

Submitted Article

Rural–Urban Differences in Childcare Subsidy Use and Employment Stability

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Abstract *Local economic disparities, particularly lower average wages, higher overall unemployment rates and higher poverty rates may lead to rural–urban differences in the use of public programs designed to support working low-income families. This study analyzes the dynamics of program participation and employment stability for rural and urban families in the Oregon childcare subsidy program. While families' demographic characteristics, employment stability, and participation in work support programs were similar, families in rural noncore counties tended to make less use of public assistance, including childcare subsidies, food stamps and welfare, than did families in metropolitan and micropolitan counties.*

Key words: childcare subsidy, low-income families, rural poverty.

JEL Codes: R20, H75, I38.

Introduction

Numerous studies have investigated differences in the incidence and causes of poverty between rural and urban areas of the United States. Official poverty rates are consistently higher in nonmetropolitan areas than in metropolitan locations, and highest in remote rural counties (Miller and 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 than are poor families in urban areas (Rural Policy Research Institute 2001). Still, 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 limited childcare 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 designed to support working low-income families, for example, childcare subsidies and food stamps. Since passage of the 1996 welfare law changes, these work support programs have become an increasingly important part of America’s anti-poverty policy. Studies have found differences in the use of various public assistance 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 (AFDC) in rural counties. One would rather expect higher usage due to higher poverty rates and relatively more working poor 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 childcare subsidies in Oregon. Nationally, the amount of state and federal funds spent on childcare subsidies for low-income families has risen rapidly since 1996, reaching approximately \$11 billion in 2004 (Field Initiated Childcare Research Projects 2004). Childcare 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 childcare costs can account for a significant portion of low-income families’ earnings. In Oregon, families who purchase childcare and have household incomes in the lowest income quartile spend almost 25% of their income on childcare whereas families in the highest income quartile spend slightly over 5% of their income on childcare (Weber 2007). Previous research on families receiving childcare subsidies in Oregon found that many utilize subsidies for only a few months, although they appear to remain eligible and continue to receive other work support benefits (Grobe, Weber, and Davis 2008). Studies suggest that procedures and policies related to obtaining and retaining eligibility for a childcare subsidy may be a barrier to participation, both in Oregon and elsewhere (Grobe, Weber, and Davis 2008; Adams, Synder, and 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. Unlike studies of participation in means-tested programs, which typically focus on one program, this study examines participation in subsidy and other work support programs during the same period of time. Table 1 presents selected elements of Oregon’s work support programs’ eligibility rules during the study period. In Oregon, as in many states, eligibility is determined concurrently and by the same caseworker for multiple programs. Yet families often do not start and stop participation in different programs at the same time. Thus, 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 a critical safety net for rural, low-income families.

This study addresses the question of rural–urban disparities in program participation by tracking participation in work support programs and employment dynamics for a sample of families participating in the childcare

Table 1 Selected elements of Oregon’s work support programs’ eligibility rules (1997–2001)

Eligibility rules 1997–2001	Childcare subsidy	Food Stamp Program	TANF
Income eligibility ceiling per month	185% of poverty level	130% of poverty level until December 2000. Increased to 185% of poverty level, January 2001.	\$616 per month (for a family of 3).
Frequency of recertification	Voucher clients every 3 months; caseworkers have authority to set to between 1 and 12 months but the expectation was 3 months.	Recertification periods range from 1 to 12 months. Most households were assigned 6 month recertification periods.	Every 6 months; however, recertification may occur once per year if the TANF case is using a monthly reporting system.
Maximum payments	Enhanced subsidy rate ^a to providers was adequate to purchase about 38% of childcare slots statewide in 2000.	Adjusted annually by U.S. Department of Agriculture.	Maximum payment standard was \$460/month (for a family of 3).
Co-pay amounts paid by parents	Co-pays were up to 68% of income.		

^a In 1999, the state created an enhanced rate with a 7% higher payment to providers who have approximately 12 hours of specific training, with an additional eight hours required every two years.

subsidy program in Oregon. The study's objectives are to: (1) examine the dynamics of program participation and employment across rural and urban counties; (2) describe the patterns of multiple program participation over time by type of county; and (3) investigate whether the use of childcare subsidies differs by type of county, while controlling for other factors.

Rural–Urban Disparities in Oregon

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 and rural areas. Counties are classified as metropolitan if they include an urbanized area of 50,000 inhabitants or more, plus outlying counties with close economic or social ties to the central county; there are 11 such counties in Oregon. Nonmetropolitan counties are divided into two groups: micropolitan and noncore. The 14 Oregon micropolitan counties include at least one urban cluster of between 10,000 and 49,000 people, plus outlying counties with strong economic and social relationships to the central county. 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.

Divergent trends in income and employment growth between rural and urban areas in 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 and Weber 2005). Table 2 provides key economic and demographic characteristics of the Oregon counties in the metropolitan, micropolitan and noncore classifications. Most Oregonians (77%) live in metropolitan counties, which have higher average incomes, higher housing costs, and lower

Table 2 Demographic and economic characteristics of county types in Oregon, 2000

Classification	Metropolitan ^a	Micropolitan ^b	Noncore ^c
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	19.7%	10.3%	10.3%

Source: 2000 Census.

^a Counties: Benton, Clackamas, Columbia, Deschutes, Jackson, Lane, Marion, Multnomah, Polk, Washington, Yamhill.

^b Counties: Clatsop, Coos, Crook, Curry, Douglas, Hood River, Josephine, Klamath, Linn, Malheur, Morrow, Umatilla, Union, Wasco.

^c Counties: Baker, Gilliam, Grant, Harney, Jefferson, Lake, Lincoln, Sherman, Tillamook, Wallowa, Wheeler.

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.

Given the rural–urban differences in economic conditions, one might expect families to rely on work support programs more heavily in rural areas. Families who meet income and asset limits may be eligible for a number of work support programs in Oregon. In this study, work support programs primarily include food stamps and subsidies to help pay for childcare. Families with children may also be eligible for cash assistance from the Temporary Assistance to Needy Families (TANF) program and for a variety of related training and job search assistance programs.¹ For most of these programs, policy in Oregon 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 policy decisions.

Data and Methods

The data in this study were drawn from five Oregon state data systems: childcare subsidy program data, Unemployment Insurance wage data, TANF program data, Food Stamp Program data, 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 single-parent families with at least one child who entered the childcare 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 began receiving a subsidy. In addition, program information is available on these families one 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 childcare subsidy spell begins.

A subsidy spell is defined as a period of receiving subsidized childcare (measured in months), which ends when there is a full calendar month in which no child in the family received subsidized care.² The data reflect months in which subsidized childcare services were actually received, not

¹“Welfare reform” occurred earlier in Oregon than in most states. Oregon received federal waivers to make changes to its welfare program in 1992 and in 1996, and thus the state was largely unaffected by the passage of the 1996 welfare legislation (Ziliak, et al. 2000). These waivers remained in force until 2003. Thus, the major changes to the welfare system in Oregon occurred prior to rather than during the period of our study.

²We 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., childcare arrangement stability). Family subsidy spells were 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 continuously in the subsidy program.

when payment occurred, so that an interruption of even one month indicates a break in the continuity of subsidized childcare.

To analyze differences across county types in the dynamics of employment and participation in work support programs, we compared spell length, number of spells, and cumulative months over the three-year period for childcare subsidies, TANF and food stamps. 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, that is, those not yet completed by the end of the study period (Singer and Willett 2003). The spell-length estimates were based on the first observed spell for each family, thus avoiding the problem of spells underway when the study began (“left-censored”).

To examine whether rural families differed from those in urban areas regarding use of work supports, we estimated a proportional hazards Cox regression model to examine whether the likelihood of exiting the childcare subsidy program differs by type of county while controlling for other factors. The dependent variable was a binary indicator equal to one if the family exited the childcare subsidy program that month (i.e, there was no subsidy receipt in the next month). The Cox regression model (which is an appropriate method for continuous time data), including time-varying covariates,³ was estimated using the first observed spell of subsidy receipt. Differences in the length of time families rely on childcare subsidies are expected to be related to family characteristics, characteristics of the childcare, local economic conditions, employment changes, and policy and program characteristics.

Demographic Characteristics of the Study Population

The description of the demographic characteristics of the study population was based on the first month of the family’s first observed subsidy spell and was broken out by metropolitan, micropolitan, and rural noncore counties. Table 3 shows that there is little variance in the demographic characteristics of families across county types: there was a mean of almost two (1.80) children in the household, and slightly fewer (1.7) children received subsidized childcare. The mean age of the youngest child in the family at the beginning of the first observed subsidy spell was almost three-and-a-half-years old (39.8 months) for metropolitan areas, which is significantly different from micropolitan areas (41.2 months), but similar to noncore areas (39.5 months). The oldest child was, on average, five years of age in all counties. The vast majority of the single-adult families were headed by women (95%) who were around 28 years of age, and, on average, had not completed a high school education. Average monthly household income was highest in metropolitan areas (\$612), and lowest in micropolitan areas (\$547). Average monthly household income was \$570 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 corresponded to 38% for micropolitan areas. In all counties, 48% of these

³The Cox regression (probability of exit) model was estimated using the PHREG procedure in the SAS statistical software program (Allison 1995).

Table 3 Characteristics of subsidy users by county type (based on first month of subsidy receipt), *N* = 27,628

Variable	Metropolitan	Micropolitan	Noncore	
	Mean (Std. Dev.) / Frequency	Mean (Std. Dev.) / Frequency	Mean (Std. Dev.) / Frequency	
Number of children in household	1.8 (0.01)	1.8 (0.01)	1.8 (0.03)	
Number of children with childcare subsidy in household	1.7 (0.01)	1.7 (0.01)	1.7 (0.03)	
Age of youngest child (months) ^a	39.8 (0.23)	41.2 (0.42)	39.5 (0.93)	
Age of oldest child (months) ^a	61.6 (0.30)	63.1 (0.54)	62.2 (1.22)	
Age of parent (years) ^a	27.5 (0.05)	27.7 (0.09)	27.7 (0.21)	
Education level of parent (years) ^{a,b}	11.1 (0.02)	11.4 (0.02)	11.4 (0.06)	
Monthly household income ^{a,b}	\$612 (4.41)	\$547 (7.16)	\$570 (16.35)	
TANF receipt in the year prior to first observed subsidy spell ^{a,c}	34.4%	38.2%	33.2%	
TANF receipt 5 years prior to study period (1992–1997) ^{b,c}	47.6%	48.1%	47.5%	
Type of care ^d	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%
Ethnicity of family ^d	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%
	White	74.5%	87.8%	84.8%
	Other/unknown	0.9%	0.4%	0.4%

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

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

^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 the 1% level.

families had at least one month of TANF receipt in the five years prior to the study period.

There were some differences in the type of childcare used by families by type of county. Over half of the primary childcare arrangements were in the home of a nonrelated caregiver, with a higher percentage in noncore (65.1%) than in urban (58.0%) areas. More than one-fifth (22.0%) of the families in metropolitan counties used childcare centers, compared to 16% in micropolitan and 14.7% in noncore counties. The majority of the study population was Caucasian, with higher representation of blacks and Hispanics in metropolitan areas, and more Native Americans in rural noncore areas.

Findings

Employment Dynamics

Across county types, families who received childcare subsidies in Oregon had relatively stable employment throughout the three years. Differences were seen across county types, though they were generally small in magnitude (Table 4). Parents had approximately 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 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 being between metropolitan and

Table 4 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 Zip code 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.

micropolitan earnings. While average earnings were higher in metropolitan than nonmetropolitan counties, the difference was much smaller for families receiving childcare subsidies than the gap in average household income for all families. Average household income for all Oregonians was one-third higher in metro than in rural noncore counties, yet average earnings for the sample families was only 9% higher. Overall, the rural and urban families receiving childcare subsidies were fairly similar in terms of employment and earnings despite the differences in average economic conditions across the county types.

While on average the families' patterns of employment appeared similar across county types, 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. About half (49%) of the parents were stably employed (i.e., they had wages recorded in nine or more of the twelve quarters). The percentage of stably employed was lowest in micropolitan counties (46%). Between 55% and 61% of the families with stable employment had two or fewer job changes in the three years. Of all parents, between 18% and 22% across county types had nine or more quarters of wages, but had more than two job changes in the three years. These parents were considered to have unstable jobs, but stable employment (because they have more than two years of wages). The proportion in each of the employment stability categories was fairly similar across the three county types, although there is clearly wide variation in employment stability for the families within each type.

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

Dynamics of Program Participation

We first looked at the 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 childcare subsidy use. Half of these subsidy spells ended after approximately four months, while the 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 the families in metro counties (23%) received childcare assistance longer than 18 months during the three years, only 18% did so in noncore counties.

Similar dynamics of participation were seen for TANF and food stamps across the three types of counties. On average, spells were slightly shorter in noncore counties. Median TANF spell length was 4.6 months in

Table 5 Characteristics of program participation by type of county

	Metro	Micro	Noncore	All
<i>Median length of first observed spell of program participation (months)</i>				
Childcare 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
<i>Cumulative number of months in 3 years (mean)</i>				
Childcare 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
<i>Families with no TANF or no food stamps in three year study (percentage)</i>				
No TANF in 3 years ^d	50.2	46.9	51.7	49.2
No Food stamps in 3 years ^d	8.2	5.4	5.6	7.6

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 the 1% level.

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. 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 (Table 5). Food stamp use was slightly more common in the nonmetropolitan counties: only about 5% of families in noncore and micropolitan counties did not receive food stamps in the three years, compared to 8% of metropolitan families (Table 5).

Although there were considerable differences across county types in population characteristics, for subsidy users, few differences were found in either employment experience or program participation across county types. Overall, the dynamics of participation in childcare 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 looked at patterns of participation in multiple programs. Descriptive information on multiple programs provided a framework for further analysis of joint participation decisions in rural versus urban areas. Table 6 shows patterns of multiple program participation during the first month of subsidy use and 12 months after subsidy program exit. While the sample was defined based on receiving a childcare subsidy, program rules in Oregon suggest that many of these parents would be eligible for

Table 6 Employment and program indicators at first month of and twelve months after first observed subsidy spell

Employment and program indicators	First month of first observed spell			Twelve months after exit from spell		
	Metro (N = 18,091)	Micro (N = 5,904)	Noncore (N = 1,120)	Metro (N = 18,117)	Micro (N = 5,906)	Noncore (N = 1,092)
<i>On childcare subsidy</i>	100%	100%	100%	18.3%	17.6%	17.0%
Employed	67.0	64.0	69.6	79.6	80.1	84.4
Not on any of these programs	16.4	12.9	14.5	3.5	1.9	2.6
Food stamps only	58.3	60.6	62.4	82.7	84.1	86.6
Food stamps and TANF	16.9	20.6	17.1	12.8	13.5	10.8
TANF or medical assistance ^a	7.51	5.45	5.6	0.3	0.2	–
On all above programs	0.8	0.5	0.4	0.7	0.4	–
Not employed	26.5	30.5	25.5	20.0	19.2	15.6
Food stamps only	42.5	38.0	40.5	33.2	37.5	41.4
Food stamps and TANF	47.0	54.8	54.2	64.5	61.5	51.7
TANF or medical assistance	8.7	6.5	4.5	1.1	–	3.5
On all above programs	1.7	0.8	0.7	1.2	1.0	3.5
Disconnected in this month/quarter	6.5	5.5	4.9	0.4	0.7	–

Continued

Table 6 Continued

Employment and program indicators	Twelve months after exit from spell		
	Metro (N = 18,117)	Micro (N = 5,906)	Noncore (N = 1,092)
<i>Not on childcare 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
Food stamps only	29.7	20.1	37.6
Food stamps and TANF	5.1	14.3	4.1
TANF or medical assistance	16.2	6.6	14.2
On all above programs	0.3	0.4	0.2
Not employed	22.0	22.7	19.5
Food stamps only	49.3	48.4	57.7
Food stamps and TANF	31.5	34.6	26.0
TANF or medical assistance	18.1	16.0	14.6
On all above programs	1.1	1.0	1.7
Disconnected in this month/quarter	30.7	32.2	29.0

^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. Medical assistance is an insurance payment made on the participants' behalf to the Oregon Health Plan.

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 childcare subsidy receipt, most were employed (ranging from 64% in micropolitan counties to 70% in noncore counties' (Table 6). Of these employed parents, most also received food stamps (some with other assistance or TANF), ranging from 58% in metro to 62% in noncore counties. The most common pattern was to receive both a childcare subsidy and food stamps. Nearly all received food stamps alone or along with some other combination of benefits (76% in metro compared to 80% 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 were typically in a training or assessment program. The receipt of food stamps seems more common in rural noncore counties, and fewer receive other work supports.

The pattern of employment and food stamp use remained similar in the month after parents' exit from the childcare subsidy program (not shown). About three-quarters of the parents 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 in combination with TANF or other benefits such as medical assistance. 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, around 20% were again receiving a childcare subsidy (Table 6). Most of these parents were employed, ranging from 83% in noncore counties to 82% in metropolitan and micropolitan counties. The majority of the 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. As seen earlier, the pattern of receiving food stamps only, rather than a combination of benefits, was more common in rural noncore counties than either micropolitan or metropolitan areas.

Parents appear to move on and off work support programs 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 childcare subsidy program, use of the same application form. Simultaneous participation in multiple work supports 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. But the similarities in patterns of work support

program participation found here reflect the similarities of the families and their employment patterns despite the overall differences in metropolitan and nonmetropolitan labor markets.

Rural–Urban Differences in Exiting the Childcare Subsidy Program

Overall, the patterns of employment and program participation 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. While relatively small, these differences raise the question of whether local economic opportunities, demographic characteristics, or local policy or program variations were related to differences in program participation. We examined this question by estimating a probability of exit model to determine whether ending a spell of subsidy use differed by type of county once other factors were controlled for.⁴

Differences in the length of time families rely on childcare subsidies are expected to be related to family characteristics, characteristics of the care itself, local economic conditions, employment changes, and policy and program characteristics. The estimated model controlled for the demographic characteristics of the family by including race, parents' education level, and childcare choices. Employment changes could 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.⁵

Other changes occurring during this time period were captured by linking data on community characteristics. Data were matched with the family's county of residence in the first month of their subsidy spell. For example, data on childcare availability (childcare capacity, or slots per 100 children) were obtained from the Oregon Childcare Resource and Referral Network (Oregon Childhood Care and Education Data Project 2000; 2002). Information on local economic conditions such as employment growth rate was obtained from the Bureau of Labor Statistics (www.bls.gov).

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 month during a subsidy spell coincided with the end of the eligibility period), family co-payment amounts, and family subsidy value (the total amount of childcare payments paid by the state to providers of all subsidized children in the family).

Table 7 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

⁴The focus of this section is on exits from the childcare 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.

⁵We assume a sequential family decision-making process, whereby employment decisions precede the decision to exit the childcare subsidy program.

Table 7 Probability of subsidy exit proportional hazard model results, $N = 25,124$

Variable	Hazard ratio
County is noncore ^a	1.094*
County is micropolitan ^a	0.979
Youngest child, months	1.002**
Oldest child, months	1.001**
Family black ^a	1.025
Family hispanic ^a	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*
Childcare supply (slots per 100 children under 13)	0.990**
Family co-pay amount	1.001**
Subsidy value	0.999**
Quarterly hours worked	0.999**
Primary provider is regulated	0.922**

Note: A hazard ratio greater than one indicates that the variable is associated with a higher probability of leaving the subsidy program (and thus with a shorter spell of subsidy receipt).

^aThese variables are not time-varying. They represent values in the first month of the first observed subsidy spell.

* $p < .05$. ** $p < .01$.

probability of exit (and a corresponding longer length of subsidy spell, all else being equal).

Residents of rural noncore counties were more likely to exit the childcare 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 approximately 9% more likely to exit each month. This higher rate of exit resulted in shorter spell durations in the subsidy program (as reported earlier). The probability of exit for families in micropolitan counties was not significantly different than metropolitan counties.

Explaining the higher exit rate in noncore counties is difficult 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 involved with recertifying eligibility (if, e.g., the distance to the office is greater in rural areas) may influence parents' decision to continue receiving a childcare subsidy. Nonetheless, these parents often continue receiving food stamps. Parsing out the reasons is not possible with the available administrative data, which 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 childcare and children 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 from the childcare subsidy program.

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 childcare, 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.

Childcare subsidy policy variables were also related to exits. The most important factor driving exits was month of redetermination. 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 during the month in which their eligibility ended. Those receiving subsidy for employment-related day care (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 co-pay, 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 childcare subsidy program at a higher rate, even after controlling for demographic, economic and policy factors. In addition, families in noncore counties had slightly shorter spells of receiving food stamps and TANF, despite the fact that unemployment and poverty rates were higher than in metropolitan counties.

Conclusions

Disparities in local economic conditions and poverty rates suggest that differences are likely across types of counties in the use of public programs intended to support working low-income families such as childcare subsidies and food stamps. 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 similar levels of joint participation in work support programs across county types, despite the more disadvantaged economic situation in rural areas.

On one hand, the similarity in work support usage was not surprising given the similarities found in family characteristics and employment patterns of this group of parents receiving childcare subsidies. While demographic characteristics of the general population vary considerably across county type, subsidy users had similar characteristics regardless of where they lived; they were single-parent families with relatively low levels of education, had 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 may explain the similarities in 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. 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. After controlling for demographic characteristics and economic conditions, families in noncore counties were more likely to exit the childcare subsidy program than those in

metropolitan areas. A number of other studies provide potential explanations for these findings. For example, Hirschl and Rank (1999) conclude that stronger social networks in rural areas explain differences in food stamp participation. Further, they summarize the sociological literature on welfare participation by noting that rural participation may be lower because of attitudes towards welfare, inaccurate information on eligibility, and stigma in the community. In addition, recent work examining the role of social capital suggests that family and friends may provide a greater level of support in rural areas. For example, Hofferth and Iceland (1998) find that families in rural areas more often exchange exclusively with kin than do urban families. Differences in the type of childcare used may also be an explanation for lower participation in the subsidy program in rural areas. Descriptive results from this study showed home-based facilities were more commonly used in nonmetropolitan areas, and childcare centers were used more commonly in metropolitan areas (see Table 3). It is possible that home-based facilities provide more transitional care than do childcare centers. Bernell, Weber and Edwards (2006) suggest that enhanced social networks in rural areas may explain why rural families are more food secure, controlling for household and community characteristics. The higher rates of exit from the subsidy program in rural noncore areas found in this study may in part be due to the strength of social networks in rural areas; perhaps family and friends provide childcare through these social networks.

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. Studies of social networks in rural areas, particularly their role in childcare, as well as attitudinal surveys, are needed to determine the importance of community contextual factors in explaining reasons for non-participation. Further research is also needed to determine if there are more barriers to getting or retaining assistance in rural areas, particularly in noncore counties. Policy-makers may need to address barriers to participation in work support programs in rural noncore areas to reduce disparities in program participation.

While many studies on public programs focus on only one program, this study reveals important interrelationships by examining multiple work support programs. Although it was not a main focus of the study, by including all major work support programs we were able to show that participation in these programs was quite disjointed. Families typically did not begin nor end spells of childcare subsidy, food stamps, and medical assistance in the same month. The eligibility periods for each program differ both in policy and practice, and these differences are undoubtedly reflected in the various spell lengths and varying start and end dates. These variable eligibility periods may impede families' abilities to navigate the system of work supports in both rural and urban 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 observed years, and on average they received food stamps for 20 of the 36 months. While food stamp participation was quite common and fairly continuous across county types, families relied less on childcare 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. Policies set at the state level may not address the diverse needs and problems found in various regions of a state.

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