Tiering's Effect on the Number of CACFP Homes

Reimbursement tiering altered the incentives for family child care homes to participate in the CACFP. For those who would qualify as Tier 1, the participation incentive was essentially unchanged. For potential Tier 2 homes, however, the participation incentive was cut approximately in half. One would therefore expect a smaller proportion of these potential Tier 2 homes to participate in the CACFP after reimbursement tiering took effect in July 1997, other things being equal.

This section reviews the changes from 1997 to 1999 in the number of family child care homes and centers participating in the CACFP. It places the 1997-1999 changes in the context of the 11-year trend from 1989 to 1999 to see whether the recent changes represent a specific effect of the legislation, sharp changes in economic or demographic factors, or a continuation of longer term trends.

The new CACFP meal reimbursement structure was accompanied by a decline in the number of participating family child care homes. The analysis indicates that tiering was responsible for this decline and that, had tiering not been introduced, the number of CACFP homes would probably have increased.

Number of Participating Family Child Care Providers

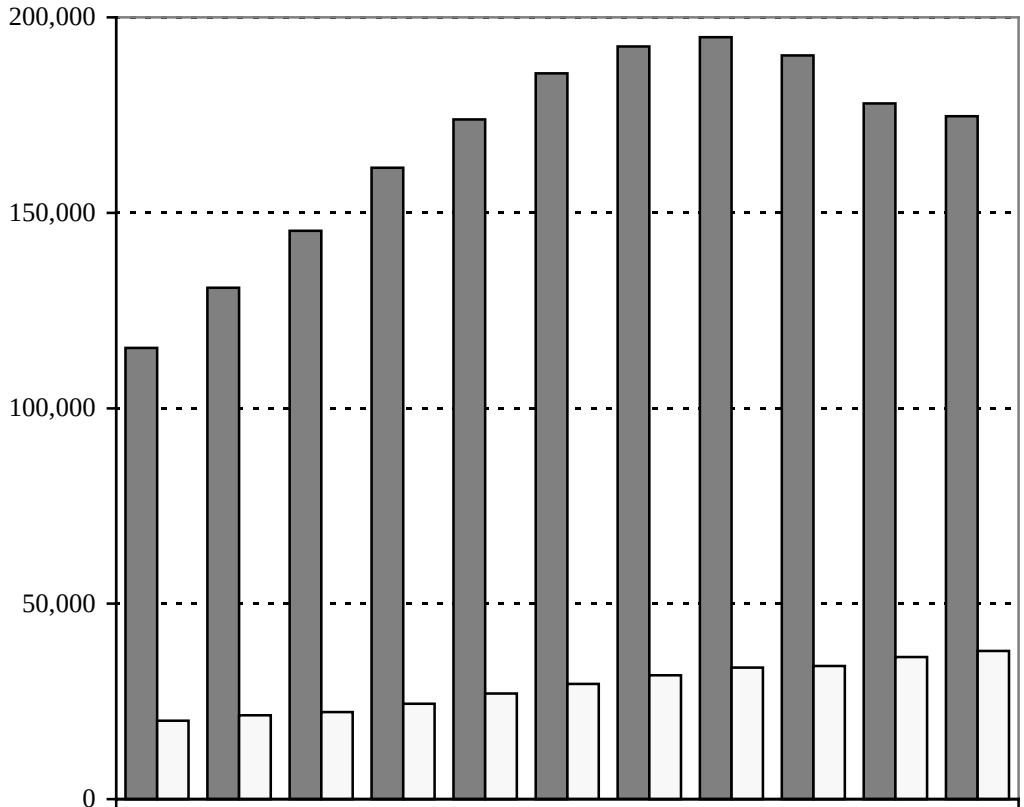
The number of participating CACFP providers grew strongly during the early 1990s (Exhibit 3).[8] The growth rate then slowed, and the number of participating providers peaked in 1996 at about 195,000. The subsequent 3 years saw declines to about 190,000 providers in 1997, 178,000 in 1998, and 175,000 in 1999. About 15,000 fewer family child care homes participated in the CACFP in 1999 than in 1997, a decline of 8.1 percent.

It is interesting to contrast the pattern for CACFP homes with the number of child care centers participating in CACFP. The number of CACFP centers consistently increased during the 1990s, growing more rapidly (in percentage terms) than the number of homes in each year from 1992 onward. And while the number of homes shrank by 8 percent from 1997 to 1999, the number of centers increased 11 percent in the same period. Clearly, whatever forces led to the decline in the number of CACFP homes did not prevent growth in the number of CACFP centers.

The 1997-99 reduction in CACFP family child care homes appears to be concentrated among Tier 2 providers—the lower reimbursement group. Tier status has been recorded only since tiering took effect, so we do not know what percentage of providers would have been Tier 1 or Tier 2 before July 1997. During the post-tiering period, however, it is clearly the Tier 2 group whose numbers have declined. From the fourth quarter of fiscal year 1997 to the corresponding quarter in 1999, the overall number of CACFP homes dropped by almost 7,200. That net decline resulted from a substantial reduction in the number of Tier 2 homes (12,500 homes), which was partially offset by a smaller

[8] All years are Federal fiscal years unless otherwise indicated. See Appendix B-1 for patterns by State.

Exhibit 3
Average Number of Family Child Care Homes and Centers Participating in the CACFP, Fiscal Years 1989 - 1999



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CACFP homes	115,437	130,795	145,371	161,536	173,905	185,667	192,571	194,897	190,227	177,990	174,735
CACFP centers	20,086	21,432	22,281	24,402	27,014	29,437	31,666	33,627	34,094	36,357	37,901

increase in Tier 1 homes (5,300 homes).[9] And among Tier 2 providers, the decline occurred mainly in the group in which all children's meals are reimbursed at the lower level (Exhibit 4).[10]

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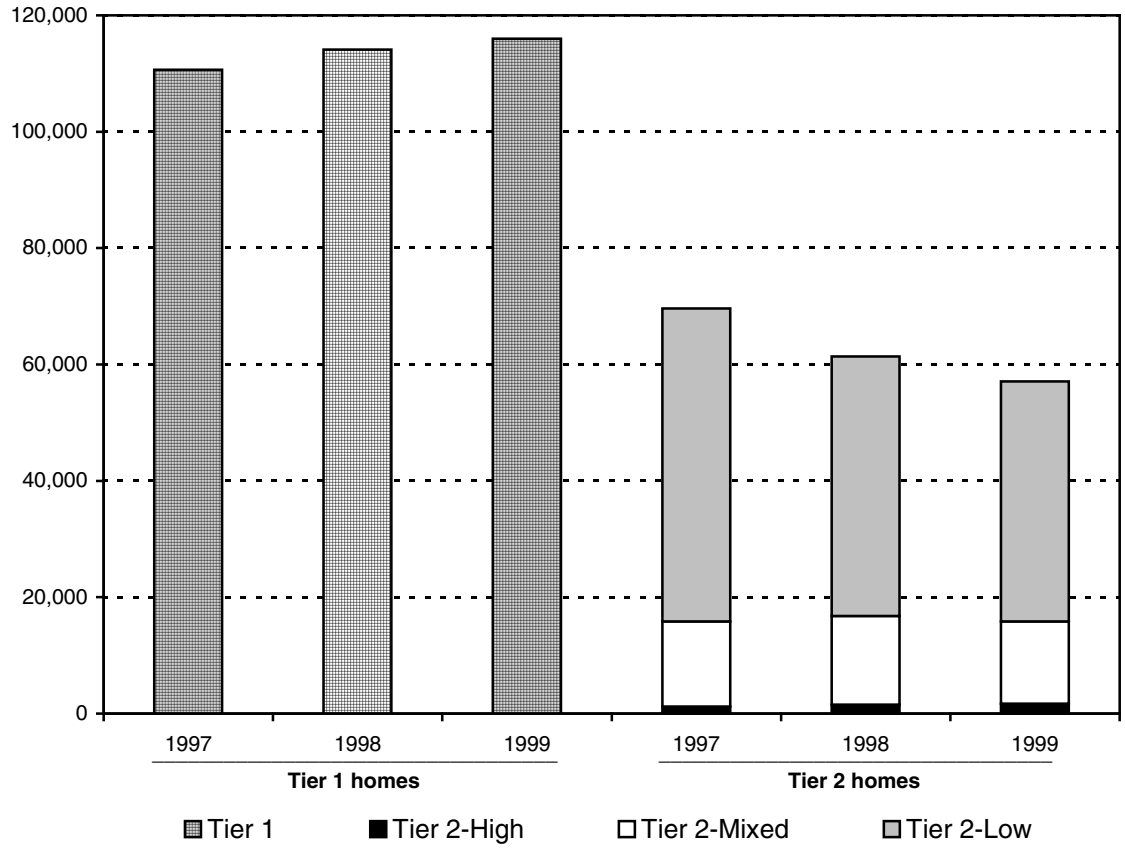
[9] These figures may somewhat overstate the true difference between Tier 1 and Tier 2 patterns. Anecdotal evidence suggests that some providers in a few States were reclassified from Tier 2 to Tier 1 status during the first year of tiering. This appears to have mainly occurred in the first two quarters after tiering was implemented and apparently reflects delayed implementation. Providers were to be classified as Tier 2 until their eligibility for Tier 1 could be assessed. Although tiering appears to have been fully implemented within the first year, the patterns of decline in Tier 2 and growth in Tier 1 homes persisted through the second year of tiering. From the fourth quarter of 1998 to the fourth quarter of 1999, the number of Tier 1 providers grew by almost 1,900 while the number of Tier 2 providers declined by nearly 4,300.

[10] Tier 2 providers may be reimbursed at the higher (Tier 1) rate for meals served to low-income children. Tier 2-High homes are those in which all children's meals are reimbursed at the higher rate. Tier 2-Low homes are those in which all children's meals are reimbursed at the lower rate. Tier 2-Mixed homes are those in which some children's meals are reimbursed at the lower rate and some children's meals are reimbursed at the higher rate.

Exhibit 4
CACFP Child Care Homes by Reimbursement Tier, Fourth Quarters of Fiscal Years 1997-99



Because the significant 1997-99 decline in the number of participating CACFP homes is attributable to a reduction in the number of providers that were most affected by the new reimbursement structure, it seems likely that the legislative change was the primary reason for the overall decline. Tiering altered one aspect of the economics of family child care homes—those homes participating in the CACFP that were now classified as Tier 2 received an average of $149 less in monthly CACFP reimbursements than they would have received at the Tier 1 rates. Unless the providers could raise prices or cut costs, the lower revenue would translate into a lower net income from the business.

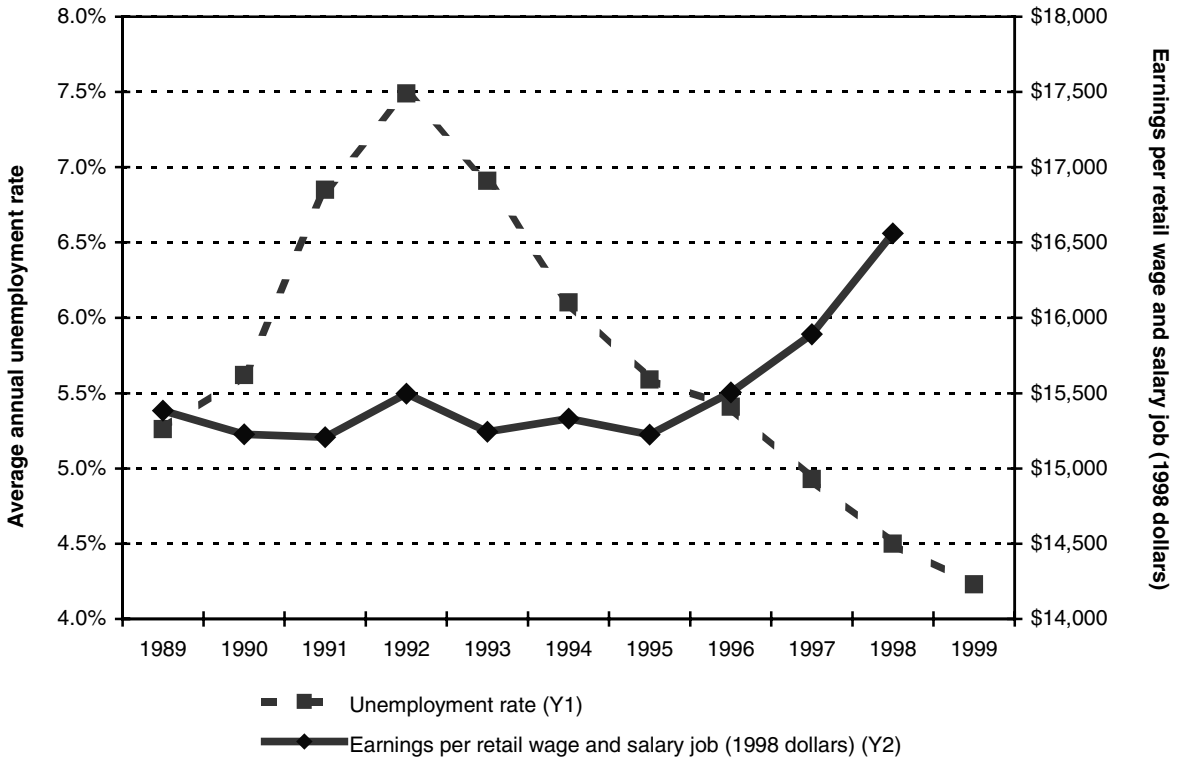
With less potential income from the business, economic theory indicates that the supply of participating providers should decline—in this case, existing family child care providers would leave the business or fewer new providers would enter. If no other forces were changing the economic environment of child care, one would expect a time trend to show a drop in the number of CACFP family home care providers after July 1997, when the new rates took effect.

The overall participation patterns are consistent with the hypothesis that lower reimbursement rates caused lower CACFP participation by Tier 2 providers. However, the CACFP changes occurred at a time when several aspects of the broader economic and policy environment were changing in ways that could also affect the demand for and supply of child care. These factors—which include a strong

labor market, welfare reform, and the growth of preschool programs in public school systems—must be considered in interpreting the decline in CACFP homes.

The economic environment in which the CACFP changes took place featured strong and growing employment opportunities. Female labor force participation grew throughout the decade (U.S. BLS, 2000).[11] The national unemployment rate was extraordinarily low, averaging just 4.2 percent in 1999, down from 4.5 percent in 1998, 4.9 percent in 1997, and 7.5 percent in 1992 (Exhibit 5).[12] Wages began to rise in the late 1990s.[13] For example, the retail sector saw real earnings per wage and salary job increase from 1995 to 1998 (the last year that data are available) after being essentially

Exhibit 5
Average Annual Unemployment Rates and Earnings per Retail Wage and Salary Job,* 1989-99



* Wage data not available for 1999.

[11] The female civilian labor force participation rate climbed from 57.4 percent in 1989 to 59.3 percent in 1996 and 60.0 percent in 1999.

[12] Annual rates estimated as the simple average of the 12 monthly unemployment rates.

[13] Real average hourly earnings, which declined slightly from 1989 to 1993 and remained at that level through 1996, rebounded from 1997 to 1999. Annual rates estimated as the simple average of the 12 monthly rates. This series does not distinguish wages by gender.

stagnant from 1990 to 1995.[14] Retail sector wages provide an interesting backdrop, since the retail sector is where many family child care workers might be employed if they left or never entered the child care business.

These positive economic trends have two potential implications for family child care homes. First, more women working should mean greater demand for child care, including both a greater need and more ability to pay for care. Second, rising wages combined with low unemployment could offer a broader array of alternative employment opportunities to people who are currently or might become family child care providers.

Another critical element of the recent child care environment has been the welfare reform and child care provisions of the PRWORA. The Act fundamentally reshaped the nation's system of cash assistance to low-income families, replacing Aid to Families with Dependent Children (AFDC) with the new Temporary Assistance to Needy Families (TANF) program. Many aspects of this legislation were expected to make recipients more likely to seek employment while on welfare and more likely to leave welfare quickly. Moving welfare recipients into employment would be expected to increase the demand for child care.

On the funding side of the equation, the PRWORA reauthorized and expanded the child care block grant by merging several funding streams into the Child Care Development Fund (CCDF). Total CCDF funding potentially represented a substantial increase—estimated at 27 percent by the Congressional Budget Office (CBO, 1996)—over the child care funding in the prior programs. The CCDF also gives States considerably more flexibility in the administration of child care subsidies, especially flexibility to serve the nonwelfare, working poor population. Nonetheless, States' allocation of the funding is expected to remain heavily targeted toward current or recent welfare families (Long *et al.*, 1998). Thus, the child care provisions of PRWORA would be expected to lead to greater demand for child care among low-income families, and especially families that are receiving or have recently received welfare.

Another development that may be altering the child care landscape is the growth of preschool education programs. Although the purpose of these programs is educational rather than custodial, they have the effect of removing the need for child care while children are attending preschool. No national statistics are available to indicate the number of children in preschool each year, but it is clear that many new programs have been adopted during the 1990s, including universal programs for 4-year olds in Georgia and New York (Long *et al.*, 1998; Knitzer and Page, 1998). Other things being equal, the growth of such programs could reduce the demand for child care.

Finally, although the discussion above has considered child care in general, CACFP family child care homes represent only one segment of the child care industry. Two other segments of note are child

[14] Wages in the retail sector were calculated by USDA's Economic Research Service using the following data from the U.S. Department of Commerce's Bureau of Economic Analysis: SA07—wage and salary disbursements by industry by state, 1969-98, and SA27—full-time and part-time wage and salary employment by industry by state, 1969-98. Earlier years' wages were adjusted to 1998 dollars using the chain-type price index for personal consumption expenditures.

care centers and unlicensed family child care providers.[15] Some of the general trends might affect these different segments in different ways. For example, increased earnings levels might shift demand from the family child care homes toward child care centers, which tend to have higher prices. The new CCDF funding, which is not restricted to licensed providers, might disproportionately go to the sector of unlicensed providers.

In short, the child care landscape in 1997-1999 was quite dynamic, subject to influence from contradictory national trends and varying State-level policies. Low unemployment, welfare reform, and CCDF funding could be expected to increase the demand for child care. Growing preschool programs could be expected to reduce the demand for child care, while the favorable labor market might reduce the supply of family child care homes.

Multivariate Analysis of CACFP Home Participation: Data and Methodology

To separate the effects of the legislative changes from the effects of other events occurring simultaneously, a time-series/cross-section model of the number of CACFP homes was estimated. The sample, methodology, and results of the model are described below. The analysis concludes that the introduction of tiering in 1997 was responsible for the decline in CACFP homes that occurred in 1998 and 1999.

The sample. The sample consisted of the 50 States plus the District of Columbia. Data were available over an 11-year time period, 1989-1999. Because lagged values for some variables were used, the model was estimated on 10 years of data. Scattered missing data items were imputed by use of time trend models.

Estimation approach. The first step in the analysis was to model the number of CACFP homes in 1989-97, the period before tiering, as a function of economic factors and State child care licensing policies.[16] The second step was to use the model to predict the number of CACFP homes that would have been expected in each State in 1998 and 1999, given the States' economic conditions and licensing policies in those years. The difference between the predicted and actual numbers of CACFP homes in 1998 and 1999 represents the effect of tiering combined with the effect of any other factors not captured in the model. An ancillary analysis provided evidence that this difference could indeed be attributed to tiering. The information from the model was then used to estimate for each State the number of homes that would be predicted in the absence of tiering. This process is described in more detail below.

Many variations of this approach were explored. For example, the model of CACFP participation was estimated through 1999 with tiering explicitly included as an explanatory variable—either as an

[15] Only providers who are licensed, certified, registered, or otherwise approved by the state can participate in the CACFP.

[16] For this analysis, years were defined to run from July 1 to June 30, which means that tiering began in the first quarter of the analysis year 1998. It is possible that some anticipatory effect of tiering occurred in 1997, between the passage of PRWORA and the implementation of tiering.

indicator, or varying across States according to the anticipated effect (e.g., proportional to the number of children living in low-income areas or in low-income households as of 1990, proportional to State per-capita income in 1997, and so on). Many explanatory variables were also considered in order to obtain the best possible estimate of the number of homes absent tiering.

The results of almost all of the alternative approaches were quite consistent with the results presented here, namely that the entire decline in CACFP homes between 1997 and 1999 was attributable to tiering. One variation that led to markedly *greater* estimated effects of tiering—that is, to predictions that absent tiering, the number of CACFP homes would have increased considerably between 1997 and 1999 rather than stayed about the same—were models that allowed tiering to have some effects in 1997. We do not believe, however, that the model presented here significantly underestimates tiering's impacts on provider participation.

Modeling the number of homes, 1989-97. The time-series/cross-section nature of the data and the dynamic nature of the adjustment process meant that ordinary least squares regression was not appropriate. It was assumed that:

- Each year, the number of homes in a State adjusts some fraction of the difference between the previous year's value and the equilibrium value implied by the explanatory variables. This fraction corresponds to the complement of the coefficient on the lagged dependent variable (λ);
- States have fixed effects;
- Years have random effects; and
- The error term is autocorrelated, with a common value of the autocorrelation parameter (ρ) across all the States.

Thus the basic model is

$$H_{i,t} = \mu + \lambda H_{i,t-1} + \Sigma_k \beta_k X_{k\,i,t} + g_t + \delta_i + u_{i,t},$$
$$u_{i,t} = \rho u_{i,t-1} + e_{i,t}$$

where $H_{i,t}$ is the number of CACFP homes in State *i* in year *t* (normalized by population; see below);
$X_{k\,i,t}$ is the value of the k^{th} explanatory variable in State *i* in year *t*;
g_t is the random year effect for year *t*;
δ_i is the fixed State effect for State *i*;
$u_{i,t}$ is the (autocorrelated) residual; and
$e_{i,t}$ is a noncorrelated residual.

The model was estimated in two stages. First, a mixed random- and fixed-effects model was used to estimate the first-stage residuals and hence ρ. Then the dependent variable and each of the independent variables were transformed to remove the effects of autocorrelation, using the formula

$$z^*_{i,t} = z_{i,t} - r\, z_{i,t-1} \text{ for } t > 1$$
$$= z_{i,t} (1 - r^2)^{1/2} \text{ for } t = 1$$

where $z_{i,t}$ is the value of the variable for State *i* in year *t*, and *r* is the estimate of ρ. Finally, the same mixed random- and fixed-effects model was re-run on the transformed data.

The dependent variable for this analysis was the number of CACFP child care homes per 100,000 population, where the number of homes was the average over the July 1-June 30 year and population was measured in June of each year. The model included the lag of this variable.

The variables considered for inclusion in the model were economic, demographic, and policy variables deemed to have the capacity to affect the supply of or demand for family day care homes. All potential explanatory variables were measured as time-series/cross-sections, and were lagged one year to bring them into synchrony with the dependent variable and/or to reduce potential problems of endogeneity. Measures were typically normalized with respect to population, for comparability among States. Variables were ultimately retained in the models if they improved the models' predictive power, that is, if their estimated coefficients exceeded the estimated standard errors. This is equivalent to maximizing the adjusted R-squared. It should be noted that the model estimated is a *reduced form equation*, including as it does determinants of both the demand for and the supply of CACFP homes.

Variables included in the models (in addition to the lagged dependent variable) were:

- Unemployment rate: expected to be negatively associated with number of CACFP homes, because more families need child care when employment is high.
- Number of CACFP sponsors / population: expected to be positively associated with number of CACFP homes because sponsors recruit homes.
- Annual State licensing fee: expected to be negatively associated with number of CACFP homes because it increases costs to providers.
- State training requirements for licensed providers: expected to be negatively associated with number of CACFP homes because it increases provider's (non-monetary) cost.

Additional variables that were considered but ultimately rejected were:

- Average wages in retail sector (constant dollars): expected to be negatively associated with number of CACFP homes because these represent alternative employment opportunities for potential providers.
- Female employment / population: expected to be positively associated with number of CACFP homes because it reflects demand for child care.
- Percent of population 0 to 5 years old: expected to be positively associated with number of CACFP homes because it reflects demand for child care.
- Percent of population 0 to12 years old: expected to be positively associated with number of CACFP homes because it reflects demand for child care.
- Number of CACFP centers / population: expected to be negatively associated with number of CACFP homes because CACFP centers are a substitute for family child care homes.
- Number of children in attendance in CACFP centers / population: expected to be negatively associated with number of CACFP homes because CACFP centers are a substitute.

- Percent of population Hispanic: expected to be positively associated with number of CACFP homes because Hispanics tend to choose homes over centers when selecting child care (Fuller *et al.*, 1996; Leibowitz *et al.*, 1988)
- Several variables reflecting other dimensions of State child care licensing policy (such as requirements for site inspection, health certification, background checks, and size of facility) with the stringency of each requirement expected to be negatively associated with the number of homes.

Estimating the tiering effect. The model described above was used to predict the number of CACFP homes in 1998 and 1999 by setting all variables in the model at their observed values for those years. For the 1999 predictions, the value of the lagged dependent variable was set at the predicted number of homes for 1998. The actual total number of CACFP homes in each State and year was subtracted from the predicted value for each State in each of the 2 years. The predicted-actual differences were provisionally assumed to represent the effect of tiering. This assumption was explored in an ancillary analysis, described below.

Multivariate Analysis of CACFP Home Participation: Results

The values of the key estimated coefficients in the model are shown in Exhibit 6. These coefficients conform with our expectations. They suggest that environments with more sponsors and less stringent licensing requirements tend to have more CACFP homes relative to population. The coefficient of 0.8 for the lagged dependent variable suggests that a change in the environment would lead to the number of homes relative to population adjusting by 20 percent of the ultimate effect in the first year.

The analysis indicates that tiering reduced the total number of homes participating in the CACFP in 1999 by about 28,000 homes, or about 14 percent below the number of homes that would have participated if tiering had not been introduced (Exhibit 7). The effect for 1998 is qualitatively similar but somewhat smaller.

The implication of these estimates is that, if tiering had not been introduced, the number of CACFP homes would have grown rather than declined in 1998 and 1999. Relative to 1996, the year before the PRWORA was enacted, the numbers of homes predicted without tiering represent 1.7 percent growth by 1998 and 4.8 percent by1999.

Exhibit 6
Model of Participation by CACFP Homes per 100,000 Population

Variable	Coefficient
Lagged number of homes per 100,000 population	0.800***
Lagged unemployment rate	–0.663
Lagged number of sponsors per 100,000 population	11.447***
Annual State licensing fee	–0.103**
State training requirements for licensing	–1.013*

* Coefficient is statistically significant at the 0.10 level.
** Coefficient is statistically significant at the 0.05 level.
*** Coefficient is statistically significant at the 0.01 level.

Exhibit 7
Estimated Effect of Tiering

Year[a]	Actual Number of CACFP Homes	Predicted Number of CACFP Homes Without Tiering	Actual-Predicted Difference in Homes	Difference as Percent of Predicted Homes
1996	194,190			
1997	193,510			
1998	179,039	197,476	–18,437	–9.3%
1999	175,201	203,576	–28,375	–13.9%

[a] Analysis years are constructed to run from July 1 to June 30, e.g., 1996 begins on July 1, 1995.

A useful benchmark for comparison is the national number of licensed child care homes, including those not participating in the CACFP, which is discussed in more detail in a later section. Relative to 1996, the number of licensed homes grew 2.6 percent by 1998 and 3.4 percent by 1999. Thus the model estimates imply that, in the absence of tiering, the number of CACFP homes would have increased at a similar or slightly faster pace than that observed for all licensed homes.

Ancillary analysis. Tiering was expected to have differential effects across States because States have different numbers of potential Tier 2 providers. Tiering was hypothesized to reduce the propensity to participate in the CACFP of a provider who is (or expects to be) classified as Tier 2. No tiering effect was expected for Tier 1 providers because their reimbursement level did not change.

The State of Vermont presented an exceptional situation. When tiering was implemented, Vermont introduced a State subsidy for Tier 2 providers equal to the difference between Tier 2 and Tier 1 reimbursement rates. Vermont providers would not have left CACFP in response to lower reimbursements, although some may have left because they did not want to provide the information necessary for determining their tier status.[17] The effect is thus not comparable to that in the other States, and Vermont was excluded from this part of the analysis.[18]

If the marked difference between actual and predicted number of homes was entirely attributable to tiering, we would expect to find that it bore a roughly proportional relationship to the "Tier 2-ness" of each State. For example, if one State had twice as many Tier 2 homes as another, we would expect the drop in participation due to tiering to be roughly twice as great. If, on the other hand, other factors were at work explaining the drop in homes between 1997 and 1999, we would expect to find that there was an underlying basic negative divergence between "actual" and "predicted" in *all* States, to which might be added a negative divergence that was proportional to the State's "Tier 2-ness."

The actual proportion of Tier 2 providers is known only for the time period after tiering took effect—that is, after the proportion was already influenced by tiering. A proxy, termed the *percent potential Tier 2 children,* was constructed to represent the proportion of Tier 2 providers among the pool of potential CACFP homes. This term was defined as the number of children living in low-

[17] In fact, the number of CACFP homes declined in Vermont in 1998-1999 at a rate quite similar to the national average.

[18] Vermont was included in the earlier stage because that model concerned only the pre-tiering period.

income census block groups in 1990, plus the number of low-income children living outside low-income census block groups in 1990, divided by the total number of children in the State in 1990.[19] This proportion was multiplied by the number of CACFP providers in the State in 1997, before tiering took effect, to estimate the number of potential Tier 2 providers.[20]

The predicted-actual difference was regressed on an intercept and the proxy measure of potential Tier 2 providers, with both terms scaled per 100,000 population. Separate OLS regressions were estimated for 1998 and 1999, with the results shown in Exhibit 8. In both years, the intercepts were very small *positive* numbers. This analysis thus provides no support for the notion that some force was at work reducing CACFP participation between 1997 and 1999 that was *not* proportional to States' "Tier 2-ness." This supports the hypothesis that the observed drop was indeed due to tiering.

Former CACFP Homes

Some further evidence of the effect of tiering on the number of participating family child care homes comes from our survey of former CACFP providers. The survey results suggest that some, but probably not most, of the estimated reduction in participating homes resulted from providers leaving the CACFP in response to tiering.

The survey was based on a nationally representative sample of 1,971 persons who were operating family child care homes and participating in the CACFP in January 1997, but who were not participating a year later, in January 1998.[21] Followup telephone interviews, conducted in the spring of 1999, reached or determined the current status of 1,270 former providers.[22] To determine whether

Exhibit 8
Models of Predicted-Actual Difference in Number of Homes per 100,000 Population

	1998	1999
Variable		
Intercept	0.749	0.310
Potential Tier 2 Providers	–0.00150****	–0.00206***
R^2	0.6833	0.6430

* Coefficient is statistically significant at the 0.10-percent level
** Coefficient is statistically significant at the 0.05-percent level
*** Coefficient is statistically significant at the 0.01-percent level

[19] Children ages 0-12 are counted. Low-income children are those whose household income is at or below 185 percent of the Federal poverty guideline. Low-income areas are those in which at least 50 percent of children are low-income children.

[20] Several alternative proxies were considered, including the percent of children in low-income areas in 1990, state per-capita income in 1997, and the actual percent of providers in 1998 who were Tier 2. These measures were strongly inter-correlated (typically at the level of about 0.8) and yielded qualitatively similar results in preliminary analyses.

[21] The sample design is described in Appendix A.

[22] Former providers who were not reached, but whose current status was considered determined, included some whose sponsors reported that they had re-enrolled in CACFP and a few who were deceased or were positively determined to have moved from the address where they participated in the CACFP. Including these individuals, the response rate is 64 percent.

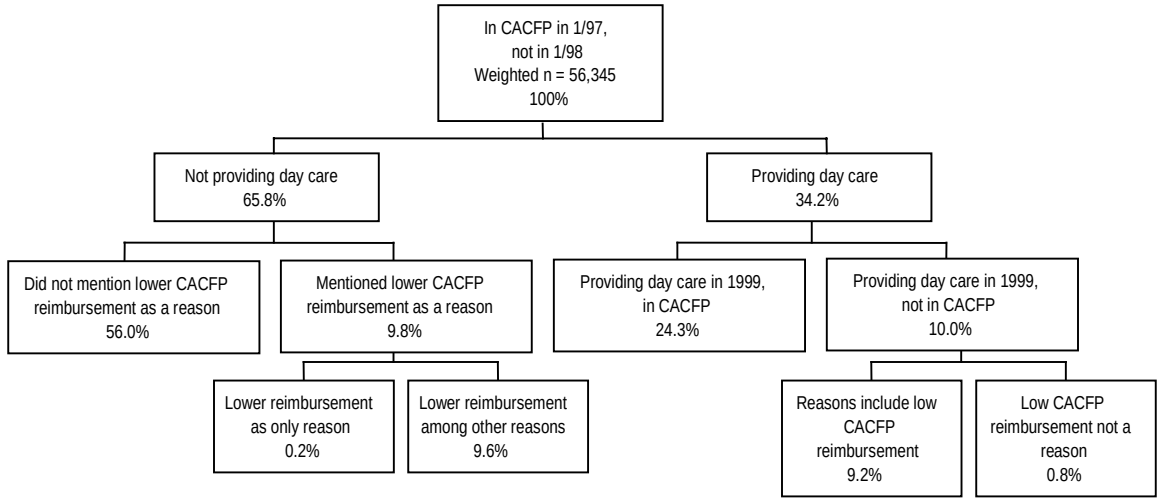
those sample members not reached by telephone differed from the ones who were reached, a subsample of 195 former providers was selected for field interviewing, resulting in an interview or known status for an additional 107 former providers. The results presented here use both the main sample and the subsample.

Extrapolating from the survey sample, an estimated 56,000 family child care homes that were listed as participating in the CACFP in January 1997, did not appear on the comparable lists for January 1998. This amounts to 29 percent of the nationwide total of 196,000 providers indicated in CACFP administrative records for January-March 1997.[23]

The vast majority of former providers did not leave the CACFP because of reimbursement tiering, as shown in Exhibit 9. Over half (56 percent) stopped providing child care and did not mention lower CACFP reimbursements as a reason.[24] Another 24 percent apparently had a period of nonparticipation, but were back in the CACFP at the time the survey was conducted in 1999.

Two groups of the former providers consist of people whose departure from the CACFP may have been influenced by tiering. One group is the people who have now left the child care business and mentioned lower CACFP reimbursements as one reason. The other group includes former providers who are still operating a child care business and whose stated main reason for leaving the CACFP

Exhibit 9
Status in 1999 of Former CACFP Child Care Homes



[23] This corresponds closely to prior estimates of annual turnover in CACFP homes, which have been about 30 percent (Kisker *et al.*, 1991).

[24] Respondents were asked why they stopped operating a child care business and read a series of possible reasons. One of the reasons was "Could not afford lowering of CACFP reimbursements." Former providers who were not interviewed but who were determined to have died or moved are included in the category of "did not mention lower CACFP reimbursements as a reason." Movers account for 0.1 percent of the main sample and 6.7 percent of the subsample. Deceased persons account for 0.2 percent of the main sample and 1.5 percent of the subsample.

could be interpreted as a response to tiering. Together these groups amount to 19 percent of the former provider sample, or an estimated 11,000 providers nationwide. We examine each of these groups more closely below.

Former Providers No Longer Operating A Child Care Business

Just under 10 percent of the full sample of former providers left the child care business entirely and said that lower CACFP reimbursement was a reason for doing so. Among the sample members who left the child care business, 17 percent cited lower CACFP reimbursement among their reasons for leaving (Exhibit 10). Nearly all respondents who cited lower CACFP reimbursements gave at least one additional reason, and many named two or more other factors.

Because providers gave multiple reasons for quitting the child care business, it is impossible to know exactly what role tiering played in their decision—whether it was the deciding factor or merely a minor consideration in a decision dominated by other issues. The most common combination of reasons, offered by a fifth of the former providers who mentioned CACFP reimbursements, included three factors: the lower reimbursement, inability to make a profit, and a change to a different job or business. The consistent economic theme in these reasons suggests that tiering may have been the decisive factor for a substantial proportion of these providers. Nearly all other providers mentioned at least one reason that was apparently unrelated to tiering, such as a change in household structure or being tired of child care. It seems likely that fewer of the former providers in this group would name tiering as the decisive factor, but we have no direct evidence on this point.

Exhibit 10
Percent of Those Who Left Child Care Citing Various Reasons

Reason	All Respondents[a]	Those Who Mentioned CACFP	Those Who Did Not Mention CACFP
Could not afford lowering of CACFP reimbursements	17.0%	100.0%	0.0%
Changed to a different job or business	47.2	65.5	43.4
Change in household structure (e.g., remarriage, divorce, children now in school)	32.8	32.8	32.8
Could not make a profit	22.3	49.1	16.9
Got tired of caring for children	21.6	35.1	18.8
Could not find parents who wanted family child care	11.9	13.3	11.6
Personal reasons (e.g., family issues, illness)	9.8	4.5	10.9
Could not afford to meet licensing requirements	3.2	7.9	2.3
Other reason	7.9	4.0	8.7
Unweighted number of respondents	815	115	700
Reasons cited per respondent	1.7	3.1	1.5

a All respondents who gave one or more reasons for leaving child care. Excludes sample members who were determined to have moved or died. Because respondents could give more than one reason, the percentages do not sum to 100 percent.

Former CACFP Participants Still Providing Child Care

About 10 percent of the providers who left the CACFP between January 1997 and January 1998 were still operating a child care business in 1999. Those who were identified in the telephone survey were asked to participate in a more intensive followup survey. The 85 providers who responded to this followup survey provide some further insight into the role of tiering.

The vast majority of the former CACFP participants who were still providing care cited low CACFP reimbursements as a reason for leaving the program (92 percent), and about half said this was their most important reason (Exhibit 11).[25] The other frequently cited reason, "too much paperwork," was mentioned as the most important reason by nearly a third of the respondents. These two reasons are in fact closely linked: they reflect a decision that the program's benefit (the meal reimbursement) is not worth the cost (the paperwork). Together, these factors were cited as the most important reason for leaving CACFP by 80 percent of respondents.

Although the survey responses indicate that the reimbursement was the paramount consideration, Tier 1 as well as Tier 2 providers could conceivably feel that the CACFP meal reimbursements were too low to make it worthwhile to continue participating. In fact, this appears to be the case. The tier classification of the former CACFP participants is not known, but their household income and

Exhibit 11
Reasons for Leaving CACFP Cited by Those Still Providing Child Care

Reason	Percent Citing as Primary Reason	Percent Mentioning Reason[a]
Reimbursement rates too low to make it worthwhile to participate	49.2	91.5
Too much paperwork and record keeping associated with reimbursement claims	30.6	56.1
Did not like my sponsor's requirements (e.g., training, monitoring)	1.4	12.9
Did not want to deal with the CACFP menu standard	0.8	23.9
Was not willing to give information on my household income to my sponsor	0.8	6.5
Did not like dealing with my sponsor's staff	0.7	6.6
Was not able to give required information on household income to my sponsor	0.5	0.0
Was not able to meet licensing, certification, or registration requirements	0.1	0.0
Other	16.5	25.7
Unweighted number of respondents	85	85

a Respondents could give more than one reason, so percentages sum to more than 100 percent.

[25] Respondents were read the list of possible reasons in Exhibit 11 and asked whether each factor was a reason for them and which was the most important reason.

location in 1999 are recorded. About one-third would apparently qualify for Tier 1 status, either because their household income is at or below 185 percent of poverty (30.5 percent), or because they live in a census block group that had at least 50 percent low-income children in 1990 (1.5 percent).[26]

Most of the "apparent Tier 1" group named as their main reason for leaving CACFP either low reimbursements or too much paperwork (38 and 26 percent, respectively). These responses were even more common among the "apparent Tier 2" group, at 55 and 33 percent.[27] It is reasonable to infer that the apparent Tier 1 group would have left the CACFP even in the absence of tiering, and that some Tier 2 providers would have done so as well, but that tiering caused some additional providers to quit the program.

The survey data thus suggest that some providers who left the CACFP while continuing to operate their child care business took this action in response to the lower Tier 2 reimbursement rates. But many providers, perhaps a majority, who dropped out of the program in 1997-98 were not responding to tiering. Analysis reported elsewhere indicates that, at the time of the survey, the former CACFP providers tended to serve smaller numbers of children, to operate for fewer hours per day and days per week, and to offer fewer meals than the active CACFP providers (Zotov *et al.*, E-FAN-02-004). The former providers were also less likely to depend on child care as their primary source of income. These factors are consistent with the idea that some providers could decide that the CACFP reimbursements were not worth complying with the program requirements, even in the absence of tiering.

Providers Who Never Enrolled In CACFP

Another potentially important class of providers consists of those who would have enrolled in the CACFP in the absence of tiering, but who were deterred from doing so by the lower reimbursement rates. These could include people actively operating child care businesses and people who decide not to start up such businesses because they do not believe the business can generate sufficient net income.

Theoretically, tiering would be more likely to deter potential participants from enrolling in the CACFP than to cause active participants to leave the program prematurely. Participation in the CACFP requires passing several initial hurdles: becoming licensed, finding a sponsor, applying for participation, and being trained in program requirements such as the meal standards and procedures for reimbursement. Active CACFP participants have already passed these hurdles, so continuing with the program simply means carrying out now-familiar routines. Providers not yet enrolled in the CACFP, in contrast, must weigh the expected program benefit against both the startup and the continuing requirements for participation.

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[26] Available data do not permit classification on the third of the tiering criteria, which is whether the provider lives in an area served by an elementary school in which at least 50 percent of the children qualify for free or reduced-price lunch.

[27] The combined total of these two responses is statistically significantly greater for the apparent Tier 2s than the apparent Tier 1s ($p < 0.10$).

Unfortunately, no data are available to test this hypothesis. Two bits of suggestive evidence point toward the existence of a deterrent effect, however. First, the nationwide total number of licensed providers increased in 1998 and 1999, as discussed in a subsequent section. Second, many CACFP sponsors reported that they stepped up recruitment activity and revamped their recruitment strategies after tiering because they found it more difficult to enroll new homes in the program (Bernstein and Hamilton, E-FAN-02-003). This cannot be considered conclusive evidence of a deterrent effect, however, and provides no basis for estimating the size of any effect.