

THE ECONOMICS OF CHILD CARE

draft report

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EXECUTIVE SUMMARY

- Large increases over the last twenty years in the numbers of employed mothers with young children has more than doubled the number of young children in non-parental care; by 1995 there were almost 10 million children under 6 with employed mothers in non-parental care. This trend is likely to continue as welfare reform moves many mothers with young children off welfare and into the workplace.
- Many families with young children and employed mothers rely on informal, low direct-cost care supplied by relatives. But over half of these families purchase child care, and for those without access to subsidized care, child care costs can be a sizable financial burden. This burden is particularly heavy for poor families: poor families who pay for child care for their young children spend an average of 18 percent of their monthly income on child care, compared to 7 percent for non-poor families.
- There is also reason to be concerned about the quality of care: Recent surveys of child care centers and family day care homes found that the majority of child care was not of a high enough standard to have a positive impact on child development, and a disturbing fraction was of a level that could threaten the child's health and safety.
- Potential economic arguments for intervention in the child care market include external benefits, information problems and redistribution. This paper reviews these arguments and the related evidence.
- A review of empirical evidence suggests that child care subsidies increase the employment of mothers and the use of paid care among working mothers, but have little effect on the quality of care purchased. **A 20 percent decrease in the cost of care is associated with an increase in employment among mothers with young children of 370,000 to 1.5 million, and in an increase in the total number of young children with employed mothers who use paid care by 560,000 to 1.4 million. A 20 percent subsidy made available only to working mothers with young children who are below 200 percent of poverty is associated with 112,000 to 336,000 more young children in paid care.** Regulations may increase the quality of care but are also likely to increase provider costs and the price parents pay, thus driving some providers out of the market and inducing some parents to switch into unregulated care.
- While the existing evidence allows us to draw some preliminary conclusions about the likely effects of various policies, remaining gaps in our knowledge hinder our ability to analyze different policy options. There are virtually no studies that examine the responses of the *low-income population* to child care policy; most of the evidence reviewed in this report is based on studies of a more general population. Since the responses of the low-income population are likely to differ from those of the population as a whole, our ability

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to estimate the responses of the low-income population to child care policy is necessarily limited. In addition, there are several areas in which additional information would improve our ability to evaluate different policy options. First, while there is a large body of evidence on the relationship between child care quality and child development, we lack evidence on the nature of the links between specific attributes of care and child outcomes. Second, we lack information on the effect of regulations on the price of care and on parental use of regulated care. Finally, we have only limited -- and incomplete -- evidence of the effect of child care subsidies on the quality of care purchased. These areas should receive high priority in future research.

INTRODUCTION -- OVERVIEW OF CHILD CARE

Between 1977 and 1993, the number of children under 5 with employed mothers in non-parental care more than doubled.¹ {see graph} By 1995, there were almost 10 million children under 6 with employed mothers in non-parental care.² This surge is attributable to a combination of increases in both the number of young children in dual-earner families and the number in one-parent families with an employed parent.³

Non-parental care can take many different forms. A distinction should be drawn between non-market care (also referred to as 'unpaid' care) that is provided by a relative or neighbor and market care (or 'paid' care) for which parents make direct payments.⁴ Over time employed mothers have shifted their care arrangements from parents or relatives to market child care.⁵ In 1993, about 55 percent of families with employed mothers and pre-schoolers used some form of paid care.⁶ Many families use multiple modes of care for a given child; 13 percent of children under 5 spent time in multiple modes of care in 1984-1985.⁷

Paid care itself comes in several different varieties. The most prevalent are child care centers, family day care homes (in which a non-relative cares for one or more unrelated children in his or her home), and in-home, non-relative sitters.⁸ There has been a shift over time toward more use of center care and less use of family day care. In 1988, 26 percent of young children with an employed mother had their primary care arrangement in center care and 24 percent in a family

¹U.S. Department of Commerce (1994) and Casper (1996).

²U.S. Department of Education (1995). Numbers refer to children not yet in kindergarten.. In addition, there were approximately 3.4 million children under 6 with *non-employed* mothers in non-parental care.

³Hernandez (1995).

⁴Non-market care has low direct costs, although there may be indirect payments made, perhaps through the rendering of other services in return for care.

⁵See Hofferth (1996) and/or U.S. Department of Commerce (1994) and Casper (1996).

⁶Casper (1995).

⁷Ribar (1992).

⁸Some of the care categorized as 'relative' may also involve direct payments but this tends to be a very small fraction of relative care. For example, in 1993, 17 percent of relative care involved payments, compared with 90 percent of center care or family day care (Casper 1996).

day care home; by 1993, these numbers had changed to 30 percent and 17 percent respectively.⁹ {see graph} Use of center-based care tends to increase with the age of the child and with the income of the family.¹⁰

The price of paid care represents a substantial financial burden to parents without access to subsidized care, and a proportionally much larger burden for lower-income families: In 1993, among families with employed mothers and young children who paid for care, those earning less than \$14,400 a year spent an average of 25 percent of their monthly income on child care compared to under 6 percent for families with annual incomes over \$54,000.¹¹ This financial burden varies with the mode of care; the average weekly cost of care in 1993 was \$57 for family day care, \$66 for organized child care (center or preschool/nursery), and \$83 for an in-home sitter.¹²

In addition to concern over the financial burden of care, there is concern about the quality of care that children receive. Two recent studies -- one of child care centers and one of family day care homes -- produced disturbing evidence of the quality of child care. The study of centers found that 86 percent of the centers surveyed provided mediocre or poor-quality care -- when judged from the perspective of child development -- and 12 percent were of such poor quality that the children's basic health and safety needs were only partly met. The family day care study found similar results: 91 percent were judged to be of inadequate or of only adequate quality.¹³ It is not clear whether centers or family day care homes are on average of higher quality: Centers tend to have more highly trained staff, but also have larger group sizes and lower staff-child ratios than family day care.¹⁴ There is no available evidence on the relative quality of market versus non-market care.¹⁵

⁹Casper (1996).

¹⁰Hofferth (1996).

¹¹Another breakdown: Families below poverty line spent on average 18 percent of their monthly income on child care, compared with 7 percent for non-poor families. All data do not include tax credits or subsidies. Casper (1995).

¹²SIPP 1993-4 data.

¹³Helburn and Howes (1996).

¹⁴Walker 1992; Blau and Hagy (forthcoming); Blau (under revision); Waite et al. (1991).

¹⁵Hofferth (1995) reports that, of all types of care, parents are least likely to report satisfaction with care provided by a relative, but in so far as this satisfaction may be based at least in part on convenience and reliability (Kisker and Maynard (1991)) and there is evidence that informal care is the least reliable (Phillips and Bridgman (1995)), this lack of satisfaction

CURRENT FEDERAL CHILD CARE POLICIES

Federal policies to reduce the cost of care

The government is not a direct provider of child care, as it is of elementary and secondary education. However, the federal government currently has several policies that reduce the costs of child care for working parents. These include the Child and Dependent Care Tax Credit (CDCTC), the Exclusion of Employer Contributions for Child Care Expenses, and the Child Care and Development Block Grant (CCDBG). *{see box}*.

Although we know what the state income eligibility requirements are for CCDBG funds, we do not have any available data on what percent of their eligible population states are currently funding. Some data from the four programs that preceded the current CCDBG -- and had about \$600,000 less in annual funding -- suggest that approximately 1 million children were receiving federally subsidized care, out of approximately 10 million children with family income less than 200 percent of poverty who had working mothers.¹⁶ Although some of these families can benefit from the CDCTC, many cannot, and almost all cannot claim the full benefit because of their low income tax liability. *Consequently, the vast majority of children with working mothers below 200 percent of poverty receive no -- or almost no -- federal subsidies for their child care.*

Government policy that pertains to the quality of care

The 1996 Personal Responsibility and Work Opportunity Reconciliation Act requires that states spend no less than 4 percent of their CCDBG funds on 'quality-enhancing' activities.¹⁷ The federal government also requires that the states certify that they have requirements to protect the 'health and safety' of children served by CCDBG providers; the states, however, are free to design the actual requirements that serve these aims.¹⁸

Regulations and licensing provisions are determined at the state or local level and vary widely.¹⁹

may not be a good indicator of development-related 'quality.'

¹⁶Numbers for children under 13 (?). citation??

¹⁷U.S. House of Representatives (1996). No data are currently available on how much the states spent and how it was spent. However, under the earlier program 7 percent of CCDBG expenditures in fiscal year 1995 were to improve the quality of child care. Of these funds, two thirds were used for monitoring and child care resource and referral (Child Care Bureau 1997).

¹⁸Child Care and Development Block Grant Act Section 658E.

¹⁹U.S. House of Representatives (1996). See also CCDBG Act Section 658E.

Licensing standards apply only to licensed or regulated child care providers, and states are free to determine the providers to which licensing standards will apply;²⁰ in the case of family day care homes, most states exempt certain providers -- often those serving less than 6 children but in some states the exemption applies to homes serving as many as 12 children -- from licensing requirements.²¹ Consequently, an estimated 82 to 90 percent of family day care homes were unregulated in 1990.²² These unregulated homes are all eligible to receive CCDBG funding, as long as they fulfil the 'health and safety' requirements that the state has put in place.²³

ECONOMIC RATIONALES FOR INTERVENTION IN THE CHILD CARE MARKET

Child care is a rapidly growing industry, involving substantial costs to large numbers of parents. The government currently intervenes in this market, as discussed in the previous section. Here, we review the economic rationales for government intervention in the child care market, and what the different rationales suggest about the appropriate type of intervention.

OVERVIEW: WHY AND HOW DO GOVERNMENTS INTERVENE IN MARKETS?

From an economic perspective, two issues must be addressed in thinking about government child care policy. First, is there an economic rationale for the government to intervene? Second, if so, what is the appropriate *type* of intervention?

Reasons for government intervention can be broadly grouped into two categories: market imperfections and redistribution. Market imperfections fall into two types: external effects and informational imperfections. If private actions impose benefits or costs on society which the market participants do not reap or bear, then the decisions of private individuals may not be socially optimal. If consumers do not have the information necessary to make appropriate choices, the government may be able to provide information that improves their ability to make choices. Government intervention on redistributive grounds might be motivated by a desire to decrease the income inequality produced by a market economy, or to ensure that access to a particular service or commodity is not conditioned on income.

For government intervention to be justified requires more than the identification of a market failure or redistributive goal. In the case of an intervention to correct a market failure, the

²⁰CCDBG Act Section 658E.

²¹U.S. House of Representatives (1996) and Children's Foundation (1997).

²²National Association for the Education of Young Children (1991).

²³CCDBG Act Section 658E

government must also be able to identify a policy that allows it to intervene in such a way that the costs of intervention are less than the benefits. Even when the goal is redistributive, it is important for the government to seek policies that achieve the desired redistribution at the least cost.

The government has a wide variety of tools at its disposal including regulation, mandates, information provision, subsidies, and direct provision of the good in question. In choosing the appropriate policy tool, the original rationale for the intervention is important to bear in mind.

- If the problem is one of an external benefit, then the government might want to induce greater consumption through subsidies or through direct provision. Which is more appropriate depends on the responsiveness of consumers to the relative price of the good, as well as to the government's efficiency - relative to the private sector - in producing the good. Regulations or mandates are also a possible tool for addressing external benefits. Providing information is unlikely to be effective.
- If the issue is one of information imperfections, then the provision of information, or of regulations that reduce uncertainty about quality are possibilities. Subsidies are unlikely to prove useful in addressing an information problem.
- If the goal is redistributive, then subsidies or direct provision could be appropriate. Further consideration should be given to whether the government should provide a general income transfer or a subsidy that is specifically tied to the good or service in question.

GOVERNMENT INTERVENTION IN THE CHILD CARE MARKET

External benefits from child care

If child care produces benefits to the child and to society in the form of the child's current and subsequent development and behavior, then the government might want to intervene to ensure that children receive such care. Parents who pay for this care might not purchase enough, since they are not the only beneficiaries. Such an external benefits argument has been made to justify government intervention in education.²⁴ Since there is substantial evidence that the early years are especially important in terms of future development,²⁵ if a link can be established between child care and these outcomes, arguments for government intervention in elementary and secondary education apply with even more force to the child care market. The link that is usually

²⁴See Cohn and Geske (1990) for an overview.

²⁵For an overview of the importance of the early years to future development see Council of Economic Advisers (1997).

made -- the evidence is reviewed below -- is not between child care and child development per se, but between *high quality* child care and child outcomes. Therefore, government intervention for reasons of external benefits should be designed to promote acquisition of high quality child care, rather than child care more generally.

It is important to distinguish between early childhood education programs -- which tend to be part day and part year for three to five year olds and are designed to promote child development and to improve children's readiness for school -- and child care programs which typically offer care on a full-day basis to infants through school age children, and are designed around the dual goals of promoting child development and enabling parents to work. These two types of programs may have different effects on children.²⁶ There is a large literature on the effects of early childhood education programs on child development.²⁷ But it is important to focus on what is known about the effects of child care on child outcomes as distinct from early childhood education programs. An unresolved question is the relative advantage of child care versus early childhood education in promoting child development; this could be addressed by a careful comparison of the two literatures.

Evidence of benefits of child care

Children's development is multiply determined; innate characteristics of the child, the family environment, care outside the home, and the larger social environment all influence development. But as part of this intricate, interactive process, child care can have important effects on child development. Indeed, a comprehensive review of the large literature of the effect of child care finds that the quality of child care -- in both centers and family day care -- is closely linked with children's social, cognitive and language development, both at the time of receiving care and in terms of future development.²⁸ However the review notes several problems with using this literature as a policy guide. Most of the studies use global or summary measures of quality (i.e. high, medium or low), which do not clearly identify the aspects of child care quality that affect development; it is difficult to design policy to improve child care quality when the relevant attributes of care are not clearly identified. Additionally, there has been little analysis of the *magnitude* of improvement in children's development associated with measured improvements in quality; hence these studies do not make it possible to conduct a cost-benefit analysis of policies designed to improve child care quality.

Some research has addressed the relationship between child care quality as measured by specific

²⁶Gomby et al. (1995).

²⁷See the Winter 1995 Issue of 'The Future of Children' for a review.

²⁸Hayes et al. (1990). See Cost, Quality & Child Outcomes Study Team (1995) for a recent study that confirms these findings.

child care attributes and child outcomes. For these purposes, measures of child care quality can be broadly grouped into two categories. One approach is to measure the quality of the child's experience in care; '*child experience measures*' look at such things as the way in which the care giver interacts with the child (including verbal and empathetic behavior) and the children's exposure to materials and activities that enhance learning. A second approach is to focus on various physical and structural features of care ('*structural measures*') such as staff/child ratios, group size, and provider education. The former measure is the one most accepted by developmental psychologists. However, for practical reasons, state regulations are based on structural measures.²⁹ The same comprehensive review of the literature concludes that child experience measures have a closer, direct link with developmental outcomes than structural measures do.³⁰ However, structural attributes appear to support and facilitate the type of optimal interactions that child experience attributes measure.³¹ In other words, inputs that the government may be able to affect have important effects on child experience measures which in turn affect child development.³²

Despite these encouraging findings, surveys of this literature note that studies of the relationship between attributes of child care and development have several shortcomings. Many are based on small, unrepresentative samples. Additionally, they often do not properly control for developmental inputs received by the children at home, as well as other socio-economic factors that may affect child development and may be correlated with the quality of care.³³ Thus while there is broad evidence that high quality child care is beneficial to the child and society, gaps in our knowledge about the relevance of specific inputs (or combinations of inputs), as well as the magnitude of their impact, hinder the design of appropriate policy.

²⁹Helburn and Howes (1996). See also Hayes et al. (1990) and U.S. House of Representatives (1996).

³⁰In some sense, the relationship between child experience measures and child development is tautological, since the child experience measures were designed as measures of aspects thought important for child development (Blau 1997).

³¹Hayes et al (1990). More recent evidence of the effect of child experience measures on child development is provided by the Cost, Quality & Child Outcomes Study Team (1995).

³²However a recent study -- Blau (1997) -- calls into question whether improvements in structural measures have effects on child experience measures; the study, using data from the National Child Care Staffing study, fails to find any robust effects of child staff ratios or staff education on child experience measure. The author notes, however, that this does not rule out the possibility that structural inputs have a direct effect on development.

³³See Hayes et al. (1990) or Blau (1997) for discussions of the problems with this literature.

It should be noted that the above studies are all based on comparisons of child outcomes across paid child care facilities of different qualities. Hence they only serve to answer the question of whether high quality paid care has benefits relative to low quality paid care. Two separate issues are the relative effects on child outcomes of non-market, non-maternal care versus market care, and maternal versus non-maternal care. None of the evidence reviewed here addresses these questions. Studies have established that non-maternal care is not a source of harm to children and that aspects of it can be beneficial.³⁴ Were there to be compelling evidence that child care had positive developmental outcomes relative to maternal care, this would provide an argument for government intervention not just into child care for children of working parents, but for all children. Consistent with this principle, intensive early education programs like Head Start do not make eligibility contingent on parental employment.³⁵

If the government wanted to increase use of care that has external benefits, its options would include regulating the quality of care, subsidizing care, subsidizing only high quality care, or directly providing care with these attributes. It is important that policy is designed to increase usage of care with external benefits. Government policy designed simply to increase the use of child care would not be appropriate if only high-quality care has been shown to have external benefits. More research is needed to determine which attributes -- or combination of attributes -- have impacts on child outcomes, and the magnitude of these effects.

Information imperfections

Several types of information imperfections may exist in the child care market. A free market may not provide information to parents on the advantages and attributes of quality child care. Providers themselves may be unable to obtain up-to-date information on how to ensure quality care. It may also be difficult for parents to find out who provides day care in their area, and what the attributes of the various choices are.

Indeed, there is evidence that parents lack information. For example, parents surveyed report that they value the characteristics of good quality child care, but it turns out that they substantially overestimate the quality of care their child is receiving;³⁶ in other words, parents have trouble evaluating the quality of care their child is receiving. Some indirect evidence of information imperfections is provided by Hotz and Kilburn (1994) who find that, holding the price of care constant, more stringent regulations (e.g. lower maximum child-staff ratios or implementing minimum provider education requirements) are associated with an increase in the demand for non-parental care; they interpret this finding as evidence that the increased standards

³⁴See Hayes et al. (1990) for a review of this literature.

³⁵U.S. House of Representatives (1996).

³⁶Cost, Quality & Child Outcomes Study Team (1995).

provide a higher degree of quality assurance and hence parents demand more non-parental care.³⁷

If information is the issue, then government provision of information could be an appropriate policy course if the government has access to better information than the individual, or at least the ability to acquire this information at a lower cost. This suggests that the government might be best off providing information on structural attributes of care, which are more easily monitored. Regulations which increase the minimum quality and therefore reduce the uncertainty faced by parents are another possibility. Regulations may also set minimum standards for health and safety; by decreasing concerns about the safety of their child in care, such regulations could also help resolve information issues.

Distributional

Two sorts of distributional arguments could be made for policies designed to increase the *affordability* of child care. First, such policy could serve as an employment-related income transfer to working parents. The government might want to improve the well-being of low income working families; currently, all federal programs that reduce the cost of child care are available only to parents who are working or participating in work-related activities or education programs. Policies designed to increase the affordability of child care may complement other redistribution programs. For example, the recent welfare legislation is intended to help move welfare recipients into the workforce. Since child care costs are a sizable burden to low income families, reductions in the cost of child care would ease the transition. Second, in so far as there can be benefits to children from child care -- or high quality child care -- child care policy could also ensure that children whose parents have different resources have 'equal opportunities.' Again, such an argument has been made to explain government involvement in primary and secondary education.³⁸

Whether the goal is to provide an employment-related income transfer or equal opportunities to children or both, two questions must be addressed in designing a redistributive policy. First, should this transfer be tied to the good in question (i.e. child care) or provided as a cash transfer? And second, if the transfer ought to be tied to a particular good, should the government directly provide the good, or reduce the cost to parents of purchasing the privately-provided good?

For those in the phase-in portion, the Earned Income Tax Credit represents a wage increase. This provides the family with additional cash that it can choose to spend how it wants. Child care subsidies or government-provided child care, on the other hand, provide money that can only be used for child care. Economic theory suggests that recipient well-being can be increased more

³⁷A weakness of this study is that -- as discussed above -- a substantial amount of non-parental care operate legally but it not subject to licensing standards.

³⁸See, for example, Poterba (1996).

efficiently through a cash transfer. It is well-known that the utility gain from transferring a bundle of goods (such as child care) cannot be more and is frequently less than from the equivalent amount of cash.³⁹ This inefficiency results from the distortionary nature of an in-kind transfer. By distorting the relative prices of various goods, the transfer influences recipients' decisions concerning how much care to purchase and how much to work. In so far as we believe there are benefits of child care that are not being taken into account, there is an argument for distorting the cost faced by the parents. But as a pure transfer policy, this represents an inefficiency compared with a cash transfer.

However, there are redistributive reasons to favor an in-kind subsidy. One reason for tying the subsidy to a particular good is to ensure that the money is spent on that good. Making the subsidy only for child care ensures that the parents spend the money on their children. Particularly if we think that there are 'equal opportunity' arguments for child care, such an in-kind transfer might make sense to ensure that parents do spend the money on child care. A second reason for tying the income transfer to purchases of child care is horizontal equity: Working adults with children have greater costs than those without. Of course, they presumably also receive benefits from having children. But in so far as the government wants to target people with a specific need that places an additional burden on them, it would make sense to alleviate some of the additional financial burden to those working adults with children. Finally, in so far as the increased demand for paid child care increases employment opportunities in child care for workers who are trying to move off welfare, this is a redistributive benefit from child care subsidies worth considering.⁴⁰

Even if an in-kind transfer is decided on, there remains the question of whether the government should subsidize the cost to parents of buying private care, or provide public care. One of the reasons it makes sense for the government to be a direct provider of education is that parents do not appear very price responsive in their demand for their child's education.⁴¹ Hence, subsidizing the cost is unlikely to produce the kind of 'equal opportunity' that the government desires. However, for child care, there is evidence of a fairly responsive demand, so subsidies are likely to be more effective.⁴² In addition, were the government to provide care, it could only provide center-based care. As discussed previously, many families opt for family day care homes, and

³⁹See, e.g. Rosen (1995)

⁴⁰Indeed, the initial federal involvement in the child care industry -- federal funded nursery schools for poor children were established during the New Deal -- was motivated not so much to provide child care for working families but to provide jobs for unemployed teachers and nurses and others as well as a wholesome environment for children in poverty. (U.S. House of Representatives 1996)

⁴¹Poterba (1996)

⁴²See the next section for evidence of demand responsiveness.

since there is no clear quality tradeoff, it does not seem wise for the government to distort these choices by providing one kind of care.

Finally, if the government is going to provide in-kind subsidies for child care, there still remains the question of whether it should subsidize consumers or providers. One potential disadvantage to subsidizing providers rather than consumers is the possibility of the misuse of the funds; in addition, if the government wants to target its subsidies to a particular population -- for example, low income families -- this is easier to achieve through consumer-based subsidies.

THE EFFECTS OF INTERVENTION

We have seen that the current quality of child care is often very poor and this may have adverse effects on children, that there may be information problems in the child care market, and that for those without access to subsidized care, child care costs can be a significant financial burden. All of these provide potential economic rationales for further government intervention in the child care market beyond existing policy. Articulating a rationale for intervention and a goal for child care policy is a first step. In order to understand what the effect of different policies will be, we need to understand how parents and providers respond to changes in the price of care. In other words, having sketched some possible reasons for intervention, and some possible tools, we review what the economic evidence is of the effects of different types of intervention. In particular, we review the effects of subsidies on maternal employment and the demand for child care, and of subsidies and regulation on the quality of care purchased.

THE EFFECT OF SUBSIDIES

The effect of subsidies on the cost of care

Increased subsidies for child care will lower the cost to parents of paying for child care. Subsidies to parents which decrease the cost of care are likely to increase the demand for care. If the amount of child care available were fixed, the increase in demand would drive up prices. The price would rise by the amount of the subsidy, so that parents would end up paying the same amount as they had been before the introduction of the subsidy, and the providers of care would receive an increase in fees equal to the amount of the subsidy. The benefit of the subsidy policy, in other words, would accrue entirely to the providers.

However, the available evidence indicates that the supply of workers will rise to meet an increase in demand for care without much of a change in the current price. For example, although the number of children in paid child care has approximately doubled over the past twenty years, the real price of care has not changed.⁴³ In addition, direct estimates indicate that small changes in

⁴³Blau (1992). Casper and O'Connell (1997). U.S. Department of Education 1990.

the price of child care induce large supply responses.⁴⁴ As a result, in the absence of other changes, the benefits of a subsidy accrue to the consumer.

How will consumers respond to a decrease in the cost of child care? We consider three decisions that may be influenced by the price of child care: the mother's decision whether to work or not; the decision whether to purchase market child care or to use non-market care; and, if market care is chosen, the choice of the quality level of care to purchase. Based on evidence -- which compares the decisions of mothers across areas with different child care prices -- we draw conclusions about the likely effects of increasing child care subsidies on maternal employment, demand for paid care, and the quality of care purchased.

The effect of subsidies on employment decisions

In places with lower child care prices, there is a higher probability that a mother will be employed. The magnitude of this effect varies across studies; a 10 percent reduction in the price of child care increases the probability that a married mother will work by 2 to 8 percent.⁴⁵ However, given that the mother is working, there is little evidence that the child care price affects the decision of the number of hours to work.⁴⁶

There is less evidence on the employment response of poor mothers or single mothers. A GAO study⁴⁷ estimates the response of different sub-groups, by income classification, and finds that a 10 percent decrease in the price of child care increases the probability that a poor mother will work by 5 percent, compared to 3.4 percent for near-poor mothers, and 1.9 percent for non-poor mothers; unfortunately, the study does not estimate whether these differences are statistically

⁴⁴Blau 1993.

⁴⁵Blau and Robins (1988), Connelly (1992), Ribar (1992), Averett et al. (1997). Ribar (1995)'s estimate lies outside this range. Blau and Hagy (forthcoming) look at a sample that includes both single and married mothers and find an effect at the bottom of this range. For more information on these studies, see Appendix 1.

⁴⁶See Michalopoulos et al. (1992), Berger and Black (1992), Chaplin and Hofferth (1995). One study estimates the unconditional effect of the price of child care on the mother's hours of work; Averett et al. (1997) report that a 20 percent decrease in the hourly cost of care is associated with about a 16 percent increase in the mother's hours of work. This estimate, which takes into account both increased hours from mothers who enter employment and those already working, is broadly consistent with the other findings reported here.

⁴⁷GAO (1995).

significant.⁴⁸ Kimmel (1994) specifically compares the employment responses of single and married mothers and while she finds that the response is somewhat greater for single mothers the difference is not statistically significant. Furthermore, once she controls for whether the single mother receives AFDC, the response for single mothers falls to that of married mothers. This suggests that the greater response to the price of care by single mothers (and perhaps also by poor mothers) is due to a viable non-employment option.

The effect of subsidies on the demand for paid care

As discussed earlier, parents choose among a wide variety of modes of care. Several of these (centers, family day care, sitters, and sometimes relatives) involve direct payments while others (care by relatives, parents or neighbors) may come at no direct cost. We refer to the former as 'paid' or 'market' care and the latter as 'unpaid' or 'non-market' care. The bulk of research has focused on the effect of the price of care on the use of paid care among *working* mothers. Hence, in order to get a sense of the total effect of a decrease in the price of child care on the demand for paid care, we will have to combine estimates of the increase in labor supply with those of the increase in the demand for paid care among mothers who work.⁴⁹

A number of studies look at variations in the price of child care and find that in places with lower costs, working mothers are more likely to use paid care. Again, there is a large range of magnitudes but most of the studies suggest that a 10 percent decrease in the hourly cost of care for children under 6 or 7 results in a 1.5 to 2.3 percent increase in the probability that a working mother will purchase care.⁵⁰

⁴⁸An additional concern is that since the probability of employment increases with the income category, the same percentage point increase in the probability a mother works would translate into a larger percent increase in the probability of work for poorer women. Hence the reported elasticities may overstate the difference in the effect on women of different income categories. Fortunately, the absolute value of the coefficients on the price of child care from the probits for the different income categories go in the same direction as the elasticities and the difference in magnitudes is even greater among the coefficients.

⁴⁹There is also evidence (Blau and Hagy (forthcoming), Hotz and Kilburn (1992) and Hotz and Kilburn (1994)) that among all mothers (including those that do not work) the demand for paid care is sensitive to the price of care. These estimates are not as useful for evaluating the likely impact of government policy since this policy currently affects only working mothers and there is evidence that the response of non-working mothers is not only different, but non-negligible (Hotz and Kilburn (1992) and (1994)).

⁵⁰Hotz and Kilburn 1992; Ribar 1995; Ribar 1992; Blau and Hagy (forthcoming). Studies lying outside the range are Hotz and Kilburn 1994 and Blau and Robins 1988. See Appendix 2 for more details on these studies.

A decrease in the price of care affects the tradeoff between paid and unpaid care; as the price of paid care falls, mothers are likely to substitute paid care for unpaid care. Such substitution is particularly likely given that parents tend to express more dissatisfaction with non-paid care.⁵¹ Unfortunately, we cannot infer from the available evidence how much of the increase in the propensity of working mothers to use paid care is due to an higher propensity to use paid care among the newly entering mothers, and how much is due to a change in the propensity of those mothers already working to use paid care, as a result of the price change. One would expect that both occur, but longitudinal studies are needed to determine the relative contribution of these two effects.

This association between paid care utilization rates and the price of paid care does not give a complete picture of the relationship between the price of care and the amount of paid care purchased. Recall that many parents use multiple modes of care. An increase in utilization of paid care may therefore reflect the decision of some parents to purchase only a few hours of paid care, rather than no paid care. On the other hand, parents that were already using some paid care may increase the number of hours of paid care in response to the price decrease, adjusting the relative amounts of paid and unpaid care purchased; such behavior would not show up in utilization measures.

Therefore, a useful supplement to the above utilization measures is the effect of child care subsidies on the *hours* of paid care purchased as a result of a change in the price of care. Three studies look at the effect of the price of care on the hours of paid care used by working mothers; this measurement considers both the effect caused by switching from zero hours to positive hours, and also changes among those already using positive hours.⁵² Again, there is a range of estimates; a dollar decrease in the hourly cost of paid care is associated with a 3 to 22 hour per month increase in the use of paid care. Ribar (1992) looks at hours of paid and unpaid care; he finds that the increase in hours of paid care among working mothers and the decrease in hours of unpaid care among working mothers are roughly similar in magnitude. This suggests that the result of price decreases is a relative increase among working mothers in the usage of paid versus unpaid care, rather than an increase in the total amount of non-maternal care used. Such a conclusion is consistent with the findings that hours of work among working mothers appears unresponsive to the price of care.

PUTTING IT ALL TOGETHER

How much will the use of paid care increase in response to a policy that reduces the cost of care? The fact that the supply of child care will respond to meet increased demand without much of a change in the price of care suggests we can consider a subsidy as translating almost dollar

⁵¹Hofferth (1995)

⁵²See Hotz and Kilburn (1992), Ribar (1992) and Kimmel (1992).

for dollar into a decrease in the price to the consumer in the long run.

The Child and Dependent Care Tax Credit provides a tax credit of 20 percent for most eligible families. What kind of an effect does a 20 percent decrease in the price of child care have on child care demand decisions? Alternatively, if a subsidy of this amount is provided to low-income families (who generally do not have enough tax liability to claim the tax credit), how does this affect their decisions?

Our analysis suggests that a 20 percent reduction in the cost of paid care would result in 560,000 to 1.4 million more children under 6 with employed mothers using paid care. If the 20 percent subsidy were applied just to mothers below 200 percent of poverty, the result would be 112,000-336,000 more children under 5 in paid care.

Increases in the use of paid care by working mothers with young children

About 9.7 million mothers with children under 6 (58 percent of mothers with children under 6) worked full or part time in 1996⁵³. A 20 percent decrease in the cost of care is associated with a 4 to 16 percent increase in the probability that a mother works. In other words, between 400,000 and 1.5 million more mothers with children under 6 would take a job in response to this decrease in the cost of care.⁵⁴

In addition to this employment effect, the 20 percent decrease in the price of paid care would also have an effect on the demand for paid care among working mothers. A 20 percent decrease in the price of paid care is associated with a 3 to 4.6 percent increase in demand for paid care among working mothers. In other words, the percent of working mothers with young children who use paid care would increase from 55 percent to about 57 percent.⁵⁵

⁵³Bureau of Labor Statistics (1996). We have chosen to base this analysis on the responses of mothers with children under 6 because almost two-thirds of the children served by CCDBG-funded child care were under 6, according to the most recent available data (Child Care Bureau 1997). In so far as subsidies are provided to mothers with children above 6, the total response would be larger than that estimated here.

⁵⁴The following calculations apply: A 4 percent (respectively, 16 percent) increase in the probability the mother works brings the probability that the mother works from 58 percent to 60.3 percent (67.3 percent). Since the total number of mothers with children under 6 is 16.6 million (Bureau of Labor Statistics 1996), the resultant 2.3 (9.3) percentage *point* increase in the probability that the mother works is equivalent to 380,000 (1.5 million) more mothers working.

⁵⁵A 3 percent increase in the probability that the employed mother uses paid care results in the probability that the mother uses paid care increasing from 55 percent to 56.6 percent; a 4.6 percent increase results in a new probability of 57.5 percent. Because this range is relatively

Combining these two estimates, a 20 percent decrease in the price of care would increase the number of working mothers with young children who use paid care by 400,000 - 1 million.⁵⁶ Since families who have children under 6 have on average 1.4 children under 6⁵⁷, this means that a 20 percent decrease in the cost of care will be associated with an increase of 560,000 to 1.4 million more children using paid care.

Increases in the use of paid care by low income working mothers with young children

The CCDBG goes almost entirely to families below 200 percent of poverty. It is therefore worth considering the increase in paid care use from subsidizing just mothers below 200 percent of poverty, most of whom it will be recalled, are not currently receiving any CCDBG subsidy. Although we lack estimates of the responses of the low-income population to changes in the price of child care, we can at least use the employment and paid care utilization responses from the general population to get an estimate of the likely effect from subsidizing the low income population.

2.6 million mothers below 200 percent of poverty with children under 5 (29 percent of the total number of mothers below 200 percent of poverty with children under 5) worked full or part time in 1993.⁵⁸ 42 percent of these working mothers paid for care.⁵⁹ By a similar set of calculations to the previous ones, a 20 percent decrease in the cost of care for low income families would be associated with an increase of 112,000 to 336,000 more low income children under 5 using paid care.⁶⁰ The CCDBG subsidy to families is considerably larger than 20 percent;⁶¹ larger subsidies

small, to avoid reporting multiple results we simply take the mean of 57 percent.

⁵⁶ The calculations are as follows:

$$(0.57 * 10.1) - (0.55 * 9.7) = 400,000$$

$$(0.57 * 11.2) - (.55 * 9.7) = 1,000,000$$

⁵⁷Census 1996 data

⁵⁸The 2.6 million is from Sipp 1993 data (downloaded from web). The total number is from 1994 CPS.

⁵⁹SIPP 1993 data. Downloaded from web.

⁶⁰Based on the following calculations: A 4 percent (respectively, 16 percent) increase in the probability the mother works brings that probability from 29 percent to 30 percent (34 percent). Since the total number of mothers with children under 5 below 200 percent of poverty is 9 million (CPS March 1994), the resultant 1 (5) percentage *point* increase in the probability that the mother works is equivalent to 100,000 (450,000) more mothers working. In addition the decrease in the price of care would result in 43.5 percent of these employed mothers using paid child care. Therefore the total increase in the number of these mothers using paid care would be

would be expected to have even larger effects on maternal employment and use of paid care.

Breaking down the effect

How much of the increase in working mothers' use of paid care is due to an increase in maternal employment, and how much is due to an increase in the working mothers' average propensity to use paid care? It depends on what the employment response is assumed to be. When the lower bound of the employment response is used, a little over half of the increase in young children in paid care can be attributed to mothers entering employment, without a change in the average propensity to use paid care. When the upper bound of the employment response is used, about 80 percent of the increase is due to mothers entering employment.

Increases in the hours of paid care purchased by working mothers with young children

The average hourly cost of child care for families with employed mothers making child care payments for young children was \$2.00 per hour in 1993.⁶² A 20 percent decrease in the hourly cost of paid care (i.e. a \$.40 decrease per hour) would therefore be associated with a 1.2 to 8.8 hours increase in the monthly hours of paid care used by working mothers with young children.⁶³ Combining this effect with the increase in working mothers with young children, a 20 percent decrease in the hourly cost of paid care would be associated with an increase in the purchase of paid care by working mothers by 12.1 to 98.6 million hours of paid care per month.⁶⁴

How sure can we be?

80,000 to 240,000. Assuming an average of 1.4 children under 5 per such family (which is a rough estimate since this statistic is for children under 6 from all families), we arrive at the number in the text.

⁶¹The average weekly cost of care was \$74 in 1993 (Casper 1995), and the average federal subsidy administered through the CCDBG was \$66 in fiscal year 1995.

⁶²Casper (1995). Divided weekly child care expenses by hours worked per week. This number is in line with ones seen elsewhere.

⁶³Since a \$1.00 decrease in the hourly cost of child care is associated with a 3-22 hour increase in monthly child care costs, a \$.40 decrease in the hourly cost of care is associated with a 1.2 - 8.8 increase.

⁶⁴The decline in the price of care results in -- from previous calculations -- 10.1 to 11.2 working mothers with young children. If on average each of these mothers increases their hours of paid care by 1.2 to 8.8 hours a month, the total increase in hours ranges from 12.1 ($=10.1*1.2$) to 98.6 ($=11.2*8.8$).

The estimates presented are based on a review of the evidence from numerous economic analyses of these issues. These analyses are almost unanimous in their conclusions about whether there is an effect, and the direction of the effect. However there is considerable variation in the magnitude of the effects reported. We present the full range of estimates, and when applicable, a description of where the bulk of the estimates lie. But we are left at best with only a range, and the ability to suggest an upper and lower bound to the effect.⁶⁵

In addition to the lack of consensus from the various estimates, caution is also in order in drawing inference about the likely effects of current policy changes. First, these estimates are of the *average* response to price changes; in so far as the response does not vary linearly with the change in price, our estimates of the response to different price changes will not be accurate. Second, these estimates were made in the pre-welfare reform era. One might expect responses to be different in a world where work requirements are stronger and in which non-employment alternatives may be more limited. And third, the studies reviewed did not generally focus on the low-income population. If we want to estimate the effect of subsidies targeted at this population, we must consider how applicable the results from a broader population are to a low income population.

In general, one might expect the employment responses of low-income families and single mothers to be less responsive to child care prices, as the need for income is greater. However, the studies that looked at such responses found that single and low-income mothers' employment decisions tended to be *more* responsive to the price of care. One plausible explanation is that, under the previous welfare system, low-income single mothers deciding whether or not to take a job had the fall-back option of welfare. Therefore they were more free to choose whether or not work was worthwhile on the basis of child care prices; and we have seen that child care costs are a proportionately larger burden to low-income mothers. But as welfare reform makes non-employment less of an option for these mothers, it is likely that the employment decisions of low-income single mothers would become less sensitive to the price of child care. Indeed, Kimmel (1994) found that controlling for AFDC reciprocity decisions reduces the employment responsiveness of single mothers to the price of child care, and brings it into line with that of married mothers.

⁶⁵ One issue with almost all of these studies is that they predict the hourly price of care using selection correction mechanisms, since data are often available on the price of paid care only for working mothers who purchase care. The instruments used vary across studies, and there is reason to believe that the results are very sensitive to the choice of instruments (see e.g. the large difference in estimates obtained by Hotz and Kilburn (1992) and Hotz and Kilburn (1994) who use the same data but different instruments and estimating procedures). In general, the results will be affected by whether the instruments are truly exogenous, as well as how correlated they are with the original variable. The variation in the predicted price of care is used to estimate the employment, care, and quality responsiveness to the price of care.

Although we might therefore expect that the employment response of the low-income population would be less than that of the general population, we should also expect that the demand for paid care among working women would be more sensitive to the price of care for low-income working women, since the costs represent a larger fraction of their monthly income. On balance then, it is not clear whether the total effect of the price of care on the demand for care (including both the employment effect and the demand effect among working women) would be larger or smaller for low income women compared with the general population. It is possible that these two effects cancel, and that the overall response of low income women is therefore similar to the general population. Without any further evidence to guide us, it is simply important to note that this limitation of the evidence should dictate caution in making precise predictions of the effects of subsidies.

POLICIES THAT ADDRESS THE QUALITY OF CHILD CARE

We have reviewed the evidence that high quality child care can have important, positive effects on children, and that, from this perspective, the current level of quality may be too low. Here, we consider why the current levels may be too low, and hence how policy can be designed to address this issue.

Parental demand for quality child care

Evidence suggests that parents tradeoff quality for price, and do not demand the structural attributes of quality that policy might address. Families switch between modes of care (e.g. non-market, family day care, and center) in response to relative price changes,⁶⁶ despite the fact that the quality attributes vary considerably among these three. Blau (1991) interprets this as evidence that parents do not demand these structural measures of quality, since they are willing to substitute among them based on price. Of course, since there is no clear overall quality tradeoff between these different modes, it is possible that parents care about overall quality as measured by these three attributes, but not about the relative levels of the different attributes.

More compelling evidence of parents' lack of demand for quality attributes is that the level of trainer education, staff-child ratios, and group size -- the main 'structural attributes' of care believed to be related to child outcomes -- have little effect on provider fees.⁶⁷ In addition, there is evidence that center fees are not responsive to 'quality', where quality is defined in terms of

⁶⁶Blau and Hagy (forthcoming); Michalopoulos and Robins (1995); Chaplin and Hofferth (1995).

⁶⁷Hagy (forthcoming); Blau and Hagy (forthcoming); Walker (1992); Waite et al. (1991).

child experience measures.⁶⁸ The fact that the staff-child ratio and the group size do not affect the cost of care is particularly surprising, given that these attributes must affect the marginal cost of providing care to a child. A common interpretation of these findings is that they suggest that parents are not willing to pay for these attributes of quality care.⁶⁹ In other words, because there is not demand for these attributes, providers cannot raise their fees based on them, for parents would simply choose lower cost providers with lower levels of these attributes.

Thus, even though parents say that they care about quality,⁷⁰ they appear not to be willing to pay for it. There are several possible explanations for this finding, although we have virtually no evidence that allows us to choose among them. The first is that parents do care about child care quality that is important for child outcomes and development, but that the attributes that they care about -- and are willing to pay for -- are not the structural attributes that are easily measured and that government policy can target. In other words, parents may choose their child care and pay based on the warmth of the child care provider, the organization of the facility, the structure of the daily routine, or other attributes that these studies have not picked up. Second, parents may care about structural attributes of quality, but lack information about these features at their different child care options. Therefore, although they may wish to choose care with these features, and are willing to pay more for them, they cannot base their decisions on them and hence the attributes are not reflected in the price. Third, parents may care about these structural attributes of quality, but not be able to afford to pay for them. In other words, quality is important to them, but the cost issue dominates because of the burden it imposes. And finally, if there are external benefits associated with high quality child care, parents may in fact not demand as high a level of quality as is optimal for their child and society. Some evidence of this is the fact that when parents say they care about the 'quality' of child care, they may in fact be placing the cost and convenience of the care at a higher premium than warm interactions with care givers and other aspects of the child care program that developmentalists believe are associated with positive outcomes.⁷¹

Possible governmental policy responses include information provision, regulation, and subsidies to reduce the price of care. Again, the appropriate policy response depends on the precise reason that parents do not purchase high quality care.

Effect of subsidies on the quality of care purchased

⁶⁸Cost, Quality & Outcomes Study Team (1995).

⁶⁹Interpretation in Waite et al (1991), Blau (1991) and Helburn and Howes (1996).

⁷⁰See e.g. Cost, Quality & Child Outcomes Study Team (1995) or Kisker and Maynard (1991).

⁷¹See for example Kisker and Maynard (1991) and Hofferth (1991).

If the low parental demand for quality child care is due to an affordability issue, or to the existence of external benefits, then policies that reduce the price of child care might induce parents to purchase higher quality care. Empirical evidence is scant, but it suggests that when prices are reduced, parents do not respond by purchasing higher quality care, as measured by structural attributes. Blau and Hagy (forthcoming) find that, for center-based care, decreases in the quality-adjusted price of care result in an increase in hours of care purchased but a decrease in quality of care purchased (as measured by structural attributes.) Similarly, increases in wages or income result in a decrease in demand for quality attributes and an increase in demand for hours of care. These results suggest that parents view quality and quantity as substitutes, and that the price of quality is increasing in the hours of care. As a result, general subsidies to child care appear unlikely to increase the demand for structural attributes of child care.⁷²

Of course, there are aspects of quality that are difficult for these studies to measure -- particularly the child experience measures that developmentalists emphasize -- and that parents may purchase more of as the cost of care goes down. Hence it is plausible that subsidies to child care will induce parents to purchase higher quality care as measured by such attributes; there is however, no evidence available on this point.

If general subsidies do not appear to induce parents to purchase higher quality care -- at least as far as we can measure it -- perhaps subsidies targeted to high quality care might have an effect. For example, a subsidy might be available only for care that met certain child-staff ratio or group size levels. Again, empirical evidence on the effect of such targeted subsidies is sparse, but what there is does not provide much hope: Hagy (forthcoming) finds that the implicit price of staff-child ratio does not affect the demand for higher staff-child ratios.

We do know, however, that subsidies that lower the price of child care induce mothers to work, and induce working mothers to purchase more paid care relative to unpaid care; it is likely that parents substitute between paid and unpaid care in response to changes in the price of care. Thus subsidizing child care is likely to result in more non-maternal care, and more market relative to non-market care. A comprehensive survey of the literature concludes that there is no evidence that non-maternal child care is likely to have adverse effects on the child.⁷³ Furthermore, given the current policy of encouraging mothers to enter or remain in the workforce, such women have little choice but to place their children in non-maternal care. But the relative merits for the child of market versus non-market care is an area that we do not yet know much about and would be

⁷²A problem with drawing conclusions based on this paper is that the data are cross-sectional and in so far as places with lower prices of child care may draw in more low income families who cannot afford high quality care, the result would not really illustrate the effect of price reductions on the quality of care purchased by given family that is already purchasing care. For this, we would need longitudinal data.

⁷³Hayes et al. (1990).

an important area for future research.

Effect of regulations on the quality of care

If the low quality of care purchased is a result of information imperfections or the external benefits associated with child care, a possible approach is for the government to regulate child care; regulation, if enforceable and binding, is likely to increase the quality of regulated care.⁷⁴ However, regulations are also likely to drive some providers out of the market and raise prices among remaining providers, thus lowering the availability and affordability of regulated care.⁷⁵ Since compliance with regulations can be costly -- particularly regulations that impose minimum group size or child staff ratios and hence raise the marginal cost of providing child care -- providers will have to raise their prices or suffer profit losses. However, we have seen that parents are unwilling to pay for these attributes, and that they are willing to substitute among modes of care in response to relative price changes. Hence providers will be limited as to how much they can raise their prices. But since most child care providers have very low profit margins,⁷⁶ those that cannot raise their prices may be driven out of business, or at least into the unlicensed sector.

In so far as regulations serve to decrease the number of regulated firms, or increase their prices and hence induce parents to switch to other modes of care, the regulations do not achieve an improvement in the quality of care for those children. However, for children who remain in regulated care, a quality improvement may be enjoyed. Empirical evidence on the relation between quality regulation and costs is scant and inconclusive. Studies have looked at the effects of criminal record checks, child staff regulations, provider education regulations, and group size regulations on the cost of care. The results differ both across and within studies as to whether a given regulation has a significant increase, a significant decrease, or no significant effect on the cost of care⁷⁷. And there is essentially no evidence of the effect of regulations on the use of

⁷⁴For example, Cost, Quality & Child Outcomes Study Team (1995) finds that states with more demanding licensing standards have fewer poor-quality licensed centers, and that centers that comply with additional standards beyond those required for licensing provide higher quality services. Here, quality is measured in terms of 'child care experience'

⁷⁵Chipty and Witte (1997) find that minimum standards regulations increase the probability that providers exit certain markets (e.g. care for certain age groups).

⁷⁶NAEYC 1991. Cost, Quality & Child Outcomes Study Team (1995).

⁷⁷Ribar (1995), Chipty (1995), Hotz and Kilburn (1994). It is worth noting that while such regulations may translate into higher costs to parents, they do not appear to improve the low wages of child care workers (Blau 1993, Blau 1992).

regulated care.⁷⁸ Both of these deserve further study.

We must acknowledge a tradeoff between the gains from regulation in terms of quality improvements in the regulated sector and the likelihood of increased child care costs and substitution out of regulated care, which could adversely affect the quality of care some children receive. Different regulations are likely to have different effects on costs, and hence on substitution. It is probable that some regulations would have net benefits, but each would have to be evaluated separately. Unfortunately, there is currently very little evidence on this issue.

Information provision and networks

Another possible remedy to information problems are information and referral services which could serve as a referral agency for parents, listing the attributes of care alternatives in their area in order to help parents make better decisions.⁷⁹ The government could either serve as the provider of information or encourage private sector agencies to collect and disseminate the information. Of course, in so far as there may be a dearth of quality care, the benefits from providing information are somewhat decreased. However, if this information stimulates demand for better quality care, it may help alleviate the current quality problems.

ADDRESSING CONCERNS ABOUT CHILD HEALTH AND SAFETY

⁷⁸Actually, two studies that estimate the effect of more stringent staff-child regulations on the demand for care find little overall effect on utilization rates among working mothers (Ribar 1992; Hotz and Kilburn 1994). Hotz and Kilburn (1994) explain this with the following findings: More stringent staff child regulations increase the cost of care, and increases in the cost of care serve to decrease the demand for non-parental care. However, holding the price of care constant, more stringent staff-child ratios increase the demand for non-parental care; they argue that this is because the regulations reduce the uncertainty about the quality of care. A problem with both these studies is that they do not look specifically at utilization of regulated and unregulated care. Ribar (1992) looks at paid versus non-paid care, and Hotz and Kilburn (1994) look at parental versus non-parental care. It is possible that parents do not switch their utilization of paid vs unpaid or parental vs non-parental, but that within paid or non-parental, they switch to unregulated (i.e. unlicensed) providers. As explained above, many providers operate legally but without a license, and therefore would not be affected by regulations.

⁷⁹We would not expect the provision of such information to increase fees the way that regulations would. However, the only empirical evidence is that provided by Hagy (forthcoming) who finds that if a provider is registered with a research or referral service, this is significantly associated with a \$0.09 increase in their hourly cost. Since such agencies don't generally provide quality assurance, Hagy suggests that the listing may serve as a signal of the provider's commitment to the profession. An alternative interpretation is that more expensive providers have more resources and are therefore more likely to get themselves listed.

In addition to 'high-end' concerns about the impact of child care on child development, we have also seen that children's health and safety are currently endangered in some care facilities. This may be because of an information problem in which parents do not have information about the relevant features. Another possibility is that parents are aware of the issue but cannot afford better care. In so far as the issue is an information one, provision of information or regulations that impose minimum standards combined with monitoring to ensure that these standards are met are potential solutions. Such regulations again have the potential to drive up the cost of care, but they can plausibly be expected to have less of an effect on cost than minimum staff/child ratios or group size, which directly increase the marginal cost of providing care. However, in so far as ensuring basic health and safety does increase the cost of care, and hence parents may not be able to afford care that meets these standards, subsidies for care that meets the standards could also be useful. There is currently no available evidence of the effect of minimum health and safety regulations on the cost of care, or of the effect of subsidies on the safety of care purchased.

LIMITS TO OUR KNOWLEDGE: THE NEED FOR MORE RESEARCH

The previous section is based on a thorough reading of the available evidence. Many careful studies have been done, and there is a lot that we have learned from them. We must be aware, though, in drawing conclusions from this evidence, on the limits of our knowledge. There are several areas in which further research is much in need.

Employment and care responses to the price of child care

There is a very large literature on these topics. However, as discussed, little of it focuses specifically on the responses of low income parents. In so far as our subsidy system is targeted to this group, this makes it difficult to draw inferences on the likely increase in use of care from increases in subsidies. Additionally, all of these studies were done in the pre-welfare reform climate; responses of low income families may be different now that their non-employment options will be different. Again, this is something that deserves investigation.

The studies would also benefit from random assignment to subsidies; in so far as subsidies are limited and therefore waiting lists tend to develop,⁸⁰ random assignment to eligible parents would enhance our ability to study the effects of subsidies on parental choices.

Another unresolved question is the cause of the increase in demand for paid care among working mothers as a result of price decreases. Possible contributors include substitution of paid for unpaid care, a higher demand for paid care among the marginal mothers who start work as a result of the price decrease, and an increase in total hours of care (although this last seems unlikely given what we know about hours of work). Of particular interest is whether working

⁸⁰See e.g. Berger and Black (1992) for evidence of waiting lists with one subsidy program.

mothers respond to subsidies by substituting paid for unpaid care; an investigation of this issue would require longitudinal data.

Finally, very little work has been done on the effect of the cost of care on the demand for quality. This effect is important in understanding whether child care subsidies will induce parents to purchase higher quality care. The work that has been done fails to find a relationship between the price of care and the quality of care purchased as measured by structural attributes. More research into this area -- particularly research based on longitudinal data -- is needed. In addition, whether the price of care affects the quality of care purchased as measured by child care experience measures also needs investigation.

The link between child care quality and child outcomes

Although there is ample evidence that high quality paid child care can have benefits to child outcomes, there is a need for more information on the relationship between specific attributes of care -- or groups of attributes -- and child outcomes. We lack information on the magnitude of the effect of changes in measured inputs on child outcomes, on the ways in which improving one attribute of care may have implications for the effects of other attributes, and on where to draw the threshold for acceptable and unacceptable levels of different attributes of care. It is important that research on such topics properly controls for family inputs and uses representative samples.⁸¹

The existing studies have looked at variations in quality among paid care facilities. Yet we know that one of the effects of child care subsidies is to induce an increase in paid relative to unpaid care. We have no information on the developmental effects of paid versus unpaid care, or even on the relative quality of the two types. While information on unpaid care is difficult to collect, the likely effects of policy make it important to try to get some data here. Finally, there is a need for more research on the effects of child care on *low income* children as compared with the general population of children.⁸²

Effects of regulation

Very little work has been done on the effect of regulation -- and, more importantly, of different types of regulation -- on the child care market. We lack information on how regulation of different structural attributes of care affects the supply of regulated care; for instance, do providers leave, or enter, the regulated child care market in response to regulation? We also lack information on the effect of regulations on the prices charged by child care providers. And finally, we lack information on how regulations affect parents' use of regulated care. For all of these, we would ideally want to study the effects of different types of regulation.

⁸¹Hayes et al (1990)

⁸² Phillips and Bridgman (1995).

SUMMARY: THE THREE ARGUMENTS FOR INTERVENTION AND THEIR RELATION TO POLICY

Maternal employment has been rising over the last few decades and with it, the use of non-maternal child care, particularly paid child care. There is no reason to expect a change in this trend, and as welfare reform moves mothers into employment, the demand for child care services is likely to grow further. Child care costs place a large financial burden on those without access to subsidized care and many low income working families receive little or no government subsidies for child care expenditures. There is also reason to be concerned about the quality of care many of the children receive.

We discussed three possible motivations for intervention in the child care market: external benefits, information imperfections, and redistribution. What can we say of the relative merits of different policy tools with respect to these different goals?

There is substantial evidence that high quality child care can have a positive impact on child development. But we lack information on the precise nature and the magnitude of the link between child care attributes and child outcomes; this makes it difficult to design policy to promote the use of child care with external benefits. Subsidies, even those tied to particular aspects of care, do not appear likely to increase the purchase of 'high quality care', at least as we can measure it. However, subsidies might increase the quality of care purchased in terms of 'child-experience measures;' there is as yet no evidence available on this point. We do know that subsidies for paid child care are likely to induce working parents to use relatively more market care compared with non-market care; the relative quality of these two types, however, is another gap in our knowledge. Regulations can serve to increase quality, but the likely increases in costs will induce substitution away from regulated care; the magnitudes of these various effects of regulations are another area where we lack information.

There is also evidence that parents lack the information necessary to make appropriate selections of child care for their children. The government could serve a useful role in providing this information, or encouraging private sector agencies to act as clearing houses for this information. Any increases in our knowledge about the links between care and outcomes would enhance the government and the private sector's ability to provide useful information. There is also some evidence that regulations which establish minimum quality levels help overcome the information gap, although potentially they have the downside of increasing the cost of care.

Finally, from a redistributive perspective, we have seen that child care costs impose a substantial burden on working families, particularly on low-income working families. Policies that make child care more affordable for working parents can help alleviate this burden. Policies targeted to the low income population complement other efforts to move welfare families into work, since we have seen that mothers' work decisions are responsive to the price of care. Such policies also seem likely to increase the use of paid care among working mothers, but not the overall amount

of non-maternal care among working mothers.

Box: Federal Policies to Reduce the cost of child care

Program	Description	Average award	Eligibility	Total Federal Expenditures
CDCTC ¹	Non-refundable tax credit for taxpayers who incur work-related child care expenses. Rate phased down for higher incomes	\$443 in fiscal year 1998.	Those with federal income tax liability, after the child tax credit. Treasury estimates indicate that a family can first benefit from the CDCTC at 130 to 160 percent of poverty -- depending on family composition -- and can first get the full credit at 170 to 200 percent of poverty.	Estimated to be \$2.8 billion in Fiscal Year 1998.
Employer Exclusion	Employers are allowed to exclude the provision of child and dependent care or employee contributions to such care accounts from employees' taxable income and social security earnings.	For families with high marginal tax rates, worth much more than CDCTC.	Families with participating employees.	Estimated to be \$890 million in fiscal year 1998.
CCDBG	Block grant to states that can be used to subsidize child care for parents who are working or participating in work-related activities or education programs. ²	Average federal subsidy is \$66 <i>per week</i> . ³	Federal law ensures that states can only use block grant funds to serve families with incomes below 85% of state median income and must use at least 70% of their mandatory and matching funds for families on TANF, transitioning from TANF, or at risk of becoming eligible for TANF. Within these requirements, states have set a wide range of eligibility thresholds. ⁴ Data on who --among the eligible -- has been funded are not yet available for the current program, but 1995 data on the old CCDBG program indicate that over 85% of families funded were under 150% of poverty, and all but 1% were under 200 percent of poverty. ⁵	\$2.9 billion in FY 1997.

¹Source: Treasury materials.

²This program is a consolidation (under PRWORA 1996) of four previous subsidy programs: Aid to Families with Dependent Children, Transitional Child Care, At-Risk Child Care and the Child Care and Development Block Grant Program. It has been estimated that PRWORA increased federal funding compared to the programs it replaced by about \$4 billion over the six years FY 1997- FY 2002. (U.S. House of Representatives 1996).

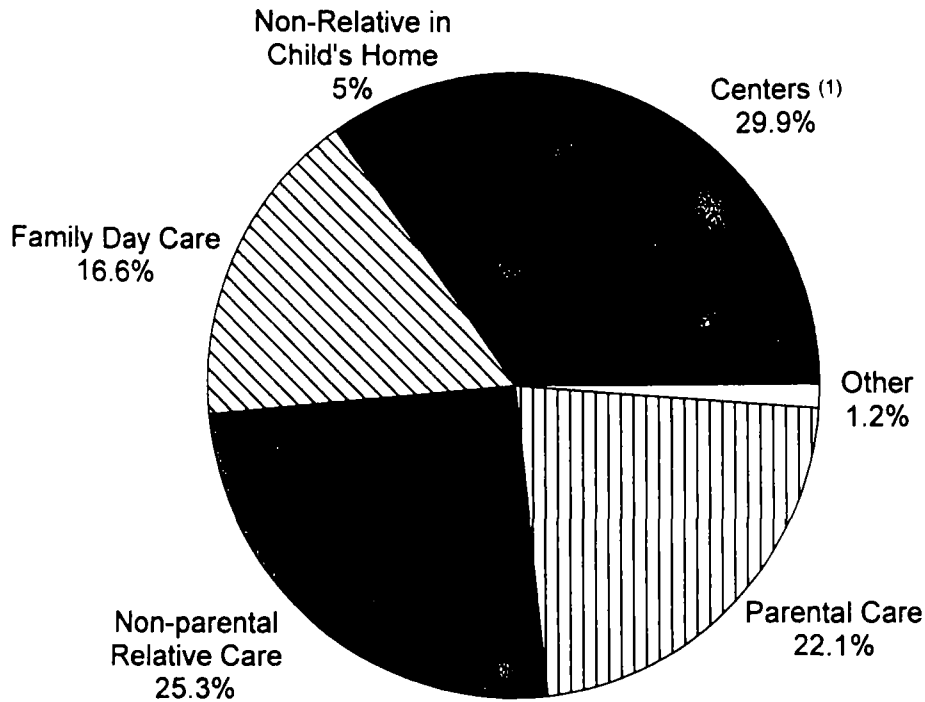
³HHS report of state reports based on CCDBG data from Fiscal Year 1995 (i.e. under the previous program). *Check if can cite.*

⁴American Public Welfare Association (1997).

⁵Child Care Bureau (1997).

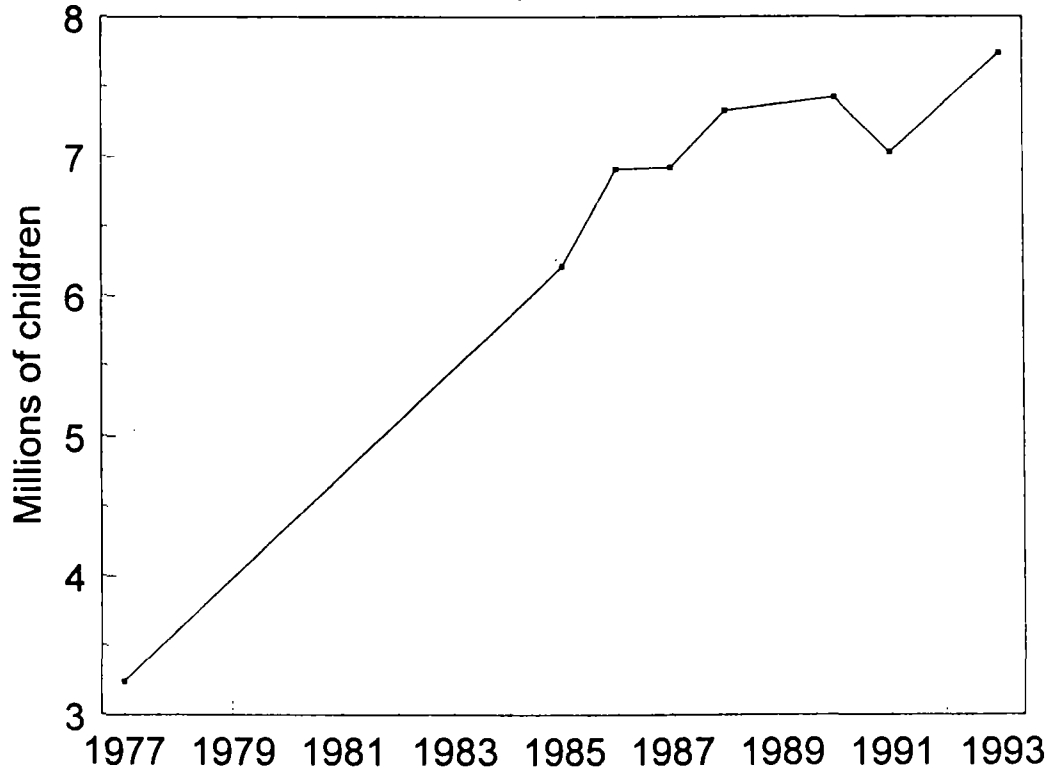
TANF	PRWORA allows states to transfer up to 30% of their TANF block grant into the child care or social services block grants, but no more than 10% of the TANF block grant can be used for the social services block grant.			The total annual TANF block grant to the states is capped at \$16.4 billion
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Percent of Children of Employed Mothers in Different Types of Care, 1993



(1) Includes center day care and nursery / preschool

Number of Children with Employed Mothers in Non-parental Care



Appendix I. The effect of child care prices on maternal employment (all effects statistically significant unless indicated)

A. Studies that use an estimation of child-care costs

Study (year)	Data source	Group studied	Estimation procedure	Measure of labor supply	Measure of cost of child care	Estimated elasticity of employment with respect to child care costs
Blau and Hagy (forth-coming)	1990 NCCS and 1990 PCS	Married and single mothers with children under 7 not in school	Multinomial logit.	Whether mother is employed	Uses data on fees to estimate hourly fees	-0.20 (calculated by computing the elasticity for each individual and then averaging over the sample.) Significance cannot be determined from available information.
Blau and Robbins (1988)	1980 EOPP	Married mothers with at least one child under 14	Multinomial logit	Mother does not work versus four combinations of mother working with purchased care or not, other relatives working or not	Average child-care expenditures among families in the community who purchased care	-0.38 (average price elasticity of employment over a range of examined child care costs) Significance cannot be determined from available information.
Connelly (1992)	Wave 5 of 1984 SIPP	Married mothers with children under 13	Probit	Employed or not	Selectivity-corrected predicted hourly costs from employed who purchase care	-0.20 (calculated at means)
Ribar (1992)	Wave 5 of 1984 SIPP	Married mothers with children under 6	Simultaneous maximum likelihood probit of labor force participation and tobit of demand for paid and unpaid child care services	ditto	ditto	-0.74 (calculated at means)
GAO (1995)	Urban Institute's 1990 National Child Care Survey and Low-Income Sub-study	Mothers in sample	Probit	ditto	ditto	-0.5 for poor mothers, -0.34 for near-poor mothers, and -0.19 for non-poor mothers. (Calculated at means)

Ribar (1995)	1984 SIPP.	Married women with children under 15	Maximum likelihood. Estimates a structural model of hours of work	ditto	ditto	-0.09 (under 15). -0.09 (under 6) Elasticities are means of effects evaluated at each observation. Significance cannot be determined from available information.
Kimmel (1995)	1987 and 1988 SIPP data	Single mothers in poverty	Probit	ditto	ditto	-0.346. Also estimated elasticity separately for white single mothers in poverty (-1.362) and black single mothers in poverty (-.345; not statistically significant)
Cleveland et al (1996)	1988 Canadian National Child Care Survey	Families with young children	Probit	Engaged in paid employment or not	ditto	-0.388 (evaluated at means)
Averett et al. (1997)	1986 NLS-Y	Married mothers with at least one child under age 6	Dual-error model	Annual hours of work	ditto	-0.78 (evaluated at means of data)

B. Studies that use an exogenous source of variation in the cost of child care

Study (year)	Data Source	Group studied	Source of variation in child care costs	Measure of labor supply	Measure of cost of child care	Estimate of employment effect
Berger and Black (1992)	Telephone survey	Low-income single mothers	Those receiving day care subsidy in two Kentucky programs versus those on subsidy waiting list.	Whether mother employed or not	Dummy for receipt of subsidy (amt of subsidy varies with income)	Attribute an increase in employment of 12% to program
Gustafsson and Stafford (1992)	Swedish data set plus telephone survey	Families in different Swedish communities	Exogenous variation due to local government setting subsidy rates for public child care.	Whether mother works 'substantially' (more than 30 hours)	Locally-set price (per month) of public child care	Estimated mean elasticity of employment with respect to child care cost -1.88
Leibowitz et al. (1992)	NLS-Y	First-time mothers	Variation among states and over time in state and federal income tax credits for child care	Whether mother is employed when child is 3 months old, and whether mother is employed when child is 24 months	Subsidy available through state and federal income tax credits; to avoid endogeneity issues, assumes woman works full-time at her predicted wage	Greater tax credits increased early return to work (w/in 3 mos) but had little effect on employment of women with older children

Appendix 2: Effect of child care price on use of market care, given maternal employment¹

Study	Data and Methods	Measures of price of care and mode of care.	Price elasticity of market care utilization conditional on employment ²
Hotz and Kilburn 1992	1986 NLS72. Black and white mothers with preschool age children. Probit.	Parental versus non-parental care. Selectivity-corrected predicted hourly price of non-parental care	-0.17 to -0.20 depending on specification. Significant.
Hotz and Kilburn 1994	1986 NLS72. Black and white mothers of pre-school age children. Maximum likelihood switching regression model.	Parental versus non-parental care. Selectivity-corrected predicted hourly price of non-parental care (using different instruments from 1992 paper).	-1.7. Significant.
Cleveland et al (1996)	1988 Canadian National Child Care survey. Families with young children. Probit.	Whether family purchases market care or non-market care at zero cost. Selectivity-corrected predicted hourly price of care from employed who purchase care.	-1.056. Single coefficient used in computing elasticity is significant.
Ribar 1995	1984 SIPP. Married women with children under 15. Maximum likelihood.	Direct report of whether family pays for care. Selectivity-corrected predicted hourly price of care from employed who purchase care.	Elasticity for paid care utilization is -0.608 or -0.42 depending on specification. When look at moms with kids under 6, elasticity drops to -0.235 or -0.224 depending on specification. Can't determine significance.
Blau and Robins (1988)	1980 EOPP. Married mothers under 45 with children under 14. Multinomial logit.	Market versus non-market care; care coded as market if provided by a non-relative or in a group facility or day care center, or if family reports any direct expenditure on child care. The weekly cost of market care reported by families is used to construct the site-average weekly child care costs; these are divided by 30 to estimate hourly price of care.	-1.17. Can't determine significance

Blau and Hagy (forthcoming)	1990 NCCS and PCCSS. Women with children under 7, not in school. Multinomial logit.	Whether family pays for care or not. Estimates hourly fees using regression results.	-.15. Can't determine significance
Ribar (1992)	1984 SIPP. Married females with children 0-6. Tobit	Paid versus unpaid care. Selectivity-corrected predicted hourly costs from employed who purchase care.	-.210. Underlying coefficients significant.

1. Elasticities for Blau and Robins (1988), Ribar (1992) and Blau and Hagy (forthcoming) are all taken from Blau (under review) who recalculates the elasticities using variable means from the data in Blau and Hagy (forthcoming).

2. All elasticities calculated at sample means except for Ribar (1995) who calculates mean of elasticities for each individual.

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