Maryland

DEPARTMENT OF ASSESSMENTS AND TAXATION

2024 Ratio Report

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Maryland
DEPARTMENT OF
ASSESSMENTS AND TAXATION

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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 2024 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 providing 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,

Dan Phillips,
Director

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2024 ASSESSMENT 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 767,226 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 notification 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 determine land rates, apply observed effective depreciation and develop sales analysis reports. After completing the analysis, the assessor applies the market value adjustments 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 reviews a series of reports and error checks to verify 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 3, performed for January 1, 2024.

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 "Standard on Ratio Studies".

Table I is the Fiscal Year 2024 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 2024 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: <u>Standard on Ratio Studies</u>; 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 25.6%, and commercial values increased 17.6%, with an overall average increase of 23.4% statewide.

Property value changes varied by region in the state since the last triennial revaluation for January 2021.

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. Calvert, Caroline, Cecil, Charles, Dorchester, Garrett, Harford, Kent, Somerset, Talbot, and Worcester Counties all had fewer than ten arms-length commercial transfers for Group 3. In those jurisdictions, individual statistical measures would be unreliable due to sample size.

The number of commercial sales decreased from 616 statewide in the 2023 Ratio Report to 505 statewide in the 2024 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 19,102 improved residential property sales from July 1, 2023, to June 30, 2024, 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, 2023, to June 30, 2024, comparing the Department's values to sales prices. The measures of central tendency indicate that properties are valued at approximately 92% of the sale price and, on average, all other properties have similar ratios as indicated by the 8.61 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 1.01. A price-related differential between 0.98 and 1.03 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 3 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 2024 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 3 that were sold between July 1, 2023 and June 30, 2024, compared with the Department's January 1, 2024 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	38,322	3,050,523,071	95.6%	1,129,267,246	98.0%	158,457,367	95.6%	3,171,267	100.0%	4,341,418,951	96.2%
Anne Arundel	216,159	83,953,132,222	88.3%	23,842,619,270	91.6%	655,738,260	88.3%	24,435,400	100.0%	108,475,925,152	89.0%
Baltimore City	221,251	30,449,025,205	93.6%	23,136,016,206	92.3%	80,000	93.6%	0	100.0%	53,585,121,411	93.1%
Baltimore	287,205	75,293,233,575	92.0%	28,688,195,981	94.9%	1,301,123,241	92.0%	58,665,633	100.0%	105,341,218,430	92.8%
Calvert	41,544	12,620,990,451	93.0%	1,564,536,133	93.4%	349,077,301	93.0%	3,200	100.0%	14,534,607,085	93.0%
Caroline	15,935	2,449,013,837	90.8%	443,046,198	93.4%	472,584,299	90.8%	573,667	100.0%	3,365,218,001	91.1%
Carroll	66,597	20,678,145,256	92.7%	3,208,008,580	95.1%	1,094,327,225	92.7%	4,436,267	100.0%	24,984,917,328	93.0%
Cecil	46,624	8,902,039,837	88.2%	3,415,555,677	93.4%	709,233,787	88.2%	9,800	100.0%	13,026,839,101	89.5%
Charles	68,092	19,828,571,764	95.1%	3,990,793,280	93.4%	554,852,081	95.1%	19,104,200	100.0%	24,393,321,325	94.8%
Dorchester	21,552	2,728,855,124	94.2%	624,303,996	93.4%	299,615,278	94.2%	798,667	100.0%	3,653,573,065	94.1%
Frederick	106,546	34,998,968,532	93.3%	8,284,881,318	89.3%	1,796,226,763	93.3%	15,167,334	100.0%	45,095,243,947	92.5%
Garrett	29,170	5,252,953,150	94.1%	537,251,849	93.4%	288,075,933	94.1%	0	100.0%	6,078,280,932	94.1%
Harford	99,429	26,660,540,882	93.1%	6,678,848,307	93.4%	927,561,772	93.1%	22,457,166	100.0%	34,289,408,127	93.2%
Howard	107,729	50,648,833,742	91.0%	15,094,950,791	90.2%	524,506,399	91.0%	41,641,200	100.0%	66,309,932,132	90.9%
Kent	12,921	2,465,975,331	95.8%	434,963,269	93.4%	458,374,709	95.8%	2,857,300	100.0%	3,362,170,609	95.5%
Montgomery	335,755	178,217,746,220	92.2%	53,976,478,368	98.0%	751,883,391	92.2%	116,055,101	100.0%	233,062,163,080	93.4%
Prince George's	292,490	91,675,918,432	93.6%	36,224,809,927	88.3%	407,276,319	93.6%	15,061,569	100.0%	128,323,066,247	92.0%
Queen Anne's	26,461	8,432,170,204	93.8%	1,170,394,563	88.3%	946,728,961	93.8%	10,661,200	100.0%	10,559,954,928	93.2%
St. Mary's	48,399	12,327,736,750	95.7%	2,263,792,883	97.3%	822,257,845	95.7%	4,047,133	100.0%	15,417,834,611	96.0%
Somerset	15,745	1,243,713,300	91.0%	301,955,901	93.4%	180,840,732	91.0%	909,599	100.0%	1,727,419,532	91.4%
Talbot	21,223	7,661,444,434	89.5%	1,205,937,494	93.4%	1,005,992,928	89.5%	8,408,267	100.0%	9,881,783,123	89.9%
Washington	57,407	11,026,106,895	93.6%	5,091,644,098	90.0%	766,800,755	93.6%	7,401,400	100.0%	16,891,953,148	92.5%
Wicomico	45,104	5,866,856,942	90.7%	2,108,034,838	86.4%	382,204,516	90.7%	2,484,668	100.0%	8,359,580,964	89.6%
Worcester	64,849	16,512,307,191	91.6%	3,205,007,628	93.4%	376,118,828	91.6%	8,292,067	100.0%	20,101,725,714	91.9%
Statewide	**2,286,509**	**712,944,802,347**	**92.4%**	**226,621,293,801**	**93.4%**	**15,229,938,690**	**92.4%**	**366,642,105**	**100.0%**	**955,162,676,943**	**92.7%**

TABLE II
Assessment Levels

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Allegany	90.1	90.0	91.8	94.5%	94.2%	95.2%	94.0%	95.6%	96.4%	95.4%	95.2%	96.3%	94.3%	95.4%	96.2%
Anne Arundel	90.3	89.7	90.2	91.2%	90.7%	93.8%	95.2%	94.3%	96.3%	96.9%	93.2%	91.5%	86.2%	89.6%	89.0%
Baltimore City	91.4	91.3	95.8	94.8%	93.1%	91.0%	92.2%	91.7%	94.7%	95.7%	95.0%	89.1%	90.4%	94.4%	93.1%
Baltimore	91.5	93.6	93.0	87.6%	92.3%	96.8%	94.8%	94.6%	92.3%	92.3%	93.2%	87.5%	86.4%	92.7%	92.8%
Calvert	94.0	91.7	90.6	90.5%	91.1%	91.3%	91.5%	93.3%	94.2%	96.0%	95.0%	91.2%	92.0%	92.7%	93.0%
Caroline	95.7	97.2	98.1	94.4%	95.6%	95.4%	94.8%	95.2%	92.4%	94.5%	96.1%	87.3%	88.2%	94.4%	91.1%
Carroll	89.5	93.2	90.5	91.5%	92.9%	91.3%	92.6%	93.7%	94.9%	94.8%	94.4%	95.5%	88.9%	93.7%	93.0%
Cecil	91.6	87.2	91.2	94.8%	92.4%	93.2%	92.6%	94.2%	96.0%	95.9%	95.8%	93.2%	91.3%	93.0%	89.5%
Charles	92.1	92.2	92.2	91.9%	92.3%	94.5%	93.1%	94.1%	94.3%	93.5%	94.8%	93.0%	93.6%	95.3%	94.8%
Dorchester	95.3	91.2	90.8	98.1%	91.8%	93.1%	93.7%	95.5%	96.1%	94.7%	88.9%	89.3%	92.0%	90.4%	94.1%
Frederick	89.2	93.0	89.2	90.4%	92.1%	90.9%	92.3%	93.2%	94.1%	95.2%	93.2%	87.8%	90.7%	92.8%	92.5%
Garrett	89.9	98.1	90.6	90.2%	94.9%	94.7%	93.3%	96.1%	94.9%	95.3%	94.9%	91.4%	93.8%	94.6%	94.1%
Harford	91.6	91.2	94.2	92.8%	92.0%	91.7%	91.2%	94.9%	93.1%	93.6%	93.1%	86.2%	92.0%	92.9%	93.2%
Howard	88.2	89.6	91.3	89.8%	92.6%	91.3%	94.2%	94.4%	94.0%	95.3%	91.9%	88.6%	90.3%	85.2%	90.9%
Kent	90.8	94.8	98.5	96.9%	96.4%	91.4%	91.7%	97.1%	96.1%	95.7%	94.8%	87.2%	96.1%	95.7%	95.5%
Montgomery	88.4	92.9	92.9	91.6%	92.4%	96.6%	93.6%	93.1%	93.9%	96.2%	95.8%	93.6%	93.8%	95.3%	93.4%
Prince George's	95.3	92.8	92.9	90.7%	91.8%	93.7%	94.3%	92.5%	93.2%	94.4%	94.6%	93.2%	91.8%	92.0%	92.0%
Queen Anne's	90.6	93.6	92.2	95.2%	93.8%	96.4%	98.4%	95.8%	96.7%	96.7%	94.2%	94.4%	95.3%	93.2%	93.2%
St. Mary's	93.3	94.5	94.5	95.3%	94.1%	92.7%	93.2%	94.1%	93.4%	92.9%	94.8%	89.4%	92.9%	94.7%	96.0%
Somerset	85.0	91.5	87.9	96.1%	93.7%	93.3%	94.2%	94.9%	96.7%	92.6%	94.9%	86.6%	81.0%	94.5%	91.4%
Talbot	93.8	97.7	96.8	93.8%	94.5%	92.8%	96.6%	96.6%	98.0%	94.7%	95.2%	93.6%	89.9%	93.4%	89.9%
Washington	92.9	95.4	90.7	90.8%	93.7%	93.1%	93.3%	92.3%	92.7%	92.7%	92.4%	87.9%	88.4%	87.0%	92.5%
Wicomico	89.1	90.6	89.4	91.0%	90.4%	87.8%	91.5%	93.3%	92.5%	92.7%	91.5%	88.4%	88.6%	89.0%	89.6%
Worcester	92.2	89.5	91.4	89.7%	91.5%	90.5%	92.5%	94.6%	92.4%	94.8%	93.9%	85.7%	83.7%	91.6%	91.9%
Statewide	**91.0**	**92.0**	**91.7**	**91.3%**	**92.3%**	**93.9%**	**93.2%**	**93.9%**	**94.3%**	**94.9%**	**94.4%**	**91.5%**	**90.7%**	**92.9%**	**92.7%**

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

Table IV
2024 Residential Ratio Study

This table shows arms-length sales of improved residential and condominium properties in Group 3 from July 1, 2023 through June 30, 2024. Ratios compare the Department's January 1, 2024 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	207	96.5%	95.6%	96.3%	5.7%	5.93	1.00	0.08	7.94	$129,900
Anne Arundel	1,873	88.3%	88.3%	85.2%	9.2%	10.44	1.04	0.13	14.29	$568,000
Baltimore City	2,653	94.6%	93.6%	93.3%	13.7%	14.67	1.01	0.19	20.27	$179,000
Baltimore	2,464	92.6%	92.0%	92.6%	5.9%	6.44	1.00	0.07	7.92	$310,000
Calvert	270	92.5%	93.0%	92.8%	7.3%	7.80	1.00	0.09	9.91	$369,950
Caroline	73	89.1%	90.8%	89.2%	10.0%	11.07	1.00	0.13	14.52	$235,000
Carroll	488	90.3%	92.7%	90.7%	6.4%	6.90	1.00	0.09	9.58	$390,000
Cecil	415	87.5%	88.2%	87.4%	7.5%	8.48	1.00	0.10	11.59	$360,000
Charles	785	94.5%	95.1%	94.6%	4.8%	5.00	1.00	0.07	7.31	$485,000
Dorchester	16	92.3%	94.2%	88.1%	8.2%	8.69	1.05	0.10	11.00	$126,250
Frederick	455	92.2%	93.3%	91.9%	5.9%	6.28	1.00	0.08	8.78	$455,000
Garrett	121	92.5%	94.1%	91.5%	5.9%	6.28	1.01	0.08	8.34	$505,000
Harford	668	93.1%	93.1%	93.4%	2.8%	3.05	1.00	0.04	3.79	$350,000
Howard	1,249	91.2%	91.0%	90.9%	6.5%	7.17	1.00	0.09	9.83	$490,000
Kent	30	89.4%	95.8%	89.6%	8.8%	9.17	1.00	0.13	14.73	$344,000
Montgomery	3,367	91.4%	92.2%	91.1%	7.5%	8.15	1.00	0.10	11.35	$517,225
Prince George's	1,947	93.0%	93.6%	93.0%	6.4%	6.89	1.00	0.09	9.24	$385,000
Queen Anne's	422	92.8%	93.8%	91.9%	6.9%	7.37	1.01	0.10	10.92	$575,000
St. Mary's	567	93.2%	95.7%	93.4%	6.1%	6.38	1.00	0.08	8.99	$377,990
Somerset	71	90.3%	91.0%	89.3%	9.0%	9.86	1.01	0.12	13.21	$227,400
Talbot	51	88.3%	89.5%	84.9%	8.5%	9.47	1.04	0.12	13.22	$460,000
Washington	213	91.3%	93.6%	91.5%	7.2%	7.71	1.00	0.10	11.04	$350,000
Wicomico	142	87.5%	90.7%	88.6%	12.4%	13.70	0.99	0.16	18.84	$299,950
Worcester	555	89.3%	91.6%	88.5%	7.6%	8.34	1.01	0.10	11.30	$425,000
Statewide	**19,102**	**92.0%**	**92.4%**	**90.8%**	**8.0%**	**8.61**	**1.01**	**0.11**	**12.49**	**$400,000**

TABLE IV-B
Statewide Residential Ratio Study Frequency Statistics

Average Ratio

$$\frac{\text{Total of Ratios}}{\text{Number of Sales}} \quad = \quad \frac{17{,}567.94}{19{,}102} \quad = \quad 92.0\%$$

Weighted Ratio

$$\frac{\text{Total Assessed Values}}{\text{Total Sales Prices}} \quad = \quad \frac{7{,}714{,}600{,}500}{8{,}493{,}137{,}028} \quad = \quad 90.8\%$$

Average Deviation

$$\frac{\text{Total Deviations}}{\text{Number of Sales}} \quad = \quad \frac{1{,}520}{19{,}102} \quad = \quad 8.0\%$$

Coefficient of Dispersion

$$\frac{\text{Average Absolute Deviation}}{\text{Median Ratio}} \quad = \quad \frac{8.0\%}{92.4\%} \quad = \quad 8.61$$

Price Related Differential

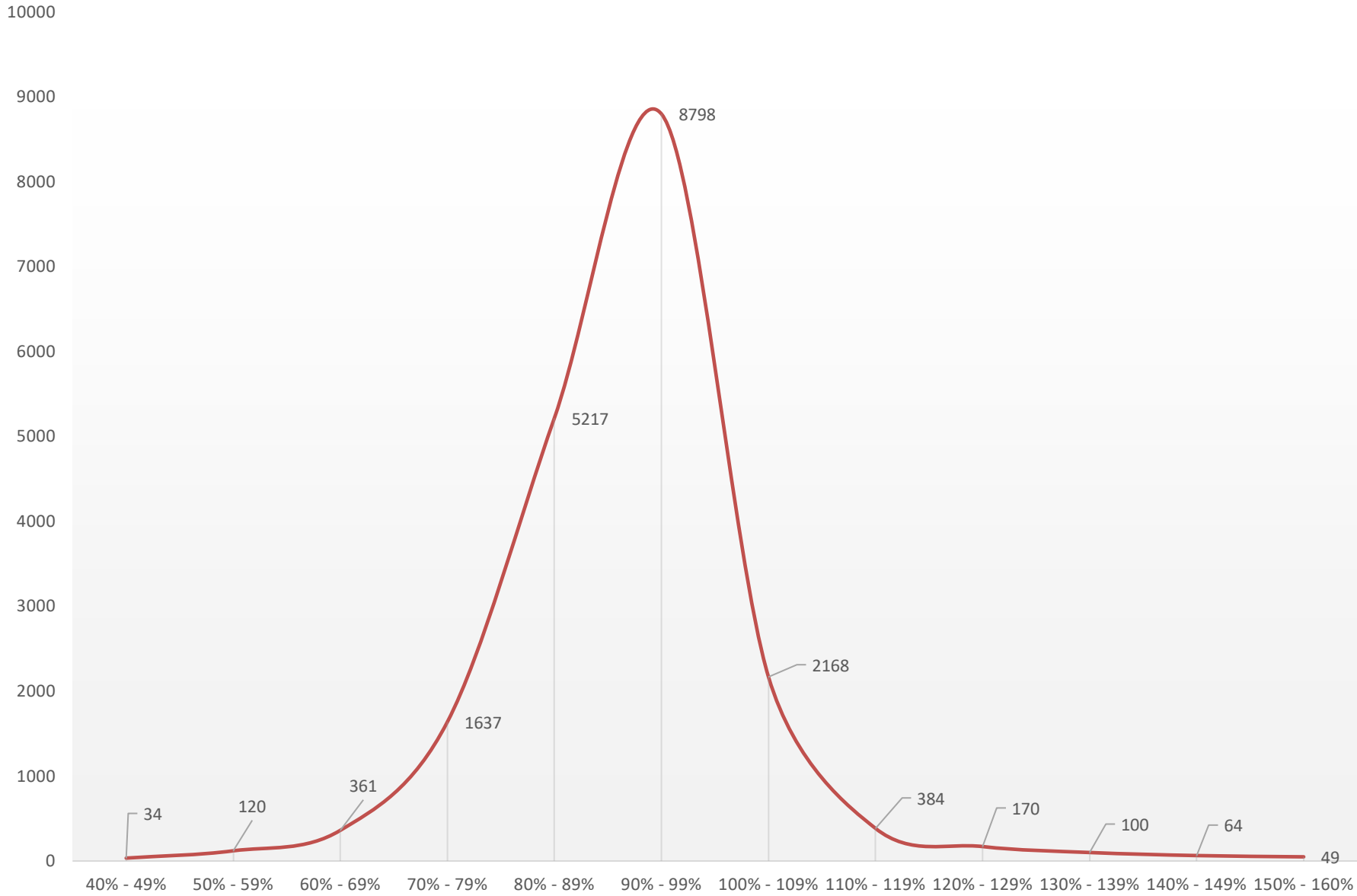$$\frac{\text{Average Ratio}}{\text{Weighted Ratio}} \quad = \quad \frac{92.0\%}{90.8\%} \quad = \quad 1.01$$

Table V
2024 Commercial Ratio Study

The table below shows statistics on arms-length sales between July 1, 2023 and June 30, 2024 of commercial property in assessment Group 3. Ratios compare the Department's January 1, 2024, 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	16	4,175,300	4,109,750	101.6%	100.3%	98.0%
Anne Arundel	67	113,190,500	128,133,400	88.3%	87.0%	91.6%
Baltimore City	82	155,169,200	172,814,130	89.8%	83.2%	92.3%
Baltimore County	19	17,183,500	18,254,220	94.1%	93.8%	94.9%
Calvert	2	639,600	1,015,000	63.0%	64.8%	64.8%
Caroline	6	1,312,900	1,633,000	80.4%	74.8%	74.0%
Carroll	42	22,282,700	27,451,202	81.2%	87.6%	95.1%
Cecil	8	3,019,500	4,139,000	73.0%	80.4%	71.6%
Charles	9	7,430,500	8,424,292	88.2%	94.3%	96.9%
Dorchester	4	2,664,600	3,983,305	66.9%	83.1%	74.2%
Frederick	22	12,532,700	14,705,400	85.2%	84.7%	89.3%
Garrett	7	1,892,700	2,432,500	77.8%	89.1%	85.4%
Harford	9	11,306,100	12,410,000	91.1%	95.0%	95.5%
Howard	30	89,112,200	106,735,814	83.5%	89.5%	90.2%
Kent	1	557,800	950,000	58.7%	58.7%	58.7%
Montgomery	59	200,941,500	210,676,815	95.4%	97.8%	98.0%
Prince George's	38	56,982,400	70,395,122	80.9%	85.6%	88.3%
Queen Anne's	32	12,088,600	13,758,700	87.9%	89.5%	88.3%
St. Mary's	10	14,017,000	16,506,126	84.9%	87.7%	97.3%
Somerset	2	525,700	554,000	94.9%	94.8%	94.8%
Talbot	0	0	0	0.0%	0.0%	0.0%
Washington	22	17,597,200	20,036,500	87.8%	87.1%	90.0%
Wicomico	13	4,211,900	5,208,200	80.9%	84.2%	86.4%
Worcester	5	5,079,700	6,223,115	81.6%	99.4%	91.9%
Statewide	**505**	**753,913,800**	**850,549,591**	**88.6%**	**88.5%**	**93.4%**

TABLE VI
Residential Sales by Ratios

Ratio Range	Count
40% - 49%	34
50% - 59%	120
60% - 69%	361
70% - 79%	1637
80% - 89%	5217
90% - 99%	8798
100% - 109%	2168
110% - 119%	384
120% - 129%	170
130% - 139%	100
140% - 149%	64
150% - 160%	49

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