DEPARTMENT OF ASSESSMENTS AND TAXATION

2008

RATIO REPORT

State of Maryland

Martin O'Malley
Governor

Department of Assessments and Taxation

C. John Sullivan Jr.
Director

Office of the Director

June 30, 2009

The Honorable Martin O'Malley
and
The General Assembly of Maryland

As required by Section 2-202 of the Tax-Property Article of the Annotated Code of Maryland, I am pleased to submit the Department of Assessments and Taxation's 2008 Assessment Ratio Report. This report measures the quality of real property assessments in each of Maryland's 24 subdivisions.

Uniform and accurate assessments are the foundation of fair property taxation. Maryland's Constitution requires that all real property subject to property taxation be assessed uniformly. State law requires that assessments be based on the fair market value of the property. Therefore, uniformity and market value are the standards used to measure the quality of the assessment work performed by the Department.

This report measures assessment quality by looking at the most recent reassessment program and comparing the results of the effort to actual market conditions. Because state law requires that one-third of all real property be reassessed each year, the Department's program resulted in approximately 728,000 reassessment notices being issued in late December of 2007. These reassessments reflected our estimates of property values as of January 1, 2008. To provide an objective quality measure of that work, this report tests those reappraisal results against property sales for the 12 month period of July 1, 2007 to June 30, 2008.

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 our compliance with those standards, are discussed in the body of this report. Statewide, the Department has met the IAAO standard for coefficient of dispersion indicating an overall uniformity of assessments. The measures of central tendency are excellent.

I hope that you find this report useful and informative. Please feel free to share with me any suggestions that you may have to improve this report or the assessment process in Maryland.

Sincerely,

C. John Sullivan, Jr.
Director

2008 ASSESSMENT RATIO REPORT

SECTION I – OVERVIEW

The Department of Assessments and Taxation appraises real property for the purposes of property taxation. Properties are valued using the three approaches to value generally recognized by the appraisal profession: cost, sales comparison, and (when applicable) income.

In Maryland, all properties are required by law to be physically reviewed once every three years. During the review, the assessor will visit properties to verify property characteristics existing in our current assessment records. Residential property characteristics include type of structure, size, quality and type of construction, condition of structure, and any new improvements. In certain circumstances, neighborhood inspections may be made in place of individual property inspections. Commercial properties are reviewed for type of structure, size, type and quality of construction, condition of structure, current use of the property, any new improvements, types of tenants, and vacancy.

This year we valued over 728,000 properties, which require the use of mass appraisal techniques. While a fee appraiser is concerned with valuing one property at a time, an assessor is valuing whole neighborhoods. To accomplish this, special mass appraisal procedures are used. The assessor will review the data and calculate replacement costs for improvements much like a fee appraiser. The assessor will then review the sales from the area. In Maryland, the local assessment office, except in Baltimore City, receives a copy of all deeds and property sales prices as the deed transferring the property is recorded with the clerk of the court. In Baltimore City, the Department of Public Works does the data entry and provides the 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 in a uniform manner. 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 is often scrutinized by individual property owners. We are continually striving for higher quality in assessment uniformity. Our quality control program 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 checks. Following the completion of the revaluation, various computer edits are made to assure good valuation quality.

A measurement of quality is the assessed value/sale price ratio. A ratio is the relationship of two numbers, in this case assessed value and sale price. It measures how closely our values compare to the actual sales prices. The average assessed value/sale price ratio indicates a typical level of value. Because the marketplace is not perfect, there will always be properties that sell for more or less than can be anticipated due to factors such as sales between people unfamiliar with the market, buyers willing to pay extra for a unique property, or escalating values in a competitive seller's market.

In mass appraisal and assessment ratio studies, we are 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 called the coefficient of dispersion (COD). The lower the COD, the more uniform 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 Officer's Standard of Performance for ratio studies. Section IV gives an overview of statewide appraisal quality for the most recent valuation of triennial Group 2, performed in December 2007.

SECTION II – RATIO STATISTICS

The purpose of this ratio study is to test the quality of the assessment product. The quality of the assessment product is examined from both an assessment level and assessment uniformity standpoint. 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, we perform many ratio studies examining neighborhoods, types of structures, age of structures, etc.

We use as a performance gauge several measures of central tendency. Each measure of central tendency is affected differently by outliers. A ratio of assessed value to sale price is calculated for each property. The average ratio is the total of all ratios divided by the number of sales. The average (mean) ratio has a natural upward bias. This would indicate a higher level of assessment than has actually occurred. The median is the midpoint of any data listed from lowest to highest. The median ratio is the point where half the ratios fall above and half 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 total 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, we are also concerned with the relative spread or variation that individual ratios fall from the typical. There are two measurements of variability: 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 but ignoring positive and negative signs, and dividing 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 preferable 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. It 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 percentage of their market value, property taxes levied against these assessments would be considered progressive. Typically, PRDs have an upward bias because higher priced properties are more unique. PRDs should range between 0.98 and 1.03, except for very small samples. For example, a PRD of 1.03 indicates under valuation 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. Due to the scope of this report, we have not examined them here. 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 2009 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 2008 Ratio Study data by subdivision 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 of assessing officials which 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 July of 2007. The Standard is advisory in nature. This Standard provides guidance to those performing ratio studies in the mass appraisal field regarding the design, statistics, performance measures and other issues related to such studies. The Maryland 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	10.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	15.0
	Rural or small jurisdictions / older properties / depressed market areas	20.0
Income-producing properties (commercial, industrial, apartments,)	Very large jurisdictions / densely populated / newer properties / active markets	15.0
	Large to mid-sized jurisdictions / older & newer properties / less active markets	20.0
	Rural or small jurisdictions / older properties / depressed market areas	25.0
Residential vacant land	Very large jurisdictions / rapid development / active markets	15.0
	Large to mid-sized jurisdictions / slower development / less active markets	20.0
	Rural or small jurisdictions/ little development / depressed markets	25.0
Other (non-agricultural) vacant land	Very large jurisdictions / rapid development / active markets	20.0
	Large to mid-sized jurisdictions / slower development / less active markets	25.0
	Rural or small jurisdictions/ little development / depressed markets	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 exist. 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; July 2007; pg 33.

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 prior to and six months after the date of finality (date of valuation, January 1st) for which assessments have become effective 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 is good and 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 circumstances, when property values are rapidly changing, this will affect the ratio statistics. Sales of property and market value increased for several years, however beginning in the second half of 2006 the market began to slow and values softened. Despite this slowdown, measures of central tendency are still less than 100.0.

Maryland's local jurisdictions continued to maintain their value despite the softening of the market. The largest increases were seen in Baltimore City, St. Mary's, and Prince George's Counties. The Baltimore City market was driven primarily by new construction and housing rehabilitation in the areas of Mount Vernon, Charles Village, and east of the Johns Hopkins Hospital.

Baltimore City has forty five percent of its accounts located in areas containing properties designated as rental units. The remaining accounts are spread over neighborhoods accented with historical and architectural significance such as Mount Vernon and Bolton Hill, as well as average properties in row-home neighborhoods such as Oliver, Druid Heights and Greenmount West.

The St. Mary's area is bordered by two highly desirable waterfront areas to live on, the Patuxent and Potomac Rivers. The town of Leonardtown and the Hollywood area are seeing significant new residential construction. Leonardtown is experiencing an upswing in commercial development tied to the waterfront redevelopment in the Wharf area along Breton Bay.

Statewide, the Department met the IAAO standard for coefficient of dispersion indicating an overall uniformity of assessments. The measures of central tendency are excellent.

Commercial properties are generally less similar than residential properties. Many commercial properties are income producing and are valued using the income approach to value. Most commercial uses are cyclical in nature. 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 property values have been less affected by the recent low interest rates for residential mortgages. Because of the uniqueness of commercial and industrial properties, 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 which have sold is so small that the statistical measures are prone to bias. Allegany, Calvert, Caroline, Carroll, Cecil, Dorchester, Garrett, Howard, Kent, Queen Anne's, St. Mary's, Somerset and Talbot Counties all had fewer than 10 arms-length commercial transfers for Group 2. In those jurisdictions, individual statistical measures would be unreliable due to sample size.
Throughout the State increasing rents from when this area was last valued on Jan 1, 2005, have contributed to continued increases in commercial property values. The major metropolitan

counties continue to see some growth. Demand for commercial properties near Washington, D.C. continues to drive up the price of properties. In Montgomery County commercial property increased in value in a number of areas including Germantown, Poolesville, Burtonsville, Bethesda, Chevy Chase, Olney, Laytonsville, Potomac, and Damascus.

In Baltimore County, the commercial corridors revalued included Reisterstown Rd. north through Owings Mills to Reisterstown, York Rd. from Baltimore City and Interstate 83 through Lutherville/Timonium to Cockeysville/Hunt Valley, and the southwest corridor from Baltimore City along I695 and I95 to Howard County. The increase in values was driven by an increase in rents combined with decreases in vacancies.

One impediment to commercial valuation has been the increased use of the transferring of the controlling interest of the entity which controls the real estate instead of the use of deed recordation. This decreased the pool commercial sales available during valuation. It also may create a downward trend in assessed values due to lack of market data. The Maryland General Assembly passed legislation in the 2007 Special Session to close this loophole.

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

Quality is the degree of excellence of a product or service; the extent to which it measures up to certain 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, for the most part, after the time period of sales used by the assessor in the group of properties being reassessed.

Assuming the assessor applied the mass appraisal model uniformly to all properties, this ratio study should show uniformity of assessment. This ratio study is a cross check by Department management to assure quality of the mass appraisal work product. The ratio statistics for each county in Table IV was conducted on 21,467 improved residential property sales from July 1, 2007 to June 30, 2008 and compares the Department's valuations to sale prices.

The frequency distribution in Table VI and statistics following present a statewide ratio analysis of improved residential property sales from July 1, 2007 to June 30, 2008 comparing the Department's values to sales prices. The measures of central tendency indicate that properties are valued at approximately 97% of sale price and that on average all other properties have very similar ratios as indicated by the 10.58 Coefficient of Dispersion. Uniformity is also indicated by the number of ratios in the frequency close to the 90% level. 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 of 1.00 indicates vertical uniformity across all strata of property values.

The analysis from Table VI and the following descriptive statistics indicates that values determined by assessors for the most recent triennial Group 2 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 2009 Real Property Tax Base/Ratio by Subdivision

This table shows assessed values and ratios of real property used for different purposes. Ratios shown are median ratios of arms-length sales of properties in Group 2 that were sold between July 1, 2007 and June 30, 2008, compared with the Department's January 1, 2008, 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	Residential		Commercial		Agricultural		Use Value		Total	Weighted
	Properties	Base	Ratio	Base	Ratio	Base	Ratio	Base	Ratio	Base	Ratio
Allegany	38,628	2,319,745,512	94.0	732,496,453	93.0	99,199,607	94.0	0	100.0	3,151,441,572	93.8
Anne Arundel	198,239	65,562,046,542	97.0	13,248,092,336	87.0	586,061,028	97.0	32,015,595	100.0	79,428,215,501	95.2
Baltimore City	219,290	22,434,868,609	95.0	9,291,777,084	94.0	0	95.0	0	100.0	31,726,645,693	94.7
Baltimore	277,961	61,134,850,769	95.0	16,249,737,695	93.0	1,080,917,755	95.0	35,958,532	100.0	78,501,464,751	94.6
Calvert	40,756	10,926,759,476	96.0	1,093,059,088	93.0	308,536,790	96.0	1,710	100.0	12,328,357,064	95.7
Caroline	15,862	2,049,794,515	96.0	313,306,789	93.0	387,000,937	96.0	4,474,906	100.0	2,754,577,147	95.7
Carroll	63,883	16,642,597,535	98.0	2,161,281,467	93.0	1,003,963,384	98.0	11,729,132	100.0	19,819,571,518	97.4
Cecil	45,243	7,810,141,161	96.0	1,679,833,744	93.0	548,975,980	96.0	9,890	100.0	10,038,960,775	95.5
Charles	59,755	14,595,469,714	97.0	2,428,448,687	93.0	475,517,538	97.0	16,801,640	100.0	17,516,237,579	96.4
Dorchester	21,532	2,351,117,538	98.0	415,022,142	93.0	321,173,194	98.0	16,878,630	100.0	3,104,191,504	97.3
Frederick	88,588	23,742,101,803	99.0	4,490,351,182	94.0	1,449,874,338	99.0	31,814,996	100.0	29,714,142,319	98.2
Garrett	28,026	3,611,683,208	93.0	419,590,945	93.0	188,887,364	93.0	0	100.0	4,220,161,517	93.0
Harford	92,931	20,710,325,655	96.0	3,574,563,171	97.0	801,954,554	96.0	0	100.0	25,086,843,380	96.1
Howard	95,246	37,554,333,038	98.0	7,900,895,151	93.0	462,858,028	98.0	0	100.0	45,918,086,217	97.1
Kent	12,844	2,140,515,886	96.0	355,140,859	93.0	371,272,959	96.0	483,480	100.0	2,867,413,184	95.6
Montgomery	312,596	148,534,810,662	98.0	33,111,733,233	90.0	742,249,844	98.0	103,461,728	100.0	182,492,255,467	96.4
Prince George's	269,169	74,085,158,486	100.0	20,454,976,281	92.0	27,972,204	100.0	26,424,274	100.0	94,594,531,245	98.2
Queen Anne's	24,843	6,823,940,357	97.0	718,312,820	93.0	786,501,947	97.0	1,633,508	100.0	8,330,388,632	96.6
St. Mary's	45,433	9,377,752,828	99.0	1,289,200,038	93.0	590,872,278	99.0	11,514,891	100.0	11,269,340,035	98.3
Somerset	16,032	1,157,309,221	93.0	237,308,373	93.0	161,597,248	93.0	985,111	100.0	1,557,199,953	93.0
Talbot	20,138	7,141,384,623	99.0	920,776,023	93.0	1,012,897,375	99.0	4,615,870	100.0	9,079,673,891	98.4
Washington	55,699	9,463,131,426	97.0	3,029,199,828	98.0	644,705,436	97.0	13,119,632	100.0	13,150,156,322	97.2
Wicomico	44,520	5,011,524,203	93.0	1,337,943,674	81.0	327,282,766	93.0	4,538,656	100.0	6,681,289,299	90.3
Worcester	64,580	16,511,081,145	93.0	2,836,499,493	100.0	305,096,565	93.0	130,660	100.0	19,652,807,863	93.9
Statewide	**2,151,794**	**571,692,443,912**	**97.0**	**128,289,546,556**	**93.0**	**12,685,369,119**	**97.0**	**316,592,841**	**100.0**	**712,983,952,428**	**96.3**

State Department of Assessments and Taxation

July 16, 2008

TABLE II

Assessment Levels

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Allegany	92.2	89.5	92.1	95.3	95.0	96.8	92.6	95.6	96.4	98.5	93.4	99.9	95.2	95.0	93.0
Anne Arundel	96.5	95.0	94.2	93.9	96.1	93.0	90.9	90.6	89.8	87.4	84.4	84.5	85.6	96.0	95.2
Baltimore City	91.5	98.1	95.4	97.0	92.5	92.8	90.5	94.7	94.3	94.9	95.0	74.3	85.2	92.0	94.7
Baltimore	94.4	96.8	96.5	95.9	96.3	92.9	94.1	93.0	91.3	92.7	86.5	88.5	83.5	94.0	94.6
Calvert	95.3	96.0	92.9	94.2	94.7	94.2	93.6	92.4	90.4	87.3	82.1	82.3	85.6	95.0	95.4
Caroline	93.0	94.8	92.3	97.0	95.9	96.2	94.3	92.7	92.2	88.3	87.3	81.7	88.9	95.0	95.3
Carroll	95.2	94.0	95.8	95.9	96.7	95.3	94.0	92.1	92.0	89.5	86.6	85.9	89.7	96.0	97.1
Cecil	93.9	93.2	94.6	94.7	95.9	88.4	94.0	93.1	92.0	91.8	88.9	86.0	91.0	94.0	94.9
Charles	95.2	96.6	92.0	96.6	94.6	95.1	94.3	92.6	92.0	88.6	88.9	87.1	88.0	94.0	96.4
Dorchester	95.2	90.2	94.0	91.3	93.3	93.4	94.3	92.9	89.1	89.3	85.4	67.0	79.3	91.0	96.9
Frederick	95.2	95.6	96.8	96.2	93.6	95.0	92.8	89.0	90.2	87.4	88.9	83.7	90.9	96.0	98.2
Garrett	91.8	86.0	93.4	98.6	87.5	96.2	93.4	94.6	93.7	83.8	91.6	88.6	91.8	95.0	92.7
Harford	93.4	90.3	93.4	94.3	93.4	93.1	92.2	92.6	89.1	88.2	85.0	85.5	85.0	93.0	96.1
Howard	96.2	94.8	94.8	93.5	94.3	93.9	95.1	92.0	92.2	90.1	88.2	89.8	92.5	97.0	96.5
Kent	93.9	99.1	98.7	95.6	94.3	95.8	91.4	91.0	92.0	92.6	87.3	86.0	83.9	94.0	95.2
Montgomery	96.1	97.7	97.4	98.4	97.6	95.7	93.8	92.1	88.2	91.0	93.3	93.2	95.5	98.0	96.4
Prince George's	98.2	97.1	96.4	94.4	94.9	96.2	94.7	94.0	91.0	90.5	83.8	83.0	85.1	91.0	98.2
Queen Anne's	91.7	92.7	94.5	93.2	94.0	98.2	91.5	92.6	93.8	90.5	86.8	88.7	87.9	96.0	96.4
St. Mary's	93.0	96.0	94.6	96.8	95.0	96.1	95.3	93.7	93.1	89.5	83.8	80.4	88.2	95.0	97.9
Somerset	90.5	88.8	96.3	91.9	95.8	97.2	94.0	93.6	94.5	94.5	85.2	85.5	86.2	86.0	92.5
Talbot	95.7	96.1	93.7	93.0	96.3	92.2	93.1	89.7	84.4	87.4	89.6	83.3	88.7	96.0	98.0
Washington	93.4	95.3	96.0	96.0	95.3	95.8	90.9	93.7	92.6	89.1	91.1	87.4	90.0	97.0	97.2
Wicomico	91.1	92.2	93.4	93.9	94.3	94.3	93.4	91.8	91.8	89.8	90.6	84.0	82.9	89.0	90.3
Worcester	96.5	93.7	93.2	94.8	90.4	90.7	89.5	84.5	89.4	76.8	86.8	83.2	89.2	97.0	93.9
Statewide	**95.7**	**96.1**	**95.9**	**96.0**	**95.5**	**94.4**	**93.3**	**92.1**	**90.5**	**90.0**	**88.2**	**86.0**	**89.7**	**96.0**	**95.7**

State Department of Assessments and Taxation

July 16, 2008

TABLE III

Illustrated Ratio Study Statistics

(1.) Property Number	(2.) Sale Price	(3.) Assessed Value	(4.) Ratio A/S %	(5.) Absolute Deviation 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

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Table IV
2008 Residential Ratio Study

This table shows arms-length sales of improved residential and condominium properties in Group 2 from July 1, 2007, through June 30, 2008. Ratios compare the Department's January 1, 2008 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	215	93.4	94	92.2	9.58	10.19	1.01	14.35	15.36	$100,000
Anne Arundel	2,776	98.5	97	96.4	9.04	9.32	1.02	13.00	13.20	$317,000
Baltimore City	2,957	92.9	95	91.4	20.11	21.17	1.02	26.50	28.53	$132,000
Baltimore	2,968	97.1	95	95.5	8.60	9.05	1.02	13.20	13.59	$318,000
Calvert	329	97.5	96	97.1	7.34	7.65	1.00	10.43	10.70	$343,000
Caroline	134	97.5	96	97.5	6.81	7.09	1.00	9.53	9.77	$275,000
Carroll	499	99.6	98	98.5	8.53	8.70	1.01	12.16	12.21	$325,000
Cecil	236	97.6	96	96.9	6.83	7.11	1.01	9.35	9.58	$265,000
Charles	444	98.3	97	97.5	9.09	9.37	1.01	12.37	12.58	$391,200
Dorchester	219	99.8	98	95.7	15.93	16.26	1.04	21.21	21.25	$212,300
Frederick	1,149	98.8	99	97.6	8.00	8.08	1.01	10.85	10.98	$273,000
Garrett	199	91.6	93	88.5	11.12	11.96	1.04	15.58	17.01	$290,000
Harford	1,080	96.4	96	96.1	5.71	5.95	1.00	7.87	8.16	$309,000
Howard	970	99.0	98	98.3	6.15	6.28	1.01	8.86	8.95	$454,990
Kent	113	95.4	96	93.3	6.55	6.82	1.02	9.58	10.04	$322,980
Montgomery	2,569	99.8	98	96.4	8.22	8.39	1.04	12.07	12.09	$450,000
Prince George's	2,823	101.8	100	101.1	9.23	9.23	1.01	12.47	12.25	$360,000
Queen Anne's	116	98.6	97	97.1	9.84	10.14	1.02	14.87	15.08	$280,000
St. Mary's	340	100.5	99	99.4	8.39	8.47	1.01	12.13	12.07	$370,000
Somerset	50	95.1	93	92.6	13.02	14.00	1.03	16.44	17.29	$134,300
Talbot	136	99.0	99	95.6	11.93	12.05	1.04	15.93	16.09	$425,000
Washington	559	96.5	97	95.9	8.71	8.98	1.01	11.96	12.39	$199,990
Wicomico	300	94.3	93	93.3	6.53	7.02	1.01	9.57	10.15	$200,000
Worcester	286	93.7	93	92.5	10.57	11.37	1.01	14.98	15.99	$255,000
Statewide	**21,467**	**97.8**	**97**	**96.8**	**10.26**	**10.58**	**1.01**	**15.3**	**15.64**	**$312,542**

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TABLE IV-B

Statewide Residential Ratio Study Frequency Statistics

Average Ratio

$$\frac{\text{Total of Ratios}}{\text{Number of Sales}} = \frac{20{,}996.69}{21{,}467} = 97.81\%$$

Weighted Ratio

$$\frac{\text{Total Assessed Values}}{\text{Total Sales Prices}} = \frac{7{,}754{,}605{,}680}{8{,}010{,}573{,}423} = 96.80\%$$

Average Deviation

$$\frac{\text{Total Deviations}}{\text{Number of Sales}} = \frac{220{,}170}{21{,}467} = 10.26$$

Coefficient of Dispersion

$$\frac{\text{Average Absolute Deviation}}{\text{Median Ratio / 100}} = \frac{10.26}{97\%} = 10.58$$

Price Related Differential

$$\frac{\text{Average Ratio}}{\text{Weighted Ratio}} = \frac{97.80\%}{96.80\%} = 1.01$$

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Table V

Commercial Ratio Study 2008

The table below shows statistics on arms-length sales between July 1, 2007 and June 30, 2008 of commercial property in assessment Group 2. Ratios compare the Department's January 1, 2008, value to the actual sale price.

Ratio statistics are shown for all counties, 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) or evaluate the performance (Table VII).

	Number of Sales	Total Assessed Values	Total Sales Prices	Weighted Ratio	Average Ratio	Median Ratio
Allegany	9	$ 2,028,000	$ 2,121,000	96%	96%	95%
Anne Arundel	36	$ 123,565,510	$ 132,397,845	93%	88%	87%
Baltimore City	84	$ 31,886,350	$ 41,600,316	77%	87%	94%
Baltimore County	51	$ 61,665,100	$ 68,915,633	89%	89%	93%
Calvert	2	$ 1,552,400	$ 3,245,000	48%	57%	57%
Caroline	4	$ 7,164,500	$ 8,175,000	88%	65%	61%
Carroll	9	$ 4,878,700	$ 5,015,000	97%	99%	100%
Cecil	5	$ 6,846,400	$ 8,038,582	85%	83%	90%
Charles	12	$ 5,912,200	$ 7,196,060	82%	92%	93%
Dorchester	7	$ 3,038,500	$ 4,155,000	73%	81%	84%
Frederick	28	$ 18,062,800	$ 19,507,825	93%	94%	94%
Garrett	3	$ 518,600	$ 641,775	81%	83%	93%
Harford	19	$ 32,185,000	$ 37,132,570	87%	93%	97%
Howard	7	$ 68,225,200	$ 78,633,300	87%	85%	86%
Kent	0	$ -	$ -	0%	0%	0%
Montgomery	37	$ 159,408,400	$ 186,496,654	85%	85%	90%
Prince George's	72	$ 197,824,900	$ 209,747,270	94%	89%	92%
Queen Anne's	3	$ 511,200	$ 554,625	92%	93%	89%
St. Mary's	9	$ 5,963,020	$ 7,134,500	84%	88%	96%
Somerset	1	$ 362,200	$ 675,000	54%	54%	54%
Talbot	1	$ 931,300	$ 900,000	103%	103%	103%
Washington	38	$ 25,877,400	$ 26,578,664	97%	96%	98%
Wicomico	18	$ 21,851,300	$ 30,184,353	72%	76%	81%
Worcester	10	$ 5,037,200	$ 5,416,219	93%	100%	100%
Statewide	**465**	**$ 785,296,180**	**$ 884,462,191**	**89%**	**89%**	**93%**

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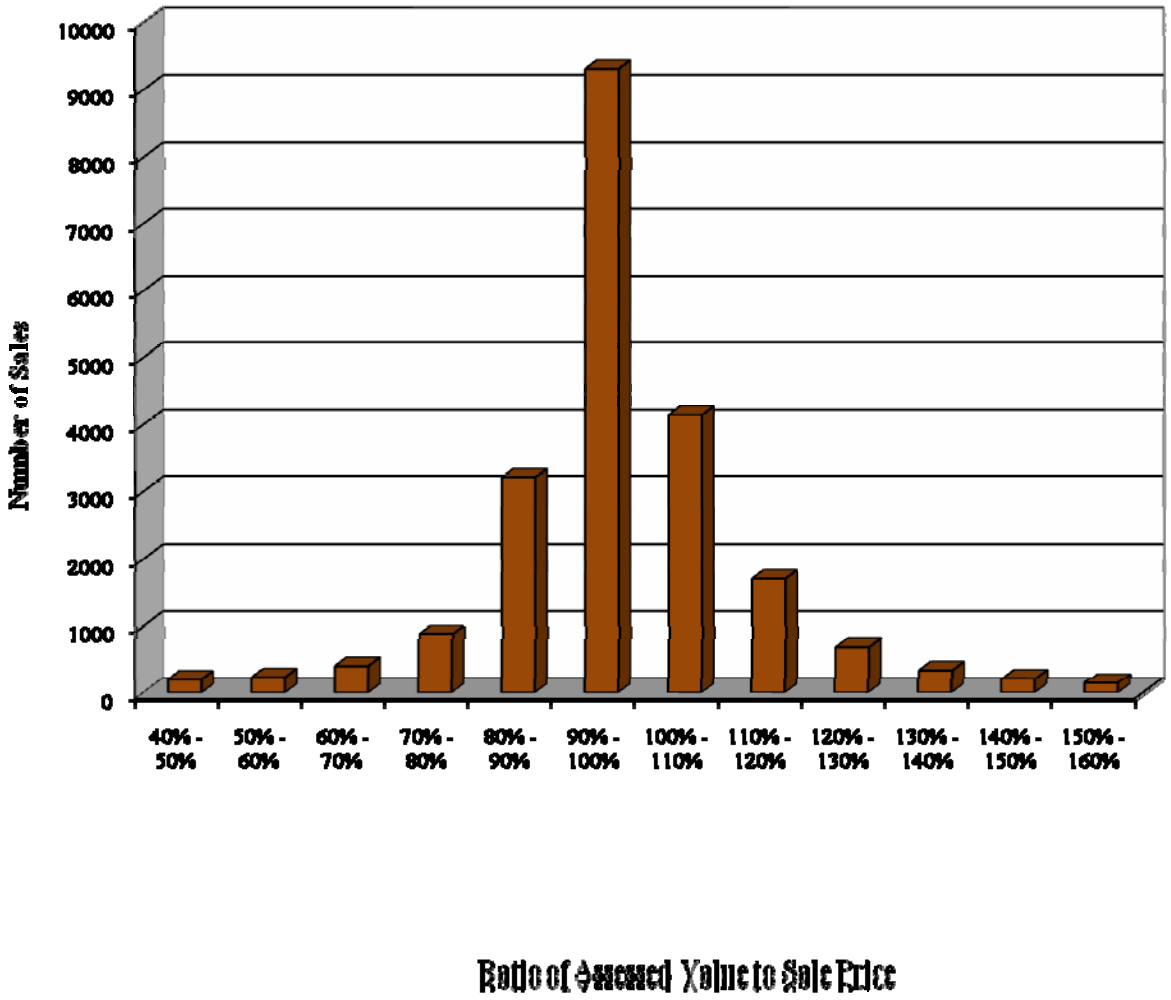
Table VI

Department's Values Compared to Property Sale Prices

The data in the chart below shows the distribution of 21,467 arms-length sales of improved residential and condominium properties in Group 2 with sales dates between July 1, 2007 and June 30, 2008. Ratios compare the Department's January 1, 2008, value to the actual sale price. 1,146 sales with ratios below 40% or over 160% are excluded from this chart.



Maryland Department of Assessments and Taxation
301 West Preston Street
Baltimore, MD 21201
www.dat.state.md.us