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Sustaining Employment Among Low-Income Parents: The Role of Child Care Costs and Subsidies

A Research Review

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Christine Ross

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Administration for Children and Families
Office of Planning, Research, and Evaluation
370 L'Enfant Promenade, SW
Seventh Floor West
Washington, DC 20447

Project Officer:
Richard Jakopic

Submitted by:

Mathematica Policy Research, Inc.
600 Maryland Avenue, SW
Washington, DC 20024-2512
(202) 484-9220

Project Director:
Christine Ross

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I. INTRODUCTION

The cost of child care is widely recognized as a major barrier to employment for low-income mothers of young children. Even modest child care costs can strain the budgets of low-income families. As a result, many of these families struggle to find free or low-cost child care in order to support their work activities. Because child care costs effectively reduce the net wage that mothers can earn, higher child care costs are associated with a lower probability of employment for women with children.

The negative effect of child care costs on the employment decisions of low-income mothers offers an important rationale for providing financial assistance for child care expenses, and indeed, child care assistance has long been part of the package of support services for welfare recipients entering employment. More recently, the amount of funding for child care assistance was an important part of the welfare reform debate in 1996. The design of child care assistance programs is a critical component of the issues welfare administrators must consider in promoting work and reducing welfare caseloads.

Policies designed to offer child care assistance in an equitable manner (for example, by providing more financial assistance to lower-income families) may alter work incentives in unintended ways (for example, by reducing the effective return to greater work effort). Policies designed to make child care more affordable may also affect the willingness of child care providers to supply child care services to low-income families. Policymakers need to know the extent to which parents and providers are sensitive to changes in child care prices in order to design policies that most effectively support employment. Moreover, while child care assistance may provide critical support to families leaving welfare, it may also help prevent families from entering the welfare system. For example, families who must pay for child care without a subsidy may not be able to sustain these payments in the event of a personal financial emergency, making them vulnerable to job loss and welfare. Similarly, if child care assistance is much more available to families on welfare than to families who are not, working parents who are struggling to pay for child care may return to welfare to qualify for child care assistance.

As part of the Personal Work and Responsibility Act of 1997 (PRWORA), Congress ended several welfare-related child care assistance programs and folded them into the Child Care and Development Block Grant (CCDBG). The AFDC/JOBS Child Care program, the Transitional Child Care program, and the At-Risk Child Care program were all repealed, and child care funding was combined under the Child Care and Development Block Grant (CCDBG) program. As was previously the case in the CCDBG program, states were given substantial authority for defining eligibility and benefit levels for child care assistance. In this chapter, we discuss the CCDBG, other current subsidy programs, and the main themes of this paper.

A. THE CHILD CARE AND DEVELOPMENT BLOCK GRANT (CCDBG)

The CCDBG is designed to assist low-income families, families receiving welfare, and families making the transition from welfare to work in obtaining child care so that they can work or attend education or training programs. Most features of the program are the same as the previous CCDBG program, except that states now have the opportunity to fashion a child care assistance program that will support low-income families seamlessly through the transition from welfare to employment. Many states are now grappling with the issues of how best to support this transition and how to define the eligible population and benefits so that families most in need of child care assistance can receive it.

The CCDBG made available $2.8 billion to states in fiscal year 1997, an increase in child care funding of $698 million over fiscal year (FY) 1996 levels. Funding is provided in three streams: discretionary funds, which are provided to all states under the rules for allocating prior CCDBG funds; mandatory funds that are provided to all states based on historical spending levels for IV-A child care programs; and mandatory funds that require a state match, which are provided to all states at the Medicaid matching rate (FMAP) if they maintain prior IV-A state child care expenditures. States must spend no more than 5 percent of these funding streams on administrative activities. They are also required to spend at least 4 percent of total funds on quality-related activities, including but not limited to licensing, inspection, establishment and maintenance of computerized child care information, and resource and referral services. States may use a portion of CCDBG funds for respite child care for child protective services cases. Information on the proportion of CCDBG funding used for this purpose in each state is not yet available, but program regulations state that respite care should be "an infrequent use" of the CCDBG funds. In addition to the CCDBG child care funds, states may use funds from the Social Services Block Grant (SSBG or Title XX) program for child care services. Many states use part of the SSBG for child care. States may also transfer up to 30 percent of their TANF block grant to the child care block grant to be used for child care subsidies. Some states are allocating additional state funds to child care subsidies to provide more support for the employment of low-income mothers.

The total amount of funding available for child care and early childhood education services from federal, state, local, and private sources is not known with any certainty. States combine federal and state funding streams in complicated ways as they administer child care programs. Organizations use different definitions of subsidies and early childhood programs that are funded by the states and the federal government. No central source of information on state child care spending exists. Local and private funding for child care is difficult to track in a systematic way. Jones et al. (1998) estimated that the federal government, states, and foundations spent at least 17.5 billion on early childhood care programs (including subsidies) in recent fiscal years, although the amount of state funding was underestimated because the available data are incomplete. Stoney and Greenberg (1996) estimate total spending on early childhood programs by government and foundation sources at about $16.4 billion annually. These authors point out that understanding the size of the contributions of nonfederal sources to early childhood programs is now much more important because of devolution.

B. UNDERSTANDING THE EFFECTS OF CHILD CARE COSTS AND SUBSIDIES ON THE EMPLOYMENT OF LOW-INCOME PARENTS

The effects of child care costs on the employment of low-income parents, and the ways in which child care subsidy policies support employment by making child care more affordable and expanding child care choices, are the main themes in this paper. In the next chapter, we discuss what is known about the child care needs and resources of low-income families, and the cost of child care they face in the market. We also discuss the effects of child care costs and subsidies on the employment decisions of low-income parents. The research literature has shown that mothers' employment decisions are moderately sensitive to child care costs. Therefore, child care subsidies hold the potential to encourage employment among mothers leaving welfare.

One of the ways in which subsidies can encourage employment is by providing mothers with the financial support to afford their preferred type of child care. Subsidies can also enable the family to have higher disposable income when parents are working. However, child care subsidy policies can change the relative prices of different forms of child care and parent's perceptions of the relative costs and benefits of employment. This, in turn, can lead the parent to make different employment and private funding for child care is difficult to track in a systematic way. Jones et al. (1998) estimated that the federal government, states, and foundations spent at least 17.5 billion on early childhood care programs (including subsidies) in recent fiscal years, although the amount of state funding was underestimated because the available data are incomplete. Stoney and Greenberg (1996) estimate total spending on early childhood programs by government and foundation sources at about $16.4 billion annually. These authors point out that understanding the size of the contributions of nonfederal sources to early childhood programs is now much more important because of devolution.

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In Chapter IV, we discuss how subsidy policies and regulations affect the choices that child care providers make with respect to the supply of child care, including quantities, quality, and prices. Providers react to changes in payment rates and regulations that affect their costs and may affect their position relative to other providers with whom they compete in the market. Understanding providers' reactions is important if we want to design policies that ultimately help parents as they are intended to.

The purpose of this paper is to provide background for developing a research agenda that would inform the design of child care policy oriented toward families leaving welfare for work and toward low-income working families in general. The final chapter summarizes what we know about the cost of child care and its relationship to the employment and child care choices of low-income parents, and proposes an agenda for future research. Two companion papers review research on the links between employment and the quality of child care and the issue of flexibility in family situations, jobs, and child care as it relates to the ability of parents to find a job and remain employed.

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II. LOW-INCOME FAMILIES IN THE CHILD CARE MARKET

We begin with a discussion of the financial resources of families headed by a low-wage earner and the consequent financial burden of child care on these families. Because the prevailing prices of different types of child care affect parents' choices of child care and their employment decisions, we end with a discussion of empirical estimates of the sensitivity of women's employment decisions and child care choices to the level of child care prices.

This chapter examines the relationship between child care costs and employment to establish a basic understanding of the decisions made by low-income families in the current child care market. We do not consider the effects of subsidies on family decisions at this point in our analysis because their choices are not necessarily influenced greatly by the subsidy system. The total amount of public resources available for child care subsidies for low-income working families has grown substantially over this decade; yet, the vast majority of low-income families do not receive assistance paying for child care. Rough estimates suggest that child care assistance is received by families for only about 1 in 10 eligible children, although we lack critical, basic information linking data on current state rules for child care program eligibility, and family income and characteristics by state, and information on the number and characteristics of families participating in child care subsidy programs that would support a more definitive estimate of the number of eligible children by state and participation rates by state and demographic group.

A. THE ECONOMIC PROBLEM OF CHILD CARE FOR LOW-INCOME FAMILIES

To work outside the home, many low-income parents need to find child care for their young children. However, low earnings make it difficult for them to afford the potentially high cost of child care. These issues of need, resources, and affordability are important determinants of the employment decisions low-income parents make with respect to child care.

1. The Need for Child Care

If we consider only families receiving welfare, we find that there are many children who would need child care if their parents went to work (U.S. House of Representatives 1998). In 1995, 9.3 million children received welfare, and the vast majority of these children would need care if their parents were working. Nearly half of all children in welfare families are under 6 years of age, and would therefore need care during all of the parents' work hours. Nearly one-third more of the children in welfare families are in grade school (ages 6 to 12 years), so depending on the parents' work schedule, they may need someone to care for them only part-time, outside school hours.

From the perspective of parents on welfare, many have at least one very young child who would need care during all of the parents' work hours. Nearly 40 percent of the parents on welfare have an infant or toddler (and possibly some older children) who would need care if they worked. Nearly one-quarter more of the parents have a preschool-age child (and possibly some older children) who would need care if they worked. Overall, 62 percent of the parents receiving welfare would need to secure child care for a substantial amount of time during the day for their children who are not yet in school. Another 24 percent have a child in elementary school who would need supervision outside school hours.

Many working families who are not receiving welfare also have a relatively low income and young children. Although low-income working families have presumably found child care arrangements, this solution may not be permanent. The low-cost arrangements many of these mothers may find can be unstable or of low quality and may leave them vulnerable to child care problems that can lead to work disruptions and the need for welfare assistance. In fact, many women have in past years moved between welfare and employment so that the distinction at a point in time between the "welfare" and "working" poor may not be a meaningful one. Reliable, good-quality child care arrangements may be necessary to support the employment of both the welfare and working poor, and the cost of these arrangements may be substantial in relation to their income levels. If we consider only families in poverty, there were about 4.1 million children under age 6 receiving welfare in 1995. An additional 1.7 million children under 6 were living in poor families that did not receive welfare. The working parents of many more young children have an income near the poverty line and so might need child care assistance in order to continue working. We discuss how parents' employment choices are influenced by child care costs in Section B of this chapter.

2. Families' Resources

Families leaving welfare for work are expected to have relatively low earnings. Burtless (1995 and 1997) followed a group of women leaving welfare for work over the period 1979 to 1990. The median wage for a worker entering the labor market was just over $6 per hour, or just over $12,000 per year (in 1993 dollars). The lowest-paid decile of workers earned about $5 per hour or less, and the highest-paid decile of workers earned about $9 per hour or more as they entered the labor market. The women included in this study typically worked part-time and/or part-year, and since part-time workers tend to earn slightly lower wages than full-time workers, this average wage may under-estimate what these women might have earned at full-time jobs. However, Burtless (1995 and 1997) also points out that, because welfare program rules did not require many women to work in the 1980s, the women in this study who were working were those with more skills and fewer barriers to work, which means that the average wages in his study may over-estimate what the average woman leaving welfare today might earn.

Low-income working families generally have more resources to work with than earnings alone. The Earned Income Credit (EIC) provides a maximum of $2,210 per year to a working parent with one child, and a maximum of $3,656 per year to a working parent with two or more children (for tax year 1997). The credit is phased out starting at earnings of $11,930 per year for a family with two or more children. The EIC ends at an adjusted gross income of $29,290. Food stamps are also available to low-income families with a gross income (including earnings and EIC) below 130 percent of the federal poverty line, or $17,329 for a family of three in 1997 who meet certain other eligibility requirements. In FY 1991, monthly food stamp benefits averaged about $170 per household, or about $2,000 per year. Food stamp benefits are reduced by 30 cents for each additional dollar of income. The Congressional Research Service (CRS) has developed estimates of disposable income at various wage levels for a mother of three in one state (Pennsylvania). CRS calculates disposable income as the family's income after adding the EIC, welfare benefits, and food stamps; subtracting social security taxes and any federal and state income taxes; and subtracting work expenses (10 percent of earnings up to a maximum of $100 monthly for general expenses, plus child care costs) (U.S. House of Representatives 1998). We have revised the calculations to omit child care costs so that we can consider what the family's disposable income is before child care costs. As gross earnings rise from $2,000 and $15,000, disposable income rises more slowly, from $9,773 to $16,803, as welfare benefits, the EIC, and food stamps are gradually withdrawn, leaving net earnings as an ever-larger share of total income. Figure II.1 shows how gradually disposable income rises as gross earnings increase. A mother earning $6 per hour, or $12,000 for full-time, full-year work, would have disposable income of $15,631 because the EIC and food stamps exceed the amounts paid for social security taxes and general work expenses.

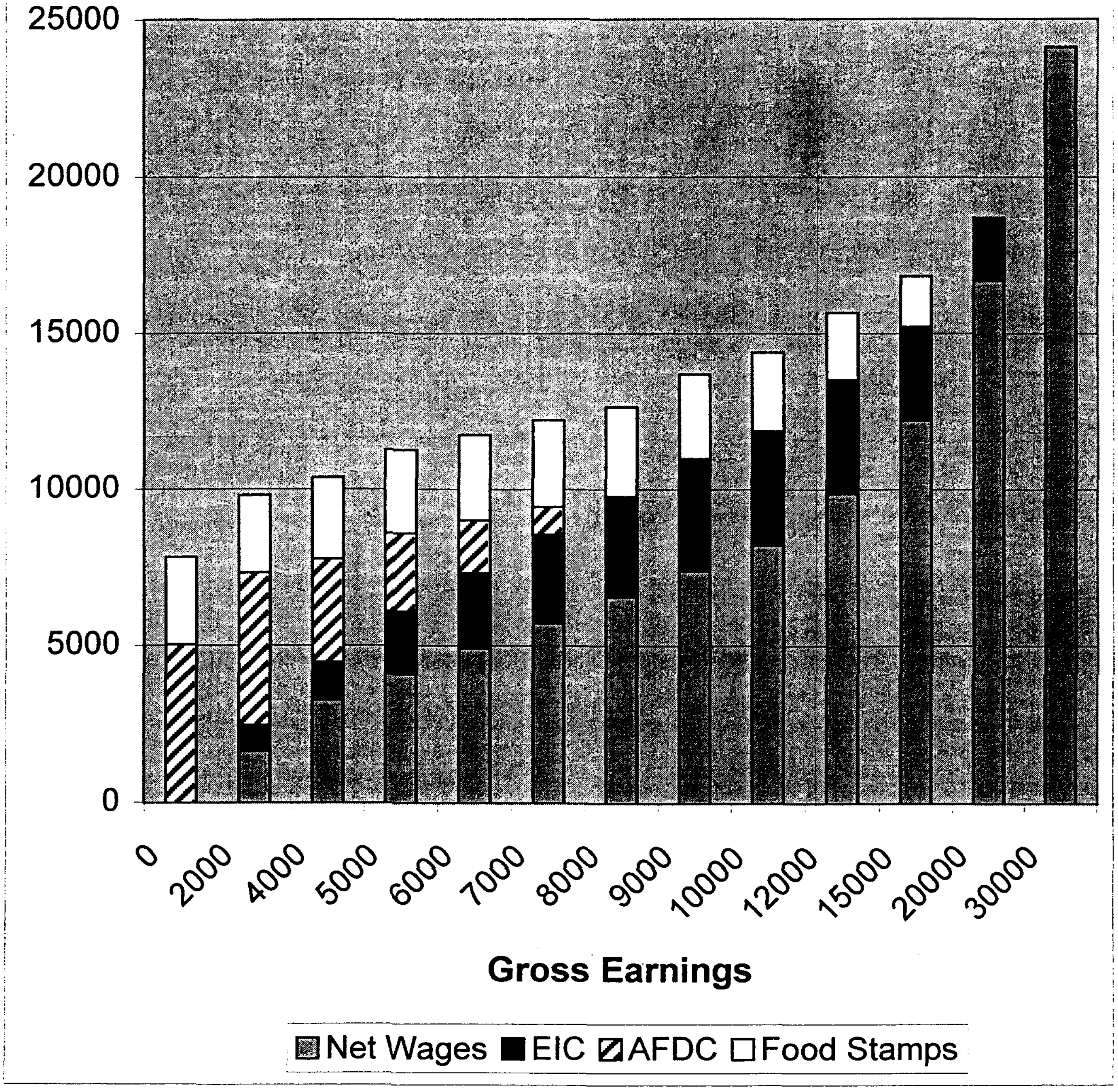
Many observers believe that women leaving welfare may need some assistance for a year or two while their wages are low, but that after a few years, their wages will rise, and they will achieve self-sufficiency. This may not be the case for most welfare recipients. Burtless (1997) shows that between 1979 and 1990, the median real wage of women who had once received welfare rose from $6.07 to $6.72 per hour[1] — an increase of about 11 percent over the entire decade. With annual earnings rising (for the median worker) to only 15 percent above the poverty line after 11 years, many women would still have difficulty meeting child care expenses on their own. With such slow expected wage growth, families leaving welfare will not have significantly more resources for child care for the entire period over which their children are young, and they face substantial child care expenses. The obstacles to wage growth are significant. The earnings capacities of these women are low as they enter the labor market, and skill-building programs are not expected to improve their wages substantially.

3. Child Care Costs and Supply

Child care costs are a major work-related expense for mothers of young children, and even more so for low-income working mothers. The most recent data on child care costs are from fall 1993, when it was estimated that the average weekly cost for paid child care for a child under age 5 was $64, or about $3,2000 per year (Casper 1995). The cost of care varies by type. Care provided

FIGURE II.1

DISPOSABLE INCOME AT VARIOUS WAGE LEVELS BEFORE CHILD CARE EXPENSES, MOTHER OF THREE, PENNSYLVANIA, JANUARY 1997



Source: Based on calculations by the Congressional Research Service U.S. House of Representatives 1998), pp. 408-409.

by nonrelatives in the child's home was the most expensive at $68 per week, followed closely by care in centers, preschools, and other organized care facilities at $64 per week. Family child care (care by nonrelatives in another home) cost approximately $52 per week, and care provided by relatives (excluding fathers and siblings) cost $42 per week when they were paid for care.

Child care costs also vary by the age of child, infant care being more expensive than preschool-age care. In 1993, the weekly cost of paid care for an infant was $72, while for older children it was about $60 (Casper 1995). Child care expenses increase substantially when the family has more than one child under age 5. Weekly child care expenses for families with one child in 1993 were $66, while for those with two or more children, weekly expenses were $110, or about $5,500 per year. The issue of the cost of child care may be more difficult for families with a child who has special needs. Children in low-income families are more likely than children in higher-income families to have a physical condition or behavioral problem that requires special attention from caregivers. Often, children with special needs who receive subsidized care are given a larger subsidy to compensate the provider for the additional efforts that must be made to care for this child, which may in turn limit the number of other children she can care for. Low-income parents with a special-needs child who does not receive subsidized care may face even higher child care costs than average.

If we compare the average cost of paid child care to the income of a family with low earnings, we find that child care expenses pose a significant economic burden. In the example involving Pennsylvania in Section 2 above, we showed that mothers earning about $5 to $6 per hour, or $10,000 to $12,000 for full-time, full-year work, would have disposable income of between $14,353 to $15,631. Child care costs of $4,000 per year for one child would represent 30 to 40 percent of their earnings, or 26 to 28 percent of annual disposable income, assuming the family receives the

EIC and food stamp benefits for which it is eligible. For two children, child care costs of $5,500 per year would represent 46 to 55 percent of earnings, or 35 to 28 percent of annual disposable income.

Given such costs of care in the market that would require such a large share of the family's disposable income, we find that, in fact, low-income families economize on child care costs by finding free child care when possible. In 1993, only 37 percent of families with income below the poverty line paid for their child care arrangements, compared to 58 percent of families with income above the poverty line (Casper 1995). When free child care is not available, low-income families use lower-cost child care. In 1993, the average weekly cost of paid child care for families with income below the poverty line was $50, or $2,500 per year (Casper 1995). But even low-cost child care is expensive for low-income families that do not receive financial assistance for child care. A weekly cost of $50 represents 21 to 25 percent of earnings and 16 to 17 percent of disposable income for families earning $10,000 to $12,000 per year. Moving from hypothetical to actual costs, in 1993, families with income below the poverty line who paid for child care spent an average of 18 percent of their income on child care.

While a large proportion of low-income families do not pay for child care, Hofferth (1995) has found that, among low-income families, the likelihood of paying for child care differs substantially depending on marital status. Low-income single mothers are much more likely than other low-income families to have to pay for child care. Using data from the 1990 National Child Care Survey, Hofferth (1995) estimated the use of paid child care by families with working parents and income below the poverty line (working poor families) and families with working parents and income below 75 percent of the U.S. median (working low-income families, who would be eligible for child care assistance in many states). She found that, while 27 percent of all working poor families and 32 percent of all working low-income families paid for child care, a much higher percentage of working poor single mothers (44 percent) and working low-income single mothers (69 percent) paid for child care. It is possible that the difference is a function of the fact that low-income married couples can arrange their work schedules to economize on child care, but single mothers are less able to similarly coordinate their schedules with another adult, preventing them from economizing on child care. Hofferth (1995) shows that shift work and shared child care among adults is particularly common among lower-income married-couples, allowing these families to avoid using paid child care.

School-age children of working parents may also need child care outside school hours. In 1993, the parents of approximately 22 million school-age children (ages 5 to 14 years) were working or in school (U.S. House of Representatives 1998). In 1993, about 5 percent of the school-age children of working mothers, or 1.2 million, cared for themselves, but researchers believe that the number of children who care for themselves without adult supervision during a typical week is much closer to about 5 million (National Institute on Out-of-School Time 1997). No care arrangement outside school hours was mentioned for 46 percent of the children, or 10.2 million. Some parents may be at home when children are out of school, but other children may return to empty houses, at least for some period in the afternoon. The safety and appropriateness of self-care depends on the child's age and developmental level, characteristics of the neighborhood, and the child's activities during that time (Vandell and Posner, in press).

Many school-age children need some supervision outside school hours if their parents are working, and they will need care during school holidays and vacations. However, very few school-age children are in formal before- and after-school programs. The National Study of Before and After School Programs estimated that, in 1991, 1.7 million children in kindergarten through grade 8 were enrolled in formal programs (Seppanen et al. 1993) The total number of children in those age ranges in 1990 was about 48 million (Hofferth et al. 1991).

Parents and relatives care for many school-age children outside school hours (U.S. House of Representatives 1998). About 18 percent of school-age children are cared for by a grandparent or other relative. About 14 percent are cared for by a parent.

Formal programs may be important in keeping children safe and improving their well-being during the afternoons when school is over. Research has found that low-income children in formal after-school programs have better academic achievement, peer relations, and emotional adjustment than peers in mother care, informal adult supervision, or self-care (Posner and Vandell 1994). Children in formal programs spent more time in academic activities and enrichment lessons and less time watching TV and playing outside unsupervised. In low-income neighborhoods, where informal adult supervision is limited, even older school-age children can be at risk if they are left on their own or in the care of an older sibling outside school hours. Juvenile violent crime rates peak during the afternoon hours when school is over. Initiatives in some communities to change high school daily schedules to coincide with adolescent sleep patterns would begin and end the school day later. This practice may reduce the need for out-of-school care, but would probably not eliminate it.

B. FAMILY CHOICES IN RESPONSE TO PRICES IN THE CHILD CARE MARKET

Several studies have examined how mothers' decisions about work and child care are affected by the price of child care. The price of child care can affect employment because it is a cost of working that reduces the net wage for an hour of work. The cost of child care may also affect child care choices, since some types of child care may be less affordable to the mother. We discuss both of these types of responses in this section.

1. Employment Choices

The cost of child care effectively reduces the amount of income a parent can earn from work outside the home. For this reason, child care costs will reduce the likelihood that a parent will work at all. Because the hourly wage net of child care costs is lower than it would be without child care costs and time at home is valuable, child care costs may also reduce the number of hours an employed parent is likely to work.

Although economic theory predicts that child care costs will lead to a reduction in the number of hours an employed parent is likely to work, the size of the response cannot be predicted by theory, but instead, must be estimated using information on the actual child care costs and employment decisions of low-income mothers. Knowing the size of low-income parents' employment responses to child care costs is important if we are to accurately predict what level of investment in child care subsidies would be needed to encourage a particular level of employment activity.

The parent's employment response to an increase in child care prices can be measured in the same way that economists measure individuals' responses to any price change, using the ***elasticity***. The elasticity of employment with respect to child care prices is simply a measure of responsiveness of employment to child care prices. The employment response may be measured in terms of the probability that the parent is employed, hours worked per week, or another measure of the level of employment. The elasticity is the percentage change in this employment measure associated with a particular percentage change in child care costs. For example, if the elasticity of employment with respect to child care costs is -.20, then if child care costs increased by 1 percent, the probability of employment would fall by .2 percent. Since a 1 percent change in child care costs would be quite small, it is more common to use a 10 percent change in costs as an example. If child care costs increased by 10 percent, then an elasticity of -.2 would imply that the probability of employment would fall by 2 percent. Economists use percentage changes as the basis for the elasticity to make this measure of responsiveness comparable across different markets that use different units to measure quantities (for example, hours of work and the number of barrels of oil) and that have different price levels (for example, the monthly cost of child care, which averages about $200 to $300, compared to the cost of a dozen oranges, which is about $6).

The elasticity of employment with respect to child care costs should, theoretically, be a negative number between zero and infinity. The number is negative because higher child care costs should decrease employment. If the elasticity were zero, it would mean that an increase in child care costs would leave employment unchanged; there would be no response to an increase in child care costs. If the elasticity were infinity, it would mean that any very slight increase in child care costs would lead to a full reduction of employment to zero. In between these two extremes, an elasticity of one means that the employment response to a change in child care costs is about the same size as the change in costs. That is, a 10 percent change in child care costs would lead to a 10 percent reduction in employment. By convention, if the elasticity is *less than one*, so that the percentage change in employment is smaller than the percentage change in child care costs, the response is considered to be *inelastic*, or not very responsive If the elasticity is *greater than one*, it is considered to be *elastic*, or very responsive.

Empirical studies concur that higher child care costs reduce the likelihood that mothers who have young children will be employed. Most of the earlier studies, following Heckman (1974), focused on the decisions of married women regarding whether to work or not. Most of these studies estimated the elasticity of employment with respect to child care prices at between -.2 and -.9 (see Table II.1), which means that the employment response of married women to child care costs is relatively small, or inelastic. For single mothers and low-income mothers, most of the estimates of elasticity fall in the lower (more inelastic) end of this range. Kimmel (1998) estimates a relatively low elasticity of -.22 for single mothers. Kimmel (1995) also estimates an elasticity of -.3 for poor single mothers, while GAO estimates an elasticity of -.3 for near-poor mothers and -.5 for poor mothers. However, Kimmel (1995) also finds a child care price elasticity of employment for poor white single mothers of -1.362, which implies a much larger response of employment to child care costs than was measured in other studies. This estimate suggests that a 10 percent increase in child care costs would reduce employment by about 14 percent.

Kimmel (1998) finds that estimates of the price elasticity of employment are very sensitive to specification and model selection. Most studies do not include actual child care costs for mothers who are not working, so the child care costs they would face if they decided to work have to be estimated using information on child care costs for mothers who are working and paying for child care. Similarly, non-working mothers in the sample do not have an actual wage that can be used to estimate the relationship between employment and child care costs, and so these wages must be estimated using information on the wages for mothers who are working. The specification of the equations used to estimate child care costs and wages for mothers who are not working and procedures for correcting for sample selection may vary, leading to different results. Studies may also use different specifications for the final regression relating employment to the price of care. Estimates of the elasticity of employment with respect to child care costs for low-income mothers are particularly sensitive to specification and model changes because a smaller proportion of low-

TABLE II.1

ESTIMATED EFFECT OF CHILD CARE PRICES ON EMPLOYMENT DECISIONS

Study	Data Source	Population Studied	Measure of Employment	Measure of Child Care Prices	Estimated Elasticity of Employment with Respect to Child Care Prices
STUDIES OF MARRIED MOTHERS WITH PRESCHOOL- AND SCHOOL-AGE CHILDREN					
Blau and Robins (1988)	1980 Employment Opportunity Pilot Projects (EOPP)	Married mothers with a child under age 14 years	Employment (yes or no)	Average cost of child care in the site, estimated using families with expenditures	-.34 (average of individual values)
Connelly (1992)	1984 Survey of Income and Program Participation, Wave 5	Married mothers with a child under age 13 years	Labor force participation (yes or no)	Child care expenditures for all children in family; estimated using families with expenditures	-.20 (estimated at the means)
Ribar (1995)	1984 Survey of Income and Program Participation	Married mothers with a child under age 15 years	Work full-time, part-time, or zero hours	Child care expenditures for all children in family; estimated using families with expenditures	-.09 or -.07 (children under 15) -.09 or -.02 (children under 6) (estimated at the means)
Michalopoulos et al. (1992)	1984 Survey of Income and Program Participation	Mothers with a child under age 15 years; Separate estimates for married and single mothers	Hours of work (workers only)	Child care expenses (families with positive expenses only)	-.0018 for married mothers -.0014 for single mothers
Kimmel (1998)	1987 Survey of Income and Program Participation	Married mothers with a child under age 13 years; Separate estimates for married and single mothers	Employment (yes or no)	Total hourly cost of child care for youngest three children; estimated using families paying for child care	-.92 for married mothers -.22 for single mothers (estimated at the means)

Study	Data Source	Population Studied	Measure of Employment	Measure of Child Care Prices	Estimated Elasticity of Employment with Respect to Child Care Prices
STUDIES OF MARRIED WOMEN WITH PRESCHOOL-AGE CHILDREN					
Ribar (1992)	1984 Survey of Income and Program Participation, Wave 5	Married mothers with a child under age 6 years	Employed (yes or no)	Child care expenditures for three youngest children in family; estimated using families paying for child care	-.74 (estimated at the means)
Averett et al. (1997)	1986 National Longitudinal Survey of Youth	Married mothers with a child under age 6 years	Hours of work	Total hourly cost of child care for family; estimated using families paying for child care	-.78 (estimated at the means)
Blau and Hagy (1998)	1990 National Child Care Survey (NCCS) 1990 Profile of Child Care Settings (PCS)	Married and single mothers with a child under age 7 years and not in school	Employment (yes or no)	For centers and family child care: estimated from providers' fees in PCS; For other nonparental care: estimated from family expenditures in NCCS	-.20 (estimated as the average of individual estimates)
Leibowitz et al. (1992)	National Longitudinal Survey of Youth (several waves)	Women who had a first child after 1979 and before 1986; children under age 2 years	Employment (yes or no) at 3 months and 24 months after birth of first child	Child care costs after state and local tax credits for child care; Estimated at the woman's income level if she works full-time at her predicted wage	Larger child care tax credit led to earlier return to work (by 3 mos. after birth) but little effect on employment at 24 months

Study	Data Source	Population Studied	Measure of Employment	Measure of Child Care Prices	Estimated Elasticity of Employment with Respect to Child Care Prices
STUDIES OF LOW-INCOME MOTHERS					
GAO (1995)	1990 National Child Care Survey and Low-Income Sub-Study	Married and single mothers with children under age 13 years; Separate estimates for poor, near-poor, and non-poor mothers	Employment (yes or no)	Total child care expenditures by family; estimated based on families paying for child care	-.50 for poor mothers -.34 for near-poor mothers -.19 for nonpoor mothers
Kimmel (1995)	1987 and 1988 Survey of Income and Program Participation	Single mothers with children under age 15 years; Income below poverty	Employment (yes or no)	Total hourly cost of child care for youngest three children; estimated using families paying for child care	-.346 for poor single mothers -1.362 for poor white single mothers -.345 for poor black single mothers
Berger and Black (1992)	Telephone survey of single mothers eligible for and participating in child care subsidy programs in Louisville, KY	Single mothers with children under age 13 years; Income below 80 percent of state median family income	Employment (yes or no) Hours worked	Actual child care prices paid by families compared to subsidized prices paid by families receiving subsidy	Child care subsidies increase employment by about 12 percent; no effect on hours worked

SOURCE: Adapted from Council of Economic Advisers (1997), Appendix I: The Effect of Child Care Prices on Maternal Employment. Source for each row of the table is indicated in the first column.

income mothers are employed, and therefore, there is less information on wages and child care costs available to predict wages and child care costs for low-income, non-working mothers. Kimmel concludes that the research has placed a reasonable bound on the child care price elasticity of employment for married mothers, but for single mothers, there is more uncertainty about the size of the response.

More research is needed to understand the employment response of low-income mothers to child care costs, particularly in the new welfare environment, where welfare is not a viable alternative to working over the long term. Connelly (1992) notes that employed mothers in her sample are mothers who are more likely to have free child care available to them. Under welfare reform, more mothers will have to work, whether or not free care is available. Moreover, because welfare reform time limits and work requirements apply to everyone, fewer relatives may be available to provide free or low-cost child care for mothers who work. Do relatives try to arrange their work hours to enable them to share child care responsibilities as low-income married couples often do, or must families rely more on nonrelatives to care for their children? Are there differences by ethnicity in the ability of families to use relatives as child care providers under welfare reform? Finally, most studies have examined only the decision to work or not, but decisions regarding hours of work are also important. More research is needed to understand whether child care costs affect hours of employment.

Based on data from the National Child Care Survey 1990, a parent survey of child care arrangements, Hofferth and Collins (1997) examined how the cost, stability, and other features of child care arrangements affect employment exits for mothers with a child under age 13. Hofferth and Collins used data from the Profile of Child Care Settings, a survey of regulated child care providers that was a companion study to the National Child Care Survey, to construct the market cost of center-based and family child care in each family's geographic area. They found that local costs of licensed and regulated child care affected the employment exits of women with moderate wages, but not low wages.[2] The authors hypothesize that low-wage women have found child care that costs much less than the market rates for centers and regulated family child care, so the high cost of these types of child care in their area does not affect their employment decisions. Hofferth and Collins (1997) also found that mothers earning low and moderate wages who also use more than one child care arrangement had a very low probability of a work exit if their arrangements for child care came to an end. The authors suggest that, compared with a single child care arrangement, multiple arrangements provide some additional flexibility for mothers who earn low and moderate wages.

Connelly (1992) finds that parents of school-age children are less likely to pay for child care than are mothers of younger children, but that when they pay, they pay higher amounts, on average. This may be attributable to the high cost of part-time child care. It is also possible that parents generally may be willing to pay for school-age child care only when it is of good quality; they may be unwilling to pay for custodial care for this age group when the children can care for themselves or be cared for by siblings for free. Much more research is needed on parents' preferences regarding school-age child care and the effects of its costs on the employment of low-income mothers. Perhaps school-age child care costs affect job choices by making work schedules much less attractive if they conflict with the child's time out of school. Or the parent may leave the school-age child unsupervised for a few hours each day but may lose time from work or leave the job if it becomes clear that the child is unsafe in that arrangement and alternative acceptable arrangements are too expensive.

2. Child Care Choices

Most of the empirical studies that have examined the effects of cost on the choice of child care arrangement have considered only the distinction between paid and unpaid child care. These studies have generally estimated a low elasticity of child care choice to price (see Table II.2). For married mothers, the estimated elasticity of choosing paid child care with respect to the price of care ranges from -.2 to -.3 in most studies, meaning that an increase in child care costs of 10 percent would decrease the probability of choosing paid child care by 2 to 3 percent. On the high end, Ribar (1992) and Ribar (1995) estimate this elasticity as -.7, -.5, and -1.86. None of these studies focused specifically on low-income women, although Michalopoulos et al. (1992) estimate the elasticity for single mothers of all income levels at -.3. Ribar (1995) finds relatively large price elasticities of choosing paid care among married women with school-age children (-.7 or -.5, depending on the specification), while his estimated price elasticities of choosing paid child care for women with children under age 6 are similar to those in other studies (-.2 or -.3, depending on the specification).

The distinction between paid and unpaid child care may not be as important to parents as differences in the type of child care (center-based or home-based) or whether or not the child care provider is related to the parent. Parents' choices of child care may be more usefully viewed as selecting a type of child care that has a particular probability of being free, and an average cost if it is not free. These price characteristics are balanced against variations with respect to several other attributes (for example, the number of children, whether it is home-based or center-based, and whether the provider is related to the child). Therefore, the approach in most studies, which is to characterize the parents' choice as between paid and unpaid care, seems very limited. In a departure

TABLE II.2

ESTIMATED EFFECT OF CHILD CARE PRICES ON CHILD CARE CHOICES FOR WORKING MOTHERS

Study	Data Source	Population Studied	Types of Child Care	Measure of Child Care Prices	Estimated Elasticity of Choice with Respect to Child Care Prices
STUDIES OF MARRIED WOMEN WITH PRESCHOOL- AND SCHOOL-AGE CHILDREN					
Blau and Robins (1988)	1980 Employment Opportunity Pilot Projects (EOPP)	Married mothers with a child under age 14 years	Market child care (positive price of care by nonrelative or group care)	Average cost of child care in the site, estimated using families with expenditures	-.34 (average over range of child care costs analyzed)
Ribar (1995)	1984 Survey of Income and Program Participation	Married mothers with a child under age 15 years	Paid child care	Child care expenditures for all children in family; estimated using families with expenditures	-.7 or -.5 (children under 15) -.3 or -.2 (children under 6)
Michalopoulos et al. (1992)	1984 Survey of Income and Program Participation	Mothers with a child under age 15 years; Separate estimates for married and single mothers	Paid child care	Child care expenditures for families with positive expenditures	-.205 for married mothers -.298 for single mothers
STUDIES OF MARRIED WOMEN WITH PRESCHOOL-AGE CHILDREN					
Ribar (1992)	1984 Survey of Income and Program Participation, Wave 5	Married mothers with a child under age 6 years	Paid child care	Child care expenditures for three youngest children in family, estimated using families with expenditures	-1.86 (estimated at the means)

Study	Data Source	Population Studied	Types of Child Care	Measure of Child Care Prices	Estimated Elasticity of Choice with Respect to Child Care Prices
Blau and Hagy (1998)	1990 National Child Care Survey 1990 Profile of Child Care Settings	Married and single mothers with a child under age 7 years and not in school	Paid child care Center care Family child care Other nonparent care	For centers and family child care: estimated from providers' fees in PCS; For other nonparental care: estimated from family expenditures in NCCS	-.34 for paid child care -.24 for center care -.34 for family child care -.12 for other nonparental care
Hofferth and Wissoker (1992) Chaplin, Hofferth and Wissoker (1996)	1985 National Longitudinal Survey of Youth	Mothers with a child under age 6 years and use nonmaternal care	Center care Home-based care by nonrelatives Relative care Father care	Amount paid for child care arrangement by families paying for care	No elasticities provided, but: If cost of center care declines by 10 percent, use increases by 17.2 percent If cost of home-based care declines by 10 percent, use increases by 2.9 percent If cost of relative care declines to zero, use increases by 11.1 percent

SOURCE: Adapted from Council of Economic Advisers (1997), Appendix 2: Effect ofChild Care Price on Use of Market Care, Given Maternal Employment. Source for each row of the table is indicated in the first column.

from this usual approach, Blau and Hagy (1998) provide estimates of the price elasticity of various choices of child care by type. For center-based care, they estimated a price elasticity of -.24; for family child care, the estimated price elasticity was -.34; while for other nonparental care, the estimated price elasticity was -.12. Thus, we would expect that as the price of center-based or family child care fell, more families would choose these types of care, but the response would be very small.

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[1]Dollar amounts are adjusted for inflation to 1993 dollars.

[2]Low-wage mothers are defined as those who are predicted to earn less than $6 per hour , which would provide income at about the poverty line for a family of four if the woman worked full-time, year-round in 1990. Moderate income is defined as potential earnings of $6 to $8 per hour, which would translate into earnings between 100 and 133 percent of the poverty line for full-time, full-year work in 1990.

III. CHILD CARE POLICIES AND THEIR EFFECTS ON FAMILIES' CHOICES

The government has several policy tools to make child care more affordable for low-income families, thereby helping them to obtain the child care they prefer and supporting their work activities. Child care subsidies are perhaps the most important policy tool affecting the child care choices and employment decisions of low-income families. The government may also support consumer education programs that provide parents with information about how to find good-quality, reliable, and flexible child care options that can best support their employment. Providing such information helps to reduce search costs for families, thus helping them find child care that more nearly meets their preferences at a price they are willing to pay. Nevertheless, consumer information cannot be as effective a policy tool if families are not also given the resources to pay for the types of care they are seeking. We discuss how subsidy and information policies affect decisions about child care and employment, and we consider what is known about the optimal design of such policies.

A. CHILD CARE SUBSIDIES AND THE COST OF CHILD CARE

Child care subsidies are intended to reduce the cost of child care, thus increasing the incentive to work because low-income families can retain more of their earnings. The employment decision in its simplest form is a decision to allocate time between work and leisure. The individual prefers leisure time, but by working, can earn money to pay for other goods and services he or she also wants. The price of an hour of leisure is what the individual would earn by working for that hour. Therefore, higher net earnings make work relatively more rewarding and the price of leisure relatively higher. This price effect will thus lead the individual to spend more time working.

However, if the net hourly wage is higher, the individual will have higher income even without working a greater number of hours, and will use the additional income to purchase more of what he or she wants, including leisure time. This leads to a tradeoff, with the individual deciding whether to work an additional hour by balancing the attractiveness of earning the higher net wage for this hour against the desire to put some of that higher income toward more leisure time. Thus, the income effect of an increase in the wage attributable to child care subsidies will lead the individual to work somewhat less than in the absence of the subsidy. The empirical studies cited in the previous chapter estimate that the net effect of the income and price effects of an increase in subsidies is to increase the employment of low-income women.

In addition to increasing the net wage from employment by reducing the cost of child care generally, subsidies are also designed to help low-income parents choose the types and quality of child care that they prefer by reducing the prices of child care. If families are able to use a more preferable type or quality of child care, they may be more comfortable working. [1]

Policies defining eligibility for subsidies, setting sliding fee schedules (the amount parents must contribute to the cost of child care, which depends on income), and setting maximum payment rates to providers determine the extent to which subsidies create sufficient work incentives and make more preferable child care options available to low-income parents. A study of state child care subsidy policies prior to Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) showed that policies varied widely across states (Ross 1996), and policies have not converged a great deal since that time (National Child Care Information Center 1998). States set very different income eligibility limits and sliding fees, meaning that families with the same income in different states received very different subsidies and faced very different child care costs. States also set different maximum payment rates, or the maximum level of reimbursement they would pay a provider for child care. Yet, while the specific levels of income eligibility limits, sliding fees, and maximum payment rates vary across the states, these three basic elements provided a similar fundamental structure for the child care policies in almost every state.

If we understand better how child care costs affect families' employment and child care choices, it may be possible to provide some guidance to states about the optimal design of child care subsidy program rules, given a particular level of funding for child care assistance. This section discusses each of the three major child care program elements and how it might affect parents' employment and child care choices. We also discuss factors affecting families' decisions to participate in child care subsidy programs for which they are eligible, including administrative rules and rules for covering unlicensed, home-based child care.

1. Income Eligibility for Child Care Subsidies

Income eligibility limits determine, in a very basic way, who may receive subsidies. The regulations for CCDBG allow states to define any income limit up to 85 percent of state median income. Most states use a lower income eligibility limit – 50 percent to 65 percent of state median income is most common (National Child Care Information Center 1998). States have set lower income eligibility limits in order to concentrate scarce child care resources on the most needy families.

Income eligibility limits ensure that child care assistance goes to the most needy families. However, research on the employment responses to child care costs, summarized in the previous chapter, indicates that mothers are responsive to child care costs throughout a range of family incomes, although the estimated responses for low-income mothers are quite variable. Research has not clearly established that any particular low- to moderate-income group might have a particularly strong employment response to child care assistance, so we do not know if there would be a substantial payoff to investing child care resources in one group versus another. As a result, the optimal income eligibility cutoff may be dictated more by equity considerations — that is, focusing scarce resources on the most needy families — or by identifying a population, defined by income, that the public is most interested in encouraging to work. Further research is needed to measure more definitively the employment responsiveness of low-income mothers to child care costs, and thus to determine whether there is also an efficiency argument for focusing scarce child care assistance on lower-income families.

Policymakers must keep in mind that income eligibility limits interact with the optimal structure of sliding fees, in terms of both incentives to families and costs to the state for subsidies. We discuss these issues more fully in the next subsection.

2. Sliding Fees

Families receiving child care subsidies are generally required to contribute to the cost of child care. This fee ensures that parents begin making a transition to paying their child care expenses as their incomes rise, since sliding fees generally increase with family income. The sliding fee can be analyzed as a tax – both may be either proportional or progressive. The regulations for CCDBG suggest that fees be set at 10 percent of family income, which would be proportional, except that the regulations also allow states to waive fees for families with income at or below the poverty line (*Federal Register*, July 24, 1998). In practice, many states set relatively low sliding fees over the initial range of incomes and then increase fees more steeply as income rises, which is a progressive structure (National Child Care Information Center 1998). The reason for this structure is to minimize a notch in the individual's budget constraint relating hours of work to disposable income.

A notch would occur if child care policy provided a relatively large benefit that disappeared completely when income reached the eligibility limit. A notch would create a disincentive to work.

In the discussion that follows, we describe the variety of ways in which states have structured their sliding fee scales, how the structure of sliding fees can affect employment and child care choices, and how parents are affected by state policies regarding whether providers may charge a co-pay in addition to the sliding fee.

a. The Structure of Sliding Fee Scales in the States

In most states, the sliding fee is a dollar amount or a percentage of income that does not depend on the type of child care chosen. As a result, the price of each type of child care becomes the same (unless the price of an option is zero), so parents receiving a child care subsidy may choose the type of child care they most prefer. Parents receiving a subsidy would be likely to choose a different mix of child care arrangements relative to what they would have chosen in the absence of a subsidy. With a subsidy, parents would be likely to choose a larger proportion of more expensive arrangements because they can afford them.

Some states set sliding fees that are based not only on income level but also on the cost of child care. Thus, rather than setting the fee as a dollar amount that increases with income, or a percentage of income, the fee may be a percentage of the cost of child care chosen by the parents, and this percentage may increase with income. Fees based on the cost of child care give parents some help in paying for child care but do not distort relative prices of child care arrangements. Therefore, we would expect parents to make child care choices that are more similar to the choices they would have made in the absence of a subsidy. Although child care generally has been made less expensive by this type of subsidy, families still face the price variation across different types of child care that existed prior to the subsidy. States using this form of sliding fee are likely to find that the cost of subsidies per family is lower compared to what it would be if sliding fees were based only on family income and not on the cost of care. However, no studies have examined how these fee structures affect parents' choices of child care and the resulting effect on state subsidy costs.

Sliding fee scales vary considerably across states, although their general pattern is similar (National Child Care Information Center 1998; Ross 1996). Some states have set relatively low fees throughout the range of eligible incomes, particularly if the income eligibility limit is sufficiently low that all of the families receiving child care assistance have income close to or below the poverty line. Other states have relatively steep fee schedules, so eligible families with more income are paying most of the cost of child care. In 1994, for example, the sliding fee for a family of three with one child in child care in Mississippi ranged from $4.20 a month for a parent working full-time at the minimum wage to $25.20 for a parent with income at the poverty line (see Table III.1). In Nebraska, the corresponding fees were $27 and $157, respectively. While many states a have changed their sliding fee scales since 1994, the major points made here about how states set sliding fees are still valid.

b. Implications of Sliding Fee Scales for Employment Decisions

Although it is generally true that child care assistance provides an incentive to work by increasing the parent's net earnings, the design of the sliding fee schedule can introduce a disincentive. This disincentive can occur at least over some income ranges if the rate of increase of sliding fees is high over that range of family incomes, or if a notch occurs, so that a relatively large benefit is lost when the family's income reaches the eligibility limit. When sliding fees increase very quickly as

TABLE III.1

MONTHLY FEES BY STATE IN 1994 FOR AT-RISK AND CCDBG PROGRAMS FOR A FAMILY OF THREE WORKING FULL-TIME WITH ONE CHILD IN CARE -- DIFFERENCES BY INCOME

State	Full-Time Minimum Wage ($737 per month)	100 Percent of Federal Poverty Level ($1,026 per month)	150 Percent of Federal Poverty Level ($1,539 per month)
Alabama	21.5	43.00	NA
Alaska	7.74	7.74	NA
Arizona	21.50	NA	NA
Arkansas	0.00	51.60	NA
California	43.00	43.00	60.20
Colorado	54.00	109.00	NA
Connecticut	5.16	10.32	15.48
Delaware	25.80	41.28	NA
District of Columbia	12.90	64.50	141.90
Florida	8.60	8.60	98.90
Georgia	55.90	90.30	141.90
Hawaii	0.00	0.00	25.20
Idaho	0.00	12.90	116.10
Illinois	1.08	1.08	78.00
Indiana	0.00	0.00	129.00
Iowa	0.00	NA	NA
Kansas	24.00	69.00	223.00
Kentucky	7.53	48.38	NA
Louisiana	12.90[a]	25.80[a]	180.60[a]
Maine	36.85	82.08	153.90
Maryland	0.00	0.00	NA
Massachusetts	8.60	77.40	172.00
Michigan	12.90	12.90	12.90
Minnesota	0.00	0.00	56.00
Mississippi	4.20	25.20	82.50
Missouri	10.75	21.50	NA
Montana	10.00	NA	NA
Nebraska	27.00	157.00	NA
Nevada	12.90	38.70	154.80
New Hampshire	1.08	1.08	2.15
New Jersey	52.39	66.68	128.60
New Mexico	1.00	25.00	100.00
New York (NYC)	0.00	21.50	129.00
New York (Suffolk Co.)	1.00	1.00	63.45
North Carolina	24.73	64.50	NA
North Dakota	51.60	129.00	129.00

TABLE III.1 *(continued)*

State	Full-Time Minimum Wage ($737 per Month)	100 Percent of Federal Poverty Level ($1,026 per month	150 Percent of Federal Poverty Level ($1,539 per month)
Ohio	15.00	NA	NA
Oklahoma	21.00	91.00	NA
Oregon	10.00	81.00	291.00
Pennsylvania	5.00	10.00	25.00
Rhode Island	21.50	25.80	73.10
South Carolina	20.64	38.70	38.70
South Dakota	25.80	25.80	NA
Tennessee	21.50	21.50	NA
Texas	66.33	92.34	138.51
Utah	0.00	0.00	252.00
Vermont	0.00	7.74	154.80
Virginia	18.43	51.30	115.43
Washington	1.00	1.00	179.50
West Virginia	2.15	32.25	NA
Wisconsin	0.00	27.00	68.00
Wyoming	51.60	86.00	NA
Minimum (several states)	0	0	2.15
Maximum (Georgia, Texas, Nebraska, Oregon)	66.33	157.00	291.00

SOURCE: Survey of State Child Care Program Rules, Mathematica Policy Research, Inc., 1994

NOTE: The calculations are based on a family of three with one parent working full-time (eight hours per day, five days per week) and one child. For sliding fees that depend on the cost of child care, we assume a cost of $1.50 per hour.

[a]Louisiana did not offer the At-Risk Child Care program at the time of the survey.

NA = not available. Family is not eligible for the program at this income level.

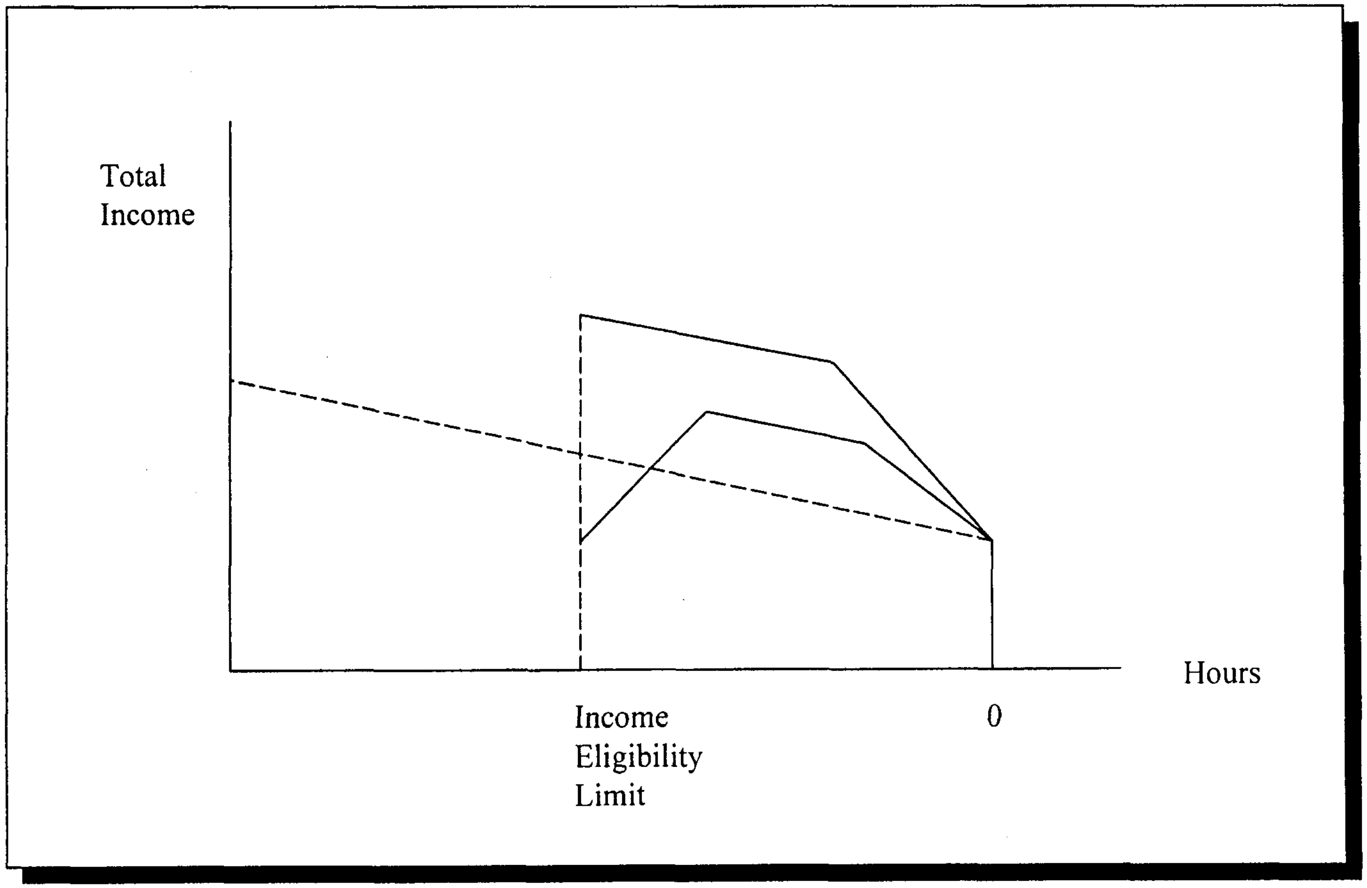
family income rises, parents may choose to work fewer hours or turn down a job offer at a higher wage because their disposable income (after child care expenses) does not adequately compensate them for the extra work.[2]

Implicit in sliding fees that go up at increasing rates over the range of family incomes is a tax on higher earnings, which may create a notched budget constraint for the individual, as discussed by Burtless and Hausman (1978) and Hausman (1981) and pictured in Figure III.1. Individuals choosing hours of work to maximize utility over this nonlinear budget constraint will tend to avoid the notches. Individuals with a relatively greater preference for work will tend to work more hours when they approach this notch, while those with a relatively lower preference to work would tend to work fewer hours as they approach this notch.

Figure III.1 shows two hypothetical budget constraints for individuals living in states with different sliding fee schedules. The figure shows how total family income varies with hours of work. The parent is working zero hours furthest from the origin and as many hours as possible closer to the origin. The dashed line shows the parent's income after child care costs without any child care assistance. The two solid lines show the parent's income after child care costs under different sliding fee schedules. The highest budget constraint illustrates a sliding fee schedule that pays most of the family's child care costs throughout the eligible income range but then withdraws all support when the family becomes ineligible. This illustrates the child care "cliff" discussed in the welfare and child care literature. The family experiences a sharp drop in income as work hours increase by a small amount because of the loss of child care assistance. The second state tries to avoid creating a child care cliff by increasing sliding fees more quickly as the parent approaches the income eligibility limit. However, fees increase by such a large amount that the parent is better off leaving

FIGURE III.1

HYPOTHETICAL BUDGET CONSTRAINTS FOR FAMILY INCOME AFTER CHILD CARE COSTS, STATES WITH DIFFERENT SLIDING FEE SCHEDULES



the subsidy program and paying for child care on her own just before she reaches the income eligibility limit. This budget constraint also includes a notch, but at a different hours/income point than was true of the first state.

The important fact about sliding fee scales that create notched budget constraints is that they can create strong work disincentives for people with a weak attachment to the labor force. For the mother in the first state, the disincentive to work is strong in that not working ensures that her income remains below the eligibility limits for the child care program. She is actually much better off with income below the eligibility limit than with income above the limit over quite an extensive range of hours. The work disincentive seems to be the greatest potential problem when sliding fees are very low throughout the eligible income range, income eligibility limits are low, and unsubsidized child care costs are high.

c. Provider Co-Payments in Addition to Sliding Fees

Provider co-payments are additional charges to parents over and above the maximum payment rate, which includes the sliding fee providers receive from parents and the subsidy amount providers receive from the state agency. States vary in their use of this practice. Some states prohibit it because they do not want providers to take advantage of parents receiving subsidies. Their rationale for this position is that they have set a sliding fee that they believe is the maximum amount parents can afford to pay, and a maximum payment rate that they believe is a fair market rate. Thus, there should be no reason for providers to charge more, and parents should not be able to afford more. Other states do not prevent providers from charging additional fees, viewing this practice as a reasonable private transaction between parent and provider. The rationale for this position also may be that states believe that this practice appropriately addresses the problem of not being able to determine exactly what each family can afford to pay or what the fair market price is for child care from each provider.

When states permit providers to charge parents a "co-pay" over and above the sliding fee, the cost of some child care options may be higher than state planners realize as they set sliding fees, particularly if maximum payment rates are set below market rates for many child care options within a reasonable geographic area for the parent. (We discuss maximum payment rates in more detail in the next subsection.) If the state does not permit providers to charge parents a co-pay, and maximum payment rates are low relative to child care market rates, many child care options may be unavailable to parents receiving a subsidy.

3. Maximum Payment Rates

States set maximum payment rates to limit the amount they are obligated to pay for subsidized care. PRWORA calls for states to set payment rates that are high enough so that families receiving subsidies have the same access to child care services as do families not receiving subsidies. To ensure this equal access, the regulations for the CCDBG call for states to conduct biennial market rate surveys and to set adequate payment rates — recommended to be set at the 75th percentile of local market rates — based on the market rate survey (*Federal Register*, July 24, 1998). The 75th percentile rate fully covers fees charged by 75 percent of the child care providers in the category that states define (for example, infant care in centers) in a child care market. Fees set at the 75th percentile rate give parents a very broad range of providers to choose from, or equal access as required by PRWORA. About half of the states set their payment rates at the 75th percentile, although most states do not conduct market rate surveys annually (National Child Care Information Center 1998).

Maximum payment rates typically vary by the category, or type, of care (center-based, home-based, and in-home care) and by the ages of children (infants, toddlers, preschool-age, and school-age) to reflect differences in the market rates for these different types of care. States may also set higher market rates for certain types of care that they want to encourage but that may cost more to provide — for example, child care in accredited centers or during nonstandard work hours. These higher payment rates give low-income parents access to types of child care that tend to be more expensive and more scarce.

In states using a statewide limit rather than a set of local market rates, providers and parents have raised concerns that payment rates are typically below the customary charges for providers in urban areas.[3] This may also occur when states set payment rates substantially below the 75th percentile rate. In response, providers will often refuse to serve children receiving a subsidy because they cannot obtain a full fee for these children. Many states allow providers to charge parents a co-pay in order to give parents and providers more flexibility and more options.[4] For instance, parents and providers can negotiate a payment that may enable families receiving subsidy to use center-based care or family child care from professional providers because they agree to pay the provider's normal fees. On the other hand, the combination of statewide rates and a co-pay may put a disproportionate burden on parents in urban areas, where child care costs can be very high.

4. Administrative Factors Affecting Participation in Subsidy

A family's decision to participate in a child care subsidy program depends partly on family circumstances and partly on program rules and administrative factors. Family factors that affect participation include financial issues, such as income relative to expected child care costs, and nonfinancial issues, such as the cost of the stigma associated with participation. Program rules include such issues as the level of sliding fees and maximum payment rates compared to the market cost of child care, as discussed in the previous sections. Administrative factors can affect the level of participation by reducing the transactions costs of participating or choosing providers and search costs involved in obtaining and using a subsidy.

Data gathered by ACF from the states provide a rough picture of participation in welfare-related child care programs across states and age groups in 1994 (Administration for Children and Families 1996). According to these sources, child care program participation varies substantially across states, which underscores the importance of program factors like funding levels, differences in program rules, and administrative factors that reduce the search and transactions costs associated with subsidies. Very little is known about the factors affecting participation in child care subsidy programs primarily because of a lack of data on eligible and participating families and on the state administrative practices affecting those families. Moreover, the state reports to ACF of child care program participation are missing information from some states, and contain inconsistent or non-comparable information from other states. Much work needs to be done with administrative data systems in some states so that we can obtain information on child care program participants nationwide that can help improve policy. This section focuses on the major types of administrative practices and rules that can affect participation in subsidy programs.

a. Reducing Transactions Costs of Participating

Child care subsidy programs can be implemented in ways that reduce the transactions costs to participating families. Simplifying access to child care and reducing stigma can be accomplished through policies that address (1) where families can apply for assistance, (2) outreach to parents to inform them about availability of assistance, (3) application and payment procedures, and (4) assistance in linking families with providers.

One way to provide convenient, equitable access to the child care assistance system is to locate the places to apply for child care assistance close the homes of families likely to apply. If convenient access requires that multiple offices accept applications for child care assistance, these offices should be linked by computer so that families may apply in a single place, and child care slots can be allocated fairly among all who apply.

In some cities, a significant portion of child care assistance is provided through contracts to providers for child care slots. All providers determine eligibility, but they do so only for their own slots. While this system lets parents apply for child care assistance in their neighborhoods, they must also apply in many places to improve their chances of obtaining a single subsidized slot. This system is costly for families, especially when their time is limited by employment.

Most cities, facing limited budgets for administrative expenses associated with child care assistance, try to designate a single office as the point of entry for child care assistance. This strategy allows families to apply in one place, so that they will know where to go for re-certification or to apply for child care assistance programs in the future. However, the only office may be inconveniently located for many families, increasing transactions costs of applying for assistance.

Outreach designed to inform parents about the availability of child care is a basic requirement of simple, equitable access to scarce subsidies. However, many states do little to reach out to families because funding is scarce and staff dislike turning applicants away. Most localities had little difficulty filling new child care slots that became available in FY 1992 and 1993, the last time child care funding increased substantially. Not long after the money became available, waiting lists began to form and turnover was very slow.[5]

Another administrative practice that promotes easy access to child care programs is a simple application that covers all child care programs.

b. Rules Regarding Use of Unregulated Family Child Care

Many states allow home-based child care providers caring for small numbers of children to operate without oversight by child care licensing and regulatory authorities, which leaves many providers operating legally without regulation. However, if unregulated providers are to offer care for children receiving subsidy, they may have to meet some minimal criteria. States have very different rules regarding what criteria must be met by providers that offer home-based child care for children receiving subsidized care, and these rules can have an important impact on the types of child care used by families receiving a subsidy. Under CCDBG regulations, states must have requirements designed to protect the health and safety of children in care that apply to all providers that serve children who receive subsidies. Health and safety rules must cover immunizations, the building and other physical premises, and minimum health and safety training that is appropriate to the provider setting. In practice, these rules may lead some relatives and neighbors to refuse to participate in the subsidy system, and parents would then have to decide whether to participate in the child care subsidy system by choosing a different provider or to remain with this provider and not participate in the subsidy program. The rules also require that health and safety regulations not interfere with parental choice by effectively excluding any category of care or type of provider (*Federal Register* July 24, 1998). However, state administrators indicate that rules regarding health and safety and methods of paying unlicensed and unregulated home-based providers have a large impact on patterns of child care use by families receiving subsidies. If state rules regarding health and safety, and payments to home-based child care and relative providers are easy to meet, then a large number of families who want to use this type of care will apply for subsidies. If, however, the rules are fairly stringent, so that otherwise unlicensed and unregulated providers do not want to go through the process of complying with those rules, then families who want to use these providers will not apply for subsidies.

No one has looked systematically at the stringency of rules for home-based care, how this interacts with the extent to which home-based providers are licensed, and how these factors affect the choices of child care, decisions to participate in subsidy programs, and the choices of whether and how many hours to work that are made by families eligible for subsidy programs.

B. CONSUMER INFORMATION

Supporting employment often requires more than assistance in paying for care. It may also require reducing the search costs involved in locating satisfactory child care arrangements by providing parents with the information they need to choose the child care arrangement that is most consistent with their preferences. Parents who have never tried to find regular child care may have difficulty obtaining information about providers and so may need assistance obtaining such information. They may also be inexperienced consumers of child care, so they may need assistance in identifying criteria for choosing providers, formulating their needs and constraints, and determining a plan for investigating and selecting a provider. The expectation is that informed consumers can put pressure on child care providers to supply the types, features, and quality of child care most desired by consumers.

1. Methods of Linking Parents with Information

There appear to be three different models for providing parent education and referrals to providers.[6] In the first model, very little information is available about child care options because child care eligibility workers are the only source of child care information, and they are not very familiar with child care providers in the community. In some cities, staff of the subsidy agency tried to fulfill this parent education role even when a child care resource and referral agency (R&R) operated in the city, sometimes because the subsidy agency perceived the R&R as unable to address the needs of low-income families. However, the quality of information on child care provided by the subsidy agency is adversely affected by the lack of funding for such referral services, and by the fact that child care eligibility workers do not have the background to explain how to choose a quality child care setting.

In the second model, parents are given the telephone number of the local R&R agency and a brochure describing its services. Staff of the R&R, in turn, describe child care options and provide referrals to parents who call. The linkages between subsidy agency and R&R often do not work smoothly, however. In many cities, it was not clear that parents were routinely given information about the R&R unless they asked for assistance in locating a provider, even when the local R&R had a contract to provide referral services to families receiving subsidies. Staff of the subsidy agency were not always willing to send parents to the R&R for parent education and referrals.

A third model is to provide subsidies and parent information in a single location, which is much more convenient for parents. In addition, the quality of the information about child care options and about providers is better when both services are co-located or provided directly by the R&R agency for several reasons. These organizations follow standard practices for collecting and disseminating information about providers that have developed over many years as the organizations have responded to parent requests for child care information. These organizations also work with child care providers in a variety of other contexts (including training, technical assistance, and administration of the Child and Adult Care Food Program), so they know what a quality child care setting looks like and can help parents identify what to look for to assess the quality of a child care arrangement.

2. Intensity of Information Services

Child care administrators in different areas have taken a variety of approaches to providing information about child care options, ranging from proactive to noninterventionist, and from energetic to ineffectual. For example, agencies in some cities take a very active role in informing parents about child care options. Parents receiving enhanced referral services are directed to providers who have just been checked for vacancies, and counselors follow up with the parent until a placement is made. If families are having difficulty finding a provider, agency staff members go into the neighborhood to develop a supply of providers. Enhanced referral services in most cities are available only to parents whose employers have paid for this service; however, one city extended these services to AFDC recipients for some time with funding from the welfare agency.

In other cities, the responsibility for administering child care subsidies is given to the child care R&R agency so that, as mentioned, parents can apply for subsidies and obtain information about child care options at the same place. When parents call the general telephone line at the R&R agency for a referral, the call is taken by a child care placement worker. If the discussion of child care options with the parent reveals a need for assistance in paying for child care, the child care placement worker can explain the various funding sources and refer the parent to a social worker if she decides to pursue funding. Providing this level of service clearly requires that the social work staff have smaller caseloads than they would if they were simply determining eligibility.

Many cities have not established systems to provide parents with good information about their options when they apply for subsidies because to do so is expensive. In many instances, subsidies are available in a welfare or social services office, so families needing assistance in finding a provider are given the phone number of the local R&R agency. Parents who do not ask for help may not be given information on how to obtain assistance. In other cities, parents asking for assistance in locating providers are simply given a list of licensed providers taken from the child care licensing office (even, in some instances, when a local child care R&R agency exists).

No research to date looks at the effectiveness of different strategies for informing parents about their child care options and about how to choose child care. It would be useful to look at different methods of linking parents with information services, and at different intensities of information and referral services with an eye toward examining how satisfied parents are with their choices over time and how successful they are at remaining employed. The speed with which parents are given help in finding child care may also be very important in supporting employment, as low-income parents cannot lose much time from work to resolve child care problems. It would also be useful to know how the provision of information and financial assistance for child care interact to help parents choose the type of child care they prefer and maintain employment over time.

[1] For more discussion of how the quality of child care from the parent's perspective may affect employment, see Ross and Paulsell (1998).

[2]When we consider how sliding fees affect the family's disposable income as hours of work increase, we should use income net of taxes and including the EIC, food stamps, and other sources, as discussed in Chapter II.

[3]Twelve states currently use a statewide rate, including Hawaii, Iowa, Louisiana, Montana, New Hampshire, New Jersey, North Dakota, Oklahoma, Rhode Island, Vermont, West Virginia, and Wyoming (National Child Care Information Center 1998).

[4] Nearly half the states allow providers to charge parents a co-pay, including Arizona, Connecticut, Delaware, Georgia, Hawaii, Idaho, Louisiana, Maine, Massachusetts, Mississippi, Missouri, Nebraska, New Hampshire, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Washington, and West Virginia (Adams et al. 1998).

[5]Turnover was 20 to 30 slots per month in many large cities with a population of more than 300,000.

[6] See, for example, Ross (1996).

IV. CHILD CARE POLICIES AND THEIR EFFECTS ON PROVIDERS' CHOICES

Child care policies that are intended to help low-income families find affordable, high-quality child care may have important unintended effects on providers and the supply of child care. Understanding the likely responses of child care providers to policies may therefore help improve policy design. We begin by discussing what we know about child care providers as they operate in the child care market. We then discuss subsidy policies that affect providers and child care regulations that affect the costs of providing care.

A. CHILD CARE PROVIDERS IN THE MARKET

Several studies of child care providers conclude that the child care market is monopolistically competitive, meaning that it has several of the characteristics of a perfectly competitive market and several characteristics of an oligopolistic or monopolistic market (Magenheim 1993). Like a perfectly competitive market, the child care market has a very large number of providers supplying child care services; providers can also easily enter and exit the market. As in a monopolistic market, child care providers have some control over the price of child care services because they vary the characteristics of the products they provide (for example, age groups served, location, hours, and quality), and because information about viable substitutes is costly for parents to obtain.

Providers compete not only with providers of the same type of care (for example, competition among centers) but also with providers of other types of care. Parents view center-based and home-based providers as substitutes to some extent. Thus, if the cost of providing one type of care increases significantly so that prices must increase for that type of care, parents may choose the other type of care, bringing into play the market forces that ultimately change the supply of child care. For example, if the cost of providing center-based care rises significantly as providers comply with ratio requirements for infant care, then parents may choose home-based care, center providers will have unfilled slots, and so some will go out of business, leading to fewer center-based care options for parents with infants. Parents face high search costs in obtaining information about providers on which to base their choice, and as a result, providers can compete on non-price characteristics of care by differentiating their product and thereby avoiding competing on price (Magenheim 1993).

Research by Blau (1993) indicates that the supply of child care labor (family child care providers and child care staff in centers) is very responsive to price. Blau used data from the Current Population Survey (CPS) to examine changes in the supply of child care labor between 1977 and 1987 in response to changes in the level of subsidies, the stringency of regulations, and the cost of child care. He finds that subsidies and regulations have little effect on the supply of child care labor. However, the elasticity of supply of child care in response to changes in the wage is between 1.2 and 1.9. This suggests that child care supply can expand relatively quickly to changes in demand with very little change in wages. In fact, over the past two decades, child care wages adjusted for inflation have increased very little even though the demand for child care has increased substantially.

B. SUBSIDY PROGRAMS AND THE SUPPLY OF CHILD CARE

Subsidy programs can have important effects on the supply of child care through the maximum payment rate and potentially, through the payment mechanism. Policy in these two aspects of child care can affect the quantity, price, and quality of particular types of child care, as discussed below.

1. Maximum Payment Rates

The statute establishing the CCDBG stated that parents who receive subsidies should have equal access to the types of child care available to families who are not receiving subsidies. To meet this goal, the regulations for CCDBG suggest that payment rates be set at the 75th percentile of market rates for the relevant type of child care; however, since the regulations do not require states to set payment rates at the 75th percentile, some states set lower rates.

When payment rates are lower than a provider's customary charge, we expect that the provider's response will vary depending on the strength of local demand for the provider's child care services and the availability of full-fee-paying families. In areas in which most families have low incomes or receive child care subsidies, providers may lose money when they serve children receiving subsidies. Providers in these neighborhoods are likely to charge families less as well, but this will lead to lower-quality care. Providers have to decide what mix of children from subsidized and full-fee-paying families, and what level of quality, will enable them to make ends meet. Many providers in low-income neighborhoods have been unable to put together a viable mix of children from fee-paying and subsidized families, and have gone out of business. In areas in which there is a high demand for child care and parents who can afford to pay full fees, providers may refuse to serve subsidy children. All of these factors limit the child care options of low-income parents. No research studies have systematically examined providers' responses — in terms of quality, price, and quantity supplied — to different levels of maximum payment rates.

States set different payment rates for different types of child care and different ages of children. In addition, they may set higher rates for special types of child care that need to be expanded — high-quality child care and care at nonstandard hours. Ideally, these payment rates would be set on the basis of an understanding of the costs of providing these types of child care and on knowledge of the market rate for such care. Without this information, states might choose an arbitrary payment rate that will encourage some increase in supply but may not bring forth enough of the types of care that are needed. Nevertheless, there is no information about how the supply of quality child care and care at nonstandard hours responds to changes in the price of child care, so policymakers have little to guide them in setting rates for these types of care.

2. Payment Mechanisms: Vouchers or Contracts

States use one of three main payment mechanisms for child care. Vouchers are the most common because federal regulations for the major child care subsidy programs have sought to ensure equity in parental choice of child care arrangements by requiring states to offer parents the option of using a voucher to purchase child care services. Vouchers give parents the ability to choose any legal provider, and providers the security of knowing they will be paid regularly by the agency as long as they care for this particular child. Second, some states reimburse parents for child care expenses, and parents, in turn, pay providers. Providers may be less satisfied with this reimbursement mechanism, because when parents face cash flow problems, the provider's payment may be the first to be delayed. Reimbursement is most often used for child care by relatives and sometimes for unregulated home-based providers. Finally, some states use contracts to pay providers. A contract lasts for a relatively long period, during which time the provider needs only to keep the slot filled to receive payment from the child care agency. In contrast, a voucher only ensures payment while a particular subsidized child is in that slot; if that child leaves, the subsidy goes with him or her. While providers prefer contracts for their greater reliability and durability, parents may prefer the greater flexibility of using vouchers, which support a broader range of child care choices.

Ficano and Gennetian (1998) have completed preliminary work with the Profile of Child Care Settings data on child care centers to examine the question of whether lower-quality child care centers tend to seek out subsidies. Pointing out that measured quality may be endogenous to the decision about type of funding, the authors examine the empirical relationship between the *predicted* quality of a center in 1990 and the center's decision to accept vouchers, to contract for slots, to become a Head Start center, or to provide services financed only by private fees, without any subsidies. Quality is measured by teacher education and training, group size, and staff-child ratios. They find that somewhat lower-quality centers tend to contract with public agencies to provide subsidized care, and that this decision appears to be partly related to unused capacity in these centers.

In contrast, Helburn et al. (1995) use data on centers from the Cost, Quality, and Child Outcomes in Centers study to examine the quality of care provided by centers with different auspices and funding sources. They find that the highest-quality care is provided by publicly sponsored centers, independent nonprofits, private centers that receive funds tied to higher standards, and worksite centers. These authors use a measure of the quality of the child's experience in child care, which is more direct than the ones used by Ficano and Gennetian (1998); however, Helburn et al. (1995) do not correct for the potential endogeneity between quality and funding source. That is, a center may obtain funding from a given source because it has high quality compared to other centers in the area. While that funding source may then help the center to further improve quality, its current level of quality cannot be fully attributed to having a particular funding source. The true effect of the funding source on quality is the *change* in quality resulting from having a particular funding source.

In Helburn et al. (1995), the higher-quality centers tended to have higher costs, and notably, their funding tended to be regular and predictable, as would be true for contracted centers or Head

Start programs (but not for programs accepting vouchers). Nevertheless, because of the likely endogeneity between quality and sources of funding, these authors have established a correlation without really explaining how it arises. The work of Ficano and Gennetian (1998) is promising but would be stronger if it were based on data from a more recent child care policy environment, and if it used variation in quality and funding sources over time to tease out the relationship between quality and sources of funding.

3. Effects on Providers of Offering Information to Parents

One of the reasons the child care market is not perfectly competitive is that parents cannot easily obtain information about the quality, price, and other features of child care supplied by each provider before making a decision. Economic theory suggests that if providers can differentiate their products (which they do) and if information is costly to obtain (which it is), then providers can charge more than marginal cost for their services. The result is greater price dispersion and higher average prices than one would observe in a perfectly competitive market.

Child care R&R agencies existed in about half of all local areas in the U.S. in 1990, most commonly in areas of higher income and education (Chipty and Witte 1998). Since that time, part of the CCDBG funding has been earmarked for quality improvements, including the funding for R&R agencies, and many states have used this funding to introduce or expand the scope of resource and referral. These agencies maintain databases on licensed and regulated providers in the area so that they can help parents identify and contact providers. The National Child Care Study of 1990 found that only 9 percent of the parents surveyed said that they found their current center or non-relative, home-based provider through an R&R service; 66 percent said that friends, neighbors, or relatives helped them locate care (Hofferth et al. 1991). It is possible that a larger proportion of parents may have contacted an R&R agency to find child care, but they may have ultimately found their provider by following a lead provided by a friend or relative. Nevertheless, the National Child Care Study was conducted in the very early years of the JOBS program and before states put large amounts of new funding toward building or expanding R&R services. In the new welfare environment and with larger and more widespread R&R agencies, more parents may use these services as they search for child care.

Chipty and Witte (1998) examine how R&R agencies have influenced the price and quality of child care. They use data from the Profile of Child Care Settings (PCS) on the prices of care and child-staff ratios for infants, toddlers, preschool-age, and school-age children in centers. The PCS obtained information on centers in 100 different counties or county groups that were representative of centers in the U.S in 1990. The authors also obtained information on the presence of R&R agencies in the 100 PCS markets in 1990. Chipty and Witte find that R&R agencies have large and statistically significant effects on the distribution of prices for the care of infants and toddlers. Compared with prices in other markets, prices in markets that have R&R agencies are significantly less dispersed, and the maximum prices are lower for infant and toddler care. Prices of care for preschool-age children are not affected by the presence of R&R agencies. Price dispersion and average prices for school-age care are not significantly affected by the presence of R&R agencies, but the maximum price is reduced.

The effects of information provision on the market for infant and toddler care may be greater than for older children because for infant and toddler care, the amount of information parents have about providers compared to the amount of information providers have about parents is substantially asymmetrical. Younger children are not able to report accurately about the quality of child care they are receiving, and many parents with young children are new to the child care market. Chipty and

Witte conclude that parents are willing to incur higher search costs for infant and toddler care because of the great asymmetry in information and because they value higher-quality child care for this group. When children are older, parents are less willing to search intensively for child care because they have become more experienced consumers of care and because their children are better able to tell them what goes on in their child care setting.

Chipty and Witte note that the decrease in prices associated with the presence of R&R agencies may be accompanied by a decline in the quality of care. They examine staff-child ratios and find that R&R agencies have no effect on the distribution of this quality indicator in child care markets. Since staff-child ratios are not perfectly correlated with the quality of the child's experience in care ("process quality"), the authors do not draw firm conclusions about whether the presence of R&R agencies intensifies the price competition surrounding unobservable (process) quality.

Chipty's and Witte's conclusion -- that the presence of R&R agencies affects prices in the infant and toddler care markets -- is curious when only 9 percent of the parents in the NCCS study reported receiving help from an R&R agency in locating child care. Hofferth et al. (1991) do not report whether the proportion of parents using R&R agencies was higher for parents of younger children, or whether parents used the R&R agency but did not ultimately find their provider through that service. Nevertheless, one wonders how R&R agencies can affect market prices if so few parents used them to find their child care arrangements.

C. REGULATIONS AND THE SUPPLY OF CHILD CARE

Several types of child care regulations and standards designed to ensure quality vary by the extent of their applicability to providers and the level of quality they would require. Child care licensing establishes thresholds for health, safety, and quality to reduce the risk of harm in child care settings. The state determines which types of providers must be licensed in order to legally provide care, and in order to receive the license, these providers must meet certain standards. Most states require child care centers and some home-based providers (depending on the number of children they care for) to obtain a license. The minimum number of children in home-based care at which licensing is required varies from one child in Maryland, Florida, and Oklahoma to thirteen children in South Dakota. Thus, in many states, a substantial number of home-based child care providers may operate without any regulatory oversight by the state.

Other child care standards seek to raise the level of quality beyond basic assurances of health and safety, toward high-quality. The Head Start program standards cover the full range of health, safety, child development, and family support issues, and are applied to Head Start centers and family child care homes by law. However, the vast majority of child care settings are not covered by the Head Start standards. Another frequently-cited set of quality standards are the accreditation standards from the National Association for the Education of Young Children (NAEYC). These standards are considered to be authoritative guides to quality for child care centers (and quality standards have also been developed for home-based care by the National Association for Family Child Care), but they are voluntary and are met by only a very small fraction of child care settings.

This section discusses the effects of state regulations on child care quality, prices, and quantity supplied, since the largest number of providers are affected by these standards. Regulations are established partly to overcome the problem of information asymmetry in the child care market. Parents cannot have perfect information about the quality of care their children receive all day, so in part to address this problem, regulations are designed to ensure that providers offer a minimum level of care. The dilemma of regulation is that higher standards may raise costs for providers to a point at which parents will seek substitute providers, and this may reduce the supply of certain types of child care.

Hofferth and Chaplin (1998) estimate a model in which regulations affect the quality, cost, and availability of child care, and these outcomes in turn affect parent choices of care. They use data from the NCCS to estimate the effects of regulations for centers and home-based providers governing child-staff ratios, training, and inspections. They find that training requirements for center-based providers reduce the likelihood that parents choose a center, while state inspections increase the likelihood that parents will choose center-based or regulated home-based setting.

Chipty and Witte (1997) used data on child care centers from the Profile of Child Care Settings (Kisker et al. 1991) to examine how regulations affect the center's decision to exit a market and the resulting quality of child care available in the market. They find that more stringent ratio requirements for infant and toddler care cause centers to exit this market, and that the requirements are associated with increases in the average and maximum child-staff ratios in the market. They conclude that the higher-quality centers that were competing on quality rather than price cannot compete as effectively when standards are raised, so they exit the market. For school-age care, however, lower required child-staff ratios do not lead to exit, so when ratio requirements are more stringent, school-age care has lower average and maximum child-staff ratios. The authors conclude that policymakers need to understand how child care providers will respond to changes in regulations in order to determine whether a given change will accomplish their policy goal. Moreover, the potential for multiple effects on supply both within the market being regulated and in the markets for substitutes could reduce the usefulness of regulations as a policy tool. We need more information about providers' responses to regulations so that this tool can be used more effectively to meet policy goals.

V. CONCLUSIONS AND RESEARCH AGENDA

The cost of child care can be substantial in relation to the income of a low-skilled parent with young children. Since earnings of low-skilled workers are not expected to increase very much even over a period of as long as a decade, parents in low-wage occupations are likely to have difficulty paying for child care when their children are young and in need of full-time care. The high cost of child care and the likelihood that some parents may have to sacrifice quality for affordability, means that child care can present a significant obstacle to the stable employment of low-income mothers.

Child care costs and subsidy policies designed to moderate those costs for low-income families can be analyzed directly using an economic framework. The economic framework is based on the assumption that individuals try to make themselves as well off as possible within the constraints of their budgets and the price of goods. Those who supply goods to consumers try to do so as efficiently as possible, given the costs of resources they use in production, so that they can obtain the highest return. These basic assumptions lead to testable hypotheses about the choices parents and providers will make in the child care market. This paper has discussed the extent to which these hypotheses have been examined in the child care literature and the extent to which the empirical information in the research literature is a sufficient basis for making child care policy. Nevertheless, because of data limitations, substantial gaps in our understanding of the child care market remain.

A. CHOICES OF LOW-INCOME FAMILIES IN THE CHILD CARE MARKET

Economists have tested hypotheses about the behavior of parents and providers in the child care market and have measured the magnitude of responses to prices in the child care market. Labor economists have measured the responsiveness of mothers' employment decisions to child care prices, and the responsiveness of their child care choices to the price of care. In general, studies of mothers have found that their employment decisions are modestly sensitive to child care prices. However, the literature pertaining to low-income mothers is less than conclusive, and the issue needs to be further studied now that these women's former alternative to working — welfare — is no longer a reasonable option. Many of the existing studies also suffer from having used estimated values of wages and child care prices for women who were not working or were using paid care. Kimmel (1998) demonstrates how sensitive estimates of the elasticity of employment with respect to child care prices are to the specifications of estimated child care costs.

In light of these gaps in the literature, we have several recommendations for future research on these issues:

- ***Study Employment Responsiveness of Low-income Mothers to Child Care Prices*** — Data collection should focus on low-income mothers and provide for sufficiently large samples to examine separately the responses of mothers who have preschool-age children and the responses of mothers who have only school-age children. The analysis should measure the responsiveness of employment decisions and child care choices to child care prices.

- ***Obtain More Wage and Child Care Data to Avoid Having to Estimate Missing Values*** — If data on mothers are collected over a period of about two years, it may be possible to observe wages for a larger portion of the sample. Information should also be collected on the prices of child care in the markets these women face so that the price of child care would not have to be estimated on the basis of the child care expenses of women paying for child care.

- ***Use a Broader Set of Employment Measures*** — With longitudinal data over a two-year period, it would be possible to analyze the effect of child care prices on additional measures of employment — for example, stability, or the number of months employed.

B. CHILD CARE SUBSIDY POLICIES AND THEIR EFFECTS ON FAMILY CHOICES

Child care subsidy policies are intended to help parents pay for child care. Families with sufficiently low incomes may participate in a subsidy program, paying a specified amount for child care that depends on their income. The state pays providers the remainder of the fee, up to a maximum amount.

Nevertheless, the specific design of these policies can affect parents' work choices and the supply of child care. The structure of sliding fees varies across states, and the way in which sliding fees interact with family income may affect parents' work decisions. The structure of sliding fee scales may also affect parents' child care choices in ways that also influence the stability and quality of child care and the cost per child of subsidies. Policy choices, such as spreading funding for child care assistance across more families by reducing the average subsidy amount, may lead to increases in sliding fees. In turn, these increases may have adverse effects on employment. A policy that reduces maximum payment rates may have adverse effects on the supply of child care to children receiving subsidized care.

Despite a plethora of straightforward hypotheses on the effects of subsidy policies on the decisions of parents and child care providers, we need to observe family circumstances and choices under experimental policy variations to control for state-to-state differences in economic conditions, welfare program environments, child care markets, and other conditions to estimate the magnitude of these responses. We need information on the proportion and characteristics of eligible families who are participating in child care subsidy programs, what parents pay for child care, and how participation in child care subsidy programs affects what parents pay. Therefore, we recommend future research in the following areas:

- ***Demonstration of Family Choices Under Different State Child Care Program Rules*** — A major goal of this study should be to obtain information that can be used to identify principles for the optimal design of child care subsidy programs in the current welfare policy environment. Additional goals include learning about parents' responses to variations in child care program rules. This study should test variations in income eligibility limits and sliding fee structures. Researchers would randomize families to face different child care subsidy policies, and then survey them periodically about employment, earnings, child care use, payments for child care, and awareness of and participation in child care subsidy programs.

- ***Study of Child Care Availability, Preferences, and Choices under Welfare Reform*** – As part of the child care subsidy demonstration, it would be possible to update and expand our information about several issues. Welfare reform may make it more difficult for relatives to help with child care because they may be required to work. To what extent do parents leaving welfare for work have relatives available for regular child care or for backup child care in an emergency? Do parents and relatives who could provide child care arrange their work schedules to make this possible? Are there any differences in the tendency to use relatives for child care by ethnicity?

- ***Study of School-Age Child Care Needs*** – The child care subsidy demonstration could also provide access to a sample of parents with school-age children. A focus group study could examine parents' preferences regarding school-age child care and how the cost of school-age care affects choices of care and employment decisions. For example, do parents of school-age children seek jobs that coincide with the school day so that they can be home with their children after school? Would their employment choices change if good after-school care were available at very low cost?

- ***Study of Provider Choices*** – Researchers would draw a representative sample of providers in the local child care market, and obtain information about their fees, quality, and features of the care they provide. The provider data and state data on payment rates would be used to analyze the relationship between maximum payment rates and providers' willingness to serve children receiving subsidies. These data could also be used to analyze the relationship between maximum payment rates and market prices and quality.

- ***Estimate Child Care Program Participation Rates and Participant Characteristics*** — This study would obtain basic information about current child care subsidy policies and TANF policies in the states so that a microsimulation model could be used to estimate the size of the population eligible for child care assistance in each state. Information should also be collected on the number of participating children and families by demographic characteristics in each state. A microsimulation model would allow researchers to combine information on the number of eligible children and families with data on the number of participating children and families to yield participation rates by state and by basic family and child characteristics. Obtaining data on participating families may require investments in administrative data systems in some states.

- ***Analyze State Child Care Program Participation Rates and Policies*** – The information on child care program participation rates by state and demographic group could be compared with information on state child care policies to develop hypotheses about the factors influencing parents' participation decisions. Future work could then develop methodologically strong tests of the most important hypotheses to learn more about parents' participation decisions and develop recommendations for improving child care subsidy policies.

- ***Study of Home-Based Care Used by Families Receiving Child Care Subsidies*** – This study would be designed to learn more about the ways in which (1) state licensing rules and (2) subsidy program rules regarding standards and payments to home-based providers affect the choice of child care provider, the decision to participate in child care subsidy programs, and the employment choices and outcomes of parents eligible for child care subsidy programs.

- ***Study of Provider Responses to Payment Rate Incentives*** – Many states offer higher payment rates to child care providers who offer child care meeting certain characteristics. For example, high-quality child care and care at nonstandard hours may be reimbursed at higher levels. It would be helpful to know the size of the supply response to higher payment rates. It may be possible to test these responses by selecting three or four states, and having these states each select three or four communities in which to offer different levels of incentive payment rates. The study could rely on data from the child care subsidy system if good data are available on parents' work schedules and provider characteristics. While this study is not methodologically very strong (since the payment rate incentives may change the mix of families participating in subsidy programs and communities in states may differ in their need for child care at nonstandard hours) the study would provide some information on providers' responses to these policies and could provide a foundation for designing a stronger study if more information would be useful.

C. CHILD CARE POLICIES AND THE SUPPLY OF CHILD CARE

Some important information is emerging about the behavior of child care providers under variations in regulatory policy and variations in the availability of R&R agencies. This research is based on analyses of data from the Profile of Child Care Settings and the National Child Care Survey 1990. Both databases include information from parents and child care providers in 100 communities selected to be representative of the U.S. Researchers have also added information about economic and regulatory conditions in the PCCS/NCCS communities. While the analyses of the PCCS and NCCS data have been valuable, the data predate welfare reform. They also predate the significant child care policy changes that occurred in the early and middle 1990s as new funding became available to states, and as federal child care program regulations required states to design their child care policies to emphasize parent choice. Therefore, we recommend research in the following area:

- ***Repeat the PCCS and NCCS Studies, a Decade Following the Original Studies —*** Significant policy changes are the rationale for repeating these important studies of the child care market. Moreover, some analyses that exploit variation across time could be performed if the same (or most of the same) child care markets were chosen for the repeat study. Regulatory changes over the period may have caused changes in the supply of child care that could be examined using data on child care providers in the same communities at two or more points in time. Changes in child care subsidy policies and in the demand for child care may also affect the quantity, quality, and price of child care over time. A repeat of the PCCS and NCCS studies would support further research on the effects of regulations and subsidy policies on the supply of child care. The ability to use data over time would strengthen analyses based on a second round of the parent and provider studies. Nevertheless, while some basic consistency across time is needed if comparisons are to be made, care should be taken to improve aspects of these studies in whatever way possible. The studies should include subsamples of low-income parents that are large enough to provide useful information on the child care market that faces low-income parents. The studies should also include a sample of unregulated, home-based providers in at least a subset of sites, because these providers make up a significant portion of child care supply. An observational assessment of the quality of a subset of child care providers included in the study could offer a nationally-representative measure of the quality of child care in the U.S. This could be done in a subset of sites to make the effort more manageable.

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