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Participation and Employment Dynamics of Child Care Subsidy Users in Rural and Urban Oregon

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Abstract

Differences in the local economies and poverty rates of rural areas suggest that there would be rural-urban differences in the use of public programs such as child care subsidies and food stamps that are designed to support working low-income families. This study analyzes employment and program participation dynamics for rural and urban families in the Oregon child care subsidy program. Demographic characteristics, employment stability, and participation in work support programs were fairly similar for families across county types. Despite higher county poverty rates and higher overall unemployment rates, families in noncore counties had slightly fewer months of child care subsidy use, food stamps and TANF compared to those in metropolitan and micropolitan counties.

Participation and Employment Dynamics of Child Care Subsidy Users in Rural and Urban Oregon

1. Introduction

Numerous studies have investigated differences in the incidence and causes of poverty between rural and urban areas of the United States. Poverty rates are consistently higher in nonmetropolitan areas than in metropolitan locations, and highest in remote rural counties (Miller & Weber, 2003; Joliffe, 2003). The characteristics of poor rural families differ in important respects from poor families in urban areas. Poor rural families are more likely to be employed and have two adults in the household compared to poor families in urban areas (Rural Policy Research Institute, 2001). In addition, rural economies may provide fewer opportunities for high-wage jobs or promotions, especially as rural economies have experienced declines in natural resource based and manufacturing jobs. Rural residents also may face barriers in obtaining and retaining employment due to lack of public transportation and child care availability (Rural Policy Research Institute, 2001).

Differences in the local economies and poverty rates of rural areas suggest that there would be rural-urban differences in the use of public programs such as child care subsidies and food stamps that are designed to support working low-income families. With the passage of the 1996 welfare law changes, these work support programs have become an increasingly important part of America's anti-poverty policy. Indeed, studies have found differences in use of public assistance type programs in rural versus urban areas. Hirschl and Rank (1999) note findings from several of their studies showing lower participation rates for food stamps and Aid to Families with Dependent Children in rural counties. One would expect higher usage due to higher poverty rates in these areas. However, willingness to participate in public assistance programs may

reflect social and cultural influences as well as demographic and economic differences across the rural-urban spectrum.

This study investigates rural-urban differences in patterns of participation in multiple work support programs among families using child care subsidies in Oregon. Nationally, the amount of public monies spent on child care subsidies for low-income families has risen rapidly since 1996, reaching about \$11 billion in combined state and federal funds in 2004 (Field Initiated Child Care Research Projects, 2004). Child care subsidies are a key work support for many low-income families, as parents often need someone to care for their children when they work and child care costs can be a significant fraction of earnings for low-income families. In Oregon, families who purchase child care and have household incomes in the lowest income quartile spend almost 25% of their income on child care, whereas families in the highest quartile spend slightly over 5% of their income on child care (Data for Community Planning, 2005). Previous research on families receiving child care subsidies in Oregon found that many use subsidies for only a few months, although they appear to remain eligible and continue to receive other work support benefits (Grobe, Weber & Davis, 2006). Studies suggest that procedures and policies related to getting and retaining eligibility for a child care subsidy may be a barrier to participation, both in Oregon and elsewhere (Grobe, Weber & Davis, 2006; Adams, Synder & Sandfort, 2002).

In this study we examine participation dynamics in multiple work support programs to determine whether subsidy policies and procedures may be impacting families differently in rural and urban areas. Studies of participation in means-tested programs typically focus on one program, examining participation in isolation from other programs. In Oregon as in many states, eligibility for multiple programs may be determined concurrently and by the same caseworker.

Yet families often do not start and stop participation in different programs at the same time. Patterns of participation in multiple programs may shed light on the ways in which families navigate the system of work supports in rural versus urban areas. With higher employment rates for poor families and lower wages in rural areas, work support programs are likely to be critical for rural low-income families.

2. Background

Divergent trends in income and employment growth between rural and urban Oregon over the past two decades have led to a common view of “two Oregons: one prosperous and urban, with increasing incomes and access to jobs, education and services; and one lagging and rural, with diminishing opportunities for work in the natural resource jobs that have been the economic mainstay for so many years” (Crandall & Weber, 2005: 1). For this study we use the Office of Management and Budget Core Based Statistical Area classification of counties to distinguish between families who live in urban versus rural areas. Counties are classified as metropolitan if they include an urbanized area of 50,000 population or more plus outlying counties with close economic or social ties to the central county. There are 11 metropolitan counties in Oregon. Nonmetropolitan counties are divided into two groups: micropolitan and noncore. Micropolitan counties include at least one urban cluster of 10,000-49,000 people, plus outlying counties with strong economic and social relationships to the central county. There are 14 micropolitan counties in Oregon. All other counties are considered noncore, and include 11 counties in Oregon. Noncore counties have no population cluster larger than 10,000 and so typically are the most rural.

Table 1 provides key economic and demographic characteristics of the Oregon counties in the metropolitan, micropolitan and noncore classifications based on the 2000 Census.¹ Most Oregonians (77 %) live in metropolitan counties, which have higher average incomes, higher housing costs, and lower poverty rates than micropolitan and noncore counties. In 2000 the unemployment rate was nearly twice as high in micropolitan and noncore counties (10%) compared to metropolitan counties (5.8%). Fewer residents in micropolitan and noncore counties have college degrees, and a larger percentage dropped out of high school than in metropolitan counties.

Families who meet income and asset limits may be eligible for a number of work supports in Oregon. In this study, work supports primarily include food stamps and subsidies to help pay for child care. Families with children may also be eligible for the cash assistance from the Temporary Assistance to Needy Families (TANF) program and for a variety of related training and job search assistance programs. For most work support programs in Oregon, policy is set at the state level. Thus, eligibility rules and program procedures do not vary across rural and urban areas of the state. Given the consistency of policy statewide, differences in program participation, if any, are likely to be due to individual and family characteristics or economic conditions in the local area, rather than due to policy decisions.

3. Objectives

With a primary focus on whether the patterns of participation in work support programs differ for rural and urban families using child care subsidies in Oregon, the study objectives are to: (i) examine the dynamics of program participation and employment across counties, (ii)

¹ A three-way classification system cannot completely capture the diversity of population density and characteristics across areas of the state. For a comparison of the core based statistical areas with other classification systems in Oregon, see Crandall and Weber 2005.

describe the patterns of multiple program participation over time by type of county, and (iii) investigate whether the likelihood of exiting the child care subsidy program differs by type of county, controlling for other factors.

4. Data and Methods

The data used in this study come from five Oregon state data systems: child care subsidy program, Unemployment Insurance wage data, TANF program, Food Stamp Program, and the Client Maintenance System. Forty-eight months of data were obtained from each of these systems covering the period from October 1997 through September 2001.

The population of interest includes 27,628 families with at least one child who entered the child care subsidy program in the two year time period between October 1998 and September 2000. This cohort of families is followed for three years, October 1998 through September 2001, so that there are at least twelve months of data on each family after they begin the subsidy spell. The sample includes only single-parent families who received a subsidy for at least one month and includes all the children (n=48,125) from each of these families. The majority of families exited their first observed subsidy spell by the end of the observation period.² A subsidy spell is defined as a period of receipt of subsidized child care (measured in months) which ends when there is a full calendar month in which no child in the family received subsidized care.³ The data reflect months in which subsidized child care services were actually received, not when payment

² Eleven percent of all families (n=3,337) had less than 12 months of data after exiting their first observed subsidy spell. Only 4.4% had six or fewer months of data after their first observed subsidy spell ended, and less than two percent had three or fewer months of data.

³ We call this a family subsidy spell and define it as continuous receipt of a subsidy for any child in the family. A family spell is distinct from a child spell. A child spell is defined as continuous receipt for an individual child and is typically used in studies focused on child outcomes (e.g., child care arrangement stability). Family subsidy spells are used in this study because our question of interest focuses on parent outcomes. Thus, it was important to capture the spells related to the length of time a parent participates in the subsidy program.

occurred, so that an interruption of even one month indicates a break in the continuity of subsidized child care.⁴

The study tracks these families for three years, October 1998 through September 2001. In addition, program information is available on these families a year prior to the beginning of the observation period (October 1997 – September 1998), allowing us to view parents' behavior for at least 12 months before the child care subsidy spell begins. Figure 1 presents case studies of four families' participation in assistance programs and their employment patterns during the four years, October 1997 through September 2001. These case studies help visualize the different data sources and track the movement of families in and out of multiple programs and employment over time.

Demographic Characteristics of the Study Population

The description of the demographic characteristics of the study population is based on responses in the first month of the family's first observed subsidy spell and is broken out by metropolitan, micropolitan, and noncore counties. Table 2 shows little variance in demographic characteristics across county types with a mean of almost two (1.80) children in the household, with slightly fewer (1.7) children who receive subsidized child care. The mean age of the youngest child in the family at the beginning of the first observed subsidy spell is almost three and a half years old (39.8 months) for metropolitan, significantly different from micropolitan (41.2 months) but similar to noncore (39.5 months). The oldest child is, on average, five years of age in all counties. The vast majority of the single-parent families are headed by women (95%) who are around 28 years of age, and, on average, have less than a high school education.

Average monthly household income was highest in metropolitan areas (\$612), and lowest in

⁴ The data do not provide information on whether the child care arrangement continued after the end of subsidy receipt, if, for example, the parents began paying the provider.

micropolitan areas (\$547). Average monthly household income was \$570 in rural noncore areas. The differences in these demographic characteristics between metropolitan versus micropolitan and noncore areas were generally statistically significant but small in magnitude.

Over half of the primary child care arrangements are in the home of a nonrelated caregiver, with a higher percent in noncore (65.1%) versus urban (58.0%) areas. More than a fifth (22.0%) of those in metropolitan counties use center care, compared to 16% in micropolitan and 14.7% in noncore counties. The majority of the study population is Caucasian, with more representation of Blacks and Hispanics in metropolitan areas, and more Native Americans in rural noncore areas. Approximately 33% of the study population in metropolitan and noncore areas had at least one month of TANF receipt in the year prior to their first observed subsidy spell; this percent was 38 for the micropolitan area. In all counties, 48% of these families had at least one month of TANF receipt in the five years prior to the study period.

The methods for each of the study's three objectives are described below.

Methods Objective 1 - Employment and Program Participation Dynamics.

The first objective of this analysis was to examine the dynamics of employment and participation in work support programs for parents using child care subsidies. The dynamics of employment and program participation were compared using spell length, number of spells, and cumulative months over the three year period. The median spell length was estimated using an accelerated failure time (AFT) regression model assuming a log-normal distribution and adjusting for "right-censored" spells; those not yet completed by the end of the study period (September 2001).⁵ The spell length estimates were based on the first observed spell for each family, which avoids the problem of spells underway when the study began ("left-censored").

⁵ Results using other distributional assumptions and, alternatively, a semiparametric model (Kaplan-Meier) were similar.

We also calculated cumulative months of subsidy use, TANF use, participation in the Food Stamp Program, and quarters of employment (i.e., non-zero wages) between October 1998 and September 2001. These data covered the same three years for all families in the sample. We also counted the number of job changes over the period (changes of employer identification number).

Methods Objective 2 - Participation in Multiple Work Support Programs. In order to examine the patterns of multiple program participation over time in urban and rural areas, we used a sub-sample that includes 25,124 families. From the initial study population of 27,628 we removed those families whose first observed child care subsidy spell (a) began before the observation period (left censored) (407 cases deleted), (b) extended beyond the observation period (end or right censored), thus these families did not have a subsidy exit to observe (1,573 cases deleted), or (c) extended into the last quarter of the observation period (524 cases deleted). Given that employment data is quarterly, it was important to observe at least one quarter of employment data after exit from the subsidy program.

The indicators include combinations of employment status, TANF receipt, Food Stamp use, and other medical assistance. Measures of participation were calculated at three points in time: at the start of the first observed subsidy spell, for the month or quarter immediately after subsidy exit, and at 12 months (fourth quarter) after subsidy exit.⁶ An additional indicator is ‘Disconnected in this month/quarter’. This indicator tracks those families that did not receive any program assistance and were not employed at a particular point-in-time.⁷

⁶ We also calculated these measures at other points in time such as three and six months after exit, and found similar patterns.

⁷ Of the 25,124 families who had at least one child care spell of subsidy, only 68 (<1%) of those families completely disconnected from all programs for the remainder of the observation period after the completion of their first observed spell.

Methods Objective 3 – Rural-Urban Differences in Exiting the Child Care Subsidy Program.

For the third objective we estimated a Cox regression model to examine whether the likelihood of exiting the subsidy program differs by type of county once other factors were controlled. The dependent variable was a binary indicator equal to one if the family exited the subsidy program that month (that is, there was no subsidy receipt in the next month). The Cox regression model (which is an appropriate method for continuous time data) included time-varying covariates⁸, and was estimated using the first observed spell for the sample of 25,124 families described above.

The probability of exit from the subsidy program is expected to be related to demographic characteristics of the family, characteristics of the care, local economic conditions, employment changes, and policy and program characteristics. The model controls for the demographic characteristics of the family by including race, parent's education level, and child care choices. Previous studies have mixed findings on the relationship of education and subsidy use (Blau & Tekin, 2001; Burstein, Layzer, Cahill, Werner, & McGarry, forthcoming). Factors believed to influence child care choices included age of youngest and oldest child and the regulated status of the facility.⁹ As age of children increases, the child care needs of the child change. Although studies in other states have found families that take up a subsidy were more likely to use center care (Burstein et al., forthcoming; Shlay et al., 2004), subsidy users in Oregon are most likely to use home-based care provided by a non-relative. In Oregon a previous study found that spell

⁸ The probability of exit models were estimated using the PHREG procedure in the SAS statistical software program.

⁹ Number of children in the household and number of subsidized children in the household were not included in the model because they were highly correlated with the variable subsidy value (which is the total amount of child care payment paid by the state to providers of all children in the family).

length did not vary by type of care (Meyers et al., 2002). We use the regulatory status of child care facilities rather than type of care in the model.¹⁰

Other changes occurring during this time period are captured by linking data on community characteristics. Data were matched with the county of residence of the family in the first month of their subsidy spell. For example, data on child care availability (slots per 100 children) were obtained from the Oregon Child Care Resource and Referral Network. Information on local economic conditions such as employment growth rate was provided by the Census and the Bureau of Labor Statistics.

Employment changes¹¹ may also influence parents' decisions to leave the subsidy program. An increase or decrease in quarterly hours worked may have affected eligibility status, thus influencing the probability of exiting the subsidy program.¹²

Policy and program characteristic variables in the model include: eligibility group (being in employment-related subsidized care versus job readiness or assessment), redetermination month (an indicator of whether or not a particular subsidy spell month coincided with the end of the eligibility period), family co-payment amounts, and family subsidy value (the amount of child care payment paid by the state to providers of all children in the family whose care was subsidized).

¹⁰ Type of care was highly correlated with the regulatory status of child care facilities, thus was not included in the model.

¹¹ Although higher earnings could influence eligibility status, quarterly earnings were not included in the model given a high correlation with co-payment amount.

¹² We assume a sequential family decision-making process, whereby employment decisions precede the decision to exit subsidy. Mills et al. (2001) provide an example of a sequential participation model for the Food Stamp Program.

5. Findings

Employment Dynamics

Across county types, the families who received child care subsidies in Oregon had relatively stable employment throughout the three years. Differences were seen across county types, though they are generally small in magnitude (table 3). Subsidy users had about 1.5 continuous spells of employment and were employed on average for nearly 8 of the 12 quarters observed, ranging from 7.4 to 7.8 quarters across the county types. The number of job changes ranged from 1.8 to 2.1 with families in micropolitan counties having the fewest job changes. Hours worked per calendar quarter average between 282 and 287 across the three county types. Slightly lower hours per quarter and slightly fewer quarters of employment resulted in a lower total hours worked over the three years for families in the micropolitan counties. Wages were higher in the metropolitan counties, with the largest difference between metropolitan and micropolitan earnings. While average earnings were higher in metropolitan than nonmetropolitan counties, the difference was much smaller for the families receiving child care subsidies than the gap in average household income for all families. Average household income for all Oregonians was one third higher in metro than rural noncore counties, yet average earnings for the sample families was only nine percent higher. The rural and urban families receiving child care subsidies were fairly similar in terms of employment and earnings despite the differences in average economic conditions across county types.

While the families were employed on average two out of the three years of the study, there was considerable variation in the amount and consistency of employment across families regardless of county type. A small percentage of families had no reported earnings in the three years (ranging from 3.5% in noncore to 4.8% in micropolitan counties) while about one in five

had earnings in every quarter. Based on patterns observed in the data, the families were divided into four groups indicating their employment stability (shown in table 4):

- (1) Little or no employment: Parents who had fewer than five quarters of employment (of a possible 12 quarters);
- (2) Limited employment: Parents who had between five and eight quarters of employment;
- (3) Stable employment with unstable jobs: Parents who had nine or more quarters of employment reported and more than two job (employer) changes in the three years;
- (4) Stable employment with stable jobs: Parents who had nine or more quarters of employment reported and two or fewer job (employer) changes in the three years.

About half (49%) of the parents were stably employed (had wages recorded in nine or more of the quarters). The percentage stably employed was lowest in micropolitan counties (46.1%). Between 55 and 61% of the families with stable employment had two or fewer job changes in the three years, and were categorized as having stable employment and stable jobs. Of all parents, between 18.1% and 22.5% across county types had nine or more quarters of wages, but had more than two job changes in the three years. These parents are considered to have unstable jobs, but stable employment (because they have more than two years of wages). The least stable employment groups are the parents with fewer than nine quarters of earnings reported. These parents are divided into those with little or no employment (fewer than five quarters out of 12), and those with between five and eight quarters of earnings (limited employment). The proportion in each of the employment stability categories is fairly similar across the three county types, although fewer of the families in micro counties have unstable jobs and stable employment (table 4). As noted earlier (table 3), the average number of job changes is smaller for families in

micropolitan counties, 1.8 job changes over the 3 years compared with 2.1 job changes on average in both metropolitan and noncore counties.

Overall, the employment experiences of families in the three types of counties are relatively similar despite differences in the overall economic conditions in these counties. As noted earlier, unemployment rates are considerably higher in the micropolitan and noncore counties relative to metro areas but there were no substantive differences in employment stability of subsidy parents by county type.

Dynamics of Program Participation

We first look at dynamics of program participation for each program individually in order to identify differences across rural and urban counties. Most of the evidence suggests that patterns of participation over time were quite similar for families in all three county types.

By sample definition, all families in the study had at least one spell of child care subsidy use. Half of these subsidy spells ended after about four months. Median subsidy spell length ranged from 3.8 months in noncore counties to 4.3 months in metropolitan counties (table 5). Cumulative months of subsidy use were also slightly lower in noncore counties (10.5 months versus 11.9 months in metro counties). While nearly one quarter of families in metro counties (23%) had over 18 months of subsidy receipt in the three years, only 18% did so in noncore counties (table 6).

Similar dynamics of participation were seen for TANF and Food Stamps across the three types of counties. Spells were slightly shorter on average in noncore counties. Median TANF spell length was 4.6 months in noncore counties compared to 5.5 months in metropolitan and micropolitan counties (table 5). More families in micropolitan counties received TANF in the

three years. Fifty-three percent of micropolitan families received TANF compared to 50% or less in noncore and metropolitan counties (table 7). Food stamp spells were longer than either TANF or subsidy, averaging nearly 10 months. The median spell length for food stamps ranged from 9.5 months in noncore counties to 10.8 months in micropolitan counties. Food stamp use was slightly more common in the nonmetropolitan counties: only about 5 percent of families in noncore and micropolitan counties did not receive food stamps in the three years, compared to 8 percent of metropolitan families (table 7).

Although there were considerable differences among all Oregonians in demographic characteristics by county type, subsidy users varied little in these characteristics and few differences were found in either employment experience or program participation across county types. Overall, the dynamics of participation in child care subsidy, TANF and food stamps were not very different across metropolitan and nonmetropolitan county types for this group of subsidy users. There were slight differences within nonmetropolitan counties, however, with less subsidy use and more employment in noncore counties and more TANF use in micropolitan counties.

Participation in Multiple Work Support Programs

We next look at patterns of participation in multiple programs. Descriptive information on multiple programs provides a framework for further analysis of joint participation decisions in rural versus urban areas. We describe the patterns of multiple program participation at three points in time: the first month of subsidy use, the month after they exit the subsidy program, and 12 months after they exit the subsidy program. While the sample was defined based on receiving a child care subsidy, program rules in Oregon suggest that many of these parents will be eligible

for food stamps and medical assistance as well. Differences in parents' willingness to participate may vary across rural and urban areas, however, due to differences in local economic conditions (i.e., opportunities) and stigma or difficulty in applying for and obtaining benefits.

When parents began a spell of child care subsidy receipt, most were employed (ranging from 64% in micropolitan counties to 70% in noncore counties (table 8). Of these employed parents, most also received food stamps (some with other assistance or TANF), ranging from 63% in metro to 71% in noncore counties. The most common pattern was to receive both a child care subsidy and food stamps. Nearly all received food stamps alone or along with some other combination of benefits (80% in metro compared to 92% in noncore counties). Of those who were not employed in the first month of subsidy receipt, the most common pattern was to receive food stamps and TANF along with the subsidy. These parents typically were in a training or assessment program. The receipt of food stamps seems more common in noncore counties, and fewer receive other benefits.

The pattern of employment and food stamp use was similar in the month after parents exit from the child care subsidy program (table 9). About three quarters were employed and there was little variance by type of county (78% employed in noncore counties, 73% in micropolitan, and 75% in metropolitan). Most families still received food stamps, occasionally with TANF or other assistance benefits such as medical. For those not employed when they exit the subsidy program, most receive both food stamps and TANF. This pattern suggests the programs serve not only as work supports but also as a safety net for those who were not employed.

At twelve months after exit from the subsidy program, close to 20% were again receiving a child care subsidy (table 10). Most of these parents were employed, ranging from 84% in noncore counties to 80% in metropolitan and micropolitan counties. The majority of these

parents were also receiving food stamps but not TANF or other assistance. Of those not employed at 12 months, their pattern was similar to those not employed after exiting the subsidy. Most received both food stamps and TANF, though fewer in the noncore counties received TANF and more received only food stamps.

Over 80% of parents were not receiving a child care subsidy at twelve months after exit. About half of these parents were employed, about 20 percent were not employed, and the remainder had no recorded wages nor receipt of benefits (we label these families as “disconnected” from the data in that month or quarter). Most of the employed parents were receiving none of the work supports (subsidy, TANF, food stamps), though the percentage ranged from 44% in noncore counties to 50% in metropolitan counties. As seen earlier, the pattern of food stamps only rather than a combination of benefits was more common in noncore counties than either micropolitan or metropolitan areas.

Parents appear to move off and on work support programs at different points in time in ways that are somewhat surprising. The median length of participation varied by program despite similar eligibility requirements and, in the case of food stamps and the child care subsidy program, use of the same application form. Participation in multiple work supports simultaneously was low and the patterns of joint use were fairly similar across the rural-urban categories. However, there appeared to be somewhat more employment and use of food stamps in the most rural noncore counties, relative to the others. Yet the differences in use of work support programs across county types were small relative to the differences in overall economic conditions. Higher unemployment rates, lower wages, and lower levels of education in nonmetropolitan counties might suggest a greater need for work support programs. The similarities in patterns of work support program participation found here may reflect the

similarities of the families and their employment patterns despite the general differences in metropolitan and nonmetropolitan labor markets.

Rural-Urban Differences in Exiting the Child Care Subsidy Program

The patterns of employment and program participation overall were quite similar across the rural-urban classification of counties. Families in rural noncore counties used work support programs slightly less often and for slightly shorter spells, as evidenced by both cumulative and first spell measures of duration. Despite being small, these differences raise the question of whether local economic opportunities, demographic characteristics, or local policy or program variations are related to differences in program participation. We examine this question by estimating a probability of exit model in order to examine whether ending a spell of subsidy use differs by type of county once other factors are controlled.¹³

Table 11 provides the estimated hazard ratios for the Cox regression models for the probability of exit including family and program characteristics, employment outcomes, county economic variables and type of county. A hazard ratio greater than one indicates that increases in the covariate are associated with a higher probability of exit (controlling for other covariates). Conversely, a hazard ratio less than one indicates a lower probability of exit (and a corresponding longer length of subsidy spell, all else equal).

Residents of rural noncore counties were more likely to exit the child care subsidy program than those in metropolitan counties after controlling for family demographic and local area characteristics. The estimated hazard ratio of 1.094 suggests that noncore families were about 9% more likely to exit each month. This higher rate of exit resulted in shorter spell

¹³ The focus of this section is on exits from the child care subsidy program rather than exits from other work support programs because of the available data. The sample was based on initial use of subsidy and thus would not be appropriate for estimating models of exit from food stamps or TANF.

durations in the subsidy program (as reported earlier). The probability of exit for families in micropolitan counties was not significantly different than in metropolitan counties.

Explaining the higher exit rate in noncore counties is a puzzle, given that policy does not vary across the state and economic and demographic factors were included in the model. It is possible that either the stigma of participation or the effort to recertify eligibility (if, for example, the distance to the office is greater in rural areas) may be influencing parents' decision to continue receiving a child care subsidy. These parents often continue to receive food stamps however. Parsing out the reasons is not possible with the administrative data, but suggests the need for further research, perhaps using survey methods.

Demographic factors were associated with exits from the subsidy program in the expected manner. As children get older, families were more likely to exit the subsidy program (due both to changing needs for child care and aging out of the program). Hispanic families were also more likely to exit compared to white families. Higher education levels were associated with a lower probability of exit.

Characteristics of the local area also influenced exits from the subsidy program. Parents in counties with higher rates of employment growth were more likely to exit, possibly because of increased earnings. The availability of child care, measured by the number of slots per 100 children) was positively related to spell length, that is, more supply was associated with a lower probability of exit.

Child care subsidy policy variables were also related to exits. The most important factor driving exits was redetermination month. Families are required to recertify their eligibility for the subsidy program at frequent intervals, and the results suggest that families were more than twice as likely to exit the subsidy program in a month in which their eligibility ended. Those receiving

subsidy for employment (ERDC) were much less likely to exit than families receiving subsidy for a TANF training or assessment program. Families with a higher subsidy value, lower copay, and regulated provider were also less likely to exit the subsidy program.

In sum, the Cox regression model suggests that families in rural noncore counties exited the child care subsidy program at a higher rate, even after controlling for demographic, economic and policy factors. In addition to subsidy, families in noncore counties had slightly shorter spells of food stamps and TANF, despite the fact that unemployment and poverty rates were higher than in metropolitan counties.

6. Conclusion

Differences in local economic conditions and poverty rates suggest that it is likely there would be differences across types of counties in the use of public programs such as child care subsidies and food stamps, programs that are intended to support working low-income families. Indeed, higher poverty rates, higher overall rates of unemployment and lower average wages would lead one to expect greater use of these programs in rural areas. Yet previous studies have typically found less use of these programs by rural families compared to their urban counterparts. In this study, we found high levels of similarity in use of work support programs across county types despite the more disadvantaged economic situation in rural areas.

On one hand, the similarity in use of work supports was not surprising given the similarities found in family characteristics and employment patterns. While demographic characteristics of the general population vary considerably across county type, subsidy users had similar characteristics regardless of where they lived. These families were single parent families with relatively low levels of education and young children, and had similar levels of employment

stability. Program rules and policies influence the characteristics of those served and having the same set of rules and policies in all areas thus may explain the similarity in the patterns of participation in work support programs across the rural-urban categories.

However, the similarity in work support use was surprising because of the differences in overall economic conditions in rural areas. And where patterns differed, rural families tended to participate less often and for shorter periods of time despite living in areas with higher poverty rates and higher overall rates of unemployment. Spells of subsidy, TANF and food stamp use were slightly though significantly shorter in noncore counties than in metropolitan counties. Even after controlling for demographic and economic conditions, families in noncore counties were more likely to exit the child care subsidy program than those in metropolitan areas. With higher unemployment rates and lower wages in rural areas, the role of work support programs is likely to be critical for rural low-income families. Further research is needed to determine if there are more barriers to getting or retaining assistance in rural areas.

The Food Stamp Program is clearly an important work support for low-income working families as nearly all of these families received food stamps at some point in the three years, and on average they received food stamps for 20 of the 36 months observed. Unlike the consistency of food stamp participation, families relied less on child care subsidies and TANF in the rural noncore counties compared to both micropolitan and metropolitan counties. Some of the largest differences in program participation were found between micropolitan and noncore counties, both of which are classified as nonmetropolitan. These results emphasize the importance of recognizing the diversity within the nonmetropolitan category both in economic opportunities and in barriers to participation.

Finally, it is important to note that the pattern of participation in work support programs was quite disjointed. Families typically did not begin or end spells of subsidy, food stamps, and medical assistance in the same month. The eligibility periods for each program differ both in policy and practice, and these policy and practice differences are undoubtedly reflected in the different spell lengths and varying start and end dates. These variable eligibility periods may impede families' ability to navigate the system of work supports in both rural and urban areas.

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Table 1. Demographic and Economic Characteristics of Metropolitan, Micropolitan and Noncore Areas in Oregon, 2000

| Classification | Metropolitan | Micropolitan | Noncore |
|--|---|---|---|
| Counties | Benton, Clackamas, Columbia, Deschutes, Jackson, Lane, Marion, Multnomah, Polk, Washington, Yamhill | Clatsop, Coos, Crook, Curry, Douglas, Hood River, Josephine, Klamath, Linn, Malheur, Morrow, Umatilla, Union, Wasco | Baker, Gilliam, Grant, Harney, Jefferson, Lake, Lincoln, Sherman, Tillamook, Wallowa, Wheeler |
| Total Population | 2,742,810 | 677,290 | 139,496 |
| Percent Urban | 76.9% | 57.9% | 25.7% |
| Median Housing Costs | \$1,149 | \$855 | \$765 |
| Median Household Income | \$43,196 | \$34,192 | \$32,356 |
| Unemployment Rate (January 2000) | 5.8% | 10.1% | 10.3% |
| Percent Single Parent Families | 12.5% | 12.5% | 10.5% |
| Average Poverty rate (% of families below poverty level) | 7.0 | 10.3 | 10.3 |
| Percent without a high school degree | 12% | 17% | 17% |
| Percent with college degree | 18% | 23% | 21% |

Source: 2000 Census

Table 2. Characteristics of the Urban/Rural Groups (based on first month of subsidy receipt during observation period) (n=27,628)

| Variable | Metropolitan | | Micropolitan | | Noncore | |
|---|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|
| | Number Missing | Mean (Std. Dev.) / Frequency | Number Missing | Mean (Std. Dev.) / Frequency | Number Missing | Mean (Std. Dev.) / Frequency |
| Number of children in household | 82 | 1.8 (0.01) | 19 | 1.8 (0.01) | 5 | 1.8 (0.03) |
| Number of children with child care subsidy in household | 0 | 1.7 (0.01) | 0 | 1.7 (0.01) | 0 | 1.7 (0.03) |
| Age of youngest child (months) ^a | 0 | 39.8 (0.23) | 0 | 41.2 (0.42) | 0 | 39.5 (0.93) |
| Age of oldest child (months) ^a | 0 | 61.6 (0.30) | 0 | 63.1 (0.54) | 0 | 62.2 (1.22) |
| Parent's age (years) ^a | 49 | 27.5 (0.05) | 14 | 27.7 (0.09) | 4 | 27.7 (0.21) |
| Parent's education level (years) ^{a,b} | 3860 | 11.1 (0.02) | 1246 | 11.4 (0.02) | 262 | 11.4 (0.06) |
| Monthly household income ^{a,b} | 0 | \$612 (4.41) | 0 | \$547 (7.16) | 0 | \$570 (16.35) |
| Type of care ^d | 445 | | 172 | | 31 | |
| Center care | | 22.0% | | 16.0% | | 14.7% |
| Home-based facility | | 58.0% | | 62.8% | | 65.1% |
| In-home provider | | 5.3% | | 6.1% | | 5.5% |
| Relative care | | 14.8% | | 15.1% | | 14.7% |

Note: a=Difference in means between metropolitan and micropolitan is statistically significant at the 5% level. b=Difference in means between metropolitan and noncore is statistically significant at the 5% level. c=Difference in means between micropolitan and noncore is statistically significant at the 5% level. Mean comparison tests use the Bonferroni adjustment. d=Difference in proportions across county types significant at 0.01 level.

Table 2. (continued) Characteristics of the Urban/Rural Groups (based on first month of subsidy receipt during observation period)

| Variable | Metropolitan | | Micropolitan | | Noncore | |
|---|----------------|------------------------------|----------------|------------------------------|----------------|------------------------------|
| | Number Missing | Mean (Std. Dev.) / Frequency | Number Missing | Mean (Std. Dev.) / Frequency | Number Missing | Mean (Std. Dev.) / Frequency |
| Ethnicity of family ^e | 17 | | 3 | | 2 | |
| Asian | | 1.7% | | 0.4% | | 0.1% |
| Black | | 11.9% | | 1.2% | | 1.3% |
| Hispanic | | 9.6% | | 8.1% | | 6.5% |
| Native American | | 1.4% | | 1.9% | | 7.0% |
| Pacific Islander | | - | | 0.02% | | - |
| White | | 74.5% | | 87.8% | | 84.8% |
| Other/Unknown | | 0.9% | | 0.4% | | 0.4% |
| Percent on TANF at least one month in the year prior to their first observed subsidy spell ^{a,c} | 0 | 34.4% | 0 | 38.2% | 0 | 33.2% |
| Percent on TANF at least one month 5 years prior to study period (Between 1992-1997) ^{b,c} | 0 | 47.6% | 0 | 48.1% | 0 | 47.5% |

Note: a=Difference in means between metropolitan and micropolitan is statistically significant at the 5% level. b=Difference in means between metropolitan and noncore is statistically significant at the 5% level. c=Difference in means between micropolitan and noncore is statistically significant at the 5% level. Mean comparison tests use the Bonferroni adjustment. e=Difference in proportions across county types significant at 0.01 level.

Table 3. Employment Measures for Subsidy Users by County Type

| Employment measure | Metro | Micro | Noncore | All |
|---|--------------|--------------|----------------|------------|
| Number of continuous employment spells in 3 years (mean) ^a | 1.5 | 1.4 | 1.5 | 1.5 |
| Number of quarters employed in 3 years (mean) ^{a,c} | 7.7 | 7.4 | 7.8 | 7.6 |
| Number of job changes in 3 years (mean) ^{a,c} | 2.1 | 1.8 | 2.1 | 2.0 |
| Mean quarterly earnings ^{a,b} | \$2,513 | \$2,246 | \$2,314 | \$2,457 |
| Mean total earnings in 3 years ^{a,b} | \$30,891 | \$26,598 | \$28,283 | \$30,061 |
| Mean quarterly hours worked ^a | 286 | 282 | 287 | 286 |
| Mean total hours worked in 3 years ^a | 3239 | 3095 | 3252 | 3231 |
| Mean total earnings divided by total hours | 9.54 | 8.59 | 8.70 | 9.31 |
| Mean number of zipcode changes in 3 years ^{a,b,c} | 1.2 | 0.9 | 1.0 | 1.2 |

Note: a=Difference in means between metropolitan and micropolitan is statistically significant at the 5% level. b=Difference in means between metropolitan and noncore is statistically significant at the 5% level. c=Difference in means between micropolitan and noncore is statistically significant at the 5% level. Mean comparison tests use the Bonferroni adjustment.

Table 4. Employment Stability of Parents by County Type

| Percentage of families | Metro | Micro | Noncore | All |
|----------------------------------|--------------|--------------|----------------|------------|
| Little or no employment | 23.1 | 25.3 | 21.3 | 23.4 |
| Limited employment | 27.4 | 28.7 | 28.1 | 27.5 |
| Stable employment, unstable jobs | 22.5 | 18.1 | 21.5 | 21.4 |
| Stable employment, stable jobs | 27.0 | 28.0 | 29.1 | 27.7 |

Note: Difference in proportions across county types significant at 0.01 level.

Table 5. Median Length of First Observed Spell of Program Participation (months)

| Program | Metro | Micro | Noncore | All |
|-------------------------------------|--------------|--------------|----------------|------------|
| Child care subsidy ^{a,b,c} | 4.3 | 4.1 | 3.8 | 4.2 |
| TANF ^{b,c} | 5.5 | 5.5 | 4.6 | 5.5 |
| Food stamps ^{a,c} | 9.7 | 10.8 | 9.5 | 9.9 |

Note: a=Difference in means between metropolitan and micropolitan is statistically significant at the 5% level.
b=Difference in means between metropolitan and noncore is statistically significant at the 5% level.
c=Difference in means between micropolitan and noncore is statistically significant at the 5% level.

Table 6. Cumulative Months of Subsidy Use by Type of County

| Percentage of families^d | Metro | Micro | Noncore | All |
|--|--------------|--------------|----------------|------------|
| 1 to 3 months | 20.5 | 22.6 | 24.8 | 20.9 |
| 4 to 6 months | 16.1 | 17.5 | 18.7 | 16.4 |
| 7 to 12 months | 23 | 23.4 | 22.4 | 23.1 |
| 13 to 18 months | 17.3 | 16.1 | 15.9 | 16.9 |
| 19 to 36 months | 23.1 | 20.4 | 18.2 | 22.6 |
| Cumulative number of months in 3 years (mean) | | | | |
| Child care subsidy ^{a,b} | 11.9 | 11.1 | 10.5 | 11.8 |
| TANF ^{b,c} | 6.0 | 6.3 | 5.0 | 5.9 |
| Food stamps ^{a,b} | 19.8 | 21.2 | 20.7 | 20.1 |

Note: a=Difference in means between metropolitan and micropolitan is statistically significant at the 5% level.
b=Difference in means between metropolitan and noncore is statistically significant at the 5% level.
c=Difference in means between micropolitan and noncore is statistically significant at the 5% level.
d=Difference in proportions across county types significant at 0.01 level.

Table 7. Percentage of Families with No TANF or No Food Stamps in Three Year Study

| Percentage of families | Metro | Micro | Noncore | All |
|-------------------------------|--------------|--------------|----------------|------------|
| No TANF in 3 years | 50.2 | 46.9 | 51.7 | 49.2 |
| No Food Stamps in 3 years | 8.2 | 5.4 | 5.6 | 7.6 |

Note: Difference in proportions across county types significant at 0.01 level.

Table 8. Employment and Program Indicators at Point-In-Time: *First Month of First Observed Subsidy Spell*

| | Metropolitan (N=18,091) | | Micropolitan (N=5,904) | | | Noncore (N=1,120) | | | |
|--|----------------------------|--------------|---------------------------|------|--------------|----------------------|------|--------------|-------------|
| | | Sub Total | Total | | Sub Total | Total | | Sub Total | Total |
| Employment and Program Indicators | | | | | | | | | |
| <i>On Subsidy</i> | | | 100% | | | 100% | | | 100% |
| Employed | | 67.0 | | | 64.0 | | | 69.6 | |
| Not on any of these programs | 16.4 | | | 12.9 | | | 14.5 | | |
| TANF only | 2.31 | | | 1.55 | | | 1.5 | | |
| Food stamps only | 58.3 | | | 60.6 | | | 62.4 | | |
| Other medical assistance only ^a | 5.2 | | | 3.9 | | | 4.1 | | |
| Food stamps and TANF | 16.9 | | | 20.6 | | | 17.1 | | |
| On all above programs | 0.8 | | | 0.5 | | | 0.4 | | |
| Not Employed | | 26.5 | | | 30.5 | | | 25.5 | |
| TANF only | 6.3 | | | 4.9 | | | 3.8 | | |
| Food stamps only | 42.5 | | | 38.0 | | | 40.5 | | |
| Other medical assistance only | 2.4 | | | 1.6 | | | 0.7 | | |
| Food stamps and TANF | 47.0 | | | 54.8 | | | 54.2 | | |
| On all above programs | 1.7 | | | 0.8 | | | 0.7 | | |
| Disconnected in this month/quarter | | 6.5 | | | 5.5 | | | 4.9 | |
| <i>Not on Subsidy</i> | | | 0% | | | 0% | | | 0% |
| Total | | | 100% | | | 100% | | | 100% |

^a This indicator includes those families receiving only medical assistance and not on other assistance programs (e.g., TANF or food stamps). Families on TANF or food stamps may also be receiving medical assistance.

Table 9. Employment and Program Indicators at Point-In-Time: *Immediately After Exit from First Observed Subsidy Spell*

| | Metropolitan (N=18,117) | | Micropolitan (N=5,906) | | | Noncore (N=1,092) | | | |
|--|----------------------------|--------------|---------------------------|------|--------------|----------------------|------|--------------|-------------|
| | | Sub Total | Total | | Sub Total | Total | | Sub Total | Total |
| Employment and Program Indicators | | | | | | | | | |
| <i>On Subsidy</i> | | | 0% | | | 0% | | | 0% |
| <i>Not On Subsidy</i> | | | 100% | | | 100% | | | 100% |
| Employed | | 74.5 | | | 72.9 | | | 77.6 | |
| Not on any of these programs | 25.4 | | | 20.9 | | | 19.2 | | |
| TANF only | 2.0 | | | 0.9 | | | 0.7 | | |
| Food stamps only | 52.1 | | | 56.3 | | | 59.6 | | |
| Other medical assistance only ^a | 10.2 | | | 8.5 | | | 9.5 | | |
| Food stamps and TANF | 10.4 | | | 13.1 | | | 10.6 | | |
| On all above programs | 0.4 | | | 0.4 | | | 0.4 | | |
| Not Employed | | 22.4 | | | 23.7 | | | 19.4 | |
| TANF only | 6.4 | | | 3.7 | | | 2.8 | | |
| Food stamps only | 34.9 | | | 31.8 | | | 44.4 | | |
| Other medical assistance only | 5.6 | | | 4.0 | | | 5.7 | | |
| Food stamps and TANF | 51.7 | | | 59.5 | | | 47.1 | | |
| On all above programs | 1.4 | | | 1.0 | | | - | | |
| Disconnected in this month/quarter | | 3.1 | | | 3.4 | | | 3.0 | |
| Total | | | 100% | | | 100% | | | 100% |

^aThis indicator includes those families receiving only medical assistance and not on other assistance programs (e.g., TANF or food stamps). Families on TANF or food stamps may also be receiving medical assistance.

Table 10. Employment and Program Indicators at Point-In-Time: *Twelve* Months after Exit from First Observed Subsidy Spell

| | Metropolitan (N=18,117) | | Micropolitan (N=5,906) | | | Noncore (N=1,092) | | | |
|--|----------------------------|--------------|---------------------------|------|--------------|----------------------|------|--------------|-------|
| | | Sub Total | Total | | Sub Total | Total | | Sub Total | Total |
| Employment and Program Indicators | | | | | | | | | |
| <i>On Subsidy</i> | | | 18.3 | | | 17.6 | | | 17.0 |
| Employed | | 79.6 | | | 80.1 | | 84.4 | | |
| Not on any of these programs | 3.5 | | | 1.9 | | | 2.6 | | |
| TANF only | 0.2 | | | 0.1 | | | - | | |
| Food stamps only | 82.7 | | | 84.1 | | | 86.6 | | |
| Other medical assistance only ^a | 0.1 | | | 0.1 | | | - | | |
| Food stamps and TANF | 12.8 | | | 13.5 | | | 10.8 | | |
| On all the above programs | 0.7 | | | 0.4 | | | - | | |
| Not Employed | | 20.0 | | | 19.2 | | 15.6 | | |
| TANF only | 0.8 | | | - | | | 3.5 | | |
| Food stamps only | 33.2 | | | 37.5 | | | 41.4 | | |
| Other medical assistance only | 0.3 | | | - | | | - | | |
| Food stamps and TANF | 64.5 | | | 61.5 | | | 51.7 | | |
| On all the above programs | 1.2 | | | 1.0 | | | 3.5 | | |
| Disconnected in this month/quarter | | 0.4 | | | 0.7 | | - | | |

Table 10. (continued) Employment and Program Indicators at Point-In-Time: *Twelve* Months after Exit from First Observed Subsidy Spell

| | Metropolitan (N=18,117) | | Micropolitan (N=5,906) | | | Noncore (N=1,092) | | | |
|------------------------------------|----------------------------|--------------|---------------------------|------|--------------|----------------------|------|--------------|-------------|
| | | Sub Total | Total | | Sub Total | Total | | Sub Total | Total |
| <i>Not On Subsidy</i> | | | 81.7 | | | 82.4 | | | 83.0 |
| Employed | | 47.3 | | | 45.0 | | | 51.4 | |
| Not on any of these programs | 48.6 | | | 58.7 | | | 44.0 | | |
| TANF only | 1.0 | | | 0.7 | | | 1.3 | | |
| Food stamps only | 29.7 | | | 20.1 | | | 37.6 | | |
| Other medical assistance only | 15.2 | | | 5.9 | | | 12.9 | | |
| Food stamps and TANF | 5.1 | | | 14.3 | | | 4.1 | | |
| On all the above programs | 0.3 | | | 0.4 | | | 0.2 | | |
| Not Employed | | 22.0 | | | 22.7 | | | 19.5 | |
| TANF only | 3.0 | | | 1.6 | | | 1.0 | | |
| Food stamps only | 49.3 | | | 48.4 | | | 57.7 | | |
| Other medical assistance only | 15.1 | | | 14.4 | | | 13.6 | | |
| Food stamps and TANF | 31.5 | | | 34.6 | | | 26.0 | | |
| On all the above programs | 1.1 | | | 1.0 | | | 1.7 | | |
| Disconnected in this month/quarter | | 30.7 | | | 32.2 | | | 29.0 | |
| Total | | | 100% | | | 100% | | | 100% |

^a This indicator includes those families receiving only medical assistance and not on other assistance programs (e.g., TANF or food stamps). Families on TANF or food stamps may also be receiving medical assistance.

Table 10. (continued) Employment and Program Indicators at Point-In-Time: *Twelve* Months after Exit from First Observed Subsidy Spell

| | Metropolitan (N=18,117) | | Micropolitan (N=5,906) | | | Noncore (N=1,092) | | | |
|---------------------------------------|----------------------------|--------------|---------------------------|------|--------------|----------------------|------|--------------|-------------|
| | | Sub Total | Total | | Sub Total | Total | | Sub Total | Total |
| <i>Not On Subsidy</i> | | | 81.7 | | | 82.4 | | | 83.0 |
| Employed | | 47.3 | | | 45.0 | | | 51.4 | |
| Not on any of these programs | 48.6 | | | 58.7 | | | 44.0 | | |
| TANF only | 1.0 | | | 0.7 | | | 1.3 | | |
| Other assistance only (e.g., medical) | 15.2 | | | 5.9 | | | 12.9 | | |
| Food stamps only | 20.6 | | | 13.3 | | | 32.0 | | |
| TANF and Other assistance | - | | | - | | | - | | |
| Food stamps and TANF | 5.1 | | | 14.3 | | | 4.1 | | |
| Food stamps and Other assistance | 9.1 | | | 6.8 | | | 5.6 | | |
| On all the above programs | 0.3 | | | 0.4 | | | 0.2 | | |
| Not Employed | | 22.0 | | | 22.7 | | | 19.5 | |
| TANF only | 3.0 | | | 1.6 | | | 1.0 | | |
| Other assistance only (e.g., medical) | 15.1 | | | 14.4 | | | 13.6 | | |
| Food stamps only | 30.7 | | | 32.0 | | | 45.8 | | |
| TANF and Other assistance | - | | | - | | | - | | |
| Food stamps and TANF | 31.5 | | | 34.6 | | | 26.0 | | |
| Food stamps and Other assistance | 18.6 | | | 16.4 | | | 11.9 | | |
| On all the above programs | 1.1 | | | 1.0 | | | 1.7 | | |
| Disconnected in this month/quarter | | 30.7 | | | 32.2 | | | 29.0 | |
| Total | | | 100% | | | 100% | | | 100% |

Table 11. Probability of Subsidy Exit (Proportional Hazard Model) Results

| | First observed non-left censored subsidy spell (N=25,124) |
|---|--|
| Variable | Hazard Ratio |
| • County is noncore | 1.094* |
| • County is micropolitan | 0.979 |
| Youngest child, months | 1.002** |
| Oldest child, months | 1.001** |
| • Family Black | 1.025 |
| • Family Hispanic | 1.071* |
| Parent's education level (continuous) | 0.991* |
| Eligibility group: Employment-related care | 0.744** |
| Redetermination month | 2.616** |
| County employment growth rate, percent | 1.006* |
| Child care supply (slots per 100 children under 13) | 0.990** |
| Family copay amount | 1.001** |
| Subsidy value | 0.999** |
| Quarterly hours worked | 0.999** |
| Primary provider is regulated | 0.922** |

• These variables are not time varying, but represent values in the first month of the first observed subsidy spell.

*Significant at the 5% level

**Significant at the 1% level