2019 Ratio Report

Maryland
DEPARTMENT OF
ASSESSMENTS AND TAXATION

Larry Hogan, Governor · Boyd K. Rutherford, Lt. Governor · Michael L. Higgs, Jr., Director

The State Department of Assessments and Taxation (SDAT) is required to submit a report on assessment ratios in each county in accordance with Tax Property Article § 2-202(12) of the Annotated Code of Maryland.

In accordance with this requirement, SDAT is pleased to submit the 2019 Assessment Ratio Report. This report measures the quality of real property assessments in each of Maryland's 24 jurisdictions.

The Department has adopted the national standards for measuring property assessment quality as outlined by the International Association of Assessing Officers. Those national standards, as well as the Department's compliance with those standards, are outlined in this report. Statewide, the Department has met the IAAO standard for coefficient of dispersion, indicating an overall uniformity of assessments.

Our entire team is committed to provide the customers we serve with the highest level of courteous, prompt and efficient service. I hope the information contained in this Report is of value to you and your constituents. As always, I welcome and appreciate the opportunity to share more information on our policies and procedures with you to enhance the level of service provided to our customers.

Very truly yours,

Michael Higgs,
Director

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2019ASSESSMENT RATIO REPORT

SECTION I – OVERVIEW

The State Department of Assessments and Taxation appraises real property in Maryland once every three years. Assessments are certified by the Department to local governments where they are converted into property tax bills. Properties are valued using the three approaches generally recognized by the appraisal profession: cost, sales comparison, and (when applicable) income.

Residential property characteristics include size, type and condition of a structure, type and quality of construction, and any new improvements or renovations. Commercial property aspects consist of size, type and condition of a structure, type and quality of construction, new improvements or renovations, current use of the property, types of tenants, and vacancy.

This year, the Department valued 696,947 properties, which required the use of mass appraisal techniques. While a fee appraiser is concerned with assessing one property at a time, an assessor is valuing whole neighborhoods through the use of special mass appraisal procedures. The assessor will review the data and calculate replacement costs for improvements/renovations, much like a fee appraiser. The assessor will then review the sales from the area. In Maryland, the county's local assessment office receives a copy of all deeds and property sales prices when the deed transferring the property is recorded with the clerk of the court. In Baltimore City, the Department of Transportation/Property Location Section provides that data to the Department. In the assessor's review and analysis of the sales, the assessor will develop land rates, depreciation tables, and sales analysis reports. After completing the analysis, the assessor applies the factors uniformly throughout the neighborhood to value all comparable properties consistently. Rental rates, vacancy and collection loss, expense ratios, and capitalization rates are analyzed and uniformly applied for comparable income-producing properties.

The Department's work is reviewed by legislative auditors and often scrutinized by individual property owners. SDAT is continually striving for higher quality in assessment uniformity and consistency. Quality control begins with the individual assessor and the assessor's immediate supervisor. As work is completed, each assessor's supervisor reviews the analysis, makes recommendations, and approves the work. When the assessor completes the revaluation, the supervisor makes a random check using procedural and data editing to ensure valuation quality.

Measurement of quality is the assessed value/sale price ratio, which measures how closely the Department's values compare to the actual sales prices. Although the average assessed value/sale price ratio indicates an average level of value, the marketplace is not perfect and there will always be properties that sell for more or less than can be anticipated. This may be due to factors such as buyers willing to pay extra for a unique property or declining values in a buyer's market.

In mass appraisal and assessment ratio studies, SDAT is not only concerned with average assessed value/sale price levels (ratios) but also with the degree of spread (variation) from the typical ratio.
The measurement of variation is the Coefficient of Dispersion (COD). The lower the COD, the more consistent the assessment level.

In the balance of this report, Section II will give a more detailed explanation of the statistical terms as applied to assessment administration and quality control. Section III explains the International Association of Assessing Officers' Standard of Performance for ratio studies. Section IV gives an overview of statewide appraisal quality for the most recent valuation of triennial Group 1, performed for January 1, 2019.

SECTION II – RATIO STATISTICS

The purpose of this ratio study is to test the quality of the assessment product, which is examined from both an assessment level and assessment uniformity standpoint. The assessment level examines the degree to which the assessments are performed based upon the statutory requirement of full market value. Assessment uniformity measures the degree to which different properties are assessed at equal percentages of their market values. From our most recent valuation, the Department performs many ratio studies examining neighborhoods, types of structures, age of structures, etc.

Several measures of central tendency are used as performance gauges and are affected differently by outliers. A ratio of assessed value to sale price is calculated for each property, with the average ratio being the total of all ratios divided by the number of sales. The average (mean) ratio has a natural upward bias, indicating a higher level of assessment than has occurred. The median is the midpoint of any data listed from lowest to highest, and the median ratio is the point where half the ratios fall above and half the ratios fall below. The median ratio counts each ratio equally. It is less biased by extreme ratios (outliers) or by individual property values. The weighted ratio is the total of all assessed values divided by the sum of all sale prices. Since the weighted ratio counts each dollar equally, it is swayed by higher-priced properties.

In addition to the general level of assessments, the Department is also concerned with the relative spread or variation that individual ratios fall from the typical. This variability is measured in two ways: coefficient of dispersion and coefficient of variation. These statistics measure horizontal inequities, or the dispersion of ratios regardless of the value of the individual properties. The coefficient of dispersion is calculated by dividing the average absolute deviation by the median ratio. The average absolute deviation is calculated by subtracting the median ratio from each ratio, adding all the results while ignoring positive and negative signs, and dividing that result by the number of ratios. Acceptable coefficients of dispersion depend on property type but should typically be 20% or less. Coefficient of variation is calculated by dividing the standard deviation by the mean or average ratio and multiplying by 100. The variance is calculated by subtracting

the mean from each ratio, squaring the differences, summing the squared differences, dividing by the total number of ratios less one. The standard deviation is calculated by taking the square root of the variance. The coefficient of dispersion is the preferable measure of variance unless a sample is normally distributed. In a normal distribution situation, coefficient of variation is the preferred measure of variance.

Another statistical measure used to gauge assessment uniformity is the Price Related Differential (PRD). The PRD tests to see if higher or lower-valued properties are assessed at the same level, and is calculated by dividing the average ratio by the weighted ratio. This statistic measures vertical inequities. When low-value properties are valued at a higher percentage of their market value, the property taxes levied against these assessments would be considered regressive. Conversely, if high-value properties are valued at a higher rate of their market value, property taxes levied against these assessments would be regarded as progressive. Typically, PRDs have an upward bias because higher-priced properties are unique. PRDs should range between 0.98 and 1.03, except for very small samples. For example, a PRD of 1.03 indicates undervaluation of high priced properties, while a PRD of .98 shows an under valuation of low priced properties.

Other descriptive statistical methods that may be used to analyze the assessment product are histograms, frequency distributions, and scatter diagrams. For further information on statistics relating to assessments, please refer to the International Association of Assessing Officers' publication "Improving Real Property Assessment."

Table I is the Fiscal Year 2019 Real Property Base/Ratio by Subdivision with assessment ratios expressed relative to full value. Table II is a history of weighted assessment ratios converted to full value (100% levels) that allows for comparison between years by adjusting for statutory changes in the assessment level. Table III displays examples of the statistical calculations used in this report.

Tables IV and V show the residential and commercial 2019 Ratio Study data by jurisdiction at assessed full market value level for the area most recently assessed. Following the ratio study is Table VI of the report detailing issues of assessment and appraisal quality that are summarized in Section IV.

SECTION III – RATIO STUDY STANDARDS VALUES TO SALE PRICES

The International Association of Assessing Officers (IAAO) is a professional organization that provides educational programs, assessment administration standards, and research on appraisal and tax policy issues. IAAO has developed numerous standards and texts on appraisal and assessment administration. Additionally, the organization is a founding member of the national Appraisal Foundation, which developed the Uniform Standards of Professional Appraisal Practice (USPAP).

IAAO's Standard on Ratio Studies was first published in September 1980 and was revised in April 2013. The Standard is an advisory and guides those performing ratio studies in the mass appraisal field regarding the design, statistics, performance measures, and other issues related to such studies. The Maryland State Department of Assessments and Taxation uses the fundamental ratio statistical measures of the Standard and has adopted IAAO's Assessment Ratio Performance Standard as the criteria to judge the performance of Maryland revaluations.

The IAAO Ratio Performance Standards are:

Ratio Study Uniformity Standards Indicating Acceptable General Quality*

General Property Class	Jurisdiction Size /Profile /Market Activity	Max COD
Residential improved (single family dwellings, condominiums, manuf. housing, 2-4 family units)	Very large jurisdictions / densely populated / newer properties / active markets	5.0 to 10.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	5.0 to 15.0
	Rural or small jurisdictions / older properties / depressed market areas	5.0 to 20.0
Income-producing properties (commercial, industrial, apartments,)	Very large jurisdictions / densely populated / newer properties / active markets	5.0 to 15.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	5.0 to 20.0
	Rural or small jurisdictions / older properties / depressed market areas	5.0 to 25.0
Residential vacant land	Very large jurisdictions / rapid development / active markets	5.0 to 15.0
	Large to mid-sized jurisdictions / slower development / less active markets	5.0 to 20.0
	Rural or small jurisdictions/ little development / depressed markets	5.0 to 25.0
Other (non-agricultural) vacant land	Very large jurisdictions / rapid development / active markets	5.0 to 20.0
	Large to mid-sized jurisdictions / slower development / less active markets	5.0 to 25.0
	Rural or small jurisdictions/ little development / depressed markets	5.0 to 30.0

*These types of property are provided for general guidance only and may not represent jurisdictional requirements. *The COD performance recommendations are based upon representative and adequate sample sizes, with outliers trimmed and a 95% level of confidence.*

**Appraisal level recommendation for each type of property shown should be between 0.90 and 1.10.*

**PRD's for each type of property should be between 0.98 and 1.03 to demonstrate vertical equity. PRD standards are not absolute and may be less meaningful when samples are small or when wide variation in prices exists. In such cases, statistical tests of vertical equity hypotheses should be substituted. *CODs lower than 5.0 may indicate sales chasing or non-representative samples.*

Source: Standard on Ratio Studies; International Association of Assessing Officers; Kansas City, MO; April 2013; p. 34.

Ratio studies may be performed for various reasons, including appraisal accuracy and assessment equity studies, to judge the need for management of a reappraisal, to identify problems with appraisal procedures, to assist in market analysis, and to adjust appraised values. Many ratio study design issues must be considered depending on the purpose of the ratio study.

This study considers unadjusted sales price data six months before and six months after the date of finality (date of valuation, January 1st) for which assessments have become active so that an unbiased estimate of assessment performance can be obtained. Sales that are arms-length transactions between willing and informed buyers and sellers are used in this study. Maryland's ratio performance conforms to the IAAO Standard.

While several measures of central tendency are calculated (average, median, and weighted ratios), the median is less affected by extreme ratios. The IAAO observes in its Standard that the median is generally the preferred measure of central tendency for monitoring appraisal performance. For this reason, median ratios are used in this study to measure compliance with IAAO standards.

As a proxy for time adjustments, this report uses sales from six months before the date of finality to six months after the date of finality. Under normal circumstances, with steadily changing property values, these sales will balance. In unusual cases, when property values are rapidly changing, this will affect the ratio statistics.

On average, the residential values in this group increased by 8.2%, and commercial values increased 12.5%, with an overall average increase of 9.1% statewide.

Property value changes varied by region in the state since the last triennial revaluation in January 2016.

Statewide, the Department met the IAAO standard for coefficient of dispersion indicating an overall uniformity of assessments.

Commercial properties are generally less similar than residential properties. Many commercial properties are income-producing and are valued using the income approach. Most commercial uses are cyclical. Various segments of the commercial real estate market may be ascending in value as a class, while others may be declining in market popularity. Commercial and industrial properties are very unique which is why measures of central tendency tend to vary more widely than with residential properties.

The number of commercial properties is small compared to the number of residential properties. In several jurisdictions, the number of commercial properties sold is small enough that the statistical measures are prone to bias. Allegany, Caroline, Dorchester, Garrett, Kent, St. Mary's, and Somerset Counties all had fewer than ten arms-length commercial transfers for Group 1. In those jurisdictions, individual statistical measures would be unreliable due to sample size.

The number of commercial sales decreased from 656 statewide in the 2018 Ratio Report to 433 statewide in the 2019 Ratio Report.

SECTION IV – STATEWIDE COMPARISON OF DEPARTMENT'S VALUES TO SALE PRICE

Quality is the degree of excellence of a product or service as determined by the extent to which they measure up to specific standards. In this case, a measure of quality is the ratio study measuring whether the assessor appraised properties uniformly at market value. The ratio study conducted in this report is based upon sales data occurring after the time period of sales used by the assessor in the group of properties being reassessed.

This ratio study is a cross-check by Department management to ensure the quality of the mass appraisal work product. The ratio statistics for each county in Table IV was conducted on 23,606 improved residential property sales from July 1, 2018, to June 30, 2019, and compares the Department's valuations to sale prices.

The frequency distribution in Table IV and statistics present a statewide ratio analysis of improved residential property sales from July 1, 2018, to June 30, 2019, comparing the Department's values to sales prices. The measures of central tendency indicate that properties are valued at approximately 94% of the sale price and, on average, all other properties have similar ratios as indicated by the 8.65 Coefficient of Dispersion. Additionally, higher valued properties are assessed at a similar level to lower-valued properties, as indicated by a Price Related Differential statistic of 1.00. A price-related differential of 1.00 indicates vertical uniformity across all strata of property values.

The analysis from Table IV and the following descriptive statistics indicates that values determined by assessors for the most recent triennial Group 1 valuation attained a uniform and appropriate level of value. At the time of valuation, the assessments were close to the sale price.

In summary, the data shows that properties throughout the State are assessed uniformly as required by law.

Table I
Fiscal Year 2019 Real Property Tax Base/Ratio by Jurisdiction

This table shows the taxable assessable base and ratios of real property used for different purposes. Ratios shown are median ratios of arms-length sales of properties in Group 1 that were sold between July 1, 2018 and June 30, 2019, compared with the Department's January 1, 2019 assessed value. In jurisdictions with fewer than 10 commercial sales, the statewide ratio is used (see Table V). A ratio of 100% is used for property not assessed on market value.

	Number of Properties	Residential		Commercial		Agricultural		Use Value		Total Base	Weighted Ratio
		Base	Ratio	Base	Ratio	Base	Ratio	Base	Ratio		
Allegany	38,381	2,528,122,896	95.1%	983,411,141	96.0%	131,619,989	95.1%	4,309,400	100.0%	3,647,463,426	95.4%
Anne Arundel	214,370	69,216,545,173	95.8%	21,336,377,969	100.9%	557,322,191	95.8%	23,130,734	100.0%	91,133,376,067	96.9%
Baltimore City	221,000	25,646,167,315	94.5%	19,910,869,418	97.3%	0	94.5%	0	100.0%	45,557,036,733	95.7%
Baltimore	284,388	61,805,993,280	91.3%	24,978,591,308	94.8%	1,093,488,860	91.3%	67,573,900	100.0%	87,945,647,348	92.3%
Calvert	42,048	10,539,631,156	96.0%	1,361,803,590	96.0%	283,222,264	96.0%	1,600	100.0%	12,184,658,610	96.0%
Caroline	15,976	1,829,513,947	94.2%	408,078,102	96.0%	386,926,170	94.2%	499,833	100.0%	2,625,018,052	94.5%
Carroll	66,275	16,519,019,065	96.2%	2,636,162,950	89.8%	940,063,402	96.2%	4,246,200	100.0%	20,099,491,617	95.3%
Cecil	46,101	7,351,648,376	95.3%	2,275,859,595	98.2%	551,574,289	95.3%	2,132,800	100.0%	10,181,215,060	95.9%
Charles	66,119	14,509,392,725	92.9%	3,387,114,025	96.0%	454,608,763	92.9%	18,786,500	100.0%	18,369,902,013	93.5%
Dorchester	22,112	2,072,985,596	94.4%	525,149,231	96.0%	276,351,145	94.4%	3,219,967	100.0%	2,877,705,939	94.7%
Frederick	99,593	24,225,836,633	94.6%	6,366,822,557	97.5%	1,372,125,345	94.6%	14,001,999	100.0%	31,978,786,534	95.2%
Garrett	28,789	3,696,097,968	95.2%	477,260,496	96.0%	239,921,181	95.2%	0	100.0%	4,413,279,645	95.3%
Harford	97,880	21,939,259,507	92.3%	5,855,085,796	98.5%	774,538,256	92.3%	14,964,067	100.0%	28,583,847,626	93.6%
Howard	105,483	40,453,733,507	95.3%	12,397,250,972	95.2%	428,696,133	95.3%	34,207,265	100.0%	53,313,887,877	95.3%
Kent	12,966	2,153,242,819	95.6%	414,795,733	96.0%	399,605,961	95.6%	2,838,300	100.0%	2,970,482,813	95.7%
Montgomery	332,896	148,400,697,835	95.7%	46,217,229,938	97.9%	620,800,640	95.7%	106,772,934	100.0%	195,345,501,347	96.2%
Prince George's	285,026	68,591,389,490	95.3%	28,728,368,112	92.4%	313,024,896	95.3%	21,676,600	100.0%	97,654,459,098	94.4%
Queen Anne's	25,419	6,537,524,004	96.6%	1,055,072,365	97.3%	797,039,275	96.6%	8,129,800	100.0%	8,397,765,444	96.7%
St. Mary's	48,436	10,131,817,492	92.4%	1,811,217,943	96.0%	644,434,574	92.4%	6,888,567	100.0%	12,594,358,576	92.9%
Somerset	15,921	953,125,482	91.8%	273,368,437	96.0%	149,315,059	91.8%	859,800	100.0%	1,376,668,778	92.6%
Talbot	20,810	6,491,013,268	94.8%	1,094,068,494	94.2%	900,731,997	94.8%	7,297,100	100.0%	8,493,110,859	94.7%
Washington	56,493	8,300,299,168	92.8%	3,984,619,028	92.3%	587,708,065	92.8%	8,368,933	100.0%	12,880,995,194	92.7%
Wicomico	45,051	4,361,038,768	92.8%	1,642,878,307	92.5%	299,636,929	92.8%	3,224,800	100.0%	6,306,778,804	92.7%
Worcester	64,324	12,878,442,308	94.0%	2,702,769,121	98.8%	294,522,817	94.0%	17,630,500	100.0%	15,893,364,746	94.8%
Statewide	**2,255,857**	**571,132,537,778**	**94.6%**	**190,824,224,628**	**96.0%**	**12,497,278,201**	**94.6%**	**370,761,599**	**100.0%**	**774,824,802,206**	**94.9%**

TABLE II
Assessment Levels

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Allegany	99.9	95.2	95.0	93.0	89.6	90.1	90.0	91.8	94.5%	94.2%	95.2%	94.0%	95.6%	96.4%	95.4%
Anne Arundel	84.5	85.6	96.0	95.2	95.1	90.3	89.7	90.2	91.2%	90.7%	93.8%	95.2%	94.3%	96.3%	96.9%
Baltimore City	74.3	85.2	92.0	94.7	91.6	91.4	91.3	95.8	94.8%	93.1%	91.0%	92.2%	91.7%	94.7%	95.7%
Baltimore	88.5	83.5	94.0	94.6	94.8	91.5	93.6	93.0	87.6%	92.3%	96.8%	94.8%	94.6%	92.3%	92.3%
Calvert	82.3	85.6	95.0	95.4	96.0	94.0	91.7	90.6	90.5%	91.1%	91.3%	91.5%	93.3%	94.2%	96.0%
Caroline	81.7	88.9	95.0	95.3	92.8	95.7	97.2	98.1	94.4%	95.6%	95.4%	94.8%	95.2%	92.4%	94.5%
Carroll	85.9	89.7	96.0	97.1	94.0	89.5	93.2	90.5	91.5%	92.9%	91.3%	92.6%	93.7%	94.9%	94.8%
Cecil	86.0	91.0	94.0	94.9	94.9	91.6	87.2	91.2	94.8%	92.4%	93.2%	92.6%	94.2%	96.0%	95.9%
Charles	87.1	88.0	94.0	96.4	93.4	92.1	92.2	92.2	91.9%	92.3%	94.5%	93.1%	94.1%	94.3%	93.5%
Dorchester	67.0	79.3	91.0	96.9	90.2	95.3	91.2	90.8	98.1%	91.8%	93.1%	93.7%	95.5%	96.1%	94.7%
Frederick	83.7	90.9	96.0	98.2	95.6	89.2	93.0	89.2	90.4%	92.1%	90.9%	92.3%	93.2%	94.1%	95.2%
Garrett	88.6	91.8	95.0	92.7	91.0	89.9	98.1	90.6	90.2%	94.9%	94.7%	93.3%	96.1%	94.9%	95.3%
Harford	85.5	85.0	93.0	96.1	92.8	91.6	91.2	94.2	92.8%	92.0%	91.7%	91.2%	94.9%	93.1%	93.6%
Howard	89.8	92.5	97.0	96.5	93.1	88.2	89.6	91.3	89.8%	92.6%	91.3%	94.2%	94.4%	94.0%	95.3%
Kent	86.0	83.9	94.0	95.2	91.0	90.8	94.8	98.5	96.9%	96.4%	91.4%	91.7%	97.1%	96.1%	95.7%
Montgomery	93.2	95.5	98.0	96.4	95.4	88.4	92.9	92.9	91.6%	92.4%	96.6%	93.6%	93.1%	93.9%	96.2%
Prince George's	83.0	85.1	91.0	98.2	96.4	95.3	92.8	92.9	90.7%	91.8%	93.7%	94.3%	92.5%	93.2%	94.4%
Queen Anne's	88.7	87.9	96.0	96.4	91.1	90.6	93.6	92.2	95.2%	93.8%	96.4%	98.4%	95.8%	96.7%	96.7%
St. Mary's	80.4	88.2	95.0	97.9	96.6	93.3	94.5	94.5	95.3%	94.1%	92.7%	93.2%	94.1%	93.4%	92.9%
Somerset	85.5	86.2	86.0	92.5	89.3	85.0	91.5	87.9	96.1%	93.7%	93.3%	94.2%	94.9%	96.7%	92.6%
Talbot	83.3	88.7	96.0	98.0	93.9	93.8	97.7	96.8	93.8%	94.5%	92.8%	96.6%	96.6%	98.0%	94.7%
Washington	87.4	90.0	97.0	97.2	91.8	92.9	95.4	90.7	90.8%	93.7%	93.1%	93.3%	92.3%	92.7%	92.7%
Wicomico	84.0	82.9	89.0	90.3	88.9	89.1	90.6	89.4	91.0%	90.4%	87.8%	91.5%	93.3%	92.5%	92.7%
Worcester	83.2	89.2	97.0	93.9	93.9	92.2	89.5	91.4	89.7%	91.5%	90.5%	92.5%	94.6%	92.4%	94.8%
Statewide	**86.0**	**89.7**	**96.0**	**95.7**	**94.0**	**91.0**	**92.0**	**91.7**	**91.3%**	**92.3%**	**93.9%**	**93.2%**	**93.9%**	**94.3%**	**94.9%**

TABLE III
Illustrated Ratio Study Statistics

(1.) Property Number	(2.) Sale Price	(3.) Assessed Value	(4.) Ratio A/S %	(5.) Absolute Deviation from Median
1	28,000	22,400	80%	20%
2	22,000	19,250	88%	12%
3	63,500	55,575	88%	12%
4	55,900	51,700	92%	7%
5	20,000	19,000	95%	5%
6	21,000	20,475	98%	2%
7	80,000	80,000	100%	0%
8	40,000	40,000	100%	0%
9	33,000	33,300	101%	1%
10	45,000	46,125	103%	3%
11	24,000	25,200	105%	5%
12	39,000	41,925	108%	8%
13	37,000	41,625	113%	13%
14	40,300	45,800	114%	14%
15	51,000	59,925	118%	18%
TOTAL	599,700	602,300	1500%	120%

Average Ratio	=	Total of Ratios (4.)	÷	Number of Sales (1.)		
		1500%	÷	15	=	100%
Weighted Ratio	=	Total of Assessed Values (3.)	÷	Total of Sale Prices (2.)		
		602,300	÷	599,700	=	100%
Average Deviation	=	Total Deviations (5.)	÷	Number of Sales (1.)		
		120%	÷	15	=	8%
Median Ratio	=	Middle Value of Data Array 100% (i.e. property #8)			=	100%
Coefficient of Dispersion	=	Average Deviation (5.)	÷	Median Ratio (4.)		
		8%	÷	100%	=	7.98
Price Related Differential	=	Average Ratio (4.)	÷	Weighted Ratio		
		100%	÷	100%	=	1.00

Table IV
2019 Residential Ratio Study

This table shows arms-length sales of improved residential and condominium properties in Group 1 from July 1, 2018 through June 30, 2019. Ratios compare the Department's January 1, 2019 value to the actual sale price.

	Number of Sales	Average Ratio	Median Ratio	Weighted Ratio	Average Deviation	Coefficient of Dispersion	Price Related Differential	Standard Deviation	Coefficient of Variation	Median Sale Price
Allegany	120	94.9%	95.1%	94.8%	3.9%	4.10	1.00	0.05	5.52	$139,450
Anne Arundel	2,668	97.2%	95.8%	95.6%	9.1%	9.52	1.02	0.13	13.85	$370,000
Baltimore City	1,943	96.1%	94.5%	91.8%	14.0%	14.85	1.05	0.20	20.84	$166,000
Baltimore	3,010	92.3%	91.3%	90.8%	10.7%	11.68	1.02	0.16	17.14	$250,000
Calvert	303	95.8%	96.0%	96.0%	4.2%	4.43	1.00	0.06	6.33	$440,000
Caroline	140	94.9%	94.2%	93.6%	9.1%	9.61	1.01	0.14	14.57	$214,000
Carroll	860	93.7%	96.2%	93.6%	6.0%	6.21	1.00	0.08	8.53	$379,950
Cecil	394	93.4%	95.3%	93.5%	6.1%	6.44	1.00	0.09	9.37	$214,950
Charles	1,038	91.9%	92.9%	92.1%	5.4%	5.81	1.00	0.07	7.76	$300,000
Dorchester	147	94.2%	94.4%	92.5%	10.9%	11.56	1.02	0.15	16.32	$185,000
Frederick	2,143	94.2%	94.6%	93.9%	6.0%	6.30	1.00	0.09	9.43	$405,000
Garrett	45	95.0%	95.2%	94.6%	5.5%	5.82	1.00	0.09	9.05	$136,125
Harford	850	90.9%	92.3%	90.9%	7.3%	7.92	1.00	0.10	10.50	$306,730
Howard	1,374	94.9%	95.3%	94.8%	5.9%	6.23	1.00	0.08	8.27	$495,000
Kent	56	89.9%	95.6%	87.8%	9.5%	9.93	1.02	0.14	15.24	$234,500
Montgomery	3,901	94.6%	95.7%	94.4%	7.1%	7.37	1.00	0.10	10.54	$530,000
Prince George's	2,220	94.0%	95.3%	94.2%	7.5%	7.89	1.00	0.11	11.46	$345,000
Queen Anne's	277	95.9%	96.6%	96.0%	5.5%	5.74	1.00	0.08	8.51	$369,000
St. Mary's	266	91.0%	92.4%	91.0%	6.0%	6.48	1.00	0.08	8.41	$295,000
Somerset	21	88.5%	91.8%	87.1%	12.0%	13.02	1.02	0.16	18.30	$165,000
Talbot	333	94.7%	94.8%	94.7%	8.6%	9.02	1.00	0.13	13.20	$294,000
Washington	774	90.6%	92.8%	91.0%	7.2%	7.81	1.00	0.10	10.93	$259,900
Wicomico	230	92.1%	92.8%	91.9%	7.0%	7.49	1.00	0.10	10.60	$163,500
Worcester	493	93.2%	94.0%	92.9%	6.4%	6.83	1.00	0.09	9.90	$259,900
Statewide	**23,606**	**94.1%**	**94.6%**	**93.7%**	**8.2%**	**8.65**	**1.00**	**0.12**	**12.98**	**$330,000**

TABLE IV-B
Statewide Residential Ratio Study Frequency Statistics

Average Ratio

Total of Ratios	=	22,221.03	=	94.1%
Number of Sales		23,606		

Weighted Ratio

Total Assessed Values	=	8,547,063,100	=	93.7%
Total Sales Prices		9,118,350,722		

Average Deviation

Total Deviations	=	1,931	=	8.2%
Number of Sales		23,606		

Coefficient of Dispersion

Average Absolute Deviation	=	8.2%	=	8.65
Median Ratio		94.6%		

Price Related Differential

Average Ratio	=	94.1%	=	1.00
Weighted Ratio		93.7%		

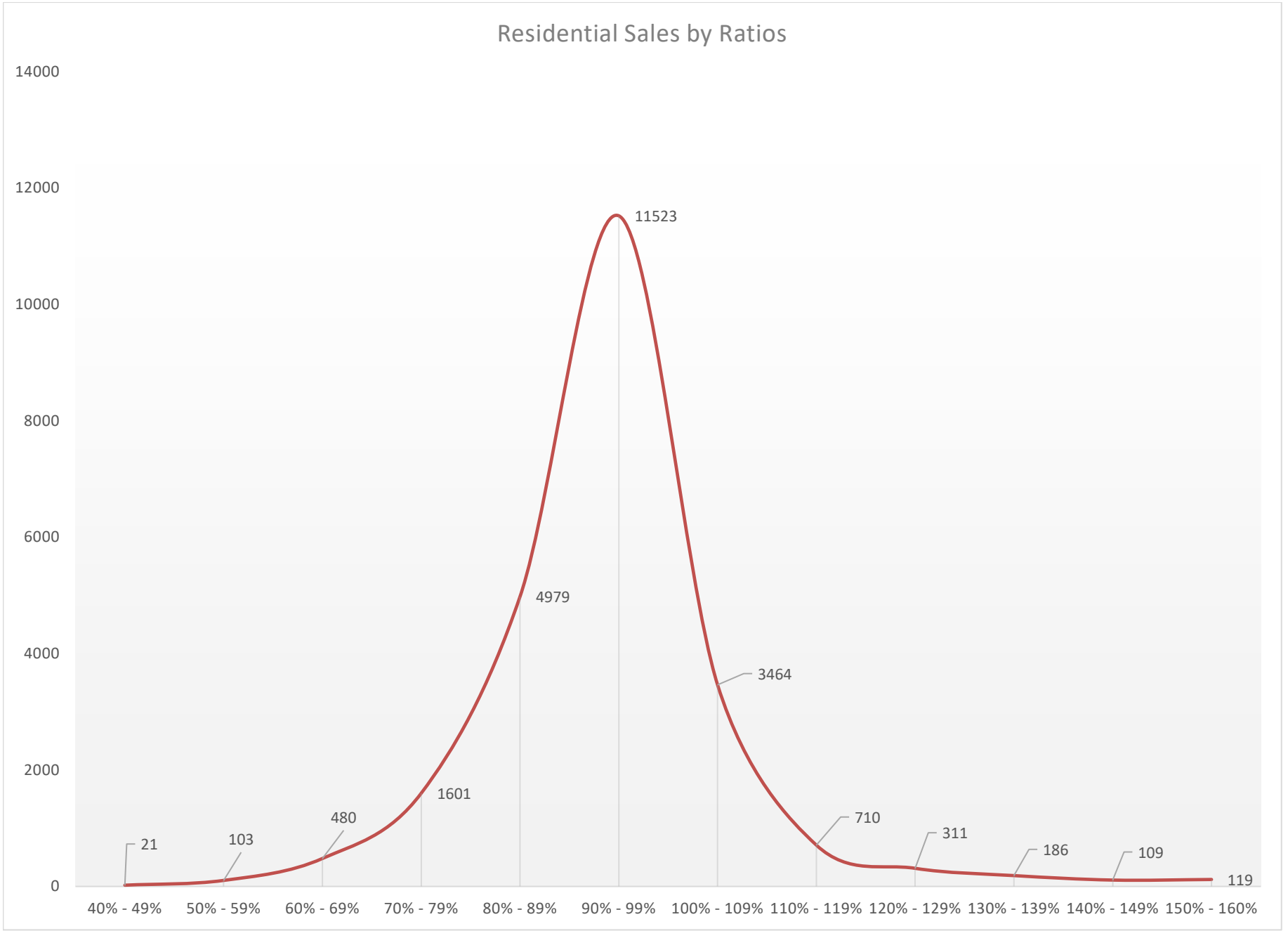
Table V

Commercial Ratio Study 2019

The table below shows statistics on arms-length sales between July 1, 2018 and June 30, 2019 of commercial property in assessment Group 1. Ratios compare the Department's January 1, 2019, value to the actual sale price.

Ratio statistics are shown for all jurisdictions, even where the number of sales is so small that there is not a sufficient sample to provide accurate statistics. In cases where there are fewer than 10 sales, the ratio statistics are not used to calculate the base (Table I).

	Number of Sales	Total Assessed Values	Total Sales Prices	Weighted Ratio	Average Ratio	Median Ratio
Allegany	1	360,000	390,000	92.3%	92.3%	92.3%
Anne Arundel	20	9,222,100	9,190,650	100.3%	96.7%	100.9%
Baltimore City	65	336,391,200	361,320,963	93.1%	94.3%	97.3%
Baltimore County	46	86,823,500	105,945,915	82.0%	94.0%	94.8%
Calvert	13	9,120,400	9,753,900	93.5%	91.8%	96.0%
Caroline	8	2,507,600	2,753,442	91.1%	94.2%	93.4%
Carroll	13	7,672,500	8,805,918	87.1%	90.8%	89.8%
Cecil	15	5,692,600	6,253,728	91.0%	98.0%	98.2%
Charles	30	58,240,100	70,392,658	82.7%	96.6%	96.0%
Dorchester	5	2,092,200	2,198,250	95.2%	103.1%	101.4%
Frederick	17	39,969,700	46,378,724	86.2%	91.6%	97.5%
Garrett	2	281,800	298,148	94.5%	96.0%	96.0%
Harford	15	9,254,000	10,128,043	91.4%	100.2%	98.5%
Howard	26	114,056,200	149,182,214	76.5%	91.3%	95.2%
Kent	1	110,100	90,000	122.3%	122.3%	122.3%
Montgomery	24	202,201,200	207,154,852	97.6%	98.7%	97.9%
Prince George's	46	66,484,600	84,351,052	78.8%	87.6%	92.4%
Queen Anne's	10	2,170,800	2,295,400	94.6%	95.4%	97.3%
St. Mary's	1	436,900	573,080	76.2%	76.2%	76.2%
Somerset	1	42,900	45,000	95.3%	95.3%	95.3%
Talbot	16	23,766,200	25,076,021	94.8%	95.0%	94.2%
Washington	16	19,166,400	21,000,996	91.3%	92.9%	92.3%
Wicomico	23	23,094,300	24,985,786	92.4%	94.2%	92.5%
Worcester	19	9,636,800	10,778,000	89.4%	94.5%	98.8%
Statewide	**433**	**1,028,794,100**	**1,159,342,740**	**88.7%**	**94.1%**	**96.0%**


Residential Sales by Ratios
14000
12000
10000
8000
6000
4000
2000
0
21
103
480
1601
4979
11523
3464
710
311
186
109
119
40% - 49%
50% - 59%
60% - 69%
70% - 79%
80% - 89%
90% - 99%
100% - 109%
110% - 119%
120% - 129%
130% - 139%
140% - 149%
150% - 160%

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