NBER WORKING PAPER SERIES

TAKE-UP RATES AND TRADE OFFS AFTER THE AGE OF ENTITLEMENT: SOME THOUGHTS AND EMPIRICAL EVIDENCE FOR CHILD CARE SUBSIDIES

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Working Paper 8886
http://www.nber.org/papers/w8886

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
April 2002

The work reported in this paper was supported by a grant from the Rhode Island Department of Human Services (DHS) to the Wellesley Child Care Research Partnership and by grant #90YE0032 from the Child Care Bureau, Administration for Children and Families (ACF), U.S. Department of Health and Human Services (DHHS) to the National Bureau of Economic Research through the Wellesley Child Care Research Partnership. The support of DHS and DHHS for this work does not indicate their concurrence with our results nor are DHS or DHHS in any way responsible for errors that we may have made. This project would not have been possible without the support of many people at DHS in Rhode Island. Sherry Campanelli, Randy Rosati, Donalda Carlson, Reeva Murphy, Carol Ponto and Nancy Tikkanen provided invaluable guidance. They provided us with data, and they helped us to understand both the state administrative data we use and the way in which the cash assistance and child care subsidy programs operated before and after welfare reform. We would also like to thank Nancy Burstein, Sherry Campanelli, Ann Collins, Patricia Divine, Joanna Grymes, Annie George, Linda Giannarelli, Julia Isaacs, Jean Layzer, Ivelisse Martinez-Beck, Madelyn Schultz, David Stevens, Helen Tauchen, and Karen Tvedt for very valuable comments on an earlier draft of the paper. The views expressed herein are those of the authors and not necessarily those of the National Bureau of Economic Research.

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NBER Working Paper No. 8886
April 2002
JEL No. I38, H40, J22, I20

ABSTRACT

In this paper we develop a model of an eligible family's decision to take or not to take child care subsidies. This decision depends on the net benefits the family expects to derive from the subsidies over their expected duration. We contend that such a demand-side model for the take-up of child care subsidies and use of the term "take-up" rate are only appropriate for programs that guarantee services to all eligible applicants. After welfare reform, most states do not offer such guarantees. For states that do not guarantee subsidies, the proportion of the eligible population that receives subsidies is better called a service rate than a take-up rate. Modeling service rates requires consideration of both governments' decisions (the supply side) and families' decisions (the demand side) regarding child care subsidies.

We survey the general literature on take-up rates for social welfare programs and review existing estimates of the take-up rates and service rates for child care subsidy programs in various states. Using administrative data and survey data for states that guarantee subsidies for all eligible families, we estimate the family-level take-up rate for child care subsidies to be around 40% in early 2000. For states that do not guarantee subsidies, service rates range from 14% in Minnesota to 50% in Massachusetts.

Finally, we suggest indicators to assess the trade offs that governments are making when designing and funding their child care subsidy programs. We use the percent of federally eligible families that receive child care subsidies and public expenditures per subsidized child to discern the relative importance that states place on using child care subsidies (1) to facilitate parental work and (2) to prepare its future work force by improving services to low-income children. For Rhode Island, we find increasing emphasis on the latter between 1996 and 2000. We also find that the Illinois subsidized child care program places relatively more emphasis on parental work facilitation, while Minnesota's program makes a more substantial investment in children through relatively more comprehensive and in-depth services.

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In the human services, the term "take-up rate" generally refers to the proportion of the population eligible for a particular social welfare program that participates in the program. The reasonably large literature on take-up rates suggests that they vary considerably across programs. Specifically, recent surveys indicate that take-up rates range from 43% for the Qualified Medicare Beneficiary program to 99% for Medicare Part A. Take-up rates also vary as a result of using different estimation methodologies. For example, the estimated take-up rate for programs such as AFDC, Food Stamps and Medicaid, while consistently above 45%, shows a 20% to 25% variation across studies depending on methodologies used (Craig, 1991; Remler, Rachlin and Giled, 2001; U.S. Department of Health and Human Services, 2001).

In recent years, researchers have reported take-up rates for child care subsidies that are substantially below the rates typically found for other social welfare programs. For example, the U. S. Department of Health and Human Services (HHS) estimates that, in an average month during April through September 1998, only 15% of eligible children or about 1.5 million of the 9.9 million low-income and moderate-income children eligible for CCDF child care subsidies actually received help through this program. This HHS report goes on to state that the gap between eligibility and receipt of child care subsidies would have been even greater if states had chosen to define the eligible population to include all the low-income and moderate-income working families that are potentially eligible under Federal law. If all states had set eligibility limits at the maximum levels allowed under Federal law (i.e., 85% of state median income [SMI]), an estimated 14.7 million children would have been eligible for child care subsidies in fiscal year 1998, of which only 10 % were served (U.S. Department of Health and Human Services, 1999).

Why is the take-up rate for child care subsidies so much lower than the take-up rate for other social welfare programs? In this paper, we seek to provide an answer to this question. To this end, we provide new estimates of the take-up rate for child care subsidies and provide indicators of the trade offs that governments are making between using child care subsidies to facilitate work and using subsidies to improve care for low-income children. To structure our thinking, we begin by developing a simple model of take-up rates for child care subsidies. We discuss some implications of this model for estimation of take-up rates for child care subsidies. Next we briefly review and

summarize studies that estimate take-up rates for social welfare programs other than child care subsidies, followed by a review of existing estimates of take-up rates for child care subsidies. We present our own estimates of take-up for child care subsidies in Rhode Island for 1996 through 2000. In the final section of the paper, based on insights gained through this work, we present tentative answers to the questions: (1) What is the take-up rate for child care subsidies? and (2) What relative importance do governments place on using child care subsidies to facilitate work and using subsidies to improve care for low-income children? In brief, our answers to the above questions are as follows. At the family level, we estimate that the take-up rate for child care subsidies in late 1999 was around 40%. This is substantially higher than estimates previously reported. We suggest that published estimates of the "take-up" rate for child care subsidies are low because, for most states, they are estimates of service rates, not take-up rates. We find that states make, often implicitly, very different trade offs between facilitating work and improving the care offered to low-income children. For example, Illinois places relatively more importance on facilitating work, while Minnesota places more emphasis on improving the care received by low-income children.

Modeling the Take-up Rate for Child Care Subsidies

To structure our thinking and provide context for the literature survey that follows, we begin by developing a model of the take-up rate for child care subsidies. Most existing models of take-up rates were developed for entitlement programs. For entitlement programs, the supply of services available to eligible families is infinitely elastic. Accordingly, these models see take up as fully determined by the decisions of eligible applicants, given that all eligible applicants are guaranteed benefits. The number of families served under entitlement programs is fully determined by the number of eligible families that apply. We begin our conceptualization of the take up for child care subsidies using insights from such demand-side models.

Building on Anderson and Meyers (1997) and Heckman, Lalonde and Smith (1999), we see those eligible to receive child care subsidies as using them if they see their use as improving their well-being (including the well-being of their children) by more than their costs (including transaction costs and stigma), subject to the information available and to the initiative of potential applicants. That is, we see potential subsidy applicants as weighing the benefits and costs of remaining without a

subsidy or of applying for and receiving a subsidy given the information they have available.

As noted by Craig (1991), there may be a lag in the take up of social benefits, even after families realize that taking them would be advantageous. This is due to the time it takes to learn about the program, to apply and to be accepted. A lag in take up may also occur because of inertia, the all too present human tendency to put things off.

Formally speaking, we see potential child care subsidy applicants as comparing, over the expected duration of subsidy receipt (denoted d),[1] the utility (denoted U) they expect to receive without subsidies versus the utility they expect to receive with subsidies. We assume that a potential subsidy recipient's utility depends upon earned income (E) net of child care and other costs of working (wc), how many leisure hours the person has (L) and the well-being of the potential recipient's children (C). The individual evaluates her or his utility using the information available, denoted I. If she does not receive child care subsidies (denoted by the superscript *ns*) over the expected duration of the subsidy, the expected utility is

$$\sum_{i=1}^{d} U(E_i^{ns} - wc_i, L_i, C_i^{ns}) \mid I$$

Let the expected benefits of receiving a subsidy to cover child care expenses potentially be both monetary and non-monetary. Net monetary benefits,[2] denoted b, may decrease the costs of working. A non-monetary benefit may be, for example, a parent-perceived increase in child well-being (C) when the child is in subsidized child care (C^s). Transaction costs/stigma of subsidy receipt, denoted c, may also be either monetary, denoted c_m, or non-monetary, denoted c_{nm}. If the parent receives a child care subsidy over the duration of the subsidy, the expected utility is

$$\sum_{i=1}^{d} U(E_i^s - (wc_i - (b_i - c_{im})), (l_i - c_{i,nm}), C_i^s) \mid I$$

Possibly with a lag, the potential subsidy applicant will take subsidies if

$$\sum_{i=1}^{d} U(E_i^s - (wc_i - (b_i - c_{im})), (l_i - c_{i,nm}), C_i^s) \mid I > \sum_{i=1}^{d} U(E_i^{ns} - wc_i, l_i, C_i^{ns}) \mid I$$

[1] Studies find median durations of child care subsidy receipt of between 3 months and 7 months (Witte and Queralt, 1999; Meyers, et al., 2001).

[2] Net monetary benefit is the decrease in child care costs net of any required payment by the parent.

Note that under this simple model, there are a number of potential reasons why parents eligible for subsidies may not take them. They may not know about the subsidy program. Or the family may fail to use subsidies because their expected period of receipt is too short to allow discounted benefits to overcome the transaction cost/stigma of obtaining the subsidy.[3] This reason for failure to take a child care subsidy may be common. For instance, many activities of cash assistance recipients eligible for child care subsidies (e.g., Job Club) are of short duration. Another reason for failure to take child care subsidies may be irregular employment, a common problem experienced by low-income families which may, in some cases, make the expected transaction costs of applying for subsidies exceed their benefits.[4] The family may fail to use subsidies because it has formal care available (e.g. through Head Start or public-school pre-K) or informal care available (e.g. through relatives or neighbors) at little or no cost.[5] Or the family may fail to use subsidies because it is unable to find a care provider that is both acceptable to the family and willing to accept child care subsidies.

In addition to the reasons discussed above as to why eligible families may not use child care subsidies, the prices that subsidy programs pay for care, called reimbursement rates, can substantially affect the child care choices available to subsidy recipients and can render the choices more or less attractive. Reimbursement rates to child care providers vary greatly across states and local areas. Federal regulations require that reimbursement rates be set to provide "equal access" to care for poor children. However, in some areas they may be set below the average cost of market care, while in other areas they may be set high enough to make it possible for most providers across the quality/price spectrum to offer subsidized care.

While reimbursement rates are a major factor determining whether or not a provider will accept the vouchers/certificates issued by child care subsidy program,

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[3] Note that the transaction costs or stigma of receipt act as fixed costs. For modeling purposes, we need not distinguish between the two. However, to estimate a take-up model, it would be important to identify distinct empirical measures likely to be associated with transaction costs and stigma. For example, stigma might be much higher for a family that has never previously received social welfare benefits than for a family that has received such benefits in the past. Transaction costs would be much higher in a child care subsidy system that was poorly administered or that required that a family come to a remote office to qualify.

[4] For example, Witte, Queralt, & Tauchen (2001) find that current and former cash assistance recipients work on average one quarter in every four.

[5] Child care subsidies may require no parental payments. However, in many states, subsidies do require that the parent pay part of the cost of care.

providers may refuse to accept child care subsidy vouchers for other reasons, such as the administrative hassle of participating in the program (e.g. long delays in being paid, paper work) or because they fear that having too many low-income children may lessen their ability to retain and attract more economically-advantaged children.[6]

Besides provider reimbursement rates, the age and health status of the children and the hours and days of work of the parents' jobs will impact the availability to the parents of child care facilities willing to accept subsidies.

The level of payment that a parent must make for care when receiving a child care subsidy (generally referred to as the parental co-payment) is another important factor that parents consider in deciding whether or not to accept a subsidy for which they are eligible. Under a co-payment system that depends exclusively on family income and size, parents face the same price for each type of care.[7] That is, the highest-priced center willing to accept vouchers will cost an eligible parent the same amount of money as the lowest-priced care available in the market. Such system increases the relative benefits of choosing the highest-priced subsidized care available, as opposed to a co-payment system that reflects the actual market prices of each type of care. This helps to explain, at least partially, the often-noted tendency of subsidized parents to disproportionately use center-based care, which is generally more expensive than other types of care available.

Most co-payment systems also require lower co-payments for the second and subsequent children in subsidized care. This makes the monetary benefits of subsidy receipt greater than they would otherwise be for families that need care for more than one child.

As noted earlier, the model developed above is a demand-side model. It only provides a meaningful conceptualization for the percent of eligible families served in states that provide child care subsidies to all eligible applicant families, such as Illinois and Rhode Island. Most states set budgets and eligibility rules for child care subsidies that result in more eligible families applying for subsidies than the state can serve. Meaningful conceptualizations of the percent of eligible families served (i.e., service

[6] In the work that we have done in Massachusetts, we have found that providers tend to have either predominately subsidized children (i.e., 80% or more of the children enrolled being subsidized) or predominately private-pay children (i.e., 80% or more of the enrolled children are unsubsidized).

[7] Besides co-payments, in some states, parents are allowed to make payments to providers over and above the reimbursement rate.

rates) for states that do not guarantee services to all applicants require consideration of government decisions regarding funding levels and of the rules that determine which families are eligible. For such states, supply as well as demand factors influence the percent of the eligible population that receive child care subsidies.[8]

When eligibility rules are set so that more families qualify for subsidies than are awarded a subsidy, some families may decide not to apply, some may apply and may be put on a waiting list for services, and some will actually receive subsidies. In such states, the number receiving subsidies divided by the total number eligible is the **service rate.**

Calculating **take-up rates** under such conditions would be more difficult. The numerator of the take-up rate would be the sum of: (1) those receiving subsidies + (2) those waiting for subsidies + (3) those discouraged from applying because they do not think they have a good chance of receiving subsidies (it would be very difficult to obtain an accurate estimate of the number of families that do not bother to apply for subsidies under these circumstances). The denominator of the take-up rate would be the same as for an entitlement program, that is, the number eligible for services.

A Brief Survey of the Literature on Take-Up Rates

Most existing estimates of take-up rates for entitlement programs are based on caseloads, for example, the proportion of those eligible for services that apply and receive benefits. Estimates are generally done at the adult or family level, since it is the adults in the family that decide to take or not to take subsidies.

Comparisons of the take-up rates for child care versus the take-up rates for other programs require that all the estimates to be compared be of take-up rates (i.e., only for states that guarantee subsidies to all eligible applicants) and that they all be calculated at the decision-making level, that is, at the family-level. For child care subsidies, however, most estimates to date have been a mixture of take-up rates and service rates. Moreover, some estimates have been calculated at the child level, while others have been calculated at the family level. Estimates at both levels may be useful since the child care subsidy program seeks to provide child care so parents can work

[8] State and local governments can shift the aggregate demand for services by changing the eligibility rules. For example, they can lower the maximum level of income that a family can receive to qualify for subsidies and thus decrease the demand for subsidies, as those who do not qualify under the income guidelines are unlikely to apply. Similarly, governments can increase the aggregate supply of subsidies by increasing the budget for such subsidies.

and also seeks to provide care that enhances children's intellectual, social and emotional development.[9]

Some estimates of take-up rates for entitlement programs are based on expenditures. Expenditure-based estimates of take-up rates give the proportion of aggregate dollar value of an entitlement that is claimed or awarded. Expenditure-based estimates generally provide higher estimates of take-up rates than caseload-based methods. This is because, consistent with the model outlined in the previous section, the monetary value of benefits awarded to recipients is higher than the monetary value of benefits that are not claimed by those eligible.[10] An eligible family will only use a program if the expected benefits of using the program exceed the fixed costs (transaction costs and stigma) of applying for the program. For example, as reported by Craig (1991), the mean benefit awarded under the British Family Income Supplement program was 11.7 British Pounds Sterling, while the mean unclaimed benefit was 8.9 pounds.

Remler, et al. (2001) note that the source data that are used to estimate take-up rates have a large effect on estimates. Estimates that are based solely on survey data generally produce imperfect assessments of take-up rates. This is because surveys are unlikely to contain sufficient detail on income sources to accurately establish eligibility. Further, survey data is subject to response and non-response biases and it is not generally verified. In contrast, administrative data can yield more accurate estimates of take-up rates. Specifically, programs such as the child care subsidy program have multiple screens for eligibility (e.g., age of child, number of hours of work of the parent and level of family income). Such programs also have detailed rules regarding what types of income will and will not be counted for the purpose of determining income eligibility. At the time of eligibility determination, the potential recipient must provide documentation to prove eligibility (e.g., pay stubs, time sheets, birth records). Administrative data, unlike survey data, reflects the application of all these screens.

However, administrative data has weaknesses for measuring take-up rates. For example, studies have shown that administrative agencies sometimes provide benefits

[9] There is a tradition of measuring service rates at the child level for early care and education programs like Head Start.

[10] A person who is eligible to receive a benefit of $600 is more likely to claim it than a person who is eligible to receive only $50.

to those who appear not to be eligible and fail to qualify those who appear eligible. Often individuals appear ineligible when they are eligible or vice versa because they happen to be in transition from one status to another at the time the data are recorded. For example, while receiving child care subsidies, a parent may have lost her job, but her child may not be immediately dropped from care when she becomes unemployed. In fact, most child care subsidy programs allow for a transition period of 4 to 6 weeks before terminating subsidies. Also, the quality of administrative data depends upon the ability and conscientiousness of the staff and administration (including database management staff) of the social service agency.

Another issue that may result in the provision of benefits to those who are not eligible is the length of the eligibility re-determination period. Other things being equal, the longer the period between determinations of eligibility, the larger will be the proportion of ineligible families receiving benefits. While families using most social welfare programs are required to report promptly any changes in status that would affect their eligibility, many choose not to do so until their next eligibility re-determination interview, which may not take place for a few months. Eligibility for child care subsidies is generally reassessed every six month. This re-determination period is long, relative to that for other programs such as cash assistance.

Most studies of take-up and service rates have used cross sectional data. Such data provides no information about the dynamics of subsidy receipt, which may fluctuate a great deal during a period of several month or years.[11] As the model presented in the previous section makes clear, dynamics can be very important at the individual and aggregate levels since it provides information on impacts of administrative and funding changes. For example, HHS's annual report to congress on take-up rates for Food Stamps, TANF and SSI has provided very valuable longitudinal data regarding the impact of welfare reform (U.S. Department of Health and Human Services, 2001).

Survey of the Literature on Take-Up Rates for Child Care Subsidies

The earliest estimates of take-up and service rates for child care subsidies that we are aware of appeared in a 1999 study done by HHS researchers (U.S. Department

[11] Since the late 1990s, HHS has provided longitudinal estimates of take-up rates for Food Stamps, TANF and SSI. See, for example, U.S. Department of Health and Human Service (2001). Calculations of take-up rates for TANF will become increasingly difficult as the 5 year time limits affect larger numbers of families. Families that have exhausted their 5 years of eligibility for TANF will need to be excluded from estimates of the number of TANF-eligible families (the denominator of take-up rates).

of Health and Human Services, 1999). HHS combined administrative data on the number of children served with federal and state funds directly allocated or transferred to the Child Care & Development Fund (CCDF)[12] with estimates of the number of children eligible for child care subsidies from the Urban Institute.[13]

The HHS report estimated that, in an average month in 1998, only 15% of low-income and moderate-income children eligible under state rules for CCDF child care subsidies actually received help through this program. The report also estimated that only 10% of eligible children would have been served if states had chosen to set eligibility limits at the maximum levels allowed under Federal law (i.e., 85% of SMI) (U.S. Department of Health and Human Services, 1999).

Neither of the HHS estimates described above are take-up rates as conventionally defined. First, both estimates are child-level estimates, while, as noted earlier, most estimates of take-up rates for social welfare benefits are done at the family level, not at the child level. Second, both estimates consider only CCDF subsidies, that is, they are estimates of the proportion of eligible children that were receiving a CCDF-funded child care subsidy. Several other sources of child care and education subsidies were not included in the estimates, such as the number of children served directly through TANF, through state-funded subsides, through public-school pre-K programs, and through Head Start Programs.[14]

HHS estimates of the proportion of children served if all states were to set income-eligibility at 85% of SMI may best be considered measures of federal and state commitment to serve federally--eligible families under the CCDF program. This depends

[12] The funding for CCDF is complicated. CCDF requires that the states maintain a certain level of funding (i.e., maintenance of effort [MOE] requirement) to obtain some federal funding for child care subsidies. To obtain additional federal funding for child care subsidies, states must provide matching funds. To provide additional child care subsidies, many states also transfer funds from TANF to CCDF. The HHS estimates of the number of children served included children funded by both state and federal CCDF funding and through funds transferred to CCDF from TANF. However, the estimates did not include the number of children served by state spending above the federally required MOE and match nor did they include the children that received funds directly through TANF. See U.S. Department of Health and Human Service (1999) for a discussion of the methodology used and Loprest et al. (2000) for a discussion of funding for CCDF.

[13] To obtain estimates of the number of eligible children, Urban Institute researchers used information on the characteristics of state CCDF programs from state CCDF plans for 1997-1999, the Urban Institute's TRIM3 micro-simulation model and March CPS data for 1996-1998 (U. S. Department of Health and Human Services, 1999; Giannarelli, et al. 2001).

[14] HHS researchers are aware of these omissions, but did not have data to allow inclusion of all types of subsidies.

on state and local revenue-raising capacity, on the level of provision of other types of care and education programs and on public attitudes toward public-sector spending in general and toward public-sector spending on CCDF subsidies for the low-income population in particular.[15]

HHS estimates of the proportion of children eligible under state rules that actually receive subsidies are closer to standard estimates of take-up rates for some states. For example, the HHS estimates that 27% of eligible children in Illinois received a CCDF subsidy and 26% of eligible children in Rhode Island received a CCDF subsidy respectively. Both Illinois and Rhode Island guarantee CCDF subsidies to families eligible under state rules. However the HHS estimates from Illinois and Rhode Island differ from standard take-up rates because they are calculated at the child level, rather than at the family level.

For states that do not guarantee subsidies to eligible applicants, the HHS estimates are best considered service rates, for example, 4% in California and 11% in Florida. These service rates under-estimate take-up rates because the numerator used in calculating them does not include the children of families on the waiting list (e.g., both California and Florida have waiting lists) or the children of applicants that have been discouraged from applying because of a scarcity of subsidies.

Building upon HHS's work, the National Study of Child Care in Low-Income Families provided child-level estimates of take-up rates and service rates for April 1999 for 17 states (Collins, et al., 2000). Like the HHS study, the National Study provides estimates of the proportion of federally eligible and of state-eligible children that received subsidies. The National Study worked directly with states and, thus, was able to refine its estimates of state rules for eligibility and of the number of children served. The National Study included not only children receiving CCDF subsidies, but also children receiving subsidies directly through TANF and children receiving subsidies funded completely by state sources.[16] As with the HHS study, results emphasize the proportion of federally eligible children who were receiving subsidies.

We focus on the proportion of state-eligible children receiving subsidies because it is closer to standard estimates of take-up rates. In April 1999, according to Collins et

[15] For a discussion see Tannenwald (2001).
[16] The National Study also updated the estimates of the number of children eligible under state rules by using the 1999-2001 state plans.

al., (2000), the estimated take-up rate for CCDF, TANF and state-provided child care subsidies in Illinois was 47%, while the estimated service rate in Minnesota (a state with a waiting list) was 14%.

In recently completed work, researchers at the University of Chicago's Chapin Hall Center for Children provide **family-level** estimates of take-up rates for child care subsidies in Illinois (Lee, George and Reidy, 2001). This study also provides information about the dynamics of child care subsidy receipt and how take-up rates vary across time. The study follows seven cohorts of single-parent recipients of cash assistance (i.e., TANF) from the time they begin receiving cash assistance through the fourth quarter of 1999. The researchers use administrative data for the cash assistance program, for the child care subsidy program and for the Unemployment Insurance (UI) program. They count cash assistance families as eligible for child care subsidies if they have earnings according to UI records and a child less than 13 years of age.

For the Chapin Hall study described above, the richest information on the dynamics of child care subsidy take up is available for those recipients who came into the cash assistance program during the first quarter of 1997. These recipients are tracked over a three-year period. Based on data in their report, we constructed Figure 1 to show the take-up rates for child care subsidies over the three-year period for this cohort. During the first quarter of 1997, all members of the cohort were, by design, new entrants to the cash assistance program. Eleven percent of these new entrants with UI earnings and with a child less than 13 years of age received child care subsidies. The estimated take-up rate for those remaining on cash assistance increases continuously and rapidly until 57% of those still receiving cash assistance in the fourth quarter of 1999 also receive child care subsidies.

We use the lower line in Figure 1 to illustrate Chapin Hall's estimates of the take-up rates for child care subsidies for those in the 1997 Quarter 1 entrants cohort who exit the cash assistance system. The estimated take-up rate for this group is set at zero in the first quarter of 1997 because no one has yet left cash assistance. During the second quarter of 1997, when approximately 14% of the cohort have left cash assistance, the estimated take-up rate for child care subsidies is 13%, higher for leavers than for cash assistance recipients in the first quarter of their eligibility. From this point on, the

estimated take-up rate for leavers decreases to 11% and then increases gradually to 24% in the last quarter of 1999.

We use the middle line in Figure 1 to illustrate the overall take-up rate for child care subsidies for both current and former cash assistance recipients who were part of the 1997 Quarter 1 entrants cohort. The estimated take-up rate for both current and former cash assistance recipients in this cohort goes from 11% in the first quarter of 1997 to 41% in the last quarter of 1999.

Estimates of Take-Up Rates for Child Care Subsidies in Rhode Island

To date none of the estimates of take-up rates for child care subsidies can easily be compared to estimates of take up for other social welfare programs. To allow such comparisons and to provide insights on trends in aggregate take-up rates for current and former cash assistance recipients, we use unusually comprehensive administrative data for the cash assistance program, the child care subsidy program and the Unemployment Insurance (UI) program[17] in Rhode Island.

To make our work comparable to Chapin Hall's work, we consider only female-headed, single-parent households. The administrative records we use include all current and former cash assistance recipients (n=29,253 families) in Rhode Island from the second quarter of 1996 through the second quarter of 2000. We determine whether or not each family was receiving child care subsidies during each of the 17 quarters of our study by checking the administrative records of the child care subsidy program in Rhode Island.

For those currently receiving cash assistance in Rhode Island, we define child care eligibility based on hours of work[18] (minimum required 20 hours per week), earnings from UI records,[19] participation in approved non-work activities (e.g., education and training) as reflected in the cash assistance administrative records, and the

[17] As in the Chapin Hall study, we use UI records to obtain earnings since no other administrative source of earnings is available for those who have left cash assistance. However, from 10% to 24% of those who appear in the child care subsidy records as working more than 20 hours per week do not appear to be working in the UI records.

[18] For cash assistance clients, hours of work were obtained from cash assistance administrative records. For former cash assistance clients, estimates of hours of work were obtained by dividing UI earnings by the estimated wage rate. The estimated wage rate was obtained from a model of wages for former cash assistance clients that were receiving child care subsidies.

[19] We use both family size (from cash assistance records) and UI earning to determine income-eligibility since income-eligibility varies by family size in Rhode Island. We include only earnings and not other sources of income because we do not have other sources of income for those who have left cash assistance and are not receiving child care subsidies.

presence of one or more age-eligible children in the family, which was calculated using birth dates for the children in the cash assistance administrative records.[20] For former recipients, we define eligibility based on hours of work, UI earnings and the presence of one or more age-eligible children in the family.

Figure 2 provides our estimates of the family-level take-up rates for child care subsidies in Rhode Island. As can be seen in Figure 2, we estimate that, overall, from 44% to 53% of eligible current and former cash assistance recipients received child care subsidies in Rhode Island between the second quarter of 1996 and the first quarter of 2000.[21] Figure 2 also shows that the take-up rate for those receiving cash assistance was higher than the take-up rate for those who had left the program in the early part of our study period, while the take-up rate for leavers was consistently higher than for those on cash assistance after the first quarter of 1998.[22]

By combining administrative data from Rhode Island with Urban Institute estimates of the number of eligible children in Rhode Island, we are able to provide estimates of both the child-level and family-level take up rates for all eligible families (i.e., low-income families never on cash assistance as well as current and former cash assistance recipient). We estimate that in the fall of 1999 the child-level take-up rate for all eligible children was 32% and the family-level take up rate for all eligible families was 40%.[23]

Should the Take-Up Rate for Child Care Subsidies Be Measured at the Family Level or at the Child Level?

One reason that researchers have provided estimates of take-up rates and service rates at both the family-level and the child-level is the dual purpose served by the child care subsidy program. The child care subsidy program provides child care subsidies to allow parents to work and to improve the child care available to low-income children. If one sees child care subsidies as primarily facilitating work, then

[20] Rhode Island increased the maximum eligibility age for able-bodied children from 12 to 15 years during the period of our data and increased income eligibility from 185% of FPL to 225% of FPL. Our estimates of the number of eligible families reflect these changes.

[21] While the take-up rate increased by only 9% during our study period, the number of current and former cash assistance families receiving child care subsidies almost doubled.

[22] The Family Independence Program (FIP), which is Rhode Island's welfare reform program, began in May 1997. In June 1998, Rhode Island began a major reform of the child care subsidy program, called Starting RIght.

[23] To obtain the family-level take up rate, we divided the child-level take-up rate by .8. We used .8 because on average RI families used subsidized care for 80% of their eligible children.

measurement of take-up rates at the family level seems most appropriate. If one sees child care subsidies as primarily benefiting children, then measuring take-up at the child-level may be most appropriate. If child care subsidies are expected both to facilitate parental work and to benefit children, estimates of take-up at both the family-level and the child-level can be useful. However, in order to compare rates across states and across time, they must be measured consistently at either the family level or the child level.

For the purpose of understanding family decision making, a strong case can be made that take-up rates should be measured at the family level. After all, it is the parents who decide whether or not to apply for a child care subsidy and for which of their children to apply for a subsidy.[24] The benefits of receiving child care subsidies increase as the number of children in the family for whom subsidies will be used increases. The increase in the benefit of child care subsidies with the number of children in the family who are subsidized is magnified in states where the dollar amount of co-payments for each additional child declines as the number of children receiving subsidies increases.[25] Despite such benefits, many families will want subsidies for some of their eligible children, but not necessarily for all the children in the family.[26] In Rhode Island, for example, 60% of families with two eligible children used care for both eligible children, but 40% did not. As the number of subsidy-eligible children in the family increases, the proportion of eligible children for whom a family uses subsidies declines. This means that take-up rates measured at the child level should be consistently below take-up rates measured at the family level.

Consider the implications of a 100% take-up rate measured at the child level. This would mean not only that every eligible family received a child care subsidy but that the family received a subsidy for every one of its eligible children. Estimation of take-up rates at the child level provides additional useful information about family

[24] In the Rhode Island data, 57% of single-parent families had one child receiving subsidies and 43% had more than one child receiving child care subsidies. The median number of children with subsidized care per family was 1 and the mean was 1.6. Families with child care subsidies had from 1 to 8 children in subsidized care.

[25] In Rhode Island the dollar amount of co-payments parents make declines rapidly with each additional child in care and ceases to increase after the fourth child in subsidized care. This means, for example, that, having 7 children in subsidized care costs the family exactly the same as having 5 children in care.

[26] Alternative sources of formal care and early education, often free, generally are more available for children over the age of 4 and may be preferred by some families. Informal care by relatives, friends or neighbors may be preferred for infants and toddlers.

decision-making. However, it mixes information about the families' overall decision to apply for subsidies with their individual decisions regarding which of their qualifying children they wish to enroll in the subsidized child care program.

Measurement of take-up rates at the child-level can provide an indication of how many more subsidies are needed. However, these estimates need to adjust for the fact that larger families often will not want subsidies for all of their eligible children.

Measurement at the family level allows comparisons with take-up rates for other programs. For example, estimates of family-level take-up rates (for states with entitlements) could be a useful addition to the annual Indicators of Welfare Dependency report that HHS makes to Congress (U.S. Department of Health and Human Services, 2001). However, it would probably require that the report be renamed. A possible title might be Welfare Dependency and Availability of Services to Enhance Two-Generational Self Sufficiency.

What Types of Data Are Best Used in Estimating Take-up Rates?

Craig (1991) makes a strong case that either surveys designed specifically to measure take up or rich administrative data are best suited to measuring take-up rates. We agree, but we suggest that work that combines survey and administrative data can provide better estimates. HHS has pursued this approach with the estimates of take-up rates and service rates that it has produced to date. However, we would suggest that greater use of administrative data could improve future estimates.

General-purpose surveys like the CPS are not well suited to the task of estimating the eligibility for child care subsidies of cash assistance recipients. For example, current HHS estimates assume that an unemployed person who is a student is eligible for child care subsidies (Giannarelli, et al., 2001). However, in many states, education per se is not an activity that would qualify a cash assistance recipient for child care subsidies. In addition, education generally is not an activity that would qualify non-recipient families for child care subsidies. Better estimates of eligibility for child care subsidies may be obtained by having states report the number of cash assistance recipients who are working or participating in approved activities (other than work). For low-income families that are not cash assistance recipients, however, in the absence of special surveys, a general purpose survey may be the only way of estimating the number who are eligible for child care subsidies.

Should Caseload or Expenditure Estimates of Take-Up Be Used?

Expenditure-based estimates of take up calculate the approximate proportion of aggregate dollar value of an entitlement that is claimed or awarded. We believe that such estimates of take-up rates may be more useful than caseload measures, although few such measures exist at present. The reason for our preference for expenditure-based estimates is that caseload estimates based on eligibility figures are likely to overestimate the proportion of the population that would avail themselves of child care subsidies. Families make their cost-benefits analyses, and they are unlikely to apply for a benefit unless the value of the benefit exceeds their estimated transaction costs and stigma of applying for it. Many who are eligible for benefits decide that it is not worth their time and effort to apply for a public subsidy.[27] Those families who decide to take subsidies are likely to be eligible for benefits of higher monetary value than those who decide not to take subsidies. Thus, expenditure-based estimates generally provide higher estimates of take up than caseload-based methods.

What Is the Take-Up Rate for Child Care Subsidies?

As shown in the sections above, there is no easy or consistent answer to this question. Take-up rates vary across states, across time and across estimation methods. They also vary depending upon whether they are measured at the family level or at the child level.

In light of the discussion above, consider the multiple estimates of take-up rates available for Rhode Island (RI) and Illinois (IL). HHS estimates that 26% of children eligible under the Rhode Island child care subsidy program received CCDF-funded subsidies in an average month during April through September 1998. Using RI administrative data and revised Urban Institute estimates of the number of eligible families, we estimate that 32% of eligible children received subsidies in the fall of 1999. Using administrative data, we estimate that slightly more than 50% of eligible, single-parent families that were current or former recipients of cash assistance received child care subsides in RI during 1998 and 1999. For all eligible families (those never on cash as well as those on cash and two-parent as well as single-parent families), we estimate that the family level take-up rate for child care subsidies was 40% in the fall of 1999.

[27] Others, of course, may not be aware that subsidized care is available, or they may not be able to get it together to apply for care.

Our estimates for Rhode Island also indicate that the take-up rate for child care subsidies has been increasing, from 44% in the second quarter of 1996 to 52% in the second quarter of 2000 (see Figure 2). This increase in take-up rates has come in the face of an approximate doubling of the number of families eligible for child care subsidies in RI.

HHS estimates that 27% of children eligible under the Illinois child care subsidy program received CCDF-funded subsidies in an average month during April through September 1998. Researchers conducting the National Study estimate that 47% of children eligible under the Illinois subsidy program received subsidies in April 1999.[28] Chapin Hall researchers estimate that between 28% and 31% of eligible families in their 1997 Quarter 1 cohort of single-parent cash-assistance recipients received child care subsidies during the second and third quarters of 1998. They further estimate that 40% of the members of this cohort received subsidies in the second quarter of 1999. By the last quarter of 1999, 47% of eligible families in the cohort were using child care subsidies. Lags in take up are apparent in the Chapin Hall study. Documenting this is one of the major contributions of the study.

Given all the above, what is the take-up rate for child care subsidies in Illinois and Rhode Island? The simple answer is that there is no single take-up rate. The take-up rate varies widely across methodologies and samples. It also varies across time, as the number of eligible families changes due to changes in social welfare programs (e.g., welfare reform) and in the economy.

Overall, our best estimate is that the family-level take-up rate for child care subsidies in IL and RI in early 2000 was between 40% and 50%. For Rhode Island, we estimate that the family-level take up rate for all families was approximately 40% in late 1999. These family-level take-up rates approach lower-end estimates of take-up rates for other means-tested social welfare benefits, such as cash assistance, Food Stamps and Medicaid.[29] This seems reasonable, given the availability of informal child care (e.g., kith and kin) and of other subsidized formal child care and early education (e.g., Head Start and public-school pre-K).

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[28] The National Study provides no estimate of take-up for Rhode Island.

[29] At this point, we are not aware of any estimates of the take-up rate for low-income families that have not been on cash assistance. One would suspect that the take-up rate for such families would be below that for current and former cash assistance recipients. Thus, overall take-up rates that include this group are likely to be lower than the rates we report.

What about take-up rates for states that do not guarantee subsidies? Such estimates would be useful, but like expenditure-based estimates of take-up rates, they are simply not available. They would require compilation of state waiting lists and specialized surveys to determine how many families know about and would apply for subsidies if subsidies were guaranteed.

What Do Service Rates Tell Us?

For states that do not guarantee child care subsidies to all eligible families that apply, we have only estimates of service rates. These estimates are useful, but they should not be compared to take-up rates because they are determined both by governments' decisions and by families' decisions regarding the child care subsidy program. That is, service rates are determined by both the demand for subsidies by families and by the supply of subsidies made available by federal, state and local governments).

Service rates provide valuable information about the consistency of state budgetary and eligibility policies. For example, by lowering its income-eligibility and guaranteeing subsidized care to all eligible applicants, Illinois was able to make its income eligibility and budgetary policy consistent. By way of contrast, states like Virginia (with income-eligibility up to 85% of SMI) and Minnesota (with income-eligibility up to 75% of SMI) have very generous income eligibilities, but they are not able to budget sufficient subsidy dollars to serve all eligible applicants. See Table 2. For example, the National Study indicates that Virginia had a service rate of 27% and Minnesota had a service rate of 14% (Collins, et al., 2000). The inconsistency between the eligibility rules and the budgets in these states is reflected in their lower service rates and in their waiting lists.[30]

Indicators of Trade Offs in Child Care Policies

It is important to understand and to evaluate the trade offs that federal, state and local governments make between providing subsidized care so that low-income

[30] States with waiting lists for child care subsidies have explicit or implicit systems for allocating scarce subsidies across eligible applicant families or they allocate subsidies on the basis of the queue (e.g., who applies first). For example, Florida has an explicit priority system that it uses to allocate child care subsidies (see Queralt, et al., 2000 for a description), while Massachusetts has an implicit set of priorities that give preference to current and former cash assistance recipients over income-eligible families who have not participated in the cash assistance program (see Lemke, et al., 2001). The equity of some priority systems could be challenged. Further, some priority systems do not meet the federal regulatory requirement that eligible "very-low-income" families be given priority for receipt of child care.

parents can work and providing child care services that enrich children and prepare them for school. To do this one requires both a measure of the extent to which low-income families can obtain child care subsidies and a measure of the comprehensiveness or depth of services provided to low-income children in subsidized child care.[31] We have data to provide such an assessment only for Rhode Island.

Table 1 provides estimated family-level take up rates[32] for all eligible RI families for state fiscal year (SFY)[33] 1996 through SFY2001 and real average expenditures per subsidized child. While the real average expenditure per subsidized child is not a perfect measure of the child care environment, it is not an unreasonable one. Further, it is a measure that most states should be able to calculate on an ongoing basis. During the course of Rhode Island's welfare reform, which made child care subsidies an entitlement for all low-income families, and through its major early care and education initiative, the Starting Right program, real expenditures per subsidized child in RI increased by 77% (from $2858 per subsidized child in SFY1996 to $5064 per subsidized child in SFY2001). During this period the family-level take-up rate for child care subsidies increased by 35% (from 32% to 43%). The increase in the take-up rate is particularly noteworthy because during this period RI also increased the income-eligibility for subsidized care (from 185% of FPL to 225% of FPL) and the age-limit for subsidized care (from 12 to 15 years).

The National Study provides information to allow a partial assessment of the trade offs being made by 16 additional states. For Illinois, the National Study estimates that the child-level take-up rate is 47%. For the 16 other states, the study estimates child-level service rates that range from 14% in Minnesota to 50% in Massachusetts.[34]

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[31] The importance of this trade off for states was pointed out to us by Sherry Campanelli, Associate Director of the RI Division of Individual and Family Support.

[32] To estimate the family-level take-up rate for the fourth quarter of 1997 and the fourth quarter of 1999, we started by using the actual number of children receiving child care subsidies each year from all funding sources (state, Title XX, TANF, IV-A, CCDBG and CCDF) as the numerator of the child-level take-up rate and the Urban Institute's estimates of the number of children eligible under state rules in October 1997 and October 1999 as the denominator. Then we divided this rate by .8 to obtain a family level take-up rate. We used .8 because on average RI families use subsidized care for 80% of their eligible children. We estimated take-up rates for all other quarters by interpolating between October 1997 and October 1999 and extrapolating for periods before October 1997 and after October 1999. We used a trend variable for this interpolation and extrapolation.

[33] RI's SFY runs from July 1 through June 30.

[34] The Massachusetts child-level service rate seems high given the substantial waiting list in that state. The high number may result from the inclusion of protective service child care in the number of children receiving subsidies.

Table 2 provides our best estimates of the extent to which low-income families can obtain child care subsidies in the states covered by the National Study. To obtain our estimates, we multiply the number of state-eligible children by the estimated child-level take-up rate for child care subsidies for each state. The result is the percent of state-eligible likely applicant children who were served in 1999. We present these estimates in column 3 of Table 2. As can be seen in column 3, by this measure, Illinois and Massachusetts, despite their relatively low income eligibility, make child care subsidies more available to low-income children than do states such as New Mexico and North Carolina that have income eligibility levels closer to the maximum allowed by federal regulation. Estimates of the percent of federally eligible likely applicant children served by each state are presented in column 4 of Table 2.

Table 2 also provides a measure of the comprehensiveness and depth of services received by children in subsidized care in the 16 states included in the National Study. To provide a measure of comprehensiveness and depth of services, we use real expenditures per child served and per state-eligible likely applicant child. Estimated real expenditures per state-eligible likely applicant child range from $1330 in Virginia to $4153 in Massachusetts. Real expenditures per child served (column 5 of Table 2) range from $2692 in New Mexico to $5913 in Minnesota. Thus, we can see, for example, that Minnesota serves only 30% of state-eligible likely applicants, but the state spends relatively generously on the children it serves. One could interpret this as indicating that Minnesota has decided to limit the availability of subsidies in order to provide children in subsidized care with more comprehensive or in depth care. By way of contrast, Illinois chooses to serve more families (greater availability of subsidies) but the state spends substantially less per child.

The trade off between the availability of subsidies for low-income families and expenditures per child is a difficult one for states to make. By providing both a measure of the extent to which eligible families that are likely to apply for subsidies will receive subsidies and a measure of the comprehensiveness of subsidized care, the trade offs made by the states become clearer.

Conclusion

We develop a model of an eligible family's decision to take or not to take child care subsidies. This decision depends on the benefits the family expects to derive from the subsidies and on the information the family has about the availability of subsidies.

We contend that a demand-side model of child care subsidy use and the term "take-up" rate are only appropriate for programs that guarantee services to all eligible, applicant families. After welfare reform, most states do not offer such guarantees. For states that do not guarantee child care subsidies to all eligible families, both government decisions (the supply side) and family decisions (the demand side) should be considered in modeling take-up rates. For states that do not guarantee subsidies, the proportion of eligible families that receive subsidies is a service rate not a take-up rate.

We survey the general literature on take-up rates for social welfare programs and review existing estimates of the take-up rates and service rates for child care subsidy programs in various states. We conclude that take-up rates vary considerably across methodologies and samples, as well as across time periods. Based on our review and our own estimates of take-up rates, we suggest that in the year 2000 take-up rates for child care subsidies, measured at the family level, were around 40%. Take-up rates appear to be higher for current and former cash assistance recipients than for other low-income families, at least in Rhode Island.

We conclude by suggesting indicators that illustrate the trade offs that governments make when providing child care subsidies. Child care subsidies serve the dual purpose of allowing parents to work and preparing their children for school. To facilitate parental work, some governments choose to focus on providing child care subsidies to as many families as possible. To provide more comprehensive child care services, other governments focus on the type of care received by low-income children. Most states would like to both facilitate the work of low-income parents and to provide comprehensive and enriching child care experiences for low-income children. However, achievement of both goals simultaneously would require substantial commitment of funds.

We suggest that the percent of federally eligible **families** (i.e., those with incomes <= 85% of SMI) that receive child care subsidies is one possible indicator of the degree to which a child care subsidy program is facilitating parental work. Real expenditures per child provide an indicator, however imperfect, of the investment the

state is making on preparing its future work force. Using these two indicators, we find that Illinois has designed its program primarily to facilitate parental work, while Minnesota has decided to put greater emphasis on the future of its children by providing them with more comprehensive or in-depth services. During the last 5 years, Rhode Island has increased both the availability of child care subsidies and expenditures per child. This was only possible because the State committed substantial additional funds to the child care subsidy program.

Given the recent decline in revenue, states are currently making important changes in the child care subsidy program. Using indicators such as those suggested above, one can more clearly discern the trade offs that are being made. Documentation of the trade offs made when setting child care policies can result in more informed public debate and possible in better child care policies.

Figure 1
Take-Up Rate For Child Care Subsidies in Illinois
TANF Entrants 1997Q1
n=6153

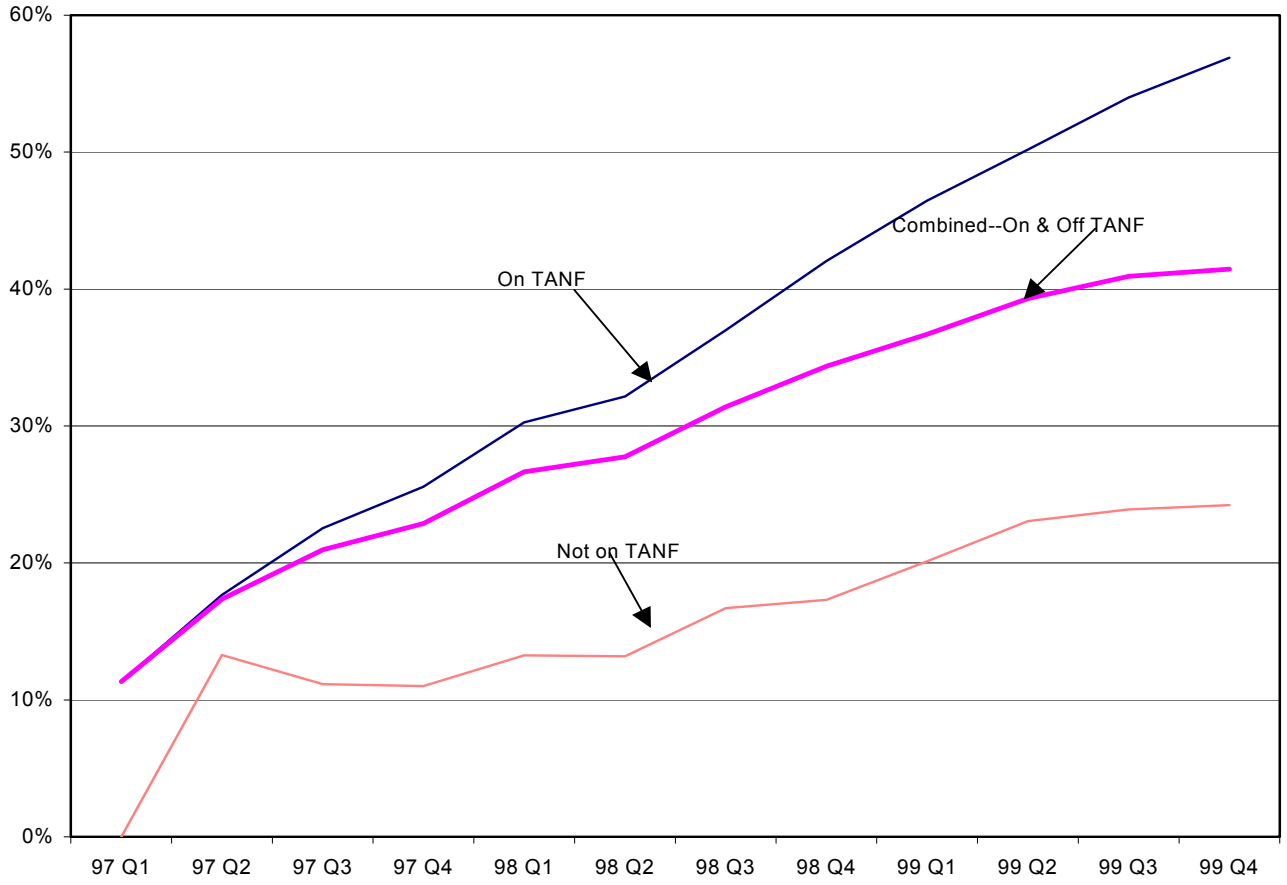

Figure 2
Rhode Island Take-Up Rates for Child Care Subsidies
All Current and Former TANF Recipients--Q2 1996-Q2 2000
n=29,253

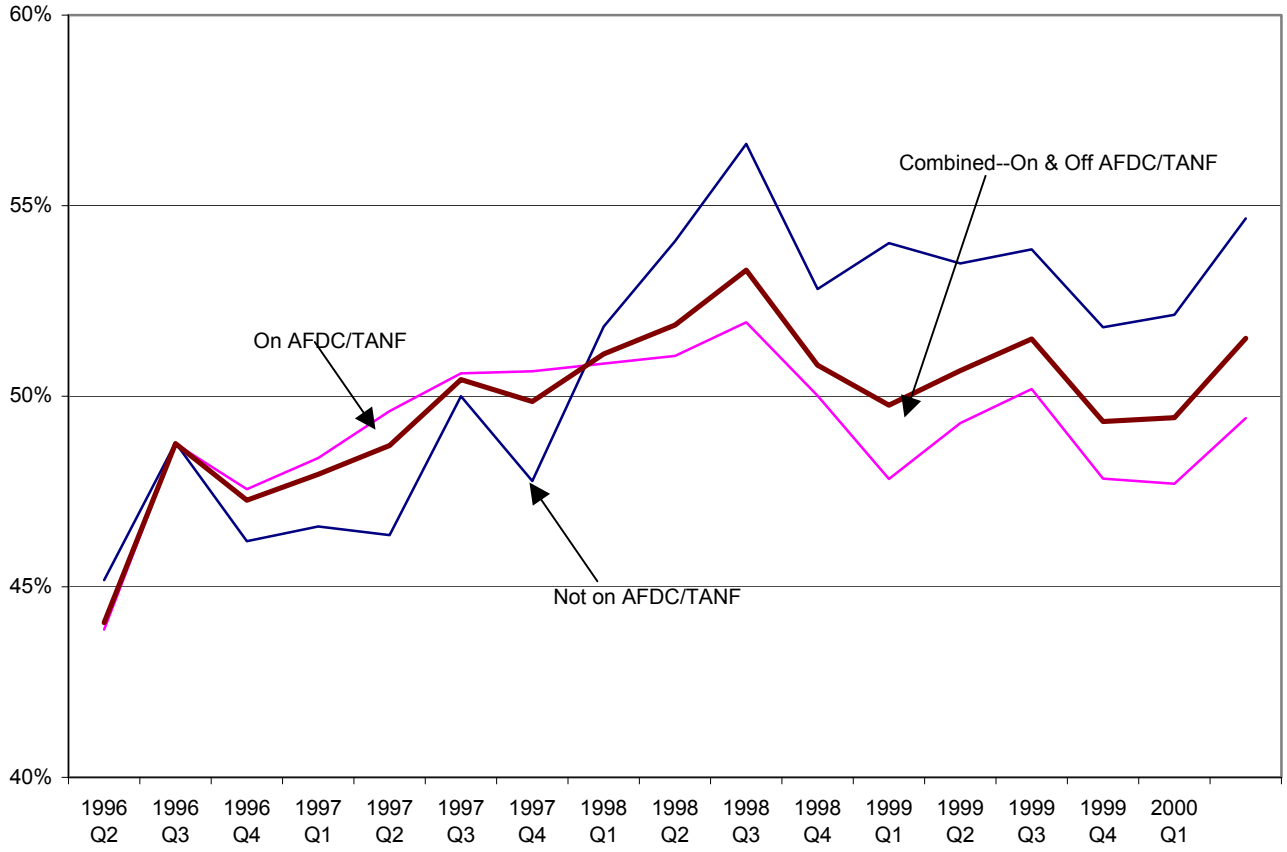

Table 1
Rhode Island: Take-Up Rate For Child Care Subsidies and Dollars Spent per Child

Year	Total Budget (real dollars)*	Number of Children	Real Average Dollars per Child	Family-Level Take-up rate
SFY1996	$14,242,958	4983	$2,858	32%
SFY1997	$16,681,338	6066	$2,750	33%
SFY1998	$20,831,992	6830	$3,050	36%
SFY1999	$28,426,532	8206	$3,464	38%
SFY2000	$46,649,104	10553	$4,420	41%
SFY2001	$62,178,426	12279	$5,064	43%

Table 2

Income-Eligibility and Real Expenditures per Child Eligible under State Rules

	Income Eligibility (% of SMI, State June 1999)	Percent of Federally Eligible (<=85% of SMI) Low-Income Children	Percent of State-Eligible Likely Applicant Children Served, 1999**	Percent of Federally Eligible Likely Applicant Children Served, 1999	Real Annual Expenditure (per State-Eligible Likely Applicant Child, 1999)	Real Annual Expenditure per Child Served, 1999)
Alabama	43%	50%	63%	31%	$1,782	$2,839
California	73%	87%	N.A.	N.A.	N.A.	N.A.
Indiana	53%	64%	42%	27%	$1,572	$3,713
Illinois	54%	53%	100%	53%	$2,934	$2,934
Louisiana	91%	95%	43%	41%	$1,530	$3,567
Massachusetts*	42%	46%	107%	49%	$4,153	$3,890
Michigan	54%	66%	70%	46%	$2,744	$3,925
Minnesota	70%	84%	30%	25%	$1,800	$5,913
New Jersey	48%	53%	40%	21%	$2,231	$5,664
New Mexico	83%	100%	32%	32%	$833	$2,692
New York	60%	72%	60%	43%	N.A.	N.A.
North Carolina	75%	81%	40%	33%	$2,056	$3,446
Ohio	55%	59%	55%	33%	$1,371	$3,323
Tennessee	56%	63%	32%	20%	$1,875	$3,435
Texas	51%	63%	32%	20%	$1,326	$4,108
Virginia	54%	70%	57%	40%	$1,330	$2,321
Washington	59%	86%	47%	40%	$1,351	$2,933

* The National Study's child-level take up rate for Massachusetts seems high, perhaps because protective services children have been included in the number of children served.
**We assume a child-level take-up rate of 47%, which is the take up rate for IL.
Source: Data used to construct this table are from Collins, et al. (2000)

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