OREGON'S PROPERTY TAX SYSTEM
Horizontal Inequities under Measure 50

RESEARCH REPORT # 4-10

September 2010

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STATE OF OREGON

Research Report

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Summary
During the 2008 interim, the Senate Finance and Revenue Committee conducted hearings on the consequences of Measure 50, ten years after its passage. Measure 50 has had a profound impact on local government finances throughout Oregon because it fundamentally changed property taxes—the largest local revenue source. The committee heard testimony describing the implications of these changes for the local government fiscal system but it also heard testimony from individual taxpayers describing how they were adversely affected by Measure 50 compared to other taxpayers. Testimony from key participants in the design of Measure 50, analysis by Multnomah County, and an examination of Measure 50's mechanics confirmed that the property tax system is subject to widespread horizontal inequities where taxpayers in equal circumstances are treated differently by the tax system. The committee directed the Legislative Revenue Office to analyze how widespread horizontal inequities are in under the Measure 50 system. Building on the work of Multnomah County and working with county assessors and the Department of Revenue, the Legislative Revenue Office built a detailed data base of properties in Deschutes, Jackson, Multnomah and Sherman counties. This report summarizes the information on horizontal inequities under Measure 50 gathered by the committee, traces through the mechanics of Measure 50 and shows how horizontal inequities occur under the system and then reports on the findings from the analysis of the four county data base. The report concludes with possible policy approaches to addressing horizontal inequities in the property tax system.

The key findings of the report are:

- Horizontal inequities—unequal tax treatment of taxpayers with similarly valued property, are widespread among the four counties observed.
- There does not appear to be a systematic relationship between assessed to market value ratios and market price, in other words variability in the ratio is spread throughout the price spectrum.
- The variability of assessed value to market value is widespread in the most common $200,000 to $300,000 price segment.
- The housing market collapse, with its corresponding home price deflation, slowed down the build- up of horizontal inequities but did not stop it because nearly all residential property is still assessed well below market value.

- When general home price appreciation begins again, horizontal inequities can be expected to grow over time. This is because the recovery will likely be uneven with certain properties, neighborhoods and regions of the state growing more rapidly than others.
- Among the sample counties, Multnomah County is experiencing the most acute degree of horizontal inequity. This is likely due to its larger, more diverse, housing market relative to the other counties.

Possible policy approaches to reduce horizontal inequities over time within the property tax system include: return to a modified market value based system, rebasing assessed value to market value at time of transaction, establishing an acceptable assessed value to market value range and adjusting annual assessed value growth for properties outside range, and requiring Measure 50 to be subject to constitutional uniformity in taxation provisions, thereby forcing the Legislature to develop a remedy to meet the constitutional requirement.

Introduction and Background

Technically Measure 50 was a product of the 1997 Legislature, but its policy directives were determined by voters through the passage of Measure 47 in the fall of 1996. Measure 47 was designed to correct what was perceived as a major flaw in Measure 5 passed in 1990. Measure 5 imposed a rate based system that limited education district taxes to $5 per $1,000 of market value. A $10 per $1,000 of market value rate limit was imposed for the sum of non-education districts. In most areas, the sum of the non-school district taxes were less than $10 leaving the previous levy based system in effect for those districts.

A key feature of Measure 5 was its retention of real market value as the property tax base. When Measure 5 took effect in 1991, Oregon residential real estate values were just beginning to grow more rapidly following a period of weakness through most of the 1980s. This meant that as Measure 5's rate limits were phased in over a 5-year period, much of the property tax bill reductions homeowners were expecting from lower rates were offset by rising market values. Adding to the frustration of homeowners during this period was the fact that residential property values were growing much faster than commercial and industrial property as the state went through a period of strong net in-migration. As a result, property taxes on residential property remained roughly constant over the 1991-96 phase-in period while overall property tax collections dropped 12%.

The rate reductions called for under Measure 5 reached their limit in 1996. This meant that property tax bills for the 1996-97 tax year would be largely determined by changes in market values without the offsetting effect of further rate reductions. Those bills began arriving in mailboxes around the state in October of 1996. Overall property tax collections rose by 12% compared to the prior year.

Reacting to disenchantment with Measure 5, Measure 47 was written and sufficient signatures were gathered for the November 1996 ballot. Measure 47 had a number of features; all designed

to limit property taxes and local government in general, but the most significant was a process for reducing and limiting growth in assessed property values. In other words, Measure 47, while not repealing Measure 5, fundamentally changed the property tax system by moving away from real market value as the tax base and replacing it with a calculated assessed value to be used for tax purposes. Measure 47 passed 52% to 48%.

Following the passage of Measure 47, the Legislature was confronted with a series of interpretation and implementation issues. The Legislature had to decide between implementing Measure 47 as-is or developing a more workable alternative for voters to consider. Implementing the measure as-is raised the strong likelihood of numerous legal challenges, disappointed voters and continued political instability around the state's property tax system. Developing an alternative required finding the right balance between retaining the basic elements of Measure 47 while putting together clear legal language to address complex issues under tight timelines. The Legislature chose the latter. The result was Measure 50 approved by voters 57% to 43% in May of 1997.

In September of 2008, the Interim Senate Finance and Revenue Committee heard testimony from three key participants in the development of Measure 50: Tom Brian (Chair of the House Revenue Committee in 1997), Jim Scherzinger (Legislative Revenue Officer in 1997) and Tom Linhares (Columbia County Assessor and representative of the Oregon Association of County Assessors in 1997). The testimony centered on legislative decisions to replace Measure 47 with a constitutional value and rate limit, to design a local option system within the double majority requirements contained in Measure 47 and to incorporate a more simplified urban renewal system.

The key decision, derived directly from Measure 47, was the imposition of a value limit. Measure 50 created and defined a new "maximum assessed value". The maximum assessed value is compared with real market value with the tax bill for the property based on the lower of the two. The maximum assessed value was initially set at 90% of the 1995-96 assessed value for each property. The maximum assessed value is then increased 3% annually after 1995-96. An important element of Measure 50 is that the maximum assessed value calculation remains with the property when ownership changes. In contrast to California's property tax limit (Proposition 13 in 1978), assessed value is not adjusted back to market value when property changes hands. Measure 50 specifies events that allow for adjustment in the maximum assessed value calculation (outside the 3% annual increase). These events occur when the property is subject to: new construction or substantial improvements, partition or subdivision, rezoning, previous assessor omission or disqualification from exemption or special assessment.

The Legislature made the decision to treat new construction the same as existing property in terms of assessed value. This led to the creation of the "changed property ratio". The changed property ratio is equal to the ratio of assessed value to market value for all existing property within the same class and geographic area. Geographic area was defined statutorily (SB 1215 in 1997) to be the county. The use of the changed property ratio means that newly constructed

property receives the same assessed value benefits under Measure 50 on average as existing properties in that county.

In constructing Measure 50, the Legislature focused on what was perceived as the main sources of dissatisfaction with Measure 5:

- Unpredictable tax bills when property values are rising rapidly.
- Creation of imbalances between classes of property, especially between residential and industrial/commercial property.

The creation of maximum assessed value largely achieved this goal. For most property owners, tax bills would not rise by more than 3% in a given year. Moreover, for classes of property experiencing rapid market value growth (residential property), the 3% annual cap has the largest relative impact. However, the Legislature recognized that the predictability provided by Measure 50 would inevitably lead to variations in assessed value relative to market value for individual properties. This meant that homes with the same market value could be paying widely different property taxes under Measure 50.

In recognition of this likely outcome, Measure 50 contains language that exempts it from other provisions of the constitution that guarantee uniform tax treatment. Specifically, Measure 50 (section 18, Article XI) states that section 32, Article 1 and section 1, Article 9 do not apply. Section 32, Article 1 states "….all taxation shall be uniform on the same class of subjects within the territorial limits of the authority levying the tax". Similar language is contained in section 1, Article 9.

Horizontal Inequities and the Mechanics of Measure 50

Equity is one of the fundamental criteria used by public finance experts to evaluate individual taxes and tax systems. Most taxpayers and policy makers consider equity or fairness to be extremely important. However, equity is an inherently subjective concept with individual and societal perceptions of what constitutes tax fairness changing over time. For tax policy most of this debate revolves around vertical equity, which refers to how taxpayers with differing ability to pay are treated by the tax system. Most agree that higher income or wealthier individuals should contribute more in taxes than those with lesser ability to pay but how much more is often the subject of fierce public debate. Horizontal equity, on the other hand, is generally less controversial. Horizontal equity means that equals are treated equally under the tax system or those with the same ability to pay, pay the same amount of taxes.

Theoretically, the property tax is a wealth based tax with the value of property (usually restricted to real estate property) serving as the tax base or measure of ability to pay. This implies that under a horizontally equitable property tax, taxpayers with equally valued property pay the same amount of taxes. The implicit assumption is that real market value is the appropriate measure of wealth because it reflects the amount that the owner would receive if the property was liquidated

or sold. Measure 50, by separating assessed value from market value, virtually assured that this definition of horizontal equity would be violated.

Shortly after passage of Measure 50, the consequences of this separation were pointed out by Governor Kitzhaber's Tax Review Technical Advisory Committee:
"The implementation of Measure 50 may lead to horizontal inequities in the property tax system. Measure 50 may have reduced the horizontal equity in the property tax system through separation of assessed values from market values. Initial inequities in assessments may be harder to correct, and assessed values will not reflect differences in market value growth rates between properties." (Governor's Tax Review Technical Advisory Committee, "Review of Oregon's Tax System", June 1998).

In October of 2007, Willamette Week newspaper published an article detailing the differential impacts of Measure 50 on residential properties in Multnomah County. The article cited the example of two families in the Portland area living in homes with a similar market value. Despite the roughly equivalent market value for the two homes, one family was paying 3.5 times more in annual property taxes compared to the other family. The mechanics of assessed value determination under Measure 50 was the cause of the difference in tax bills between the two properties.

The Senate Finance and Revenue Committee also received detailed testimony from individual homeowners adversely affected by the Measure 50 value calculation relative to other taxpayers. Irene Vlatch from Portland presented testimony showing that her home had a substantially higher tax burden than other properties in the neighborhood with higher market values. Bob James, from Eagle Point, also presented detailed information showing higher property taxes for his home compared to other higher valued homes in the same area. Mr. James asked for an explanation from Jackson County Assessor Dan Ross. Assessor Ross agreed with Mr. James that his home had a higher assessed value than comparable homes but explained that the provisions of Measure 50 prevented an adjustment in his maximum assessed value calculation.(Legislative Revenue Office: Exhibits from Interim Senate Finance and Revenue Committee, September 23, 2008)

While the cases of Ms. Vlatch and Mr. James may be extreme, the mechanics of Measure 50 make variations in the ratio of assessed value to market value inevitable. In testimony before the Task Force on Comprehensive Revenue Restructuring in May of 2008, Tom Linhares pointed out three ways in which Measure 50 can cause horizontal inequities for residential property:

- Base Year (1995-96)
    - Measure 50, following Measure 47, established a new lower assessed value for all properties by taking the 1995-96 value and reducing it by 10%. This means that any inequities that were in place in 1995-96 or differential growth rates that had occurred between 1995-96 and 1997-98 were locked into place because the maximum assessed value grows at 3% annually for all properties from this base year forward. Properties whose value was set too high or too low compared to other properties in the base year would remain so over time.

- Neighborhood to Neighborhood
  - Maximum assessed value grows 3% annually for most properties regardless of what is happening to market value. This means that properties with rapid market value growth over time will be "under assessed" compared to properties with slower market value growth. The differential impact of the residential real estate boom between 1998 and 2006 exaggerated this effect.
- New Construction vs. Existing Property
  - Newly built homes are assessed at the change property ratio. The change property ratio is the average ratio of assessed value to market value for the class of property (residential in this case) for the county. Because it is based on the average, roughly half the residential property in the county will have a higher assessment ratio and roughly half will have a lower assessment ratio compared to the new construction.

Three hypothetical examples show how these inequities develop over time:

Example 1: Equal Valued Properties with Differential Growth Rates		
	Property 1	Property 2
2010 Real Market Value	$200,000	$200,000
2010 Maximum Assessed Value	$160,000	$160,000
Ratio of Assessed Value to Market Value	.8	.8
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	1.2%	1.2%
Assumed Real Market Value Annual Growth	10%	4%
Maximum Annual Assessed Value Growth Under Measure 50	3%	3%
Tax Bill	$2,400	$2,400
Values and Taxes After 10 Years of Differential Growth		
2020 Real Market Value	$518,748	$296,049
2020 Maximum Assessed	$215,027	$215,027
Ratio of Assessed Value to Market Value	.415	.726
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	0.62%	1.1%
Tax Bill	$3,225	$3,225

Example 1 is based on a scenario in which properties begin with the same market value ($200,000) and the same maximum assessed value ($160,000). Because assessed values are the same, the two properties have the same property tax liability ($2,400). However the real market value of the two properties is assumed to grow at different annual rates over the next ten years. Property 1 is assumed to be located in a high growth area experiencing 10% annual growth. After 10 years, the market value of property 1 is $518,748. Property 2, assumed to grow at a 4%

annual rate, has a real market value of $296,049 after ten years. Despite the fact that property 1 has a market value that is 75% greater than property 2, the tax liability on the two properties is the same. This occurs because the ratio of the maximum assessed value to real market value is .415 for property 1 and .726 for property 2. Dividing the tax bill for each property by its real market value shows a large difference in effective tax rates (tax bill/market value) with property 1 facing an effective rate of .62% and property 2 paying 1.1% of market value. Example 1 shows how differential property value growth rates can lead to a situation where taxpayers with large differences in the values of their home pay the same amount of taxes.

Example 2: Unequal Valued Properties with Differential Growth Rates		
	Property 1	Property 2
2010 Real Market Value	$200,000	$100,000
2010 Maximum Assessed Value	$160,000	$80,000
Ratio of Assessed Value to Market Value	.8	.8
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	1.2%	1.2%
Assumed Real Market Value Annual Growth	5%	12.54%
Maximum Annual Assessed Value Growth Under Measure 50	3%	3%
Tax Bill	$2,400	$1,200
Values and Taxes After 10 Years of Differential Growth		
2020 Real Market Value	$325,779	$325,888
2020 Maximum Assessed	$215,027	$107,513
Ratio of Assessed Value to Market Value	.66	.33
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	0.99%	0.49%
Tax Bill	$3,225	$1,613

Example 2 shows how differential growth rates for properties with previously unequal values can lead to a classic case of horizontal inequity. Properties 1 and 2 begin with the same assessment ratio and the same tax rate. Since property 1 has an assessed value twice that of property 2, it is subject to twice the property tax burden. However, if the market value of property 2 consistently grows at a faster rate than property 1, the two properties can have essentially the same market value ($325,000) after 10 years with property 1 still paying twice the amount of property taxes. This is a clear situation where taxpayers with equal ability to pay based on the market value of their property are subject to a vastly different property tax burden.

Examples 1 and 2 are both the result of differential growth in property values over time. Given that Measure 50 was followed by a period of rapid home price appreciation, these examples are descriptive of what happened in many parts of the state between 1997 and 2007. However, since 2007, residential property values have declined in many parts of the state. The real market value

of single family residential property declined 7.3% between January 1, 2008 and January 1, 2009 on a statewide basis. Assessors are reporting further declines for the 2010-11 tax year.

Example 3 presents a scenario where properties are declining at differential rates.

Example 3: Unequal Valued Properties with Differential Rates of Decline		
	Property 1	Property 2
2010 Real Market Value	$200,000	$150,000
2010 Maximum Assessed Value	$120,000	$90,000
Ratio of Assessed Value to Market Value	.6	.6
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	0.9%	0.9%
Assumed Real Market Value Annual Rate of Decline	-7.0%	-1.0%
Maximum Annual Assessed Value Growth Under Measure 50	+3%	+3%
Tax Bill	$1,800	$1,350
Values and Taxes After 5 Years of Differential Rates of Decline		
2020 Real Market Value	$139,138	$142,648
2020 Maximum Assessed Value	$139,113	$104,335
Ratio of Assessed Value to Market Value	.99	.73
Tax Rate Based on Assessed Value	1.5%	1.5%
Tax Rate Based on Market Value	1.5%	1.1%
Tax Bill	$2,087	$1,565

Example 3 shows a situation where market values are declining for both properties. However, the rate of decline for property 1 is greater (-7% annually) than for property 2 (-1% annually). At the beginning of the period, property 1 has a market value that is 33% greater than property 2 but both have the same assessment ratio (.6) and the same effective tax rate (0.9%). After 5 years, the market value of property 1 has fallen to $139,138 while property 2 has declined to $142,648. Despite the fact that property 2 is now worth more than property 1, it is subject to lower taxes ($1,565) than property 1 ($2,087) because it has a lower maximum assessed value. This means that horizontal inequities can develop under Measure 50 when market prices are falling as long as the rate of decline is not the same. There is, however, an important difference under a scenario of falling home prices over an extended period of time. In example 3, the market value of property 1 has fallen almost back to its market value; at that point the market value would become the assessed value. Under Measure 50, the assessed value of a property is the lesser of the maximum assessed value or the market value.

Evidence of Horizontal Inequities under Measure 50

The designers of Measure 50 recognized that the loss of equity among similarly valued properties was the cost of providing predictability for annual property tax bills. Individual property owners have come forward with detailed descriptions of instances where horizontal equity has been

violated. Finally, the mechanics of Measure 50 demonstrate that horizontal inequities are almost certain to develop over time. The next step is to systematically look for the degree to which these inequities exist in the diverse real estate markets around the state.
Multnomah County was the first to do an in-depth analysis of variations in the ratio of assessed value to market value after 10 years under Measure 50. The Multnomah County analysis showed that this ratio varied widely for residential properties throughout the price spectrum. The county did not find a systematic relationship between the price of a home and variations in the ratio of assessed values to market values.

The Interim Senate Finance and Revenue Committee directed the Legislative Revenue Office (LRO) to build on the work of Multnomah County and extend the analysis to other counties in the state. Working with the assessors from Multnomah, Jackson, Deschutes and Sherman counties and the Department of Revenue, LRO built a data base consisting of assessed value, market value and tax bill for properties in the four counties. The data are for fiscal years 2005 through 2010. Data were gathered for residential property as well as commercial and industrial property. This report will focus on the residential property data only.

Table 1 shows the ratio of assessed value to market value for all single family residential property in each of the four counties for the 5 year sample period.

Table 1: Ratio of Assessed Value to Market Value for Residential Property

County	2005	2006	2007	2008	2009	2010
Deschutes	.700	.658	.533	.442	.471	.570
Jackson	.655	.575	.487	.484	.527	.628
Multnomah	.656	.612	.567	.514	.503	.551
Sherman	.813	.816	.677	.610	.519	.523

Table 1 shows the movement of the assessed to market value ratio through the peak of the real estate boom and the beginning of the bust in 2008. Both Deschutes and Jackson counties experienced rapid drops in the ratio from 2005 through 2008 as market value growth soared well above the 3% annual maximum assessment growth. As the national housing bust hit Oregon in 2008, market values began declining for many residential properties. As a result the ratio of maximum assessed value to market value rose sharply in Deschutes and Jackson counties. Multnomah County went through a similar but milder cycle while rural Sherman County had a steady decline in the ratio until flattening out in 2010. Despite the uptick in the ratio, especially for Deschutes and Jackson Counties, the average maximum assessed value remains well below market value. This means the maximum assessed value is the basis for property taxes for nearly all residential property in the four counties. However, with further market value declines expected in 2011 and beyond, an increasing number of properties will be assessed at market value.

Table 2: Ratio of Assessed Value to Market Value by Market Value Segment			
Real Market Value in FY 2010	Deschutes	Jackson	Multnomah
$0 to $100,000	.468	.528	.435
$100,000 to $200,000	.611	.653	.558
$200,000 to $300,000	.598	.653	.541
$300,000 to $400,000	.559	.631	.514
$400,000 to $500,000	.555	.609	.521
$500,000 to $600,000	.559	.591	.546
$600,000 to $700,000	.546	.574	.567
$700,000 to $800,000	.534	.578	.578
$800,000 to $900,000	.555	.595	.585
$900,000 to $1,000,000	.562	.608	.593

Table 2 indicates that the assessed to market value ratio is relatively low for all segments of the housing market in the three counties. Sherman County is excluded from this table because of its relatively small number of properties. There is no clearly discernable relationship between market value and the assessed to market value ratio. In other words, there is no systematic increase or decrease in the ratio as real market value rises.

Based on the information in Tables 1 and 2, it is clear that the assessed value to market value ratio is well below one for most residential property. However, these data do not address the issue of horizontal inequities or cases where properties with similar market values are subject to significantly different tax burdens. For this issue it is necessary to look for variations in the ratio of assessed value to market value for individual properties. Table 3 displays single family residential properties for the 2010 fiscal year grouped by the ratio of assessed value to market value for Jackson, Deschutes, Sherman and Multnomah Counties.

Table 3: Ratio of Assessed Value to Market Value for Residential Property								
	Jackson		Deschutes		Sherman		Multnomah	
Ratio	Number	%	Number	%	Number	%	Number	%
0 to .2	124	.3	50	.2	2	.6	4,731	2.5
.2 to .4	399	1.0	1668	5.3	56	17.8	21,429	11.5
.4 to .6	10,964	26.5	16,169	51.5	163	51.7	95,726	51.4
.6 to .8	28,299	68.5	12,364	39.4	70	22.2	58,647	31.5
.8 to 1	1,406	3.4	1,092	3.5	24	7.6	5,412	2.9
1	129	.3	25	.1	0	0	223	.1
All	41,321	100	31,368	100	315	100	186,168	100

Table 3 indicates that the assessed value for residential properties is widely spread between 40 and 80% of market value in all four counties. Urban Multnomah County and rural Sherman both have a substantial proportion of residential properties assessed in the 20 to 40% of market value range.

Table 4 presents the same data with tighter 5% intervals. Sherman County is dropped from this table because of its relatively small number of residential properties.

Table 4: Ratio of Assessed Value to Market Value at 5% Intervals

	Jackson	Deschutes	Multnomah
Ratio	Percent of Total	Percent of Total	Percent of Total
0 to .05	.06	0	.53
.05 to .1	.07	.02	.14
.1 to .15	.05	.05	.43
.15 to .2	.12	.08	1.45
.2 to .25	.08	.35	1.28
.25 to .3	.08	.85	1.32
.3 to .35	.24	1.72	2.69
.35 to .4	.55	2.36	6.28
.4 to .45	1.54	3.64	11.35
.45 to .5	3.29	7.42	14.82
.5 to .55	6.32	16.87	13.79
.55 to .6	15.34	23.58	11.51
.6 to .65	25.84	19.39	10.81
.65 to .7	22.11	11.0	10.54
.7 to .75	13.59	5.69	6.46
.75 to .8	7.0	3.4	3.61
.8 to .85	2.21	2.03	1.56
.85 to .9	.72	1.02	.79
.9 to .95	.33	.37	.37
.95 to 1	.13	.08	.14
1	.31	.08	.11
All	100	100	100

The three counties show a large proportion of homes with ratios scattered between .5 and .7. Multnomah County shows the greatest spread with 11.3% of homes assessed between 40 and 45 % of market value and 10.5% assessed between 65 and 70% of market value. It is important to recognize the differences in tax burdens implied by this spread. For example, a home assessed at 70% of market value will have an effective tax rate (tax bill/ market value) that is 40% higher than a home assessed at 50% of market value.

Another way to look at the variability in assessment ratios is to focus on typically priced homes. Table 5 shows only homes with a market value between $200,000 and $300,000, a range that includes the statewide median home price as well as the median price for most counties.

Table 5: Assessed Value to Market Value Ratio for Homes with a Market Value Between $200 and $300 K

	Jackson		Deschutes		Multnomah	
Ratio	Number	%	Number	%	Number	%
0 to .1	2	0	2	0	505	.6
.1 to .2	2	0	7	0	2,549	3.1
.2 to .3	3	0	117	.8	2,743	3.3
.3 to .4	59	.4	465	3.3	8,173	9.9
.4 to .5	469	3.1	1,144	8.1	18,858	22.8
.5 to .6	2,579	16.8	5,725	40.8	18,217	22.0
.6 to .7	8,555	55.7	4,608	32.8	18,233	22.0
.7 to .8	3,234	21.0	1,341	9.6	10,850	13.1
.8 to .9	416	2.7	556	4.0	2,201	2.7
.9 to 1	36	.2	66	.5	343	.4
1	16	.1	7	0	46	.1
All	15,371	100	14,038	100	82,718	100

Table 3 confirms that there is widespread variability in the ratio of assessed value to market value for typically priced homes in Jackson, Deschutes and Multnomah Counties. The variability is most striking in Multnomah County where 8,173 homes in the $200,000 to $300,000 price range are assessed between 30 and 40 % of market value while 10,850 homes in this same range are assessed at 70 to 80% of market value. There is less variability in the more homogeneous Jackson and Deschutes county residential market but nonetheless homes are widely spread in the 40 to 80% of market value range in these two counties as well.

Data was gathered for Jackson, Deschutes and Multnomah Counties for a 5-year period. Sherman County data is not available for 2005. Table 6 shows how the ratio of assessed to market value for residential properties has shifted over time for the three counties.

Table 6: Change in Assessed Value to Market Value Ratios over Time						
	Jackson		Deschutes		Multnomah	
	FY 2005	FY 2010	FY 2005	FY 2010	FY 2005	FY 2010
Ratio	% of Total	% of Total	% of Total	% of Total	% of Total	% of Total
0 to .2	.2	.3	0	.2	.5	2.5
.2 to .4	.6	1.0	.4	5.3	4.9	11.5
.4 to .6	11.9	26.5	11.0	51.5	41.9	51.4
.6 to .8	85.0	68.5	78.0	39.4	48.0	31.5
.8 to 1	2.2	3.4	10.3	3.5	4.5	2.9
1	.2	.3	.3	.1	.2	.1
All	100	100	100	100	100	100

Table 6 shows the general downward drift in the assessed value to market value ratio over the 5-year period. A general spreading out of properties into the different ratio segments can also be seen. Both of these trends have slowed over the past two years as the housing market collapsed but they are expected to resume when widespread recovery begins.

Tables 1 through 6 highlight the major findings of the study but more detailed information from the same data base can be found in Appendix A.

Conclusions and Policy Options

Analyzing the assessed value and market value data for the four counties leads to the following general conclusions:

- Horizontal inequities—unequal tax treatment of taxpayers with similarly valued property, are widespread among the four counties observed.
- There does not appear to be a systematic relationship between assessed to market value ratios and market price, in other words variability in the ratio is spread throughout the price spectrum.
- The variability of assessed value to market value is widespread in the most common $200,000 to $300,000 price segment.
- The housing market collapse, with its corresponding home price deflation, slowed down the build- up of horizontal inequities but did not stop it because nearly all residential property is still assessed well below market value.
- When general home price appreciation begins again, horizontal inequities can be expected to grow over time. This is because the recovery will likely be uneven with

certain properties, neighborhoods and regions of the state growing more rapidly than others.

- Among the sample counties, Multnomah County is experiencing the most acute degree of horizontal inequity. This is likely due to its larger, more diverse, housing market relative to the other counties.

Policy Options

Possible policy options to mitigate the growing inequities in the property tax system were discussed during the hearings held by the Interim Senate Finance and Revenue Committee. A more general policy options discussion regarding local government finance and Measure 50 was also a major part of the report issued by the Task Force on Comprehensive Revenue Restructuring (Legislative Revenue Office: Task Force on Comprehensive Revenue Restructuring, Final Report, January 2009). The options list below builds on those discussions. The intent of the suggested options is to provide a possible framework for addressing horizontal inequities in the system while minimizing the loss of predictability for taxpayers. They can also be set up to be revenue neutral in the short term with appropriate phase-in periods.

- Eliminate maximum assessed value calculation and return to market based assessments with lower tax rates.
    - This is essentially a proposal to return to the Measure 5 based system and was made in testimony before the committee by Don McIntire, Measure 5's principle author. Property tax rates (now roughly .95% of market value on a statewide basis) could be adjusted to achieve short-term revenue neutrality. The proposal would eliminate horizontal inequities, as defined in this report, but would re-introduce uncertainty for taxpayers concerning annual tax bills. This could be softened by incorporating a proportional adjustment factor for periods when general housing prices are rising rapidly.

- Rebase residential property to market value at time of transaction.
    - The designers of Measure 50 explicitly avoided this option because of concerns over horizontal inequities. In the short-term, horizontal inequities would increase, as newly sold property is assessed at 100% of market value and existing property is assessed at 50 to 60%. However, rebasing to market value does provide a long-term safety valve on the degree of horizontal inequity over time. Assuming that nearly all property is eventually sold, this proposal would require most properties to be assessed at market value at some point over the long-term. Measure 50 does not provide a long-term re-adjustment, as long as property values grow more than 3% over time, the assessed value to market value ratio will continuously fall. Rebasing to market value would generate additional property tax revenue initially. This could be partially offset by a phase-in period in which newly sold properties are assessed at a higher, but less than 100%, proportion of market value.

- Establish assessed value to market value range; adjust 3% annual growth factor according to where property ratios are with respect to range.
    - Assessment ratios above or below the acceptable range would in effect become a form of exception to the annual 3% growth restriction, similar to new construction and rezoning. The growth factor adjustment would be positive for properties below the range and negative for those above. The annual growth factor adjustments could be designed in a way that moves properties into the range over a period of time. Such a system could be designed in a revenue neutral manner in the short-term but market forces would inevitably influence the revenue impact over time. Such a system is also likely to be complicated for local assessors and taxpayers.

- Repeal Measure 50's exemption for constitutional requirements of uniformity in taxation and direct Legislature to design adjustments to the property tax system that are consistent with uniformity in taxation principles.
    - This would give the Legislature the mandate to develop a remedy for horizontal inequities in the system. It could also be designed in a way that gave the Legislature the flexibility to develop a combination of approaches and adjust them over time based on results. This approach would however generate uncertainty around the system during the period when modifications are being developed and implemented.

All policy options listed above would require a constitutional amendment because they entail some direct change in Measure 50. In the case of multiple changes, a constitutional revision would be required. This would entail revisiting some of the policy decisions made by voters in 1997. Restructuring the Measure 50 system to reduce horizontal inequities is likely to cause some loss in year-to-year predictability for taxpayers—a major reason for passage of Measures 47 and 50. Policy-makers will have to weigh this trade-off carefully and be prepared to fully explain the changes to voters in order to get their support.

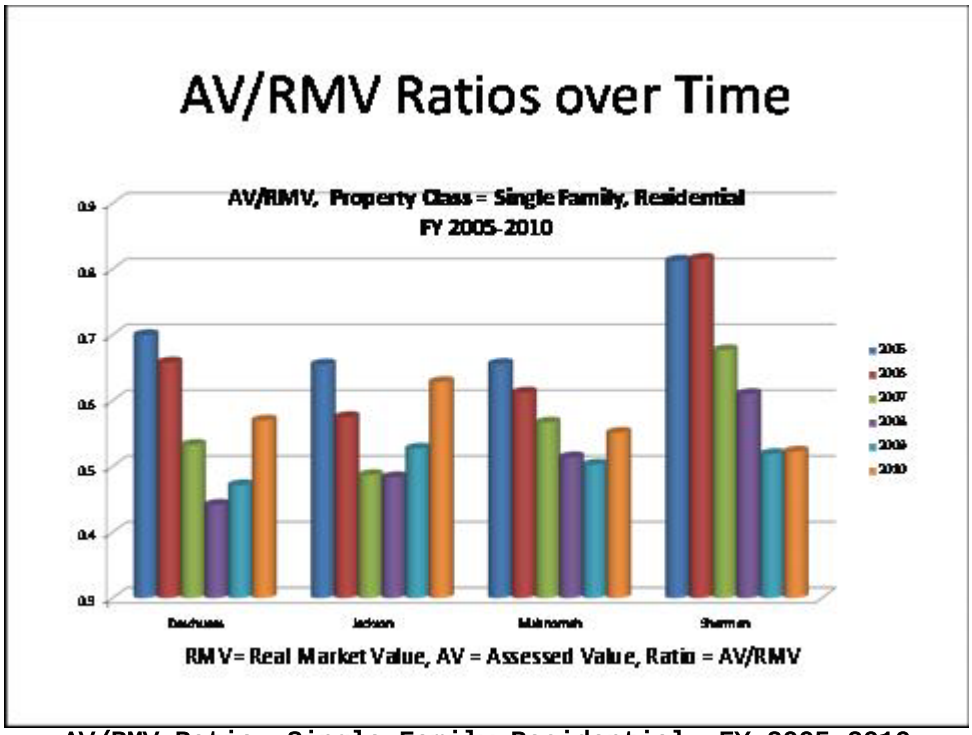
APPENDIX A

DETAILED STATISTICAL ANALYSIS

AV/RMV Ratio, All Real Properties, All Counties, FY 2009-2010

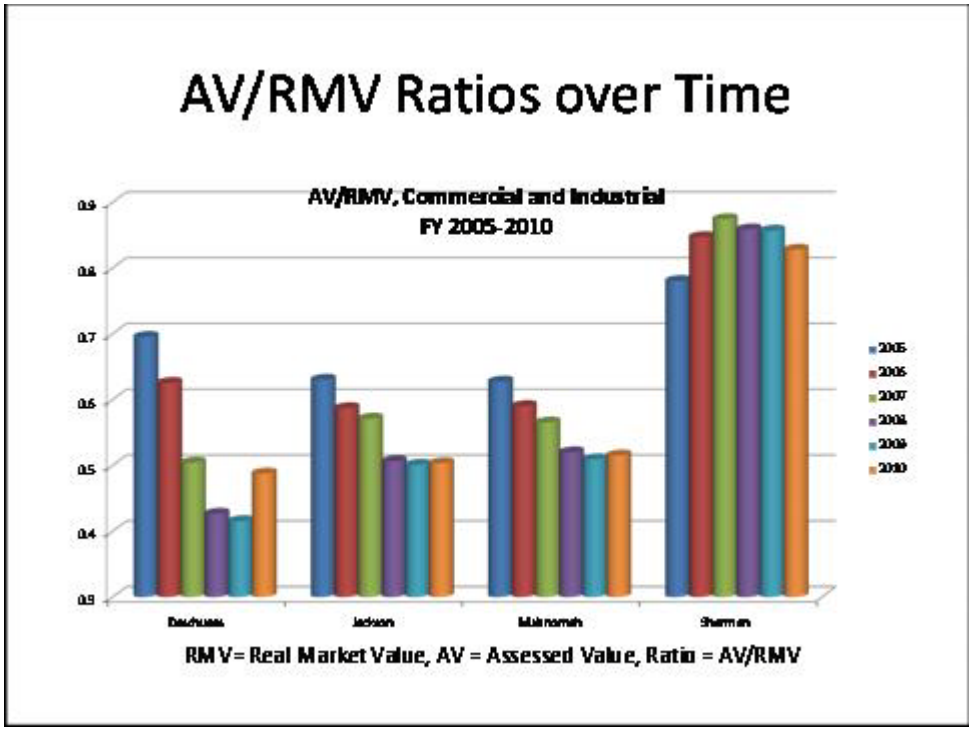
	FY 2009-2010		
	Real Property		
County	**RMV**	**AV**	**AV/RMV Ratio**
Baker	1,293,730	891,958	0.689
Benton	9,485,646	5,979,884	0.630
Clackamas	52,244,324	33,870,105	0.648
Clatsop	8,546,223	4,628,304	0.542
Columbia	5,169,904	3,456,022	0.668
Coos	6,741,373	4,005,795	0.594
Crook	3,348,708	1,558,477	0.465
Curry	3,638,999	2,276,511	0.626
Deschutes	32,227,491	16,702,792	**0.518**
Douglas	10,474,073	6,547,573	0.625
Gilliam	404,910	230,891	0.570
Grant	615,626	405,238	0.658
Harney	586,968	375,014	0.639
Hood River	3,019,838	1,624,882	0.538
Jackson	25,317,423	14,718,486	**0.581**
Jefferson	2,106,820	1,030,619	0.489
Josephine	8,771,264	5,507,279	0.628
Klamath	6,573,294	3,846,761	0.585
Lake	786,674	439,366	0.559
Lane	40,188,761	23,855,306	0.594
Lincoln	10,169,748	5,856,413	0.576
Linn	9,769,917	7,087,310	0.725
Malheur	1,868,674	1,319,500	0.706
Marion	26,886,231	17,639,932	0.656
Morrow	1,030,292	758,858	0.737
Mult.	99,417,282	53,805,915	**0.541**
Polk	6,248,309	4,241,034	0.679
Sherman	254,509	138,777	**0.545**
Tillamook	6,299,553	3,584,175	0.569

Umatilla	4,680,564	3,278,104	0.700
Union	1,925,962	1,247,345	0.648
Wallowa	1,035,529	536,005	0.518
Wasco	2,740,094	1,495,403	0.546
Wash.	65,467,506	41,974,973	0.641
Wheeler	273,508	96,982	0.355
Yamhill	9,869,326	5,968,869	0.605
State Total	469,479,056	280,980,858	0.598



AV/RMV Ratio, Single Family Residential, FY 2005-2010

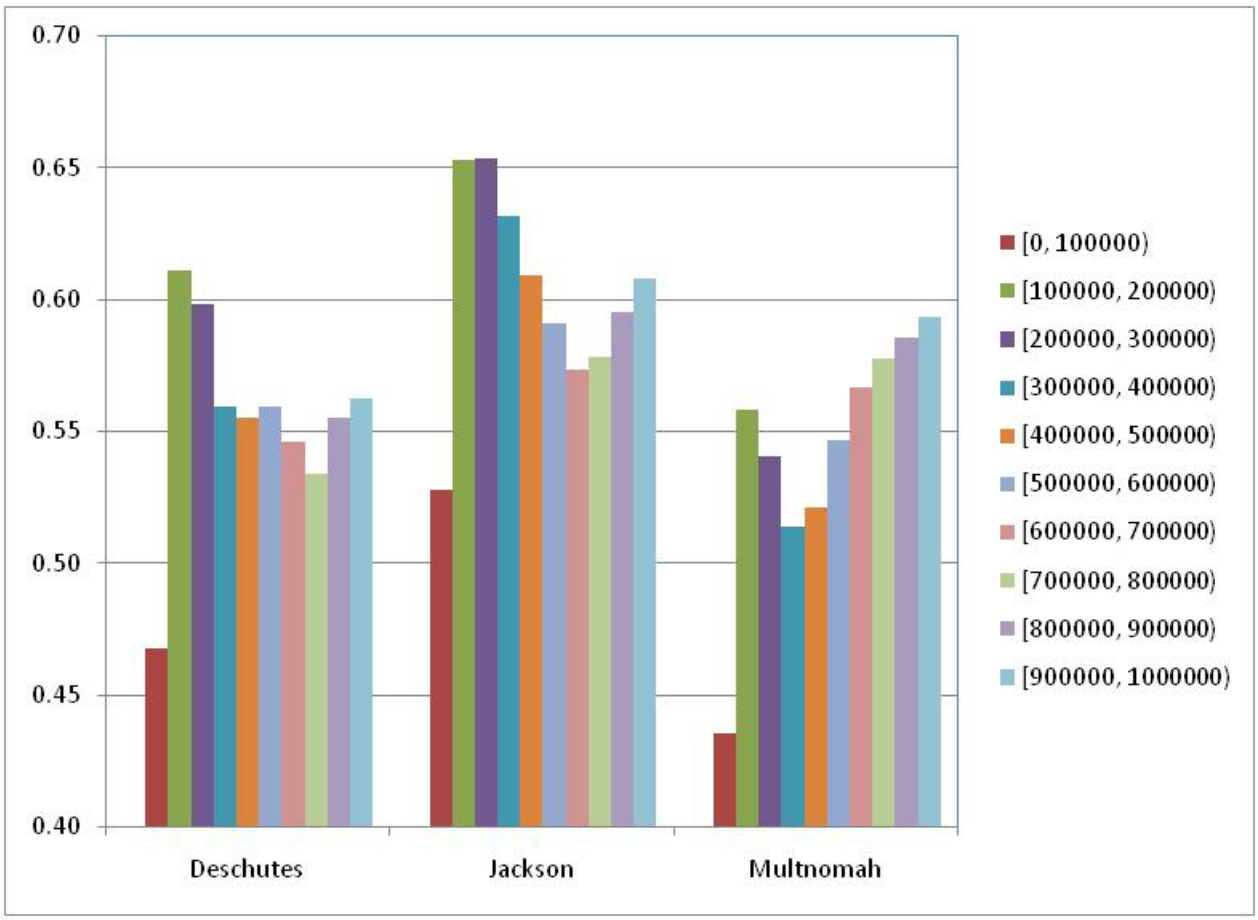
County	2005	2006	2007	2008	2009	2010
Deschutes	0.700	0.658	0.533	0.442	0.471	0.570
Jackson	0.655	0.575	0.487	0.484	0.527	0.628
Multnomah	0.656	0.612	0.567	0.514	0.503	0.551
Sherman	0.813	0.816	0.677	0.610	0.519	0.523



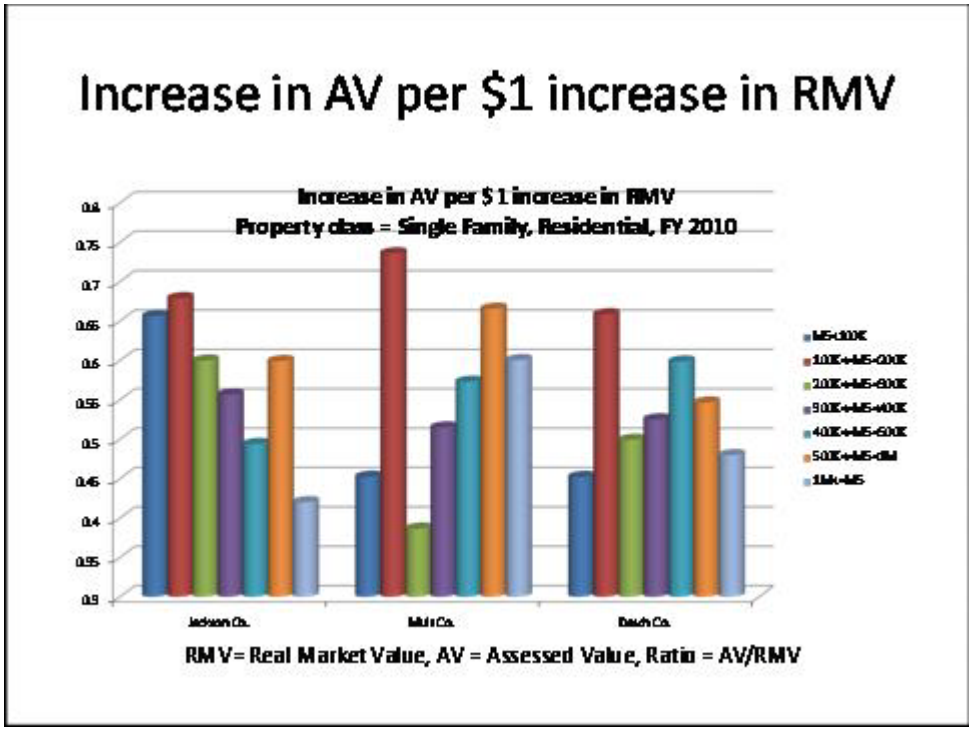
AV/RMV Ratio, Commercial and Industrial, FY 2005-2010

County	2005	2006	2007	2008	2009	2010
Deschutes	0.695	0.625	0.504	0.427	0.415	0.488
Jackson	0.630	0.587	0.571	0.506	0.501	0.503
Multnomah	0.627	0.590	0.565	0.520	0.509	0.515
Sherman	0.780	0.847	0.874	0.859	0.857	0.828

AV/RMV Ratios based on Real Market Value, FY 2009-2010
Single Family Residential
RMV < $1 million



RMV ($)	Deschutes	Jackson	Multnomah
[0, 100000)	46.8%	52.8%	43.5%
[100000, 200000)	61.1%	65.3%	55.8%
[200000, 300000)	59.8%	65.3%	54.1%
[300000, 400000)	55.9%	63.1%	51.4%
[400000, 500000)	55.5%	60.9%	52.1%
[500000, 600000)	55.9%	59.1%	54.6%
[600000, 700000)	54.6%	57.4%	56.7%
[700000, 800000)	53.4%	57.8%	57.8%
[800000, 900000)	55.5%	59.5%	58.5%
[900000, 1000000)	56.2%	60.8%	59.3%



Expected Increase in AV per $1 increase in RMV
Single Family Residential, FY 2009-2010

	Jackson	Multnomah	Deschutes
RMV Less than $100,000	$0.66	$0.45	$0.45
$ 100,000<=RMV<$ 200,000	$0.68	$0.74	$0.66
$ 200,000<=RMV<$ 300,000	$0.60	$0.39	$0.50
$ 300,000<=RMV<$ 400,000	$0.56	$0.51	$0.53
$ 400,000<=RMV<$ 500,000	$0.49	$0.57	$0.60
$ 500,000<=RMV<$ 1M	$0.60	$0.67	$0.55
$ 1M<=RMV	$0.42	$0.60	$0.48

AV/RMV Ratio, Single Family Residential, By Tax Code Area
Deschutes County, FY 2009-2010

Code Area	Mean	Std. Dev.	Obs.
1001	0.578	0.117	22727
1003	0.532	0.052	23
1016	0.385	NA	1
1017	0.516	0.088	65
1060	0.553	0.000	2
1061	0.378	0.085	118
1087	0.600	0.057	374
1108	0.568	0.016	24
1109	0.571	0.066	163
1110	0.541	0.017	77
1120	0.521	NA	1
1122	0.529	NA	1
2001	0.614	0.081	6952
2003	0.431	NA	1
2004	0.595	0.099	7
2033	0.358	NA	1
2036	0.837	0.110	52
2039	0.578	0.070	186
5015	0.565	NA	1
6001	0.594	0.130	558
6002	0.632	NA	1
6045	0.404	0.030	2
6047	0.502	0.128	31
All	**0.586**	**0.111**	**31368**

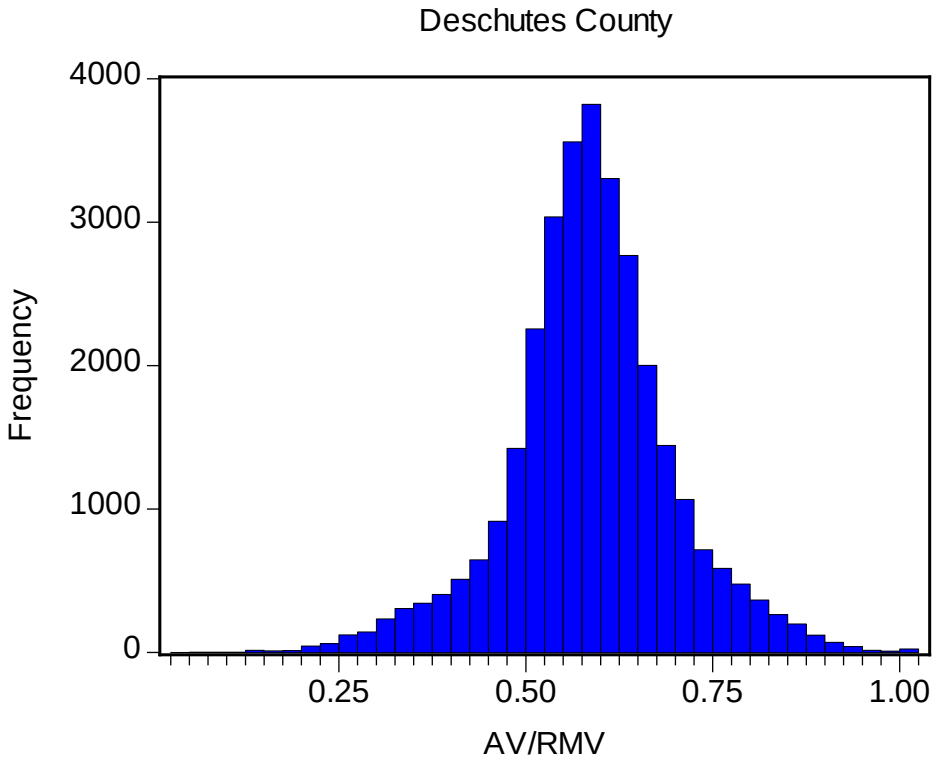
AV/RMV Ratio, Single Family Residential, By Tax Code Area
Jackson County, FY 2009-2010

Code Area	Mean	Std. Dev.	Obs.
101	0.559	0.078	915
102	0.563	0.106	99
401	0.637	0.052	1095
405	0.614	0.030	26
407	0.686	0.092	1380
408	0.500	0.100	5
419	0.629	0.120	32
429	0.625	0.005	2
501	0.544	0.107	5275
504	0.565	0.091	6
508	0.316	0.164	18
511	0.412	0.196	10
515	0.586	0.104	113
601	0.693	0.084	373
602	0.715	0.074	4512
603	0.583	0.183	13
604	0.617	0.091	453
610	0.595	0.106	73
628	0.623	0.077	576
901	0.680	0.099	2373
903	0.427	0.220	4
906	0.667	0.043	6
909	0.483	0.011	26
915	0.663	0.081	529
924	0.628	0.000	2
926	0.643	0.080	1489
2201	0.610	0.065	1225
2206	0.574	0.100	135
3501	0.665	0.079	538
3503	0.359	0.395	2
4901	0.655	0.075	18280
4903	0.589	0.057	494
4905	0.600	0.037	300
4910	0.598	0.050	99
4915	0.576	0.065	99
4916	0.559	0.076	2
4919	0.612	0.038	53
4939	0.641	0.094	10
4946	0.589	0.074	44
4947	0.620	0.050	16
4949	0.675	0.077	332
4950	0.664	0.127	193
6202	0.674	NA	1
9101	0.635	0.069	93
All	**0.642**	**0.096**	**41321**

AV/RMV Ratio, Single Family Residential, By Tax Code Area
Multnomah County, FY 2009-2010

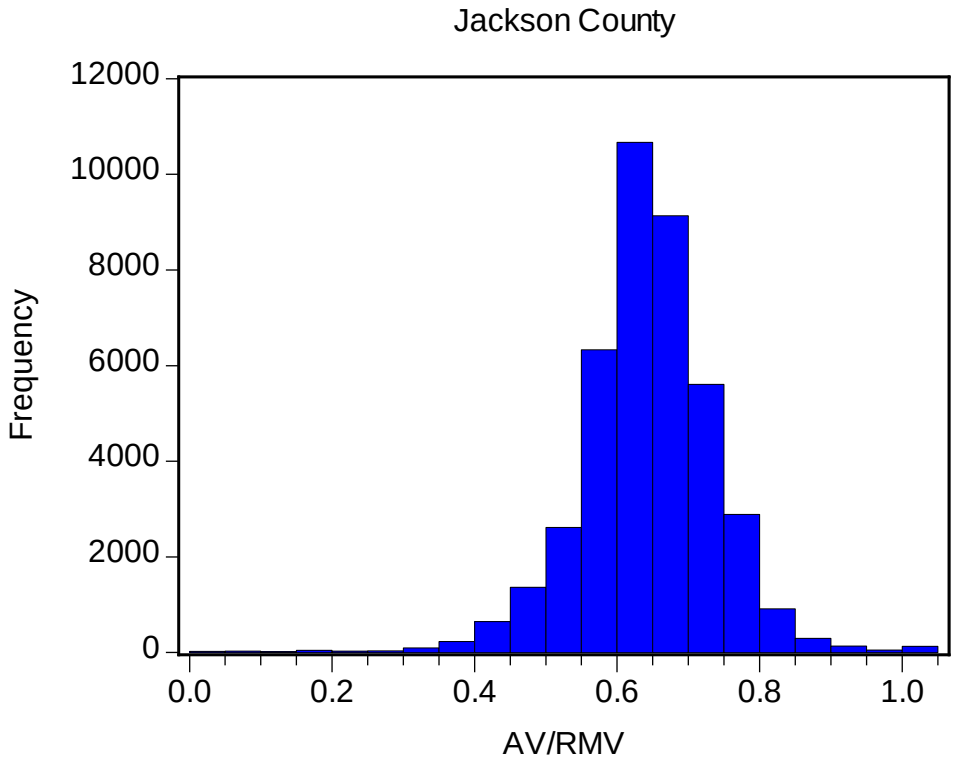
Code Area	Mean	Std. Dev.	Obs.	Code Area	Mean	Std. Dev.	Obs.
1	0.592	0.109	25376	248	0.683	0.132	106
2	0.640	0.185	35	264	0.677	0.111	40
5	0.636	0.136	27	276	0.641	0.151	82
6	0.611	0.092	6283	277	0.528	NA	1
11	0.625	0.008	2	278	0.690	0.194	143
16	0.629	0.128	27	279	0.762	0.097	3
26	0.700	0.095	12398	281	0.701	0.092	490
27	0.690	0.135	29	296	0.675	0.205	26
28	0.715	0.173	32	303	0.707	0.156	104
36	0.689	0.275	4	304	0.709	0.157	444
40	0.698	0.077	1901	331	0.640	0.062	305
47	0.680	0.059	103	350	0.645	0.081	86
49	0.658	0.137	120	353	0.698	0.090	5
62	0.513	0.185	22	354	0.611	0.115	87
72	0.550	0.129	52	358	0.671	0.180	29
74	0.646	0.145	155	370	0.613	0.080	27
82	0.434	0.246	32	374	0.689	0.125	34
85	0.623	0.156	45	378	0.700	0.139	40
86	0.788	0.180	8	381	0.674	0.104	620
87	0.682	0.169	18	383	0.776	0.105	2056
88	0.671	0.156	47	386	0.666	0.061	1343
90	0.530	0.174	5	391	0.652	0.128	346
103	0.607	0.130	135	402	0.665	0.092	3371
113	0.627	0.112	10986	403	0.575	0.069	4
118	0.664	0.125	116	404	0.648	0.128	216
121	0.650	0.103	339	406	0.627	0.094	1762
122	0.724	0.085	37	407	0.658	0.082	2426
137	0.651	0.073	1226	410	0.834	0.010	2
144	0.599	0.072	35	411	0.678	0.148	17
147	0.642	NA	1	412	0.817	NA	1
149	0.686	0.121	4	413	0.560	NA	1
151	0.572	0.068	2	414	0.663	0.023	2
154	0.698	0.073	54	606	0.644	0.061	3
155	0.873	0.081	6	703	0.555	0.121	4144
160	0.621	0.081	418	704	0.627	0.051	7
161	0.666	0.072	549	705	0.578	0.141	2101
175	0.670	0.092	3564	709	0.534	0.078	12
181	0.539	0.061	23	710	0.358	0.127	8751
187	0.633	0.115	35	711	0.553	0.116	35
201	0.454	0.105	85890	712	0.558	0.108	172
203	0.433	0.240	27	883	0.297	0.135	48
236	0.660	0.104	156	884	0.471	0.114	46
240	0.637	0.090	1555	885	0.330	0.195	5
241	0.627	0.118	526	901	0.669	0.099	194
242	0.699	0.081	4020	904	0.880	0.167	3
243	0.574	0.041	3	**All**	**0.539**	**0.148**	**186168**

AV/RMV Ratios for Single Family Residential Properties, FY 2009-2010
AV=Assessed Value, RMV=Real Market Value



RATIO	Mean	Std. Dev.	Obs.
[0, 0.2)	0.147659	0.038065	50
[0.2, 0.4)	0.334837	0.047674	1668
[0.4, 0.6)	0.535246	0.047532	16169
[0.6, 0.8)	0.664325	0.050379	12364
[0.8, 1)	0.850560	0.040589	1092
1	1.000000	0.000000	25
All	0.586196	0.111019	31368

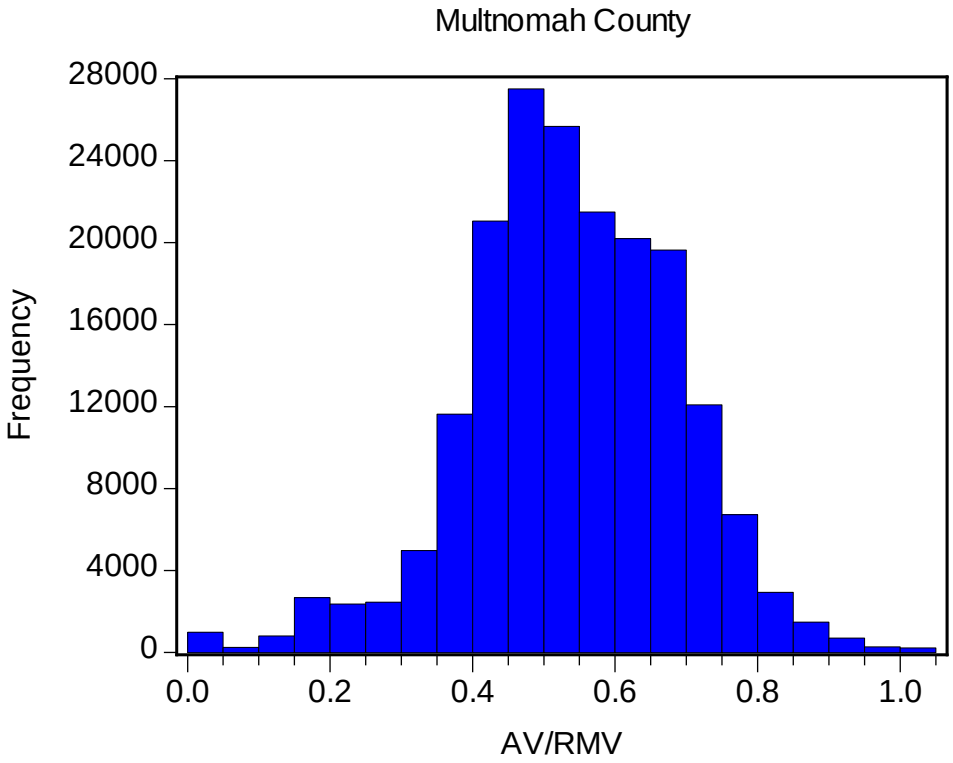
AV/RMV Ratios for Single Family Residential Properties, FY 2009-2010
AV=Assessed Value, RMV=Real Market Value



RATIO	Mean	Std. Dev.	Obs.
[0, 0.2)	0.114739	0.059465	124
[0.2, 0.4)	0.344790	0.049767	399
[0.4, 0.6)	0.544820	0.047689	10964
[0.6, 0.8)	0.674983	0.050209	28299
[0.8, 1)	0.847431	0.043280	1406
1	1.000000	0.000000	129
All	0.642459	0.095927	41321

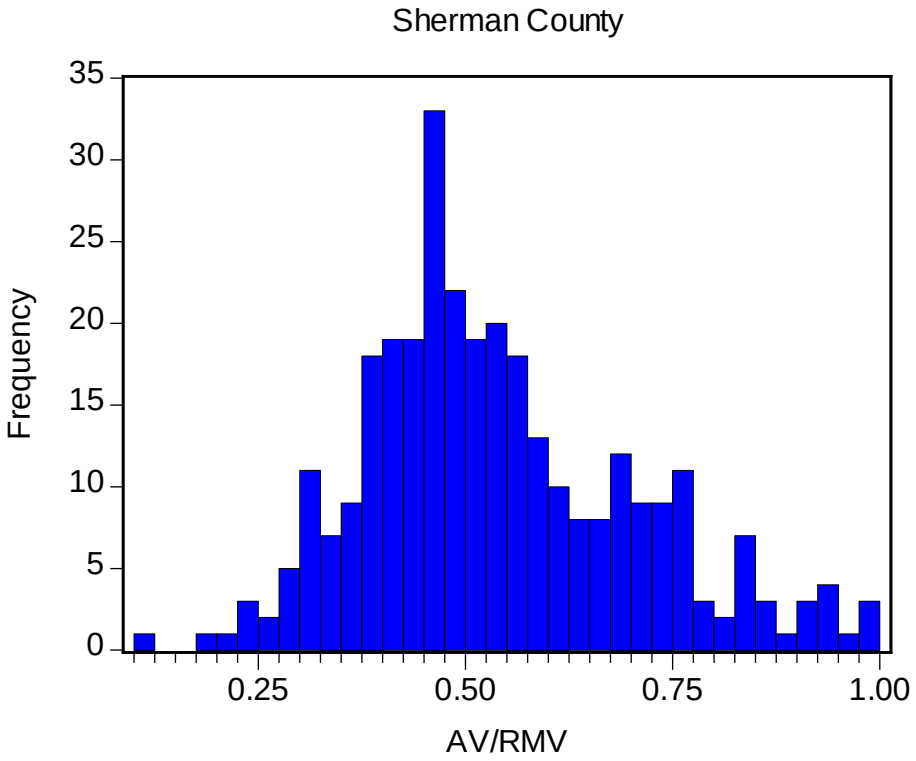
AV/RMV Ratios for Single Family Residential Properties, FY 2009-2010

AV=Assessed Value, RMV=Real Market Value



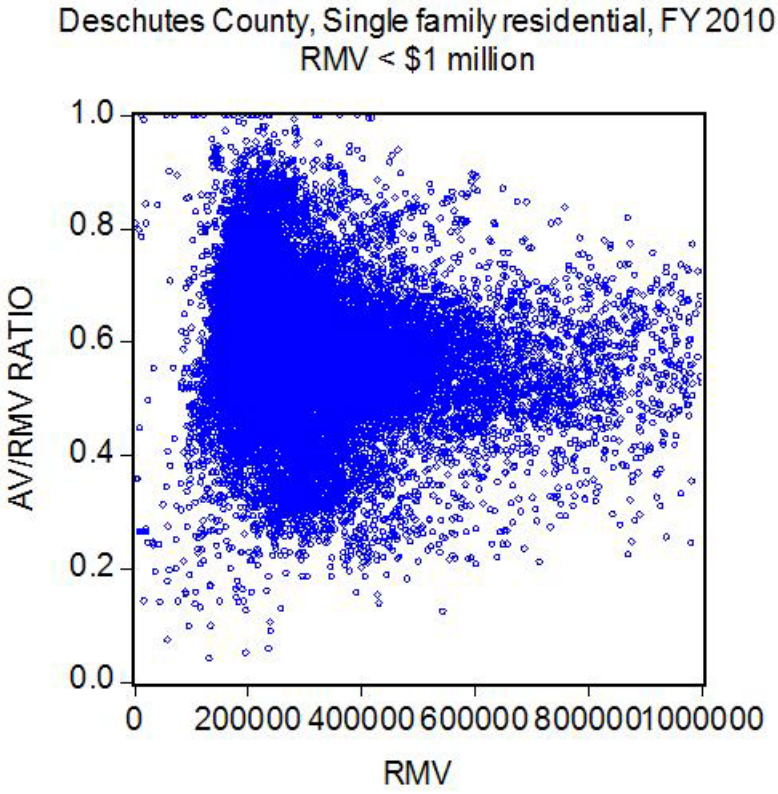
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.017648	0.033248	1248
[0.1, 0.2)	0.166028	0.023261	3483
[0.2, 0.3)	0.250779	0.029901	4826
[0.3, 0.4)	0.363288	0.026545	16603
[0.4, 0.5)	0.454218	0.027840	48548
[0.5, 0.6)	0.547006	0.028641	47178
[0.6, 0.7)	0.649289	0.028434	39831
[0.7, 0.8)	0.740403	0.027841	18816
[0.8, 0.9)	0.838372	0.028312	4431
[0.9, 1)	0.935385	0.026665	981
1	1.000000	0.000000	223
All	0.539024	0.148081	186168

AV/RMV Ratios for Single Family Residential Properties, FY 2009-2010
AV=Assessed Value, RMV=Real Market Value



RATIO	Mean	Std. Dev.	Obs.
[0, 0.2)	0.144135	0.061520	2
[0.2, 0.4)	0.337985	0.048040	56
[0.4, 0.6)	0.493057	0.053872	163
[0.6, 0.8)	0.692308	0.055391	70
[0.8, 1)	0.892408	0.062089	24
1	1.000000	0.000000	0
All	0.537978	0.164165	315

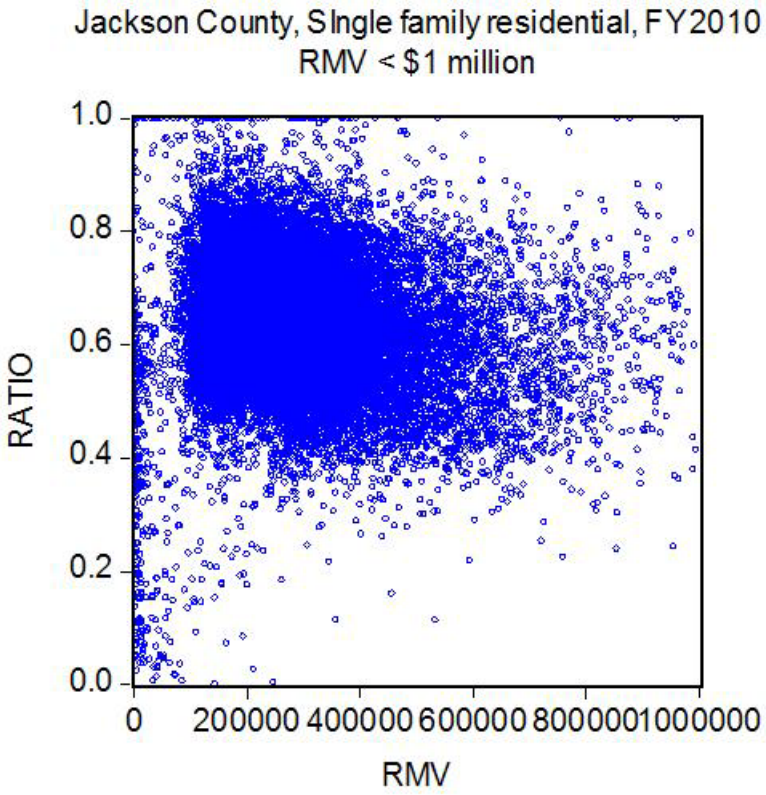
Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Deschutes County, Single family residential, FY 2009-2010



RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.073103	0.023122	7
[0.1, 0.2)	0.159796	0.023169	43
[0.2, 0.3)	0.262903	0.025822	375
[0.3, 0.4)	0.355726	0.028195	1271
[0.4, 0.5)	0.461728	0.028255	3448
[0.5, 0.6)	0.555593	0.027472	12610
[0.6, 0.7)	0.641319	0.027446	9474
[0.7, 0.8)	0.741150	0.028799	2832
[0.8, 0.9)	0.838804	0.026944	951
[0.9, 1)	0.930379	0.024630	140
1	1.000000	0.000000	25
All	0.586474	0.110947	31176

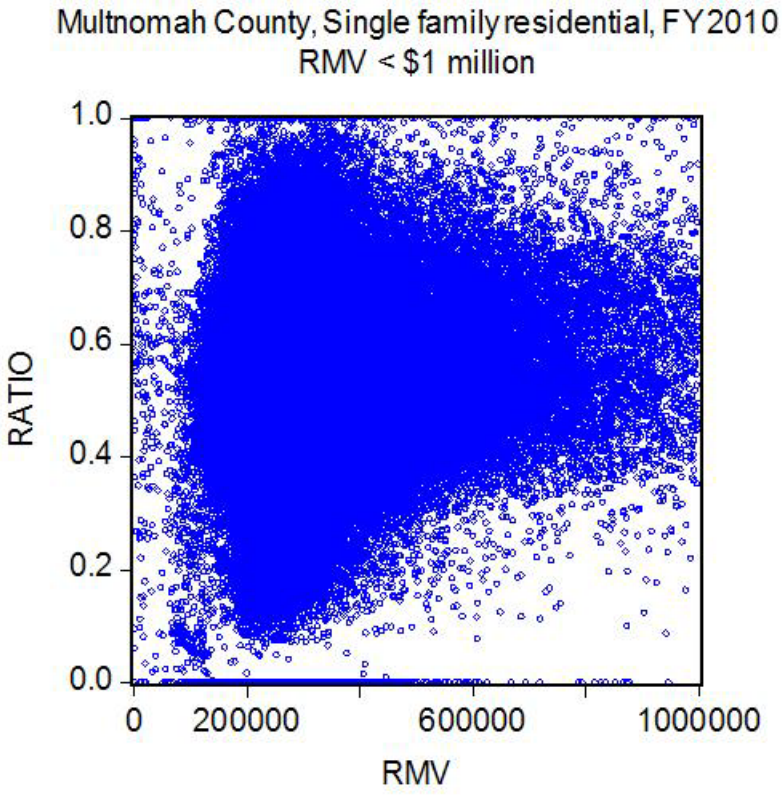
Scatter Diagram for AV/RMV ratios

AV/RMV ratio based on RMV, Jackson County, Single family residential, FY 2009-2010



RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.055302	0.028163	54
[0.1, 0.2)	0.160591	0.028222	70
[0.2, 0.3)	0.252740	0.028047	67
[0.3, 0.4)	0.363134	0.027511	327
[0.4, 0.5)	0.462257	0.027075	1992
[0.5, 0.6)	0.563462	0.027122	8931
[0.6, 0.7)	0.647483	0.027920	19765
[0.7, 0.8)	0.739062	0.026652	8486
[0.8, 0.9)	0.833538	0.025193	1210
[0.9, 1)	0.935768	0.026784	189
1	1.000000	0.000000	129
All	0.642567	0.095808	41220

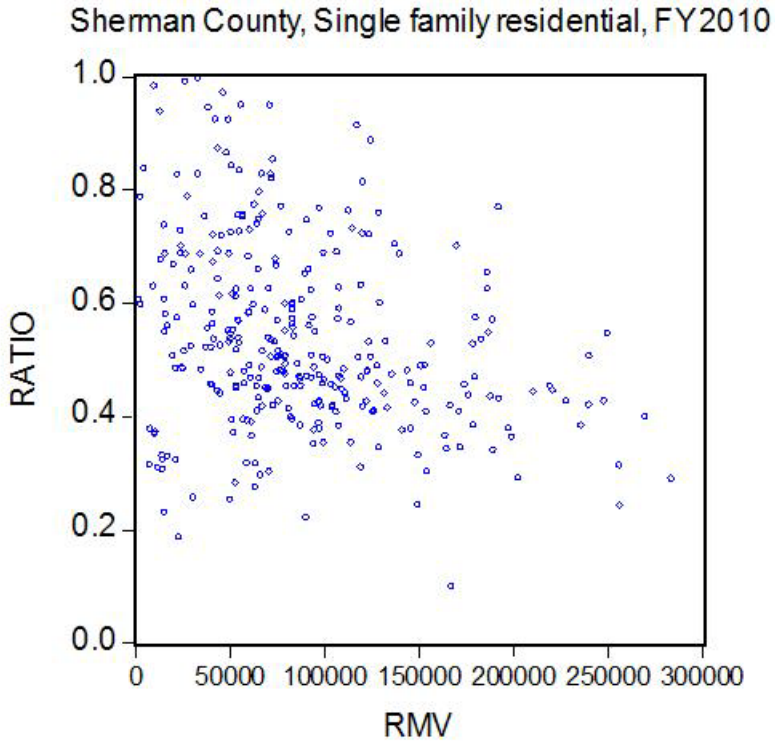
Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Multnomah County, Single family residential, FY 2009-2010



RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.017758	0.033312	1231
[0.1, 0.2)	0.166035	0.023262	3475
[0.2, 0.3)	0.250740	0.029915	4798
[0.3, 0.4)	0.363287	0.026547	16538
[0.4, 0.5)	0.454205	0.027833	48267
[0.5, 0.6)	0.546966	0.028647	46660
[0.6, 0.7)	0.649298	0.028428	39364
[0.7, 0.8)	0.740449	0.027845	18570
[0.8, 0.9)	0.838465	0.028360	4339
[0.9, 1)	0.934979	0.026561	941
1	1.000000	0.000000	212
All	0.538483	0.147955	184395

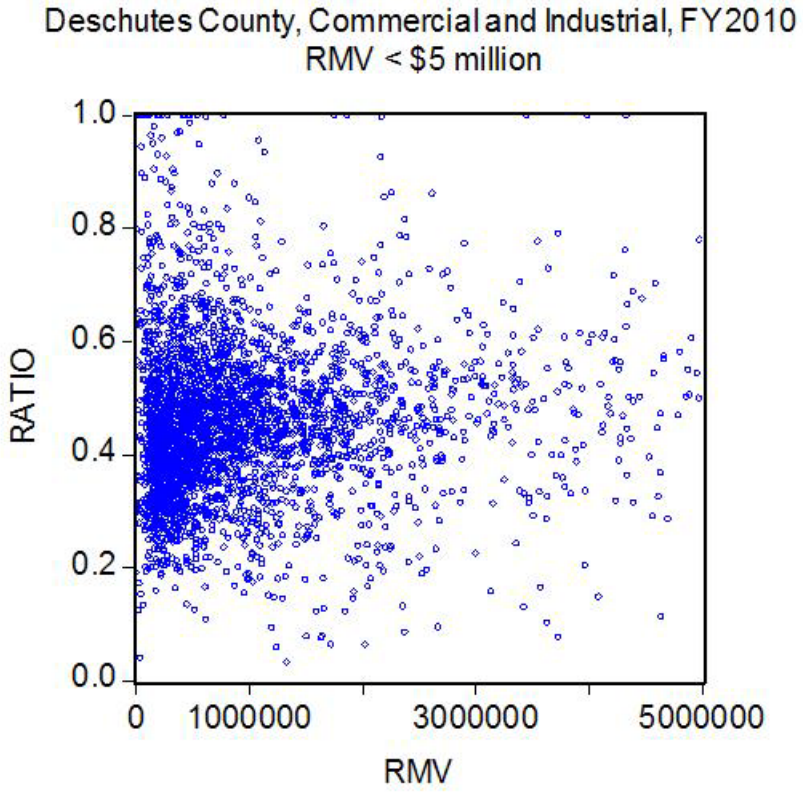
Scatter Diagram for AV/RMV ratios

AV/RMV ratio based on RMV, Sherman County, Single family residential, FY 2009-2010



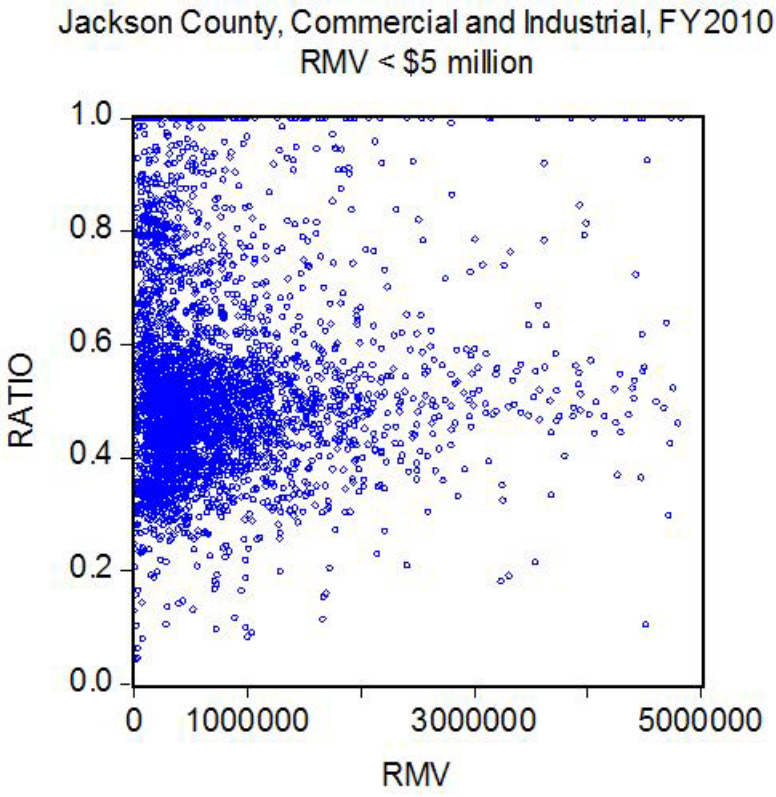
RATIO	Mean	Std. Dev.	Obs.
[0.1, 0.2)	0.144135	0.061520	2
[0.2, 0.3)	0.262598	0.026280	11
[0.3, 0.4)	0.356413	0.030979	45
[0.4, 0.5)	0.452830	0.025696	93
[0.5, 0.6)	0.546501	0.029235	70
[0.6, 0.7)	0.649089	0.031331	38
[0.7, 0.8)	0.743631	0.025475	32
[0.8, 0.9)	0.841076	0.022004	13
[0.9, 1)	0.953072	0.028498	11
1	1.000000	0.000000	0
All	0.537978	0.164165	315

Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Deschutes County, Commercial/Industrial, FY 2009-2010



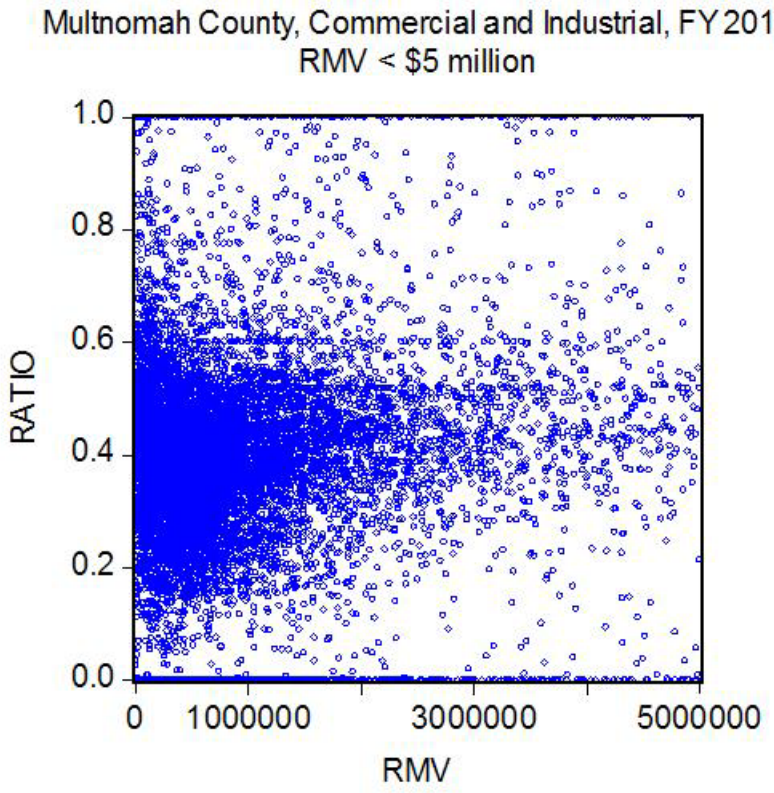
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.069457	0.019457	12
[0.1, 0.2)	0.164824	0.027641	55
[0.2, 0.3)	0.264552	0.027506	324
[0.3, 0.4)	0.355662	0.029285	765
[0.4, 0.5)	0.449756	0.028179	1079
[0.5, 0.6)	0.541646	0.027304	642
[0.6, 0.7)	0.640158	0.027668	243
[0.7, 0.8)	0.745587	0.028704	90
[0.8, 0.9)	0.843833	0.033238	35
[0.9, 1)	0.952568	0.028193	18
1	1.000000	0.000000	24
All	0.454536	0.141679	3287

Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Jackson County, Commercial/Industrial, FY 2009-2010



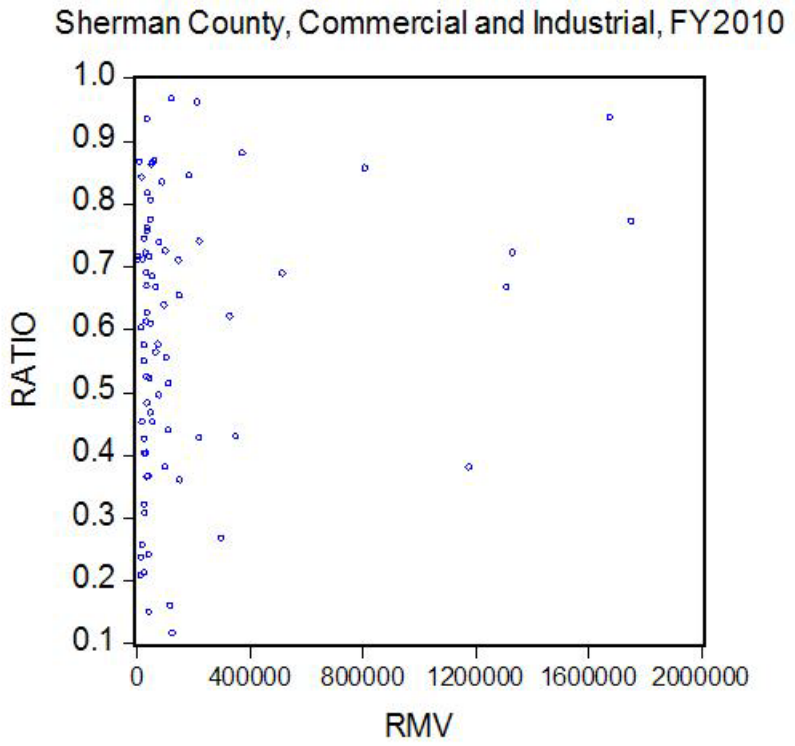
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.074893	0.022194	8
[0.1, 0.2)	0.156019	0.030975	27
[0.2, 0.3)	0.266706	0.026292	96
[0.3, 0.4)	0.354925	0.027300	649
[0.4, 0.5)	0.454697	0.027540	1238
[0.5, 0.6)	0.540246	0.027069	858
[0.6, 0.7)	0.647103	0.027127	272
[0.7, 0.8)	0.754067	0.028767	205
[0.8, 0.9)	0.842823	0.029787	131
[0.9, 1)	0.940465	0.026708	81
1	1.000000	0.000000	160
All	0.527353	0.177691	3725

Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Multnomah County, Commercial/Industrial, FY 2009-2010



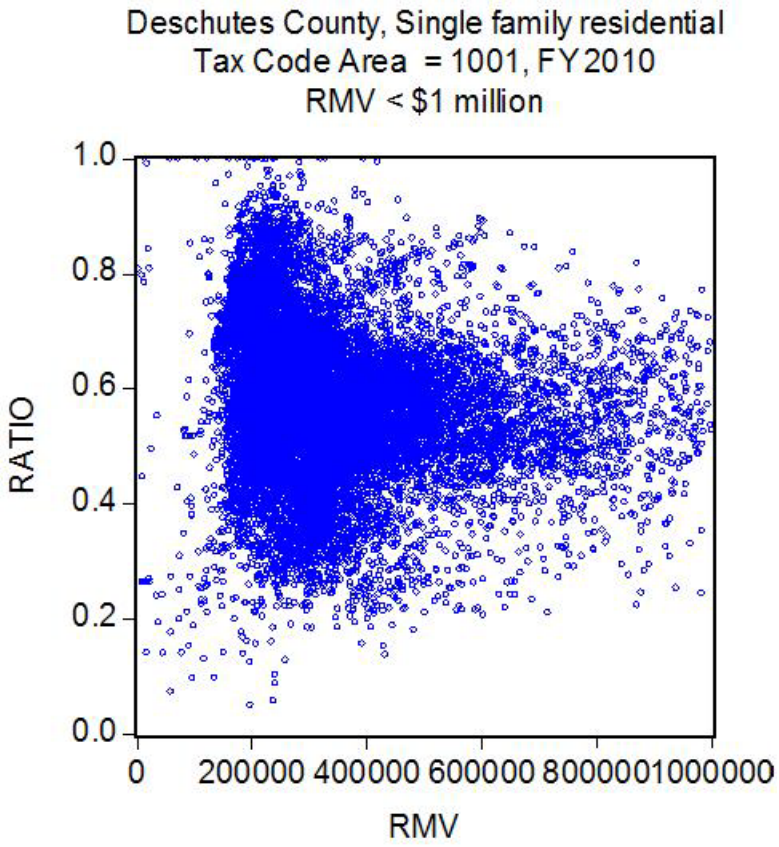
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.006254	0.019946	1125
[0.1, 0.2)	0.163539	0.024943	466
[0.2, 0.3)	0.256110	0.028033	1465
[0.3, 0.4)	0.356286	0.027147	3435
[0.4, 0.5)	0.444690	0.027899	3365
[0.5, 0.6)	0.538631	0.027538	1315
[0.6, 0.7)	0.635380	0.028830	395
[0.7, 0.8)	0.744826	0.030450	155
[0.8, 0.9)	0.846998	0.027651	95
[0.9, 1)	0.951883	0.026582	56
1	1.000000	0.000000	204
All	0.380189	0.187172	12076

Scatter Diagram for AV/RMV ratios
AV/RMV ratio based on RMV, Sherman County, Commercial/Industrial, FY 2009-2010



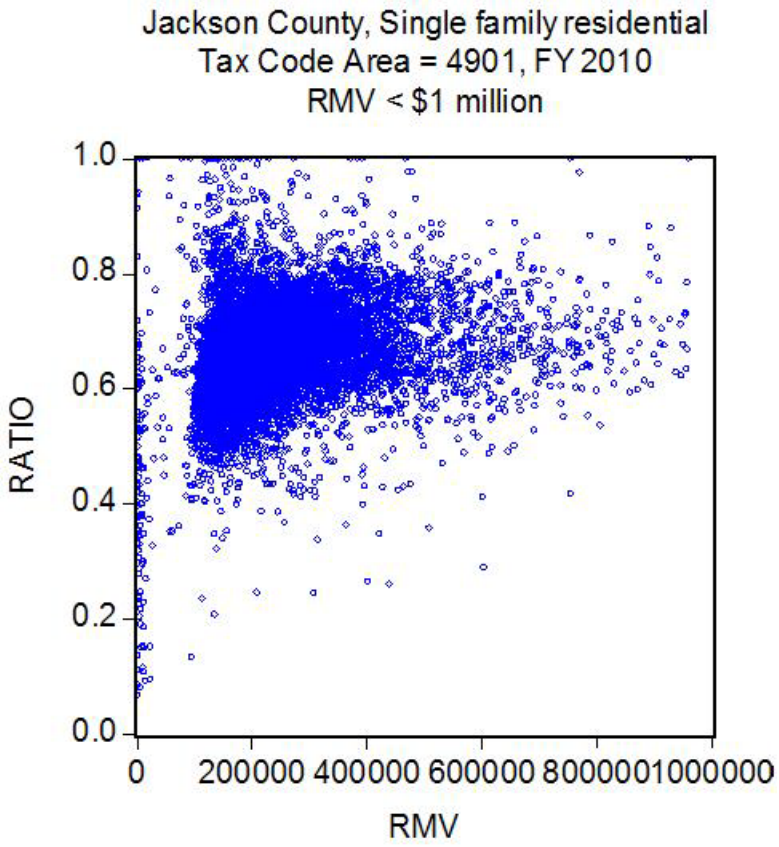
RATIO	Mean	Std. Dev.	Obs.
[0.1, 0.2)	0.142584	0.022769	3
[0.2, 0.3)	0.237313	0.023383	6
[0.3, 0.4)	0.354574	0.028801	7
[0.4, 0.5)	0.443648	0.030046	11
[0.5, 0.6)	0.547458	0.024495	8
[0.6, 0.7)	0.648931	0.030539	14
[0.7, 0.8)	0.734467	0.022607	15
[0.8, 0.9)	0.849258	0.023125	11
[0.9, 1)	0.949964	0.016522	4
All	0.592876	0.216352	79

**Scatter Diagram for AV/RMV ratios
Deschutes County, Single family residential, Tax Code Area = 1001, FY 2009-2010**



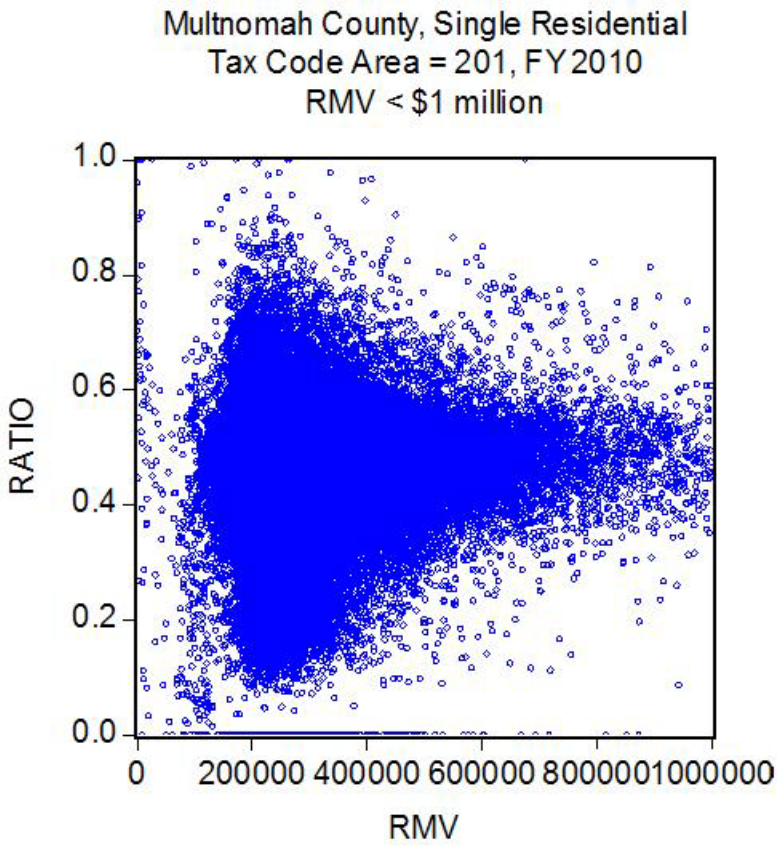
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.078323	0.020313	6
[0.1, 0.2)	0.160684	0.024201	33
[0.2, 0.3)	0.263117	0.025965	356
[0.3, 0.4)	0.355929	0.028229	1127
[0.4, 0.5)	0.461290	0.028437	2913
[0.5, 0.6)	0.552881	0.027647	8988
[0.6, 0.7)	0.640800	0.027331	6296
[0.7, 0.8)	0.743815	0.029188	1934
[0.8, 0.9)	0.838851	0.026990	780
[0.9, 1)	0.931757	0.026589	91
[1, 1.1)	1.000000	0.000000	21
All	0.578697	0.116701	22545

Scatter Diagram for AV/RMV ratios
Jackson County, Single family residential, Tax Code Area = 4901, FY 2009-2010



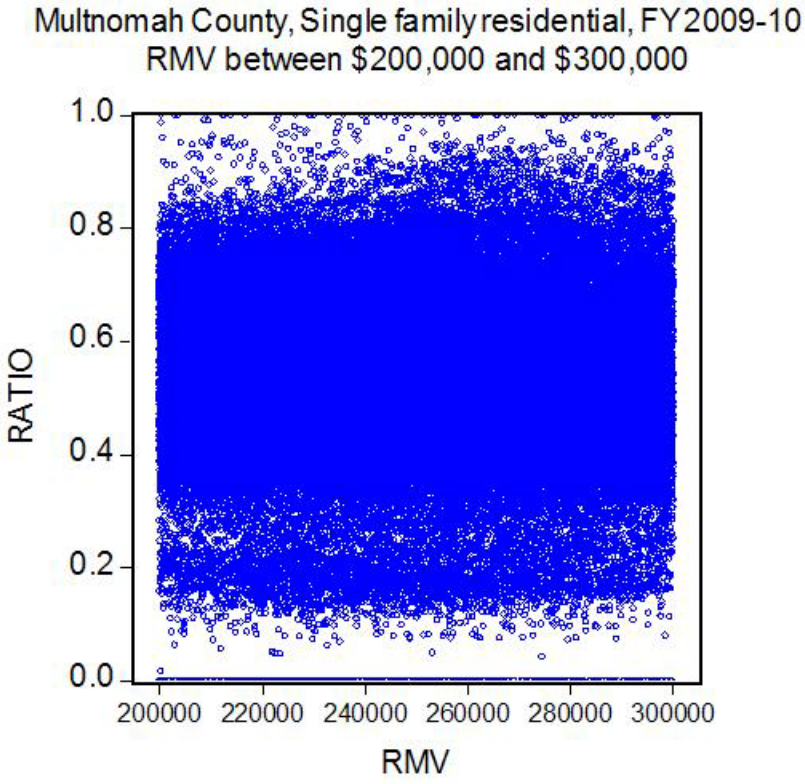
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.081886	0.012076	6
[0.1, 0.2)	0.144667	0.027432	11
[0.2, 0.3)	0.251729	0.029465	19
[0.3, 0.4)	0.354035	0.027751	55
[0.4, 0.5)	0.464463	0.028058	211
[0.5, 0.6)	0.569154	0.023488	3133
[0.6, 0.7)	0.649537	0.027541	10567
[0.7, 0.8)	0.734081	0.025729	3756
[0.8, 0.9)	0.833889	0.025181	386
[0.9, 1)	0.940320	0.026275	70
1	1.000000	0.000000	42
All	0.655021	0.075210	18256

Scatter Diagram for AV/RMV ratios
Multnomah County, Single family residential, Tax Code Area = 201, FY 2009-2010



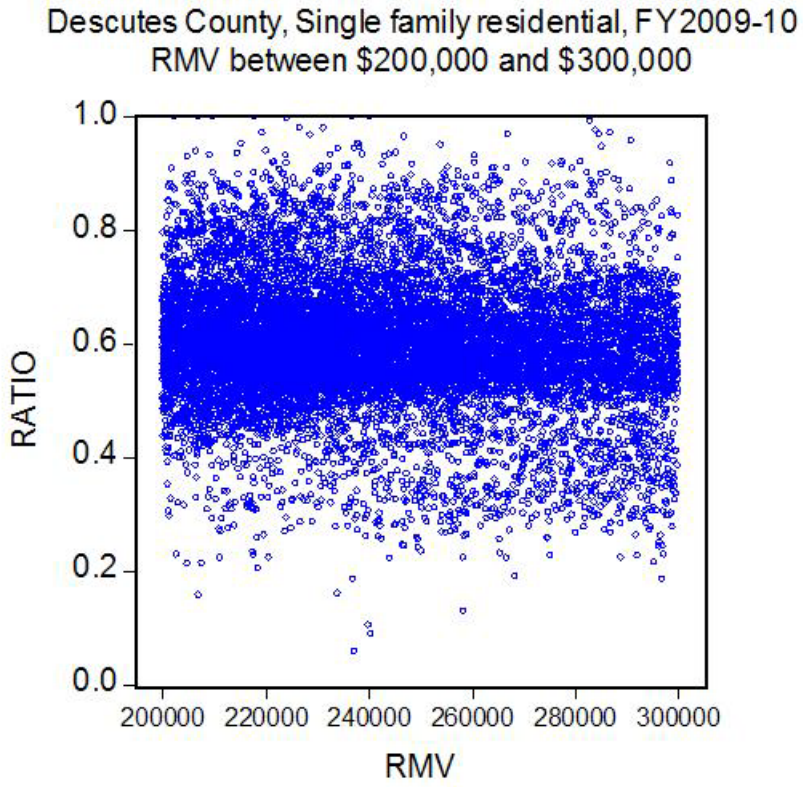
RATIO	Mean	Std. Dev.	Obs.
[0, 0.1)	0.015575	0.032002	662
[0.1, 0.2)	0.165370	0.022648	2054
[0.2, 0.3)	0.253743	0.029340	3389
[0.3, 0.4)	0.363622	0.026494	12960
[0.4, 0.5)	0.454168	0.027535	39750
[0.5, 0.6)	0.536048	0.025915	22780
[0.6, 0.7)	0.634866	0.027032	3130
[0.7, 0.8)	0.737221	0.026278	733
[0.8, 0.9)	0.838473	0.027288	116
[0.9, 1)	0.942055	0.033359	25
1	1.000000	0.000000	10
All	0.453750	0.104944	85609

Scatter Diagram for AV/RMV ratios
Multnomah County, Single family residential, FY 2009-2010
RMV between $200,000 and $300,000



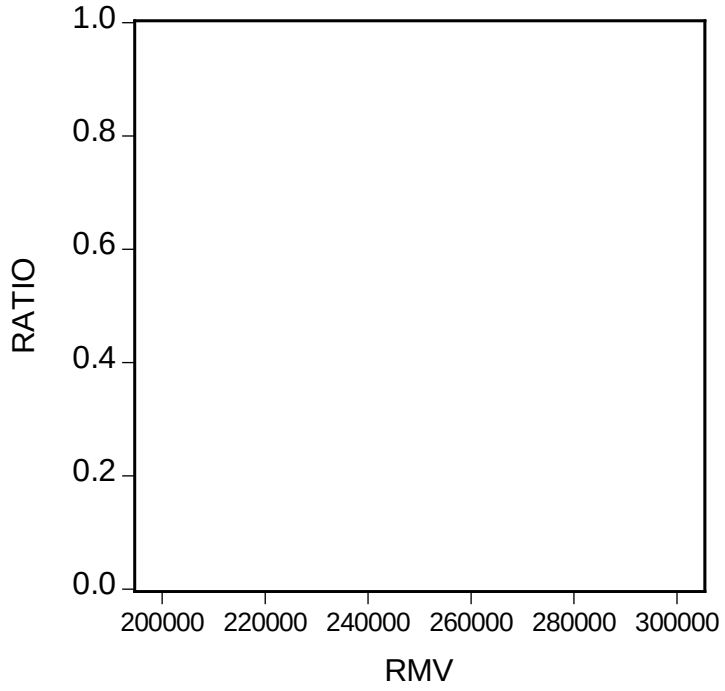
RATIO	Mean	Std. Dev.	Obs.	Share
[0, 0.1)	0.015	0.033	505	0.6%
[0.1, 0.2)	0.166	0.023	2549	3.1%
[0.2, 0.3)	0.249	0.030	2743	3.3%
[0.3, 0.4)	0.362	0.027	8173	9.9%
[0.4, 0.5)	0.453	0.028	18858	22.8%
[0.5, 0.6)	0.546	0.029	18217	22.0%
[0.6, 0.7)	0.653	0.028	18233	22.0%
[0.7, 0.8)	0.741	0.028	10850	13.1%
[0.8, 0.9)	0.837	0.028	2201	2.7%
[0.9, 1)	0.931	0.024	343	0.4%
1	1.000	0.000	46	0.1%
All	0.541	0.160	82718	100.0%

Scatter Diagram for AV/RMV ratios
Deschutes County, Single family residential, FY 2009-2010
RMV between $200,000 and $300,000



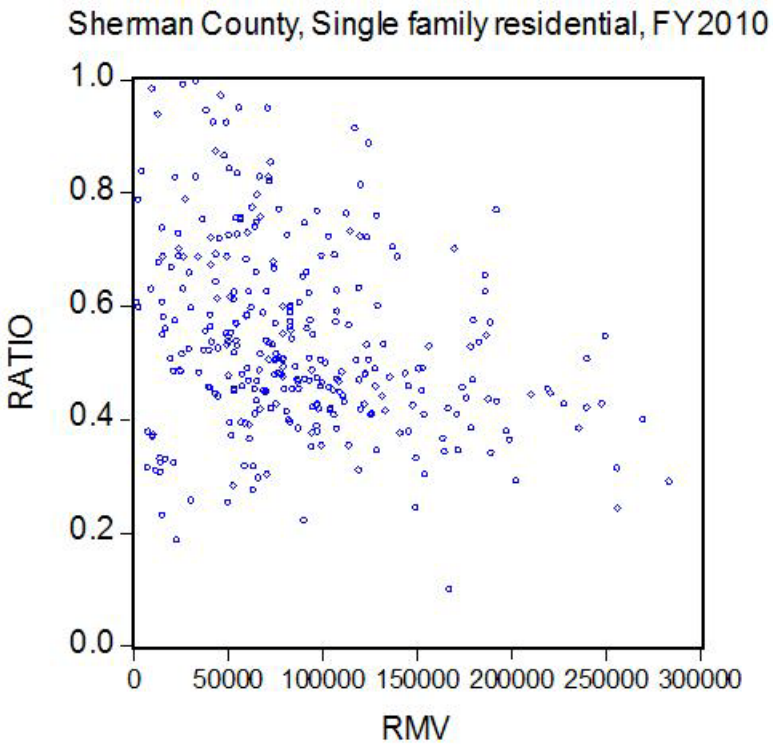
RATIO	Mean	Std. Dev.	Obs.	Share
[0, 0.1)	0.074	0.022	2	0.0%
[0.1, 0.2)	0.159	0.033	7	0.0%
[0.2, 0.3)	0.271	0.025	117	0.8%
[0.3, 0.4)	0.353	0.029	465	3.3%
[0.4, 0.5)	0.461	0.028	1144	8.1%
[0.5, 0.6)	0.557	0.026	5725	40.8%
[0.6, 0.7)	0.642	0.027	4608	32.8%
[0.7, 0.8)	0.742	0.030	1341	9.6%
[0.8, 0.9)	0.841	0.027	556	4.0%
[0.9, 1)	0.932	0.025	66	0.5%
1	1.000	0.000	7	0.0%
All	0.598	0.107	14038	100.0%

Scatter Diagram for AV/RMV ratios
Jackson County, Single family residential, FY 2009-2010
RMV between $200,000 and $300,000



RATIO	Mean	Std. Dev.	Obs.	Share
[0, 0.1)	0.015	0.017	2	0.0%
[0.1, 0.2)	0.180	0.006	2	0.0%
[0.2, 0.3)	0.241	0.005	3	0.0%
[0.3, 0.4)	0.365	0.027	59	0.4%
[0.4, 0.5)	0.468	0.025	469	3.1%
[0.5, 0.6)	0.567	0.026	2579	16.8%
[0.6, 0.7)	0.650	0.028	8555	55.7%
[0.7, 0.8)	0.737	0.026	3234	21.0%
[0.8, 0.9)	0.835	0.025	416	2.7%
[0.9, 1)	0.934	0.023	36	0.2%
1	1.000	0.000	16	0.1%
All	0.653	0.078	15371	100.0%

Scatter Diagram for AV/RMV ratios
Sherman County, Single family residential, FY 2009-2010
All RMV Range



RATIO	Mean	Std. Dev.	Obs.	Share
[0, 0.1)	NA	NA	0	0.0%
[0.1, 0.2)	0.144	0.062	2	0.6%
[0.2, 0.3)	0.263	0.026	11	3.5%
[0.3, 0.4)	0.356	0.031	45	14.3%
[0.4, 0.5)	0.453	0.026	93	29.5%
[0.5, 0.6)	0.547	0.029	70	22.2%
[0.6, 0.7)	0.649	0.031	38	12.1%
[0.7, 0.8)	0.744	0.025	32	10.2%
[0.8, 0.9)	0.841	0.022	13	4.1%
[0.9, 1)	0.953	0.028	11	3.5%
1	1.000	0.000	0	0.0%
All	0.538	0.164	315	100.0%

AV/RMV Ratio Distribution Comparison between FY 2005 and 2010
Single family residential

Deschutes County

	FY2005		FY 2010	
RATIO	Obs.	Share	Obs.	Share
[0, 0.2)	11	0.0%	50	0.2%
[0.2, 0.4)	93	0.4%	1668	5.3%
[0.4, 0.6)	2631	11.0%	16169	51.5%
[0.6, 0.8)	18627	78.0%	12364	39.4%
[0.8, 1)	2457	10.3%	1092	3.5%
1	77	0.3%	25	0.1%
All	23896	100.0%	31368	100.0%

Jackson County

	FY2005		FY 2010	
RATIO	Obs.	Share	Obs.	Share
[0, 0.2)	60	0.2%	124	0.3%
[0.2, 0.4)	232	0.6%	399	1.0%
[0.4, 0.6)	4367	11.9%	10964	26.5%
[0.6, 0.8)	31242	85.0%	28299	68.5%
[0.8, 1)	795	2.2%	1406	3.4%
1	72	0.2%	129	0.3%
All	36768	100.0%	41321	100.0%

Multnomah County

	FY2005		FY 2010	
RATIO	Obs.	Share	Obs.	Share
[0, 0.2)	849	0.5%	4731	2.5%
[0.2, 0.4)	8971	4.9%	21429	11.5%
[0.4, 0.6)	76696	41.9%	95726	51.4%
[0.6, 0.8)	88057	48.0%	58647	31.5%
[0.8, 1)	8321	4.5%	5412	2.9%
1	369	0.2%	223	0.1%
All	183263	100.0%	186168	100.0%

Sherman County - FY 2005 Data not available