State of Maryland
Department of Assessments and Taxation

2007
Assessment Ratios Survey Report

State of Maryland

Department of Assessments and Taxation

Office of the Director

Martin O'Malley
Governor

C. John Sullivan Jr.
Director

December 28, 2007

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 2007 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 that 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 661,000 reassessment notices being issued in late December of 2006. These reassessments reflected our estimates of property values as of January 1, 2007. 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, 2006 to June 30, 2007.

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

2007 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.

We value over 701,000 properties each year, which requires 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 1, performed in December 2006.

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 2008 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 2007 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 1999. 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 Performance Standards

Type of Property	Measure of Central Tendency	COD	PRD
Single- Family Residential			
Newer, homogeneous areas	.90 - 1.10	10.0 or less	.98 – 1.03
Older, heterogeneous area	.90 - 1.10	15.0 or less	.98 – 1.03
Rural residential and seasonal	.90 - 1.10	20.0 or less	.98 – 1.03
Income Producing Properties			
Larger, urban jurisdictions	.90 - 1.10	15.0 or less	.98 – 1.03
Smaller, rural jurisdictions	.90 - 1.10	20.0 or less	.98 – 1.03
Vacant Land	.90 - 1.10	20.0 or less	.98 – 1.03
Other Real and Personal Property	.90 - 1.10	Varies with local Conditions	.98 – 1.03

Source: Standard on Ratio Studies; International Association of Assessing Officers; Chicago, Illinois; July 1999; pg 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 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 one.

Maryland's local jurisdictions continued to maintain their value despite the softening of the market. The largest increases were seen in St. Mary's, Somerset, and Prince George's

Counties. Smaller increases were seen in counties with a larger number of high value properties such as Howard and Montgomery.

Waterfront areas adjacent to the Chesapeake Bay lure buyers to Anne Arundel, Baltimore, Dorchester, Kent, Queen Anne's, Somerset, and Talbot Counties. Cecil, St. Mary's, and Washington Counties, once considered primarily rural in nature, have become a part of the suburbs. Many people are choosing to live in Caroline, Queen Anne's and Talbot Counties on the Eastern Shore and commute daily to the Western Shore. Quality of life combines with house and lot size to draw more buyers to Southern Maryland, Frederick and Washington Counties in Central Maryland, and the Central Eastern Shore.

Gentrification continues to spread throughout Baltimore City. Many workers in the Washington, D.C. area view Baltimore City as an affordable alternative to Washington, D.C. Architecturally unique properties and access to the cultural offerings of a major metropolitan area are luring many people to Baltimore City. Baltimore City revalued properties in the northern portion of the City. This cross section of the city continued to reflect increases in value with higher priced neighborhoods seeing greater increases than average residential neighborhoods. The commercial reassessment area covered a wide range of properties including the downtown central business district. Many businesses are seeking space closer to the newly developed east side of the Inner Harbor.

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

Statewide commercial properties have shared in the recent increase in real estate values. 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, Caroline, Garrett, Harford, Kent, Queen Anne's, St. Mary's and Somerset Counties all had fewer than 10 arms-length commercial transfers for Group 1. In those jurisdictions, individual statistical measures would be unreliable due to sample size.

Throughout the State, increasing rents have contributed to continued increases in commercial property values. Residential growth is contributing to the demand for local businesses throughout the State. The major metropolitan counties continue to see 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 Aspen Hill/Wheaton, Glenmont, Viers Mill, Kensington, Sligo, Silver Spring and Takoma Park. In the Baltimore region, commercial and industrial properties including the downtown business district in Baltimore City saw increases. In Baltimore County, commercial corridors in the suburbs including Liberty Road and Reisterstown Road in the western portion of the county and the Belair Road corridor and the Dundalk area in eastern Baltimore County increased in value. The Route 40 and Route 213 corridors in Cecil County have been active market areas with growth in new construction. In Queen Anne's county commercial properties including the

marinas, hotels, and restaurants in Kent Narrows increased as well as the Centerville area business district.

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 30,786 improved residential property sales from July 1, 2006 to June 30, 2007 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, 2006 to June 30, 2007 comparing the Department's values to sales prices. The measures of central tendency indicate that properties are valued at approximately 97.0% of sale price and that on average all other properties have very similar ratios as indicated by the 10.70 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 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 show that properties throughout the State are assessed uniformly as required by law.

Table I

Fiscal Year 2008 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 1 that were sold between July 1, 2006 and June 30, 2007, compared with the Department's January 1, 2007, 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 Base	Ratio	Commercial Base	Ratio	Agricultural Base	Ratio	Use Value Base	Ratio	Total Base	Weighted Ratio
Allegany	38,590	2,057,565,587	97.0	685,595,154	90.0	86,615,878	97.0	0	100	2,829,776,619	95.2
Anne Arundel	196,464	56,528,116,238	97.0	11,335,330,739	91.0	503,200,037	97.0	29,125,718	100	68,395,772,732	96.0
Baltimore City	218,220	18,576,039,642	93.0	8,056,647,769	89.0	0	93.0	0	100	26,632,687,411	91.8
Baltimore	277,003	53,007,386,607	94.0	14,716,094,515	96.0	957,026,451	94.0	32,796,966	100	68,713,304,539	94.4
Calvert	40,443	9,310,438,452	95.0	687,109,300	94.0	264,970,267	95.0	1,710	100	10,262,519,729	94.9
Caroline	15,776	1,733,884,288	96.0	280,003,267	90.0	341,981,792	96.0	4,417,246	100	2,360,286,593	95.3
Carroll	63,510	14,440,537,752	98.0	1,968,578,686	84.0	871,601,058	98.0	11,962,964	100	17,292,680,460	96.2
Cecil	44,569	6,741,748,485	96.0	1,485,978,608	86.0	483,720,308	96.0	9,890	100	8,711,457,291	94.1
Charles	58,335	12,278,304,855	94.0	2,161,227,549	92.0	401,437,872	94.0	18,100,306	100	14,859,070,582	93.7
Dorchester	21,274	1,984,199,692	92.0	380,427,495	84.0	283,898,197	92.0	14,829,822	100	2,663,355,206	90.8
Frederick	87,737	20,806,043,725	97.0	4,010,294,813	91.0	1,265,020,435	97.0	30,461,826	100	26,111,820,799	96.0
Garrett	27,776	3,199,208,350	96.0	380,072,893	90.0	167,930,806	96.0	0	100	3,747,212,049	95.4
Harford	92,146	17,990,290,009	94.0	3,147,508,325	90.0	697,797,668	94.0	0	100	21,835,596,002	93.4
Howard	93,648	32,674,557,929	99.0	7,219,099,636	87.0	432,442,673	99.0	0	100	40,326,100,238	96.6
Kent	12,717	1,831,238,800	95.0	330,966,653	90.0	330,864,438	95.0	416,696	100	2,493,486,587	94.3
Montgomery	309,097	132,183,793,204	98.0	30,989,753,577	96.0	631,165,308	98.0	111,358,564	100	163,916,070,653	97.6
Prince George's	264,212	61,352,172,748	93.0	16,692,420,779	83.0	25,606,784	93.0	25,288,606	100	78,095,488,917	90.7
Queen Anne's	24,618	5,950,757,030	97.0	625,244,421	90.0	680,910,901	97.0	1,461,468	100	7,258,373,820	96.4
St. Mary's	44,005	7,745,733,787	96.0	1,187,840,497	90.0	482,921,750	96.0	8,992,217	100	9,425,488,251	95.2
Somerset	16,002	986,108,795	85.0	200,074,166	90.0	139,013,768	85.0	777,856	100	1,325,974,585	85.7
Talbot	19,968	6,179,883,689	97.0	796,788,937	86.0	868,461,576	97.0	4,361,970	100	7,849,496,172	95.8
Washington	55,143	8,033,008,817	97.0	2,710,502,931	96.0	548,501,195	97.0	0	100	11,292,012,943	96.8
Wicomico	44,176	4,300,272,974	95.0	1,244,975,434	71.0	286,159,095	95.0	4,833,034	100	5,836,240,537	88.6
Worcester	63,576	14,001,772,065	98.0	2,538,709,668	90.0	269,780,178	98.0	132,660	100	16,810,394,571	96.7
Statewide	2,129,005	493,893,063,520	97.0	113,831,245,812	90.0	11,021,028,435	97.0	299,329,519	100	619,044,667,286	95.6

State Department of Assessments and Taxation

August 15, 2008

TABLE II

Assessment Levels

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Allegany	94.2	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
Anne Arundel	96.5	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
Baltimore City	99.5	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
Baltimore	95.5	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
Calvert	95.3	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
Caroline	94.9	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
Carroll	96.3	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
Cecil	97.0	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
Charles	95.8	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
Dorchester	94.6	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
Frederick	97.2	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
Garrett	91.3	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
Harford	95.7	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
Howard	95.8	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
Kent	92.7	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
Montgomery	96.2	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
Prince George's	100.2	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
Queen Anne's	95.1	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
St. Mary's	96.8	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
Somerset	96.3	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
Talbot	93.7	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
Washington	96.4	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
Wicomico	93.2	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
Worcester	96.4	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
Statewide	96.6	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

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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

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Table IV

2007 Residential Ratio Study

This table shows arms-length sales of improved residential and condominium properties in Group 1 from July 1, 2006, through June 30, 2007. Ratios compare the Department's January 1, 2007, 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	166	96.2	97.0	91.6	0.12	12.68	1.05	0.23	23.90	129,125
Anne Arundel	2,653	102.5	97.0	98.0	0.11	11.14	1.05	0.20	19.92	345,000
Baltimore City	4,108	94.3	93.0	91.9	0.21	22.51	1.03	0.30	32.29	155,000
Baltimore	4,484	96.2	94.0	95.2	0.10	10.28	1.01	0.16	16.94	259,900
Calvert	209	96.3	95.0	93.3	0.09	9.33	1.03	0.17	17.50	449,900
Caroline	154	98.1	96.0	96.9	0.10	10.46	1.01	0.17	17.33	233,000
Carroll	871	98.8	98.0	98.0	0.08	8.25	1.01	0.12	12.54	385,000
Cecil	578	97.4	96.0	94.5	0.10	10.76	1.03	0.19	19.72	236,500
Charles	1,774	95.2	94.0	95.1	0.07	7.20	1.00	0.12	12.08	330,000
Dorchester	191	95.2	92.0	92.7	0.18	19.83	1.03	0.28	29.26	175,000
Frederick	1,443	97.5	97.0	96.1	0.07	6.94	1.01	0.10	10.25	420,000
Garrett	88	97.8	96.0	86.7	0.17	18.17	1.13	0.43	44.46	101,000
Harford	885	94.2	94.0	93.3	0.08	9.04	1.01	0.15	16.17	349,990
Howard	1,430	100.5	99.0	99.2	0.07	6.62	1.01	0.14	14.39	448,000
Kent	83	98.5	95.0	92.6	0.15	15.33	1.06	0.34	34.11	265,000
Montgomery	4,941	99.0	98.0	98.0	0.07	6.88	1.01	0.11	11.29	485,000
Prince George's	3,742	95.2	93.0	94.5	0.11	11.33	1.01	0.16	16.75	330,000
Queen Anne's	306	96.8	97.0	96.0	0.07	6.91	1.01	0.10	9.93	435,425
St. Mary's	291	97.7	96.0	96.2	0.11	11.27	1.01	0.19	19.33	334,900
Somerset	32	83.7	85.0	82.5	0.12	14.08	1.01	0.15	17.64	135,000
Talbot	409	97.3	97.0	96.2	0.09	9.69	1.01	0.15	15.26	310,000
Washington	665	97.5	97.0	96.6	0.08	7.98	1.01	0.11	11.58	279,900
Wicomico	694	94.1	95.0	94.0	0.09	9.24	1.00	0.14	14.95	178,920
Worcester	589	97.3	98.0	96.6	0.08	8.58	1.01	0.12	12.42	300,000
Statewide	30,786	97.1	97.0	96.2	0.10	10.70	1.01	0.18	18.59	315,000

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TABLE IV-B

Statewide Residential Ratio Study Frequency Statistics

Average Ratio

Total of Ratios	=	29,894.74	=	97.10%
Number of Sales		30,786		

Weighted Ratio

Total Assessed Values	=	10,940,299,930	=	96.22%
Total Sales Prices		11,370,393,666		

Average Deviation

Total Deviations	=	3,196	=	0.10
Number of Sales		30,786		

Coefficient of Dispersion

Average Absolute Deviation	=	10.00%	=	0.10
Median Ratio / 100		97.00%		

Price Related Differential

Average Ratio	=	97.10%	=	1.01
Weighted Ratio		96.20%		

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Table V

Commercial Ratio Study 2007

The table below shows statistics on arms-length sales between July 1, 2006 and June 30, 2007 of commercial property in assessment Group 3. Ratios compare the Department's January 1, 2007, 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	3	$ 7,480,300	$ 7,232,000	103%	101%	100%
Anne Arundel	32	36,201,200	47,574,396	76%	93%	91%
Baltimore City	100	134,934,800	146,880,645	92%	86%	89%
Baltimore County	40	49,776,340	66,553,319	75%	93%	96%
Calvert	11	5,907,200	7,512,492	79%	88%	94%
Caroline	4	1,000,910	913,940	110%	107%	103%
Carroll	12	7,887,700	9,751,900	81%	86%	84%
Cecil	39	12,821,500	17,457,900	73%	83%	86%
Charles	26	19,498,080	24,025,071	81%	96%	92%
Dorchester	10	1,988,100	2,452,500	81%	86%	84%
Frederick	12	55,063,600	57,375,214	96%	84%	91%
Garrett	1	124,100	125,000	99%	99%	99%
Harford	5	1,493,100	1,835,000	81%	87%	100%
Howard	16	67,096,800	76,510,283	88%	88%	87%
Kent	8	5,267,400	6,610,187	80%	83%	79%
Montgomery	31	37,653,200	40,274,928	93%	94%	96%
Prince George's	45	151,358,100	197,868,011	76%	87%	83%
Queen Anne's	7	4,637,000	6,615,000	70%	79%	66%
St. Mary's	5	3,405,200	6,095,000	56%	76%	88%
Somerset	3	373,100	456,000	82%	83%	81%
Talbot	16	5,647,400	6,991,350	81%	83%	86%
Washington	14	15,693,900	16,303,940	96%	89%	96%
Wicomico	15	11,426,000	17,458,795	65%	73%	71%
Worcester	17	4,302,000	4,941,900	87%	86%	90%
Statewide	**472**	**$ 641,037,030**	**$ 769,814,771**	**83%**	**88%**	**90%**

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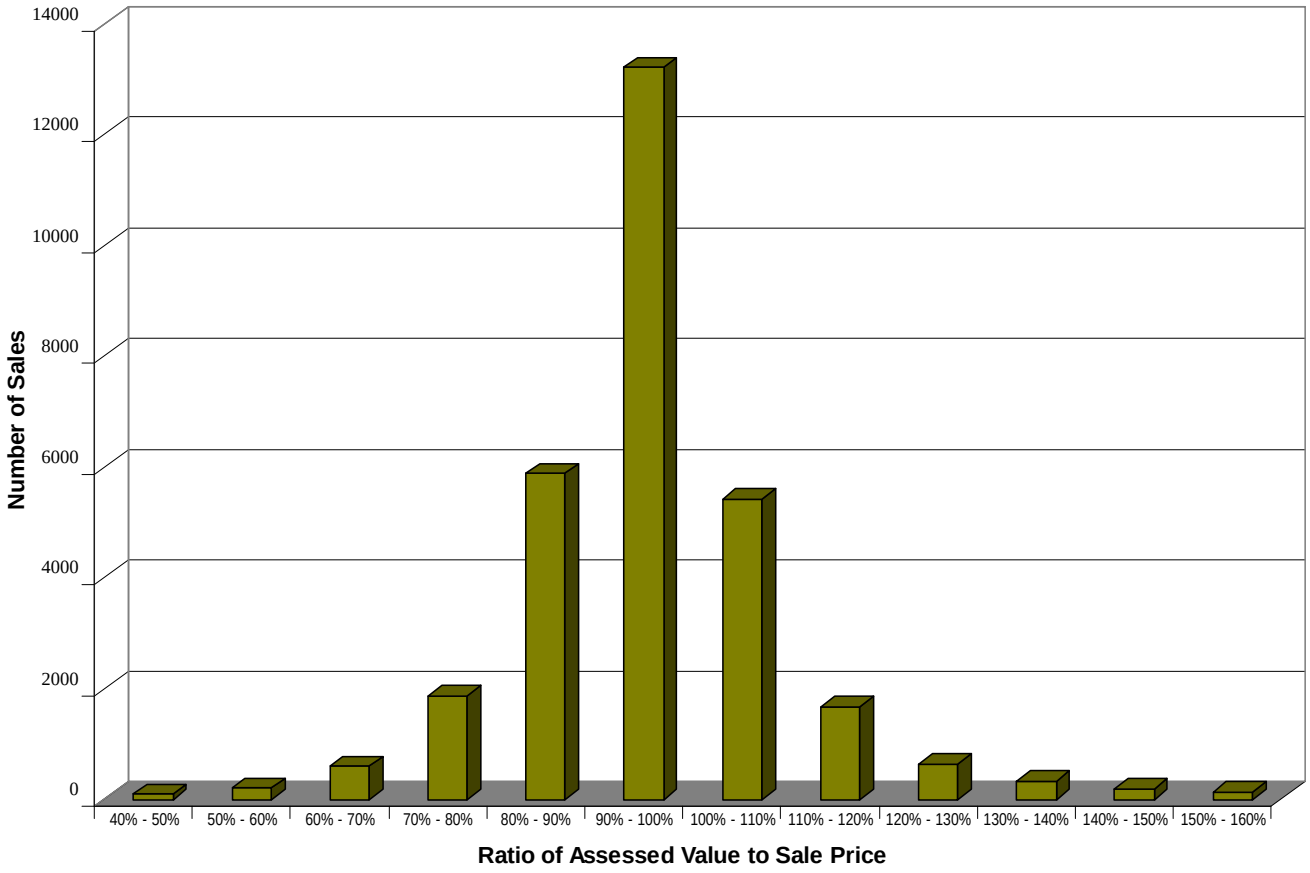
Table VI

Department's Values Compared to Property Sale Prices

The data in the chart below shows the distribution of 30,786 arms-length sales of improved residential and condominium properties in Group 1 with sales dates between July 1, 2006 and June 30, 2007. Ratios compare the Department's January 1, 2007, value to the actual sale price. 539 sales with ratios below 40% or over 160% are excluded from this chart.



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