.05	1.096	536	0.929	30.65	1.13
6800	38	0.997	35.52	1.102	40	0.907	36.69	1.189
9170	67	1.039	25.74	1.116	53	0.951	28.27	1.135
9171	53	0.949	19.03	1.105	61	0.861	29.49	1.093
Total Sales	**9,651**				**8,199**			

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

Uniformity of appraisal *between* land use categories can be considered by looking at variations in the median ratios for each group. Value uniformity relates to the consistency and equity of values. It is important to ensure, for example, that residential and commercial properties are appraised at similar percentages of market value. During the 5-year reassessment cycle, however, different property types are affected differently by market forces, which alters the distribution of property tax liabilities across land uses.

For example, in 2015, commercial properties (land use classes 300, 400, 500, 600, and 900) typically had lower median appraised/sales ratios than single family homes (1100), while vacant and improved agricultural land (9170 and 9171) had relatively high median ratios. In other words, appraisals for commercial properties were further from actual market values than appraisals for residential properties. Those relative ratios changed during the course of the reassessment cycles. By 2018, most commercial property types had relatively higher median ratios compared to improved residential properties. In other words, by 2018, the appraised values of improved residential properties were further from actual market values than most types of commercial property.

In addition, the spread between the highest and lowest median ratios was higher in 2018 than in 2015. Specifically, the highest median ratio in 2015 was for vacant farmland (1.039) and the lowest was for automobile commercial properties (class 300s with a median ratio of 0.822), a difference of 26.4 percent of the lowest median ratio. Alternatively, in 2018, the highest median ratio (0.927) was for restaurants and the lowest was for automobile related commercial properties at 0.715. This is a difference of 34.5 percent of the lowest median ratio. These results confirm the deterioration in equity in the property tax across land use categories between 2015, the first year of the new property values, and 2018, the fourth year of the reassessment cycle.

The next step in the process for understanding the effect of the 5-year assessment cycle on uniformity is to look at uniformity of appraisals *within* each land use category. The *coefficient of dispersion* (COD) is

the most used measure of within-class uniformity. The COD is based on the average absolute deviation of individual parcel ratios and the median ratio. The COD is calculated by dividing the average absolute deviation of the appraisal/sales ratio for each parcel and the median ratio by the median ratio and multiplying by 100 (Eckert 1990).

The International Association of Assessing Officers publishes target standards for uniformity within land use classes. Specifically, the following standards are recommended for the COD:

- Single-family homes and condominiums: CODs of 5 to 10 for newer or similar residences and 5 to 15 for older or more heterogeneous areas
- Income-producing properties: CODs of 5 to 15 in larger, urban areas and 5 to 20 in other areas
- Vacant land: CODs of 5 to 15 in very large areas with active markets, 5 to 20 in large to mid-size areas with slower development, or 5 to 25 in rural or seasonal recreation areas
- Rural residential, seasonal, and manufactured homes: CODs of 5 to 20
- Rural vacant land with little development: CODs of 5 to 30. (IAAO 2014)

Table A10 reports the COD for each land use class in 2015 and 2018. While the COD for residential property satisfies IAAO standards, the other CODs are not consistent with those standards, and sometimes significantly depart from the standards. The COD is higher across all land uses, except restaurants, in 2018 versus 2015 and generally exceed IAAO standards in both years. This suggests that within-class uniformity, or horizontal equity, declined during the 5-year reassessment cycle as appraisals became more dispersed relative to actual sales prices.

Improved residential properties accounted for nearly 87 percent of the parcels in the work file and had the best CODs in both years. This class nearly complied with IAAO standards. The next lowest COD in both years is for improved farmland and is close to IAAO standards in 2015. Among the land uses with the highest COD, or least uniform appraisals, in both years are vacant commercial land (35.52 and 36.69 in 2015 and 2018 respectively) and automobile related commercial properties (31.10 and 49.64 in 2015 and 2018 respectively).

A final aspect of assessment uniformity relates to equity between lower and higher value properties, or the vertical equity of appraisals. Appraisals are considered *regressive* if high-valued properties are under appraised relative to low-valued properties and progressive if high-valued properties are over appraised relative to low-valued properties.

The most frequent statistic for measuring assessment regressivity or progressivity is the price-related differential (PRD). The PRD provides a simple gauge of price-related bias. It is calculated by dividing the mean appraisal/sales ratio by the weighted mean. According to IAAO standards, the PRD should be between 0.98 and 1.03. PRDs below 0.98 tend to indicate assessment progressivity, the condition in which assessment ratios increase with price. PRDs above 1.03 tend to indicate assessment regressivity, in which assessment ratios decline with increasing prices (Eckert 1990; IAAO 2014).

The results are consistent across land use categories and across years. Most PRDs in 2015 exceed the standards set by IAAO indicating there is some degree of assessment *regressivity* across most land use categories**.** The exceptions are automobile related commercial properties (PRD of 1.009) and improved residential properties (PRD of 1.024). Multi-family and apartment residential properties have the highest PRD at 1.399. By 2018, improved residential property still had the lowest PRD (1.012) and meets the IAAO standard. Multi-family and apartment residential properties still have the highest PRD, and most regressive appraisals, of 1.300, albeit this is a slight improvement over the results in 2015. About half the land use categories had improved PRDs in 2018 compared to 2015, but all still exceed the IAAO standards, except for improved residential property.

In Greenville County there is strong and consistent evidence that the uniformity and fairness of appraisals relative to actual sales prices has eroded during the course of the 5-year reassessment cycle, thereby undermining the equity of the property tax.

Horry County

Geographic, Demographic, and Economic Characteristics

Horry County lies in the Pee Dee/Coastal region of South Carolina along the Atlantic Ocean and is home to Myrtle Beach, South Carolina. It is the fourth largest county in South Carolina, with a 2018 estimated population of 344,147. From April 1, 2010, to July 1, 2018, the population of Horry County increased 27.9 percent, the largest increase of the case study counties. Horry County had the highest percentage of residents 65 years old or older (24.0 percent).[21] It was near the middle of the group in terms of labor force participation with a rate with 57.8 percent of the population aged 16 or greater in the civilian labor force.

Horry County has a home ownership rate of 69.9 percent, the third highest of the case study counties. The county has the third highest median value of owner-occupied housing units at $166,500. It is near the middle of the case study counties in terms of median household income ($46,475) and per capita income is near the middle of the group at $25,804. Just 16.1 percent of the population lives below the poverty line, the fourth lowest level of any county in the study. Horry County had 4,520 building permits issued in 2018, the second highest of the case study counties, suggesting a vibrant real estate market in the county. It is a county with both urban and rural areas and has a population density of 237.5 people per square mile, the fifth highest in the study.

Property Tax Administration

There are more than 265,000 taxable real property parcels valued by the assessor in Horry County. In the 2018 reassessment, which was implemented in tax year 2019, residential properties were valued by a modified cost, or cost step-up, model. Marshall & Swift cost and depreciation tables were initially used to generate an estimate of *fair market value* (FMV), which was then modified, as needed, for each neighborhood based on market data including assessment/sales ratios for each neighborhood. Land values were estimated for each neighborhood based on actual vacant land sales. If there were insufficient vacant land sales, then land values were estimated based on land/improvement ratios from adjoining neighborhoods.[22]

Commercial properties were valued in the same manner as residential properties. Again, estimates of FMV were determined using Marshall & Swift cost tables and straight-line depreciation. These estimates were then refined with local market information. Similarly, land values were estimated for each neighborhood based on actual vacant land sales. If there were insufficient vacant land sales, then land values were estimated based on land/improvement ratios from adjoining neighborhoods.

In 2018 there were approximately 20,000–30,000 *Assessable Transfers of Interest* (ATIs) in Horry County. These properties had to be reappraised in 2018.

Because of the relatively dynamic real estate market in the county, many properties were not affected by the 15 percent assessment limit imposed by Act 388 because they were reappraised when they were

[21] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

[22] Bell and Bowman (2008) analyzed three different methods used to value land for property tax purposes when there are insufficient vacant land sales and found the land ratio method had the greatest variation based on examination of coefficients of dispersion and price related differentials.

transferred as a valid ATI. The new estimate of market value became effective December 31 of the year of the assessible transfer and took effect in the next tax year.

Also, because of the dynamic real estate market and Act 388, there are numerous requests for residency status in the county. The assessor created a Special Assessments staff to determine legal resident status because of the increase in residency applications after Act 388. Four full time staff currently work on processing 10,000–12,000 residency applications annually, and two full time employees review those determinations. Before Act 388, there was approximately a 20–30 percent difference in taxes between owner-occupied and nonowner-occupied residential properties. Following Act 388, the difference in taxes could vary by as much as 300 percent. There is significant potential for fraud in residential applications, as the tax benefits are so much greater if residency is established.

Composition of Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county assessor provided data for real property in Table A11. The table shows the number of parcels, the aggregate appraised value, and the aggregate assessed value organized by property category. The table references real property valued by the assessor.

Table A11 Horry County Property Real Property Tax Base Composition by Property Type, 2018

Real Property Valued by County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	19,489,180,916	35.5	713,450,030	30.8
Other Residential	19,964,312,811	36.4	1,094,000,900	47.2
Agriculture (Private)	2,801,230,411	5.1	11,507,540	0.5
Agriculture (Corporate)	597,618,690	1.1	877,050	0.0
Commercial	11,728,691,030	21.4	488,446,680	21.1
Other	287,579,560	0.5	10,944,680	0.5
In Process	8,789,400	0.0	0	0.0
TOTAL	**54,877,402,818**	**100.0**	**2,319,226,960**	**100.0**

Source: County assessor

In Horry County, primary residential properties account for more than one-third of total appraised value and 30.8 percent of assessed value, which is the base for determining property tax liabilities. Other residential properties account for 36.4 percent of total appraised value in the county, but 47.2 percent of assessed value. Alternatively, commercial properties account for 21.4 percent of appraised value and 21.1 percent of total assessed value.

Effect of the 5-Year Reassessment Cycle

Legitimacy and fairness concerns require that the property tax be administered uniformly within each jurisdiction. Uniformity is important because values set for individual properties determine the distribution of responsibility for funding local government activities among taxpayers. Everyone should feel they are paying their fair share of the property tax burden.

A hypothesis presented here is that the quality of assessments deteriorates during the 5-year reassessment cycle because real estate markets grow at different rates for different types of properties and in different neighborhoods, thereby moving away from uniformity of assessment and undermining the equity of the property tax.

To test this hypothesis three measures of the quality of assessment were computed for the 2015 and 2018 files representing true arm's-length sales provided by the Horry County assessor.[23] Three different measures of assessment quality were compared for the two years—a measure of central tendency (the median appraisal/sales ratio), the dispersion of ratios around the median ratio, and the degree of bias in valuations based on whether the property is high-valued or low-valued.

The assessor in Horry County provided selected information for 10,589 parcels on the 2015 property tax roll, which were determined to be true sales, and 16,917 true sales in 2018. These numbers reflect the dynamic real estate market in Horry County during this period. Each file included a unique *Property Identification Number* (PIN) for each parcel, the land use class at the time of sale, the sales amount and date, the 2015 appraisal (the value estimated during the prior reassessment and certified as of December 31, 2013), and a jurisdiction code giving information on the location of the parcel.

For an assessment/sales ratio study, however, sales must be arm's-length sales, not just "true" sales. An arm's-length sale is one that is between unrelated parties who are not under abnormal pressure from each other or a third party (Eckert 1990). In other words, to determine the accuracy of appraisals with absolute certainty, it is necessary for all properties in the population to have been sold in arm's-length, open-market transfers between a willing seller and a willing buyer (IAAO 2013). Any transaction related to a foreclosure would not be an arm's length transaction.

The data files were then sorted and all properties with zero for their current taxable value were deleted as tax exempt properties. There was also a column in each data file called *Sales Description*. Most of the cells were blank, but a number had notes in this column that indicated the sale, while a "true" sale, was not an arm's-length sale. For example, some sales were for multiple parcels, or there was an indication of data issues, or the sale was identified as a sale after foreclosure. These non-arm's length sales were deleted from the file. The resulting 2015 Work File contained 9,024 sales presumed to be arm's-length sales and the 2018 Work File contained selected information on 11,819 arm's-length sales.

The Work Files were then sorted according to the land use code at the time of the sale. Horry County classifies property into 225 different land use codes. Individual land uses, or combinations of related land uses, were assigned individual tabs in an Excel file. The parcels in each land use category were then checked for duplicate entries with the same Parcel Identification Number. None were found.

The purpose of this analysis is to better understand the effect of the 5-year assessment cycle on the equity of the property tax by comparing the sales amount in each year with the estimated FMV of the property at the beginning of the cycle. Since Horry County did its most recent reassessment in 2013, certified as of December 31, 2013 for implementation in tax year 2014, the assumption is there will not be much difference between appraised value and the sales amount in 2015, but by 2018 there will be more

[23] 2015 was the second tax year of the just completed 5-year reassessment cycle and 2018 was the final year in that reassessment cycle.

significant differences between the sales amount and the estimate of FMV from the beginning of that reassessment cycle.

The problem is that during that 5-year period there are several other factors that might influence the relationship between the estimate of FMV and the sales amount of an individual property. For example, a property could sell in 2016 or 2017 and receive an updated estimate of FMV effective December 31 of the year sold. So, for many properties the analysis could be comparing the sales amount with an updated estimate of FMV. Also, there could have been a change in zoning, a parcel could have been split or combined so it may not have existed at the beginning of the reassessment cycle, buildings could have been added, remodeled, or demolished, all of which affect market value and would be reflected in the sales amount, but not the estimate of FMV from December 31, 2013. Finally, there could simply be data entries that were mistakes.

In other words, there are factors that could affect the difference between the sales amount and the estimated FMV other than the 5-year cycle. To the extent such factors exist, they result in appraisal/sales ratios that are outliers for purposes of this analysis (outlier ratios are very low or high ratios compared with other ratios in the sample). The accuracy of ratio study statistics used to evaluate assessment outcomes could be compromised by the presence of outliers (IAAO 2013). To minimize this effect, extreme appraisal/sales ratios of 2.5 and greater, or 0.5 or less, were eliminated.

In addition to properties that have appraisal/sales ratios that are outliers, some parcels in 2015 and more parcels in 2018 did not exist in 2013, when the new values were implemented. Both data sets identify those parcels by writing NULL in the current land use field. These parcels were deleted since there was no value from the previous reassessment effort to compare with the sales price in 2015 or 2018.

After cleaning the data, and because several land use categories did not have sufficient sales for this analysis, results are presented based on the analysis of 6,922 parcels that sold in 2015 (76.7 percent of the number of parcels in the original file) and 10,301 parcels that sold in 2018 (87.2 percent of the number of parcels in the original file).

Three traditional measures of assessment uniformity were calculated for each land use each year by an appraisal/sales ratio study. The first step is to determine the typical appraisal level for each land use category in the analysis. This is calculated statistically by a measure of central tendency. The median appraisal/sales ratio is the preferred measure of central tendency in most ratio studies. (Eckert 1990; Bell and Bowman 2008).

The median ratio is the midpoint, or middle ratio, when appraisal/sales ratios are arrayed in order of magnitude. It divides the ratios into two equal groups and is not affected by extreme values (Eckert 1990). If the appraised value of each property exactly equaled the actual sales amount each appraisal/sales ratio would be 1.0 and the median ratio would be 1.0. If the median ratio is higher than 1.0 it means more parcels have appraised values higher than the actual sales amount and if the median ratio is less than 1.0 it means more parcels have appraised values lower than the actual sales price. The following table presents results for the analysis of sales files from 2015 and 2018.

Table A12 Horry Summary by Land Use type, 2015 and 2018

	2015				2018			
Land Use	**Parcels**	**Median Ratio**	**COD**	**PRD**	**Parcels**	**Median Ratio**	**COD**	**PRD**
100	656	0.931	25.2	1.085	661	0.788	27.68	0.951
101	2,816	0.915	13.43	1.026	3,866	0.807	13.45	1.009
102–104	51	0.982	19.88	1.041	63	0.829	26.06	1.005
107	2,747	0.918	12.41	1.011	4,798	0.797	14.14	0.982
109	257	0.903	14.48	1.019	399	0.78	13.18	1.002
110	117	0.884	14.29	1.034	165	0.75	12.02	1.004
112	21	1.064	31.65	1.229	41	0.821	29.71	1.109
113	59	1.115	30.23	1.564	62	0.896	25.79	1.068
123	20	0.924	25.3	1.098	20	0.954	34.2	1.113
126–127	18	0.91	3.98	0.998	18	0.854	10.54	0.961
211–212	8	0.783	31.2	1.151	7	0.771	22.35	0.942
300	39	1.205	32.73	1.045	49	0.933	34.65	1.018
301	25	1.013	30.21	1.122	28	0.837	21.44	1.054
315–317	NA	NA	NA	NA	6	0.705	15.76	0.978
319–348	29	1.108	30.12	1.35	31	0.95	31.28	1.045
349–356	17	0.829	31.41	1.266	30	0.986	32.15	1.127
366–374	27	1.124	32.84	0.966	38	0.838	23.77	1.089
396–399	15	0.959	30.1	1.447	19	0.765	29.79	1.165
TOTAL	**6,922**				**10,301**			

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

Uniformity of appraisal *between* land use categories can be considered by looking at variations in the median ratios for each group. Value uniformity relates to the consistency and equity of values. It is important to ensure, for example, that residential and commercial properties are appraised at similar percentages of market value. For example, in 2015, 14 of the 18 land use groups reported in the table have a median appraisal/sales ratio within 15 percent of the perfect ratio of 1.0. The best ratio is 0.982 for Multi-Family Residential properties (102–104) and the worst ratio is 0.783 for Garden and High-Rise Apartments. Vacant and improved farmland, vacant commercial properties, some improved commercial properties, and warehouses all had appraisal/sales ratios greater than 1.0.

By 2018, the median ratio had fallen for 15 of the 18 land use categories reported in the table. These findings document the decline in the median sales price relative to appraised value during this period indicating sales values are moving further from the appraised values that are used for determining property tax liabilities. Only 6 of the 18 land uses had appraisal/sales ratios within 15 percent of the IAAO target of 1.0 in 2018. Local governments are foregoing significant property tax revenues they would otherwise collect if the values used to calculate tax liabilities were closer to actual market prices and the relative contribution of individual land use categories to property tax liabilities has shifted as a result. There is strong and consistent evidence that uniformity and fairness of assessments eroded during the 5-year reassessment cycle, thereby undermining the equity of the property tax.

The second step in the process for understanding the effect of the 5-year assessment cycle on uniformity is to look at uniformity of appraisals *within* each land use category. The coefficient of dispersion (COD) is the most used measure of within-class uniformity. The COD is based on the average absolute deviation of individual parcel ratios and the median ratio. The COD is calculated by dividing the average absolute deviation of the appraisal/sales ratio for each parcel and the median ratio by the median ratio and multiplying by 100 (Eckert 1990).

The International Association of Assessing Officers publishes target standards for uniformity within land use classes. Specifically, the following standards are recommended for the COD:

- Single-family homes and condominiums: CODs of 5 to 10 for newer or similar residences and 5 to 15 for older or more heterogeneous areas
- Income-producing properties: CODs of 5 to 15 in larger, urban areas and 5 to 20 in other areas
- Vacant land: CODs of 5 to 15 in very large areas with active markets, 5 to 20 in large to mid-size areas with slower development, or 5 to 25 in rural or seasonal recreation areas
- Rural residential, seasonal, and manufactured homes: CODs of 5 to 20
- Rural vacant land with little development: CODs of 5 to 30 (IAAO 2014).

Table A12 reports the COD for each land use class in 2015 and 2018. CODs for individual land use categories somewhat exceeded IAAO standards in both 2015 and 2018 and only six of 18 CODs met IAAO standards in 2015 and 2018. The change in CODs from 2015 to 2018 show mixed results. For eight land use categories the CODs improve somewhat from 2015 through 2018 and 8 land use categories have CODs higher in 2018 than in 2015 reflecting deterioration in uniformity within those land use categories. This suggests that within-class uniformity declined in almost half the land use categories reported in the table and improved in the other half.

Single family residential properties and fee simple condominiums accounted for 80 percent of the parcels examined in 2015 and 84 percent of parcels examined in 2018. Each had the lowest CODs in 2015 and were among the lowest five CODs in 2018. Both land uses satisfy the IAAO standards.

A final aspect of assessment uniformity relates to equity between lower and higher value properties. Appraisals are considered *regressive* if high-valued properties are under appraised relative to low-valued properties and progressive if high-valued properties are over appraised relative to low-valued properties.

The most frequent statistic for measuring assessment regressivity or progressivity is the price-related differential (PRD). The PRD provides a simple gauge of price-related bias. It is calculated by dividing the mean appraisal/sales ratio by the weighted mean. According to IAAO standards, the PRD should be between 0.98 and 1.03. PRDs below 0.98 tend to indicate assessment progressivity, the condition in which assessment ratios increase with price. PRDs above 1.03 tend to indicate assessment regressivity, in which assessment ratios decline with price (Eckert 1990; IAAO 2014).

In 2015, four of the 18 land use categories reporting results in Table 2 had PRDs that were consistent with IAAO standards. The highest PRD was 1.564 for improved agricultural land, indicating regressive appraisals within this category. The second highest PRD was 1.447 for warehouses. The lowest PRD was 0.966 for some miscellaneous and multi-purpose commercial properties, indicating somewhat progressive appraisals across these land use categories.

By 2018, six of the 18 land uses reported had PRDs that were consistent with the IAAO standards and the PRDs were more closely arranged around the IAAO standards. The highest PRD was 1.165 for warehouses, reflecting only slight regressivity in appraisals. The lowest PRD was 0.942 for Garden and High-Rise Apartments, indicating slight progressivity and reversing the slight regressivity seen in 2015.

In conclusion, in the context of deteriorating equity in the property tax in Horry County from 2015 to 2018 the results are mixed. The deterioration in median appraisal/sales ratios during the period are

consistent and significant. Over time sales move further and further from the FMV determined for individual properties at the beginning of the reassessment cycle. Alternatively, from 2015 through 2018 about half the land use categories experienced greater dispersions of appraisal/sales ratios indicating a decline in uniformity and horizontal equity, while about half the land use categories experienced improvements in CODs suggesting somewhat improved within-class uniformity and equity. Finally, in terms of the regressivity or progressivity of appraisals within land use groups 13 of the 18 land use categories experienced improvements from 2015 to 2018.

Orangeburg County

Geographic, Demographic, and Economic Characteristics

Orangeburg County lies in the Midlands region of South Carolina. It is near the middle of counties in South Carolina in terms of population with a 2018 estimated population of 86,934. Population in Orangeburg County declined from April 1, 2010, to July 1, 2018, by 6.0 percent during this period, the second greatest decline of the 10 case study counties. Of the ten case study counties, Orangeburg County had the third highest percentage of residents 65 years old or older (19.7 percent). [24] It has the third lowest labor force participation rate of 53.7 percent of the population aged 16 or greater in the civilian labor force.

Orangeburg County has the fourth highest home ownership rate of the case study counties at 68.6 percent. The county has the second lowest median value of owner-occupied housing units of $92,700, the second lowest median household income of the case study counties of $34,943 and has the second lowest per capita income of $19,489. The county has the second highest percent of population living below the poverty line of the case study counties with 24.4 percent. Orangeburg County had 59 building permits issued in 2018, the second lowest of the case study counties, suggesting a relatively stable real estate market in the county. It is classified as a rural county, with a population density of just 83.6 people per square mile, the third lowest in the study.

Property Tax Administration

The assessor values approximately 65,000 taxable real property parcels in Orangeburg County. There are generally between 700 and 750 sales annually. The most recent reassessment was in 2015 and took effect in tax year 2017. Residential properties are valued by the sales approach to valuation using a Computer Assisted Mass Appraisal (CAMA) regression model calibrated using actual sales.[25] The results are confirmed with a Marshall & Swift-based cost estimate for the average house in each neighborhood with land valued by analyzing vacant land sales.

For commercial properties, comparable sales could be used, but they are very rare. Generally, commercial properties are valued using the cost approach and cost and depreciation tables from Marshall & Swift. Land is valued based on actual vacant land sales. If there are insufficient vacant land sales, land values are considered from other neighborhoods or jurisdictions.

There are approximately 1,000 *Assessable Transfers of Interest* (ATIs) in Orangeburg County annually. There has not been an increase in the number of applications for residency as a result of Act 388, and few properties are subject to the 15 percent appraisal limit.

[24] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.
[25] CAMA is typically used to appraise only certain types of real property. Multiple regression analysis is a type of statistical analysis.

No additional information was provided.

Richland County

Geographic, Demographic, and Economic Characteristics

Richland County lies in the Midlands region of South Carolina. It is the second most populated county in South Carolina with a 2018 estimated population of 414,576. Population in Richland County was relatively stable from April 1, 2010 to July 1, 2018 and increased by 7.8 percent during this period. Of the ten case study counties, Richland County had the lowest percentage of residents 65 years old or older (12.7 percent).[26] It had the third highest labor force participation rate of 63.6 percent of the population aged 16 or greater in the civilian labor force.

Richland County has the lowest home ownership rate of the case study counties at 59.0 percent. The county is in the middle of the case study counties with regard to the median value of owner-occupied housing units which is $154,100, the fourth highest median household income of the case study counties of $52,082 and has the fourth highest per capita income of $28,018. The county is among the middle of the case study counties with 16.9 percent of the population living below the poverty line. Richland County had 2,644 building permits issued in 2018, right in the middle of the case study counties, suggesting a relatively dynamic real estate market in the county. It is classified as an urban county, with a population density of 507.9 people per square mile, the second highest in the study.

Property Tax Administration

The assessor values approximately 170,000 taxable real property parcels in Richland County. There are approximately 20,000 sales annually. The most recent reassessment was in 2018 and took effect in tax year 2019. Residential properties are valued using the cost approach. Property characteristics are run through a cost model and valued based on local estimates of building costs. Effective age and depreciation tables are constructed using information for estimates of local averages. The results are then compared to a market index based on actual sales, which are calculated for 1,200 neighborhoods using five years of sales data.

Commercial properties are valued using the income approach and market information if available. Gross income is compared with expenditure ratios for each type of commercial property and then adjusted for vacancy rates. If actual income information is not provided, commercial properties are valued in terms of potential income using average information on rents and vacancy rates for each category of commercial property. Capitalization rates for commercial properties are purchased from COSTAR for use in the metropolitan area.

There were 11,237 *Assessable Transfers of Interest* (ATIs) in Richland County in 2018 and it requires significant staff resources to process them. Similarly, there has been an increase in the number of applications for residency and the office devotes significant resources to processing and verifying residency applications.

Composition of Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. Data for Table A13 was provided by the county assessor and/or the county auditor. The county auditor reported the number of parcels, the aggregate appraised value, and the aggregate assessed value by property use category according to classifications defined in the state constitution. The top panel in the table references real property valued by the assessor and the lower panel references other real property valued by the

[26] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue.

Table A13 Richland County Property Tax Base Composition by Property Type, 2018

Real Property Valued by the County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	15,312,446,500	51.1	612,497,780	42.4
Other Residential	NA	NA	NA	NA
Agriculture (Private)	41,662,400	0.1	1,666,940	0.1
Agriculture (Corporate)	3,530,400	0.0	211,820	0.0
Commercial/Other	9,333,863,700	31.2	560,035,040	38.7
Subtotal	**24,691,503,000**	**82.5**	**1,174,411,580**	**81.2**
Real and Personal Property Valued by the County Auditor and State Department of Revenue				
Property Classification	Total Appraised (Fair Market) Value	% Total Appraised Value	Total Assessed Value	% Total Assessed Value
Personal Property (Vehicles)	2,645,630,160	8.8	170,730,590	11.8
Other Personal Property	83,658,810	0.3	8,423,180	0.6
FILOT	NA	NA	NA	NA
Manufacturing	512,013,803	1.7	50,722,780	3.5
Utility	1,280,101,805	4.3	134,411,780	9.3
Business Personal Property	654,535,651	2.2	70,439,140	4.9
Railroads, Private Carlines, Airlines, and Pipelines	76,083,407	0.3	7,227,924	0.5
Subtotal	**5,252,023,636**	**17.5**	**271,224,804**	**18.8**
TOTAL	**29,943,526,636**	**100.0**	**1,445,636,384**	**100.0**

Source: County assessor and/or county auditor

When looking at real property in Richland County we see that real property valued by the assessor accounts for 82.5 percent of appraised real property value in the county, and 81.2 percent of assessed value. Primary residential properties account for more than 51 percent of appraised value, but just 42 percent of assessed value, which is the base for determining property tax liabilities. Alternatively, manufacturing and utility real and personal property account for 6 percent of *fair market value* (FMV) in

the county, but 12.8 percent of assessed value. Similarly, commercial properties account for 31 percent of appraised value, but nearly 39 percent of assessed value.

No additional data was provided.

Sumter County

Geographic, Demographic, and Economic Characteristics

Sumter County lies in the Midlands region of South Carolina. It is the fifteenth most populous county in South Carolina with a 2018 estimated population of 106,512. Of the ten case study counties, Sumter County had the fifth lowest percentage of residents 65 years old or older (16.4 percent).[27] It had the seventh lowest labor force participation rate of 56.9 percent of the population aged 16 or greater in the civilian labor force.

Sumter County had the third lowest median value of owner-occupied housing units at $113,200, the third lowest median household income of $41,946 and had the third lowest per capita income of $21,733. The county had the third highest proportion of its population living below the poverty line at 19.1 percent. Sumter County had 279 building permits issued in 2018, the fourth lowest of the case study counties, suggesting a relatively stable real estate market. It is classified as a rural county, with a population density of just 161.4 people per square mile, the fourth lowest in the study.

Property Tax Administration

The assessor values approximately 64,000 taxable real property parcels in Sumter County. There are generally about 1,500 to 2,000 *Assessible Transfer of Interests* (ATIs) in the county annually. There are relatively few applications for residency, and applicants must provide a South Carolina driver's license and a utility bill to document residency.

The most recent reassessment was in 2015 and took effect in tax year 2016. Residential properties are valued using the comparable sales approach. In this approach, the property being appraised is compared with similar properties that have recently sold. The sales prices of the comparables are then adjusted for differences as compared with the property being valued. The market value of the property being assessed is then determined based on the modified sales prices of the comparable properties. Sales prices of comparable properties are usually considered the best evidence of market value (Eckert 1990).

For commercial properties, the income approach to valuation is typically used. Marshall & Swift income and expense tables are used to estimate gross and net income for commercial properties. Depreciation tables from Marshall & Swift are then used to adjust the estimated values for economic, functional, and physical depreciation. Land values are based on actual sales of vacant land in subdivision developments in the southern portion of the county, while land values in the northern part of the county are relatively stable and change little.

Composition of the Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county auditor provided data shown in Table A14. The table shows the number of parcels, the aggregate appraised value, and the aggregate assessed value for real property in each land use category according to the classifications defined in the state constitution.

[27] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

Table A14 Sumter Property Tax Base Composition by Property Type, 2018

Real Property Valued by the County Assessor				
Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	2,967,635,000	63.0	118,705,400	53.3
Other Residential	531,368,185	11.3	32,882,091	14.8
Agriculture (Private)	68,502,750	1.5	2,740,110	1.2
Agriculture (Corporate)	6,352,166	0.1	381,130	0.2
Commercial/Other	1,133,389,317	24.1	68,003,359	30.5
TOTAL	**4,707,247,418**	**100.0**	**222,712,090**	**100.0**

Source: County assessor

When looking at real property in Sumter County, primary residential properties account for nearly two-thirds of appraised real property value, but just over one-half of total assessed value, which is the base for determining property tax liabilities. Alternatively, commercial and other properties account for 24.1 percent of appraised value, but 30.5 percent of total assessed value.

No additional data was provided.

York County

Geographic, Demographic, and Economic Characteristics

York County lies in the Piedmont region of South Carolina along the North Carolina border. It is the seventh largest county in South Carolina with a 2018 estimated population of 274,118. From April 1, 2010, to July 1, 2018, the population in York County increased by 21.3 percent, the second highest among the case study counties. York County had the second lowest percentage of residents 65 years old or older (14.3 percent).[28] It had the highest labor force participation rate of the 10 case study counties at 66.3 percent of the population aged 16 or greater in the civilian labor force.

York County had the second highest home ownership rate (71.0 percent) of the 10 case study counties. Similarly, York County had the second highest median value of owner-occupied housing units at $173,600, the highest median household income of $59,394 and the second highest per capita income of $30,387. Just 11.2 percent of the population lives below the poverty line, the lowest level of any county in the study. York County had 2,692 building permits issued in 2018, the fourth highest of the case study counties, suggesting a relatively vibrant housing market. It is an urban county, with a population density of 332.2 people per square mile, the fourth highest in the study.

[28] These and the following data come from QuickFacts issued by the U.S. Census Bureau which can be found at https://www.census.gov/quickfacts/fact/map/US/PST045218.

Property Tax Administration

The assessor values approximately 121,000 real property parcels in York County. The county is implementing a new CAMA system for the 2019 reassessment, when residential properties are being valued by the cost approach. The cost approach is based on the concept that the value of the property being appraised is the value of the land plus the cost of replacing the improvements, less depreciation for physical deterioration, functional obsolescence, and changes in the economy or neighborhood. Tables that reflect construction costs are applied to the characteristics of the structure being valued and the resulting value is reduced using depreciation tables that reflect physical, functional, and economic depreciation.

Standard Marshall & Swift cost and depreciation tables are initially used by the appraiser, values are then adjusted for the square footage and quality of individual properties. The resulting cost estimates are then refined based on analysis of actual sales/market observations and regression analysis. These market adjustments are applied to different types or categories of property being valued, not neighborhoods. Land values are determined based on actual vacant land sales in each neighborhood and then added to the estimated replacement cost of the structures to determine the estimated *fair market value* (FMV) of the subject property.

Commercial properties are valued based on the income approach, if a business is willing to share its income and expense information. If not, commercial properties are valued based on a cost model using Marshall & Swift cost and depreciation tables. Land values are determined by actual vacant land sales. The county receives assistance from QS1 (a data company in Spartanburg) with reassessments, storage of the property tax roll, and production of various reports or data queries.

In 2018, there were approximately 7,500 arms-length real estate sales, or just over 6 percent of total real estate on the property tax roll. There were another 5,500 real estate transfers that were not arms-length. In other words, there were approximately 13,000 *Assessable Transfers of Interest* (ATIs) in York County. These properties had to be reappraised in 2018.

Because of the relatively dynamic real estate market in the county, many properties were not affected by the 15 percent assessment limit imposed by Act 388, because they are reappraised when transferred as a valid ATI. The new estimate of market value becomes effective December 31 of the year of the assessible transfer and takes effect in the next tax year. Also because of the dynamic real estate market there are numerous requests for residency status in the county.[29] There are three full time staff in the assessor's office working on processing applications for residency in the county.

Composition of the Property Tax Base

The first level of comparison in the case study counties is the composition of the property tax base. The county auditor provided data in Table A15 reporting the number of parcels, the aggregate appraised value, and the aggregate assessed value for real property for each land use category according to classifications defined in the state constitution. The lower panel references other real property valued by the Department of Revenue and personal property (including automobiles) valued by the county auditor and the Department of Revenue, but no data on appraised values were provided.

Table A15 York County Property Tax Base Composition by Property Type, 2018

Real Property Valued by the County Assessor

[29] The number of applications for residency status has grown substantially because of Act 388 and the exemption of the education operating and maintenance portion of the property tax.

Property Classification	Total Appraised (Fair Market) Value ($)	% Total Appraised Value	Total Assessed Value ($)	% Total Assessed Value
Primary Residential	13,624,904,335	68.60	544,365,705	39.10
Other Residential	1,930,049,582	9.70	114,487,455	8.20
Agriculture (Private)	49,271,549	0.20	1,960,690	0.10
Agriculture (Corporate)	1,825,540	0.00	109,536	0.00
Commercial/Other	4,263,392,258	21.50	242,674,776	17.40
Subtotal	**19,869,443,264**	**100.00**	**903,598,162**	**64.90**
Real and Personal Property Valued by the County Auditor and Dept of Revenue				
Property Classification	Total Appraised (Fair Market) Value	% Total Appraised Value	Total Assessed Value	% Total Assessed Value
Personal Property (Vehicles)	NA	NA	134,972,244	9.70
Other Personal Property	NA	NA	13,886,858	1.00
FILOT	NA	NA	67,924,495	4.90
Manufacturing	NA	NA	41,639,940	3.00
Utility	NA	NA	195,551,393	14.00
Business Personal Property	NA	NA	35,366,890	2.50
Railroads, Private Carlines, Airlines, and Pipelines	NA	NA	Included with Utilities	NA
Subtotal	NA	NA	**489,341,820**	**35.10**
TOTAL	NA	NA	**1,392,939,982**	**100.00**

Source: County assessor and/or county auditor

When looking at real property in York County the real property valued by the assessor accounts for nearly 65 percent of the assessed value of the property tax base. Slightly more than 39 percent of the assessed property tax base is owner-occupied residences and 17.4 percent of assessed value is commercial property. That portion of the property tax base valued by the auditor and Department of Revenue accounts for just over 35 percent of assessed value. Utilities account for 14 percent of the assessed value and vehicles account for almost 10 percent of assessed value in the county.

Effect of the 5-Year Reassessment Cycle

Legitimacy and fairness concerns require that the property tax be administered uniformly within each jurisdiction. Uniformity is important because values set for individual properties determine the

distribution of the responsibility for funding local government activities among taxpayers. Everyone should feel they are paying their fair share of the property tax burden.

A hypothesis presented here is that the quality of assessments deteriorates during the 5-year reassessment cycle because real estate markets grow at different rates for different types of properties and in different neighborhoods, thereby moving away from uniformity of assessment and undermining the equity of the property tax.

To test this hypothesis the quality of assessments was computed for the 2015 and 2018 files of true arms-length sales that were provided by the York County assessor.[30] Three different measures of assessment quality were compared for the two years—a measure of central tendency (the median appraisal/sales ratio), the dispersion of ratios around the median ratio, and the degree of bias in valuations based on whether the property is *high-valued* or *low-valued*.

The 2015 file of arms-length sales included information on 5,988 sales and the 2018 file included 7,524 parcels that sold that year. This reflects the dynamic real estate market in York County during this period. Each file included a unique *Property Identification Number* (PIN), the land use class, the book and page number for the parcel, the sales date, the sales amount, the appraisal, the land value, and the improvement value for each parcel.

The parcels in each file had to be rearranged for the analysis, which was carried out for each land use type, to the extent there were enough sales for the analysis. To create the work file for the analysis, the first step was to sort all the parcels by the land use code. Then each category of property was pasted into its own tab in an Excel file. One tab included all properties with an exempt land use code, but these were not included in the analysis. The land use classifications are described in Table A16.

Each land use category was then examined to identify duplicate entries with the same PIN number. A unique PIN number may have multiple entries for a variety of reasons and the reason for the duplication determined how the issue was resolved. For example, all the information in each of multiple entries for the same PIN could be identical. In this case, the entry simply appears in the file twice and one can be cut and pasted into a tab for deletion. Alternatively, all the information for multiple entries could be identical except the sale date and sale amount. This suggests the property was flipped in the year examined and both sales are kept in the file. Similarly, all information could be the same for two entries with the same PIN, but the Book and Page number are different. This suggests there are in fact two properties and both entries are kept in the file. Finally, all information in duplicate entries could be the same, but the appraised value differs. In this case, both entries would be shifted to the deleted file because there is no way to know which appraised value should be used in the analysis.

The data was reexamined, and it was discovered that some parcels with land use codes for improved property had zero in the improvement column. For example, several parcels in land use classifications CI, RI, RIL, and RIO had zero listed for improvement value even though they were supposed to be developed. It was not clear if this was just a data entry mistake or a mistake in classifying the land use for the property. In any case, these properties were moved to the deleted file.

Table A16 York County Land Use Classification Codes

Class	Description	Assessment Ratio

[30] 2015 was the first tax year to use the new values produced in the 2014 reassessment and 2018 was the fourth year in the current 5-year assessment cycle.

CI	COMMERCIAL IMPROVED	6%
CV	COMMERCIAL VACANT	6%
EI	EXEMPT IMPROVED	N/A
EIG	EXEMPT IMPROVED GOVERNMENT	N/A
EV	EXEMPT VACANT	N/A
EVG	EXEMPT VACANT GOVERNMENT	N/A
FI	FARM IMPROVED	6%
FUC	FARM USE COMMERCIAL	6%
FUV	FARM USE VALUE	4%
FV	FARM VACANT	6%
FVH	RES. HOMESTEAD ADJUSTED	N/A
MKT	MARKET VALUE	N/A
MI	MANUFACTURING IMPROVED	—
MV	MANUFACTURING VACANT	—
RI	RESIDENTIAL IMPROVED	6%
RIL	RESIDENTIAL IMPROVED LETTER	6%
RIO	RESIDENTIAL IMPROVED OCCUPIED	4%
RIOP	RESIDENTIAL IMPROVED PRORATED	—
RIOZ	OWNER OCCUPIED/NO EXEMPTIONS	4%
RV	RESIDENTIAL VACANT	6%
RVH	RESIDENTIAL VACANT HOMESTEAD ADJUSTED	—
UTI	UTILITY IMPROVED	—
UTV	UTILITY VACANT	—

Source: Data provided by the county assessor.

There is a quirk in South Carolina law that added a complication when interpreting the data in certain land use categories. Specifically, when a property receiving some sort of preferential treatment is sold, the preferential treatment immediately stops, and the parcel is reclassified until the new owner applies for reinstatement of the preferential treatment. In this circumstance, the assessor must determine if the property is still eligible for the preferential treatment. For example, RIO is the code for owner-occupied residential property, which is taxed at 4 percent of market value. When such a property sells, it is reclassified as RIL, which is valued at 6 percent of value. The new owner then must reapply for the owner-occupied classification to be taxed at 4 percent if in fact the property will remain owner-occupied. This reclassification process takes time, especially since there has been a significant increase in applications for residential classification following passage of Act 388. As a result, the land use

categories RIL and FV include properties that might eventually be classified as FUV or RIO. [31] Finally, for purposes of this analysis, all properties in the land use category RV that had entries in the Improved Value column were moved to the land use code RIO for analysis.[32]

The purpose of this analysis is to better understand the effect of the 5-year assessment cycle on the equity of the property tax by comparing the sales amount in each year with the estimated FMV of the property at the beginning of the 5-year assessment cycle. Since York County did its most recent reassessment in 2014, certified as of December 31, 2014, for implementation in tax year 2015, the assumption is there will not be much difference between appraised value and the sales amount in 2015, but by 2018 there will be more significant differences between the sales amount and the estimate of FMV.

The problem is that during that 5-year period there are several other factors that might influence the relationship between the estimate of FMV and the sales amount of an individual property. For example, a property could sell in 2016 or 2017 and receive an updated estimate of FMV effective December 31 of the year sold. So, for many properties the analysis would be comparing the sales amount with an updated estimate of FMV. Also, there could have been a change in zoning, a parcel could have been split or combined so it may not have existed at the beginning of the reassessment cycle, buildings could have been added, remodeled, or demolished, all of which would affect market value and would be reflected in the sales amount, but not the estimate of FMV as of December 31, 2014.

In other words, there are factors that could affect the difference between the sales amount and the estimated FMV other than the 5-year cycle. To the extent such factors exist they could result in appraisal/sales ratios that are outliers in the analysis and distort the findings. To minimize this affect, extreme appraisal/sales ratios of 2.5 and greater, or 0.5 or less were eliminated.

After cleaning the data, the analysis was performed on 5,771 parcels that sold in 2015 (96.4 percent of the number of parcels in the original) and 7,170 parcels that sold in 2018 (95.3 percent of the number of parcels in the original file).

Three traditional *measures* of assessment uniformity were calculated for each land use and each year by an appraisal/sales ratio study. The first step was to determine the typical appraisal level for each land use category. This is calculated statistically by a measure of central tendency. The median appraisal/sales ratio is the preferred measure of central tendency in most ratio studies (Eckert 1990; Bell and Bowman 2008).

The median ratio is the midpoint, or middle ratio, when appraisal/sales ratios are arrayed in order of magnitude. It divides the ratios into two equal groups and is not affected by extreme values (Eckert 1990). If the appraised value of each property exactly equaled the actual sales amount each appraisal/sales ratio would be 1.0 and the median ratio would be 1.0. If the median ratio was higher than 1.0 it means more parcels have appraised values higher than the actual sales amount and if the median ratio is less than 1.0 it means more parcels have appraised values lower than the actual sales price.

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[31] More than three-fourths of the parcels in each sales file were in the RIL use code. The majority of parcels were owner-occupied houses that lost their preferential treatment at time of sale and were reclassified as RIL. As the new owners apply for residency status the properties will be reclassified as RIO. However, for the purposes here there is no way to determine which parcels in the RIL use class will ultimately be reclassified as owner-occupied. They were all left in the RIL class for purposes of analysis.

[32] RV is the code for Residential Vacant so each parcel should have a zero in the Improved Value column. However, given the rapid development in York County, properties may have been developed, with the construction of a new home, and sold before the land use code could be changed to RIO, if the new owner applies for it. As a result, many vacant lots have improvement values listed.

Table A17 presents results of the analysis of sales files from 2015 and 2018. In terms of the measure of central tendency, the median appraisal/sales ratio for each land use was within ten percent of the IAAO target of 1.0 and they all improved from 2015 to 2018 except for improved commercial properties where the ratio was essentially unchanged and vacant residential properties where the ratio declined. This suggests that overall appraisal/sales ratios in 2018 are moving closer to 1.0 than in 2015.

Table A17 Results of the Analysis of Sales Files, 2015 and 2018

Land Use	2015				2018			
	Parcels	Median Ratio	COD	PRD	Parcels	Median Ratio	COD	PRD
CI	69	0.953	17.5	1.196	111	0.955	8.56	1.036
CV	27	0.938	22.27	1.027	26	0.973	11.75	1.102
FUV	47	1.056	25.75	1.046	74	0.989	14.63	1.043
FV	40	0.938	11.58	1.023	38	0.971	10.36	1.022
RI	124	0.943	12.82	1.05	174	0.965	12.33	1.066
RIL	4,488	0.937	4.94	1.008	5,497	0.96	4.46	1
RIO	533	0.932	3.49	1.006	818	0.975	1.3	0.999
RV	443	1	17.82	1.063	432	0.963	18.32	1.033
Total Sales	**5,771**				**7,170**			

Source: Author's computations based on assessor sales files.

Note: COD is coefficient of dispersion. PRD is price related differential.

Uniformity of appraisal *between* land use categories can be considered by looking at variations in the median ratios for each group. Value uniformity relates to the consistency and equity of values. It is important to ensure, for example, that residential and commercial properties are appraised at similar percentages of market value. For example, in 2015 improved commercial properties (CI) had a somewhat higher median appraisal/sales ratio than owner-occupied housing (RIO) and residential improved letter (RIL). By 2018, that had reversed as RIL had somewhat higher median ratios than CI. Privately owned farms had the highest median ratio in both 2018 and 2015.

In addition, the spread between the highest and lowest median ratios was higher in 2015 than 2018. Specifically, the highest median ratio in 2015 was for private use farmland (1.056) and the lowest was for owner-occupied residential properties (0.932), a difference of 0.124 or 13.3 percent of the lowest median ratio. Alternatively, in 2018, the highest median ratio is for privately owned farmland (0.989) and the lowest is for improved commercial properties at 0.955. This is a difference of 0.034, or just 3.6 percent of the lowest median ratio. This is somewhat counterintuitive if valuations are expected to be less uniform during the course of the 5-year assessment cycle.

The next step in the process for understanding the effect of the 5-year assessment cycle on uniformity is to look at uniformity of appraisals *within* each land use category. The coefficient of dispersion is the most used measure of within-class uniformity. The coefficient of dispersion (COD) is based on the average absolute deviation of individual parcel ratios and the median ratio. The COD is calculated by dividing the average absolute deviation of the appraisal/sales ratio for each parcel and the median ratio by the median ratio and multiplying by 100 (Eckert 1990, 534).

The International Association of Assessing Officers publishes target standards for uniformity within land use classes. Specifically, the following standards are recommended for the COD:

- Single-family homes and condominiums: CODs of 5 to 10 for newer or fairly similar residences and 5 to 15 for older or more heterogeneous areas
- Income-producing properties: CODs of 5 to 15 in larger, urban areas and 5 to 20 in other areas
- Vacant land: CODs of 5 to 15 in very large areas with active markets, 5 to 20 in large to mid-size areas with slower development, or 5 to 25 in rural or seasonal recreation areas
- Rural residential, seasonal, and manufactured homes: CODs of 5 to 20
- Rural vacant land with little development: CODs of 5 to 30 (IAAO 2014).

Table A17 reports the COD for each land use class in 2015 and 2018. The COD is lower in 2018 versus 2015 for all land use categories except vacant residential properties. This suggests that within-class uniformity improved during the assessment cycle (again, somewhat counterintuitive). Only vacant residential properties had a COD that indicates appraisal uniformity deteriorated during the assessment cycle. In both years, the CODs for residential properties, both owner-occupied and rental, are consistent with IAAO standards.

A final aspect of assessment uniformity relates to equity between lower and higher value properties. Appraisals are considered *regressive* if high-valued properties are under appraised relative to low-valued properties and progressive if high-valued properties are over appraised relatively relative to low-valued properties.

The most frequent statistic for measuring assessment regressivity or progressivity is the price-related differential (PRD). The PRD provides a simple gauge of price-related bias. It is calculated by dividing the mean appraisal/sales ratio by the weighted mean. The PRD should be between 0.98 and 1.03. PRDs below 0.98 tend to indicate assessment progressivity, the condition in which assessment ratios increase with price. PRDs above 1.03 tend to indicate assessment regressivity, in which assessment ratios decline with price (Eckert 1990; IAAO 2014).

The results were more mixed regarding assessment regressivity/progressivity compared to the COD. For example, from 2015 to 2018, the PRD improved for two land uses (CI and RV) was virtually unchanged for four land uses (FUV, FV, RIL, and RIO), and deteriorated for two land uses (CV and RI). In 2015, four land uses had PRDs that met IAAO standards (CV, FV, RIL, and ROI) while results for the other land uses suggested assessment regressivity. By 2018, three land uses met the IAAO standard (FV, RIL, and RIO), while results for the other land uses suggested assessment regressivity.

In York County, there does not seem to be strong, consistent evidence that the 5-year reassessment cycle has undermined uniformity of the property tax. This could be in part because of the active real estate market in the county, the tremendous growth and land conversion taking place in the county, and the significant annual revaluation of a large number of properties qualifying as Assessible Transfers of Interest in the year each transfer took place.

Appendix B

Property Tax Administration Case Study: Tennessee

When considering reform of its property tax administration system, South Carolina will do well to consider some commendable features of systems in comparable states. While not perfect, Tennessee's property tax system has some features which may serve as a model for South Carolina. This memo first describes the mechanics of Tennessee's property tax administration system and compares it to South Carolina's system, then identifies a few exemplary features.

Assessment Administration

Tennessee's 95 counties appraise most property. The state is responsible for valuing public utilities and transportation companies (Significant Features of the Property Tax).[33]

Tennessee appraises property at market value except for agricultural, conservation, open space, forest land, or timber production eligible for current use valuation (Significant Features of the Property Tax). Revaluation cycles established in state statute range from 4 to 6 years depending on the locality. The Tennessee Comptroller of the Treasury reports reappraisal schedules for each county on its website along with county appraisal ratios (Tennessee Comptroller of the Treasury, Reappraisal Schedules). Revaluation requires physical re-inspections conducted over a period of 3 to 5 years, depending on the length of the reappraisal cycle (Significant Features of the Property Tax). For example, in a county with a five-year appraisal cycle, 25 percent of properties are physically re-inspected each year for the first four years of the cycle leading up to the revaluation year.

Oversight of appeals begins at the local level with the county assessor; appeals may then advance to the county board of equalization and finally to the state board of equalization.

The Division of Property Tax Assessments conducts an annual appraisal ratio report. The appraisal ratio (or sales ratio)[34] report measures the difference between the appraised value and the market value. It is calculated by dividing the appraisal by the sales price. The state is required by statute to conduct sales ratio studies for each county at least every two years. Counties with a six-year review cycle must update values if the average appraisal is less than 90 percent of market value (Tennessee Comptroller of the Treasury 2018a).

Classification

Tennessee has a classified system with ratios ranging from 5 percent (certain personal property) to 55 percent (utility property). Tennessee taxes tangible and intangible personal property but exempts up to $7,500 of household and personal effects (Significant Features of the Property Tax). The state constitution establishes the classes and ratios.

[33] The state assesses airlines, barge lines, railroads, motor bus and motor carrier companies, private electric and gas companies, interstate natural gas and pipeline companies, power companies, phone companies (including cellular and wireless), and state-regulated water and sewer companies.
[34] South Carolina uses the term "sales ratio" whereas Tennessee uses the term "appraisal ratio."

Real Property

Industrial and Commercial - 40%

Residential - 25%

Farm - 25%

Public Utility Property - 55%

Tangible Personal Property

Industrial and Commercial - 30%

Public Utility Property - 55%

All Other Tangible Personal Property - 5%

Intangible Personal Property - 40%

Tax Bill Calculation

Tennessee counties calculate tax bills according to a basic formula: Assessed Value x Tax Rate = Tax Bill. Assessed value is a property's appraised value multiplied by the applicable assessment ratio (listed above). Counties set tax rates (Tennessee Comptroller of the Treasury, How to Calculate Your Tax Bill). The state explains the tax calculation on its website and provides the following sample calculation:

> Assume you have a house with an APPRAISED VALUE of $100,000. The ASSESSED VALUE is $25,000 (25% of $100,000), and the TAX RATE has been set by your county commission at $3.20 per hundred of assessed value. To figure the tax simply multiply the ASSESSED VALUE ($25,000) by the TAX RATE (3.20 per hundred dollars assessed).
>
> $25,000/10 = 250 x $3.20 = $800 or ($25,000 x .3200 =$800)
> for a tax bill of $800

Limitations

Tennessee is one of only four states with no state-imposed tax limitation (Paquin 2015). The state's truth in taxation requires public notice and hearing before a jurisdiction can adopt a tax rate after a reappraisal that would increase the levy over the prior year (Significant Features of the Property Tax).

Disclosure

The state maintains a central database of assessing information for 84 of the state's 95 counties. The other 11 counties do not use the centralized system but have Computer Assisted Mass Appraisal (CAMA) systems with other vendors. The assessment website includes links to the assessing databases for counties using different software (Tennessee Comptroller of the Treasury, Real Estate Assessment Data).

An annual aggregate tax report reports the makeup of the tax base by class of every county and municipality in the state. The report includes actual tax rates and effective tax rates for each county and

municipality, as well as the number of exempt parcels in each jurisdiction (Tennessee Comptroller of the Treasury 2018b). The comptroller publishes a land use classification report.

The state publishes both the appraisal ratio studies and reports of adopted appraisal ratios each year (Tennessee Comptroller of the Treasury 2018a and 2019). The 2019 study includes appraisal ratio studies for 38 counties. It includes data for another 13 counties that completed reappraisals in 2018, and six current value update counties. Current value update counties are those on a 6-year schedule; they are required to complete a current value updated midway through the 6-year cycle.

The State Board of Equalization has a statutory obligation to approve assessment manuals. The web site of the Comptroller of the Treasury provides a set of manuals on sales data procedures, exemptions, equalization, and greenbelt (agriculture, forest, and open space) (Tennessee Comptroller of the Treasury, Manuals). In addition, the comptroller publishes an assessment glossary that defines key property tax assessment terms (Tennessee Comptroller of the Treasury, Tennessee Property Assessment Glossary). The Division of Property Assessments at the Comptroller of the Treasurer supports county assessors and oversees property tax administration. It administers tax relief programs, provides training for assessors, technological services, and it assists jurisdictions with reappraisals.

Summary of Exemplary Features

The absence of property tax limitations or a general homestead exemption in Tennessee simplifies the computation of property tax bills. As in South Carolina, assessed value is calculated as market value times assessment ratio and the tax is calculated by multiplying the assessed value by the tax rate. Whereas in South Carolina Act 388 restricts growth in appraisals to 15 percent per year, in Tennessee, market value appraisals are not subject to a limit. Since Tennessee has no general homestead exemption, computation of tax bills does not require any deduction for residential property such as South Carolina's O & M exemption. Both Tennessee and South Carolina could achieve greater simplicity, transparency, and equity by moving away from classification.

Although its 4- to 6-year revaluation cycles exceed the IAAO recommendation, Tennessee requires physical reinspection each cycle and a subset of properties inspected each year leading up to revaluation. Physical reinspection is important for maintaining accurate assessments.

Tennessee's administration system is a model of transparency. County assessment information is available online and largely centralized in one web-based system (Tennessee Comptroller of the Treasury, Real Estate Assessment Data). In 2003, the state database received the Distinguished Assessment Jurisdiction award from the International Association of Assessing Officers. The CAMA systems support sound appraisal practices and include tax billing capabilities. The state also supports the assessment process by providing other information to the public and assessors online including assessment manuals, a glossary of key terms, simple explanation of tax bill calculation, equalization reports, and data on tax rates and levies (Tennessee Comptroller of the Treasury, Property Tax Resources).

Tennessee county assessors have assumed responsibility for most assessments and assessment appeals since reforms adopted in 1980, but the state provides vital support, not only in maintaining and publishing data, but also by training assessors, assisting counties with reevaluations, providing technical support and administering tax relief programs including awarding exemptions. The balance between local responsibility for assessments and state support is a good model.

Table B1 Property Tax Administration in Tennessee and South Carolina

	Tennessee	South Carolina
Revaluation Cycle	4-6 years	4 years
Physical Reinspection Required?	Yes	No
Central Assessing Database?	Yes	No
Sales Ratio Study Frequency	Annual; Each county at least every two years	Every 5 years
Sales Ratio Reports Available Online?	Yes	Not found
Rate Limit?	No	Yes
Assessment Limit?	No	Yes
Truth in Taxation?	Yes	No
Classification Ratios Published Online?	Yes	Yes
State reports tax base by class for each county?	Yes	Yes
State reports effective tax rates by municipality and county?	Yes	No
State reports number or value of exempt parcels?	Yes, Number	Not online
State publishes assessment manuals online?	Yes	Not found
State publishes glossary of assessment terms online?	Yes	No, but some counties provide glossary
State publishes reappraisal schedules for each county online	Yes	No
State publishes explanation of tax bill calculation online	Yes	No but state links to SCAC report that explains tax bill calculation

Source: South Carolina Association of Counties, Significant Features, and author's research

Sources: Various South Carolina state sources; Tennessee Comptroller of the Treasury; Significant Features of the Property Tax