Land Value Tax Analysis:
Simulating the Effects in Multnomah County

NeRC

June 2019

Portland State UNIVERSITY

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This report was researched and produced by the Northwest Economic Research Center (NERC) with support from Common Ground OR-WA.

Common Ground OR-WA seeks to bring economic justice to Oregon's property tax policy by proposing a permanent solution to the inequities caused by tax limitation Measures 5 and 50. We postulate that by returning to real market assessments and shifting taxes from capital investment onto land and natural resources, the *land value tax* will bring fairness to the tax system.

NERC is based at Portland State University in the College of Urban and Public Affairs. The Center focuses on economic research that supports public-policy decision-making and relates to issues important to Oregon and the Portland Metropolitan Area. NERC serves the public, nonprofit, and private sector community with high quality, unbiased, and credible economic analysis. Dr. Tom Potiowsky is the Senior Advisor of NERC, and also the former Chair of the Department of Economics at Portland State University. Dr. Jenny H. Liu is NERC's Assistant Director and Associate Professor in the Toulan School of Urban Studies and Planning. The report was researched and written by Peter Hulseman, Adam Rovang, Devin Bales, and Hoang The Nguyen

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Common Ground-U.S.A. is dedicated to the principle that all persons have equal and common rights in the earth and its resources, and each individual has an exclusive right to the income from his or her own labor and capital investment. Therefore, we are committed to reducing and replacing taxes on labor and capital. We propose to pay for essential government services by adequate taxation of the value of land and other natural resources. Common Ground-U.S.A. chapter members work at the local and state level on projects designed to spread the message, influence elected officials, and get legislation adopted.

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Executive Summary

In 1990 ballot Measure 5 passed, which limited the property tax rate that counties could levy to $15 per $1000 assessed value in Oregon. In 1997 voters approved Measure 50, after first approving the similar Measure 47 in 1996, which prevents the assessed value of all individual properties from increasing more than 3% per year beginning with the 1995-96 tax year. Both measures are embedded in the state constitution. As shown in a previous Northwest Economic Research Center (NERC) study[1], one consequence of these tax limitations is inequitable tax burdens. Following up on this finding, Common Ground requested that the Northwest Economic Research Center undertake a simulation of an alternative tax structure to determine if a Land Value Tax (LVT) would lead to increased equity and incentives to utilize land more wisely in concert with Oregon's statewide growth management program enacted in 1973.

The analytical approach adopted for this study develops in two steps. First, an exemption from M-5 and M-50 limitations. This would allow assessments to revert to real market value (RMV) instead of the limited-growth maximum assessed value (MAV). It would also allow the tax rate on land assessments to reach the higher levels required under LVT. Since RMV assessments are by now considerably higher than MAV assessments, the applied tax rates are proportionally reduced so that the simulated tax outcome is revenue neutral. First stage simulation results will compare taxes on selected properties under two scenarios – MAV and RMV under the equal rate tax.

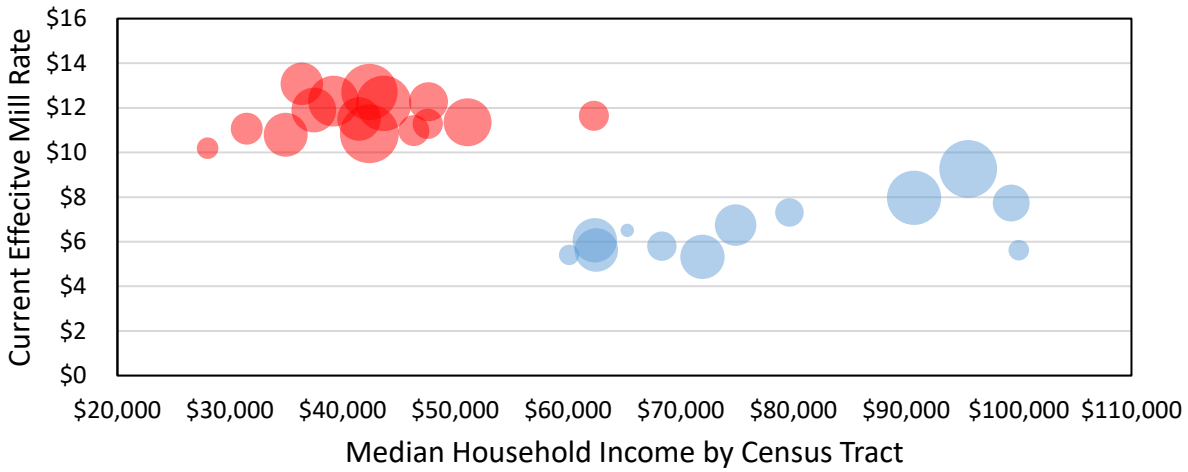
The second step is to simulate a change from the present equal rate tax to a split rate tax – a higher rate on land assessments and lower rate on improvements. Variations in simulated tax levies in all three trials occur at the parcel level. These are first aggregated by land use class and later by level of land utilization. Much of this NERC study is limited to examining the effects of LVT on two illustrative communities: Inner Northeast (INE) and Outer Southeast (OSE). Both of which have a mix of vacant, commercial, industrial, and single-family property types.

As mentioned earlier, a major motivator for investigating alternative property tax structures is the regressivity of the current system. The following graph displays the equitability issue of the current tax system across several measurements (see Figure E.S.1). First, the horizontal axis for each is the estimated median household income for the property.[2] The vertical axis is a measurement of tax payment—the current effective mill rate (tax per $1,000 of RMV). Next, the two areas of analysis are differentiated by color with **Outer-Southeast in red, and Inner-Northeast in blue**. Lastly, the size of the data points indicates the number of households at the specific income level.

[1] "Oregon Property Tax Capitalization: Evidence from Portland". Available at www.pdx.edu/nerc/projects

[2] American Community Survey Data by Census tract. Available at: www.census.gov/programs-surveys/acs/data.html

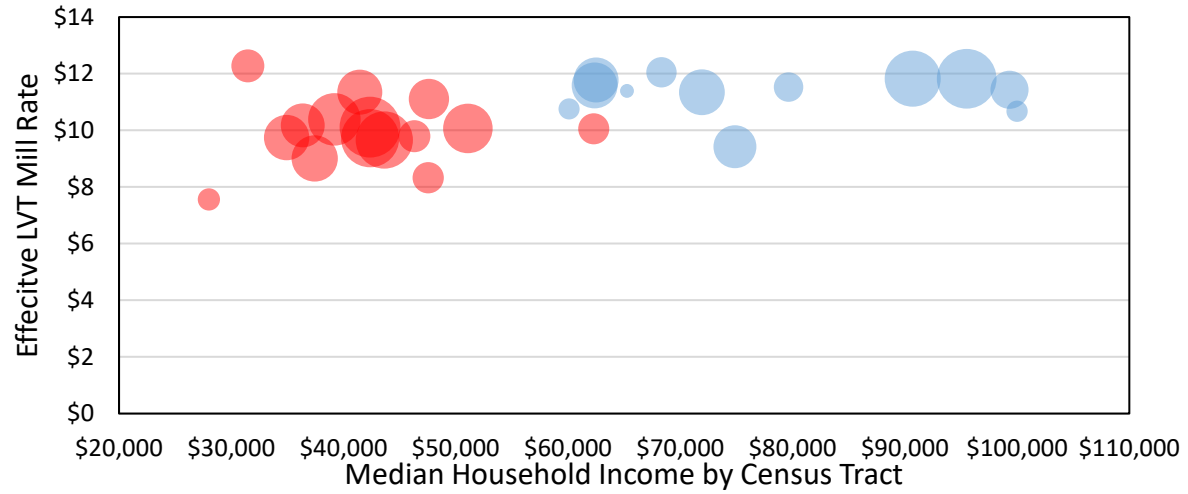
Figure E.S.1: Effective RMV Mill Rate by Income and Community



There are clear differences in many of the measurements within Figure E.S.1. While estimated median incomes in Outer-Southeast are clustered around $40,000, there is far more spread in incomes in Inner-Northeast, ranging from $60,000 to $100,000. However, the amount of RMV that is taxable is generally higher in Outer-Southeast, the lower income area. This indicates consistent growth in RMV in excess of the 3% limit imposed by Measure 50 for the Inner-Northeast community, and results in inequitable tax payments.

Figure E.S.2 below displays the effective mill rates resulting from the 90/10 LVT. The separate rates on land and improvement value results in a significantly more balanced rate distribution than in Figure E.S.1 above. Furthermore, a LVT system would be slightly income progressive (as opposed to the marked regressivity shown in Figure 1).

Figure E.S.2: Effective LVT Mill Rate by Income and Community



This is only one result of the analysis. Other sections of this report highlight how an LVT implemented in Multnomah County would incentivize development, shift taxes based on land-use class, and encourage land improvements. There is also a discussion of potential regressive outcomes, and how to mitigate them with carefully crafted legislation or other tax structures (such as the AXI building exemption tax discussed on pages 28-31).

Ultimately, land-based property tax systems, whether a split-rate LVT or an AXI building exemption tax, do what they are designed to do—place more of the tax burden on wealthier landowners, and encourage the highest and best use of land. Based on the simulations performed on the INE and OSE communities, a LVT would provide a more equitable tax structure, incentivize upgrading and developing properties, and discourage "holding" land for speculative purposes. Furthermore, the potential downsides of the tax policy—such as increasing taxes on low-income homeowners—can be mitigated with carefully crafted legislation. In short, many of the inequities created by Measure 5 and 50 would likely be reversed if a LVT were implemented in the Portland region.

Introduction

In 1990 ballot Measure 5 passed, which limited the property tax rate that counties could levy to $15 per $1000 assessed value in Oregon. In 1997 voters approved Measure 50, after first approving the similar Measure 47 in 1996, which prevents the assessed value of all individual properties from increasing more than 3% per year beginning with the 1995-96 tax year. Both measures are embedded in the state constitution. As shown in a previous Northwest Economic Research Center (NERC) study[3], one consequence of these tax limitations is inequitable tax burdens. Following up on this finding, Common Ground requested that the Northwest Economic Research Center undertake a simulation of an alternative tax structure to determine if a Land Value Tax (LVT) would lead to increased equity and incentives to utilize land more intensely in concert with Oregon's statewide growth management program enacted in 1973.

The analytical approach adopted for this study develops in two steps. First, an exemption from M-5 and M-50 limitations. This would allow assessments to revert to real market value (RMV) instead of the limited-growth maximum assessed value (MAV). It would also allow the tax rate on land assessments to reach the higher levels required under LVT. Since RMV assessments are by now considerably higher than MAV assessments, the applied tax rates are proportionally reduced so that the simulated tax outcome is revenue neutral at the county level. First stage simulation results will compare taxes on selected properties under two scenarios – MAV and RMV under the equal rate tax.

The second step is to simulate a change from the present equal rate tax to a split rate tax – a higher rate on land assessments and lower rate on improvements. The split rate is expressed as an LVT Ratio, the percentage of the tax rate applied to the land assessment of all taxable parcels. Split rates are determined on a revenue-neutral basis at the county level, and assessments are RMV. Thus, total county revenue will be the same for (i) the conventional equal rate tax with MAV assessments, (ii) an equal rate RMV tax (step 1), and the split rate land value tax (step 2). Variations in simulated tax levies in all three trials occur at the parcel level. These are first aggregated by land use class and later by level of land utilization.

This study consists of model simulations of tax shift progressing from the present conventional tax to real market value assessments and land value taxation in two contrasting Portland communities.

This analysis aims to respond to the following questions:

- Do owners possessing similar property attributes receive more equitable tax treatment under RMV assessments; under LVT?

[3] "Oregon Property Tax Capitalization: Evidence from Portland". Available at www.pdx.edu/nerc/projects

- How do the assessments and tax burdens of residents in gentrifying regions differ from what they are now?
- Do the tax incentives accompanying LVT encourage upgrading and discourage land speculation?
- Are certain classes of land users overburdened?
- Does tax shift accompanying LVT help mitigate expected increases in some property assessments due to the change from MAV to RMV?
- What tax relief measures might be appropriate in hardship cases: An alternative land-based tax? A property tax deferral?

Background

The conception of land value taxation is attributed to 19th century political economist Henry George's work on the extraction of land rent. Georgist theory of land taxation holds that a property tax based upon site values provides an incentive to bring land into productive use; simultaneously, a reduction or abolition of taxes on site improvements should encourage more efficient land use.

Land value taxation (LVT) taxes the highest use value of land[4], in contrast to conventional property taxes structures which include the value of buildings or other improvements when assessing value. LVT is intended to counter the monopolization of land and incentivize landowners to use their land more productively.

Oregon Property Tax Laws

Oregon's convoluted property tax rules motivate the current conversation about LVT. The passage of Measures 5 and 50 drastically changed the way property taxes were assessed in Oregon. The cumulative effects of

Calculating Property Taxes under the Current System

Calculating the actual tax due for a household can be complicated due to the multiple rates and valuation methods. The calculation begins with the comparison of two values, based on a property's MAV and RMV. Based on its location in various taxing districts, each property will have a number of government tax rates and a number of education tax rates. The sum of these rates is then multiplied by the MAV to calculate the base tax. If the calculated base tax exceeds the Measure 5 cap of 1.5% of current RMV, any temporary voter approved property tax measure for specific services (such as increased funding for public safety, libraries or schools) is reduced first, all the way to $0 if necessary. If the taxes still exceed Measure 5 caps, each permanent tax rate component within the base tax is then compressed proportionally such that the base tax will equal the Measure 5 cap.

In order to calculate final taxes, the bonded general government and bonded education rates, which fund capital construction projects, such as new buildings or equipment, are multiplied by the MAV and added to the base tax. These bonded rates are not subject to the property tax caps.

[4] The reasonably probable and legal use of vacant land or an improved property that is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity. (Definition from the Appraisal Institute: *The Appraisal of Real Estate*, 14th Edition, p. 333)

limiting the growth of property assessments under Ballot Measure 50 are continuous revenue shortfalls, an increasing disparity between true market values and taxable assessments and unequal tax treatment of taxpayers with similarly valued property. A 2018 Center on Budget and Policy Priorities report identifies Oregon as one of four states where property tax structures exacerbate economic inequities, and a 2017 *Oregonian* article concludes that Oregon's property tax system has dramatically distorted the tax burden in the Portland area.

City Club of Portland's 2013 report critiques the current system, suggesting that it is inequitable, undermines local control, and difficult to comprehend.[5] A 2014 report by East Portland Action Plan (EPAP) Housing Subcommittee came to similar conclusions, recommending a "Reset of assessed property value on sale" to deal with the inequities created by the current property tax system.[6]

In 2014 the Northwest Economic Research Center (NERC) published a study on the effects of Measures 5 and 50 on property tax capitalization in Portland. In that study, NERC specifically sought to understand – if two houses are similar in all ways except for their property tax payments, do their sale prices differ as a result? The study concluded that tax payments are having a significant effect on sale prices. Assuming a discount rate of 3% and a perpetual lifespan of properties, we expect a property that would last into perpetuity to show capitalization of $33.33 for every dollar decrease in property taxes. Depending on the estimation specification, we found that the capitalization of property taxes into property value in the Portland area ranges from 15% to 92%.[7]

Effects of Measures 5 and 50

The two measures created two separate limits that come into play depending on the MAV and RMV of a property.

- Measure 5 Limit: Maximum Allowable Tax
  =$15 per thousand dollars of RMV
- Measure 50 Limit: Maximum Annual Growth in MAV=3%

If the levy according to the property's Levy Code Area (LCA) is greater than the maximum allowable tax, compression occurs, reducing the amount of tax each jurisdiction can collect.

[5] City Club of Portland. (2013). "Reconstructing Oregon's Frankentax: Improving the Equity, Financial Sustainability, and Effeciency of Property Taxes". Retrieved from: http://members.pdxcityclub.com/library/reportarchive

[6] East Portland Action Plan, Housing Subcommittee. (2013). "Property Tax Inequity Analysis". Retrieved from: http://eastportlandactionplan.org/sites/default/files

[7] "Oregon Property Tax Capitalization: Evidence from Portland". Available at www.pdx.edu/nerc/projects

According to Linhares & Provost, the Oregon property tax system is functioning in line with what voters approved more than two decades ago.[8] They explain that the bulk of responsibility to fund public education has been shifted to the state and property tax bills have been made more predictable; however, these outcomes are tilted in favor of the property owner, and in some cases restrict revenue streams necessary for state and local governments to provide adequate services. Portland based organizations like City Club of Portland and East Portland Action Plan identified several issues with the Oregon system as it is currently functioning:

- The system contains and is exacerbating inequities
- It appears to be undermining local control
- It is failing to maintain voter approved service levels
- The system is extremely complex which undermines constituent confidence

Additionally, property tax imposed in Oregon as a whole has been growing at a decreasing rate since 2010, while inflation has been growing at a consistently higher rate. This relationship can be observed in Multnomah County where total property tax imposed grew by a little less than 1.4 percent between 2011 and 2012 while inflation grew by 2.3 percent.[9]

Among the above-mentioned issues, perhaps one of the most prominent is that the Oregon system has effectively disconnected the amount paid in property taxes from the value of the property. This results in horizontal inequity, the case in which property owners with similarly valued properties and levels of service pay dramatically different property tax rates. NERC's 2014 report concludes that this disconnect creates a distortion in the market for houses and condos, and from a policy perspective, arbitrarily benefits some property owners and harms others. In reference to these critiques, alternatives to the current system have been proposed. One proposition is a shift to a system that relies primarily on Land Value Taxation.

Literature on LVT

In conventional property tax systems, the property tax rate applies to both the value of land and improvements made upon it. Building on a parcel of land or making major structural improvements will increase the assessed value, thereby increasing the property tax bill. This equal rate property tax, in theory, disincentivizes capital investments in real estate, as it increases the cost. By way of contrast, LVT relies on the realistic assumption that land is a fixed commodity and designates property taxes based on the "highest and best use" (HBU) value of the land. Landowners are incentivized to pursue the most efficient land investment under LVT.

LVT theory also disincentivizes speculative land purchases and the "holding" of land out of production with the intention of reselling it at a higher price. A high tax on the HBU value of

[8] Linhares, T., & Provost, E. (2011). *Recent History of Oregon's Property Tax System.* Available at: www.tsccmultco.com/graphics/Recent_History_jan_2012.pdf

[9] Oregon Department of Revenue. (2013). Oregon Property Tax Statistics from fiscal year 1997-98 to present. Available at: www.oregon.gov/dor/STATS/Pages/statistics.aspx#property

land increases holding costs to a level which is less financially viable. Buyers would avoid purchasing land they did not intend to improve upon.

Another key component of LVT theory is land conservation. It shifts tax burden onto the extensive use of finite goods society wishes to conserve. As described by Durning and Bauman in "Tax Shift," LVT is a tax that moves taxes away from things we want more of – that is productive uses, and toward a limited resource – land, the consumption we want less of.[10]

While LVT is income progressive in the aggregate, there are situations where lower income owners face increased costs. There are methods of mitigating these negative effects and are discussed in the "Mitigation" section below.

Proponents of LVT argue that changes in land value is created by the community while capital investments come from landowners.[11] Thus, communities should benefit from the value they created as landowners benefit from their investments. A "pure" form of LVT would capture the full annual land value, applying the entire tax rate to land assessments, while split rates capture a portion of the annual land value, applying a partial tax rate to land and a partial rate to improvements.

Several economists have produced research seeking to understand the potential outcomes of implementing LVT systems. Due to the lack of adoption of LVT in the U.S., nearly all of these studies rely on simulation methods to draw conclusions. Key concerns when analyzing the viability of a switch to LVT include generating sufficient revenue, increasing overall welfare through capital improvements, and understanding how the tax burden shifts. Most literature on LVT suggests it would result in a more income progressive distribution of tax burden, lower housing costs, and increased capital investment but are uncertain about the financial feasibility.[12] In Oregon, the current property tax structure creates assessed values lower than real market values, leading to relatively lower tax revenues than the property values suggest. Thus, generating sufficient revenue under LVT should not be difficult in Oregon. While not the central focus of most empirical studies, many acknowledge that LVT can create undue burden for certain types of households without carefully crafted legislation.

Specifically, people who are "land rich and income poor" pose a problem when considering a switch to LVT. One of the key motivators for LVT is to create a situation where those with low incomes bear lower incidence. However, in urban areas where land value has grown significantly in a relatively short amount of time there are undoubtedly people who live in homes near urban centers that earn relatively low incomes. For these homeowners, LVT would

[10] Durning, A. T.; Bauman, Y. (1998). "Tax Shift". Northwest Environment Watch. Seattle, Washington.

[11] Dye, R., & England, W. (2010) Assessing the Theory and Practice of Land Value Taxation. Available at: www.lincolninst.edu

[12] Song, Y., & Zenou, Y. (2006). Property tax and urban sprawl: Theory and implications for US cities. Available at: *Journal of Urban Economics, Vol 60, Issue 3*

likely increase their tax incidence. However, measures such as delaying a switch to LVT until death or sale and implementing a lower LVT/RMV ratio for overburdened landowners are policy measures that could correct for these situations and are discussed in the "Mitigation" section below.

LVT in the United States

Some regions in the United States have adopted LVT, including counties in Pennsylvania, Hawaii, Connecticut and Alabama. The duration and outcomes vary by situation. Some successfully implemented LVT for decades while others lasted only for a few years. For example, in Pennsylvania, where LVT was most widely adopted, some counties and cities are still using it, while others have repealed it.[13] The city of Pittsburgh instituted a split-rate LVT in 1913 and used it for nearly a century before reverting to a traditional property tax in 2001. In this instance, research suggests LVT was repealed due to poor assessment and rate setting practices despite evidence LVT encouraged building activity.[14] In the Hawaii case, LVT taxation was abandoned because it was seen as a cause of the overdevelopment of Waikiki in the 1970's.

Smaller municipalities such as Harrisburg City, Scranton City, and DuBois City still use LVT today. Subsequent studies by the Center for the Study of Economics in Philadelphia have shown consistently higher building permit rates in the LVT cities.[15] They have also cited several cities in Pennsylvania showing that LVT also simplifies the assessment process. Under LVT, use of computer aided mass appraisal (CAMA) enables cost-effective land assessment. Since LVT deemphasizes the importance of improvement assessments, several Pennsylvania cities have experienced fewer property tax appeals and have reduced assessor staff accordingly. While simplifying assessment, LVT improves data collection and rate application.

While some variations and experimentation with land taxation are presently taking place in Vermont and Connecticut, no other states in the U.S. have recently implemented LVT, leaving no clear model for Oregon.

Methodology

This section covers the techniques required to calculate the levy mill rates for the purpose of simulating property tax system changes, including RMV and LVT. Resulting levy mill rates will ensure revenue neutrality, collecting the same level of revenue for the county as the current conventional system. We use property tax data from the 2017-18 tax year, courtesy of the Multnomah County Assessor's Office, comprised of 276,558 tax lots.

[13] Bourassa, S. (1990). Land value taxation and housing development: Effects of the property tax reform in three types of cities. Available at: *American Journal of Economics and Sociology, Vol 49 Issue 1*

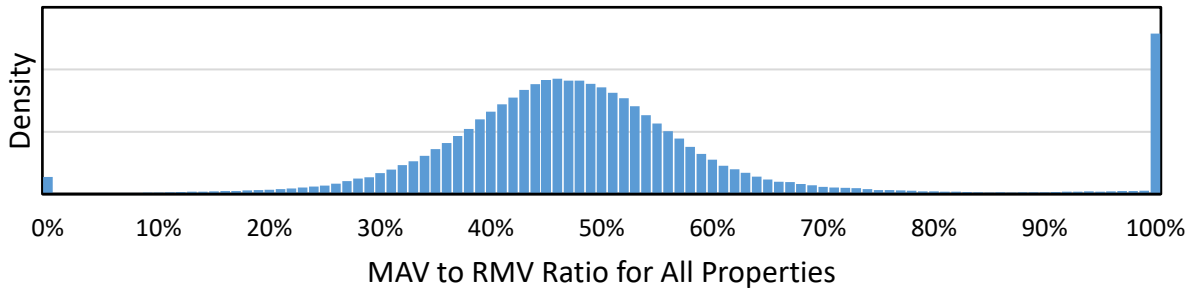
[14] Oates, W. E.; Schwab, R. M.. (1997). National Tax Journal. Available at www.ntanet.org

[15] Center for the Study of Economics. (2009). Land Value Taxation in Philadelphia. Available at www.urbantools.org

Most of the current inequity of Oregon's property tax structure is driven by increasing disparities in property values due to Measure 50 which limits the growth of MAV to the minimum of RMV or 103% of the past year's MAV. For properties growing in value at 3% per year, the taxable value of the property also grows at 3%, resulting in balanced levy payments. However, the taxable share of value for properties experiencing high value growth falls, and properties experiencing little growth may see their taxable share increase.

Over time, this creates a gap in the effective mill rates—the rate paid per thousand dollars of RMV—for properties even within the same Levy Code Area (LCA). Figure 1 shows the spread of MAV to RMV ratios across Multnomah County (i.e. what proportion of the property value is taxed). The county-wide MAV to RMV ratio is 39.1%. Most properties pay tax on between 30 and 70% of the value of their property. High rates of growth in property values results in a lower ratio, thus a lower effective mill rate, while growth below 3% leads to a higher ratio and effective mill rate. This results in disparities in effective mill rates between high and low value growth areas, resulting in the regressivity seen under the current tax system.

Figure 1: Distribution of MAV to RMV Ratios for All Properties in Multnomah County



Additionally, Measure 5 limits mill rates by property to $15 per thousand ($10 for general government and $5 for education) of the property's RMV. For example, properties where $25 per thousand of MAV[16] exceeds $15 per thousand of the RMV, the mill rate is compressed. This compression largely occurs for properties with high MAV to RMV ratios in Levy Code Areas with a mill rate above $15. Local Option Levy rates are compressed first, followed by special district, city, and county taxes. To remove the compression caused by Measure 5, we return all tax rates to their LCA rate, and to remove the Measure 50 limits, we simply swap their MAV for RMV in the levy amount calculations.

In Multnomah County there are 124 Levy Code Areas that incorporate City, school district, and fire district fees. LCA mill rates vary between $9.22 and $20.74 per thousand MAV. Because

[16] A common Levy Code Area tax rate.

aggregated RMV assessments are considerably higher than the total MAV, the rates will have to be lowered to a set of LCA rates that yield the equivalent total county revenue.

In our calculations the total tax revenue equals the MAV for each property multiplied by that property's LCA tax rate. To allow for revenue neutrality after a shift away from Measure 5 and 50 limitations, we scale each rate by a fixed proportion. With this scale, every property's tax rate is reduced by a fixed proportion, which within our analysis comes to a 57.5% reduction in nominal tax rates. This is represented using *r* as the rate of tax reduction as follows:

$$Total\ Revenue = r_{total} \sum_{prop} LCA\ Rate_{prop} \times RMV_{prop}$$

The reduction in tax rates, as well as the shifts away from Measures 5 and 50, represents a stepping point from which to compare the current tax system and an LVT system to a situation where the effective mill rate paid by each property is equal within LCAs.

LVT Ratio

Setting up an LVT requires calculating separate revenue-neutral mill rates for the two components of RMV, and further complicates the above calculation. Since each property's RMV is composed of land value (LV) and improvement value (IV), we first separate the summation:

$$\begin{aligned} Total\ Revenue &= r_{total} \sum_{prop} LCA\ Rate_{prop} \times (LV_{prop} + IV_{prop}) \\ &= r_L \sum_{prop} LCA\ Rate_{prop} \times LV_{prop} + r_I \sum_{prop} LCA\ Rate_{prop} \times IV_{prop} \end{aligned}$$

By definition, the LCA rate of each property value component is equal regardless of the separate rates for LV and IV. These are the current revenue generated from each property component:

$$Total\ Revenue = r_L \times LV\ Revenue + r_I \times IV\ Revenue$$

From this point, we pick the rate multipliers that meet our desired rate outcome. The two separate rate reduction terms above translate into the LVT ratio. This ratio determines how differently we want to tax LV and IV. For any tax system which taxes LV and IV at the same rate, there is $.50 in LV tax rate for every $.50 in IV tax rate; a 50/50 LVT ratio. If we increase the tax rate on land, we get a higher LVT ratio. For example, a 90/10 LVT ratio represents $.90 in LV tax rate for every $.10 in IV tax rate. The two LVT ratios used in this analysis are 90/10 and 60/40.

Using this methodology, NERC seeks to understand how a switch to LVT would affect revenue generation, economic development, and property tax incidence in the Portland Metropolitan Statistical Area (MSA).

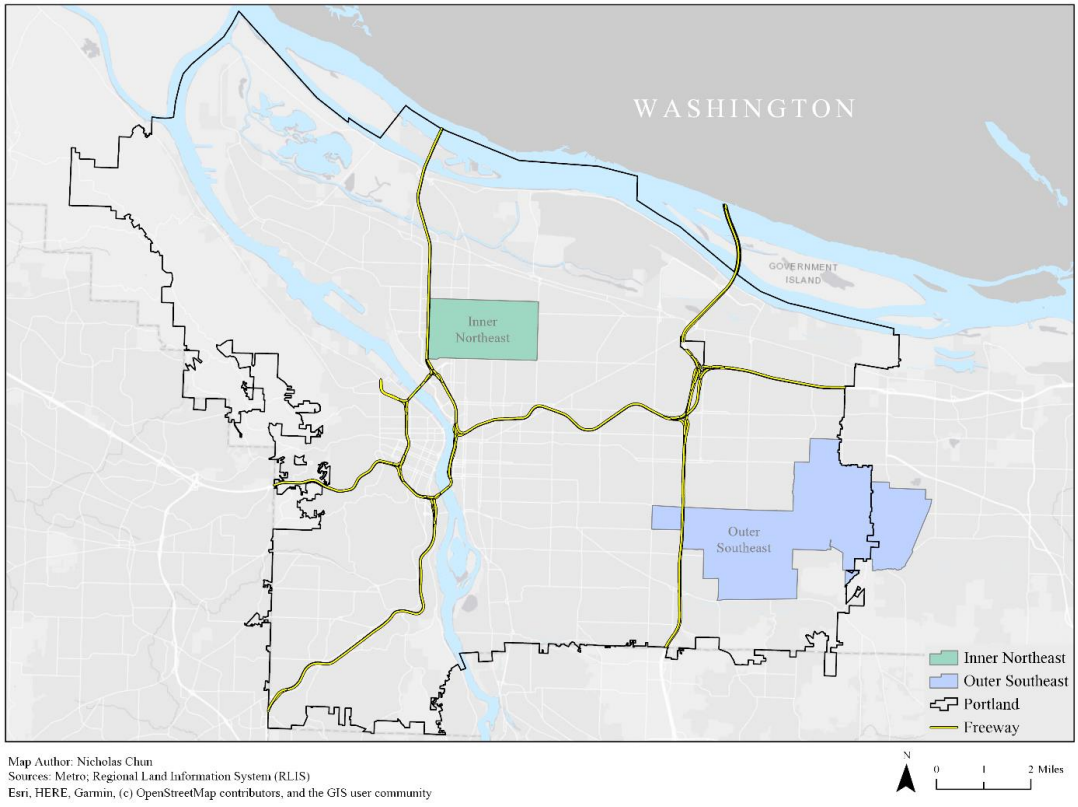
Areas of Analysis

Much of this NERC study is limited to examining the effects of LVT on two illustrative communities (see Figure 2). Inner Northeast (INE) and Outer Southeast (OSE) both have a mix of vacant, commercial, industrial, and single-family property types. However, they offer a compelling contrast.

Inner Northeast is a residential and commercial district incorporating the Concordia, King and Vernon neighborhoods in the Northeast quadrant of Portland. The larger community centers on Alberta Street, and stretches approximately 2 miles, from Interstate 5 to NE 33rd Avenue, bounded on the north by NE Ainsworth St. and NE Fremont St. on the south.

The Outer Southeast study area is comprised of Centennial, Powellhurst-Gilbert and Glenfair neighborhoods. This community was outside the city limits until 1983 when Portland began its annexation program. Single family lot sizes are very large, averaging over 9,000 sq. ft. compared to 5,000 sq. ft. and trending smaller in INE. One explanation for this is the sanitary sewerage system at the time (septic tanks). This large lot phenomenon will have implications for tax burden when examining the effects of LVT.

Figure 2: Map of Two Areas of Analysis: Inner Northeast (INE) and Outer Southeast (OSE)



As described above, Oregon's current property tax system results in certain land user classes paying higher effective tax rates. In both the INE and OSE, single family homeowners pay the highest effective tax rate per RMV, while commercial properties pay the lowest effective RMV in Inner-Northeast and rural properties pay the least in OSE.

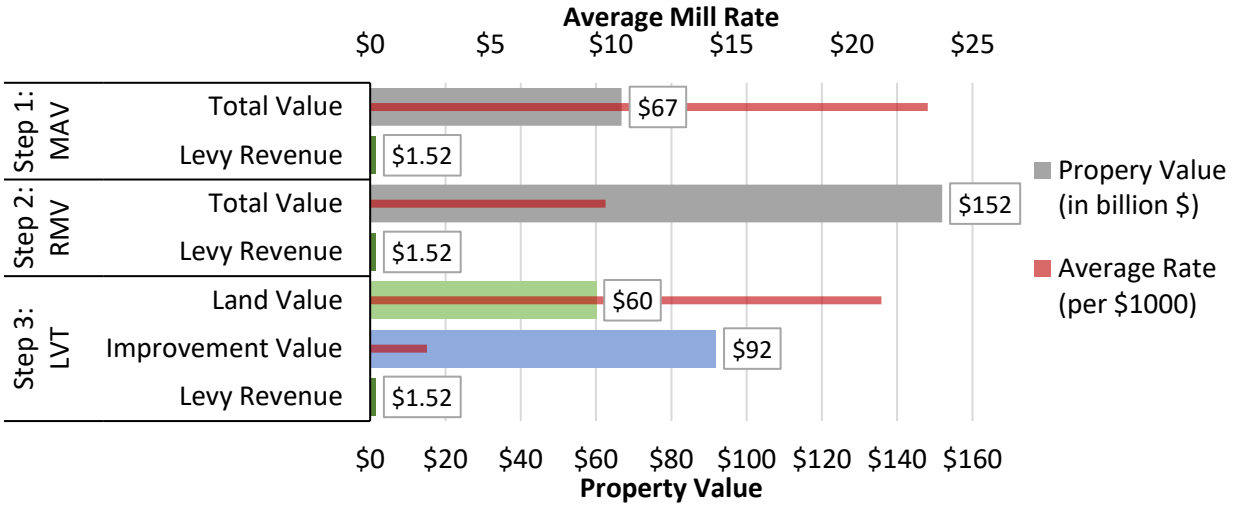
Currently, landowners are assessed a tax rate based on an even combination of land value and improvement value. Under the LVT ratio scenario used for analysis, land users would pay property taxes based $.90 in land rate for every $.10 in improvement rate. The impact of the split rates largely depends on the land share of property value. For Multnomah County, the average land share of total value ratio is 39.5%. Thus, any property with a higher proportion of their value in land will pay a higher effective tax rate under LVT. Table 1 provides a snapshot of the percent of land RMV to total RMV for various land user classes in Multnomah County (otherwise known as the Land-to-Total Value or LTV).

Table 1: Land Share of Total Value (LTV) for Different Land Use Classes

Land Use Class	LTV Ratio
Industrial	20.1%
Office	20.9%
Multi-Family	24.3%
Commercial	35.7%
Single Family	45.6%
Restaurant	52.4%
Vacant	98.0%
Grand Total	**39.5%**

Two problems arose with regard to land use classes on separate ends of the MAV to RMV ratio spectrum. Condominiums largely have zero land value associated with their property values and under an LVT would receive a substantial reduction in tax rate. Conversely, farm properties derive the majority of their value from land and, though few in Portland, would receive a similarly disproportionate increase in tax rate if assessed at market value. To mitigate any impact of these large tax changes, we remove their property values from rate calculations and assume these groups would be given special consideration under a LVT law. The following chart shows the county-wide data used to calculate RMV tax rates and LVT split rates. It should be noted that the county-wide MAV and effective RMV tax rates are $22.75 and $10.00 respectively.

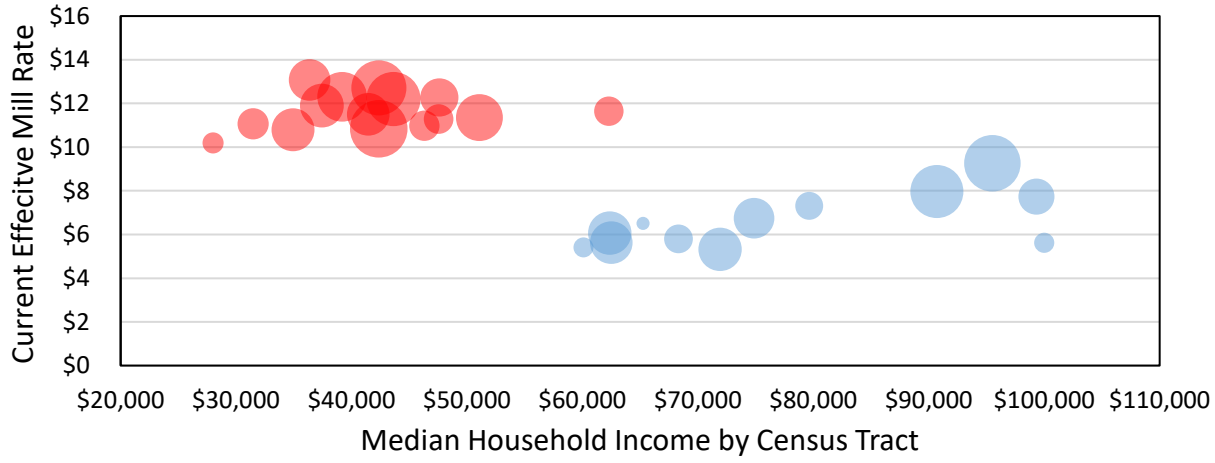
Figure 3: Illustration of Tax Shift Rate Calculation Maintaining Constant Revenue



Comparing MAV/RMV Ratios

As mentioned earlier, a major motivator for investigating alternative property tax structures is the regressivity of the current system. The following graph displays the equitability issue of the current tax system across several measurements (see Figure 4). First, the horizontal axis for each is the estimated median household income for the property.[17] The vertical axis is a measurement of tax payment—the current effective mill rate. Next, the two areas of analysis are differentiated by color with **Outer-Southeast in red**, and **Inner-Northeast in blue**. Lastly, the size of the data points indicates the number of households at the specific income level.

Figure 4: Effective RMV Mill Rate by Income and Community



[17] American Community Survey Data by Census tract. Available at: www.census.gov/programs-surveys/acs/data.html

There are clear differences in many of the measurements within Figure 4. While estimated median incomes in Outer-Southeast are clustered around $40,000, there is far more spread in incomes in Inner-Northeast, ranging from $60,000 to $100,000. However, the amount of RMV that is taxable is generally higher in Outer-Southeast, the lower income area. This indicates consistent growth in RMV in excess of the 3% limit imposed by Measure 50 for the Inner-Northeast community, and results in inequitable tax payments.

Implementing LVT

As mentioned in the Methodology section, the analysis progresses through two stages. Measure 5 and Measure 50 limitations are exempted in the first stage, expressing values and rates in terms of RMV. The second stage changes the RMV uniform rate scheme to a two-rate 90%/10% split rate land value tax regime. Positive or negative shift in tax burden on any given parcel is determined by i) its land-to-total value (LTV) ratio (expressing the land value as a fraction of the total assessed value), and ii) MAV/RMV ratio (showing how far its MAV lags behind its RMV). As total tax revenue remains unchanged at the county level, a given parcel will generally pay a higher levy if its MAV/RMV ratio is lower than the county's average ratio. Likewise, a property with a LTV ratio higher than the county's average ratio will see a higher levy. In terms of the incentive effects of LVT, parcels having low LTV ratio are seen to have a higher utilization status. Thus, LVT is shifting tax burden from more efficiently used sites to less efficiently utilized sites.

The reporting method we use here is to provide summary results by aggregating individual parcels into land use categories. Simulated tax applications are performed on the entire array of parcels in each community. Table 2 below summarizes these two ratios for each type of land use in each community. As shown later in Table 3, first stage results are affected only by MAV/RMV ratios. Parcels with low ratios will see positive tax shift. In the second stage, however, sites with high LTV ratios will face higher tax payments.

Table 2: Decomposition of Land Market Values for Various Land Use Types

Land Use Description	# Parcels	MAV – RMV Ratio	LTV Ratio
INNER NORTHEAST			
Single Family	8,371	0.30	0.46
Multi-family 2-4 units	575	0.24	0.43
Multi-family 4 units or more	87	0.31	0.16
Commercial	237	0.21	0.27
Commercial - Auto Related	12	0.18	0.54
Office	31	0.24	0.27
Restaurant	34	0.23	0.36
Warehouse	32	0.24	0.58
Vacant	242	0.17	0.99
Total	**9,621**	**0.29**	**0.43**
OUTER SOUTHEAST			
Single Family	13,351	0.58	0.49
Multi-family 2-4 units	485	0.64	0.44
Multi-family 4 units or more	268	0.45	0.23
Commercial	229	0.48	0.38
Commercial - Auto Related	41	0.49	0.51
Office	28	0.52	0.39
Restaurant	57	0.38	0.55
Warehouse	35	0.62	0.33
Mobile Home	48	0.50	0.60
Vacant	517	0.37	0.99
Total	**15,059**	**0.55**	**0.45**

The tax shifts in each stage and combined effects are shown in three panels of Table 3. Panel A compares the two tax regimes, showing the difference when moving from MAV assessments and current rates to RMV assessments and derived rates. Differences are clear when comparing Inner Northeast and Outer Southeast communities. Almost all land uses in INE will see higher taxes since their MAV assessments on most land use categories account for less than 32% of market values, compared to the county average of 39.1%. Most properties in OSE will see some reduction in their tax bills due to their MAVs being closer to their RMVs.

Table 3 Changes in Tax Incidences under Three Tax Schemes with Revenue Neutrality[18]

Panel A: Current Property Tax - RMV Equal Rate Tax

Land Use Description	# Parcels	Current Tax	RMV Equal Rate Tax	Difference	Percent Change
INNER NORTHEAST					
Single Family	8,371	32,058,762	45,858,723	13,799,961	43.0%
Multi-family 2-4 units	575	2,074,539	3,727,544	1,653,006	79.7%
Multi-family 4 units or more	87	3,413,178	5,314,564	1,901,386	55.7%
Commercial	237	1,664,848	3,332,170	1,667,322	100.1%
Commercial - Auto Related	12	37,118	86,572	49,454	133.2%
Office	31	512,896	913,953	401,057	78.2%
Restaurant	34	130,789	240,192	109,403	83.6%
Warehouse	32	179,981	321,414	141,432	78.6%
Vacant	242	320,084	824,904	504,820	157.7%
OUTER SOUTHEAST					
Single Family	13,351	45,093,484	32,993,047	-12,100,437	-26.8%
Multi-family 2-4 units	485	2,379,326	1,623,886	-755,439	-31.8%
Multi-family 4 units or more	268	5,952,768	5,587,685	-365,082	-6.1%
Commercial	229	3,834,965	3,483,443	-351,522	-9.2%
Commercial - Auto Related	41	275,289	241,834	-33,455	-12.2%
Office	28	286,222	244,346	-41,876	-14.6%
Restaurant	57	394,791	439,268	44,477	11.3%
Warehouse	35	757,817	550,953	-206,863	-27.3%
Mobile Home	48	709,946	618,483	-91,463	-12.9%
Vacant	517	493,592	568,513	74,921	15.2%

Panel B illustrates the results of simulated tax applications in the second stage, using RMV assessment and derived split rates for reporting LVT results. When moving from an equal rate tax on RMV assessments, tax shift shows more variation. This again is due to the differences in LTV ratios across land use categories (see Table 2). Parcels indicated by high improvement values relative to land values experience declines in their tax bills. For example, improvement values being roughly 2.5 as much as land value, multi-family developments of more than 4 units will see significant reductions in tax bills in both INE and OSE communities. This is consistent with previous LVT research findings in Washington State and Marion County where the multifamily category typically experienced the greatest negative tax shift among major land uses.[19,20] Of course, a larger number of dwelling units on a unit of land is a more efficient use of land, hence is rewarded under a LVT tax system.

[18] Tax-exempt properties and condos are dropped from this analysis

[19] McIntire, J.; Gihring, T. (1999). Equity, Land Use, and Resource Land Impacts of Land Value Taxation in Washington State. *Lincoln Institute of Land Policy*.

[20] Gihring, T.; Nelson, K. (1999). Tax Shift—Sequential to a Land-Based Property Tax System in Salem, Oregon. Available upon request.

On the other hand, single family and smaller multi-family developments are slightly higher than the total county-wide LTV ratio, hence are in the aggregate subject to a moderate positive tax shift. Commercial uses are more likely to be nested within pedestrian-oriented commercial "ribbons" in INE than commercial uses in OSE which are likely scattered along commercial strips and in strip malls. Hence the difference in tax shift. Likewise, restaurants are likely found having similar characteristics. Land utilization explains this difference in LVT taxation incentive effects. As expected, vacant lands will be subject to the highest increase in tax burden, as total real market value consists almost entirely of land. These distinctions will become more apparent when comparing fully developed parcels and underutilized lands in next section.

Panel B: RMV Equal Rate Tax - Two-Rate (90-10) LVT

Land Use Description	# Parcels	RMV Equal Tax Rate	Two-Rate (90-10) LVT	Difference	Percent Change
INNER NORTHEAST					
Single Family	8,371	45,858,723	51,793,420	5,934,697	18.5%
Multi-family 2-4 units	575	3,727,544	3,982,596	255,052	12.3%
Multi-family 4+ units	87	5,314,564	2,882,852	-2,431,711	-71.2%
Commercial	237	3,332,170	2,524,413	-807,757	-48.5%
Office	31	913,953	689,357	-224,596	-43.8%
Restaurant	34	240,192	225,250	-14,942	-11.4%
Warehouse	32	321,414	434,465	113,052	62.8%
Vacant	242	824,904	1,777,153	952,248	297.5%
OUTER SOUTHEAST					
Single Family	13,351	32,993,047	39,163,694	6,170,647	13.7%
Multi-family 2-4 units	485	1,623,886	1,755,955	132,069	5.6%
Multi-family 4+ units	268	5,587,685	3,808,438	-1,779,247	-29.9%
Commercial	229	3,483,443	3,414,869	-68,574	-1.8%
Commercial - Auto	41	241,834	300,947	59,113	21.5%
Office	28	244,346	237,657	-6,689	-2.3%
Restaurant	57	439,268	573,001	133,733	33.9%
Warehouse	35	550,953	487,146	-63,807	-8.4%
Mobile Home	48	618,483	868,511	250,028	35.2%
Vacant	517	568,513	1,225,105	656,592	133.0%
Other	40	103,054	60,481	-42,573	-30.2%

Reforming the property tax system as proposed in these model simulations will not take the form of stages as shown in this analysis. Stage 1 and 2 are for the purpose of showing the separate effects of each change in the tax structure. In practice, an alternative tax being a local option LVT will likely take place as a complete conversion. Panel C shows the total tax shift effects of the change from the current MAV system with M5 and M50 limitations to a land value tax. In INE, due to their productive use, multi-family parcels with at least four units experience 15.5% reduction of tax duties. While all other land uses have to pay more taxes, in part due to their low MAV/RMV ratio, the less productive the sites are, the more their tax

duties increase. As vacant lands, commercial-auto related sites and warehouse have highest LTV ratios, they witness the highest percentage changes. Similarly, while most parcels in OSE have negative tax shifts (partly due to their MAV/RMV ratio above to the county's average value), multi-families with four units or more gain the most (a 36% decrease). Without improvement, vacant lands have to pay significantly more under LVT.

Panel C: Current Property Tax - Two-Rate (90-10) LVT

Land Use Description	# Parcels	Current Tax	Two-Rate (90-10) LVT	Total Tax Shift	Total Percent Change
INNER NORTHEAST					
Single Family	8,371	32,058,762	51,793,420	19,734,658	61.6%
Multi-family 2-4 units	575	2,074,539	3,982,596	1,908,057	92.0%
Multi-family 4+ units	87	3,413,178	2,882,852	-530,326	-15.5%
Commercial	237	1,664,848	2,524,413	859,565	51.6%
Office	31	512,896	689,357	176,461	34.4%
Restaurant	34	130,789	225,250	94,462	72.2%
Warehouse	32	179,981	434,465	254,484	141.4%
Vacant	242	320,084	1,777,153	1,457,069	455.2%
OUTER SOUTHEAST					
Single Family	13,351	45,093,484	39,163,694	-5,929,790	-13.1%
Multi-family 2-4 units	485	2,379,326	1,755,955	-623,370	-26.2%
Multi-family 4+ units	268	5,952,768	3,808,438	-2,144,330	-36.0%
Commercial	229	3,834,965	3,414,869	-420,096	-11.0%
Commercial - Auto	41	275,289	300,947	25,659	9.3%
Office	28	286,222	237,657	-48,565	-17.0%
Restaurant	57	394,791	573,001	178,210	45.1%
Warehouse	35	757,817	487,146	-270,671	-35.7%
Mobile Home	48	709,946	868,511	158,566	22.3%
Vacant	517	493,592	1,225,105	731,513	148.2%
Other	40	141,062	60,481	-80,582	-57.1%

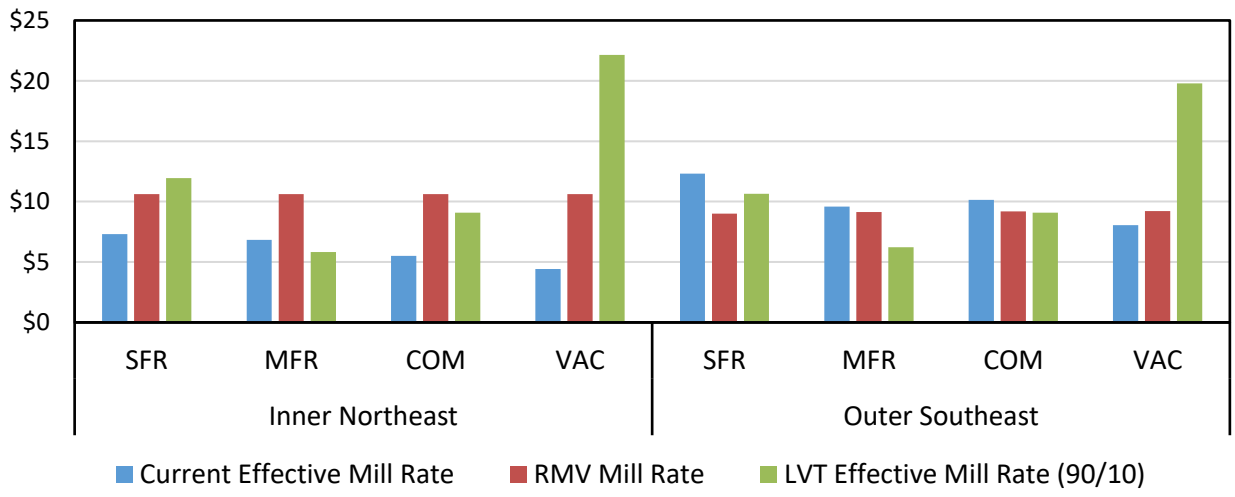
The tax shift can also be seen from comparing changes in mill rates by land uses before and after switching to LVT. Implementing changes to property tax systems will create disparate impacts to mill rates depending on land use type. The relatively low MAV/RMV ratio of properties in the Inner-Northeast community all but guarantees an increase in levy under RMV tax, even with the 57.5% decrease in LCA rates. Under RMV tax, Outer-Southeast gets a decrease in tax rate on average for each land use class, with the largest decrease coming for Single Family Residential properties.

Table 4: Average Levy under Four Tax Regimes by Community

	INNER NORTHEAST				OUTER SOUTHEAST			
Land Use	**MAV**	**RMV**	**90/10 LVT**	**60/40 LVT**	**MAV**	**RMV**	**90/10 LVT**	**60/40 LVT[21]**
Single Family	$3,830	$5,478	$6,187	$5,632	$3,378	$2,471	$2,933	$2,571
Multi-Family	$8,290	$13,659	$10,371	$12,946	$11,065	$9,577	$7,390	$9,103
Mobile Home					$14,791	$12,885	$18,094	$14,014
Commercial	$6,697	$13,310	$10,923	$12,793	$15,223	$13,797	$13,762	$13,790
Office	$16,545	$29,482	$22,237	$27,911	$10,222	$8,727	$8,488	$8,675
Restaurant	$3,847	$7,064	$6,625	$6,969	$6,926	$7,706	$10,053	$8,215
Industrial	$26,486	$15,760	$3,795	$13,166	$27,458	$32,660	$8,814	$27,490
Vacant	$1,323	$3,409	$7,344	$4,262	$955	$1,100	$2,370	$1,375
Total	**$4,203**	**$6,303**	**$6,695**	**$6,388**	**$3,964**	**$3,060**	**$3,420**	**$3,138**

For all broad land use classes but one, average levy rates increase with higher rates of LVT (see Figure 5). Multi-Family properties are the one land use class for which effective tax rates are reduced. This suggests that any increased rate for land value relative to improvement value, beyond incentives created, will benefit—and incentivize the development of—Multi-Family properties.

Figure 5: Effective Mill Rates under Three Tax Scenarios, by Property Type and Community



Whether each property pays more or less under each tax shift is determined by a combination of two factors: the MAV/RMV and Land to Total Value (LTV) ratios. This is represented in the MAV/RMV tax shift columns of Table 5 below. The majority of properties in INE pay more with a switch to RMV, emblematic of their consistent high value growth relative to other areas. Only

[21] This LVT Ratio will be introduced into the model in the mitigation section.

9% of OSE properties pay more with an RMV tax, with the remainder paying less (consistent with their higher than average LTV ratios).

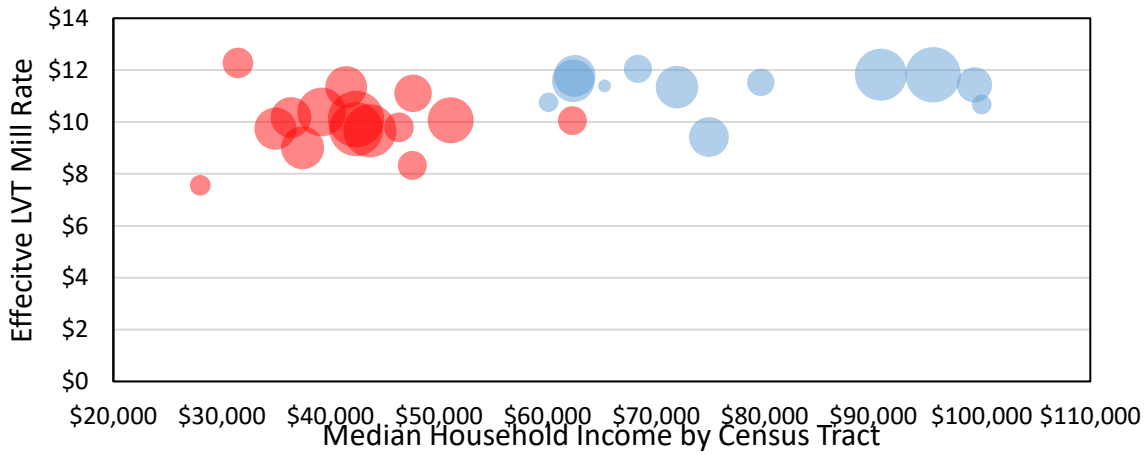
The share of properties paying more from a switch from RMV to LVT systems is entirely determined by the size of the property's LTV ratio relative to the county average of 39.5%. For example, 83% and 86% of single family properties in INE and OSE, respectively, have a higher LTV ratio than the county average, rendering an increase in tax. The final column for each community is the combined effect of each factor. Again, most properties in the INE community pay more. In the OSE, despite majorities of vacant lots, and commercial buildings paying more, only 26% of properties would pay more than they are currently paying under an LVT.

Table 5: Shares facing Positive Tax Shift by Land Use

	INNER NORTHEAST				OUTER SOUTHEAST			
Land Use	**Total Parcels**	**MAV/RMV tax shift**	**RMV-LVT tax shift**	**MAV-LVT tax shift**	**Total Parcels**	**MAV/RMV tax shift**	**RMV-LVT tax shift**	**MAV-LVT tax shift**
Single Family	8,371	85%	83%	88%	13,351	6%	86%	23%
Multi-Family	662	98%	65%	94%	753	12%	57%	14%
Mobile Home					48	31%	92%	63%
Commercial	281	97%	40%	88%	270	54%	67%	59%
Office	31	94%	55%	74%	28	25%	64%	36%
Restaurant	34	91%	47%	85%	57	58%	79%	82%
Vacant	242	74%	100%	100%	517	47%	100%	99%
Totals	**9,623**	**86%**	**81%**	**89%**	**15,030**	**9%**	**84%**	**26%**

Figure 6 below displays the effective mill rates resulting from the 90/10 LVT. The separate rates on land and improvement value results in a significantly more balanced rate distribution than in Figure 4 above. Furthermore, a LVT system would be slightly income progressive (as opposed to the marked regressivity shown in Figure 4). OSE is in red, while INE is in blue.

Figure 6: Effective LVT Mill Rate by Income and Community



Incentivizing Development

One of the most important theoretical advantages of LVT is its potential effect on incentivizing land owners to make the best use of their land, while at the same time discouraging land speculation. In the current tax system, redevelopment increases the MAV—bringing it much closer to the RMV, and significantly increasing the taxes levied. This section considers how differently the two-rate LVT may affect parcels with different levels of land utilization. Our analysis also examines the mechanism through which LVT may provide incentives for owners of underutilized sites to put their land to more productive use.

The model simulation method classifies parcels by land utilization status: fully developed or underutilized. Two criteria are combined to make this distinction: i) observed utilization of zoned development capacity; and ii) the LTV ratio. A parcel is treated as underutilized if its LTV ratio > 0.66 (i.e. its land value is more than double the improvement value). The assumption is that an underutilized site is economically unproductive and would become more productive if redeveloped. To meet the physical utilization threshold, a parcel's building bulk (density) must reach at least 20% of its maximum development capacity as specified by its zoning designation. Both threshold criteria (< 0.66 and > .20) must be met for a parcel to be classified fully developed.

Concerning the physical utilization criterion, a parcel's zoning designation is used to determine its maximum development limit. For single-family residential parcels (R2.5, R5, R7, R10, R20 and RF zones), the maximum number of allowed units is determined by dividing the total parcel area by the maximum density. For multi-family residential parcels (R1, R2, R3 and IR zones), the maximum number of residential units is calculated by dividing the total parcel area by the maximum density. In both cases, the rounding rules specified in the City of Portland's Land Division Information Guide are adopted. For commercial zones, the total parcel area is multiplied by zone-based maximum floor area ratio (FAR) to obtain the allowed building square footage. The data base contains existing square footage of building area for all developed parcels.

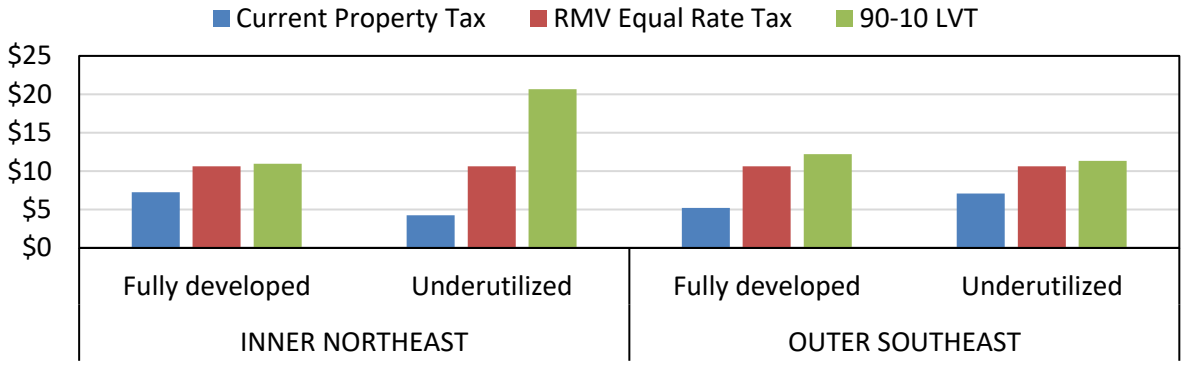
The level of observed utilization of zoned development capacity is expressed as the percentage of development capacity currently used in terms either of lots, residential units or areas. For example, each parcel in the single-family residential zones is counted as one lot. Then its level of physical utilization is obtained by one divided by its maximum number of allowed lots. As the number of existing residential units in multi-family areas are not available, it is estimated by dividing total building areas by the maximum density without rounding[22]. The only exception is the industrial zones where no FAR or other similar limits on maximum development capacity is available to calculate the first indicator. Thus all vacant industrial properties are assigned to the "less than 20%" group while other industrial lands are mapped into the "at least 20%" group.

[22] Apart from exempt properties, a few parcels were dropped from the sample due to their lacks of necessary data.

Figure 7 below compares changes in mill rates[23] between underutilized and fully developed parcels under current property tax and two tax simulations while holding county-level tax revenue unchanged. As expected, sites utilized more intensively experience comparatively lower mill rates under LVT.

With the change from the current tax system using MAV assessments to RMV equal rate taxation, overall tax burden increases in Inner Northeast, but decreases in Inner Southeast regardless of land use efficiency, due to the differences in the MAV / RMV ratio. However, when adopting LVT, the divergence in tax burden between the two utilization groups becomes unambiguous. Underutilized parcels witness significant increases in both communities, while the fully developed parcels will pay minimal additional taxes. Note here that lots classified as "fully developed" meet both criteria but are not necessarily developed to full allowable capacity.

Figure 7: Effective Mill Rates: Underdeveloped and Developed Land Parcels



Note also that developed sites are likely to have improvement value accounting for a larger share of total property value than underutilized parcels (Table 6), and improvements are taxed at substantially lower rates than land. Fully developed lands still pay a marginally higher tax after exempting Measures 5 and 50 limitations and switching to 90/10 LVT. The reason is they still have higher land value's share of total value than the average of the county (which is 39.5%) (see the table below).

Table 6: Land and Improvement Market Value as Shares of Total Real Market Value

Area	Land Utilization Status	# Parcels	Share of Total Real Market Value	
			Land	Improvement
INNER NORTHEAST	Fully Developed	8,733	41.1%	58.9%
	Underutilized	523	88.5%	11.5%
OUTER SOUTHEAST	Fully Developed	11,341	41.9%	58.2%
	Underutilized	1,342	80.4%	18.6%

[23] Data are expressed as percentage of total real market value

Compared to the current property tax, underutilized lands pay significantly higher taxes, while developed lots experience either tax reductions as in Outer Southeast, or substantially smaller increases as in Inner Northeast.

These incentive-based tax shifts are intended to encourage the owners of underutilized sites, particularly vacant lots, to invest in improving their properties. Some owners will pay higher tax bills due to the change to higher real market values. Nevertheless, such increases are marginal; even relatively low returns on their capital investments suffice to cover them. For example, suppose that underutilized sites are redeveloped in such a way that increases the market value of their improvements by 200% while land market values are unchanged.

Table 7 below illustrates changes in their total property value and their tax bills. With this assumed improvement, on the one hand, the total value of underutilized parcels increases by over 20% and 35% in INE and OSE respectively. However, these substantial value increases are associated with modestly higher tax bills (3% and 5% respectively)[24]. If the minimum required return on investment (ROI) is defined as the ratio between the amount of tax increased and the change in the improvement values of these underutilized lands, then under our assumptions the minimum ROI is only 0.26% and 0.22% in INE and OSE, respectively.

Table 7: Tax Shift with 50% Increase in Improvement Value of All Underutilized Parcels

	% Growth in Improvement Value	% Increase in Total Real Market Value	% Increase in Total LVT	Required Return to Investment
Inner Northeast	200%	23.06%	2.85%	0.26%
Outer Southeast	200%	37.63%	5.01%	0.22%

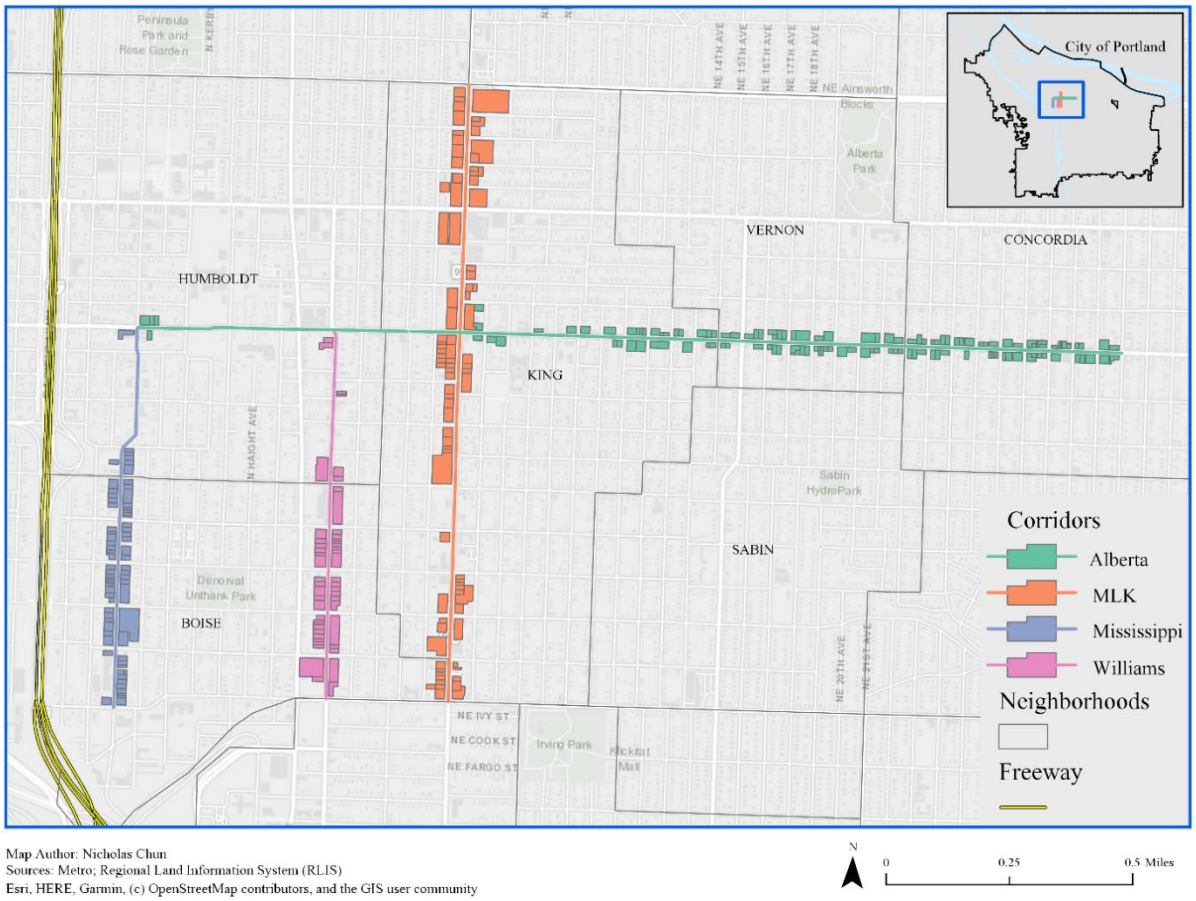
Commercial Corridor Analysis

In addition to looking at how LVT incentivizes development for INE and OSE in general, it can be helpful to focus on commercial corridors in particular. Portland city land use policies encourage more pedestrian-friendly commercial settings – akin to the 'main street' configuration, as opposed to the sprawling pattern of commercial strips.[25] The question is whether LVT incentivizes more compact commercial development. Figure 8 shows the four commercial corridors analyzed in Inner-Northeast Portland: North Mississippi Ave., North Williams Ave., NE Martin Luther King Jr. Blvd., and NE Alberta Street. Only commercial uses within the corridors are included in the data for analysis.

[24] The actual investment would be more than the 100% improvement value when accounting for permits etc.

[25] City of Portland. "2035 Comprehensive Plan". Page GP3-10. (December 2018). Retrieved from: www.portlandoregon.gov/bps

Figure 8: Map of Commercial Corridors in Inner-Northeast Portland



Map Author: Nicholas Chun
Sources: Metro; Regional Land Information System (RLIS)
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

A commercial property is defined as underutilized or fully developed following the methodology described above. An additional challenge to the modeling of redevelopment scenarios is determining the amount each underutilized property increases in improvement value. For this analysis, NERC assumes that each underutilized tax lot will redevelop to a level where the land value is reduced to 25% of the total value (.25 LTV ratio). This ratio is consistent with other newly developed lands in the INE.

The four figures below (9, 10, 11, and 12) reveal the average amount of taxes paid by fully developed, underutilized, and redeveloped commercial parcels under the three different tax rates in each of the four commercial corridors. Notably, under the current system there is a strong disincentive to redevelop land, as new improvements significantly increase the amount of taxes owed annually. Moving from the current tax system to an LVT would incentivize redevelopment in each of these commercial corridors.

Figure 9: North Williams Commercial Corridor Redevelopment Scenario, Mean Taxes

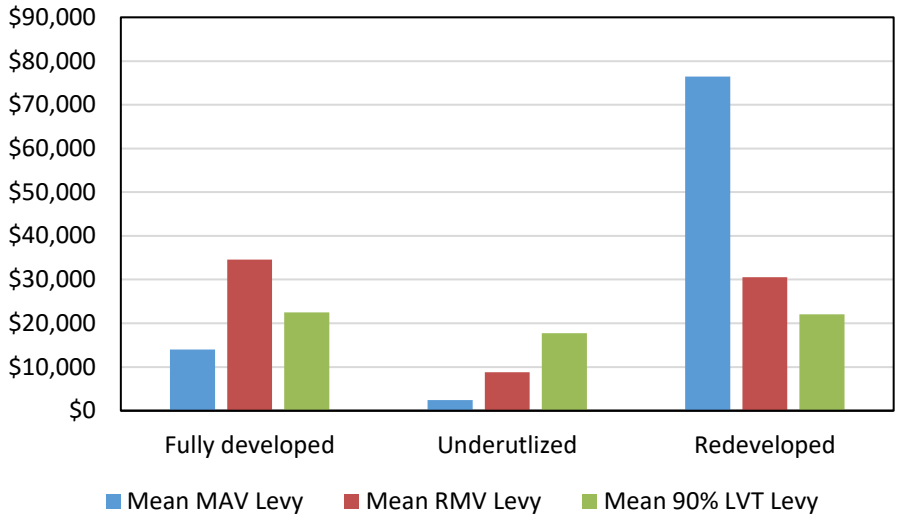


Figure 10: North Mississippi Commercial Corridor Redevelopment Scenario, Mean Taxes

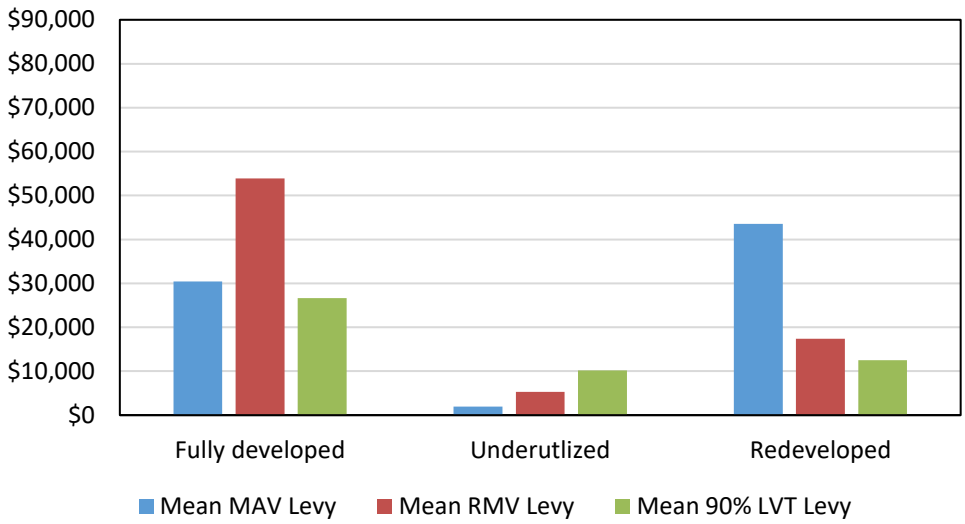


Figure 11: Northeast MLK Commercial Corridor Redevelopment Scenario, Mean Taxes

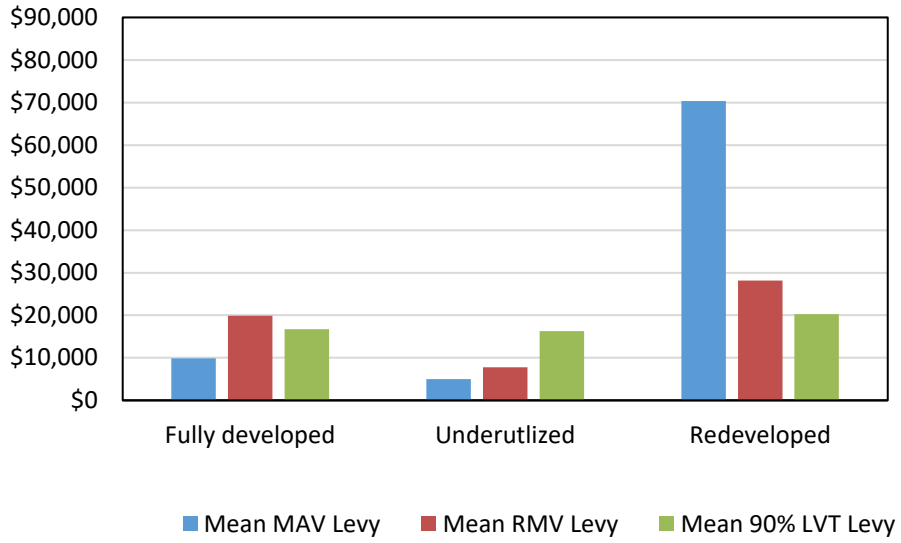
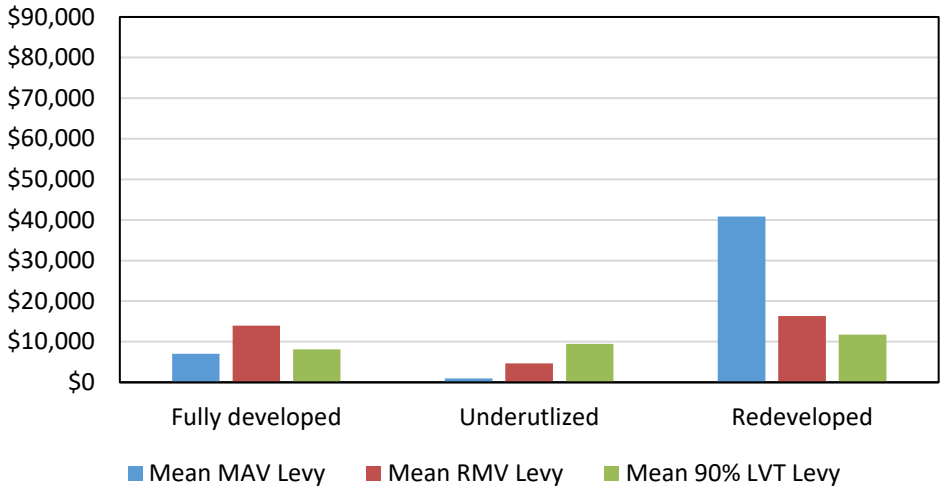


Figure 12: Northeast Alberta Commercial Corridor Redevelopment Scenario, Mean Taxes



What first becomes obvious is the tax burden difference between underutilized and fully developed properties under the conventional equal rate tax system utilizing both MAV and RMV assessments. Underutilizing, or in some cases neglecting, structural improvements on commercial sites leads to significantly lower low property taxes.

Changing to the 90/10 LVT tax regime, a much smaller increase in tax burden is experienced under the redevelopment scenario. In the N. Mississippi corridor, redeveloped properties in the aggregate actually see a lower tax burden compared to the current MAV levy on fully developed sites due to the relatively high value of property and level of utilization in that corridor (see Figure 10).

Mitigation

Under LVT, specific situations may create disproportionate and unintended hardship for landowners. These situations can create hesitancy toward a switch to any form of LVT, and thus some form of mitigation or exemption is needed. For some land uses, such as farms, the most efficient land use may not provide society the greatest benefit and should be excluded from LVT policies. In other situations, long standing homeowners who may have seen a massive increase in their property value over a long period of time, but who have not seen an equivalent increase in their income could see an untenable increase to their property tax payment. Here, we discuss a few oft-cited hardship cases and potential mitigation methods.

The highest and best use may not always be deemed the best use of land. Farms provide value without full development. With a switch to LVT farms could see a large increase to their property tax payments. As it is not the intention of LVT to incentivize the building of high-density housing on farmland, farms could be excluded from a shift to LVT and remain under an RMV tax structure exempt from M5 & M50, or given a current use exemption that allows them to continue to operate without undue tax burden. It should be emphasized that there are not many farms with the Portland Urban Growth Boundary and farm land is often assessed at a significantly lower land value—meaning that there likely will be little need for exemptions.[26]

Another situation requiring separate policies under a switch to LVT (or RMV) is households that are asset rich but cash poor. This commonly occurs in urban areas that have seen high appreciation in properties' values over the last 15 to 30 years. A homeowner may have purchased a home when property values were lower, leaving them with a valuable asset. However, the same homeowner's wages may not have appreciated at the same rate as their property, leaving them with most of their assets tied up in their home. Under a switch to LVT, this type of homeowner would see an increase to their property tax payment, but may be unable to afford the increase, especially if it is substantial. In these scenarios, mitigation techniques are often used to offset the burden for the impacted homeowners.

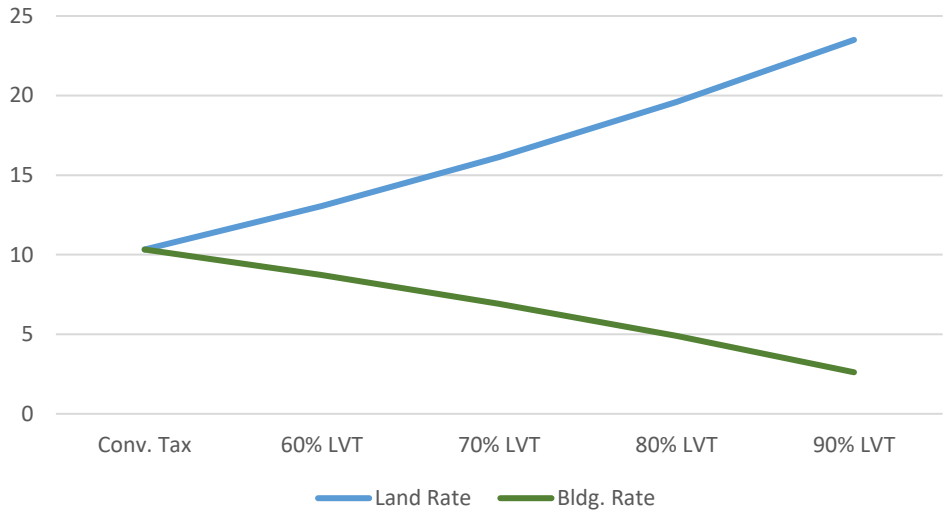
A variety of mitigation techniques have been proposed to smooth the transition to LVT for those who are asset rich and low-income, and Oregon currently has other tax deferrals that could be extended to help such households. One option is to grandfather households who are

[26] Fiscal Policy Center, University of Washington. (1999). Resource Lands in Clark and Grant Counties.

asset rich and low-income into their previous property tax payments until death or the sale of the property (either allowing the tax payments to increase at some fixed growth rate or continuing under the current tax system).

Another mitigation model for this scenario involves introducing LVT with a gradual increasing split rate over a period of time. Instead of a 90/10 land to improvement value ratio, the first year of implementation might begin with a 60/40 land-to-total value split. This then gradually increases over a number of years, easing the transition period for cost-burdened homeowners (see Figure 13 for how this transition may occur).

Figure 13: LVT Graduated Split Rates



Oregon currently uses other mitigation techniques to lower property taxes for those who experience undue burden from their tax situation. One, which could be expanded with a switch to LVT is the current tax deferral for disabled and senior citizens who own property.[27] Under the current laws, disabled and senior property owners can apply for a property tax deferral if they meet certain qualifications. Similar deferrals could be granted to those who are asset rich but house poor under an LVT model.

Another tax application model crafted as an alternative to LVT is the Assessment Exemption of Improvements (AXI) model developed by the Center for the Study of Economics[28].

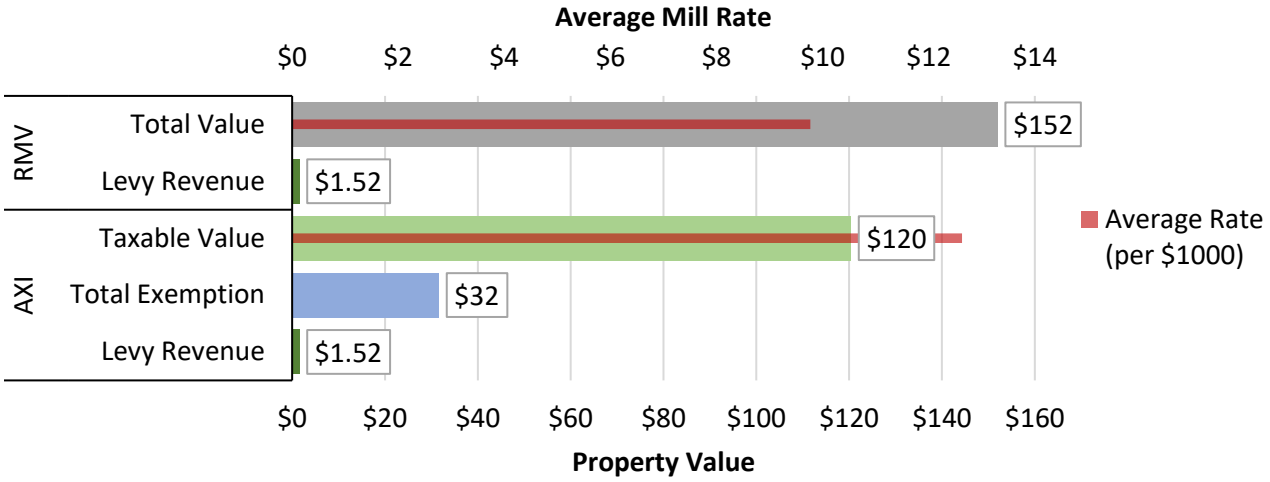
The AXI Model

Unlike the split-rate LVT system, the AXI method uses an equal rate for both land and improvement assessments. In order to create a similar investment incentive as LVT, a fixed amount of improvement value is exempted from taxation from all properties. All else constant,

[27] Oregon Department of Revenue: ORS 311.666-ORS 311.701. Available at wwww.oregon.gov/DOR/deferral
[28] Center for the Study of Economics. (2009). Land Value Taxation in Philadelphia. Available at www.urbantools.org

this results in lower effective tax rates for properties with building value near the exemption level and removes the disincentive to build up to highest and best use value. It becomes evident that by adopting the AXI model low value structures—usually owned by lower income occupants—will receive the largest benefit.

Figure 14: Illustration of Tax Shift Rate Calculation Maintaining Constant Revenue



For a brief assessment of how the AXI system might compare to LVT, we first find the share of property tax coming from land value, i.e. the land tax ratio, for different LVT ratios. We then calculate the AXI universal building value exemption required to achieve a comparable land tax ratio. As with the other models, levy rates are adjusted to maintain revenue neutrality. A 90/10 LVT system results in 85.5% of property tax revenue coming from land value. To achieve the same land tax ratio, the first $30 million of building value would need to be exempt. A 60/40 LVT results in a more feasible exemption figure, with an AXI exemption of $159,931 of improvement value or around 83.25% of the median building value in Multnomah County. To maintain revenue neutrality, LCA rates would need to increase around 29% to an effective rate of $12.62 per $1,000 of non-exempt property value.

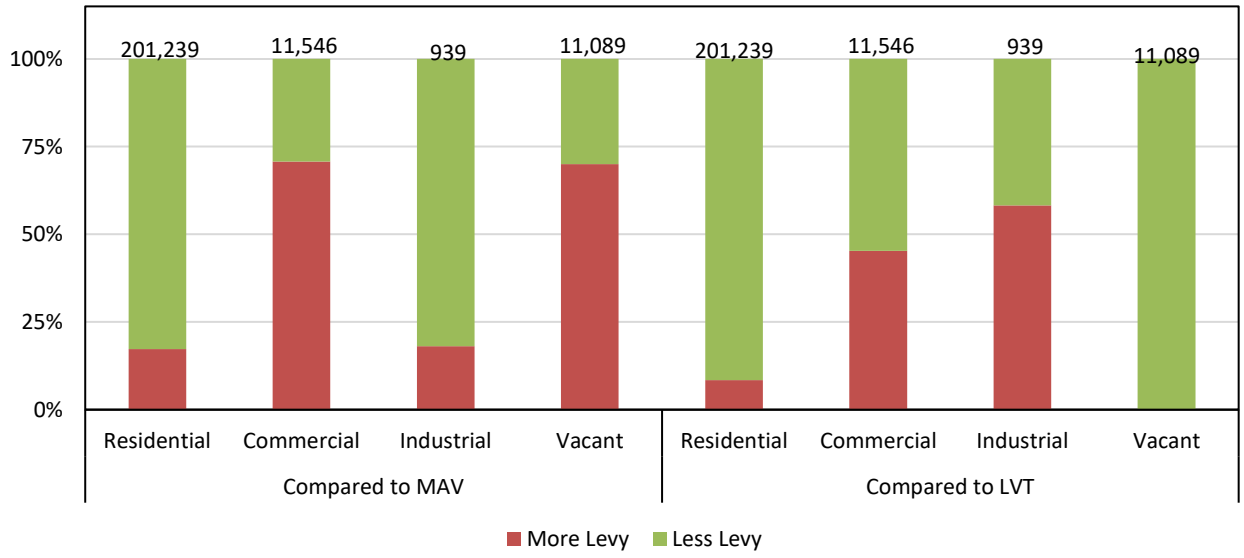
Table 8: Simulated AXI Exemption Levels

LVT Ratio	Land Tax Ratio	BV Exempt. Ratio	Improvement Value Exemption	Total Improvement Value Exemption
90/10	85.5%	**15510%**	$ 29,976,177	$ 81,947,747,610
80/20	72.3%	**2636%**	$ 5,094,597	$ 69,264,546,007
70/30	60.4%	**299%**	$ 578,554	$ 52,794,606,483
60/40	49.5%	**83%**	$ 159,931	$ 31,437,688,852

Figure 16 shows effective mill rates for the current tax system, a 60/40 LVT, and an AXI exemption of $159,931 across estimated median household income.[29] Both alternative tax models are more progressive with respect to income than the current tax system. The pattern suggests that the 60/40 LVT and AXI would reduce rates on average for census tracts with median income below $60,000, with AXI resulting in the lowest effective rates. In the areas for which we have estimates of median household income, AXI results in lower effective rates for all income levels except the $70,000 income group. This suggests AXI is a potential mitigating measure for the tax shift to LVT, while providing comparable progressivity.

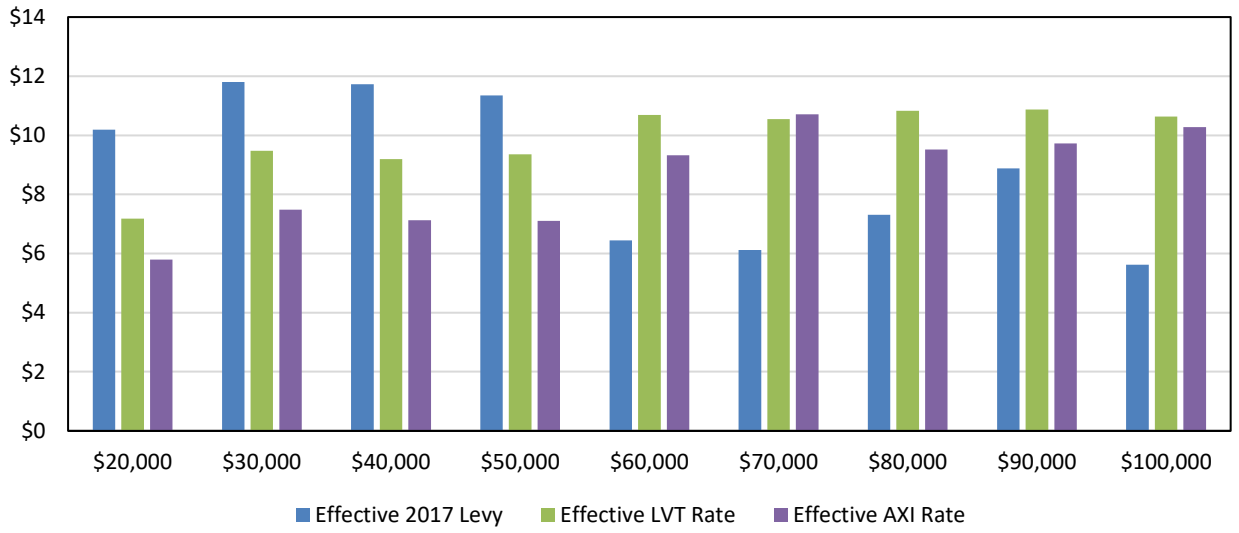
Figure 15 below shows the shares of properties that would pay less or more under an AXI tax structure compared to the current MAV system and the proposed 90/10 LVT. The vast majority of residential and industrial properties would pay a lower levy under the AXI system relative to the current system, while commercial and vacant properties would pay more. Much of this is due to the rate changes of the shift to an RMV system. However, compared directly to the 90/10 LVT, majorities of residential, commercial, and vacant properties would pay less under an AXI system, while the majority of industrial properties would pay more.

Figure 15: Count of Tax Shifts from AXI by Land Use Class



[29] The $20,000 income block includes those from $20,000 to $29,999, with similar groupings for later blocks.

Figure 16: Effective Mill Rates for Mitigating Policies by Median Household Income Groups



One potential downside of AXI relative to LVT is its limited impact on incentives. While LVT incentivizes development for all properties by reducing improvement value tax rates, the incentives created by the AXI model are limited to properties with improvement value below the exemption. Properties with low improvement values, such as vacant lots, will face no increase in property tax for developing up to the exemption, but all properties with improvement values at or above the exemption rate face higher tax rates for any development. This implies that the mitigation effects of AXI would largely apply to single family dwellings rather than multifamily or commercial properties.

Conclusion

Ultimately, land-based property tax systems, whether a split-rate LVT or an AXI building exemption tax, do what they are designed to do—place more of the tax burden on wealthier land-owners, and encourage the highest and best use of land. Based on the simulations performed on the INE and OSE communities, a LVT would provide a more equitable tax structure, incentivize structure upgrading and development of underutilized properties, and discourage "holding" land for speculative purposes. Furthermore, the potential downsides of the tax policy—such as increasing taxes on low-income homeowners—can be mitigated with carefully crafted legislation. In short, many of the inequities created by Measure 5 and 50 would likely be reversed if a LVT were implemented in the Portland region.

South Waterfront construction, Portland OR