INITIAL FINDINGS
FROM THE OREGON POVERTY MEASURE PROJECT

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CONTENTS

ABBREVIATIONS

ACS	American Community Survey
ACTC	Additional Child Tax Credit
CTC	Child Tax Credit
CDCTC	Child and Dependent Care Tax Credit
CPM	California Poverty Measure
CPS-ASEC	Current Population Survey Annual Social and Economic Supplement
EITC	Earned Income Tax Credit
LIHEAP	Low Income Home Energy Assistance Program
MOOP	Medical Out-of-Pocket Expenses
OPM	Official Poverty Measure (federal)
ORPM	Oregon Poverty Measure
SPM	Supplemental Poverty Measure (federal)
SNAP	Supplemental Nutrition Assistance Program
TANF	Temporary Assistance for Needy Families
TAXSIM	NBER Tax Microsimulation Model
TRIM3Urban	Institute Transfer Income Model, version 3
WIC	Special Supplemental Nutrition Program for Women, Infants & Children
WPM	Wisconsin Poverty Measure

EXECUTIVE SUMMARY

In a context of an economy that has experienced both historic highs and lows during the last fifteen years, there is great interest in understanding the levels and trends of poverty. Interpretations of progress against poverty and how social policies affect poverty hinge on how poverty is measured. Existing poverty measures have well-known limitations that fail to reveal the true nature of poverty. The Oregon Poverty Measure Project, inspired by Supplemental Poverty Measure methods developed at the federal level, is designed to be the most valid measure of poverty for the state. In this report, we use 2017 American Community Survey data with a number of adjustments to economic resources and thresholds.

We find that 12% of Oregonians are in poverty according to the Oregon Poverty Measure (ORPM), slightly lower than the Official Poverty Rate (13%). However, by accounting for transfer programs, taxes and expenses, the child ORPM poverty rate was substantially lower than the Official Poverty Measure (10% vs. 17%) and the older adult poverty rate considerably higher (12% vs. 9%).

These ORPM findings relative to the Official Poverty Measure are broadly aligned with differences across rates observed at the federal level. Geographically, poverty in Oregon is higher in East Portland metro area and remote southern Oregon. We show the influence of the federal and state social safety net: In the absence of Social Security, the Earned Income Tax Credit, and the Supplemental Nutrition Assistance Program, a considerably higher share of Oregonians would be in poverty.

INTRODUCTION

In this project, we create an Oregon Poverty Measure (ORPM). Compared to the Official Poverty Measure (OPM), the ORPM better captures the level of hardship experienced by Oregonians, permits more accurate assessment of the impact of various national and state antipoverty policies and programs, and provides more detail about the geography of poverty in Oregon. The ORPM is necessary because of the many limitations of the OPM developed by the Census Bureau.[1] Concerns about the limitations of the OPM have led a few states to develop of alternative poverty measures (e.g., Wisconsin and California). We model the ORPM after these other initiatives but differ in our data sources, analysis, and incorporation of state-specific economic and social characteristics as well as policy priorities of the 33rd U.S. state.

ORGANIZATION OF THE REPORT

In this first descriptive report we describe initial findings for one year of data. Future reports are forthcoming that examine more comprehensive data over multiple years. This report is organized in response to three questions about poverty in Oregon.

1. How many Oregonians are considered poor under the ORPM and how does poverty compare across other measures?
2. How is poverty distributed geographically within Oregon?
3. How many Oregonians are lifted out of poverty by the safety net programs?

The report concludes with a summary of key findings and next steps, and observations about the contributions we expect the Oregon Poverty Measure Project to make to our understanding of Oregon's economic and policy context.

[1] See the United States Census description of these differences: https://www.census.gov/library/visualizations/2017/demo/poverty_measure-how.html. See also Institute for Research on Poverty FAQ on poverty measurement for more details: https://www.irp.wisc.edu/resources/how-is-poverty-measured/

APPROACH

A person (or household) is considered to be in poverty when their economic resources fall below a pre-determined level of need. The Official Poverty Measure (OPM) produced by the Census Bureau is the national standard for understanding the levels and trends for poverty in the United States. While the OPM facilitates trend analysis back to the 1960s, the method is subject to several well-known issues that threaten its validity (National Research Council, 1995). For example, the OPM rests on an antiquated definition of family units that treats cohabiting partners as separate units and excludes foster children; omits important economic resources such as taxes and transfers (Supplemental Nutrition Assistance Program [SNAP], Earned Income Tax Credit [EITC]), and does not account for geographic variation in the cost of living.

The Oregon Poverty Measure accounts for many of the shortcomings in the OPM to generate a more valid measure of poverty for the state. It incorporates some of the features of the Supplemental Poverty Measure (SPM), the most recent measure produced by the Census Bureau. The SPM overcomes many of the limitations of the OPM and is widely recognized as superior to the OPM. Like the OPM, however, the SPM relies on the in-depth income measures included in the Current Population Survey (CPS) Annual Social and Economic Supplement. The CPS is limited for state-level poverty analysis because of its relatively small sample size and inability to reliably report on poverty in sub-state geographies. The ORPM in contrast uses detailed data from multiple sources and includes taxes and in-kind transfers into resource estimates. Below we briefly describe these multiple data sources and several analytic steps involved in creating the ORPM.

DATA SOURCES

In contrast to the OPM and SPM that rely on the CPS, microdata from the 2017 American Community Survey (Ruggles et al., 2019) served as our primary source of information about individual and household-level resources. The main benefit of the American Community Survey (ACS) is a larger sample within Oregon that allows more granular analysis of poverty. Because the ACS only includes the OPM several adjustments are needed to create the Oregon-specific improved poverty measure. Overall, the ORPM project involves adjusting the Oregon sample of the ACS to include the resources and thresholds necessary for an SPM-like poverty measure for the state. Several data sources are used to implement the adjustments, e.g., the CPS, Survey of Income and Program Participation, SPM thresholds from the Expenditure Survey from Bureau of Labor Statistics, TRIM3 microdata, and TAXSIM microsimulation data. Our analytic sample includes 39,346 observations totaling a weighted state population of 4,045,385.

ANALYTIC PLAN

The ORPM was created in seven analytic steps, including:

1) Identifying data sources and restrictions;
2) Defining the ORPM resource unit, or "household" [2];
3) Creating poverty thresholds;
4) Estimating ORPM unit cash and non-cash resources;
5) Estimating ORPM unit expenses;
6) Estimating ORPM net tax liability[3]; and,
7) Assigning ORPM poverty status and estimated rates.

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[2] Throughout this report, we refer to groups of individuals who live at the same address and share resources as a "household," as described in more detail in this section. Our process yields a resource unit aligned with that of the Supplemental Poverty Measure's "SPM Resource Unit" (Fox, 2019, p. 17), which is somewhat more expansive than the "family" unit used by the Official Poverty Measure.

[3] Tax liability was calculated separately from cash and non-cash resources, even though some tax credits (e.g., EITC) effectively represent a public transfer.

We excluded institutionalized individuals and individuals living in group quarters, as well as college-age students living at home and working limited hours. We defined ORPM households to include unmarried partners and other selected non-relatives of the household head. We calculated ORPM poverty thresholds using aggregate national SPM threshold amounts and shares (US Bureau of Labor Statistics, n.d.), to which we applied 1) geographic adjustments at the sub-state level to adjust for regional variation in relative housing costs, using estimates of median housing costs from a 5-year sample of the American Community Survey (Ruggles et al., 2019); and 2) equivalence scales to adjust for the size of the household (Betson, 1996).

We conducted statistical modeling to estimate selected other resources (e.g., SNAP, Temporary Assistance for Needy Families [TANF], housing subsidies) and expenses (Medical Out-of-Pocket Expenses, childcare and other work-related expenses), using supplemental microdata from the 2016-18 Current Population Survey (Flood et al., 2019), 2014-15 TRIM microdata (Parolin, 2019; TRIM3 project website, downloaded on 04/19/2019) and aggregate estimates from the Survey of Income and Program Participation (Mohanty et al., 2017). Tax liabilities and credits were estimated using the TAXSIM27 microsimulation model (Feenberg & Coutts, 1993; National Bureau of Economic Research, n.d.). Our approach was informed by the Supplemental Poverty Measure (e.g., Fox, 2018) and other state-level equivalents, including the California Poverty Measure (e.g., Bohn et al., 2017; Mattingly et al., 2019), the Wisconsin Poverty Measure (e.g., Marks et al., 2011; Smeeding & Thornton, 2019) and related guidance (Renwick, 2015).

The ORPM deviates from the OPM in several ways. The main differences include: 1) definition of the household (resource unit); 2) exclusion of college-age students from the sample; 3) calculation of the poverty threshold; 4) data source(s); 5) inclusion of non-cash resources and tax liabilities; and 6) inclusion of selected expenses. Our methods are described further in Appendix A, and extensively documented in a separate Technical Appendix. Of note, the ORPM also differs from other hardship metrics, such as ALICE and the Self-Sufficiency Score (see Appendix A for details).

For this initial ORPM report, we present descriptive statistics about the poverty rate experienced by individuals in Oregon, overall, by age and by geography. We also generate estimates of the effects of various resources and expenses on the total number of individuals in ORPM poverty. All descriptive analyses are representative of the Oregon population.[4] To draw attention to the labor market and highlight the role of the taxes and transfer system, we calculate market income poverty.[5] [6] Market income is defined as earnings from wages and salary, business and farm income, plus rent, interest, dividends, and private pensions, aggregated by ORPM household and compared against ORPM poverty thresholds.

[4] See the Technical Appendix for more information about the weighting procedures used in our analyses.
[5] We present all three poverty measures for comparison purposes. Note, however, that such comparisons should be undertaken with a degree of caution, given the considerable methodological differences.
[6] Estimates of official poverty in this report will deviate from those in Census Bureau reports because of differences in sample restriction.

Table 1: Comparison of Oregon Poverty Measure and Official Poverty Measure

Step	Key Component	OR Poverty Measure (2017)	US Official Poverty Measure Threshold (1967-18)[7]
Identify restrictions	Excluded populations	**Excludes:** individuals in group quarters; college-aged students	**Excludes:** Individuals in group quarters
Define resource unit	Poverty unit	**Household**: includes unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and relatives	**Family:** excludes unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives
Calculate poverty thresholds	Basis for poverty threshold	**FCSU**[8]; applies equivalence scales and geographic adjustment at PUMA level	**Food:** Cost in 1963 of the US Dept of Agriculture economy food plan adjusted for CPI inflation
Estimate resources	Cash Resources	**ACS 1-year sample:** Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, TANF/GA, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance. **CPS 3-year sample**: Used to correct for ACS under-reporting	**CPS 1-year sample**: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, TANF/GA, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance.
	Non-cash resources	**TRIM 1-year sample**: Used to correct CPS SNAP data **CPS 3-year sample**: Used to impute SNAP and housing subsidy to ACS sample **ACS 5-year sample:** PUMA median rent used to estimate housing subsidy value.	**None**

[7] See Semega et al. (2018) for more information about construction of the Official Poverty Measure. See Fisher (1992) for an extensive history of the Official Poverty Measure.
[8] FSCU: Food, shelter, clothing and utilities, estimated at national level by BLS Survey of Expenditures (US Bureau of Labor Statistics, n.d.)

Estimate expenses	Medical Out-of-Pocket Expenses	**CPS 3-year sample:** Used to impute MOOPs to ACS sample	**None**
	Child care and work-related expenses	**CPS 3-year sample:** Used to impute child care expenses to ACS sample **SIPP aggregate data:** Used to estimate work-related expenses in ACS sample	**None**
Estimate net taxes	Tax liabilities and credits	**TAXSIM:** Used to estimate federal and state net taxes	**None**
Assign poverty status	Total resources< poverty threshold	**In poverty if:** (Resources – Expenses) + Taxes) < Poverty Threshold	**In poverty if:** Resources < Poverty Threshold

RESULTS

Overall poverty

The level of poverty in Oregon differs dramatically depending on the measure used. Figure 1 shows that poverty is highest when measured as market income (18.6%), which includes cash income, but does not include non-cash transfers, taxes or expenses. According to the Official Poverty Measure, poverty is significantly lower at 12.9%. Using the Oregon Poverty Measure yields the lowest overall poverty rate at 11.5% or 465,977 individuals in Oregon.[9]

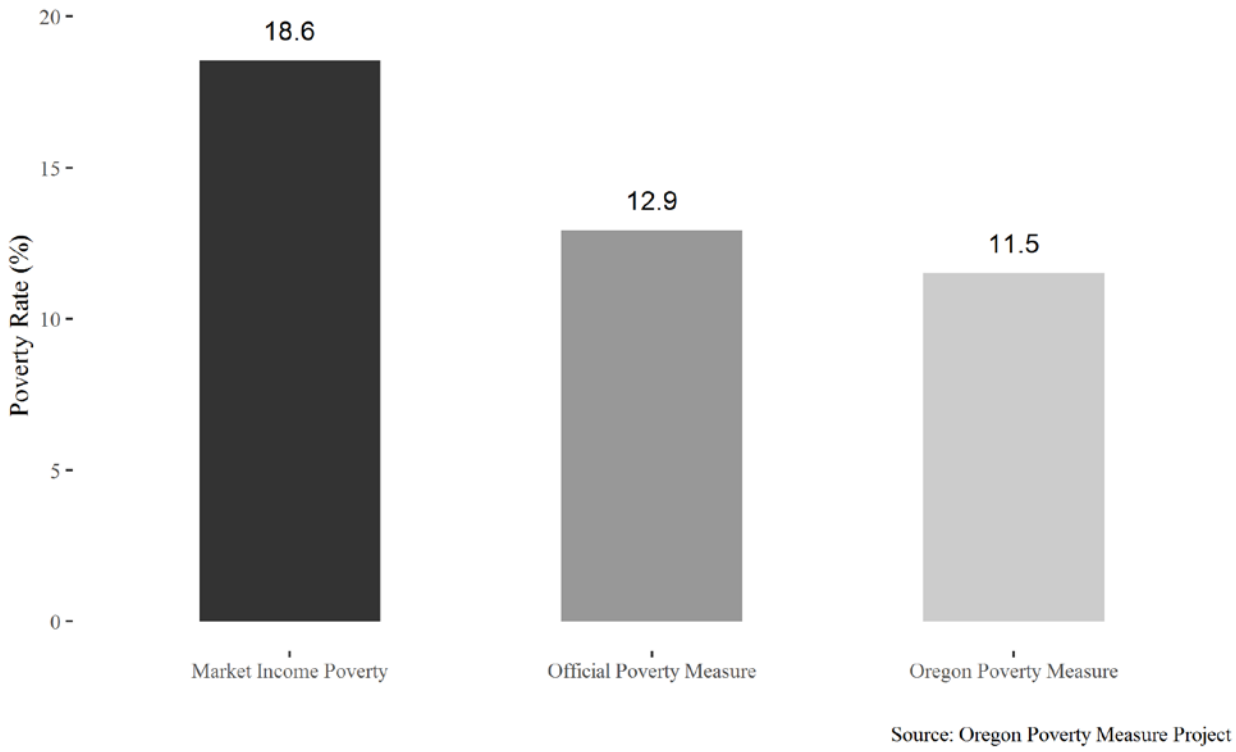

Figure 1: Overall Poverty by Measure

[9] The difference between the ORPM rate and Official Poverty Measure rate is statistically significant at the 0.01 level.

Poverty by age

Children under age 18 comprise over one-fifth of Oregon's population (21.5%), while adults (age 18-64) and older adults (age>64) make up 61.5% and 17.0% of the population, respectively. Figure 2 shows how the three poverty measures vary across age groups.

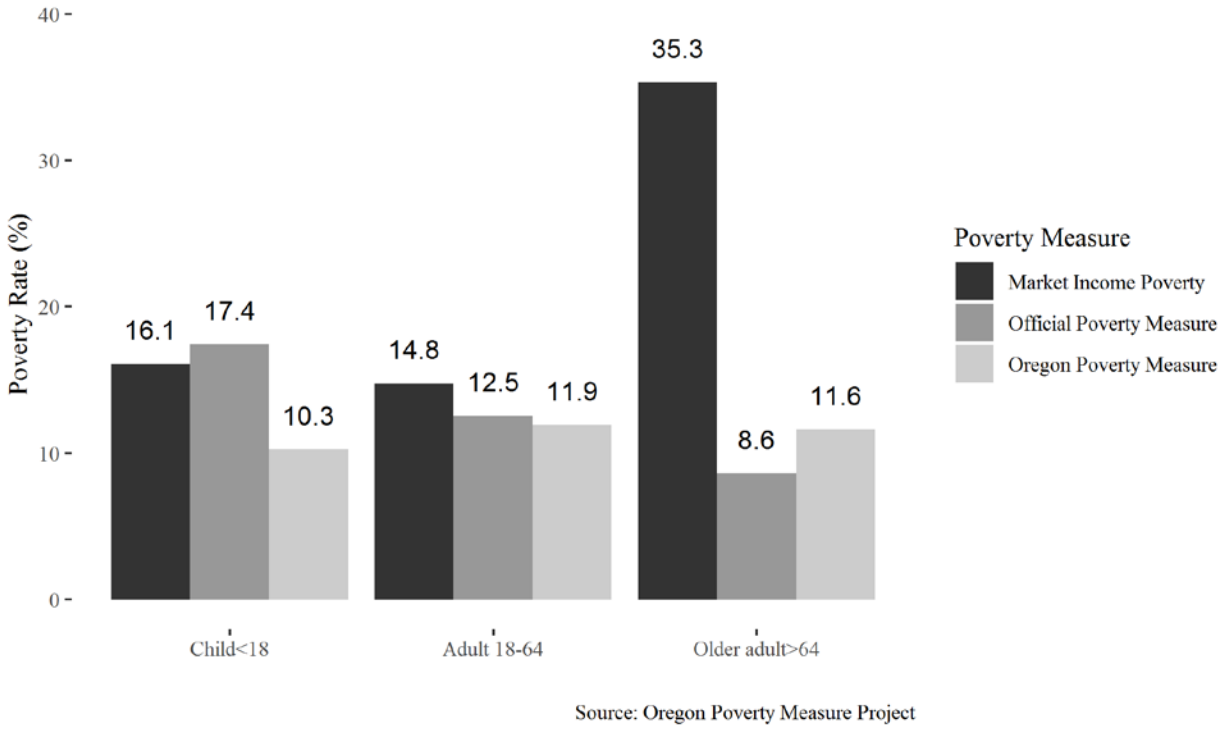

Figure 2: Poverty by Measure and Age Group

Measuring poverty according to market income alone, the poverty rate is 35.3% among older adults (age>64), while the rate is substantially lower among children (16.1%) and adults (14.8%). In contrast, the Official Poverty Measure yields the highest poverty among children (17.4%), followed by adults (12.5%) and seniors (8.6%), due in part to the cash income associated with Social Security entitlements. In comparison, the Oregon Poverty Measure yields a substantial decrease in the poverty rate experienced among children (10.2%). Among adults age 18-64, the ORPM poverty rate (11.9%) is slightly lower, relative to the Official Poverty Measure, while the ORPM yields a higher poverty rate among older adults

(11.6%).[10,11] According to the ORPM, relative to market income or OPM, poverty is more evenly distributed across age groups.

The considerably lower ORPM poverty among children, relative to the Official Poverty Measure rate, likely reflects the inclusion of tax credits and non-cash resources that are directed at families with children. These elements of the social safety net such as the Earned Income Tax Credit and Supplemental Nutrition Assistance Program are the primary anti-poverty interventions for children (National Academies of Sciences, Engineering, and Medicine, 2019). Moreover, the higher ORPM poverty rate among older adults likely represents the inclusion of medical expenses among that group. Subsequent reports will consider explanations for these differences (e.g., what role does the geographic adjustment play).

Geographic breakdown

The ORPM captures sub-state poverty in ways not possible with other poverty measures by using a combination of two geographic designations: 1) Public Use Microdata Area (PUMA); and 2) county. PUMAs are statistical geographic areas defined by the US Census Bureau. The 31 Oregon PUMAs are built on census tracts and counties, are geographically contiguous, contain at least 100,000 people, and are nested within the state. Some PUMAs represent the aggregation of multiple counties (e.g., Umatilla, Union, Baker and Wallowa), and cannot be disaggregated to the county level.[12] In contrast, other PUMAs represent only a partial county (e.g., West Central Lane County), and can be aggregated to the county level, or left in PUMA form, as desired.

[10] The difference between the ORPM and OPM for adults is not statistically significant.
[11] The difference between the ORPM for children and working-age adults is statistically significant at the 0.01 level. The difference between the ORPM for children and older adults is statistically significant at the 0.05 level. However, the difference between the ORPM for working-age adults and older adults is not statistically significant.
[12] The US Census Bureau aggregates some PUMAs across multiple counties to protect the confidentiality of ACS respondents in low population areas.

Using PUMAs, we find the ORPM poverty rate varies substantially, from a low of 5.3% in Washington County Central/Hillsboro, to a high of 18.6% in Portland City/East. Figure 3 presents ORPM poverty by PUMA across three broad categories: less than, equal to, and greater than the state ORPM poverty rate (11.5%).[13]

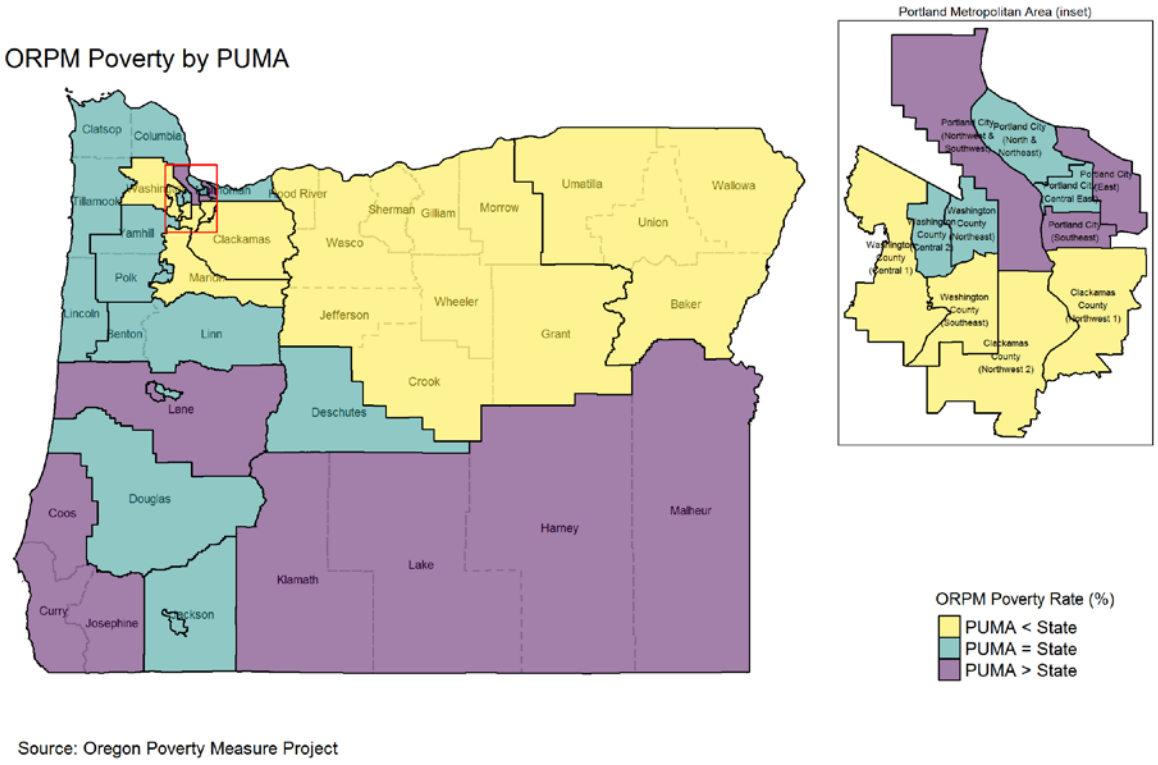

Figure 3: ORPM Poverty by PUMA

[13] We used 95% confidence intervals for both PUMA and the state to assess ORPM values at the PUMA level relative to the state ORPM.

Figure 3 suggests several clear patterns. First, poverty in the Portland Metropolitan Area is mixed, with affluent Portland suburbs in Clackamas and Washington Counties showing lower-than-average ORPM poverty, while Portland City neighborhoods show average or higher-than-average ORPM poverty (see Figure 3 subset image). Outside of Portland, PUMAs in the southern half of the state have higher-than-average ORPM poverty rates, while PUMAs with lower-than-average ORPM poverty are located in the northeast. PUMAs along the I-5 corridor generally experience average or lower-than-average ORPM poverty, as do the northwest PUMAs.[14]

To contrast with PUMAs, next we consider ORPM in Oregon counties and multi-county areas. Figure 4 presents the overall state rate (11.5%) as a vertical dashed line with counties/multi-counties with lower poverty rates falling below the state rate and counties/multi-counties with higher rates above the state rate.

[14] Some of these results likely reflect the geographic adjustment introduced by the ORPM, which modifies the poverty threshold on the basis of PUMA-level median housing costs. See Appendix B for PUMA-level geographic adjustments.

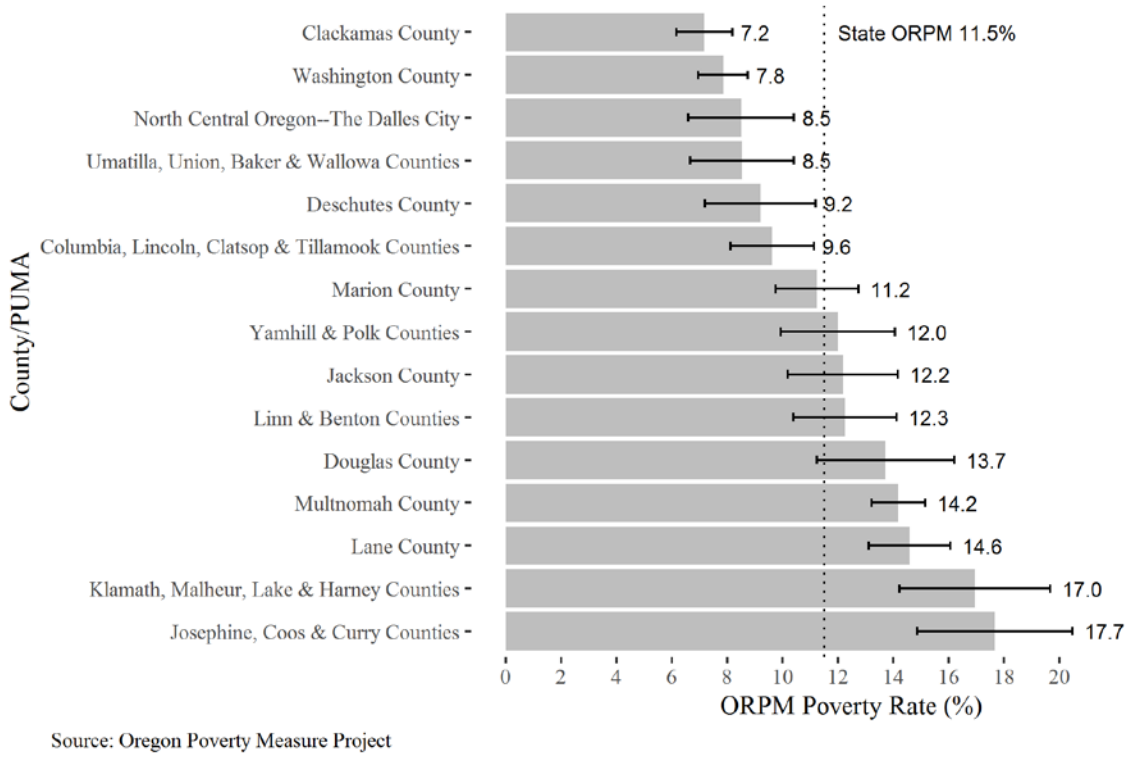

Figure 4: Poverty by County/PUMA[15]

These observations highlight the wide geographic variation in ORPM experienced across the state. A total of six counties and multi-county PUMAs have an ORPM poverty rate that is less than the state ORPM average.[16] Another five counties/PUMAs experience ORPM poverty higher than the state average. The remaining four counties/PUMAs are not significantly different from the state ORPM poverty rate.

[15] In this figure, individual PUMAs are aggregate to the county level, where possible. All other results are presented as multi-county PUMAs. Error bars represent the 95% confidence interval.

[16] This difference is statistically significant at the 95% level. Confidence intervals for each county/PUMA are shown by black error bars in Figure 4.

Poverty and the safety net in Oregon

As described above, one of the innovations of the ORPM and other supplemental poverty measures is to account for a variety of public transfers, taxes, and expenses in the poverty measure. Figure 5 shows what the poverty rate would be without the various resource components – transfers, noncash benefits, taxes, and expenses (the static effects). The most impactful safety net program, Social Security income, moves a total of 313,000 Oregonians out of poverty, of whom 69.1% are older adults (age>64). In the absence of Social Security income, the overall ORPM poverty rate would be 19.2%, and 43% for older adults. Federal refundable tax credits (Child Tax Credit and Earned Income Tax Credit) and SNAP have the largest impacts on children, each program lifting some 60,000 and 36,000 Oregon children out of poverty, respectively.

In the absence of each of these programs, the child ORPM poverty rate would be 17.1% and 14.4%, over 4 p.p. higher than the estimated 10.2% ORPM child poverty rate accounting for both programs. Other public transfers that contribute to lowering the number of individuals in poverty include Supplemental Security Income (-37,000 individuals), housing subsidies (-30,000) and Oregon-specific refundable tax credits, including the Child and Dependent Care Tax Credit and the Earned Income Tax Credit (-4,000). The primary cash assistance program for families, Temporary Aid for Needy Families (TANF), has a modest impact on poverty in Oregon (-19,000).

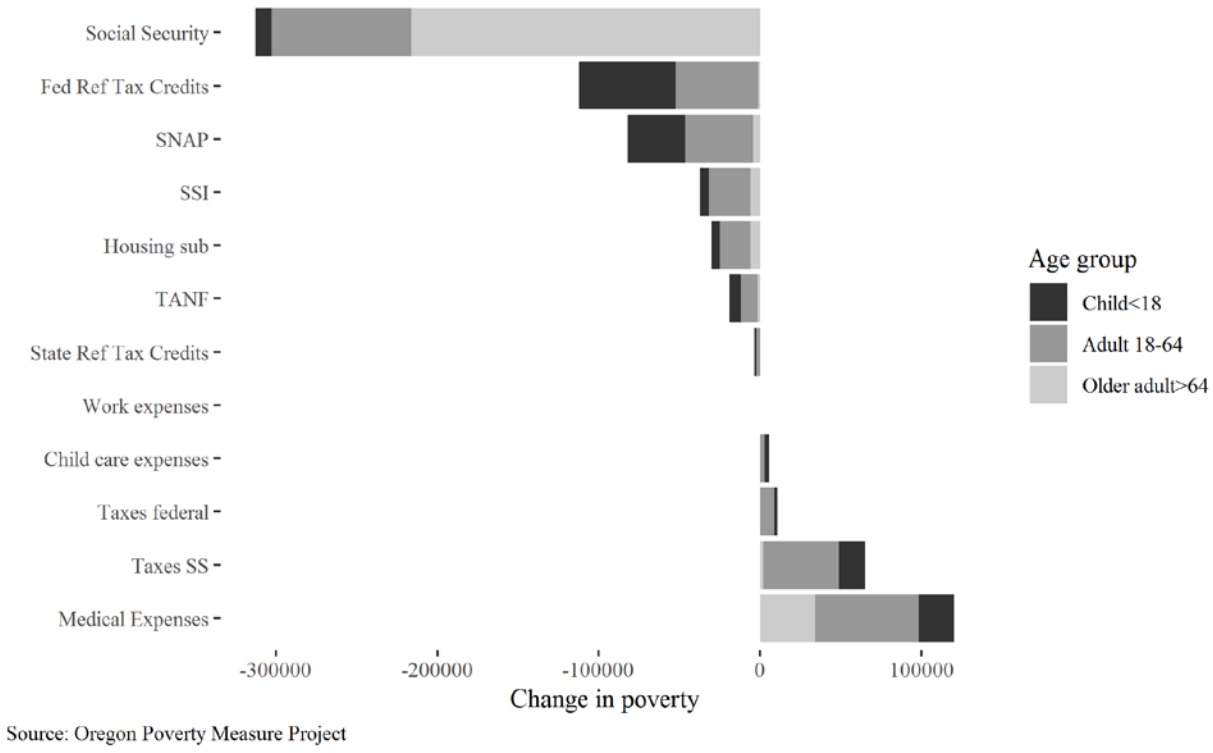

Figure 5: ORPM Poverty Reductions by Safety Net Program and Age Group

In contrast to the poverty reduction effects of public transfers, selected expenses and taxes put upward pressure on the poverty rate, as we might expect. Notably, Medical Out-of-Pocket (MOOP) expenses move the largest number of people into ORPM poverty. In Oregon, 63,000 working-age adults (age 18-64) move into poverty when MOOP expenses are considered in the poverty measure, while MOOP expenses move 34,000 older adults (age>64) into ORPM poverty. Both payroll taxes (FICA) and federal taxes also move individuals into poverty, especially adults aged 18-64 (+46,000 and +9,000, respectively) and children (+16,000 and +2,000, respectively). Older adults are much less impacted by FICA and federal taxes, presumably because senior adults are less likely to live in households with working adults and are likely to have lower levels of taxable income.

SUMMARY AND NEXT STEPS

Compared with the OPM and the state-level SPM, Oregon Poverty Measure offers a more comprehensive assessment of the levels of poverty, risk of poverty by age, and how poverty is distributed across the state. While the overall ORPM poverty rate is slightly lower than the Official rate, the detailed analysis across multiple sources and adjustment reveals this overall small difference varies by age with children having lower and older adults having higher poverty. Our PUMA-level analysis shows that poverty rates are unevenly distributed in the Portland metro area and that some geographically isolated communities experience high poverty levels even after adjusting for lower cost of living. Ouranalysis reveals the poverty-reducing (or increasing) impact of the array of taxes and the federal and state safety net systems.

The project is ongoing with plans to build on these preliminary ORPM poverty estimates in several ways. First, we will add four additional years of data to the current 2017 data set, including the three years prior (2014-16) and one year following (2018), yielding a five-year data set that represents 2014-18.[17] With a five-year dataset, we expect to be able to provide more robust estimates of subgroup differences, and generate an initial picture of changes in poverty over time. Second, we plan to supplement selected resource estimates with state administrative microdata for TANF and SNAP from the 2014-18 time period. We will also use state administrative microdata to incorporate benefits from selected other self-sufficiency programs, such as the Low Income Home Energy Assistance Programs (LIHEAP) and Employment-Related Daycare (ERDC). We plan to produce a full report that includes multiple years with new estimates and detailed analysis in the upcoming months.

[17] Both ACS and CPS data for reference year 2018 were released in Fall 2019.

Our vision for the ORPM is to produce timely and policy-relevant information that both reflects and reveals important shifts in the Oregon economic and policy context. For example, for the first time since the late 1960s median household income in Oregon recently surpassed those of the national median, with strong gains in the lower end of the income distribution (Oregon Office of Economic Analysis, 2019). We also expect that a multi-year ORPM can provide a method for parsing how the economy interacts with social policies and demographic changes to affect levels of poverty. For example, Oregon implemented a new minimum wage increase in 2016 (Oregon Bureau of Labor and Industries, n.d.); the ORPM offers a lens for examining the effects of that policy on low-income households.

Similarly, the ORPM can provide insights into the effects of Oregon's unique social welfare system. Features that distinguish Oregon from other states include distinctly progressive (Semuels, 2016) approaches to social welfare alongside a collaborative (Giordono & Edwards, 2018) policy environment. We anticipate, for example, that the unique combination of high SNAP participation (Edwards et al., 2016), low-income childcare investments (Weber et al., 2014) and Oregon Earned Income Credit (Rothwell et al., 2019), may act in combination to reduce poverty. Further, Oregon has a long history of expanding public health insurance, which has shown to increase the use of health care services and reduce large medical out-of-pocket expenditures among Oregonians (Finkelstein et al., 2016, 2019) The ORPM is uniquely positioned to assess the effects that state-level initiatives have on poverty among Oregon families.

Relatedly, based on the strength of the ORPM relative to other measures, we anticipate that policymakers and service providers will use the ORPM to inform policy debates and decisions. For example, we expect in addition to estimating the effects of past policy changes, the ORPM will serve as a data source for estimating prospective outcomes associated with proposed changes, such as those related to proposed renewal of the Oregon Earned Income Credit (e.g., *HB3028*, n.d.).

Finally, we anticipate that the ORPM may provide information about sub-state and local trends and policies that impact them. For example, the ORPM offers a unique lens into the impact of high average housing costs (Rogoway, 2019) that have eroded individual and household resources in affected geographic areas. Related, the ORPM may provide insight into local effects of statutes associated with (*HB2001*, n.d.) intended to diversify allowable housing types and thus decrease housing costs (Oregon Housing Alliance, 2019; Parker, 2019).

We look forward to receiving feedback from interested stakeholders, expanding on the preliminary findings presented in this report and leveraging the Oregon Poverty Measure for future policy analysis and decision-making.

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APPENDIX A

ORPM Development Process

The ORPM measures an individual's poverty status by comparing their household's resources with a pre-determined poverty threshold; those under the threshold are designated as being in ORPM poverty, while those at or above the threshold are designated as not in poverty. Despite the apparent simplicity of the poverty designation process, the Oregon Poverty Measure relies on multiple data sources and seven discrete analytic tasks to assign poverty status and generate ORPM poverty rates. Development of the 2017 Oregon Poverty Measure followed a similar approach as the federal Supplemental Poverty Measure (Fox, 2018), the state-level anchored Supplemental Poverty Measure (Columbia Poverty and Social Policy Center, n.d.) and other state-level SPMs. In particular, our methods were heavily informed by both the California Poverty Measure (e.g., Bohn et al., 2017; Mattingly et al., 2019) and the Wisconsin Poverty Measure (e.g., Marks et al., 2011; Smeeding & Thornton, 2019), as well as the broad recommendations offered by Renwick (Renwick, 2015).

The ORPM development process was comprised of seven analytic steps, which are extensively documented in the Technical Appendix (under separate cover). The steps included:

1) Identifying data sources and restrictions;
2) Defining the ORPM resource unit, or "household" [18];
3) Creating poverty thresholds;
4) Estimating ORPM unit cash and non-cash resources;
5) Estimating ORPM unit expenses;

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18 Throughout this report, we refer to groups of individuals who live at the same address and share resources as a "household," as described in more detail in this section. Our process yields a resource unit aligned with that of the Supplemental Poverty Measure's "SPM Resource Unit" (Fox, 2019, p. 17), which is somewhat more expansive than the "family" used by the Official Poverty Measure.

6) Estimating ORPM net tax liability[19]; and,
7) Assigning ORPM poverty status and estimated rates.

Similar to the SPM, we began by excluding individuals living in group quarters or institutionalized. In alignment with the Wisconsin and California measures, we also excluded selected college-age individuals who live at home and who work limited hours and weeks. We then defined our households to include unmarried partners and other selected non-relatives of the household head.

Data Sources

Microdata from the American Community Survey (IPUMs, n.d.) served as our primary source of information about individual and household-level resources. We calculated ORPM poverty thresholds using aggregate national SPM threshold amounts and shares (US Bureau of Labor Statistics, n.d.), to which we applied 1) geographic adjustments at the sub-state level to adjust for regional variation in relative housing costs, using estimates of median housing costs from a 5-year sample of the American Community Survey (Ruggles et al., 2019); and 2) equivalence scales to adjust for the size of the household (Betson, 1996).

We conducted statistical modeling to estimate other resources (e.g., SNAP, TANF, housing subsidies) and expenses (Medical Out-of-Pocket Expenses, childcare and other work-related expenses), using supplemental microdata from the Current Population Survey Annual Social and Economic Supplement (Ruggles et al., 2019) and TRIM3 (Parolin, 2019; *TRIM3 project website*, Data downloaded April 2019; Zedlewski and Giannarelli, 2015), as well as aggregate estimates from the Survey of Income and Program Participation (Mohanty et al., 2017). We also used the TAXSIM27 modeling program (Feenberg & Coutts, 1993; National Bureau of Economic Research, n.d.).

[19] Tax liability was calculated separately from cash and non-cash resources, even though some tax credits (e.g., EITC) effectively represent a public transfer.

Comparison with Official Poverty Measure and Supplemental Poverty Measures

The ORPM is similar to the Official Poverty Measure in terms of assigning poverty status based on comparing household resources to a poverty threshold. However, there are several major differences between the ORPM and the Official Poverty Measure, including: 1) definition of the resource unit; 2) exclusion of college-age students from the sample; 3) calculation of the poverty threshold; 4) data source(s); 5) inclusion of non-cash resources and tax liabilities; and 6) inclusion of selected expenses.

While there are selected differences between the ORPM and other state SPMs, the ORPM is broadly aligned with these approaches. Table A1 compares the composition of the ORPM with the California Poverty Measure, the Wisconsin Poverty Measure, the Supplemental Poverty Measure and the Official Poverty Measure.

Table A1: ORPM Compared with Other Poverty Measures

Step	Key Component	OR Poverty Measure (2017)	CA Poverty Measure (2011-17)	WI Poverty Measure (2008-17)	U.S. Supplemental Poverty Measure Threshold (2009-18)	U.S. Official Poverty Measure Threshold (1967-18)
Identify restrictions	Excluded populations	Individuals in group quarters; some **college-aged students**	Individuals in group quarters; some **college-aged students**	Individuals in group quarters; some **college-aged students**	Individuals in group quarters	Individuals in group quarters
Define resource unit	Poverty unit	Resource unit/household: **includes** unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives	Poverty unit/household: **includes** unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives	Resource-sharing unit/household: **includes** unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives	SPM resource unit/household: **includes** unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives	Family: **excludes** unmarried partners, co-resident, unrelated children, foster children, and unmarried partners and their relatives
Calculate poverty thresholds	Basis for poverty threshold	Applies FCSU-based equivalence scales and geographic adjustment at **PUMA level**	Applies FCSU-based equivalence scales and geographic adjustment at **county level**	Applies FCSU-based equivalence scales, geographic adjustment at **regional level**, **WI-specific COL adjustments** and **Medical Out-of-Pocket Expenses**	FCSU; applies equivalence scales and geographic adjustment at **state and metro/nonmetro level**	**Food:** Cost in 1963 of the US Dept of Agriculture economy food plan adjusted for CPI inflation

Estimate resources	Cash resources	ACS 1-year sample: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, public (cash) assistance, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance. **CPS 3-year sample**: Used to correct for ACS TANF/GA under-reporting	ACS 1-year sample: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, public (cash) assistance, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance. **State administrative data**: Used to correct for ACS TANF/GA under-reporting	ACS 1-year sample: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, public (cash) assistance, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance.	**CPS 1-year sample**: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, public (cash) assistance, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance.	**CPS 1-year sample**: Includes cash income from earnings, unemployment and workers compensation, Social Security, Supplemental Security Income, public (cash) assistance, veteran's payments, pension or retirement income, interest, dividends, child support, and educational assistance.
	Non-cash resources	**TRIM 1-year sample**: Used to correct CPS SNAP **CPS 3-year sample**: Used to impute SNAP and housing	**State administrative data**: Used to correct SNAP participation and impute school meals subsidy **CPS 3-year sample**: Used to	**State administrative data**: Used to impute SNAP, housing subsidy and LIHEAP subsidy to ACS sample	**CPS 1-year sample**: Includes SNAP, housing subsidies, school meals, WIC, LIHEAP	**None**

		subsidy to ACS sample **PUMA median rent:** used to estimate housing subsidy value. **WIC, LIHEAP, and school meals not included**	impute housing subsidies and WIC to ACS sample. **HUD Fair Market Rent**: Used to estimate housing subsidy value. **LIHEAP not included**	**WIC and schools meals not included**		
Estimate expenses	Medical Out-of-Pocket Expenses (MOOPs)	CPS 3-year sample: Used to impute MOOPs to ACS sample	CPS 3-year sample: Used to impute MOOPs to ACS sample	**Not included as an expense** (included in threshold)	CPS 1-year sample: Includes MOOPs	**None**
	Child care and work-related expenses	CPS 3-year sample: Used to impute child care expenses to ACS sample SIPP aggregate data: Used to estimate work-related expenses in ACS sample	CPS 3-year sample: Used to impute child care expenses to ACS sample SIPP aggregate data: Used to estimate work-related expenses in ACS sample	CPS 3-year sample: Used to impute child care expenses to ACS sample SIPP aggregate data: Used to estimate work-related expenses in ACS sample; **adjusted for commutes from rural areas**	CPS 1-year sample: Includes child care expenses SIPP aggregate data: Used to estimate work-related expenses in CPS sample	**None**
Estimate net taxes	Federal and state tax liabilities and credits	TAXSIM: Used to estimate federal and state net taxes, including payroll taxes, income taxes and tax credits	TAXSIM: Used to estimate federal and state net taxes, including payroll taxes, income taxes and tax credits	**In-house tax simulation model**: Used to estimate federal and state net taxes, including payroll taxes,	**Census Bureau tax calculator**: Used to estimate federal and state net taxes, including payroll taxes,	**None**

				income taxes and tax credits	income taxes and tax credits	
Assign poverty status	Total resources< poverty threshold	Resource unit in poverty if: Resources – (Expenses + Taxes) < Poverty Threshold	Resource unit in poverty if: Resources – (Expenses + Taxes) < Poverty Threshold	Resource unit in poverty if: Resources – (Expenses + Taxes) < Poverty Threshold	Resource unit in poverty if: Resources – (Expenses + Taxes) < Poverty Threshold	Family in poverty if: Resources < Poverty Threshold

Comparison with other hardship metrics

Given the well-known limitations in the Official Poverty Measure (OPM), several efforts have been initiated to create alternative indicators to gauge poverty and economic hardship in local areas.[20] The ALICE (Asset Limited[21], Income Constrained, Employed) project from the United Way (2018a) and the Self Sufficiency Standard from the University of Washington (2017) are two of the most common indicator projects referenced by policymakers and anti-poverty advocates. We briefly describe how the Oregon Poverty Measure (ORPM) differs from these other measures. We also include reference to the OPM for comparison. As a reminder, the ORPM extends directly from the Census Bureau's historical efforts to measure poverty. The major goal of the ORPM is to estimate the amount of *poverty* in Oregon and provide as much geographic detail as the data will allow. The ORPM and these metrics differ with respect to both purpose and methods, as described below.

Purpose

In spirit, the ORPM, ALICE, SSS and other efforts aim to provide better information about the landscape of economic hardship in society by acknowledging and overcoming some of the limitations in the OPM. While the general purpose is similar across initiatives, the constructs are different. The purpose of the ORPM is to measure *poverty* in Oregon. Poverty is defined as a lack of resources to meet a predefined level of need over a given time period (Smeeding, 2016). Somewhat relatedly, the purpose of ALICE is to measure the "number of individuals and families who are working but unable to afford the basic necessities of housing, child care, food, transportation, and health care" (United Way, 2018b). However, the ALICE population is slightly different; where the ORPM captures all individuals and

[20] E.g., the Kids Count (Annie E. Casey Foundation), the Basic Needs Budget (National Center for Children in Poverty), the Family Budget Calculator (Economic Policy Institute), the Economic Security Index (Institution for Social and Policy Studies), the Living Wage Calculator (MIT), and the Assets and Opportunity Scorecard (Prosperity Now).
[21] Assets as typically conceptualized and measured in the literature (Sherraden, 1991) are not included in the ALICE measure.

families living in poverty, the ALICE measure is especially interested in families and individuals above the poverty line but below a self-defined "ALICE threshold" (United Way, 2018b). The Self Sufficiency Standard (SSS) generates detailed thresholds across geographies and for different family structures. Importantly, the SSS does not measure the resources that families have to meet needs. The Oregon SSS "defines the amount of income necessary to meet the basic needs of Oregon families, differentiated by family type and where they live" (Center for Women's Welfare, 2017).

Methods

There are considerable methodological differences between the ORPM, ALICE, and the SSS, especially related to data source(s) and threshold creation. Both the ORPM and ALICE rely heavily on the American Community Survey. The ORPM uses individual- and household-level ACS data to identify resources, whereas the ALICE metric uses aggregate data to identify county-level thresholds, or "household survival budgets," and household resources. The SSS, in turn, relies on alternative (i.e., non-ACS) data sources for threshold development, but SSS "Community Indicator" applications frequently rely on the ACS as a source of household resources for comparison with the SSS threshold to assess the degree of hardship faced by households.[22]

Because county level data in the ACS are aggregated by broad categories (e.g., $30,000, $35,000, etc.), the ALICE method rounds the threshold up or down to create a usable threshold. It then uses aggregate data from the ACS at a county level to estimate the number of people falling below the threshold. To generate the proportion of ALICE households in a given county, the method deducts the proportion of households who fall below the OPM. For example, the latest Oregon ALICE report states that 13% of households fall below OPM and an additional 28% are 'ALICE' (United Way, 2018a). The ORPM takes advantage of the granularity of

[22] See http://www.selfsufficiencystandard.org/node/25 for more on the SSS in practice, including its use as a Community Indicator.

microdata to produce estimates and test differences, while the ALICE is constrained by the limitations of aggregate data. Moreover, ALICE takes the OPM poverty measure as valid and estimates the proportion of households who are above the OPM poverty threshold but with incomes that are below a threshold to meet a survival budget. While SSS applications vary in their use of ACS data, they also frequently rely on aggregate county level estimates of resources that lack the granularity of microdata.

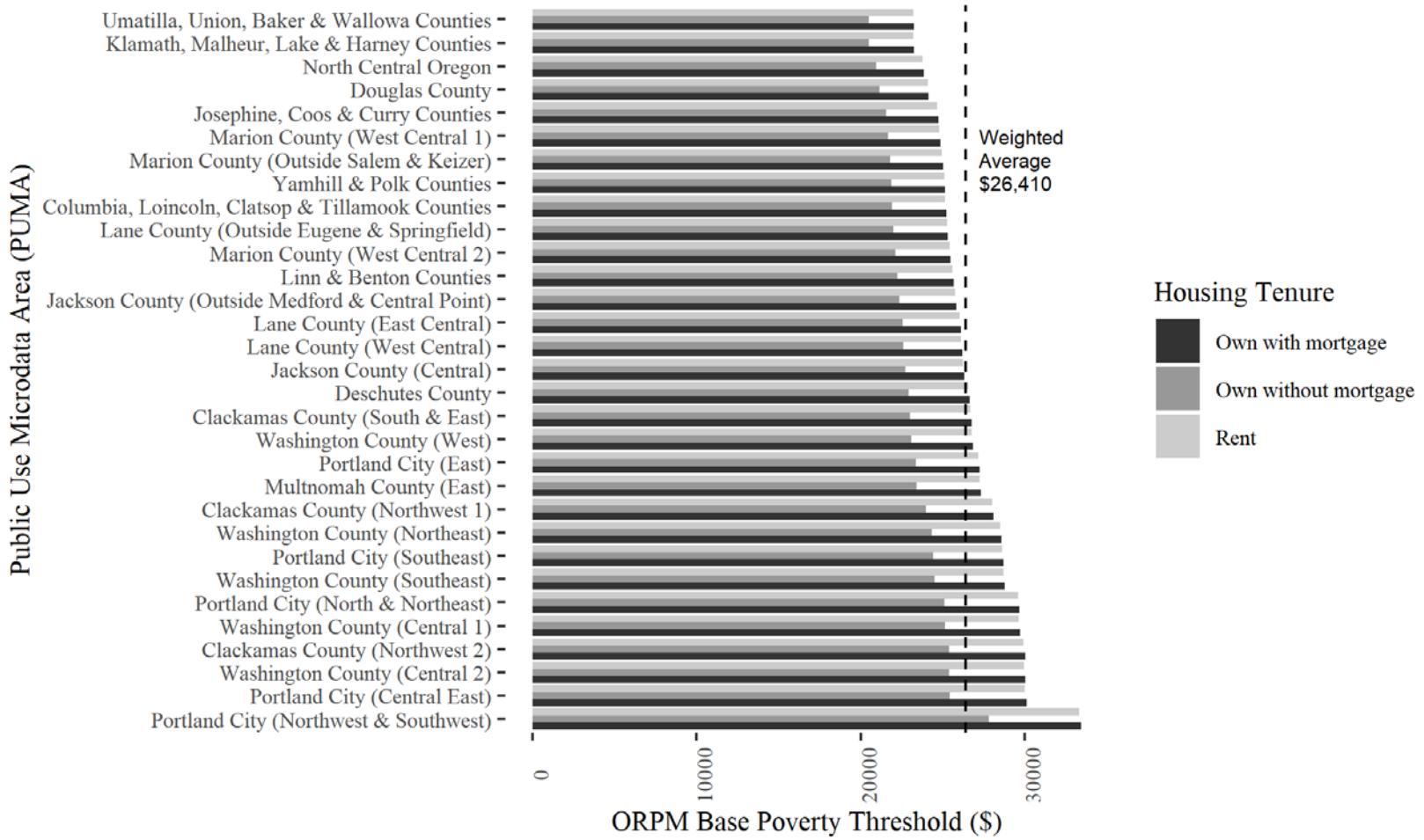
The threshold creation process is also different. Both ALICE and SSS create the threshold by systematically aggregating data from a variety of sources for the local area for a wide variety of categories, including food, shelter, clothing, utilities, child care, transportation, etc. Assumptions are then made about what constitutes a given ALICE or self-sufficiency threshold. In contrast, the ORPM uses thresholds produced by the Bureau of Labor Statistics that rely on five years of data from the Consumer Expenditure Survey to anchor the threshold in spending patterns of food, clothing, shelter, utilities, and transportation and adjusts those with a geographical adjustment based on PUMA-level median housing prices. Thresholds are produced for three housing tenure groups to account for differences in housing costs (owners with mortgages, owners without mortgages, and renters). Overall, thresholds reflect average spending within the 30th to 36th percentile range of expenditures for the estimation sample, multiplied by 1.2 to account for additional basic needs (Fox, 2019). Following the official poverty measure methodology (OPM and SPM), the ORPM deducts a range of other expenditures from the household resources bundle, rather than building into the budgetary threshold. See Table A2 for a comparison of how various expenditure categories are included in each metric.

Table A2: Inclusion of Expenditure Categories in Metrics								
	ORPM		OPM		ALICE		Self-Sufficiency	
Category	Added to Threshold	Deducted from Resources	Added to Threshold	Deducted from Resources	Added to Threshold	Deducted from Resources	Added to Threshold	Deducted from Resources
Food	X		X		X		X	
Clothing	X				X		X	
Housing	X				X		X	
Utilities	X				X		X	
Child care		X			X		X	
Transportation		X			X		X	
Health care		X			X		X	
Taxes		X			X		X	
Other Miscellaneous	X				X		X	
Emergency savings							X	

Finally, while both the ORPM and ALICE adjust for geographic differences and family size, the ORPM makes additional distinctions to the threshold according to housing tenure. The differences in the threshold creation process therefore yield considerable differences in the ORPM and ALICE thresholds, as shown in Table A3. See also Appendix B for ORPM base thresholds by PUMA.

Table A3: Sample Thresholds by Metric				
Threshold	**ORPM**	**OPM**	**ALICE**	**Self-Sufficiency**
Multnomah: Thresholds 2 adults, 1 infant, 1 preschooler	Renters: $24,081 Owners w/mortgage: $27,318 Owners w/o mortgage: $23,428	$24,858	$45,000	$84,235
Douglas: Thresholds 2 adults, 1 infant, 1 preschooler	Renters: $27,237 Owners w/mortgage: $24,143 Owners w/o mortgage: $21,148	$24,858	$50,000	$43,139
Note: Multnomah is Multnomah County East – Gresham and Troutdale. ORPM and OPM does not distinguish between child ages.				

APPENDIX B



Source: Oregon Poverty Measure Project

Figure B1: Base Poverty Thresholds by PUMA (2 adults and 2 children)