

**Estimates of Expenditures on Children
and
Child Support Guidelines**

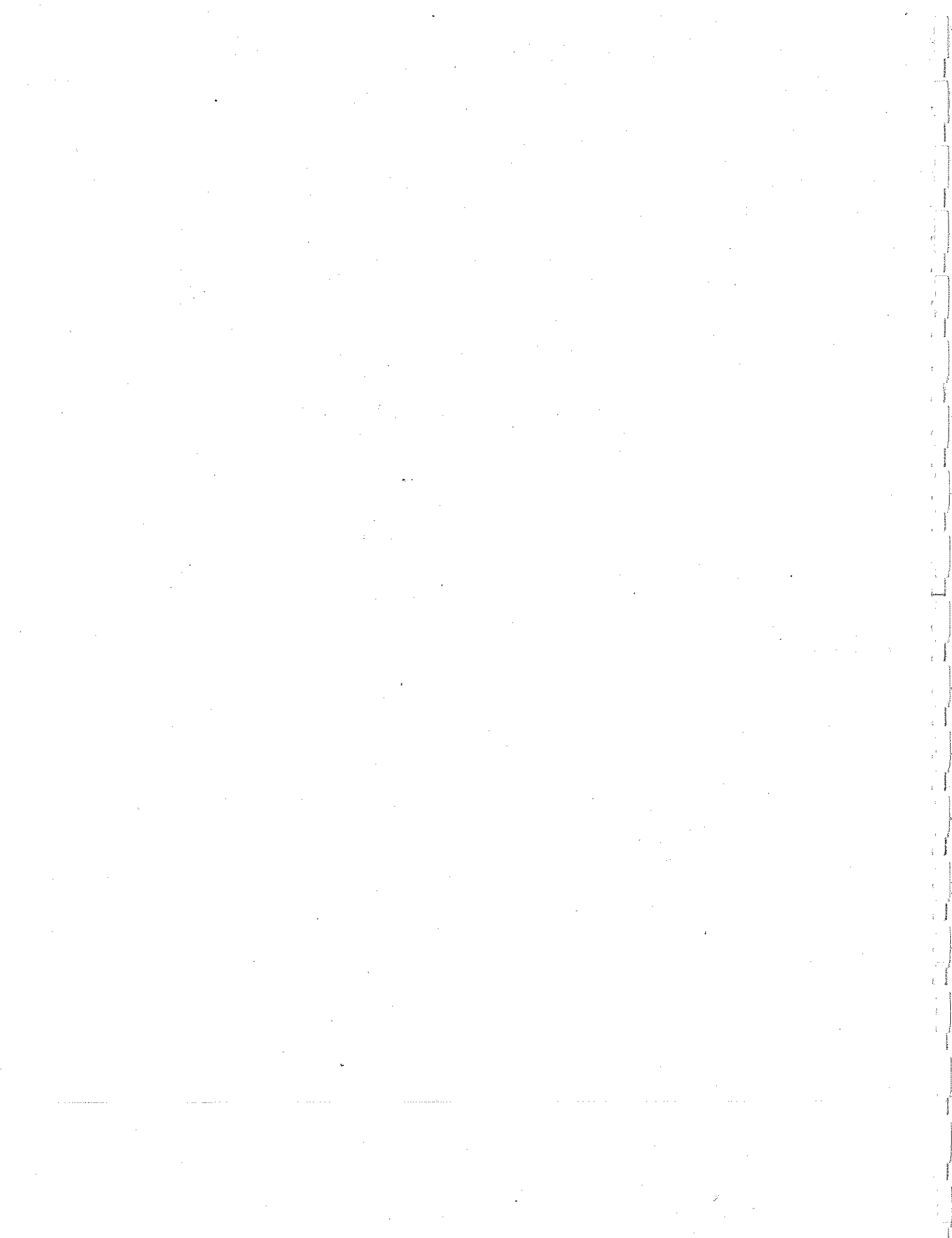
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The Department also established a technical review panel to ensure that the report accurately reflected the findings of the technical study by Dr. David Betson of the University of Notre Dame and other relevant research, and fairly represented the interests of children, custodial parents, and noncustodial parents. Members of the panel were technical experts experienced in estimating expenditures on children, were knowledgeable of the data base used for the study, and/or were recommended, at the request of the Office of Child Support Enforcement, by interest groups representing custodial and noncustodial parents. The review panel consisted of Terry K. Adams, Thesia Garner, Ronald Jerimias, Suzanne Helbrun, Mark Lino, Robert T. Michael, Julie Nelson, Eugene Smolensky, Roberta Spalter-Roth, and Lloyd Teigen. The review panel members made many comments on the draft report, and where possible their thoughtful suggestions and concerns were incorporated into this report. The assistance of the review panel was very much appreciated.

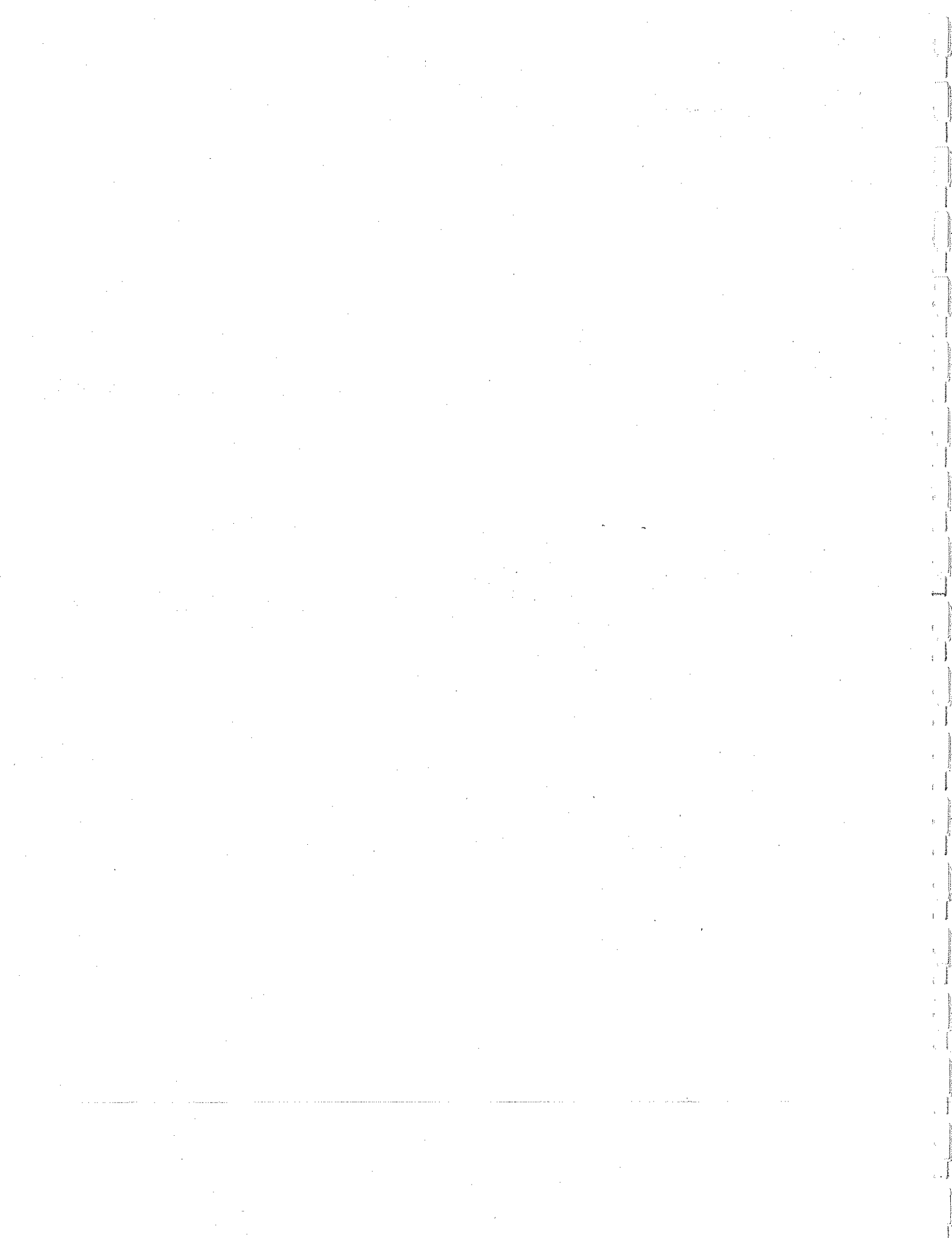


TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1-1
1.1 Background	1-1
1.2 Organization of the Report	1-6
2. PROCEDURES FOR ESTIMATING EXPENDITURES ON CHILDREN	2-1
2.1 Difficulties Inherent in Measuring Expenditures on Children	2-2
2.2 General Approach to Estimating Expenditures on Children	2-7
2.3 Specific Estimation Techniques	2-12
2.4 Limitations of the Estimation Techniques	2-27
2.5 Summary	2-32
3. DATA USED TO ESTIMATE EXPENDITURES ON CHILDREN	3-1
3.1 Background of the CEX	3-2
3.2 The Interview Survey Component of the CEX	3-3
3.3 Limitations of the CEX	3-5
4. THE EMPIRICAL LITERATURE ON EXPENDITURES ON CHILDREN	4-1
4.1 Results of the Betson Study	4-5
4.2 Comparing the Results of the Betson, NICHD, and FERG Studies	4-14
4.3 Summary of the Findings	4-24
APPENDIX 4.1	4-27
APPENDIX 4.2	4-30
5. THE ECONOMIC CONSEQUENCES OF MARITAL DISSOLUTION	5-1
5.1 Review of Nationally-Representative Estimates	5-9
5.2 Review of State and Local Study Estimates	5-39
5.3 Summary and Conclusions	5-50

TABLE OF CONTENTS
(continued)

	<u>Page</u>
6. CHILD SUPPORT GUIDELINES AND ESTIMATES OF EXPENDITURES ON CHILDREN	6-1
6.1 Summary of Child Support Guidelines	6-2
6.2 Guidelines and Their Relationship to Expenditures on Children	6-20
6.3 Other Factors that May be Considered in Establishing Child Support Guidelines	6-30
6.4 Summary	6-42
Appendix 6.1	6-45
Appendix 6.2	6-59
7. SUMMARY AND RECOMMENDATIONS	7-1
7.1 Summary of Major Findings	7-1
7.2 Recommendations and Conclusions	7-13

1. INTRODUCTION

1.1 Background

In 1988 approximately 40 percent of all children under the age of 18 -- a total of 25 million children -- did not live with both of their biological parents.¹ Most of these children, about 19 million, lived with their mother, another 3.6 million lived with their father, and the remaining 2.4 million lived with neither parent. The number of children living apart from one or both parents has increased rapidly in recent years, mostly as a result of higher rates of divorce and out-of-wedlock births. Between 1970 and 1988, for example, the number of children living only with their mothers nearly doubled.

As a result of these trends, children are much more at risk of being in poverty than the general population. In 1987, 13.5 percent of the population had incomes below the poverty level, but 20.6 percent of the nation's children were impoverished. In female-headed families, the poverty rate for children was 55 percent in 1987. One source of impoverishment among children with an absent parent is the lack of child support. In 1987, only 59 percent of mothers with children under 21 from an absent father had been awarded child support, and only 39 percent received any child support.²

The Federal government has been sensitive to the increase in the number of children living in situations where child support is potentially an important source of income.

Beginning in 1975 the Federal government has taken a number of actions to improve the

¹ Data cited in this section are from Select Committee on Children, Youth, and Families, U.S. House of Representatives, 1989. U.S. Children and Their Families: Current Conditions and Recent Trends, 1989, Washington, D.C.: U.S. Government Printing Office.

² In 1985, the corresponding figures were 61 and 37 percent, respectively. See U.S. Department of Commerce, Current Population Reports, Special Studies, Series P-23, No. 167, Child Support and Alimony: 1987, U.S. Government Printing Office, Washington, D.C., June 1990, and Series P-23, No. 154, Child Support and Alimony: 1985 (Supplemental Report), U.S. Government Printing Office, Washington, D.C., 1989.

nation's child support system.³ The Office of Child Support Enforcement (OCSE) was established by legislation in 1975 to provide financial support to states for locating absent parents, establishing paternity and support awards, and enforcing support orders. The program serves families receiving Aid to Families with Dependent Children (AFDC), who are required to cooperate with state child support enforcement agencies, as well as other families who have applied for such services.

The Child Support Enforcement Amendments of 1984 (Public Law 98-378)

strengthened states' abilities to enforce delinquent child support orders through means such as mandatory wage withholding, liens against real and personal property, and withholding state tax refunds.⁴ The 1984 Amendments also contained provisions requiring states to take actions to improve the adequacy and equity of child support orders. In particular, states were required to establish commissions to consider issues such as establishing appropriate standards for support, and states were required to develop guidelines for determining support obligations. These guidelines, which could be either advisory or presumptive, had to be made available to all judges and other child support officials in the state.

The Family Support Act of 1988 (Public Law 100-485) added enforcement tools and required states to take additional actions to ensure that their child support systems are effective and equitable. States must meet standards for establishing paternity; use wage withholding from the start of the order rather than waiting until a delinquency occurs; meet time standards established by the Secretary for processing cases; and develop state-wide

³ The discussion of the child support enforcement program is based on material from Committee on Ways and Means, U.S. House of Representatives, 1990. Overview of Entitlement Programs, 1990 Green Book: Background Material and Data on Programs within the Jurisdiction of the Committee on Ways and Means, 1990 Edition. Washington, D.C.: U.S. Government Printing Office, pp. 629-698.

⁴ The Amendments also extended the Federal Tax Refund Offset Program, initially established in 1981 (Public Law 97-35) to recover delinquent child support debts among AFDC cases, to minor children not on welfare.

automated data systems. The Family Support Act also requires that state guidelines be used for establishing support awards unless rebutted by a written finding that application of the guidelines would be unjust or inappropriate. The guidelines are to be reviewed by states every four years, and individual awards must be reviewed every three years for AFDC cases (unless it is not in the best interest of the child) and at the request of either parent for all other cases under the jurisdiction of the state child support enforcement program.

The Department of Health and Human Services is in the process of developing final regulations for implementing the guidelines requirements in the Family Support Act. In October 1989 the Department published proposed regulations in the Federal Register at C.F.R. 302.56, which would require that states establish by law or by judicial or administrative action one set of guidelines for setting and modifying child support awards in the state. Such guidelines would also be required to: (1) take into account the earnings, income, and resources of the absent parent, (2) be based on specific descriptive and numeric criteria and result in a computation of the support obligation, and (3) provide for coverage of the child(ren)'s health care needs including the provision of health insurance coverage. In addition, in reviewing and possibly updating their guidelines every four years, states would be required to analyze data on the number of cases complying with or deviating from the guidelines and the reasons for deviation. Comments on the proposed regulations have been received and analyzed, and the final regulations are expected to be published in fiscal year 1991. Within the parameters set by the Family Support Act and the Department's implementing regulations, states have been given broad authority to develop guidelines consistent with their political and philosophical views on the equitable allocation of child support expenditures between parents.

The Federal government also recognized that there is a great deal that is not known about expenditures on children and the standards of living in households of different

composition. Such information is useful for developing guidelines for child support. Section 128 of the Family Support Act calls for the Secretary of Health and Human Services to carry out two activities: (1) conduct a study of expenditures on children, and (2) submit a report on the results of the study:

The Secretary of Health and Human Services shall, by grant or contract, conduct a study of the patterns of expenditures on children in 2-parent families, in single-parent families following divorce or separation, and in single-parent families in which the parents were never married, giving particular attention to the relative standards of living in households in which both parents and all of the children do not live together. The Secretary shall submit to the Congress no later than 2 years after the date of the enactment of this Act a full and complete report of the results of such study, including such recommendations as the Secretary may have for legislative, administrative, and other actions.

The study required under Section 128 of the Act was conducted by Professor David Betson of the University of Notre Dame.⁵ Using data from the Consumer Expenditure Survey, the Betson study examines patterns of expenditures on children in two-parent families and single-parent families where the custodial parent was either divorced, separated, or never married. The present report fulfills the Secretary's obligation to provide a report to Congress on the results of the study along with the Secretary's recommendations.⁶ In addition to examining the results from Professor Betson's study, this report also reviews the results of many other relevant studies -- including other major studies of expenditures made on behalf of children and studies of the economic effects of family disruption.

⁵ David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-1986 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990.

⁶ The focus of this study is on the identification of expenditure patterns on children. The study does not address issues such as joint custody and second families. Readers interested in these issues are referred to earlier studies by Edward P. Lazear and Robert T. Michael, Allocation of Income Within the Household, Chicago: University of Chicago Press, 1988, and Robert Williams, Development of Guidelines for Child Support Orders: Final Report, Washington, D.C.: U.S. Department of Health and Human Services, September 1987.

One can pose three distinct questions regarding expenditures on children, and all three are relevant for establishing child support policies. First, what is the minimum amount that must be spent to maintain children? Second, how much do families in different circumstances actually spend on their children? Finally, how much should families in different circumstances, including situations where the parents do not live together, spend on their children? The first two questions are empirical issues that researchers can and have addressed. The question of how much parents should spend on their children involves policy and other value judgments. Many of the child support guidelines that have been proposed and implemented consider actual and minimum expenditures on children, but also make judgments on how much parents should spend on their children based on the competing interests of parents and children.

The Congressional mandate (embodied in Section 128 of the Family Support Act) addresses the second question, "how much do families in different circumstances actually spend on their children?" This report, and the study on which it is based, discusses issues related to determining how much parents actually spend on their children (both in single-parent and two-parent families) and the implications of those expenditure patterns for child support. Although the Congressional mandate specified that expenditure patterns of different types of single parent families (divorced, separated, and never-married) be studied, this report does not explicitly do so; the sample sizes in existing relevant data bases were inadequate to support such an analysis, and time and budgetary limitations precluded the development of a new data base for the purposes of this report.

1.2 Organization of the Report

The report consists of seven chapters. Chapter 2 provides a review and assessment of the various methods that have been used to estimate expenditures on children. Although it might appear straightforward to develop such estimates, two fundamental problems make it extremely difficult to do so. First, for many goods and services, such as food, even the best available data sources do not indicate how the goods are divided between adults and children within a household. Second, other goods and services, such as housing, are consumed jointly by members of a household; even tremendously detailed data on family expenditure patterns will be insufficient to identify what portion of these expenditures are attributable to the family's children. To deal with these problems, researchers have developed methods of estimating the relative well-being of households with different compositions and allocating expenditures among children and adults. These issues are reviewed in Chapter 2, and the advantages and limitations of alternative methods of estimating expenditures on children are assessed. The chapter also notes that some researchers have argued that all the standard methods used to estimate expenditures on children do not properly account for the fact that having children is usually voluntary, and therefore, while their expenditure patterns change, parents' well-being does not decrease as is assumed in the methodologies discussed in this chapter.

Chapter 3 describes the Consumer Expenditure Survey (CEX), an ongoing nationally-representative statistical survey of consumer expenditures that includes 5,000 households per quarter. The Betson study and all other major studies of expenditures on children in the United States have made use of the CEX or its predecessors. The chapter provides the history of the CEX, describes the methodology used to conduct the CEX, and points out the limitations of the CEX for studies of expenditures on children.

The Secretary's study of expenditures on children, the Betson study, is reviewed in Chapter 4. The chapter presents the study's findings on expenditures on children in different types of families using methodologies described in Chapter 2. This chapter also provides a review of previous studies of expenditures on children and indicates how and why the results of the Secretary's study differ from previous research. The chapter concludes that because of the considerable complexity involved in estimating average expenditures on children, there is no one "correct" estimate. Rather there is a range of credible estimates which is quite wide.

Chapter 5 reviews a number of studies on the economic consequences of marital dissolution based on sources other than the Consumer Expenditure Survey (CEX).⁷ The primary purpose of the Betson study is to develop estimates of expenditures on children by parents in one- and two-parent families. Of particular interest in the context of child support is the comparison of expenditures made on behalf of children by one- and two-parent families. Implicit in this comparison is an assessment of the types of changes experienced by intact families that subsequently dissolve (i.e., the effects on a family of the transition from an intact to a divorced or separated state).

While inferences developed from cross-sectional survey data such as the CEX (i.e., data collected from a sample of individuals and families at a single point in time) can be useful in understanding the relationship between economic well-being and family composition, a number of other studies have drawn on longitudinal data. These data, based on repeated interviews of the same families over time, track changes in marital, socioeconomic, and other characteristics and can address much more directly the relationship between family composition and economic well-being. Unfortunately, time and budgetary constraints often require that longitudinal data bases be less detailed than their cross-sectional counterparts.

⁷ The studies reviewed in Chapter 5 were not funded for or commissioned as part of the Secretary's study called for in the Family Support Act of 1988.

As a result, no data source can simultaneously support a detailed study of family expenditure patterns and a study of the transition effects of marital dissolution. Because of this limitation in the CEX (and, therefore, of all major studies of expenditure patterns on children), Chapter 5 reviews the findings of studies based on data that explicitly track changes in the economic circumstances of families that experience a marital disruption. In general, the available research on this subject shows that the standard of living for women and children frequently declines substantially after a marriage terminates.

Chapter 6 reviews the theory and practices among states in establishing child support guidelines. The chapter begins with a description of the three general types of guidelines currently being used by states (the percentage of income, income shares, and Melson guidelines) and then analyzes the relationship between existing state child support guidelines and available estimates of expenditures on children. With some exceptions, all three guidelines are implemented by the states in such a way as to be within the range of estimates of expenditures for children in two-parent families. A brief review of factors other than expenditure estimates that are potentially relevant to the development of state child support guidelines is also provided in Chapter 6. Among these factors are issues of fairness and equity. Because of lost economies, one or more parties generally experiences a decline in economic well-being when a household splits into two, and the guidelines should consider how this decline can most equitably be spread between the children and custodial and noncustodial parents.

A summary of the report's major findings is presented in the final chapter. In addition, Chapter 7 reviews a number of important topics not addressed in the report, and provides recommendations and conclusions.

2. PROCEDURES FOR ESTIMATING EXPENDITURES ON CHILDREN

For many years researchers have been attempting to determine how much parents spend to raise their children. There are a number of complex issues that must be confronted in developing such estimates. Recently, the importance of these issues has increased as changes in child support legislation have transformed the discussion about how best to estimate expenditures on children from being primarily an academic question to a public policy debate. The issue of child support and its relation to the cost of children is discussed in Chapter 6. This chapter reviews the various methods that have been used to estimate expenditures on children.

In any discussion of the "costs" of children, one key issue that quickly arises is that children may not really "cost" anything. In cases of extreme neglect, for example, a child would cost almost nothing because little (if anything) would be spent on behalf of the child. In less extreme cases, parents would incur the "minimum cost" necessary to ensure a child's basic survival. Most parents, however, spend more, and some spend substantially more, than this minimum. Moreover, spending patterns are likely to vary with both children's ages and community standards. The "cost of children," therefore, is not a well-defined concept because their cost varies with parental income and preferences, with the ages and number of children, and perhaps with community standards as well.

What we are concerned with in this chapter is not what children cost, but rather what is spent on them. That is to say, we would like to know how expenditure patterns vary between families without children and otherwise comparable families with children. In addition, we are interested in knowing how expenditure patterns vary with children's characteristics (e.g., how many there are and their ages), as well as with the characteristics of their parents (e.g., their socioeconomic and marital status).

This chapter describes the general methods that have been developed to estimate what parents spend on their children. Consideration of how expenditures vary with a variety of particular circumstances (e.g., children's ages and child care expenses) is postponed until later chapters.

The first section of the chapter describes the difficulties inherent in measuring what parents spend on their children. Section 2.2 outlines the general approach used to estimate expenditures on children. Section 2.3 describes the specific techniques that have been used to implement the general procedure, paying particular attention to the assumptions that are required for each of these techniques to produce accurate estimates. Section 2.4 discusses the implications of these assumptions, focusing on the extent to which the assumptions limit our ability to measure accurately the level of expenditures made on children. A brief summary is provided in Section 2.5.

2.1 Difficulties Inherent in Measuring Expenditures on Children

The birth and aging of children typically alter a family's spending patterns. Clearly, the demands made on a family's budget increase with the number of children. The birth or presence of children, however, does not in itself typically result in an increase in the family's income.¹ In fact, in many cases, just the opposite happens; one parent (often the mother) often quits work, at least temporarily, to stay at home and care for the family's children. In increasing numbers, however, mothers are either not leaving the labor force after the birth of their children or are returning to work much more quickly than in the past. As a result, child care has become a major item in the budget of many families.

¹ The exception is for older children who have jobs and contribute some or all of their earnings to the family.

Some families accommodate the needs of children, at least in part, by adjusting their savings. Families might increase their savings either to meet children's future educational expenses or to leave an inheritance.² Other families, however, may decrease their savings because the increase in the demands on the budget cannot be accommodated without reducing savings.

In addition to adjusting savings, families are likely to adjust their spending in a variety of ways in response to the changing needs they face: they might consume less expensive goods (e.g., macaroni and cheese instead of salmon); the adults might reduce their own level of consumption (e.g., they buy fewer or less expensive clothes or luxury items); the types of goods purchased might change (e.g., a station wagon may be substituted for a sports car); and the quantity of goods consumed might also change (e.g., more tickets must be purchased when going to the movies, although movies may be attended less frequently).

Some of the adjustments in spending are made on the "shared goods" (i.e., commodities such as housing and transportation that are jointly consumed and from which all individuals in the family benefit) that the family consumes. Other adjustments in spending are made on "privately" consumed goods (i.e., those items such as food or clothing that are consumed individually rather than jointly).

The vast majority of a family's expenditures (90 percent) are made either on shared goods or privately consumed goods, such as food, that are not readily attributed to a given family member.³ Both of these categories of goods make estimating expenditures on

² An increase in savings is more likely to occur in high income-families than in low-income families.

³ David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-1986 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990.

children problematic. What portion of a family's expenses on a shared good such as housing, for example, should be attributed to the family's children? And what portion of a privately consumed good such as a loaf of bread or a bottle of shampoo should be "charged" to each family member? Only in cases where goods are consumed exclusively by adults (e.g., adult clothing or alcohol) or consumed exclusively by children (e.g., children's clothing or toys) is there a reasonable prospect of sorting out on whose behalf the expenditure was made.⁴ The numerical example given in Table 2.1 may help to clarify the problem.

TABLE 2.1
AN MAXIMUS
 HELPING GOVERNMENT SERVE THE PEOPLE

	Y:	Child
Shared (0	0
Adult Goods		
Children's		
All Other Privately Consumed	10,000	12,000
Total Expenditures	\$30,000	\$30,000

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Clearly the minimum expenditures made on the child in this hypothetical example is the \$1,000 increase in the amount spent on children's goods. There may, however, be other increases in expenditures on the child as well. For example, the \$500 increase in shared

⁴ Even then it might be difficult to attribute these expenditure to a particular adult or child. Typically, we only know that these expenditures were made on behalf of the family's children or on behalf of its adults.

goods may reflect increased expenditures on housing, and some or all of that increase could be attributed to the child. Further, the overall decrease in expenditures on privately consumed goods is likely to conceal an increase in some privately consumed goods for the child. The child will consume some food, but we cannot tell how much. The point is that even the most detailed data on expenditures do not permit us to identify how shared goods are consumed or which family members are consuming what amounts of privately consumed goods.

This example points to the fundamental problem that must be solved in order to measure expenditures made on behalf of children. If such expenditures are to be estimated accurately, a method is needed for dividing a family's expenditures on shared goods into two components: the portion that should be attributed to the family's children and the portion that should be attributed to the family's adults. In addition, a similar mechanism is needed for dividing a family's expenditures on privately consumed goods, such as food, where the consumers cannot be identified without extreme data collection measures and invasion of privacy. Determining what portion of privately consumed goods should be attributed to the family's children is not a straightforward matter because, as has already been mentioned, expenditures for these goods are typically co-mingled among all family members.

Given all of the difficulties outlined above, an easy way to "estimate" expenditures on children is simply to divide the total expenditures of the family by the number of individuals in the family and call the quotient "expenditures per family member." This approach, which is usually called either the per capita or average cost estimator, has obvious advantages. It solves the problem of attempting to determine what portion of a family's shared goods and privately (but co-mingled) consumed goods should be attributed to the children -- it simply assigns each family member an equal share of expenditures. That is to say, each family

member is assumed to be responsible for the same (i.e., the average) amount of family spending.

Unfortunately, the per capita (average cost) procedure has little merit. The most obvious problem is that it does not really correspond to expenditures on children. Rather, it assumes that the expenditure patterns are known. The other major problem is that the marginal (i.e., extra) expenditures on an additional family member are likely to be less than the average expenditures on a family member. Up to some limit, an additional family member can be accommodated without buying a larger house or a larger car. Even if additional expenditures on shared goods become necessary because of the addition of one more person, in many cases the incremental (i.e., marginal) expenditures would be less than the per capita (i.e., average) expenditures on the shared good. That is to say, per capita expenditure "estimates" are likely to overestimate the true level of expenditures on children.⁵

The remainder of this chapter reviews a variety of "marginal cost" estimators which, unlike the per capita estimator, attempt to determine the incremental expenditures that families make on behalf of their children.⁶ Expenditures are defined to include both direct expenditures made for children's "private" consumption, as well as that portion of a family's expenditures on shared goods that is attributable to the family's children. This focus is dictated, in large part, by the nature of the available evidence; the literature on family expenditure patterns has concentrated on these aspects of spending. This is not to say, however, that this definition is ideal. Children pose costs in addition to those outlined above.

⁵ Interestingly, the Engel method of estimating expenditures on children, which is discussed below, leads to results that are close to the per capita method.

⁶ Note that because children do not typically add to the income that families have available, these incremental expenditures will either result in reduced savings or reduced expenditures on the other family members.

There is, for example, an "opportunity cost" to children. This cost refers to the value of leisure or earnings that parents or other caretakers forgo in order to care for children. While the opportunity cost of children is clearly important, this report does not address this component of the total cost of children.

As the earlier discussion indicated, another important, but indirect, expense of children is the "cost of saving" for their future. It is not clear how this expense should be handled, even at a conceptual level. If a family reduces its savings, should this be considered an expense to the parents? On the other hand, if the family increases its saving (perhaps to finance future educational needs), shouldn't this too be considered an expense? Empirical attempts to estimate expenditures on children have focused exclusively on spending patterns. That is to say, the estimates exclude the portion of a family's savings (be it a positive or negative amount) that should be included as a component of expenditures on children.⁷ Unfortunately, correcting for this omission is beyond the scope of this report. Finally, in addition to imposing financial costs on their parents, children also provide non-monetary benefits. A consideration of these benefits, however, is also beyond the scope of this report.

2.2 General Approach to Estimating Expenditures on Children

The inability to observe directly expenditures made on behalf of a child (i.e., the marginal cost of a child) requires that an indirect approach be used to infer how much families spend on their children. To make such inferences, we introduce the concept of "well-being" or what economists refer to as "utility." Consider a childless couple with a particular

⁷ As noted above, there are substantial difficulties involved in estimating expenditures on children, even during a relatively short period of time (a year, for example). These difficulties have proven to be so formidable that there have not yet been any attempts to estimate expenditures on children within a life cycle model (i.e., a model that includes both savings costs and opportunity costs).

level of income. If a child is added to the household, the family will spend some of its budget on the child. As a result, the adults spend less on themselves and their level of economic well-being decreases because of the presence of the child.⁸ The "cost" of the child to the adults may then be measured as the extra resources needed to bring the parents back to the same level of economic well-being they would have enjoyed had they remained childless.

Unfortunately, a household's level of well-being cannot be observed directly. By making particular assumptions about the determinants of well-being, however, we can estimate the resources required to equate levels of well-being for families with different numbers of children. For example, one assumption that has been widely used is that two families that spend the same proportion of their budget on food have the same level of well-being. This approach, first developed by Ernst Engel in the nineteenth century, is described in more detail later. A second assumption that has been sometimes used is that the adults in two households that spend the same amount on goods consumed exclusively by adults have equal levels of well-being. This approach, referred to as the "Rothbarth method" after its originator, is also described later. In both of these approaches, and in other methods that are described in the following section, an assumption is made that permits us to determine when the adults in two households have the same levels of well-being.⁹

⁸ Having a child is typically voluntary. Consequently, the adults' expectation of what their total well-being will be is not decreased by a child or the parents would not choose to have the child. Our concern here is with parents' ability to maintain the same economic standard of living (as measured by the consumption of material goods and services) for themselves. Furthermore, because the ultimate purpose of this report is to inform policymakers who must make decisions about child support guidelines, it is important to bear in mind that child support is owed -- whether or not parenthood is voluntary.

⁹ The assumptions made in each of the methods used to measure expenditures on children are quite restrictive and have implications for the validity of the estimates produced. A discussion of these implications can be found in Section 2.4.

These assumptions are necessary because we do not have adequate data bases that track the expenditures of households over time as they add or lose children.¹⁰ Consequently, we must estimate expenditures on children from cross-sectional surveys that provide information on expenditures among a large number of families with different numbers of children. To estimate expenditures for the first child, we first look at expenditure patterns for childless couples and/or single individuals. The data for these childless families enable us to determine how much such families spend on the goods and services that are used to measure well-being.

Next, we look at expenditure patterns for families with one child.¹¹ By using our measure of well-being, we can then identify families with the same level of well-being as the childless couples. For example, if we are using the Engel estimator, two families are considered to be equally well off if they spend the same proportion of their budget on food. If a childless couple spends, say, 30 percent of their budget on food, then a family with one child is assumed to have the same level of well-being if they also spend 30 percent of their budget on food.¹² Given this assumption, it follows that the difference in total expenditures between the two families indicates how much money must be given to a household, after a

¹⁰ Even if we had such data, the numeric example in Table 2.1 indicates that we would still not be certain about how to allocate the family's expenditures on many goods across its members.

¹¹ Because the techniques that have been developed are based on family income and expenditures, it is not necessary to distinguish children's income from parents' income, nor is it necessary to consider intrafamily transfers (e.g., allowances) or know which family member spends the money.

¹² Note that the level of total expenditures may differ substantially between the two families even though the percentage of expenditures devoted to food is identical.

child is added, to maintain the level of well-being of the adults.¹³ This amount is considered to be the "cost" of the child (or, more correctly, expenditures on the child) because if the extra resources were added to the budget of a family with a child, the adults would be at the same level of economic well-being as a childless couple. A numerical example is provided in Table 2.2.

TABLE 2.2
HYPOTHETICAL EXAMPLE OF
ANNUAL EXPENDITURES:

	<u>Family A</u> <u>(No Children)</u>	<u>Family B</u> <u>(One Child)</u>	<u>Family C</u> <u>(One Child)</u>
Food	\$6,000	\$8,000	\$9,000
Adult Goods	2,000	2,000	3,000
All Other Goods	<u>12,000</u>	<u>14,000</u>	<u>18,000</u>
Total Expenditures	\$20,000	\$24,000	\$30,000

By the Engel criterion, the adults in Family C in Table 2.2 are as well off as the adults in Family A because both spend 30 percent of their total expenditures on food.¹⁴ The

¹³ By examining how these expenditures vary, it is possible to derive an equivalence scale (the ratio of expenditure levels, across families of varying size and composition, that is required to achieve a fixed level of well-being). In some applications (e.g., comparing estimates based on expenditure data from different years), it is convenient to use equivalence scales. In other applications (e.g., in child support determination), it is more convenient to have dollar measures. In this chapter, our numeric examples focus on dollar estimates. It should be noted, however, that one measure can be derived from the other because they embody the same information.

¹⁴ Note that by the Engel criterion, the adults in Family B (which spends 33 percent of its total expenditures on food) would be judged to be worse off than the adults in either Family A or C.

Engel estimate indicates that annual expenditures on one child are \$10,000 (\$30,000 - \$20,000). By the Rothbarth criterion, however, the adults in Family B are as well off as the adults in Family A because both spend \$2,000 on adult goods.¹⁵ This estimate indicates that annual expenditures on one child are \$4,000 (\$24,000 - \$20,000). This basic approach can be repeated to compute the expenditures for adding a second child in a household by comparing families with one and two children, and can be extended to larger families as well.

It is important to note that there are at least two reasons why expenditures on two children cannot be determined by simply doubling the expenditures for one child. First, there are likely to be economies of scale; the marginal (extra) expenditures on a second child are likely to be less than the expenditures on the first child. For example, children can share a room, a babysitter, hand-me-down clothes, and possibly (but less likely) even toys. Second, the addition of another child puts an extra strain on the family's budget. Unless income increases or savings decrease, the level of economic well-being of the original family members cannot be maintained. Some (perhaps most) of the reduced standard of living will be borne by the family's adults. It is likely, however, that the first child will also suffer at least some reduction in his/her standard of living. For both of these reasons, we should expect expenditures on two children to be less than twice the expenditures on one child.

The approach outlined above can also be used to determine how expenditures on children vary with a variety of circumstances. These circumstances include the ages of the children, the region of the country in which the family lives, the demographic characteristics of the parents, and their marital status. The basic procedures are similar, but the analysis

¹⁵ Note that by the Rothbarth criterion, the adults in Family C (which spends \$3,000 on adult goods) would be judged to be better off than the adults in either Family A or B.

incorporates variables to measure how expenditure patterns vary with the characteristics of interest.

2.3 Specific Estimation Techniques

This section describes the major techniques that have been used to estimate expenditures on children (and adults as well).

The FERG (Family Economics Research Group) Estimator

The Family Economics Research Group (FERG) at the U.S. Department of Agriculture has for many years produced bi-annual estimates of expenditure patterns on children.¹⁶ The FERG estimation technique combines some aspects of both a marginal and average cost estimator. That is to say, the FERG estimator considers the major categories of expenses that most families incur and attributes some of these expenses to children (and adults) on a per capita basis and others on a marginal cost basis.

In particular, housing, transportation, and miscellaneous other expenses are all assigned on a per capita (i.e., average cost) basis. That is to say, total family spending on housing is first divided by the total number of family members and then multiplied by the number of children in the family. The result of this calculation is defined to be expenditures on housing attributable to the family's children. The transportation and other miscellaneous expenses attributable to the family's children are similarly calculated, although transportation expenses are adjusted to account for non-work-related travel only.

A variety of other procedures are used to assign the remaining categories of expenses to either the family's children or to its adults on a marginal cost basis. Expenditures on

¹⁶ Mark Lino, "Household Expenditures on a Child," Family Economics Review, (forthcoming).

children's clothing, education, and child care are assigned on an equal basis to each child in a household. Food and health care expenditures are allocated among family members based on individual member shares (using findings from the National Food Consumption Survey conducted by the U.S. Department of Agriculture and the National Medical Care Utilization and Expenditure Survey conducted by the U.S. Department of Health and Human Services).

The estimates apply to the younger child in a husband-wife household with two children (the average number of children in a household in 1987). Formulae have been devised to adjust these estimates for expenditures on the older child and for households with only one or three or more children.

The Engel Estimator

The first empirical attempt to actually estimate expenditures on children (and adults as well) is attributable to Engel who noted two important regularities in expenditure patterns.¹⁷ Engel documented that as a family's size increased (holding family income constant), the percentage of the family's expenditures devoted to food increased. This observation, which still holds true today, has come to be known as Engel's Law. Engel also documented that as a family's income increased (holding family size constant), the percentage of the family's expenditures devoted to food decreased, even though total expenditures on food increased. That is to say, expenditures on food increased more slowly than income increased.

Given these empirical regularities, Engel concluded that the percentage of a family's total expenditures that was devoted to food was a good criterion for evaluating well-being. Engel assumed, therefore, that if two families were equal by this criterion, then the families

¹⁷ Ernst Engel, "Die Productions und Consumtionsverhaltnisse des Konigsreichs Sachsen," Zeitschrift des Statisticshen Bureaus des Koniglich Sachsischen Ministeriums des Innern, 3, 1857.

were equally well off (in economists' terminology, the families have equal utility levels).

Alternatively, if one family devoted a greater percentage of expenditures to food than another family, then that family was assumed to be less well off than the other family.¹⁸

The assumption that the percentage of a family's expenditures devoted to food is a good criterion for evaluating family well-being is quite restrictive. It implicitly incorporates an assumption known as "separability" or "independence" in the economics literature. The assumption of separability requires that families compartmentalize their consumption decisions into components that are, in some sense, independent of one another.¹⁹ In the application at hand, these components would be: adults' consumption of food, adults' consumption of "all other" (i.e., non-food) goods, children's consumption of food, and children's consumption of all other items.²⁰ Further, it is assumed that the relationship between food consumption and all other consumption is the same for adults as it is for children.

Using the "independence" assumption, the assumption that the percentage of expenditures devoted to food is a proxy for well-being, and observations about how food

¹⁸ A variation of this procedure was used by Orshansky in the early 1960s to compute poverty thresholds for families of different size. Since then, poverty thresholds have been computed by simply adjusting Orshansky's original calculations to account for the effects of inflation as measured by Consumer Price Index. See Mollie Orshansky, "Counting the Poor: Another Look at the Poverty Profile," Social Security Bulletin, 28, January 1965.

¹⁹ That is to say, consumption decisions that are made within one component have no impact on consumption decisions that are made within another component.

²⁰ Clearly, the food components correspond to "private" consumption, while the "all other" component consists both of private and shared goods. As was pointed out earlier, however, by assuming that the percentage of expenditures that is devoted to food measures well-being, the problem of allocating non-food goods between adults and children is avoided.

expenditures vary across families, expenditures on children can be estimated.²¹ The estimation procedure requires that expenditure patterns of families without children be examined to determine how spending on food (as a percentage of total expenditures) varies with a family's socio-demographic characteristics (age and education of the head of the household, geographic location, etc.). In the second step of the analysis, food expenditure patterns (as a percentage of total expenditures) in families with one child are then examined to determine how they compare with similar families without children. In one-child families that spend the same proportion of their budget on food as families with no children, the adults are assumed to be as well off as a childless couple. Expenditures on a single child are then computed as the difference between total consumption expenditures for the one-child family and total consumption expenditures for a childless couple with the same level of well-being. Finally, by examining how expenditure patterns vary between families with different numbers of children, it is possible to estimate the expenditures on additional children. This procedure has come to be known as the Engel estimator.

The Iso-Prop Estimator

The Engel estimator is actually one example of a broader class of estimators known as "iso-props." The term iso-prop, adopted by Harold Watts, is short-hand for iso-proportion (i.e., equal-proportion).²² Like the Engel estimator, iso-prop estimators are based on the

²¹ There still remains a question, however, about how food expenditures should be measured. Should food expenditures, for example, be based only on food consumed at home, or should these expenditures also include food consumed away from home? Researchers typically examine a variety of closely related measures of expenditures and then use the best one, as determined by statistical measures (e.g., highest R^2), to approximate individuals' preferences.

²² Harold W. Watts, "The Iso-Prop Index: An Approach to the Determination of Differential Poverty Income Thresholds," Journal of Human Resources, 2, Winter 1967.

assumptions that: (1) the percentage of family expenditures devoted to a particular type of consumption (e.g., food, shelter, clothing, and medical expenses) serves as a proxy for the family's well-being, and (2) the family's expenditure patterns are independent (i.e., the same portion of expenditures on the iso-prop that is attributable to the family's children is also attributable to all other family members).

A variety of alternative iso-props have been proposed, including expenditures on shelter, clothing, total food plus clothing, food at home plus clothing, and total food plus transportation plus medical expenses. Once a particular iso-prop has been chosen, the procedures for estimating expenditures on children are exactly the same as those outlined above for the Engel estimator.

The Rothbarth Estimator

An alternative estimator, which is closely related to the Engel/iso-prop estimator, was first proposed by Rothbarth.²³ Rothbarth argued that the best way to measure expenditures on children is to assess children's impact on their parents' consumption. Rather than defining families who spend an equal percentage of their total expenditures on food (or some other category of goods) as being equally well off, Rothbarth assumed that the well-being of parents should be determined by the level of "excess income" available to them once necessary expenditures on all family members had been made. Rothbarth defined excess income to include "luxuries" (alcohol, tobacco, entertainment, and sweets) and savings.

²³ Erwin Rothbarth, "Notes on a Method of Determining Equivalent Income for Families of Different Composition," Appendix 4 in Charles Madge (ed.), War-Time Pattern of Spending and Saving, National Institute for Economic and Social Research, Cambridge: Cambridge University Press, 1943.

A number of authors have used the Rothbarth criterion to estimate expenditures on children.²⁴ In practice, however, Rothbarth's definition of excess income has been narrowed to include only "observable adult goods," those goods that, with reasonable certainty, can be assumed to be used exclusively by adults.²⁵ Once again, the idea is to assess the impact that children have on their parents' consumption. Referring again to Table 2.2 may serve to clarify the rationale underlying this estimation technique. By the Rothbarth criterion, the adults in Families A and B (which have equal levels of expenditures on adult goods) are judged to be equally well off, while the adults in Family C (which has higher expenditures on adult goods) are considered to be better off than the adults in the other two families.

Clearly, there are many difficulties involved in using observable adult goods as the basis for comparing well-being. Some goods that appear to be shared by all family members may, in fact, be adult goods. For example, a family's transportation expenses may include expenditures on a sports car that is used only by the parents, and a station wagon that is used by all family members. To the analyst who is attempting to measure expenditures on children, however, it would appear that all of the transportation expenses (i.e., both cars) are shared. Similar problems exist with private (but co-mingled) goods. A family's expenditures on food may include items (such as coffee, bran cereal, and baking soda toothpaste) that are probably consumed exclusively by the adults in the family. Yet, it would be impossible for the analyst to know that these expenditures are being made entirely on behalf of the adults. In many instances, therefore, it is quite difficult to identify "observable adult goods." In practice,

²⁴ A discussion of the results of these studies can be found in Chapter 4.

²⁵ Note that by assuming that observable adult goods serve as a proxy for adult well-being, we have not precluded the possibility that adults shift their consumption of other goods (either "shared" or "private") in order to meet their children's needs.

data constraints have limited the definition of observable adult goods to expenditures on three categories of goods: alcohol, tobacco, and adult clothing.²⁶

Quite apart from the data limitations, the assumption that the level of expenditures devoted to observable adult goods is a reliable criterion for evaluating adults' well-being is critical. As was the case with the iso-prop/Engel estimator, this assumption forms the foundation for estimation and implicitly incorporates the concept of "independence" in the consumption decision-making process. In this case, independence implies that: (1) families compartmentalize their consumption decisions into observable adult goods and "all other" goods (some of which would be shared goods, and others, private goods; some would be consumed by the family's adults and some by the family's children); and (2) the relationship between consumption of observable adult goods and all other consumption is the same for adults in families with children as it is for adults in families without children. The Rothbarth independence assumption does not, however, imply that adults gain utility only from observable adult goods. Rather, this assumption implies that the level of expenditures on observable adult goods is a proxy for the level of all goods consumed by adults or their total well-being.

The independence assumption and the assumption that the level of expenditures on observable adult goods is a proxy for adults' well-being, provide the basis for estimating expenditures on children. The procedure for computing expenditures on children using the Rothbarth estimator is very similar to that used for the iso-prop/Engel estimator. Expenditure patterns of families without children are first examined to determine how spending on observable adult goods varies with a family's socio-demographic characteristics (age and

²⁶ It should also be noted that some teenagers may consume these "adult goods." This creates problems in developing reliable estimates using the Rothbarth procedure for families with older children, a point that is discussed further in Chapter 4.

education of the head of the household, geographic location, etc.). In the second step of the analysis, spending patterns in families with one child are used to identify families with the same level of well-being, i.e., families with the same level of spending on adult goods. Expenditures on the child are then estimated by subtracting total family spending in the childless family from total family spending in a family with one child and the same level of well-being. Similarly, the spending patterns of families with more than one child can be examined to estimate expenditures on additional children.

The Prais-Houthakker Estimator

The Prais-Houthakker technique for examining family spending patterns was first proposed in 1955.²⁷ The primary focus of the original work was to provide a statistical explanation for family spending, rather than to measure family well-being. Other analysts, however, have since used the technique to examine how levels of well-being vary with the number of children and thereby estimate expenditures made on their behalf.

This technique assumes that the percentage of a family's expenditures on a particular type of good (e.g., housing or food) that is attributable to a particular type of family member (i.e., children and adults of different ages and gender) varies with the good under consideration. Teenage boys, for example, are likely to be relatively "food-intensive" while teenage girls may be "clothing-intensive." Parents who are relatively older (say, over the age of 50) may be more "health care-intensive" than younger parents. In short, expenditures

²⁷ See S.J. Prais and Hendrick S. Houthakker, The Analysis of Family Budgets. Cambridge: Cambridge University Press, 1955.

made on behalf of a family member are unlikely to be constant across different categories of goods.²⁸

Prais and Houthakker developed an estimation procedure that incorporates this assumption. Basically, the procedure deflates (i.e., divides) a family's expenditures on each major commodity group (e.g., food, housing, transportation) by a "relative expenditure scale" specific to that group.²⁹ The relative expenditure scale varies not only with the commodity group, but also with the composition of the family. For example, the relative expenditure scale for food would be a relatively large number for a family with a teenage boy and a relatively small number for a family with an infant (because an infant consumes less food than a teenage boy). The scale for medical expenditures may, however, be larger for the family with the infant than for the family with the teenage boy (because newborns typically generate more medical expenditures than do older children).

These scales are used to develop an adjusted per capita measure of spending on each major commodity group. Unlike a simple per capita measure of expenditures, the adjusted per capita measure recognizes that a given family member does not consume the same proportion of each type of good.

Once the adjusted per capita measures of spending have been developed, calculations can be done to determine how these measures vary with changes in family composition. For example, the adjusted per capita consumption of medical care of otherwise similar families with and without an infant can be examined to determine how an infant affects

²⁸ Recall that the Engel and iso-prop estimators implicitly assume that the percent of expenditures attributable to a family member is constant across broad categories of goods (e.g., food and non-food).

²⁹ In practice, it is necessary for the researcher to make some very strong assumptions in order to identify (i.e., estimate) the relative expenditure scale.

per capita medical expenditures. For most types of expenses, the addition of a child will reduce the adjusted per capita expenditures made on behalf of the other family members. Expenditures on the child are then determined by adding up all of these reductions in the per capita expenditures of the other family members.

It should be noted that this approach is primarily a statistical (i.e., mechanistic) one that does not depend on a particular definition of well-being. It is not necessary, for example, to assume that the percentage of expenditures devoted to food or the level of expenditures on observable adult goods is a proxy for well-being. This is a major advantage of the Prais-Houthakker technique.

There is, however, also a major disadvantage of the technique; in statistical terms, the system of equations for estimating adjusted per capita expenditures by commodity group is not an "identified" system. That is to say, there simply is not enough information to reliably identify (i.e., estimate) the model. The fundamental problem is that if we knew the relative expenditure scale by type of family member and by type of expenditure, we would know how much of each expenditure to attribute to each family member. In others words, we would know the level of expenditures on children (and adults as well). In sum, by using a set of relative expenditure scales to determine adjusted per capita expenditures we have essentially assumed the level of expenditures on children.³⁰

³⁰ In practice, statisticians do not simply assume that the relative expenditure scales are known. Rather, they estimate them. Nonetheless, the problems in estimating the scales is exactly the problem described in the text. There simply is not enough information to reliably estimate both the relative expenditure scales and expenditures on children. If one was known, we could then estimate the other. But because neither is known, the Prais-Houthakker technique is an intrinsically unstable (i.e., unreliable) estimation technique.

Utility Maximization Estimators

The procedures outlined above have relied either on explicit assumptions of how well-being can be measured (the Engel, iso-prop, and Rothbarth estimators) or on an implicit assumption about what types of family members consume a certain percentage of each type of good (the FERG and Prais-Houthakker estimators). An alternative procedure is to assume a particular mathematical relationship (i.e., utility function) between expenditures on each category of goods and the level of well-being within the family. Once this mathematical relationship is specified, it is possible to determine how much expenditures would have to increase in order to hold well-being (i.e., utility) constant after the addition of a child. Procedures of this type encompass a broad class of utility maximization models that could be used for the purpose of estimating the expenditures on children.

A simplified example may serve to clarify the discussion. Assume that well-being (which we shall label W) is a linear function of the level of per capita housing expenditures (which we shall label H) and the level of per capita expenditures on all other goods (which we shall label G). That is to say: $W = H + G$ (1)

If a childless couple spends \$3,000 per capita on housing (i.e., total housing expenditures are \$6,000) and \$6,000 per capita on all other goods (i.e., total expenditures on all other goods are \$12,000), then W (well-being) would be 9,000 "utils" (when total expenditures on H and G are \$18,000).³¹ If a child is added to the family, then per capita consumption on H and G would fall to \$2,000 and \$4,000, respectively. This would imply that the new level of well-being would be 6,000 utils. In order to restore the family to 9,000 utils, total expenditures

³¹ Economists are fond of using utils as the unit of measurement for well-being (utility), even though it is well-recognized that neither utils nor well-being can ever actually be measured.

would have to be increased to \$27,000.³² That is to say, expenditures on the child would be estimated to be \$9,000.

There are two points to note about this very simplified example. The first is that the method used for deflating the expenditures into per capita levels is critically important. The procedure used above is the most straightforward one; it divides total expenditures by family size. As the discussion earlier in this section indicated, however, this embodies a very important (and probably unrealistic) assumption that is likely to result in an overestimation of expenditures on children. A more realistic procedure would adjust per capita expenditures for each commodity by a relative expenditure scale that is specific both to that commodity and the age and gender composition of the family. Unfortunately, for reasons that were discussed earlier, attempts to implement this procedure suffer from substantial technical problems (because there is simply not enough information available to "identify" the estimates).

The second point to note is that the exact form that is chosen for the mathematical relationship between expenditures and well-being is also extremely important. Here we chose, for the sake of simplicity, a linear relationship.³³ The assumption of linearity, in combination with the simple per capita adjustment used to deflate expenditures, ensures that the expenditure estimates will be identical to those produced by a per capita "estimate."

³² Note that because we have assumed that the mathematical relationship is a linear one, it does not matter on which good, or combination of goods, the additional money is spent. If, however, we had assumed a nonlinear relationship between per capita expenditures and well-being, the allocation of additional expenditures between the goods would affect well-being.

³³ By assuming a linear relationship, we have implicitly assumed that there is a "constant marginal utility of income" (i.e., an extra dollar produces exactly as much additional well-being for a rich person as it does for a poor person). Many economists and philosophers believe that this is an unrealistic assumption and that it is probably more reasonable to assume a mathematical relationship that is consistent with "diminishing marginal utility of income" (i.e., each additional dollar produces less additional well-being as a person becomes more wealthy).

Clearly, the mathematical relationship chosen in equation (1) is too simple, and it is not one that would actually be used to estimate expenditures on children. It does, nonetheless, demonstrate that when an analyst assumes a particular relationship between expenditures and well-being (i.e., chooses a utility function), he/she has gone a long way toward dictating the proportion of expenditures made on behalf of children.

The Barten-Gorman Estimator

The Barten-Gorman estimator, first proposed by Barten and then generalized by Gorman, is a particularly noteworthy example of a utility maximization model.³⁴ It expands and incorporates the central insight of the Prais-Houthakker estimator into a utility maximization framework. Unfortunately, the Barten-Gorman estimator suffers from the same problems in implementation as does the Prais-Houthakker estimator. That is to say, there is generally not enough information available to produce reliable estimates of expenditures on children.

Nevertheless, as Deaton and Muellbauer have shown, a theoretical (rather than an empirical) analysis of the properties of the Engel, Rothbarth, and Barten-Gorman estimators is instructive.³⁵ Such an examination (see Section 2.4 for a discussion), can help establish potential upper and lower bounds for the true expenditures on children.

³⁴ Anton P. Barten, "Family Composition, Prices and Expenditure Patterns," in P.E. Hart, G. Mills, and J.K. Whitaker (eds.), Econometric Analysis for National Economic Planning, London: Butterworths, 1964; and William M. Gorman, "Tricks with Utility Functions," in M. Artis and A.R. Nobay (eds.), Essays in Econometric Analysis, Cambridge: Cambridge University Press, 1976.

³⁵ See Angus S. Deaton and John Muellbauer, "On Measuring Child Costs: With Applications to Poor Countries," Vol. 94, No. 4, Journal of Political Economy, 1986. Deaton and Muellbauer's analysis could be generalized to incorporate a wide variety of utility maximization models (not just the Barten-Gorman estimator).

One of the major advantages of the Barten-Gorman estimator is that, unlike the Engel/iso-prop and Rothbarth estimators, it does not assume independence of expenditures (either between food and non-food consumption, children's and adults' consumption, or adult goods that are "observable" and those that are not). As a result, the Barten-Gorman estimator is somewhat less restrictive than either the Engel/iso-prop or Rothbarth estimators.

By not assuming independence of consumption decisions, the Barten-Gorman estimator allows for the possibility that adults may substitute between different categories of goods in response to the presence and/or the number of children in their household. Adults with teenage children, for example, may be less inclined to buy a new car (because the children might use it so much that the adults never get to), and be more inclined to spend the money on themselves (perhaps to improve their wardrobes).³⁶ The central insight here (which expands on the insight of the Prais-Houthakker estimator) is that the presence of children in a household alters the "price" (as it is perceived by the adults) of many of the items consumed in the household. While the actual monetary value of a good is unaffected by the presence of children, adults may nonetheless perceive that the price (to them) of a good increases when the sharing of the good by adults and children is great. The reason is simple; when adults have to share a commodity with their children, the implicit "price" of a unit of adult consumption increases (i.e., the adults have to buy a larger amount of the commodity in order to get the same amount for themselves). As a result, adults in households with children may have a tendency to substitute away from those goods which involve a large degree of sharing and into those goods that need not be shared (i.e., adult goods). In sum, adults in households with children, particularly those with large numbers of children, have an

³⁶ This assumes that adults do not have to also share their clothes with their teenage children, an assumption that may, in fact, be erroneous.

economic incentive to spend a disproportionately smaller percentage of their total expenditures on goods that are consumed by both children and adults, and a larger share on adult goods. While this type of "selfishness" strikes many observers (especially parents) as unlikely, it is, nonetheless, a possibility that should ideally be considered.

It is not only the requirement of sharing, however, that alters the consumption price that adults perceive in households with children. In addition to the material goods that children require, they also require time and care. As a result, children alter the price of many adult activities. For example, adults may substitute away from going to the movies (which, in households with small children, requires either paying for additional admission or acquiring the services of a babysitter) and into home videos (which does not require that more tickets be purchased or that a babysitter be hired).

The important point here is that even in the absence of "selfishness," children affect adults' perception of prices. Children increase the perceived price of going to the movies, even if the children are left at home. As a result, adults substitute away from this activity and into another one. In other words, the substitution mechanism works in an identical fashion whether or not adults are behaving selfishly.³⁷

A major difficulty arises in implementing the Barten-Gorman estimator precisely because it allows for this type of substitution. In essence, implementation of the estimator requires that we be able to measure both the actual (monetary) price of a good and how the

³⁷ There is, of course, the possibility that adults behave "selflessly," and that the substitution mechanism works in the opposite manner of that which is outlined here. In this case, the validity of all the estimation procedures discussed here is called into question (see the discussion at the end of Section 2.4).

estimates of these perceived prices (by family size and composition) were available, it would be possible to estimate the relationship (appropriately adjusted per capita) between expenditures and utility, using the general types of procedures outlined above.³⁹ As has already been mentioned at several points in this chapter, there is simply not enough information available to calculate perceived prices. As a result, the Barten-Gorman estimator has limited practical applicability.

2.4 Limitations of the Estimation Techniques

As the discussion heretofore has indicated, there are many difficulties involved in estimating the level of expenditures that are made on behalf of children. At the most basic level, because one cannot directly measure how much is spent on children, some criterion must be established by which adults' well-being can be evaluated. This criterion forms the basis for determining how much parents actually spend on their children.

The two criteria that have been most widely used are the percentage of a family's expenditures that are devoted to food (the Engel estimator) and the level of expenditures on "observable adult goods" (the Rothbarth estimator). Because of the importance of these two estimators in the empirical literature, this section focuses on an examination of their properties. As the discussion below indicates, both have important limitations.

³⁸ As with the Prais-Houthakker estimate, we need to be able to measure relative equivalence scales both by commodity group and family composition. This typically requires that the researcher be able to identify variations (either by region or over time) in the prices that families face. Such data are usually not available.

³⁹ It should be noted that even if it were possible to determine perceived prices, the analyst would still be faced with the problem of choosing a utility function that appropriately represents individual preferences.

The primary advantage of the Engel and Rothbarth estimators is that both offer a simple solution to the methodological difficulties of allocating a family's expenditures for shared as well as co-mingled private goods among its members (children and adults). Essentially, both estimators avoid these difficulties by choosing a simple criterion for measuring adult well-being (and thereby implicitly incorporate the assumption of independence in the consumption decision-making process). The choice of the criterion has substantial implications for the validity and reliability of the estimates of expenditures on children.⁴⁰

Biases in the Engel Estimator

The validity of the Engel estimator is critically dependent on the assumption that the percentage of the family's expenditures on non-food items that should be attributed to the family's children is the same as the percentage of the family's food expenditures that is attributable to the family's children. There is reason to believe that this assumption is invalid; children are probably relatively "food-intensive." That is to say, the percentage of the family's food that is consumed by children is probably greater than the percentage of non-food items consumed by children.⁴¹ If this is the case, then the Engel estimator overestimates the true expenditures on children. Unfortunately, Deaton and Muellbauer's analysis indicates that the degree of overestimation may be quite substantial. This leads Deaton and Muellbauer to

⁴⁰ The discussion in the remainder of this section is based on a line of reasoning outlined by Deaton and Muellbauer in "On Measuring Child Costs: With Applications to Poor Countries," Vol. 94, No. 4, Journal of Political Economy, 1986.

⁴¹ While this assertion is intuitively appealing, it is impossible to test empirically. Such a test would require that we know how much of each category of a family's spending is attributable to its children. If this was known, expenditures on children would also be known (i.e., there would be no need to estimate expenditures).

conclude that, "We can construct no plausible defense for the belief that the food share correctly indicates welfare [well-being] between households of different size, and we do not believe that credence should be given to estimates based on that belief."⁴²

Biases in the Rothbarth Estimator

The Rothbarth estimator, on the other hand, is likely to underestimate expenditures on children. The Rothbarth estimator does not account for the possibility that the presence of children in a household may lead to substitution from goods that must be shared with children toward goods consumed only (or mostly) by adults.⁴³ If such substitution does occur, the Rothbarth estimator will indicate that relatively low levels of additional income are needed to restore the level of adult expenditures to that which would have prevailed in the absence of children. While it is impossible to document the significance of this phenomenon, recent empirical work by Nelson indicates that the underlying assumptions of the Rothbarth technique are in fact violated.⁴⁴ As a result, the Rothbarth estimator will lead to the conclusion that children are relatively inexpensive (because the level of additional income needed to restore the pre-children level of adult expenditures forms the basis for calculating

⁴² Angus S. Deaton and John Muellbauer, "On Measuring Child Costs: With Applications to Poor Countries," Journal of Political Economy, 1986, vol. 94, no.4, p. 741.

⁴³ The Engel and iso-prop estimators also do not account for this type of substitution. However, because neither of these estimators rely on adult goods as a proxy for well-being, this omission is not a source of underestimation in the Engel and iso-prop estimates.

As was noted in an earlier footnote, none of the estimators discussed in this chapter incorporate the possibility that adults behave "selflessly." Some economists believe that because of this, all of the estimators discussed here are flawed (see the discussion at the end of this chapter).

⁴⁴ See Julie A. Nelson, "Separability, Scales and Intra-Family Distribution: Some Empirical Evidence," Working Paper Series No. 346, Department of Economics, University of California, Davis, January 1990.

expenditures on children). In reality, however, the family's consumption of "shared" goods (i.e., all goods other than those consumed exclusively by adults or children) may be disproportionately low because adult goods are substituted for shared goods in families with children.⁴⁵ In other words, the true level of expenditures on children (as measured by the level of additional income needed to restore adults to the level of consumption of shared goods), is greater than the level estimated by the Rothbarth methodology.

In addition to the problem of underestimation that arises because of possible substitution of adult goods for shared goods, the procedures typically used to implement the Rothbarth estimator are problematic. As Deaton and Muellbauer point out:

Rothbarth himself used a very broad definition of adult goods including virtually all luxury goods and saving. Later authors have tended to work with narrow groupings, most popularly with drink and tobacco. As pointed out by Cramer (1969), this can cause problems since neither category seems to be typically very responsive to changes in income so that the income effects required to measure the compensation are hard to establish.⁴⁶

Thus, the narrow definition of observable adult goods that is typically used in modern applications of the Rothbarth estimator is likely to further reduce the reliability of the estimates that it produces.⁴⁷ In short, the estimates of expenditures on children produced by the

⁴⁵ If a family consisted only of adults, all goods would be adult goods (i.e., there would be no "shared" goods). Only some (typically small) percentage of total expenditures, however, would satisfy the more narrow definition of adult goods that is used by the Rothbarth estimator. The remainder would be "shared."

⁴⁶ Angus S. Deaton and John Muellbauer, "On Measuring Child Costs: With Applications to Poor Countries," Journal of Political Economy, 1986, vol. 94, no.4, p. 731.

⁴⁷ See Jan S. Cramer, Empirical Econometrics, Amsterdam: North-Holland, 1969, for a more detailed discussion of this point.

Rothbarth estimator are likely to be highly sensitive to the definition of "observable adult goods."⁴⁸

Comparing the Biases of the Engel and Rothbarth Estimators

Unfortunately, there appears to be no way around this dilemma. One of the most commonly used estimators appears to overestimate expenditures on children, while the other appears to underestimate them. The Barten-Gorman estimator could, in theory, provide a much better estimate of the "true" expenditures on children. In practice, however, the Barten-Gorman estimator is extremely difficult to implement.

Estimates that are produced using the Barten-Gorman estimator need to be interpreted cautiously. Even though the theoretical assumptions on which the Barten-Gorman estimator is based are somewhat less restrictive than those of the iso-prop/Engel or Rothbarth estimators, the empirical assumptions (concerning perceived prices) that must be made to implement the Barten-Gorman estimator are quite restrictive. Given this, it may well be the case that the actual (as opposed to theoretical) estimates produced by the Barten-Gorman estimator are less reliable than those produced by the Engel or Rothbarth estimators.

Nonetheless, the Barten-Gorman estimator remains important. The theoretical properties of the Barten-Gorman estimator indicate that the Engel estimates are likely to be an upper bound of the true expenditures on children, while the Rothbarth estimates are likely to be a lower bound. If we find that other estimators (the FERG or iso-prop, for example) produce estimates that fall outside the range of estimates produced by the Rothbarth and Engel estimates, we have reason to believe that these estimates should not be given a great deal of credence. If the resultant range of "credible" estimates is not too broad, then knowing

⁴⁸ The degree of sensitivity to the actual definition used is discussed in Chapter 4.

that they bound the true expenditures on children could prove to be very useful to policy makers. Table 2.3 summarizes the estimators discussed, their assumptions, and our judgments about the reliability of each of these techniques.

Finally, it is important to note that some researchers have argued that the standard approaches used to estimate expenditures on children are fundamentally flawed because the decision to have children is usually voluntary.⁴⁹ If adults decide to have children and if they behave rationally, then the adults' well-being should be at least as much as when they were childless. That is, even though the adults consume fewer goods for themselves than had they remained childless, they are at an equal or greater level of well-being or they would not have elected to have children. All the methods for estimating expenditures on children are based on the assumption that adding a child does not increase the well-being of the adults in the family.

2.5 Summary

A variety of techniques have been developed to estimate expenditures made by families on behalf of children. These techniques have been used to calculate the amount of money that would be needed to restore the adults in a family to the same level of economic well-being they would have enjoyed had they remained childless (or not had an additional child). This amount represents expenditures on the child and is sometimes called "the cost of a child."

⁴⁹ For a summary of this line of reasoning, see Robert A. Pollak and Terence J. Wales, "Welfare Comparisons and Equivalent Scales," American Economic Review, Papers and Proceedings, May 1979. Pollak and Wales' argument assumes that the decision to have children is based on sufficient information to make a well-informed decision. That is to say, when deciding whether or not to have children, potential parents do not typically make mistakes about the level of well-being they will derive from their children.

TABLE 2.3

SUMMARY OF ALTERNATIVE ESTIMATION TECHNIQUES

<u>Estimator</u>	<u>Assumptions</u>	<u>Comments</u>
Per Capita	<ol style="list-style-type: none"> 1. Each family member receives the same proportion of family expenditures. 	This technique is based entirely on its underlying assumption that all goods are shared (divided) equally; no estimation techniques are used. It is likely to overstate true levels of expenditures on children.
FERG	<ol style="list-style-type: none"> 1. Identifiable child-related expenditures allocated among children and other categories of expenditures assigned to family members based on previous research findings of household member shares. 2. Assumes that some categories of expenditures should be assigned on a per capita basis. 	This estimator suffers, at least in part, from the same problems as the per capita estimator. It, too, is likely to overstate true levels of expenditures on children.
Engel	<ol style="list-style-type: none"> 1. Assumes that if two families spend an equal <u>percentage</u> of their total expenditures on food, then the families are equally well off. 2. Assumes "independence" of consumption decisions. This implies that the relationship between expenditures on food and "all other goods" is the same for families with and without children. 	This estimator is likely to over-estimate true levels of expenditures on children because children are likely to be "food-intensive."
Iso-Prop	<ol style="list-style-type: none"> 1. Based on the same assumptions as the Engel estimator, but uses a variety of categories of goods (e.g., food plus housing or food plus housing plus transportation) as the measure of well-being. 	The reliability of this class of estimator is not known. If the iso-prop that is chosen (such as food) is disproportionately consumed by children, the estimator will over-estimate true levels of expenditures on children. If the reverse is true, the estimator will under-estimate expenditures on children.
Rothbarth	<ol style="list-style-type: none"> 1. Assumes that if two families spend an equal <u>amount</u> on "observable adult goods," then the adults in the families are equally well off. 2. Assumes "independence" of consumption decisions. This implies that the relationship between expenditures on "observable adult goods" and "all other goods" is the same for families with and without children. 	This estimator is likely to underestimate levels of expenditures on children because it does not account for the possibility that the presence of children may cause adults to consume disproportionately large amounts of "observable adult goods."

2.33

TABLE 2.3 (Continued)

SUMMARY OF ALTERNATIVE ESTIMATION TECHNIQUES

<u>Estimator</u>	<u>Assumptions</u>	<u>Comments</u>
Prais-Houthakker	1. Assumes that a "relative expenditure scale" can be estimated for each major category of expenditures and for each type of family member (based on age and gender).	There is not enough information available to "identify" (i.e., reliably estimate) expenditures on children using this technique.
Utility Maximization	1. Assumes a particular mathematical relationship between expenditures (by category) and the level of well-being.	The reliability of this class of estimators is not known.
Barten-Gorman	1. Based on the assumptions of both the Prais-Houthakker and utility maximization estimators.	The very strong empirical assumptions required to implement this estimator indicate that it is likely to yield unstable estimates.

The various techniques reviewed differ in how economic well-being is measured. A per capita estimator assumes that each family member receives the same amount of expenditures. The FERG estimator uses a combination of a per capita approach for estimating the proportion of some categories of expenditures that should be attributed to children, and a variety of other marginal cost procedures for estimating other expenditures. The Engel estimator uses the proportion of a family's budget that is devoted to food as a measure of economic well-being. Iso-prop estimators are similar to the Engel estimator except that other necessities are used in addition to or instead of food. The Rothbarth estimator uses the amount of money spent on a given set of adult consumption items. The Prais-Houthakker technique is a statistical technique for assigning expenditures to the family's children that does not rely on a particular measure of well-being. Utility maximization models for estimating expenditures on children assume a particular mathematical relationship between per capita expenditures and well-being.

Finally, the Barten-Gorman estimator is based on the premise that the presence of children results in changes in the cost of a unit price of adult consumption as children are added to a family. Once these changes are accounted for, it is possible to estimate the amount of money needed to restore a family's economic well-being to the level that prevailed when the family was childless (or had one less child). Unlike the Engel and Rothbarth estimators, the Barten-Gorman estimator does not assume that the proportion of consumption devoted to food or the level of adult consumption can be used as measures of adult well-being. Although the Barten-Gorman estimator is the most general of the techniques that have been proposed to estimate expenditures on children, the difficulties involved in measuring the perceived price of a unit of adult consumption imply that the Barten-Gorman estimator has limited practical application. However, the theoretical properties of the Barten-Gorman

estimator can be used to show that the Engel estimator is likely to overestimate expenditures on children and the Rothbarth estimator is likely to underestimate expenditures on children. Consequently, the true level of expenditures on children is likely to fall within the range of estimates produced by these two techniques. This is a useful finding that we will return to in later chapters.

All of the techniques outlined in this chapter are indirect methods of estimating expenditures on children. With the exception of the FERG estimator, none of the techniques explicitly consider expenditures (such as child care or medical care) that might be made directly on behalf of a family's children. Consequently, these types of expenditures are accounted for only indirectly, insofar as they affect the measure of well-being (e.g., observable adult goods or percentage of expenditures devoted to food).⁵⁰ As a result, the techniques outlined here will generate estimates of the average expenditures on children. Consequently, the estimates will be too low (high) for families that have unusually high (low) expenditures on items such as child care. This is an issue that is discussed further in Chapter 6.

⁵⁰ Once again, the exception to this point is the FERG estimator.

3. DATA USED TO ESTIMATE EXPENDITURES ON CHILDREN

Most estimates of expenditures on children in the United States have been based on analyses of data from a variety of consumer expenditure surveys.¹ Conducted under the auspices of the Bureau of Labor Statistics (BLS), these surveys represent a substantial data gathering effort. The primary purpose of the surveys is to provide detailed information on family expenditures for goods and services used in day-to-day life. This information forms the basis for calculating the Consumer Price Index (CPI). Given this purpose, the Consumer Expenditure Survey (CEX) contains the most extensive and detailed information available on how expenditure patterns vary between families of different composition, size, geographic location, and socioeconomic and demographic characteristics.

The high quality of the CEX data makes it well-suited for addressing a wide variety of issues. It is by far the best available source of information for implementing the techniques for estimating expenditures on children that were described in the previous chapter.² This is not to say, however, that the CEX is ideally suited for this purpose. Nonetheless, given budget constraints and privacy considerations that must be honored in any data effort, it is unlikely that the CEX could be greatly improved for the purpose at hand.

The first section of this chapter provides background on the CEX and the sampling procedures and methodology used. A more detailed discussion of the interview component of the CEX is provided Section 3.2. The survey's limitations, for the purpose of estimating expenditures on children, are discussed in Section 3.3. In addition to these limitations, there

¹ As the survey has evolved since its inception in 1888, so too has its name (i.e., it has not always been called the Consumer Expenditure Survey).

² Given the timeframe and budget, it was not possible to do a separate survey specifically designed to answer the congressional mandate for a study of patterns of expenditures on children.

are other limitations that restrict our ability to tailor the estimates of expenditures on children in a way that would be most useful for the purposes of determining child support. A discussion of these latter limitations is postponed until Chapter 6.

3.1 Background of the CEX

The BLS surveys of family expenditure patterns are among its oldest data gathering activities. The first national survey was conducted in 1888-91 to study the spending patterns of workers. While subsequent rounds of the survey focussed exclusively on urban families, by 1960, the seventh and eighth versions of the CEX were expanded to collect national data on both urban and rural families. As the CEX evolved, so too did its purpose. Increasingly, the surveys were used to study the economic well-being of the population and selected groups within it, as well as to provide the weights used in computing the Consumer Price Index.³ This latter focus required that the BLS develop extremely detailed survey instruments and procedures to capture the hundreds of goods and services that the average family consumes. This detail makes the CEX particularly well-suited for estimating expenditure patterns for different types of families. No other data set matches its detail and scope, explaining why analysts in the United States have relied on the CEX to develop estimates of expenditures on children.

Before 1979, one of the major limitations of the CEX was the infrequency with which the survey was conducted. Particularly during times of rapid economic change, there was a clear need for more timely data than could be provided by surveys conducted every 10 to 12

³ The weights in the CPI represent an estimate of the percentage of an average family's expenditures that are devoted to a particular type of consumption (e.g., food, shelter, transportation, etc.). These weights are used to calculate the total price of an average "market basket of goods and services" which, in turn, is used by BLS to calculate the CPI.

years. As a result, in late 1979 the BLS initiated an ongoing annual CEX. Because it takes a substantial amount of time to process the data, 1987 is currently the most recent year for which the CEX is available for public use.

Currently, the CEX consists of two separate surveys. In the "Interview Survey," each consumer unit in the sample is interviewed every 3 months over a period of five calendar quarters. The second component of the survey, the "Diary Survey," consists of detailed record-keeping and is completed at home by the respondent for two consecutive one-week periods. Although the sample sizes of the two components of the CEX are approximately the same, data from the Interview Survey are better suited for estimating expenditures on children because they cover a much longer period of time and contain a sufficient level of detail for these purposes. As a result, the Diary Survey is not discussed further here.⁴

3.2 The Interview Survey Component of the CEX

The sample of consumer units (families) included in the CEX is designed to be representative of the entire civilian noninstitutional population.⁵ The sample includes approximately 5,000 families per quarter from 31 Metropolitan Statistical Areas (MSAs) with populations of over 1.2 million, 22 medium-size MSAs, 24 small MSAs, 14 urban

⁴ The diary component of the survey provides a great deal of detail on food expenditures. For more information on the Diary Survey component of the CEX, see Chapter 18 of the BLS Handbook of Methods, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2285, April 1988.

⁵ A consumer unit is defined as: (1) all members of a household who are related by blood, marriage, adoption, or other legal arrangement, (2) a person who is financially independent and living alone or sharing a household with others, or (3) two or more persons who live together and pool their income to make joint expenditures decisions. Thus, while a consumer unit is not necessarily the same as a household or family, we will use the term "household" or "family" to refer to consumer units. Analysts using CEX data to examine expenditures on children often restrict their analysis to particular types of consumer units or families.

nonmetropolitan areas, and 18 rural nonmetropolitan areas.⁶ Approximately 90 to 95 percent of all family expenditures are covered in the Interview Survey. These are expenditures that respondents are expected to be able to recall for a period of 3 months or longer -- namely expenditures on items that are either relatively large (e.g., property, cars, or major appliances) or that are incurred on a regular basis (e.g., rent, utility bills, etc.). In addition, global questions (i.e. the respondent's estimate of the average expenditure over the 3 month period) are asked about food and other selected items.

In the initial interview, the interviewer collects information on the demographic and family characteristics of the consumer unit and on the major durable goods that the unit possesses. In the second through fifth interviews, a uniform questionnaire is used to collect information on expenditures over the previous quarter. A final profile of the consumer unit is obtained by collecting data on annual income in the second and fifth interviews (using 12-month recall); when there are significant changes in economic circumstances, these data are supplemented in the third and fourth interviews.⁷

⁶ The CEX is subject to strict confidentiality requirements which insure that respondents cannot be identified by data users. The response rate to the survey is quite high. In 1986, for example, 86 percent of all eligible housing units participated in the Interview Survey. See Chapter 18 of the BLS Handbook of Methods, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2285, April 1988.

⁷ Once a survey has been completed by a consumer unit, it is transferred to the Census Processing Center, where computer processing is performed. Computer programs check for coding errors, inconsistent relationships, and missing data. Coding errors are corrected, inconsistencies are reconciled by field staff through office review or interviewer follow-up, and missing data (except for income) are replaced with imputed data (i.e. estimated values). Imputation is done at the "cell level," where a cell is defined by variables such as income group, family size, and region of the country. Different methods of imputation (hot deck, weighting class, and percent distribution) are used for different expenditure items. These methods essentially estimate the expected value of a missing expenditure item based on the characteristics of the consumer unit and the average value of that expenditure item for similar consumer units.

After the fifth interview, the consumer unit is dropped from the survey and replaced by a new consumer unit. As a result, 20 percent of the sample is dropped each quarter and a new group is added. The BLS releases each quarter's data independently so that data on families who have participated for less than the full five quarters can still be used.⁸

Each family included in the survey is assigned a "weight" that indicates the number of similar families within the civilian noninstitutionalized population that this family represents. This weight is used to calculate a weighted average of all responses to the survey. The weighted average of expenditure patterns is representative of the expenditure patterns for the entire U.S. population. The weight can also be used to create estimates of expenditure patterns for particular subgroups of consumer units (e.g., single-parent families, rural families, etc.).

3.3 Limitations of the CEX

Even though the CEX is the best available data source for estimating expenditures on children, it has a number of limitations that constrain our ability to develop precise estimates. These limitations, which are described below, become particularly severe when we attempt to develop estimates tailored to the particular characteristics of a family (such as its size, composition, income, race, and region).

Small Sample Sizes

Although the sample sizes in the CEX seem quite large, they do not allow for as much detailed analysis (by variations in family circumstances) as one might hope. For example,

⁸ Expenditure data from the first quarter are used for bounding purposes only (i.e., to classify the unit for analysis and to prevent duplicate reporting of expenditures in subsequent interviews) and are not released by the BLS.

only 6 percent of approximately 5,000 consumer units responding to the 1987 Interview Survey questionnaires were single-parent families (a subgroup of particular interest in this study). With such a low proportion, estimates of expenditures on children in these families are likely to be imprecise (particularly if we want to account for variations by region of residence, urban-rural status, number and ages of the children, employment status of the parent(s), etc.).⁹ Identifying how expenditures vary between different types of single-parent families (divorced, separated, or never-married) is also likely to be difficult. Even for two-parent families with children, (which make up 31 percent of the 1987 CEX sample), it is unlikely that precise estimates, tailored to the wide variety of circumstances in which these families find themselves, can be developed.

One way of addressing this problem is to pool data across years (from 1980 to 1987, for example). Although it masks some of the year-to-year fluctuations in prices, there are a number of distinct advantages to pooling the CEX data, including increasing the number of observations for which there are four completed quarters of data (i.e., annual data). Like many other studies, the Betson study uses this approach. The results of this study are reported in the next chapter.

Limited Information on "Observable Adult Goods"

Although the CEX publishes expenditure data on approximately 500 items, there are relatively few items that can be defined as observable adult goods (i.e., a good that is consumed only by adults). The items in the CEX that can be used for this purpose are adult clothing, alcohol, and tobacco. This limitation, of course, is not unique to the CEX; there are,

⁹ Given that not all families in the sample respond to each of the five interviews, the usable sample size is smaller still. For greater accuracy, many analysts restrict their analysis to families who have completed at least three quarterly surveys.

in fact, very few items that are (typically) consumed only by adults. As was mentioned in Chapter 2, the narrow measurement of adult goods is likely to reduce the reliability of the estimates of expenditures on children when the Rothbarth estimation technique is used.¹⁰

Other Limitations

Despite the fact that the CEX is the best available data set on families' expenditure patterns, it has two deficiencies which make it impossible to calculate direct expenditures on children. The first is that the information available on child care expenses (which may be a substantial portion of expenditures on small children) is poor. Specific questions are asked about expenditures on: (1) babysitting or other home care for children, and (2) day care expenses including tuition. This information does not allow one to differentiate between necessary expenditures on child care expenses (e.g. those that enable a parent to work outside the home), and child care expenditures that are more discretionary.¹¹

A second problem with the CEX data is that it is impossible to determine what proportion of a family's expenditures on health care is attributable to the family's children. If a family has unusually large health care expenses, it may be a child, a parent, or an elderly relative who is generating these expenses. Unfortunately, there is no way to allocate such expenses across family members.¹²

¹⁰ Similarly, there are very few "observable children's goods" in the CEX. This limitation, however, does not represent a serious problem for estimating expenditures on children because none of the estimation techniques are based on the measurement of children's goods.

¹¹ The notion of necessary and discretionary expenses could be helpful in identifying the minimum level of expenditures on a child.

¹² Food expenditures vary systematically (and predictably) between families with and without children and between families with different numbers of children. This systematic variation allows analysts to determine (with some degree of certainty) that portion of a family's

A family's expenditures on child care and health care may not only be quite substantial, but these expenditures are likely to vary dramatically from family to family. Although these two data limitations do not affect our ability to measure expenditures on children using the indirect estimation techniques outlined in Chapter 2, they do restrict our ability to tailor the estimates to account for unusually high expenditures made by some families.

In addition, there are other potential avenues of inquiry that cannot readily be addressed by the CEX, if at all. These include (but are not limited to) how expenditures are affected by: child support or welfare receipt in single-parent households; custody/visitation arrangements; and special needs (e.g., tuition, second families, non-child dependencies, provision of in-kind services, intra-year consumption fluctuations).

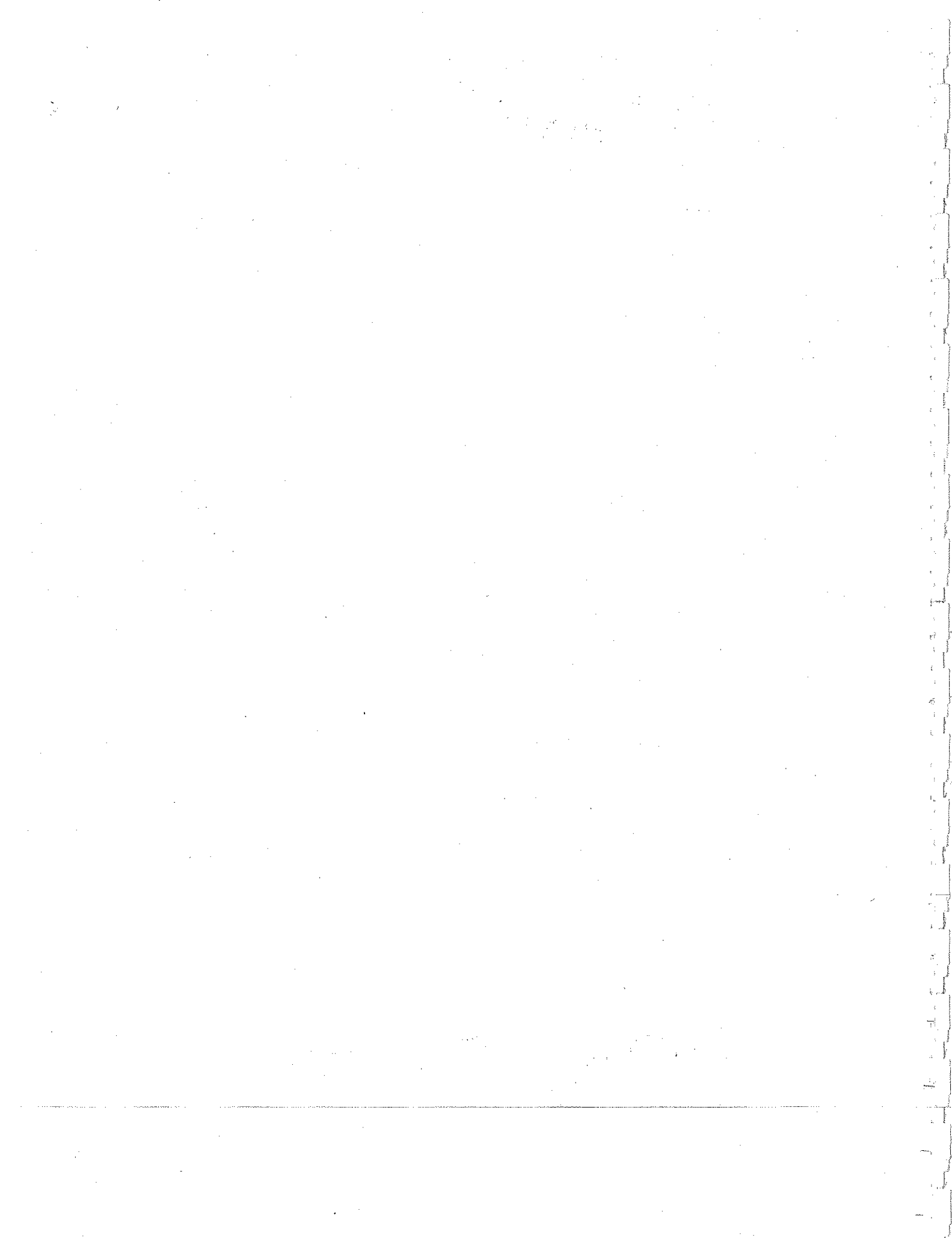
It is also important to note that expenditure measures such as those that can be developed from the CEX, do not account for a number of indirect costs associated with children, even in the absence of any data limitations. These indirect costs include the opportunity cost of children – the value of leisure or earnings that parents forgo in order to care for children – and the cost of savings (including pensions and life insurance). While the opportunity costs of children could be measured using other data sets,¹³ no models have yet been developed that would allow analysts to measure the savings cost of children.

food expenditures that should be attributed to the family's children. Health care expenditures, however, do not vary in nearly as predictable a manner as do food expenditures. As a result, it is very difficult to determine accurately what portion of a family's health care expenditures should be attributed to the family's children. Furthermore, health insurance premiums are, in some sense, a joint consumption item. As a result, it is difficult to know how to allocate them among the family's adults and children.

¹³ The Current Population Survey, for example, has the variables that are needed for such estimation and has much larger sample sizes than the CEX, allowing for much more precise estimation. Ideally, however, estimates of the opportunity cost of children would be based on longitudinal data sets (data observed on the same individuals over a long period of time) such as the National Longitudinal Survey (NLS). See Charles A. Calhoun and Thomas J. Espenshade, "Childbearing and Wives' Forgone Earnings," *Population Studies*, No. 42, 1988, for an example of such estimation based on the NLS.

Finally, CEX data on income, as distinct from expenditures, may be quite unreliable. Published CEX data suggest that total consumption (or expenditures) are too high relative to reported levels of income.¹⁴ While this problem does not affect our ability to estimate expenditures on children, it does complicate attempts to relate expenditures on children to parental income -- a problem that is particularly salient in the context of developing child support guidelines.

¹⁴ Staff at the Bureau of Labor Statistics confirmed that the CEX income data are likely to be inaccurate because of underreporting and nonreporting. These problems are present in many surveys; they are likely to be more severe in a survey such as the CEX where the primary emphasis is on collecting information other than income.



4. THE EMPIRICAL LITERATURE ON EXPENDITURES ON CHILDREN

Empirical attempts to measure how well-being varies with family size (and, thereby, to measure expenditures on children) can be traced back to Engel's work in the nineteenth century.¹ Engel's work has stimulated a great deal of other research on expenditures on children, work that has continued throughout the twentieth century. As a result, there are now many studies that have attempted to estimate the level of expenditures that are made by parents on behalf of their children.² This chapter reviews studies that have been done within the past decade.³

The first study discussed below was performed by Dr. David Betson of the University of Notre Dame for the U.S. Department of Health and Human Services.⁴ Betson's research was funded to meet the requirement in Section 128 of the Family Support Act of 1988 for a comprehensive study of expenditures on children.⁵ Betson pooled data from recent years of the Consumer Expenditure Survey (1980 through the first quarter of 1987) and used a variety

¹ Ernst Engel, "Die Productions und Consumtionsverhaltnisse des Konigsreichs Sachsen," Zeitschrift des Statisticshen Bureaus des Koniglich Sachischen Ministeriums des Innern, 3, 1857.

² For reviews of this literature see Thomas J. Espenshade, Investing in Children: New Estimates of Parental Expenditures, Washington D.C.: Urban Institute, 1984; Lawrence Olson, Costs of Children, Lexington: D.C. Heath, 1983; and Jacques van der Gaag, "On Measuring the Cost of Children," Children and Youth Services Review, 4, 1982.

³ Given that the ultimate purpose of this report is to inform policy makers who are responsible for child support guidelines, the focus is on studies that are most relevant to this process. As a result, studies that use data from countries other than the United States and those that use data that are now out of date are not discussed. The review focuses on studies that used the 1972-1973 or more recent versions of the CEX.

⁴ David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-1986 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990.

⁵ See Chapter 1 for the statutory language regarding the mandated study on expenditures on children.

of estimation procedures (Engel, Iso-prop, Rothbarth, and Barten-Gorman). The major contribution of the Betson study, in addition to producing estimates of expenditures on children based on the most recently available data, is that it gives us a consistent framework within which to examine the sensitivity of the estimates to variations in the estimation procedures.

During the 1980s, five major studies of expenditures on children were funded (in part or in total) by grants from the National Institute of Child Health and Human Development (NICHD). These studies were conducted by Mathtech (1981), Olson (1983), Turchi (1983), Espenshade (1984), and Lazear and Michael (1988).⁶ While each of these studies was based on the same data base, the 1972-1973 Consumer Expenditure Survey (CEX), the procedures used for estimating expenditures on children varied from study to study. Espenshade used the Engel procedure;⁷ Lazear and Michael used a variation of the Rothbarth estimator; Turchi used a version of the Prais-Houthakker procedure; Olson used a particular utility function;⁸ and Mathtech attempted to use a variety of alternative utility

⁶ The results of these studies are reported in the following: Mathtech Inc., The Cost of Children: A Household Expenditures Approach, Washington, D.C.: National Institute of Child Health and Human Development, October 1981; Lawrence Olson, Costs of Children, Lexington: D.C. Heath, 1983; Boone A. Turchi, Estimating the Cost of Children in the United States, Washington, D.C.: National Institute of Child Health and Human Development, June 1983; Thomas J. Espenshade, Investing in Children: New Estimates on Parental Expenditures, Washington, D.C.: Urban Institute Press, 1984; and Edward P. Lazear and Robert T. Michael, Allocation of Income within the Household, Chicago: University of Chicago Press, 1988.

⁷ Espenshade also experimented with a variety of alternative iso-props, but concluded that the percentage of expenditures devoted to food consumed at home was the most appropriate measure of well-being.

⁸ Although Olson used a variant of the Cobb-Douglas utility function, his estimation methodology is based implicitly on the Rothbarth technique. We have, however, classified his work as utility maximization because his estimator is derived in a utility maximization framework.

functions.⁹ Finally, the Family Economics Research Group (FERG) at the U.S. Department of Agriculture produces bi-annual estimates of expenditures on children, using the approach described in Chapter 2. The FERG estimates summarized here are based on data from the 1987 CEX.¹⁰

By comparing the results of these studies, we can gain additional insight into how sensitive the estimates of expenditures on children are to the estimation procedure used.¹¹ In addition, since the NICHD studies are based on the 1972-1973 CEX and the Betson study is based on the 1980-1986 CEX, the comparisons may yield information about how the estimates of expenditures on children have varied over time.¹²

⁹ Mathtech encountered insurmountable technical difficulties in implementing their estimation procedures. As a result, they had only very limited results to report. Consequently, we shall not discuss the Mathtech results further in this chapter.

¹⁰ See Mark Lino, "Household Expenditures on a Child," Family Economics Review, (forthcoming).

¹¹ For the sake of completeness, we should note that Terrill has used a (slightly modified) per capita cost calculation to "estimate" expenditures on children. See William T. Terrill, "Child Expenditure Estimates for Child Support Guidelines," December 1986, unpublished manuscript, and "Expenditures on Children for Child Support: Economist As Policy Advisor," March 1989, unpublished manuscript. As was pointed out in Chapter 2, a per capita procedure does not really estimate expenditures on children. Rather, it assumes that each family member receives the same level of expenditures.

In addition, Jacques van der Gaag and Eugene Smolensky use a utility maximization procedure to estimate expenditures on children in "True Household Equivalence Scales and Characteristics of the Poor in the United States," Review of Income and Wealth, Series 28, No.1, March 1982. The utility function used by the authors is based on the Extended Linear Expenditure System (ELES) developed by C. Lluch in 1973 and is estimated using 1972-73 CEX data. Unfortunately, in some cases, their procedure yields negative (or zero) estimates of expenditures on children. Determining whether this counter-intuitive finding is a result of the specific utility function adopted or the empirical estimation of the function, is beyond the scope of this report. It does suggest, however, that the results of this estimation procedure are highly unreliable.

¹² It should be noted that Lazear and Michael used both the 1960-61 and 1972-73 CEX.

Unfortunately, comparing the results from these studies is not as straightforward as one might hope. One of the difficulties that arises in making meaningful comparisons is that the primary purpose of many of the studies was to estimate the total expenditures made on behalf of a child from birth to age 18. This focus required that the authors make assumptions about future economic conditions (employment, unemployment, labor force participation rates, wage rates, and inflation rates). Since each of the authors used a different set of assumptions, comparing the level of expenditures (measured in dollars) on children across the studies is difficult. We have dealt with this difficulty by comparing how the estimated expenditures on children, measured as a percentage of a family's total expenditures, varies across studies; in other words, we do not compare dollar levels. This eliminates the need to adjust each author's estimates to account for a variety of different assumptions about the rate of inflation.

In the first section of this chapter, the results of the Betson study are summarized. Section 4.2 summarizes the results from the other studies (the NICHD studies and the FERG estimates) and compares them to Betson's results. Section 4.3 summarizes the findings of the chapter.

It is important to note that the estimates reported in this chapter are based on average expenditure levels. Expenditures on items such as child care and medical care are incorporated only indirectly to the extent that they affect the measures used to approximate a family's well-being.¹³ Furthermore, these expenditures are incorporated (albeit only indirectly) at their average level. Consequently, the actual range of expenditures is likely to

¹³ This statement does not apply to the FERG estimator.

be much broader than the range reported here.¹⁴ Families with atypical expenditure patterns such as unusually high (or low) expenses for child care or medical care for children will spend more (or less) on their children than is indicated by the estimates reported in this chapter.

4.1 Results of the Betson Study

The Betson study focused on estimating how expenditures on children vary with the number of children, their ages, the total level of family expenditures, the number of adults living in the household, and the estimation technique used. In particular, Betson developed detailed estimates of expenditures on children as a percentage of total family expenditures for: (1) families with one child at a variety of different ages (4, 8, and 16), (2) families with two children at a variety of different ages (4 and 8; 8 and 10; 10 and 16), and (3) families with three children at a variety of different ages (4, 8, and 10; 4, 8, and 13; 10, 13, and 16).

Each of these estimates was calculated separately for one- and two-parent families, at a variety of annual family expenditure levels (ranging in \$5,000 increments from a low of \$5,000, up to \$50,000). Finally, all of the estimates were calculated using a variety of estimation techniques. Two alternative definitions of the percentage of total expenditures devoted to food were used in implementing the Engel technique; the first was based on food consumed at home, and the second was based on all food expenditures (at home and away). Three alternative iso-props were used; these were the percentage of expenditures devoted to (1) food at home, shelter, clothing, and health care, (2) food at home, shelter, and clothing, and (3) food at home and shelter. Two alternative definitions of "observable adult goods"

¹⁴ Lazear and Michael (1988) examine the actual range of expenditures and find that it is, in fact, very broad. Readers interested in more detail on this point are referred to Chapter 7 of Lazear and Michael's book.

were used to implement the Rothbarth technique; the first was the level of expenditures on adult clothing, alcohol, and tobacco, and the second was the level of expenditures on adult clothing. Finally, the Barten-Gorman estimator was also used.

The results of Betson's analysis are too voluminous to report here in their entirety. Consequently, this section summarizes the results for a few prototypical two-parent families and similar one-parent families. We turn first to a discussion of Table 4.1, the results for two-parent families. For purposes of comparison, the last column of the table reports estimated per capita expenditures on children.¹⁵ As would be expected, based on the discussion in Chapter 2, the Engel estimates are substantially higher than the Rothbarth estimates.¹⁶ For example, the Engel estimates indicate that between 45 and 49 percent of total family expenditures are attributable to the children in an average-income family (with annual expenditures of \$30,000) with two children. The remainder of expenditures (51 to 55 percent) are attributable to the family's adults, indicating that each adult accounts for approximately 25 to 27 percent of total family expenditures. The Rothbarth estimates indicate that the expenditures attributable to the children in such a family are between 33 and 35 percent of total expenditures. Consequently, these estimates indicate that each of the two adults account for approximately 33 to 34 percent of total family expenditures. With a few exceptions, the iso-prop estimates are lower than the Rothbarth estimates.¹⁷ Since the Rothbarth estimates are likely to represent a lower bound for the true expenditures on

¹⁵ Recall that for a per capita calculation, the total level of family expenditures is divided by the total number of family members.

¹⁶ The reader may want to refer again to the discussion beginning on page 2-27 which outlines the biases inherent in the Engel and Rothbarth estimators.

¹⁷ The exceptions are the estimated expenditures on three children using the iso-prop(1) and iso-prop(2) estimates.

TABLE 4.1

**Results From the Betson Study:
Percent of Expenditures Attributable to Children in Two-Parent Families^a**

	Engel		Iso-prop ^f			Rothbarth		Barten-Gorman ^f	Per Capita ^g
	1	2	1	2	3	1	2		
Number of Children: ^{b,c}									
One	33	30	16	13	9	25	23	11	33
Two	49	45	29	27	21	35	33	16	50
Three	59	55	41	41	34	39	37	21	60
Children's Ages (2 Children): ^{b,d}									
4 and 8	46	37	27	25	22	36	33	13	50
8 and 10	49	45	29	27	21	35	33	16	50
10 and 16	53	50	34	32	24	n/a	n/a	19	50
Family Expenditures (2 Children): ^e									
Low	49	46	34	33	28	36	36	13	50
Medium	49	45	29	27	21	35	33	16	50
High	49	45	27	23	17	35	31	17	50

^a See David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-86 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990. The measures of well-being used by each of the estimators are as follows: Engel(1) is percentage of expenditures devoted to food at home; Engel(2) is percentage of total expenditures devoted to food (at home and away); iso-prop(1) is the percentage of total expenditures devoted to food at home, shelter, clothing, and health care; iso-prop(2) is the percentage of total expenditures devoted to food at home, shelter, and clothing; iso-prop(3) is the percentage of total expenditures devoted to food at home and shelter; Rothbarth(1) is expenditures on adult clothing, alcohol, and tobacco; Rothbarth(2) is expenditures on adult clothing.

^b Based on annual expenditures of \$30,000.

^c In families with: one child, the child is assumed to be 8 years old; two children, the children are assumed to be 8 and 10 years old; three children, the children are assumed to be 4, 8, and 13 years old.

^d The Rothbarth estimates for older children are unreliable because of a data problem in the CEX.

^e Based on two children (ages 8 and 10). The Betson study reported expenditure patterns for families with expenditures between \$5,000 and \$50,000 (in \$5,000 increments). Low expenditure families are defined to be those with annual expenditures of \$5,000, \$10,000, or \$15,000. Medium expenditure families are defined to be those with expenditures in the \$20,000 to \$40,000 range. High expenditure families are those with annual expenditures of \$45,000 or \$50,000. The figures reported in the table represent the average over this range.

^f Note that while the iso-prop and Barten-Gorman estimates are included in this table for the sake of completeness, Betson believes (and we concur) that these estimates should be discounted.

^g This column is included to indicate how the estimates compare to a per capita calculation.

children, these results suggest that the iso-prop estimates summarized in Table 4.1 should not be considered reliable.¹⁸ Similarly, the Barten-Gorman estimates should not be considered reliable; while this estimator has attractive theoretical properties, the discussion in Chapter 2 indicated that its empirical properties are likely to cause it to be quite unstable.

In general, the estimates follow the pattern that we would expect: the greater the number of children, the greater the percentage of expenditures attributable to the children. Expenditures on older children are estimated to be greater than expenditures on younger children.¹⁹ Finally, expenditure patterns on children vary with the level of total family expenditures (i.e., the family budget). With the exceptions of the Engel(1) and Barten-Gorman estimators, all of the estimates indicate that low-budget (presumably low-income) families spend a higher percentage of their total budget on children. The variation in the percentage of expenditures devoted to children between high- and low-budget families, however, is quite modest.²⁰ Based on the percentages reported in Table 4.1, Table 4.2 presents dollar estimates of expenditures on children assuming total annual family expenditures are \$30,000.²¹ Note that some level of total annual expenditures must be assumed in order to

¹⁸ It should be noted, however, that an alternative set of iso-prop estimates (using different definitions of the iso-prop) could well produce estimates that fall within the bounds of the Engel and Rothbarth estimates.

¹⁹ Expenditures for the clothing of 16 and 17 year old children is included as "adult clothing" in the CEX. As a result, some of the expenditures on "observable adult goods" are really expenditures on children's goods. Consequently, the Rothbarth procedure underestimates the total level of expenditures that would be required to restore the adults to the level of adult goods that they would have enjoyed in the absence of children in this age group. Given this data problem, we have not included Betson's Rothbarth estimates for older children in the table.

²⁰ This statement is particularly true if we exclude the iso-prop estimates.

²¹ Dollar estimates for other two-family total expenditure levels can be similarly calculated by multiplying total annual family expenditures by the appropriate percentages reported in Table 4.1.

TABLE 4.2

Results From the Betson Study:
Expenditures Attributable to Children in Two-Parent Families With Total Annual Expenditures of \$30,000^a

	Engel		Iso-prop ^e			Rothbarth		Barten-Gorman ^e	Per Capita ^f
	1	2	1	2	3	1	2		
<u>Number of Children:</u> ^{b,c}									
One	9,905	9,010	4,807	3,874	2,796	7,480	6,994	3,417	10,000
Two	14,744	13,606	8,757	8,064	6,315	10,595	9,815	4,995	15,000
Three	17,797	16,598	12,357	12,217	10,181	11,762	11,126	6,492	18,000
<u>Children's Ages</u> <u>[2 Children]:</u> ^{b,d}									
4 and 8	13,674	11,146	8,028	7,370	6,728	10,781	9,847	3,952	15,000
8 and 10	14,744	13,606	8,757	8,064	6,315	10,595	9,815	4,995	15,000
10 and 16	15,788	15,060	10,280	9,605	7,206	n/a	n/a	5,790	15,000

^a See David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-86 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990. The measures of well-being used by each of the estimators are as follows: Engel(1) is percentage of expenditures devoted to food at home; Engel(2) is percentage of total expenditures devoted to food (at home and away); Iso-prop(1) is the percentage of total expenditures devoted to food at home, shelter, clothing, and health care; Iso-prop(2) is the percentage of total expenditures devoted to food at home, shelter, and clothing; Iso-prop(3) is the percentage of total expenditures devoted to food at home and shelter; Rothbarth(1) is expenditures on adult clothing, alcohol, and tobacco; Rothbarth(2) is expenditures on adult clothing.

^b Based on annual expenditures of \$30,000.

^c In families with: one child, the child is assumed to be 8 years old; two children, the children are assumed to be 8 and 10 years old; three children, the children are assumed to be 4, 8, and 13 years old.

^d The Rothbarth estimates for older children are unreliable because of a data problem in the CEX.

^e Note that while the iso-prop and Barten-Gorman estimates are included in this table for the sake of completeness, Betson believes (and we concur) that these estimates should be discounted.

^f This column is included to indicate how the estimates compare to a per capita calculation.

develop dollar estimates from the percentage estimates reported in Table 4.1 precisely because the percentages vary with the level of total family expenditures.

Before moving on to a discussion of the results for one-parent families, there are two final points to note about Tables 4.1 and 4.2. The first is that the Engel estimates, especially those based on Engel(1) (which uses the percentage of expenditures devoted to food consumed at home as the measure of well-being) are remarkably close to per capita estimates of expenditures on children.

The second point to note is the pattern of results produced by the three iso-prop estimators and their relationship to the Engel estimates. The most broadly defined of the iso-props (food at home, shelter, clothing, and health care) produces the highest of the three iso-prop estimates, while the most narrowly defined of the iso-props (food at home and shelter) produces the lowest of the three estimates. Given that food at home [Engel(1)] produces the highest estimates, and that food at home and shelter produces the lowest estimates, these results appear to confirm that while children are "food-intensive," there do appear to be substantial economies of scale in housing expenses (at least in two-parent families).

The striking feature of Table 4.3, which reports the estimates of expenditures on children in one-parent families, is how large the estimates are, particularly in comparison to those in Table 4.1. It is important to remember that to some extent, the larger estimates of the percentage of total expenditures attributable to children in one-parent families are inevitable; there are fewer individuals over whom the budget must be spread in a one-parent family than in a similar two-parent family. Nevertheless, even bearing this consideration in mind, the results in Table 4.3 indicate that expenditures on children in one-parent families (as a percentage of total expenditures) are very high.

TABLE 4.3

**Results From the Betson Study:
Percent of Expenditures Attributable to Children in One-Parent Families^a**

	Engel		Iso-prop ^f			Rothbarth		Barten-Gorman ^f	Per Capita ^g
	1	2	1	2	3	1	2		
<u>Number of Children:</u> ^{b,c}									
One	61	49	56	55	60	38	38	40	50
Two	78	66	69	68	74	53	55	50	67
Three	85	73	77	75	81	60	65	53	75
<u>Children's Ages</u>									
<u>[2 children]:</u> ^{b,d}									
4 and 8	76	61	67	66	73	51	56	52	67
8 and 10	78	66	69	68	74	53	55	50	67
10 and 16	78	68	70	69	74	n/a	n/a	57	67
<u>Family Expenditures</u>									
<u>[2 children]:</u> ^e									
Low	81	66	70	68	77	55	54	39	67
Medium	78	66	69	68	74	53	55	50	67
High	77	65	69	68	73	53	56	51	67

^a See David M. Betson, "Alternative Estimates of the Cost of Children from the 1980-86 Consumer Expenditure Survey," U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, September 1990. The measures of well-being used by each of the estimators are as follows: Engel(1) is percentage of expenditures devoted to food at home; Engel(2) is percentage of total expenditures devoted to food (at home and away); Iso-prop(1) is the percentage of total expenditures devoted to food at home, shelter, clothing, and health care; Iso-prop(2) is the percentage of total expenditures devoted to food at home, shelter, and clothing; Iso-prop(3) is the percentage of total expenditures devoted to food at home and shelter; Rothbarth(1) is expenditures on adult clothing, alcohol, and tobacco; Rothbarth(2) is expenditures on adult clothing.

^b Based on annual expenditures of \$30,000.

^c In families with: one child, the child is assumed to be 8 years old; two children, the children are assumed to be 8 and 10 years old; three children, the children are assumed to be 4, 8, and 13 years old.

^d The Rothbarth estimates for older children are unreliable because of a data problem in the CEX.

^e Based on two children (ages 8 and 10). The Betson study reported expenditure patterns for families with expenditures between \$5,000 and \$50,000 (in \$5,000 increments). Low expenditure families are defined to be those with annual expenditures of \$5,000, \$10,000, or \$15,000. Medium expenditure families are defined to be those with expenditures in the \$20,000 to \$40,000 range. High expenditure families are those with annual expenditures of \$45,000 or \$50,000. The figures reported in the table represent the average over this range.

^f Note that while the Iso-prop and Barten-Gorman estimates are included in this table for the sake of completeness, Betson believes (and we concur) that these estimates should be discounted.

^g This column is included to indicate how the estimates compare to a per capita calculation.

As was the case for the estimates for two-parent families, the Engel estimates are always greater than the Rothbarth estimates. The Engel estimates indicate that between 66 and 78 percent of total expenditures are attributable to two children in a one-parent family, which implies that 22 to 34 percent of expenditures are attributable to the adult. The Rothbarth estimates indicate that between 53 and 55 percent of total expenditures are attributable to children in such a family, which implies that 45 to 47 percent of expenditures are attributable to the adult. Unlike the estimates for two-parent families: (1) the iso-prop estimates in Table 4.3 are always greater than the Rothbarth estimates, but less than the Engel estimates, and (2) the Barten-Gorman estimates do not always fall below the Rothbarth estimates.

The high level of expenditures on children (in percentage terms) in one-parent families undoubtedly captures the fact that children are typically more of a financial burden in such families than they are in two-parent families. However, it should be pointed out that while children account for a higher percentage of total expenditures in a one-parent family than they do in a two-parent family, the percentage of expenditures attributable to the adult may actually be higher in one-parent families.²² Nonetheless, while the percentage of expenditures attributable to each adult and child in one-parent families is higher than in two-parent families, the level of expenditures is likely to be lower in one-parent families. The reason is that one-parent families typically have much lower income levels, and therefore lower expenditure levels, than do demographically comparable two-parent families.

The general pattern of the results for one-parent families is consistent both with our expectations and the results for two-parent families: the greater the number of children, the

²² That is to say, the residual percentage of expenditures (after accounting for children's expenditures) that remains for adult consumption is more than half as large in one-parent families as it is in two-parent families.

greater is the percent of total expenditures devoted to the children; older children are more expensive than younger children; and with the exception of the Rothbarth(2) and Barten-Gorman estimates, the percentage of expenditures devoted to children in low-budget (low-income) families is slightly higher than the percentage in higher-budget families.²³

There are, however, some important differences between the expenditure patterns that emerge for one and two-parent families. For two-parent families, the Engel(1) estimates are strikingly similar to per capita estimates. For one-parent families, the Engel(1) estimates actually exceed the per capita estimates, but the Engel(2) estimates (which are based on food consumption both at and away from home) are quite close to the per capita estimates.

The pattern of estimates produced by the three iso-prop techniques is also different from that for two-parent families. The most broadly defined of the iso-props (food at home, shelter, clothing, and health care) produces the lowest of the three estimates, while the most narrowly defined of the iso-props (food at home and shelter) produces the highest of the three estimates. This pattern, which is exactly the opposite of that which emerges for two-parent families, indicates that children in one-parent families are "shelter-intensive."

Finally, in some cases, the Barten-Gorman estimates for one-parent families fall between the Engel and Rothbarth estimates (whereas for two-parent families they were always less than the Rothbarth estimates). Nonetheless, the conclusion remains that the Barten-Gorman estimates appear to be unreliable.

In summary, while the range of Betson's estimates is quite broad, all of the estimates indicate that children account for a substantial portion of total family expenditures (especially

²³ It should be noted that for the sake of comparability, we have used identical definitions for low, medium, and high budgets in Tables 4.1 and 4.3. In reality, of course, one-parent families typically have much lower budgets (incomes) than do demographically similar two-parent families.

in one-parent families). Expenditures on children increase with the number of children and their ages. Low-budget (income) families appear to spend a slightly higher percentage of their expenditures on their children than do high-budget (income) families.

4.2 Comparing the Results of the Betson, NICHD, and FERG Studies

The overall results from the earlier NICHD studies and the FERG study are summarized in Table 4.4.²⁴ For the sake of comparison, we have also summarized Betson's results in this table. Once again, the numbers in the table represent the percent of total family expenditures that are attributable to two children in a two-parent family of average income, based on the range of estimation techniques described in Chapter 2.²⁵ Since the NICHD studies focused primarily on estimating expenditures over 18 years, these numbers should be interpreted as the average expenditure level over the course of the children's eighteen years.

An examination of Table 4.4 indicates that, as was the case with the Betson results, the estimates from other studies follow the pattern that would be expected based on the discussion in Chapter 2. The Engel estimator, implemented by Espenshade, produces the highest estimated expenditures on children, indicating that 41 percent of expenditures in an average-income, two-parent family with two children is attributable to the family's children.²⁶

²⁴ Recall that the NICHD studies all used the 1972-1973 CEX and the FERG study is based on the 1987 CEX.

²⁵ We have reported the estimates for two-parent families since the earlier studies focused almost exclusively on this type of family. The definition of "average income" (which is often not made explicit by the authors) varies from study to study. As a result, we have simply adopted each authors' definition of average income. For the Betson study, we have chosen an annual expenditure level of \$30,000 to represent the average family.

²⁶ Espenshade examines expenditure patterns by socioeconomic status (SES). We have assumed that a medium SES family corresponds to an average-income family.

TABLE 4.4

PERCENT OF EXPENDITURES ATTRIBUTABLE TO TWO CHILDREN
IN AN AVERAGE-INCOME, TWO-PARENT FAMILY^a

	<u>FERG Method</u>	<u>Engel</u>	<u>Iso-prop</u>	<u>Rothbarth</u>	<u>Prais- Houthakker</u>	<u>Utility Max.</u>
Other Studies ^b	37	41	n/a	27	28	38
Betson Study ^c	n/a	45-49	21-29	33-35	n/a	16

^a See Appendix 4.1 at the end of the chapter for notes explaining how these numbers were derived. The definition of "average income" (which is often not made explicit by the authors) varies from study to study. As a result, we have simply adopted each authors' definition of average income. For the Betson study, we have chosen an annual expenditure level of \$30,000 to represent the average family.

^b The Engel estimate was produced by Espenshade; the Rothbarth by Lazear and Michael; the Prais-Houthakker by Turchi; and the utility maximization by Olson.

^c Betson used several alternative measures of well-being to implement the Engel, iso-prop, and Rothbarth estimators. Consequently, there is a range of estimates produced by each of these procedures. Betson's utility maximization estimator was the Barten-Gorman. The iso-prop and Barten-Gorman estimates have been included for the sake of completeness; Betson believes (and we concur) that these estimates should be discounted.

The FERG and utility maximization techniques produce estimates of 37 and 38 percent, respectively. The Rothbarth technique (implemented by Lazear and Michael) and the Prais-Houthakker technique (implemented by Turchi), however, both produce substantially lower estimates, indicating that 27 and 28 percent of total family expenditures, respectively, are attributable to the children.

The specific utility function assumed by Olson leads to an estimate that 38 percent of expenditures in an average income, two-parent family with two children are attributable to the family's children.²⁷ Once again, as the discussion in Chapter 2 indicated, the relationship between this estimate and the others in Table 4.4 is to be expected. Since Olson's approach allows for the possibility that parents change their consumption patterns in response to the presence and number of children, we should expect this approach to generate estimates that are greater than those produced by the Rothbarth technique.²⁸ Similarly, because the FERG estimator combines aspects of both a marginal and average cost estimator, it is not surprising that it falls below the Engel estimates but above the Rothbarth estimates.

Of all of the earlier studies, Espenshade's and Lazear and Michael's are most directly comparable to Betson's. Betson's Engel(1) estimator (see Table 4.1) used the same

²⁷ Williams concluded that Olson's estimates of expenditures on children were higher than Espenshade's, but he did not consider that Espenshade and Olson made different assumptions about future inflation and economic growth and Olson estimates the cost of children for their first 23 years while Espenshade estimates costs for 18 years. See Robert G. Williams, Development of Guidelines for Child Support Orders: Final Report, Washington, D.C.: U.S. Department of Health and Human Services, Office of Child Support Enforcement, September 1987.

²⁸ That is not to say, however, that the Olson estimates are necessarily valid. Because of the mathematical properties of the estimator that Olson used (a variant of the Cobb-Douglas utility function), the degree to which parents substitute between different types of goods (while not zero) is assumed to be known. In other words, the parameter that measures parents' ability to substitute is assumed to be known (i.e., it is not estimated). Nonetheless, the utility maximization procedure that Olson chose appears to produce more reliable estimates than the Barten-Gorman (utility maximization) estimator used by Betson.

definition of well-being (the percentage of expenditures spent on food consumed at home) as Espenshade used. Using this definition, Betson estimated the expenditures attributable to children to be 49 percent, while Espenshade's estimate was 41 percent. Similarly, Betson's Rothbarth(1) estimate used the same definition of well-being (the level of expenditures on adult clothing, alcohol, and tobacco) as did Lazear and Michael. Using this definition, Betson estimated the expenditures attributable to children to be 35 percent, while Lazear and Michael's estimate was 27 percent.

Interestingly, both Betson's Engel and Rothbarth estimates, using 1980-1986 data, are greater than the Engel and Rothbarth estimates based on 1972-1973 data.²⁹ In private correspondence, Betson has noted that there were a number of differences between his study and Lazear and Michael's in the procedures used to implement the Rothbarth technique. In addition, the Engel estimator was implemented differently in the Espenshade and Betson studies, and the Espenshade estimate includes periods when only one child is in the family. (This is not a flaw in Espenshade's work but reflects different goals of his research.) Consequently, the differences in the results between the 1980-1986 data and the 1972-1973 data could either be caused by the differences in the procedures used or by true differences in expenditure patterns over time. Given the currently available information, it is impossible to distinguish between these two alternatives. However, as Betson has noted in

²⁹ This comparison of Lazear and Michael's and Betson's Rothbarth estimates differs slightly from the comparison made by Betson in Appendix G of his report. Although both this and Betson's comparison are based on an evaluation of Lazear and Michael's main estimating equation (their phi-function, see Appendix 4.2), the comparison provided here has been implemented in a slightly different manner; Betson's evaluation of Lazear and Michael's estimating equation (see Appendix G of Betson's report) is based on a pre-determined set of family characteristics, while this comparison is based on an evaluation of Lazear and Michael's estimating equation at the mean set of family characteristics.

Appendix G of his report, the differences between his Rothbarth estimates and Lazear and Michael's estimates are (in most cases) not statistically significant.³⁰

In addition to the overall estimates presented in Table 4.4, there is considerable richness of detail in the earlier literature. Table 4.5 summarizes how expenditures on children (as a percentage of total family expenditures) vary with the number of children and their ages, the level of family expenditures, and the number of parents living in the household.

Before turning to a discussion of these results, we should mention some of the factors that are not included in this table. A number of the authors examined how expenditures on children vary with region of the country, place of residence (e.g., metropolitan or non-metropolitan), race and age of the head of household, and the number of parents employed outside the home. With the exception of Lazear and Michael's estimates, these examinations did not adequately control for how income varies with these other factors. This makes it impossible to sort out the separate effects of these factors on expenditures from the effects of income on expenditures.

The results in Table 4.5 indicate that expenditures on children as a percentage of total family expenditures vary substantially with the number of children.³¹ The Engel estimators (Espenshade and Betson¹) indicate that: one child living with two adults accounts for 24 to 33 percent of all expenditures; two children account for 41 to 49 percent of all expenditures,

³⁰ Betson does not consider whether or not there is a statistically significant difference between his Engel estimates and those of Espenshade, but because Espenshade's estimates include periods when only one child is in the family, their findings are likely to be very close.

³¹ Because the Betson(3) (utility maximization/Barten-Gorman) estimates are considered to be unreliable, they will not be discussed further in this chapter.

TABLE 4.5
Percent of Expenditures Attributable to Children

Data:	1972-1973 CEX				1980-1987 CEX			1987 CEX	Per Capita ^f
	Engel	Rothbarth	Utility Maximization	Prais Houthakker	Engel	Rothbarth	Utility Maximization		
Estimator:	Engel	Rothbarth	Utility Maximization	Prais Houthakker	Engel	Rothbarth	Utility Maximization		
Study:	Espenshade	Lazar and Michael	Olson	Turchi	Betson1 ^c	Betson2 ^d	Betson3 ^e	FERG	--
Number of Children: ^{a,b}									
One	24	16	22	n/a	33	25	11	22	33
Two	41	27	38	n/a	49	35	16	37	50
Three	n/a	35	50	n/a	59	39	21	43	60
Children's Ages [2 children]: ^{a,b}									
0, 8	n/a	n/a	n/a	19	46	36	13	n/a	50
8, 10	n/a	n/a	n/a	25	49	35	16	n/a	50
10, 17	n/a	n/a	n/a	32	53	n/a	19	n/a	50
Number of Parents Living in House [2 children]: ^b									
One	n/a	52	n/a	n/a	78	53	50	n/a	67
Two	41	27	38	28	49	35	16	37	50
Family Expenditures [2 children]: ^a									
Low	n/a	n/a	n/a	33	49	36	13	40	50
Average	41	27	38	28	49	36	16	37	50
High	n/a	n/a	n/a	28	49	35	17	37	50

Note: See Appendix 4.2 for notes explaining how these numbers were derived.

^a Based on two-parent families.

^b Based on average-expenditure families.

^c Based on Betson's Engel(1) estimates, which are most directly comparable to Espenshade's estimates.

^d Based on Betson's Rothbarth(1) estimates, which are most directly comparable to Lazear and Michael's estimates. The estimates for older children are unreliable because of a data problem in the CEX.

^e Betson's utility maximization (Barten-Gorman) estimates are included in this table for the sake of completeness, Betson believes (and we concur) that these estimates should be discounted.

^f This column is included to indicate how the estimates compare to a per capita calculation.

which is between 1.48 and 1.71 times as much as one child; and three children account for 59 percent of all expenditures, which is 1.79 times as much as one child. The Rothbarth estimates (Lazear and Michael and Betson²) indicate that: one child living with two adults accounts for between 16 and 25 percent of all expenditures; two children account for 27 to 35 percent of all expenditures, which is between 1.40 and 1.69 times as much as one child; and three children account for 35 to 39 percent of all expenditures, which is between 1.56 and 2.19 times as much as one child. Olson's utility maximization estimates generally fall between the Engel and Rothbarth estimates; one child accounts for 22 percent of all expenditures; two children account for 38 percent of all expenditures, which is 1.69 times as much as one child; three children account for 50 percent of all expenditures, which is 2.24 times as much as one child.³² The results from the FERG estimates are similar to Olson's: one child accounts for 22 percent of all expenditures, two children account for 37 percent of all expenditures (or 1.68 times as much as one child), and three children account for 43 percent of all expenditures (or 1.95 times as much as one child).

All of the estimates indicate that expenditures on children do not increase in proportion to their numbers.³³ Expenditures on two children are less than twice as much as those for one child; the estimates for two children range from 1.40 to 1.73 times that for one child. Similarly, expenditures for three children are less than three times as much as

³² Note that these ratios of expenditures for two and three children, relative to one child, are based on results reported directly by Olson. Because of rounding errors, these ratios are slightly different than the ratios implied by expenditures of 22, 38, and 50 percent (for one, two, and three children, respectively).

³³ As the discussion in Chapter 2 indicated, there are at least two reasons why this is so. First, there are likely to be some economies of scale in caring for children. Second, the addition of another child puts an added strain on a family's budget that typically requires that all family members (both children and adults) make some sacrifices in their consumption.

those for one child; the estimates for three children range from 1.56 to 2.24 times that for one child.

In addition to varying with the number of children, the results in Table 4.5 indicate that expenditures on children as a percentage of total family expenditures also vary with children's ages.³⁴ Turchi's estimates indicate that expenditures on children as a percentage of total expenditures increase by almost 69 percent – from 19 percent when children are less than 8 years old to 32 percent when children are over 10 years old. If more detailed age groupings were used, the estimated growth in expenditures would be even more pronounced.³⁵ Using the Engel estimator (Betson1), Betson also finds an increase in expenditures as a percentage of income as children age, but the 15 percent increase (from 46 to 53 percent) is less pronounced than that found by Turchi. As was mentioned earlier, Betson's Rothbarth estimates (Betson2) for older children are unreliable because of a data problem in the CEX, and as a result, are not reported here.³⁶

The results from the FERG, Turchi, and Betson(2) estimates indicate that expenditures on children (as a percentage of total family expenditures) decline modestly as family income increases. The Betson(1) Engel estimates, however, are constant across low, average, and high-income families.

³⁴ As was mentioned in an earlier footnote (and in the Betson study), there is reason to believe that a data problem in the CEX has caused a substantial downward bias in Betson's estimated expenditures on 16-17 year olds using the Rothbarth estimator.

³⁵ The age grouping used in Table 4.5 was chosen to conform with the groupings that Betson used in presenting his results. The reader is reminded that these estimates account for child care costs, and how they vary with the ages of children, only indirectly through the effect that these costs have on the measure of well-being (see the summary in Chapter 2 for further discussion).

³⁶ See Appendix 4.2 for a more detailed discussion of the data problems.

The Lazear and Michael and Betson studies were the only ones that examined how the percent of expenditures attributable to children varies with the number of parents living in the household. Both Lazear and Michael and Betson found that holding expenditures constant, one-parent households spend a substantially higher percentage of total expenditures on children than do two-parent households.³⁷ The Rothbarth estimators (Lazear and Michael and Betson2) indicate that between 52 and 53 percent of expenditures in a one-parent household with two children is devoted to the children, while the Engel estimator (Betson1) indicates that 78 percent of all expenditures in such a household is attributable to the children.

As was mentioned earlier, this finding is not surprising. If expenditures are held constant while family size decreases (i.e., one adult is no longer there), the same level of resources is then spread among fewer family members. A simple per capita calculation indicates that two children in a one-parent household account for 67 percent of all expenditures. The Rothbarth estimators indicate, therefore, that while children account for a higher percentage of expenditures in a one-parent family than in a two-parent family, a child still consumes less than the adult. These estimates also indicate that the percentage of expenditures attributable to the adult in a one-parent family is higher than in a two-parent family.³⁸ The Engel estimator, however, indicates that a child in a one-parent family actually accounts for more expenditures than does the adult, and that the adult accounts for a lower percentage of total expenditures than in two-parent families.

³⁷ It should be noted, however, that Lazear and Michael did not find this effect (higher percentage of expenditures attributable to children in one-parent than in two-parent families) when they used the 1960-61 CEX.

³⁸ That is to say, the residual percentage of expenditures (after accounting for children's expenditures) that remains for adult consumption is more than half as large in one-parent families as it is in two-parent families.

It should be pointed out that while the discussion above is based on holding expenditures constant across one- and two-parent families, the level of expenditures does not typically remain constant in response to changes in the number of adults in the household. In the vast majority of cases, one-parent households have expenditure (and income) levels that are substantially below those of demographically comparable families with two parents. Although the total amount spent on children falls as total family expenditures fall, the final set of results in Table 4.5 provides limited evidence that the percent of expenditures attributable to children rises (albeit by a very modest amount) as family expenditures fall.³⁹ While the Engel estimates (Betson1) indicate that expenditures on children as a percentage of total family expenditures are constant across a wide range of income, both Turchi's estimates and Betson's Rothbarth estimates (Betson2), indicate that expenditures on children as a percentage of total expenditures fall slightly as expenditures rise. We should point out that, in any event, whether the percent of expenditures attributable to children is constant or falls as expenditures rise, all of these estimates indicate that the percentage of a family's income spent on children falls as income rises.⁴⁰

Finally, it should be pointed out that all of the estimates summarized here represent average expenditures. The range of actual expenditures is likely to be very broad -- much broader than the range of average expenditures summarized here. It appears that Lazear and

³⁹ That is to say, the percentage of expenditures attributable to children in one-parent families may be somewhat higher than indicated in the discussion above. The level of expenditures on children in a one-parent household, however, is likely to be lower than in a two-parent household (with similar demographic characteristics) because income is typically lower in one-parent households than in two-parent households.

⁴⁰ Because the percentage of income "spent" on taxes and savings generally rises with income, the percentage of income spent on consumption falls. Therefore, if children account for a constant percentage of expenditures across expenditure categories, they must account for a declining percentage of income.

Michael are the only authors who have considered this point in detail. Their estimates indicate that while average expenditures on two children in a two-parent family account for 27 percent of total family expenditures: 10 percent of such families spend less than 15 percent of total expenditures on their children; another 10 percent spend more than 36 percent of total expenditures on their children; and the remaining 80 percent of such families spend between 15 and 36 percent of total expenditures on their children.⁴¹ In sum, the averages reported here are likely to mask substantial variation in actual expenditure patterns.

4.3 Summary of the Findings

The results of the NICHD, FERG, and Betson studies indicate that there is a very wide range of estimates of expenditures on children. Drawing on the conclusions in Chapter 2 on the properties of the various estimators, a portion of this range can be ruled out as being extremely unlikely. In particular, we know that the Rothbarth estimator is likely to underestimate expenditures on children; any technique that produces estimates that are lower than those produced by the Rothbarth estimator should probably be considered unreliable. Consequently, we conclude that Betson's iso-prop and Barten-Gorman estimates (for two-parent families) are too low. Similarly, we know that the Engel estimator is likely to overestimate expenditures on children. In practice, the Engel estimator appears to produce results that are close to per capita estimates, estimates that are higher than those produced by any other technique. As a result, knowing that the Engel estimates are an upper bound does not prove very helpful in narrowing the range of estimates.

Unfortunately, the remaining range of estimates is quite wide. One child is estimated to account for 16 to 33 percent of total family expenditures; two children are estimated to

⁴¹ These figures have been derived from Chapter 7 of Lazear and Michael's book.

account for 27 to 50 percent of total family expenditures; and three children are estimated to account for 35 to 60 percent of total family expenditures. If we were to consider only the 1980-1986 estimates developed by Betson, the range would narrow somewhat: 23 to 33 percent for one child, 33 to 49 percent for two children, and 37 to 59 percent for three children.

The 1980-1986 Betson Engel estimates are somewhat higher than the 1972-1973 Espenshade Engel estimates, the 1980-1986 Betson Rothbarth estimates are 11 to 56 percent (for one and three children, respectively), which are higher than the estimates based on the 1972-1973 data. Unfortunately, it is impossible to determine whether the higher estimates in 1980-1986 reflect a genuine increase in the percentage of family expenditures attributable to children, or whether the higher estimates reflect differences in the procedures used by Betson, Espenshade, and Lazear and Michael to implement the Engel and Rothbarth estimators. This is a point that deserves further attention in future empirical work.

Although the range of estimates from the studies summarized is quite wide, there are nonetheless some well-defined regularities that emerge from these studies:

- Expenditures made on behalf of children do not increase in proportion to their numbers; i.e., each additional child accounts for fewer expenditures when there are more children. Expenditures on two children are estimated to be between 1.40 and 1.73 times as much as expenditures for one child; expenditures on three children are estimated to be between 1.56 and 2.24 times as much as expenditures for one child.
- The percentage of total family expenditures spent on a child increases with the age of the child. In a two-parent family with two children aged 0 and 8, the children are estimated to account for 19 to 46 percent of total family expenditures. In a similar family with two children aged 10 and 17, the children are estimated to account for 32 to 53 percent of total family expenditures.
- Children in one-parent families account for a higher percentage of total expenditures than children in similar two-parent families. In a two-parent family with two children, the children are estimated to account for 27 to 50 percent of total expenditures. In a one-parent family, the children are estimated to account for 52 to 78 percent of total family expenditures. This general finding is to be expected; if income is held constant

while family size decreases (i.e., one adult is no longer there), the children are likely to receive a higher percentage of the family's expenditures. It is important to note that while a higher percentage of expenditures may be attributable to the children in a one-parent family than in a two-parent family, in most cases the level of expenditures is likely to be lower (because one-parent families typically have lower incomes than demographically comparable two-parent families).

- There is some evidence that expenditures on children as a percentage of total family expenditures decrease slightly as income increases.⁴²

⁴² It should be noted that because of small sample sizes, none of the studies on which these findings are based examined expenditure patterns among relatively high income families. The Betson study, for example, does not consider families with annual incomes greater than \$75,000.

APPENDIX 4.1

The purpose of this Appendix is to explain the derivation of the numbers in Table 4.4.

The FERG Method

The number reported in Table 4.4 is the FERG's estimate of average expenditures on 2 children, based on data from the 1987 CEX that has been updated to 1989 using the Consumer Price Index. The FERG reported that in 1989, average expenditures for a younger child in a family with 2 children at a middle income (before-tax income between \$28,300 and \$46,900) were \$6,340¹ (or \$114,150 over the course of 18 years, divided by 18). As a percentage of income, the range was 28 to 45 percent, for an average of 37 percent.

Engel Estimate (1972-1973)

This estimate is taken directly from Table 20 (page 66).²

Rothbarth Estimate (1972-1973)

This number is derived from estimates reported by Lazear and Michael.³ The authors estimate that an average household (with 2.2 children and 1.93 adults) spends \$38 per child for every \$100 spent per adult. In other words, a child is approximately equivalent to 0.38 adults (in terms of consumption expenditures). After adjusting Lazear and Michael's estimates to find the relationship between children's and adult's consumption in a two-parent household with 2.0 children, we calculate that \$37.50 is spent on children in such a household for every \$100 spent on adults. As a result, the percent of expenditures attributable to two children in a two-parent family is equal to 0.27. The calculation necessary to derive this percentage is outlined below:

1. Expenditures on two children (in terms of adult equivalents) = $2 \times 37.5 = 75$
2. Expenditures on two adults (in terms of adult equivalents) = $2 \times 100 = 200$
3. Total family expenditures (in terms of adult equivalents) = $75 + 200 = 275$

Therefore, expenditures on two children as a percentage of total family expenditures, is equal to 0.27 (which is $75/275$).

¹ This figure is 3 percent higher for the older of the two children.

² Thomas J. Espenshade, Investing in Children: New Estimates of Parental Expenditures, Washington D.C.: Urban Institute, 1984.

³ Edward P. Lazear and Robert T. Michael, Allocation of Income within the Household, Chicago: University of Chicago Press, 1988, p.86.

Prais-Houthakker Estimates (1972-1973)

This estimate is based on calculations reported by Turchi.⁴ As was the case with the Lazear and Michael estimates, Turchi's estimates are reported in terms of equivalence scales (the percentage of consumption expenditures that are attributable to a child relative to those that are attributable to an adult). Turchi reports equivalence scales by age and sex of the child. By taking the average value of the equivalence scales across children's ages and sexes, we find that Turchi's equivalence scale for children is .38.⁵ To translate this equivalence scale into the percentage of total family expenditures that are attributable to two children in a two-parent family, we followed the same procedure as was used for the Lazear and Michael estimates. A child equivalence scale of .38 corresponds to an estimate that 28 percent of total family expenditures are attributable to the family's children. $[(2 \times 38)/(2 \times 100 + 2 \times 38)]$.

Utility Maximization Estimate (1972-1973)⁶

This estimate is based on expenditures for two-children families, by age and sex reported by Olson.⁷ In order to make his figures roughly comparable to those of the other authors, we have chosen an average income family with a 12 year old boy and a 7 year old girl.⁸ Olson estimates that the expenditures attributable to the children in such a family are 29.8 percent of total (pre-tax) family income. As a result, the percent of expenditures attributable to children (as a percentage of total family consumption) is 38 percent. The calculation necessary to derive this latter percentage is outlined below:

1. Expenditures on two children = .298 X family income
2. Total family expenditures = .789 X family income⁹

⁴ Boone A. Turchi, Estimating the Cost of Children in the United States, Washington, D.C.: National Institute of Child Health and Human Development, June 1983, p.59.

⁵ Note that the estimated value of Turchi's equivalence scale is nearly identical to Lazear and Michael's.

⁶ As was mentioned in Chapter 4, Mathtech did a 1981 study using a utility maximization approach. Unfortunately, there were severe technical difficulties in the implementation of this approach, making it difficult for the computer estimation techniques to converge upon an estimate. As a result, Table 4.4 does not include a summary of the Mathtech results (which were quite limited in their scope).

⁷ Lawrence Olson, Costs of Children, Lexington: D.C. Heath, 1983, p.44.

⁸ Olson does not report detailed expenditure patterns by the age of the children. As a result, we were constrained to using the ages reported in the text.

⁹ This percentage, which was derived from Table B-26 of the 1989 Economic Report of the President, is very nearly constant over time.

Therefore, expenditures on two children is 38 percent of total family expenditures (.298/.789).

Engel Estimates (1980-1986)

These estimates are taken directly from Betson's study, Tables F-1 and F-3, using a family with a \$30,000 income. The lower estimate (45 percent) is based on Table F-3, in which Betson used the percentage of expenditures devoted to food (both at home and away from home) as the basis for evaluating family well-being. The higher estimate (49 percent) is based on Table F-1, in which Betson used the percentage of expenditures devoted only to food consumed at home as the basis for evaluating family well-being.

Iso-prop Estimates (1980-1986)

These estimates are taken directly from Betson's study, Tables F-5 and F-9, using a family with a \$30,000 income. The lower estimate (21 percent) is based on Table F-9, in which the iso-prop used as the basis for evaluating family well-being was the percentage of expenditures devoted to food at home and shelter. The higher estimate (29 percent) is based on Table F-5, in which the percentage of expenditures devoted to food at home, shelter, clothing, and health care was the basis for evaluating family well-being.¹⁰

Rothbarth Estimates (1980-1986)

These estimates are taken directly from Betson's study, Tables F-11 and F-13, using a family with a \$30,000 income. The lower estimate (33 percent) is based on Table F-13, in which the basis for evaluating well-being was the level of expenditures on adult clothing. The higher estimate (35 percent) is based on Table F-11, in which the level of expenditures on adult clothing, alcohol, and tobacco was used as the basis for evaluating well-being.

Utility Maximization (Barten-Gorman) Estimate (1980-1986)

This estimate was taken directly from Betson's study, Table F-15, using a family with a \$30,000 income.

¹⁰ A third iso-prop (the percentage of expenditures devoted to food at home, shelter, and clothing) produced an intermediate estimate of 27 percent (see Table F-7 in Betson).

APPENDIX 4.2

The purpose of this Appendix is to explain the derivation of the numbers in Table 4.5.

Espenshade

Number of Children:

These estimates are taken directly from Table 20 (page 66).¹

Children's Ages:

It is not possible to derive meaningful estimates of how expenditures on children as a percentage of total family expenditures vary with the ages of the children from Espenshade's study. Although Espenshade's standard-of-living equation (Table A-15) could, in theory, enable us to make the necessary calculations, the results would be highly unstable (because of a lack of stability in the underlying regression coefficients measuring the consumption impacts of children by their ages).

Number of Parents Living at Home:

Since Espenshade limits his sample to two-parent families, it is impossible to determine how his estimates vary with the number of parents living in the household.

Family Income:

Espenshade's standard-of-living equation (in Table A-15) does not control for income. As a result, it is impossible to calculate how expenditures vary with income.²

Lazear and Michael

Number of Children:

These numbers are based on estimates that Lazear and Michael present on page 86.³ They estimate that a typical family, with 2.0 children and 2.0 adults spends \$37.50 on children's consumption for every \$100 of adult consumption (see the discussion in Appendix 4.1). If an additional child is added, each child's consumption (relative to an adult's consumption) is estimated to fall by \$1.67 (to \$35.83). As a

¹ Thomas J. Espenshade, Investing in Children: New Estimates on Parental Expenditures, Washington, D.C.: Urban Institute Press, 1984.

² It should be noted that Espenshade produces estimates at three different socioeconomic status (SES) levels. These SES levels, however, are not synonymous with income-levels.

³ Edward P. Lazear and Robert T. Michael, Allocation of Income within the Household, Chicago: University of Chicago Press, 1988.

result, the percent of expenditures attributable to three children in a two-parent family is equal to .35. The calculation necessary to derive this percentage is outlined below:

1. Expenditures on three children (in terms of adult equivalents) = $3 \times 35.83 = 107.49$
2. Expenditures on two adults (in terms of adult equivalents) = $2 \times 100 = 200$
3. Total family expenditures (in terms of adult equivalents) = $107.49 + 200 = 307.49$

Therefore, expenditures on three children as a percentage of total family expenditures, is equal to .35 ($107.49/307.49$).

Similarly, their calculations indicate that in a family with only one child, that child's consumption (relative to an adult's consumption) would be \$39.17. As a result, the percent of expenditures attributable to one child in a two-parent family is equal to .16. The calculation necessary to derive this percentage is outlined below:

1. Expenditures on one child (in terms of adult equivalents) = 39.17
2. Expenditures on two adults (in terms of adult equivalents) = $2 \times 100 = 200$
3. Total family expenditures (in terms of adult equivalents) = $39.17 + 200 = 239.17$

Therefore, expenditures on one child as a percentage of total family expenditures, is equal to .16 ($39.17/239.17$).

Children's Ages:

Lazear and Michael do not examine how expenditures vary with the ages of the children in the family.

Family Income:

While Lazear and Michael report regression results (page 96) on how expenditures vary with income, these results are not sufficiently detailed to make the calculations required for Table 4.5.⁴

Number of Parents Living at Home:

This number is also based on estimates that Lazear and Michael report on page 86.⁵ If income were held constant, and the number of adults in a household were reduced by one, Lazear and Michael estimate that expenditures per child (in adult equivalents) would rise from \$37.50 to \$53.90. As a result, the percent of expenditures attributable to two children in a one-parent family is equal to .52. The calculation necessary to derive this percentage is outlined below:

1. Expenditures on two children (in terms of adult equivalents) = $2 \times 53.90 = 107.8$
2. Expenditures on one adult (in terms of adult equivalents) = 100

⁴ Because of the mathematical properties of the estimator that Lazear and Michael use, the percentage change in expenditures that results from a decrease in income is constrained to be of equal magnitude (but the opposite sign) of the change in expenditures that results from an increase in income. This leads to unrealistic estimates of how expenditures attributable to children, as a percentage of total family expenditures, vary with income.

⁵ Lazear and Michael express some skepticism about the plausibility of their numbers.

3. Total family expenditures (in terms of adult equivalents) = $107.8 + 100 = 207.8$

Therefore, expenditures on two children as a percentage of total family expenditures, is equal to .52 ($107.8/207.8$).

Olson

The estimation method used by Olson does not allow us to identify (with an adequate degree of precision) how expenditures vary with the age of children, the number of parents living in the household, or the income of the household.⁶ He does, however, report (on page 3) how his estimates vary with the number of children; they are 1.69 as times as great for two children as one, and 2.24 times as great for three children as one.

Since Olson reports expenditures made on behalf of children as a percentage of income, these percentages must be translated into percentages of total expenditures. The procedure for doing so was described in Appendix 4.1. Since, according to this procedure, two children consumed 38 percent of total family expenditures, one child must then consume 22 percent of expenditures [$(1/1.69) \times .38$], and three children must consume 50 percent of total expenditures [$(2.24/1.69) \times .38$].

Turchi

Number of Children:

Turchi does not report any estimates of how expenditures vary with the number of children.

Children's Ages:

These numbers are based on estimates of equivalence scales by age and sex of the child, reported on page 59. The procedure for translating these equivalence scales (by age group) into the percentage of expenditures attributable to children (by age group), is identical to the procedure described for Turchi's estimates in Appendix 4.1.

Family Income:

These numbers are based on the equivalence scales for children in three socioeconomic status (SES) groups (high, medium, and low) that Turchi reports on page 59. While these SES groups do not correspond exactly to income groups, they are intended to be correlated with long-run earnings capacity. The same procedures were used to translate the equivalence scales into a percentage of expenditures attributable to children as those outlined in Appendix 4.1.

⁶ Olson reports how expenditures vary with the ages of two children, making it impossible to sort out the separate effects of the change in the age of each of the children. His regression results that report how expenditures vary with the number of parents living in the household and the income of the household are not sufficiently detailed to produce reliable estimates.

Number of Parents Living in the House:

While Turchi does report some evidence on expenditure patterns in one, as well as two-parent households, these estimates do not account for differences in income between the two household types. Therefore, it is impossible to determine how household type affects expenditures, independent of its effects on income.

Betson1

These numbers are taken directly from Tables F-1 and F-2 which report Betson's estimates from the Engel estimator (using percentage of expenditures devoted to food at home as the basis for measuring well-being). Except for the cases where family income is explicitly varied, income is assumed to be \$30,000 (both for one and two-parent families). The family income groupings are as follows: the low income grouping consists of families with income up to \$15,000, the middle group has income between \$20,000 and \$40,000, and the upper income group has income between \$45,000 and \$50,000. The numbers in the table represent an average over these ranges.

Betson2

These numbers are taken directly from Tables F-11 and F-12 which report Betson's estimates from the Rothbarth estimator (using the level of expenditures devoted to adult clothing, alcohol, and tobacco as the basis for measuring well-being). Except for the family income estimates, income is assumed to be \$30,000 (both for one and two-parent families). The family income groupings are as follows: the low income grouping consists of families with income up to \$15,000, the middle group has income between \$20,000 and \$40,000, and the upper income group has income between \$45,000 and \$50,000. The numbers in the table represent an average over these ranges.

One peculiarity of Betson's estimated expenditures is that they are very low for 10-17 year olds (9 percent). Betson believes (and we concur) that this extremely low estimate is not credible. It appears to reflect a data problem in the CEX.⁷ Consequently, we have not reported Betson's estimates for 10-17 year olds. Fortunately, this data problem does not affect Betson's other estimates of expenditures.⁸

⁷ Expenditures for clothing for 16-17 year old children is coded as adult clothing in the CEX, resulting in what appears to be a substantial downward bias in the estimated cost of children in this age group.

⁸ Since most of the estimates are based on the average child (who is younger than 16), the average estimates are unaffected by the data problem.

Betson3

These numbers are taken directly from Table F-15 which reports Betson's estimates from the Barten-Gorman estimator. Except for the cases where family income is explicitly varied, income is assumed to be \$30,000 (both for one and two-parent families). The family income groupings are as follows: the low income grouping consists of families with income up to \$15,000, the middle group has income between \$20,000 and \$40,000, and the upper income group has income between \$45,000 and \$50,000. The numbers in the table represent an average over these ranges.

FERG

These numbers were derived by Mark Lino, the author of the FERG study, and made available for inclusion through private correspondence.

5. THE ECONOMIC CONSEQUENCES OF MARITAL DISSOLUTION

Increasing rates of divorce, separation, and out-of-wedlock childbearing over the past few decades, together with large differences in economic well-being by family type, have generated a great deal of interest in the economic consequences of marital dissolution and the well-being of female-headed families. Since 1970, the number of female-headed families has increased by over 110 percent while the number of two-parent families has declined by 4 percent. Currently, an estimated 15 million children live in families in which the father is absent.¹

The importance of these changes was reflected in a recent report of the Select Committee on Children, Youth, and Families:

For the past two decades, we have known that single parenthood is a prescription for poverty, regardless of race... Seventy percent of children living with both parents were in families with incomes of \$25,000 or more per year, but only 12 percent of children living with mothers only achieved this economic level. Conversely, about 47 percent of the children living with single mothers were in families with income levels below \$7,500, compared with a mere 4 percent of those residing with both parents.²

In 1987, the poverty rate among female-headed householders was over 5 times the rate among householders in all other families (34.3 percent compared to 6.3 percent). Differences in poverty levels among children were equally dramatic: 55 percent of children under the age

¹ U.S. Bureau of the Census, Statistical Abstract of the United States: 1989, Tables 70 and 71, (109th Edition), Washington, D.C., 1989. For a review of these trends with a particular emphasis their implications for public policy, see Irwin Garfinkel and Sara S. McLanahan, Single Mothers and Their Children: A New American Dilemma, Washington, D.C.: Urban Institute, 1986, and Andrew J. Cherlin (ed.), The Changing American Family and Public Policy, Washington, D.C.: Urban Institute, 1988.

Note that the term "absent father" is one that is used and defined by the Bureau of the Census. Children from an absent father are a woman's sons and daughters (including step-children and adopted children) whose father is not living in the same household.

² Select Committee on Children, Youth, and Families, U.S. House of Representatives, U.S. Children and Their Families: Current Conditions and Recent Trends, 1989, U.S. Government Printing Office, Washington, D.C., 1989.

of 18 living in female-headed households were living below the poverty level in 1987, compared to 11 percent of children in other family types.³

It is in part because of these differences in economic well-being that the study mandated by the Family Support Act of 1988 was required to give "particular attention to the relative standards of living in households in which both parents and all of the children do not live together."⁴ Implicit in any comparison of two-parent and single-parent families is an understanding of the types of changes experienced by intact families that subsequently dissolve (i.e., the effects on a family of the transition from an intact to a divorced or separated state). Currently, much of what is known about the relationship between marital status, family composition, and economic well-being is based on inferences developed from cross-sectional survey data.⁵ These data are used to compare economic and other characteristics of adults and children in intact families with those of adults and children in single-parent households at a single point in time; differences between families' economic characteristics are typically attributed to differences in family composition. Often, however, families that differ in terms of family composition also differ systematically on other variables affecting economic well-being. Unless these other differences are controlled for, observed

³ U.S. Bureau of the Census, Statistical Abstract of the United States: 1989, Table No. 735, (109th Edition), Washington, D.C., 1989.

⁴ Section 128, Study of Child Rearing Costs, Title I, Child Support and Establishment of Paternity, Family Support Act of 1988 (Public Law 100-485).

⁵ Note that the data used in the Betson study and other U.S. studies of expenditures on children, the Consumer Expenditure Survey (CEX), are cross-sectional data.

differences in economic well-being may be incorrectly attributed to differences in family composition.⁶

Other studies of economic-well-being by family composition, however, are based on longitudinal data. These data, drawn from repeated interviews of the same families over time, track changes in marital, socioeconomic, and other characteristics and can address much more directly the relationship between family composition and economic well-being.⁷ Unfortunately, time and budgetary constraints often require that longitudinal data bases be less detailed than their cross-sectional counterparts. As a result, there is no data source that can simultaneously support a detailed study of family expenditure patterns and a study of the transition effects of marital dissolution. This chapter, therefore, reviews findings based on sources other than the Consumer Expenditure Survey (CEX).⁸

No single factor can account for the economically disadvantaged position of women and children in divorced and other single-parent families. In reviewing the findings from the Panel Study of Income Dynamics (PSID), Espenshade cites the following explanations first developed by Bane:

There are a number of reasons why women with children but without husbands find themselves in such desperate economic straits. The data suggest the

⁶ A number of multivariate techniques have been developed to control for the effects of confounding variables on a given variable of interest (in this case, economic well-being). The most common technique is ordinary least squares (OLS) regression analysis.

⁷ Note that the key distinction is not that more than one survey be conducted but that data on the same individuals and families be available for different points in time. Such information can also be obtained through cross-sectional surveys by asking retrospective questions on marital and family status, levels of income, and other measures of economic well-being at earlier points in time. (Indeed, some of the studies reviewed in this chapter, such as that of Weitzman, rely on this type of data.) Unfortunately, recall error often affects the reliability, detail, and response rate of retrospective questions.

⁸ It is important to note that the studies reviewed in this chapter were not funded or commissioned as part of the Secretary's study called for in the Family Support Act of 1988.

following causes: loss of "economies of scale"; greater prevalence of divorce and death among poor families; low and irregular levels of alimony, child support, and public assistance; fewer adult earners; fewer opportunities for female heads of families to work; lower wages than men when they do work.⁹

Among the most obvious reasons for a decline in economic well-being when families dissolve is the loss of economies of scale when two households rather than one need to be maintained.¹⁰ Because such a large proportion of the costs of maintaining a family are nearly fixed (e.g., housing, heating, and transportation), the greater the number of family members living together, the lower the per capita costs of maintaining such a family. Economies of scale are also reflected in levels of the official poverty threshold.¹¹ In 1989, for example, the poverty threshold for a two-adult, two-children family was \$12,575 or \$3,144 per family member. The corresponding levels for one adult and two children, and one adult alone were \$9,990 and \$6,451, respectively. These latter figures correspond to a four-person two-family combined poverty threshold of \$16,441 or \$4,110 per person. Thus, it costs an

⁹ Mary Jo Bane, "Marital Disruption and the Lives of Children," Journal of Social Issues, 32 (1), p.112. Cited in Thomas J. Espenshade, "The Economic Consequences of Divorce," Journal of Marriage and the Family, August 1979, p.620.

¹⁰ A number of studies reviewed in this chapter make use of a measure, an income/needs ratio, that is designed to account for such economies of scale.

¹¹ The poverty index was developed by the Social Security Administration in 1964 and revised in 1969 and 1981. The index, which consists of several money income thresholds that vary by family size and composition, is adjusted annually by the Consumer Price Index to account for the effects of inflation. Thresholds are based on money income only and do not include the value of non-cash benefits such as employer-provided health insurance, food stamps, or Medicaid. For a comprehensive review of the official poverty index and other issues relating to the measurement of poverty, see Patricia Ruggles, Drawing the Line: Alternative Poverty Measures and their Implications for Public Policy, Washington, D.C.: Urban Institute Press, 1990.

additional \$966 per person per year to maintain two adults and two children in two families at the poverty level than in one family at the poverty level.¹²

In addition to lost economies of scale, a number of studies have documented a direct relationship between pre-divorce socioeconomic status and marital stability. In their analysis of PSID data, Duncan and Hoffman find that "the average predivorce family income levels of couples about to divorce are substantially lower than the family incomes of intact couples." As they point out, "[D]ivorcing couples are clearly not a random subset of all couples, at least with respect to income. Simple comparisons of family income of divorced women with the family income of intact couples will therefore overstate the average drop in family income that divorced women experience."¹³

Studies of child support payments consistently indicate that many custodial parents do not receive child support -- either because an award has not been made or because noncustodial parents do not pay what is due. In 1988, for example, 33 percent of the 3.0 million divorced women and 45 percent of the 1.4 million separated women living with their own children under the age of 21 from an absent father had not been awarded child support.

¹² For one-child families the difference is even larger. The analogous numbers are: \$9,981 to maintain a two-adult one-child family (or \$3,327 per person) at the poverty level; \$8,547 for one adult and one child and \$6,451 for one adult alone (for a total two-family per person amount of \$4,999). Thus, in the case of a one-child family, it costs an additional \$1,672 per person per year to maintain three people at the poverty level in two families rather than one family.

¹³ Greg J. Duncan and Saul D. Hoffman, "A Reconsideration of the Economic Consequences of Marital Dissolution," *Demography*, Vol. 22, No. 4, November 1985, p. 487. Note that the causal relationship between low socioeconomic status and marital instability is unclear. In addition to their low socioeconomic status, individuals with low incomes may exhibit other characteristics that lead to an increased likelihood of marital dissolution.

Also, this result suggests that inferences developed from cross-sectional data on the effects of marital dissolution (i.e., data comparing continuously married couples with divorced or separated couples) are likely to be incorrect insofar as pre-divorce socioeconomic differentials are not controlled for.

Of women who had been awarded child support and were supposed to receive payments, 77 percent of divorced and 55 percent of separated mothers received payments.¹⁴ It was in part because so many families were not receiving child support that Congress enacted the Child Support Enforcement Amendments of 1984 and Title I of the Family Support Act of 1988.

While there is consensus that family dissolution typically results in a drop in the standard of living among women and their children and an increase in the standard of living of the noncustodial father, the studies reviewed in this chapter indicate that the magnitude of these changes and their persistence over time remain open to question. In general, economic well-being is examined in terms of pre- and post-divorce levels of income (both total family income and per capita income), although a number of the studies reviewed also examine changes in income in relation to needs, and these findings are also presented.¹⁵

The available literature on the economic effects of marital dissolution is limited in two important respects. First, the majority of studies are based on data collected between 1968

¹⁴ U.S. Department of Commerce, Current Population Reports, Special Studies, Series P-23, No. 167, Child Support and Alimony: 1987, U.S. Government Printing Office, Washington, D.C., June 1990.

¹⁵ The income needs ratio, which is designed to take into account economies of scale, measures changes over time in family income in relation to changes over time in the size and composition of a family (or, changes in the income needs of a family). Unfortunately, there is no unique definition of a family's economic "needs"; some studies make use of the needs standard developed for the official U.S. government poverty index while others use less stringent definitions. For an overview of these issues see "Adjusting for Differences in Family Needs," Chapter 4 in Patricia Ruggles, Drawing the Line: Alternative Poverty Measures and their Implications for Public Policy, Washington, D.C.: Urban Institute Press, 1990.

Many of the studies reviewed in this chapter examine additional economic (e.g., the division of communal assets and changes in labor force participation) and non-economic aspects of divorce and marital dissolution. A detailed discussion of these other findings is beyond the scope of this report and the interested reader is referred to the specific studies cited.

and 1983. Since 1984, however, the child support enforcement system has been significantly strengthened (primarily as a result of the Child Support Enforcement Amendments of 1984 and the Family Support Act of 1988). The effects of these changes on the economic status of post-divorce custodial and noncustodial households will not be evident from the studies reviewed in this chapter.¹⁶ In addition to reforms in the child support enforcement system, changes over time in women's labor force participation, wage rates (among both men and women), and the overall health of the economy are likely to affect the economic implications of divorce and marital dissolution for families. Older studies that reflect circumstances significantly different from those that prevail today are likely to misstate the current economic situation of post-divorce or post-separation households.

A second caveat is that, with one exception, none of the studies reviewed in this chapter include one important family type – never-married mothers and their children.¹⁷ Although there are many similarities between never-married mothers and other single parents, studies on the effects of divorce do not (by definition) include never-married mothers and the data available to study this group of single-mothers separately are very limited. Never-married mothers are, however, entitled to and often in need of child support. The omission is an important one: families headed by never-married mothers are not only one of the more consistently economically disadvantaged family types, but the number of such families has

¹⁶ Although results from the April 1988 CPS Child Support and Alimony Supplement, do not indicate significant changes in the proportion of women awarded child support, the proportion receiving child support, or the average level of child support received, these too do not reflect the effects of additional changes in the nation's child support enforcement system that will result when all of the provisions of the Family Support Act of 1988 have been implemented.

¹⁷ Although Bianchi and McArthur's analysis of data from the Survey of Income and Program Participation (SIPP), reviewed in Section 5.1 of this chapter, does include children of never-married mothers, the results are not reported separately for this group of mothers and children.

been growing over time. Never-married mothers are much more likely to be poor than other single mothers. In 1988, for example, 57 percent of never-married women with their own children under the age of 21 from an absent father lived below the poverty level, compared to 27 percent of divorced mothers and 51 percent of separated mothers with the same aged children.¹⁸ While more children living in single-parent families have parents that are divorced (42 percent) rather than never-married (27 percent), between 1970 and 1986, the number of children in the former group doubled while the number of children with never-married parents increased by a factor greater than seven.¹⁹

Finally, it is important to keep in mind that with one important exception, the studies reviewed in this chapter examine the consequences of marital dissolution for women, not children. Implicit in these studies, however, is the effect of divorce and separation on children: economic well-being is generally determined within the family unit, and an individual's poverty status is a function of family income. Thus, while the results of the studies reviewed typically focus on the economic status of women, their relevance for children cannot be overlooked.

The first section of this chapter reviews the findings of several studies based on nationally-representative data, including the Survey of Income and Program Participation (SIPP) and the Panel Study of Income Dynamics (PSID). A second section reviews selected estimates from small-scale local survey data. A summary and conclusions are presented in Section 5.3.

¹⁸ U.S. Department of Commerce, Current Population Reports, Special Studies, Series P-23, No. 167, Child Support and Alimony: 1987, U.S. Government Printing Office, Washington, D.C., June 1990.

¹⁹ U.S. Department of Commerce, Current Population Reports, Series P-20, No.418, Marital Status and Living Arrangements: March 1986, U.S. Government Printing Office, Washington, D.C., 1987.

5.1 Review of Nationally-Representative Estimates

The Survey of Income and Program Participation

The Survey of Income and Program Participation (SIPP) is a longitudinal survey designed to provide detailed data on the demographic and economic characteristics of individuals and households in the United States. Analyses of SIPP data have been used to study the distribution of income, wealth, and poverty, as well as to assess the effects of federal and state programs on the economic well-being of families and individuals. Based on a nationally-representative sample of households from the civilian non-institutional population, SIPP tracks groups (or panels) of individuals and their households for approximately two and one-half years. The first panel was initiated in October of 1983 (the 1984 panel) with the adults (persons age 15 and over) in approximately 20,000 households. The second and subsequent panels begin in February of each calendar year, and participants are interviewed every four months over the two and one-half year life of the panel.²⁰

The short time interval between successive SIPP interviews and the detailed data on family and income characteristics make SIPP particularly well suited for examining the effects of changes in family composition on economic well-being. In a study of the 1984 SIPP panel, Suzanne Bianchi and Edith McArthur analyzed the short-term effects of parental departure from a household on the economic well-being of children.²¹ The Bianchi and McArthur study has one important advantage over the other studies reviewed in this chapter: because

²⁰ For more information on SIPP, see U.S. Department of Commerce, Bureau of the Census, Survey of Income and Program Participation, User's Guide, Washington, D.C., July 1987.

²¹ Suzanne Bianchi and Edith McArthur, "Family Disruption and Economic Hardship: The Short-Run Picture for Children," unpublished paper forthcoming in U.S. Department of Commerce, Current Population Reports, Series P-70, Washington, D.C., 1990; also presented at the 1989 Annual Meeting of the Population Association of America, Baltimore, MD, March 1989.

the unit of analysis is the child rather than the divorced or separated mother, the estimates reflect the economic situation of children regardless of the marital status of their parents.

While the study does include children of never-married mothers in addition to children in other types of single-parent households, the authors did not conduct their analyses separately for this group of mothers and children. As a result, the economic effects of changes in family composition estimated by Bianchi and McArthur are not likely to reflect the experiences of any single group of women and children; rather, they reflect the aggregate experience of divorced, separated, and never-married mothers – groups that often face very different economic circumstances.

The majority of children (71 percent) in the 1984 SIPP panel lived in two-parent families throughout the entire panel period (32 months between 1983-1986).²² The remaining 29 percent of children lived without one or both of their parents for at least some portion of the panel period: over 24 percent lived with their mother in a family in which the father was not continuously present (16 percent lived with their mother only for the entire panel period, 6 percent lived in families in which the father departed during the panel period, and another 3 percent lived in families in which an absent father joined or rejoined the mother during the panel period). Just under 3 percent of children lived with their fathers throughout the entire panel period while their mothers were absent for all or part of the same period, and just under 2 percent of children lived in households in which neither parent was present for at

²² The sample of SIPP children is comprised of all children under the age of 15 at the time of the first interview for whom there are 32 months of data on household income and family composition. Linked to each child's data record is information on the marital status, employment, earnings, income, and welfare receipt of the child's parent(s).

least some portion of the panel period.²³ In reviewing these results, it is important to note that in SIPP, the term "parent" includes step-parents and adoptive parents in addition to biological parents. Thus, in categorizing children by family type, no distinction is made between step-fathers, adoptive fathers, or biological fathers.

The economic circumstances of children at the beginning and end of the panel period (the first and eighth SIPP interviews) are shown in Table 5.1. Four separate measures of economic well-being are reported: family and household income, per capita household income, and income-to-needs ratio.²⁴ The last of these four measures is often considered to be a more accurate gauge of economic well-being because economic well-being depends not only on a family's total income but on their income relative to their needs (which vary by size and composition).²⁵ In general, the results in Table 5.1 indicate that the SIPP children

²³ At the beginning of the 1984 panel period, the distribution of children by type of living arrangement was as follows: 78 percent were living with both their parents, 19 percent with their mother but not with their father, 2 percent with their father but not their mother, and 1 percent with neither parent.

Bianchi and McArthur also report racial differences in children's family composition. At the beginning of the panel period, the majority of white children (over 84 percent) lived with both parents while the majority of black children (51 percent) lived with their mother only. This initial difference in part explains why a much smaller proportion of black children than white children lived in a stable two-parent family over the entire panel period (37 percent compared to 77 percent). Among Hispanic children, 73 percent were living with both parents at the beginning of the panel, and 67 percent lived in a stable two-parent family during the entire panel period.

²⁴ Mean monthly income figures represent the average monthly income during the four-month reference period of each interview. All dollar amounts (and the poverty threshold used to determine the income/needs ratio) are expressed in constant January-April 1986 dollars. Percent changes, therefore, reflect real (i.e., inflation-adjusted) increases or decreases in income over time. Unless otherwise noted, all dollar figures reported in Section 5.1 of this chapter are in real (inflation-adjusted) dollars.

²⁵ The income/needs ratio used by Bianchi and McArthur is based on the official U.S. poverty needs standard. An income/needs ratio of 1 means that the child's family had just enough monthly income to meet its financial needs, the latter being defined as one-twelfth of the annual poverty threshold for a family of the same size and composition. If the ratio is less

Table 5.1

Change in Average Monthly Income Between First and Eighth SIPP Interviews
by Living Arrangement During the Panel

	All Children	Always Two Parents	Father Leaves	Mother Always Present Only	"Father" Enters	Father Always Present	Neither Parent Present
Mean Family Income							
First Interview	\$2,453	\$2,834	\$2,346	\$1,132	\$1,164	\$2,434	\$1,615
Eighth Interview	\$2,622	\$3,060	\$1,815	\$1,176	\$2,506	\$2,320	\$1,466
Percent Change	6.9	8.0	-22.6	3.9	115.3	-4.7	-9.2
Mean Household Income							
First Interview	\$2,488	\$2,847	\$2,359	\$1,197	\$1,428	\$2,508	\$1,855
Eighth Interview	\$2,645	\$3,073	\$1,821	\$1,247	\$2,421	\$2,356	\$1,625
Percent Change	6.3	7.9	-22.8	4.2	69.5	-6.1	-12.4
Mean Per Capita Income							
First Interview	\$575	\$649	\$530	\$305	\$395	\$619	\$447
Eighth Interview	\$610	\$689	\$485	\$328	\$591	\$611	\$443
Percent Change	6.1	6.2	-8.5	7.5	49.6	-1.3	-0.9
Mean Income/Needs Ratio							
First Interview	2.51	2.83	2.35	1.22	1.39	2.58	1.72
Eighth Interview	2.67	3.06	2.05	1.30	2.63	2.55	1.72
Percent Change	6.4	8.1	-12.8	6.6	89.2	-1.2	0.0
Percent with Income/Needs Ratio Less than 1							
First Interview	21.4	12.1	21.3	56.2	47.9	20.5	39.7
Eighth Interview	18.8	9.7	31.0	53.3	18.2	13.2	38.2
Percent Change	-12.5	-20.2	45.7	-5.0	-62.0	-35.4	-3.9
Sample Size	7,745	5,512	411	1,206	207	264	145
Number (in thousands)	51,862	36,867	2,884	8,390	1,402	1,372	948

Source: Suzanne Bianchi and Edith McArthur, "Family Disruption and Economic Hardship: The Short-Run Picture For Children," forthcoming in U.S. Department of Commerce, Current Population Reports, Series P-70, Wash., D.C., 1990. Table 2.

(taken as a whole) experienced real increases in their economic well-being over the panel period. On all four measures, economic well-being increased by 6 to 7 percent, and the number of children in poverty declined by almost 13 percent over the panel period. Not all children benefitted, however, from this overall increase in economic well-being.

On all measures of economic well-being and at both points in time, children who resided in stable two-parent families fared better than children in other family types. In the first interview, for example, these children had a mean monthly family income of \$2,834 (compared to the next highest level of \$2,434 among children living in families in which the father, but not the mother, was always present), a mean per capita monthly income of \$649 (compared to the next highest level of \$619, again for children in the "father always present" category), and a mean income/needs ratio of 2.83. Equally consistent (across income measures and over time) are the economically disadvantaged circumstances faced by children who resided with their mothers only during the entire panel period. Compared to all other groups of children, children who resided with their mothers only lived in families characterized by the lowest absolute level of family and household income (\$1,132 and \$1,197, respectively, for the first interview), the lowest per capita income (\$305 for the first interview), and the lowest income/needs ratio (1.22 for the first interview). On all four income measures, the children in this group had less than one-half the income of children in stable two-parent families. At the beginning of the panel period, 12 percent of children in stable two-

than 1, then the child and the child's family are "poor." Finally, an income/needs ratio that is greater than 1 reflects that proportion by which the child's family income exceeds the poverty threshold.

For a general review of needs standards, see "Adjusting for Differences in Family Needs," Chapter 4 in Patricia Ruggles, Drawing the Line: Alternative Poverty Measures and their Implications for Public Policy, Washington, D.C.: Urban Institute Press, 1990.

parent families were poor compared to 56 percent of children in "mother only" families, and by the end of the panel period these figures had not changed significantly.

Children living in families in which the father enters or returns to the household during the panel (the "father enters" category) and children in families that experienced a marital disruption during the panel (the "father leaves" category) experienced the greatest relative increase and relative decrease, respectively, in their economic well-being over time. Again, on all four measures of economic well-being, children in families in which there was a marital disruption suffered the largest declines in well-being: their family and household incomes dropped by an average of 23 percent, their per capita income dropped by an average of 9 percent, and their income/needs ratio fell by 13 percent. The largest increases in economic well-being, however, were for children who gained a father: their family and household incomes increased by 115 and 70 percent, respectively, their per capita income increased by almost 50 percent, and their ratio of income/needs increased by over 89 percent.²⁶

Not surprisingly, children in the "father leaves" and the "father enters" groups also experienced the largest increase and decrease in the percent of children in poverty: the poverty rate among children in the former group increased by 46 percent while it declined by 62 percent for children in the latter category. Children in families in which the father left the household saw their poverty rate jump from 1.8 to 3.2 times the poverty rate experienced by children in stable two-parent families. The poverty rate among children in families where the father entered or re-entered the household, however, fell from 4.0 to 1.9 times the poverty level experienced by their counterparts in stable two-parent families. Although children in the

²⁶ Recall that no distinction is made between step-fathers, adoptive fathers, or biological fathers. In the case of mothers marrying someone other than the father of their child(ren), it is important to note that while (re)marriage is often economically beneficial for both mothers and their children, step-fathers are not always legally required to support their step-children.

least some portion of the panel period.²³ In reviewing these results, it is important to note that in SIPP, the term "parent" includes step-parents and adoptive parents in addition to biological parents. Thus, in categorizing children by family type, no distinction is made between step-fathers, adoptive fathers, or biological fathers.

The economic circumstances of children at the beginning and end of the panel period (the first and eighth SIPP interviews) are shown in Table 5.1. Four separate measures of economic well-being are reported: family and household income, per capita household income, and income-to-needs ratio.²⁴ The last of these four measures is often considered to be a more accurate gauge of economic well-being because economic well-being depends not only on a family's total income but on their income relative to their needs (which vary by size and composition).²⁵ In general, the results in Table 5.1 indicate that the SIPP children

²³ At the beginning of the 1984 panel period, the distribution of children by type of living arrangement was as follows: 78 percent were living with both their parents, 19 percent with their mother but not with their father, 2 percent with their father but not their mother, and 1 percent with neither parent.

Bianchi and McArthur also report racial differences in children's family composition. At the beginning of the panel period, the majority of white children (over 84 percent) lived with both parents while the majority of black children (51 percent) lived with their mother only. This initial difference in part explains why a much smaller proportion of black children than white children lived in a stable two-parent family over the entire panel period (37 percent compared to 77 percent). Among Hispanic children, 73 percent were living with both parents at the beginning of the panel, and 67 percent lived in a stable two-parent family during the entire panel period.

²⁴ Mean monthly income figures represent the average monthly income during the four-month reference period of each interview. All dollar amounts (and the poverty threshold used to determine the income/needs ratio) are expressed in constant January-April 1986 dollars. Percent changes, therefore, reflect real (i.e., inflation-adjusted) increases or decreases in income over time. Unless otherwise noted, all dollar figures reported in Section 5.1 of this chapter are in real (inflation-adjusted) dollars.

²⁵ The income/needs ratio used by Bianchi and McArthur is based on the official U.S. poverty needs standard. An income/needs ratio of 1 means that the child's family had just enough monthly income to meet its financial needs, the latter being defined as one-twelfth of the annual poverty threshold for a family of the same size and composition. If the ratio is less

Table 5.1

Change in Average Monthly Income Between First and Eighth SIPP Interviews
by Living Arrangement During the Panel

	All Children	Always		Father Leaves		Mother Always Present		"Father" Enters		Father Always Present		Neither Parent Present	
		Two Parents	Parents	Father Leaves	Mother Only	"Father" Enters	Father Always Present	Father Always Present	Neither Parent Present				
Mean Family Income													
First Interview	\$2,453	\$2,834	\$2,346	\$1,132	\$1,164	\$2,434	\$1,615						
Eighth Interview	\$2,622	\$3,060	\$1,815	\$1,176	\$2,506	\$2,320	\$1,466						
Percent Change	6.9	8.0	-22.6	3.9	115.3	-4.7	-9.2						
Mean Household Income													
First Interview	\$2,488	\$2,847	\$2,359	\$1,197	\$1,428	\$2,508	\$1,855						
Eighth Interview	\$2,645	\$3,073	\$1,821	\$1,247	\$2,421	\$2,356	\$1,625						
Percent Change	6.3	7.9	-22.8	4.2	69.5	-6.1	-12.4						
Mean Per Capita Income													
First Interview	\$575	\$649	\$530	\$305	\$395	\$619	\$447						
Eighth Interview	\$610	\$689	\$485	\$328	\$591	\$611	\$443						
Percent Change	6.1	6.2	-8.5	7.5	49.6	-1.3	-0.9						
Mean Income/Needs Ratio													
First Interview	2.51	2.83	2.35	1.22	1.39	2.58	1.72						
Eighth Interview	2.67	3.06	2.05	1.30	2.63	2.55	1.72						
Percent Change	6.4	8.1	-12.8	6.6	89.2	-1.2	0.0						
Percent with Income/Needs Ratio Less than 1													
First Interview	21.4	12.1	21.3	56.2	47.9	20.5	39.7						
Eighth Interview	18.8	9.7	31.0	53.3	18.2	13.2	38.2						
Percent Change	-12.5	-20.2	45.7	-5.0	-62.0	-35.4	-3.9						
Sample Size	7,745	5,512	411	1,206	207	264	145						
Number (in thousands)	51,862	36,867	2,884	8,390	1,402	1,372	948						

Source: Suzanne Bianchi and Edith McArthur, "Family Disruption and Economic Hardship: The Short-Run Picture For Children," forthcoming in U.S. Department of Commerce, Current Population Reports, Series P-70, Wash., D.C., 1990. Table 2.

(taken as a whole) experienced real increases in their economic well-being over the panel period. On all four measures, economic well-being increased by 6 to 7 percent, and the number of children in poverty declined by almost 13 percent over the panel period. Not all children benefitted, however, from this overall increase in economic well-being.

On all measures of economic well-being and at both points in time, children who resided in stable two-parent families fared better than children in other family types. In the first interview, for example, these children had a mean monthly family income of \$2,834 (compared to the next highest level of \$2,434 among children living in families in which the father, but not the mother, was always present), a mean per capita monthly income of \$649 (compared to the next highest level of \$619, again for children in the "father always present" category), and a mean income/needs ratio of 2.83. Equally consistent (across income measures and over time) are the economically disadvantaged circumstances faced by children who resided with their mothers only during the entire panel period. Compared to all other groups of children, children who resided with their mothers only lived in families characterized by the lowest absolute level of family and household income (\$1,132 and \$1,197, respectively, for the first interview), the lowest per capita income (\$305 for the first interview), and the lowest income/needs ratio (1.22 for the first interview). On all four income measures, the children in this group had less than one-half the income of children in stable two-parent families. At the beginning of the panel period, 12 percent of children in stable two-

than 1, then the child and the child's family are "poor." Finally, an income/needs ratio that is greater than 1 reflects that proportion by which the child's family income exceeds the poverty threshold.

For a general review of needs standards, see "Adjusting for Differences in Family Needs," Chapter 4 in Patricia Ruggles, Drawing the Line: Alternative Poverty Measures and their Implications for Public Policy, Washington, D.C.: Urban Institute Press, 1990.

parent families were poor compared to 56 percent of children in "mother only" families, and by the end of the panel period these figures had not changed significantly.

Children living in families in which the father enters or returns to the household during the panel (the "father enters" category) and children in families that experienced a marital disruption during the panel (the "father leaves" category) experienced the greatest relative increase and relative decrease, respectively, in their economic well-being over time. Again, on all four measures of economic well-being, children in families in which there was a marital disruption suffered the largest declines in well-being: their family and household incomes dropped by an average of 23 percent, their per capita income dropped by an average of 9 percent, and their income/needs ratio fell by 13 percent. The largest increases in economic well-being, however, were for children who gained a father: their family and household incomes increased by 115 and 70 percent, respectively, their per capita income increased by almost 50 percent, and their ratio of income/needs increased by over 89 percent.²⁶

Not surprisingly, children in the "father leaves" and the "father enters" groups also experienced the largest increase and decrease in the percent of children in poverty: the poverty rate among children in the former group increased by 46 percent while it declined by 62 percent for children in the latter category. Children in families in which the father left the household saw their poverty rate jump from 1.8 to 3.2 times the poverty rate experienced by children in stable two-parent families. The poverty rate among children in families where the father entered or re-entered the household, however, fell from 4.0 to 1.9 times the poverty level experienced by their counterparts in stable two-parent families. Although children in the

²⁶ Recall that no distinction is made between step-fathers, adoptive fathers, or biological fathers. In the case of mothers marrying someone other than the father of their child(ren), it is important to note that while (re)marriage is often economically beneficial for both mothers and their children, step-fathers are not always legally required to support their step-children.

"father enters" and "father departs" groups exhibited relatively low levels of economic well-being during the first and last interviews, respectively, at no time did they fare as poorly as children living in families in which only the mother is present for the entire panel. At the beginning of the panel period, the poverty rate in this group was over four and one-half times the level for children in stable two-parent families, and at the end of the panel period, it was close to five and one-half times the level of the two-parent group.

Of particular interest is the fact that even at the beginning of the panel period, children in the "father departs" group were worse off than children in the stable two-parent group. As Bianchi and McArthur point out, this indicates that "the economic hardship for children who experience the departure of their father from the household resulted from two different factors. One was the loss of income earned by the absent parent; the other was that children who made the transition into single-parent households were less well-off to begin with than their counterparts who did not make the transition."²⁷ The relative disadvantage of children whose mothers remain single is also supported by differences in the receipt of child support and means-tested public transfer income. Mothers who remained single throughout the panel period were much more likely than mothers who (re)married or reconciled with the father to receive food stamps and AFDC payments; they were less likely, however, to receive child support.²⁸

²⁷ The authors also note, however, that "In some of these situations, this probably reflects the fact that the 'father' that is 'gained' may actually live with the child and contribute to the income of the household prior to the mother's actual remarriage." Income contributed by an unmarried partner of the child's mother would be included in the child's household income but not the child's family income. In addition, because single mothers who did not remarry had slightly larger households, per capita income was somewhat lower for these children.

²⁸ As of the first interview, 40 percent of mothers in the "always mother only" group received AFDC and 50 percent received food stamps. The corresponding percentages for mothers who remarried during the panel were 29 and 36 percent, respectively. In addition, 22 percent of the "always mother only" group received child support compared to 35 percent of

In order to examine in more detail the effects of a transition from a two-parent to a one-parent household, Bianchi and McArthur restricted a number of their analyses to children who started the panel with both parents and whose father left during the panel period, as well as the subset of these children whose mother did not remarry or reconcile with the children's father. A summary of the effects of marital disruption on the economic well-being of children before, during, and at four points in time after the loss of a parent is shown in Table 5.2.²⁹ The average monthly income "at time of loss," reported in the second column of Table 5.2, is the average monthly income during the four months preceding the first interview in which the father was no longer present; therefore, any income contributed by the father during this four-month period is included in this amount. The full economic effect of the father's departure, therefore, is most appropriately measured in "Time 1" (the first interview in which the father was absent for the entire four-month interview reference period).

Bianchi and McArthur's analysis of the 1984 SIPP data indicate that children's family income declined by about 37 percent (from \$2,435 per month to \$1,543 per month) after marital dissolution. Income measures that adjust for changes in total family size indicate a somewhat smaller reduction in children's well-being: per capita income declined by 21 percent (from \$549 per month to \$436 per month), and income/needs declined by about 26 percent (from 2.43 to 1.79). A comparison of the first and fourth time periods after disruption (a time interval of approximately 16 months) indicates that the decline in economic well-being

the "father enters" group.

²⁹ Because the loss of the father could occur at any time during the panel period, the number of post-separation observations declines with each successive time period. The analysis was limited to 4 post-separation time periods in order to maintain a sufficiently large sample size: information for at least 4 post-separation interviews was available for 205 (or 49 percent) of the 417 children who lived with two-parents at the first interview but whose father later departed from the household.

Table 5.2

Change in Income Among Children Who Lived With Both Parents at the Beginning of the SIPP Panel and Whose Father Left in Subsequent Months

	Prior to Loss	At Time of Loss	After Loss of Father from Household			
			Time 1	Time 2	Time 3	Time 4
Average Monthly Income						
Family Income	\$2,435	\$1,746	\$1,543	\$1,548	\$1,739	\$1,711
Household Income	\$2,461	\$1,749	\$1,546	\$1,645	\$1,781	\$1,687
Per Capita Income	\$549	\$449	\$436	\$447	\$468	\$456
Income/Needs Ratio	2.43	1.91	1.79	1.77	1.94	1.96
Percent in Poverty	18.7	30.3	35.5	30.9	29.3	30.7
Ratio of Income to Income Prior to Loss						
Family Income	1.00	0.717	0.634	0.636	0.714	0.703
Household Income	1.00	0.711	0.628	0.668	0.724	0.685
Per Capita Income	1.00	0.818	0.794	0.814	0.852	0.831
Income/Needs Ratio	1.00	0.787	0.737	0.729	0.801	0.805
Percent in Poverty	1.00	1.620	1.898	1.652	1.567	1.642
Sample Size	417	417	366	317	259	205
<u>Children Whose Mother Does Not Remarry/Reconcile</u>						
Average Monthly Income						
Family Income	\$2,416	\$1,735	\$1,452	\$1,364	\$1,424	\$1,432
Household Income	\$2,450	\$1,732	\$1,451	\$1,459	\$1,465	\$1,395
Per Capita Income	\$540	\$445	\$424	\$409	\$409	\$399
Income/Needs Ratio	2.39	1.90	1.73	1.60	1.67	1.71
Percent in Poverty	18.5	30.7	37.6	32.9	35.6	35.3
Ratio of Income to Income Prior to Loss						
Family Income	1.00	0.718	0.601	0.565	0.589	0.593
Household Income	1.00	0.707	0.592	0.596	0.598	0.569
Per Capita Income	1.00	0.824	0.785	0.757	0.757	0.739
Income/Needs Ratio	1.00	0.796	0.723	0.670	0.699	0.714
Percent in Poverty	1.00	1.659	2.032	1.778	1.924	1.908
Sample Size	315	315	264	223	180	139

Source: Suzanne Bianchi and Edith McArthur, "Family Disruption and Economic Hardship: The Short-Run Picture For Children," forthcoming in U.S. Department of Commerce, Current Population Reports, Series P-70, Washington, D.C., 1990. Table 9.

was not temporary. By the fourth interview after family disruption, family and household income had only recovered to about 70 percent their pre-dissolution levels, and per capita income to 83 percent of its pre-dissolution level.

Table 5.2 indicates that the longer-term effects of marital dissolution are even more pronounced if the subgroup is further limited to children whose mothers did not remarry or reconcile within the panel period. At Time 4, family and household income among these children were only 57 to 59 percent their pre-dissolution levels, and per capita income and income needs were only 74 and 71 percent, respectively, their pre-dissolution levels. Finally, marital dissolution was associated with a near doubling of the poverty rate among these children.

Mothers' employment status and the proportion receiving income from various sources (including child support and public assistance) are shown in Table 5.3 for the subset of children whose fathers departed and did not return during the panel period. Prior to the departure of the children's father, just over 30 percent worked full-time full-year, and close to 46 percent did not work at all. By Time 1 after the father's departure, an additional 11 percent of these mothers were working full-time, and 16 percent fewer were not working at all. These levels were generally constant over the remaining period of observation, with the exception of a 10 percentage point increase in the proportion of mothers who were not working at all.³⁰ The results in Table 5.3 also indicate that despite increases in the proportion of mothers with earned and personal income, marital dissolution was associated with significant increases in the proportion of mothers collecting means-tested public transfers (namely, AFDC and food stamps).

³⁰ Bianchi and McArthur also provide information on mothers' employment and earnings for other groups of children.

Table 5.3

Changes in Mother's Employment, Personal Income, and Reciprocity of Child Support, AFDC, and Food Stamps After Departure of Father from Household Among Children Whose Mothers Do Not Remarry/Reconcile During SIPP Panel

	Prior to Loss	At Time of Loss	After Loss of Father from Household			
			Time 1	Time 2	Time 3	Time 4
Percent Working Full-Time, All Weeks	30.6	37.1	42.4	44.5	47.3	42.5
Percent Not Working At All	45.5	35.0	29.8	39.3	34.2	39.7
Percent Reporting Weekly Hours Worked	58.2	67.1	73.5	63.2	68.1	62.0
Average Weekly Hours of Those With Hours	33.4	35.7	36.5	38.4	39.4	37.8
Percent with \$1 or more of Earned Income	56.4	66.3	73.5	63.2	67.4	62.0
Average Monthly Earnings	\$934	\$924	\$884	\$994	\$1,015	\$1,025
Percent with \$1 or more of Personal Income	79.7	95.5	98.2	95.7	98.6	98.4
Average Monthly Income	\$810	\$962	\$1,075	\$1,070	\$1,043	\$1,060
Percent with \$1 or more in Child Support	14.3	35.3	46.3	44.1	40.9	42.5
Average Monthly Receipt	\$294	\$321	\$340	\$368	\$401	\$410
Percent with \$1 or more in AFDC Income	11.7	18.9	19.4	23.6	24.4	25.8
Average Monthly Receipt	\$268	\$242	\$243	\$279	\$273	\$298
Percent with \$1 or more in Food Stamps	10.3	27.6	28.2	29.0	28.7	31.7
Average Monthly Receipt	\$187	\$150	\$187	\$177	\$194	\$186
Sample Size	315	315	264	223	180	139

Source: Suzanne Bianchi and Edith McArthur, "Family Disruption and Economic Hardship: The Short-Run Picture For Children," forthcoming in U.S. Department of Commerce, Current Population Reports, Series P-70, Washington, D.C., 1990. Tables 11 and 13.

The SIPP findings indicate that changes in family composition are clearly important to children's economic well-being. In general, the immediate effects of marital disruption on children who remain with their mother after their father departs are reductions in family income (by about 37 percent), per-capita income (21 percent), and income in relation to needs (26 percent), and these reductions tend to persist over time. As Bianchi and McArthur conclude, however:

[T]he economic differences between children who experience family disruption and those who do not result from two factors: the economic hardship brought on by a father's departure and the fact that economic disadvantage tends to precede family disruption. The SIPP data make clear that children who experienced a parental marital disruption during the period were less well off at the beginning of the panel (when they were still living in a two-parent family) than those who continued to live in stable two-parent families. (emphasis added).

The Panel Study of Income Dynamics

The Panel Study of Income Dynamics (PSID) is a large-scale longitudinal survey specifically developed to examine the factors affecting changes in the economic well-being of families over time. The PSID is a nationally representative sample survey of approximately 5,000 American families who were surveyed for the first time in 1968 and who have been reinterviewed every year since.³¹ Over time the sample has grown to include both the

³¹ The original sample was constructed based on a pool of 3,000 households drawn to be representative of the entire U.S. population. In order to develop more precise estimates of the experiences of low-income households, the remaining 2,000 sample households were selected from Bureau of the Census data based on their low-income status. Although low-income households are overrepresented in the survey sample, the weights attached to each sample observation have been constructed so that the fully weighted sample is representative of the general population. For more information on the PSID, see the University of Michigan, Institute for Social Research, User Guide to the Panel Study of Income Dynamics, Ann Arbor, Spring, 1984.

newly formed households that are created when young people move into homes of their own and the households that have divided as a result of divorce or separation.³²

A great deal of research on the determinants of family well-being has been conducted using data from the PSID.³³ Duncan and Morgan summarize their review of the general findings that emerge from analyses of the PSID as follows:

Two broad generalizations seem to be warranted regarding the relationship between family composition changes and changes in economic status. First, the economic status of men was affected far less by family composition change than was that of women. Second, changes brought about by marriage and remarriage that resulted in two-parent families were the most beneficial, while such changes as divorce, separation, splitting off, and widowhood which resulted in a family with an unmarried household head were generally detrimental. These two findings were remarkably consistent for all groups of individuals that formed our sample. Both were the product of several obvious facts of contemporary society: Women earn less than men partly because of discrimination and partly because of their less regular pattern of labor force participation. In addition, two-parent families often have two earners while single-parent families do not. And finally, dependents are much more likely to go with the mother than the father after a marital disruption.³⁴

These findings are supported by a number of different analyses of PSID data, including relatively recent studies conducted by Robert Weiss, Greg Duncan and Saul Hoffman, and Kate Stirling.

³² As with the original sample weights, which adjusted for the oversampling of low-income households, the weights attached to sample observations are periodically adjusted as new households are added in order to maintain the sample's national representativeness over time.

³³ A number of studies based on the PSID are published in a series of volumes edited by Greg J. Duncan and James N. Morgan entitled Five Thousand American Families -- Patterns of Economic Progress, Institute for Social Research, University of Michigan, Ann Arbor, Vols.1-10, 1974-1983.

³⁴ Greg J. Duncan and James N. Morgan (eds.), Five Thousand American Families -- Patterns of Economic Progress, Volume IV: Family Composition Change and Other Analyses of the First Seven Years of the Panel Study of Income Dynamics, Institute for Social Research, University of Michigan, Ann Arbor, 1976, pp. 16-17.

Weiss

In his analysis of PSID data, Robert Weiss examined three separate types of economic consequences of divorce: the magnitude and persistence over time of income reduction, changes in income sources, and changes in consumption patterns.³⁵ His analysis is based on two subsamples of PSID sample members. The first sample consists of married mothers who were divorced or separated any time between 1969 and 1974. Because 1980 was the final year data were available, 1974 was chosen as the last possible year of divorce in order to observe the income and consumption patterns following divorce for a minimum of six years.³⁶ In addition to this first group, Weiss constructed a control sample of married mothers whose marriages persisted for an interval of seven years. In order to make appropriate comparisons of changes in income and expenditures over time (i.e., control for the length of time since divorce or separation), Weiss constructed index years for all sample members. For the divorced or separated subsample, the index year was the year in which the divorce or separation took place, and for the married sample, 1972 was selected as the

³⁵ See Robert S. Weiss, "The Impact of Marital Dissolution on Income and Consumption in Single-Parent Households," Journal of Marriage and the Family, February 1984.

³⁶ Unlike a number of other studies reviewed in this chapter, Weiss explicitly excludes women who remarry. The following criteria were used to identify women as single parents in a particular year: (a) they had been reported as married in the previous year; (b) they reported themselves in the current year as separated or divorced; (c) they reported themselves as separated or divorced in the subsequent year (this was then called the first year after the break); (d) they had children under 18 living in their households, both in the break year and in the year following the break; and (e) the women's ages were no more than 40 plus the age of the oldest child (in order to exclude grandparents). Excluded from the analysis were women who reported themselves as single or divorced for only one year. Finally, when women ceased to be single parents (either by remarrying or no longer having children under the age of 18 in their households), they were dropped from the sample.

index year.³⁷ Individuals in both groups were classified by income category based on whether their family income (prior to divorce, in the case of the first group) fell into the upper, middle, or lower third of the national income distribution.³⁸

Weiss found the reduction in income subsequent to divorce to be largest among women whose pre-divorce income was highest (see Table 5.4). For the upper-third income group, divorce reduced income to almost one-half the level achieved during the last married (or prebreak preindex) year. For the middle- and lower-income groups, the corresponding levels were two-thirds and three-quarters, respectively. Thus, while women with the highest pre-divorce income levels continued to have higher post-divorce incomes, divorce constituted a leveling experience among women who divorced, narrowing the difference in income between those in the highest and lowest post-divorce income categories.

Interestingly, after tracking women's income levels for five years after their divorce, Weiss found that women who do not remarry rarely recovered from the initial post-divorce reduction in income. He also notes, however, that their economic situation did not worsen. For women in the middle and upper one-third income groups, income rose very slightly (on the order of 5 to 10 percent) after the first year of marital dissolution. This is in contrast to a steady increase over time in the family income of PSID sample members who remained married throughout the panel period. As Weiss states:

In all income groups the reduction in income consequent to marital disruption appears to persist indefinitely as long as the households remain headed by female single parents. Although single-parent households were followed for

³⁷ Note that while members of the married sample are known to have been married for at least seven years, Weiss did not consider the length of marriage for divorced or separated sample members.

³⁸ Income groupings were constructed on the weighted sample to correct for the oversampling of low-income households in the original unweighted sample.

Table 5.4
Household Incomes as a Proportion of Total Incomes in Prebreak or Preindex Year (PSID)

Income Category	Mean Income Prebreak/Preindex Year (Number)	Break/Index Year	Proportion in Relation to Break/Index Year (1972)				
			Year 1	Year 2	Year 3	Year 4	Year 5
Separated and/or Divorced Women							
Lower	\$5,611 (77)	1.04 (77)	0.77 (77)	0.80 (67)	0.74 (58)	0.74 (58)	0.78 (54)
Middle	\$10,317 (49)	0.68 (49)	0.56 (49)	0.67 (41)	0.67 (36)	0.68 (35)	0.64 (28)
Higher	\$17,330 (47)	0.61 (47)	0.45 (47)	0.47 (43)	0.50 (37)	0.53 (32)	0.50 (31)
Married Women							
Lower	\$5,921 (370)	1.21 (370)	1.32 (370)	1.52 (355)	1.66 (349)	1.57 (342)	1.58 (335)
Middle	\$10,070 (414)	1.02 (414)	1.08 (414)	1.18 (406)	1.27 (396)	1.27 (388)	1.22 (384)
Higher	\$18,669 (431)	0.97 (431)	1.00 (431)	1.02 (411)	1.08 (390)	1.08 (376)	1.10 (344)

^a In 1967 dollars.

^b Income category includes respondents whose yearly income, when married, was in the estimated lower, middle, or higher thirds of national incomes.

^c Numbers shown are actual respondents. Since lower income levels were oversampled, all statistics are based on weightings that compensate for oversampling.

Source: Robert S. Weiss, "The Impact of Marital Dissolution on Income and Consumption in Single-Parent Households," Journal of Marriage and the Family, February 1984, Table 1, p. 117.

only five years, nowhere was there any evidence of a return to anything approaching the married household income.

It is important to note that lower income married households in the index year increased their income substantially by five years later. Here is a critical difference between the married poor (all of whom in this sample have children) and the single-parent poor: the former, taken as a group, do better with time; the latter do not. On average, the married poor move out of poverty; the single-parent poor remain there.

While total income among low-income households remained at about three-quarters of what it had been during the last year of marriage, over time this level represented an even smaller proportion (one-half) of the income levels achieved by continuously married couples.

Weiss also documented interesting differences in the proportion of women who had any earnings and the proportion of total family income attributable to women's earnings by income group and marital stability. For the married sample households, virtually all husbands or fathers had earnings (comprising approximately 80 percent of household income), and one-half of the wives had earnings. For married households in which the wife had earnings, these earnings comprised about one-fourth of total income in the low-income group and one-fifth of income in the higher-income group.³⁹

Compared to their married counterparts, mothers in single-parent families were much more likely to have earnings. Whereas one-half of married mothers in each of the three income groups contributed earnings to the household income, almost two-thirds of low-income and over 90 percent of middle- and high-income divorced or separated mothers had earnings of their own. For divorced and separated mothers with earnings, these earnings

³⁹ Other possible income sources are private transfers (including child support, alimony, and help from relatives), means-tested public transfers (i.e., welfare and food stamps), Social Security income, unemployment compensation, and income from assets. With the exception of the first two, these income sources were of little importance for the divorced or separated group taken as a whole.

constituted almost two-thirds of total household income for the low-income group, three-quarters for the middle-income group, and again about two-thirds for the high-income group. In general, the proportion of divorced or separated mothers with any earnings and the relative contribution of these earnings towards total household income remained fairly constant over the five-year observation period following marital disruption. Over time, however, earnings among middle- and high-income mothers appeared to increase slightly as a proportion of total household income.

For divorced and separated mothers, two other sources of income were important: private transfers including child support, alimony, and help from relatives, and means-tested public transfers, namely welfare and food stamps. While a very small proportion of married households (less than 1 percent) received any form of private transfer income, for the divorced and separated sample members, child support and alimony were received by just over one-third of the low-income group, about one-half of the middle-income group, and almost three-quarters of the high-income group in the first year after marital disruption. Among households receiving child support or alimony payments, these transfers constituted between 20 and 40 percent of their total household income (the lowest proportion applying to the lowest income group and the highest to the highest income group). Over the five-year period following marital disruption, child support and alimony declined as a proportion of total income for the middle and higher income groups.⁴⁰ By the fifth year, for example, these transfer payments accounted for approximately one-tenth and one-fourth of total income for middle- and high-income groups, respectively. In the low-income group, child support and

⁴⁰ Because Weiss does not report absolute levels of income separately for sample members who received child support and alimony income, it is not clear whether this decline was due to an increase in total income or a decrease in child support and alimony.

alimony continued to account for the same share of total income as it did the year following marital disruption.

The majority of the married sample did not receive any means-tested public transfers, namely welfare and food stamps. This was a significant source of income for less than 4 percent of households in the lower-income married group. For divorced or separated mothers, particularly mothers in the low-income category, however, public transfer income was both widely received and an important component of total income. During the first year after marital disruption, for example, two-thirds of low-income divorced or separated mothers received welfare and one-half received food stamps (comprising 54 and 11 percent, respectively, of total household income among households receiving such assistance). Taken together, 30 percent of the low-income households received 75 percent or more of their total income from welfare and food stamps. While over 70 percent of low-income divorced or separated mothers received either welfare or food stamps during the first year after marital disruption, only one-quarter and less than 5 percent of mothers in the middle- and high-income groups, respectively, received income from these sources.

Over time, welfare and food stamps continued to be used by many low-income divorced or separated mothers, and they remained an important component of total income. In fact, five years after marital disruption, more mothers in the low-income category received welfare, although the proportion receiving 75 percent or more of their income from welfare declined slightly (from 30 to 25 percent). For mothers in the middle income category, the use of welfare declined with time. Between the first and fifth year following marital disruption, the proportion of mothers receiving welfare or food stamps declined from 25 to 12 percent, comprising 37 and 22 percent of total household income, respectively. In general, there appeared to be very little use of welfare among high-income mothers who divorced or

separated. For middle-income mothers, welfare receipt declined both in frequency and importance during the five years following marital disruption. Finally, for low-income mothers, welfare was used by a large proportion of mothers, was an important component of total family income, and did not decline over the five-year period following marital disruption.⁴¹

Duncan and Hoffman

Greg Duncan and Saul Hoffman have also used the PSID to assess the economic effects of marital dissolution.⁴² Like Weiss, the authors control for the number of years since divorce or separation; in addition, however, their analysis takes into account the possibility (and economic effects) of remarriage.⁴³ The PSID sample used for their study consists of couples who experienced a divorce or separation any time between 1969 and 1975 and a comparison group of couples who were continuously married over this same

⁴¹ Weiss also examined the effect of divorce on expenditures for housing and food consumed at home. These results are not reported here.

⁴² Greg J. Duncan and Saul D. Hoffman, "A Reconsideration of the Economic Consequences of Marital Dissolution," Demography, Vol. 22, No. 4, November 1985.

⁴³ An earlier study conducted by Saul Hoffman and John Holmes also examined the economic consequences of divorce and separation separately for women who remarried and those who did not. Unlike the Duncan and Hoffman study, however, the analysis did not standardize the length of time following divorce over which economic well-being was measured. Thus, the estimates reflected the economic situation of divorced and separated women at varying time periods following marital dissolution. This more recent study, therefore, has the advantage of standardizing for length of time since divorce (Weiss' methodological development) and examining continuously divorced/separated and remarried women separately. For Hoffman and Holmes' original study, see Saul Hoffman and John Holmes, "Husbands, Wives, and Divorce," in Greg J. Duncan and James N. Morgan (eds.), Five Thousand American Families -- Patterns of Economic Progress, Volume IV: Family Composition Change and Other Analyses of the First Seven Years of the Panel Study of Income Dynamics, Institute for Social Research, University of Michigan, Ann Arbor, 1976.

period.⁴⁴ Following Weiss' technique of indexing years according to the year of divorce or separation (year t), Duncan and Hoffman examine changes in income and income/needs over the 6-year period t-1 to t+5. The economic status of continuously married couples was similarly tracked, 1972 being chosen as the index year, over the 1971-1977 period.⁴⁵

The sample on which Duncan and Hoffman's analysis is based consists of 349 divorced or separated women and 250 men; roughly 40 percent of these women and one-third of the men were black and the remaining 60 percent were white.⁴⁶ Remarriage was quite prevalent among the group; more than 20 percent of women were married within 2 years, and by 5 years time, 55 percent of white women and 42 percent of black women had remarried.⁴⁷ At every year subsequent to divorce or separation and for both races, remarriage rates were even higher among men.

⁴⁴ As with most of the studies reviewed in this chapter, the authors use a functional rather than a legal definition of marriage and do not distinguish between divorce and separation, which is defined as the transition from living with a spouse or long-term partner to living without that person for any reason other than death. Cohabiting couples who reported living together for two consecutive annual interviews were classified as long-term partners. In order to control for the effects of major changes in labor supply and the receipt of retirement income, Duncan and Hoffman restricted the sample to individuals between the ages of 25 and 54 in the year prior to divorce; this restriction caused some men to be eliminated from the sample while their ex-wives were not, and vice versa.

⁴⁵ Note that this period includes the recessionary years of 1972 through 1974.

⁴⁶ The number of males in the sample was smaller than the number of females because the sample attrition rate was much higher among men following divorce or separation than it was for women. The relatively high proportion of blacks in the sample resulted because low-income households were oversampled in the original PSID sample. Recall, however, that the weights attached to each sample observation have been constructed such that the fully weighted sample remains representative of the total population.

⁴⁷ Due to the small sample sizes involved, the authors did not distinguish between men who remarried and those who remained divorced or separated. They do state, however, that based on preliminary analyses, this distinction was much less important (in terms of post-divorce economic status) for men than it was for women.

Duncan and Hoffman's results for post-divorce changes in economic well-being are reported in Table 5.5. The measures are reported for years t+1, t+3, and t+5, and are expressed as the ratio of economic well-being in a given year to economic well-being in the year prior to divorce (or 1971, in the case of continuously married couples). The authors examined two measures economic well-being: total family income and income/needs.⁴⁸ The latter measure, which adjusts family income for the size and composition (and therefore needs) of a family, is based on the needs standard used for the official U.S. government poverty standard.

As the results in Table 5.5 indicate, long-term divorce or separation reduced the economic well-being of women. Among women who did not remarry, family income fell to approximately 70 percent its pre-divorce level during the first year following divorce, and remained at this lower level for the remaining period of observation.⁴⁹ The initial decline in family income was particularly large among black women whose family income declined to 54 percent its pre-divorce level.⁵⁰ As the first three rows in Table 5.5 indicate, when the long-term divorced or separated women are pooled with those who remarry, the situation is quite

⁴⁸ Data on income reflects income from all sources including transfer income such as child support and alimony. Reported income figures include such transfers and are expressed in real (i.e., inflation adjusted) 1981 dollars.

⁴⁹ As Duncan and Hoffman point out, because the sample of unmarried women changes from year to year, this finding should be interpreted with caution. If women with higher than average ratios had higher rates of remarriage, then the average ratio for women who do not remarry could remain constant over time even if their economic well-being was in fact increasing.

⁵⁰ More detailed analyses indicate that over 40 percent of divorced or separated women who did not remarry saw their family incomes drop by at least 50 percent in the first year after divorce. By contrast, only one-sixth of the divorced or separated men in the sample and few intact couples (2 percent) experienced a decline of this magnitude. Finally, while post-divorce family income increased for 11 percent of divorced or separated women, the proportion was much smaller than for divorced men (30 percent of whom had higher levels of post-divorce income) and intact couples (65 percent of whom had higher post-index year incomes).

Table 5.5

Changes in Family Income and Income/Needs
For Divorced or Separated Individuals and Intact Couples Over Selected Time Intervals^a

Marital Status/Race	Family Income Interval: Years After (t)			Income/Needs Interval: Years After (t)		
	1	3	5	1	3	5
Divorced or Separated Women						
All (Includes Remarriages)	.81	.97	1.01	.91	1.05	1.10
White	.84	.99	1.03	.93	1.07	1.12
Black	.67	.82	.88	.80	.97	1.03
Remained Unmarried	.70	.70	.71	.87	.91	.94
White	.72	.72	.71	.89	.93	.94
Black	.54	.59	.74	.71	.78	.95
Remarried in Year	--	--	1.27	--	--	1.25
White	--	--	1.29	--	--	1.26
Black	--	--	1.08	--	--	1.13
Divorced or Separated Men						
All (Includes Remarriages)	.93	1.08	1.14	1.13	1.24	1.30
White	.91	1.11	1.17	1.10	1.25	1.32
Black	1.02	.87	.97	1.40	1.08	1.19
Intact Couples						
All	1.17	1.17	1.28	1.19	1.17	1.30
White	1.18	1.17	1.27	1.19	1.17	1.30
Black	1.14	1.22	1.32	1.15	1.18	1.30

^a Ratio of family income (income/needs) in years t+1, t+3, and t+5 to family income (income/needs) in year t-1, where t is the year of divorce or separation for divorced or separated individuals and t is 1972 for intact couples.

Source: Greg J. Duncan and Saul D. Hoffman, "A Reconsideration of the Economic Consequences of Marital Dissolution," *Demography*, Vol. 22, No. 4, November 1985, Tables 2 and 4.

different. Improvements in economic well-being resulting from remarriage raises the average level of family income for the divorced group taken as a whole from .70 to .81 of the pre-divorce level, and economic well-being continues to improve over the remaining years of observation. For remarried women, five years after marital dissolution white women had family incomes 29 percent higher than their pre-divorce level, and for black women the corresponding increase was 8 percent. The level of well-being for white women who remarry is very close to that achieved by intact couples in 1977 (or 5 years after the index year).

A comparison of all divorced or separated women with divorced or separated men indicates that the economic costs of marital dissolution are much less severe for men. Although the men in the sample did experience a decline in their family income one year after their divorce or separation, the decline was much smaller for men (on the order of 7 percent), and within three years they were faring better than during their last year of marriage. These results hold for both black and white men in the sample.

Consistent with these general findings are changes over time in the income/needs of post-divorce households. As would be expected, changes in income/needs are not as great as changes in family income alone because marital dissolution reduces the size (and therefore needs) of both post-divorce households. Even after changes in economic needs are taken into account, however, income/needs declines to 89 percent of their pre-divorce level for white women who remain unmarried after their first year of divorce and to 71 percent for black women.⁵¹ By contrast, men of both races actually fare better in terms of their

⁵¹ As Duncan and Hoffman note, the average of the individual ratios (reported here) is not necessarily equal to the ratio of average individual incomes. The individual ratios are skewed to the right (i.e., higher) because there is a natural lower bound (zero income) but no upper bound. Although the authors imposed a truncation of 5.0 (i.e., restricted the ratio of post-divorce to pre-divorce economic well-being to a maximum of 5.0), the mean ratio was still significantly higher than the median ratio. In their article, "What Are the Economic Consequences of Divorce?," Demography, Vol. 25, No.4, November 1988 (discussed later),

income/needs after divorce or separation. While post-divorce income/needs increase over time for both men and women, men's income/needs increase by approximately 17 percentage points (from 1.13 to 1.30) while women's income/needs increase by only 7 percentage points (from .87 to .94)

The post-divorce economic situation of women is much less severe when remarried women are included in the analysis. For divorced or separated women taken as a whole, income/needs declines to 91 percent its pre-divorce level in the first year after divorce. By the third and fifth years, however, income/needs are greater than pre-divorce levels by 5 and 10 percent, respectively. Despite these improvements, divorced or separated women generally do not fare as well as their continuously married counterparts and this is true whether or not they remarry.⁵²

Duncan and Hoffman also found important post-divorce differences in poverty rates. After divorce or separation, poverty rates increased from 5 to 11 percent for the families of white women and from 13 to 33 percent for the families of black women. These rates declined only slightly for women who remained unmarried five years after their divorce. Divorce was associated with reductions in poverty among men; prior to divorce, 6 percent of the men in the PSID sample lived in poor families, and one year after divorce only 4 percent did so. Finally, the authors also found that the majority of women received no alimony or child support and that the level and incidence of these two forms of transfer income declined over time. Duncan and Hoffman conclude:

the authors indicate that post-divorce declines in economic well-being (as measured by the pre- post-divorce ratio of average incomes/needs) is approximately 30 percent.

⁵² Although white divorced women who had remarried by their fifth year of divorce fared better than their continuously married counterparts in terms of changes in family income, this was not the case for their income/needs ratio.

A close look at the income flows in the years following divorce or separation reveals marked differences in the distribution of effects. The economic consequences of divorce are especially adverse for women. In most cases, children remain with the mother, who usually has considerably lower potential labor market earnings than her former husband, partly because her responsibilities for the children are likely to reduce her labor supply and may have limited her past human capital investments. Alimony and child support are the principal mechanisms for transfer from the ex-husband to the ex-wife, but payments are rarely frequent or sizeable enough to make up for an appreciable amount of labor income lost through the departure of the ex-husband. Human capital investments on the part of the mother have a modest effect on her economic situation in the years following the divorce.

Most men who divorce or separate are immediately better off because they retain most of their labor incomes, typically do not pay large amounts of alimony and child support to their ex-wives, and no longer have to provide for the level of needs associated with their former families.

Stirling

In a more recent study of the PSID, Stirling has analyzed in more detail the longer-term effects of divorce.⁵³ Although this study (like those of Weiss and Duncan and Hoffman) takes into account differences in the number of years divorced, her analysis differs from other estimates based on the PSID in two important respects. First, because declines in family income have been identified as one of several factors associated with the likelihood of divorce, studies which measure post-divorce economic well-being in relation to the last year of marriage alone may underestimate pre-divorce economic well-being and, therefore,

⁵³ Kate J. Stirling, "Women Who Remain Divorced: The Long-Term Economic Consequences," Social Science Quarterly, Vol. 70, No. 3, September 1989.

A somewhat older study that examines both the short- and long-term effects of divorce for women who have had relatively longer marriages is Lois B. Shaw, "The Economic Consequences of Marital Disruption for Women in Their Middle Years," pp. 181-203 in U.S. Department of Labor, Proceedings of a Conference on the National Longitudinal Surveys of Mature Women, Women's Changing Roles and at Home and on the Job, Washington, D.C.: U.S. Department of Labor, 1978. This study is based on data from the mature women's cohort of the National Longitudinal Survey of Labor Market Experience.

overestimate post-divorce economic well-being.⁵⁴ Stirling addresses this problem by comparing post-divorce economic status with that which prevailed during the last three years of marriage. Second, none of the earlier studies which report post-divorce economic status at several points in time follow a single unchanging group (or cohort) of women over time. The sample sizes for each post-divorce time period decrease as divorced women exit the group by remarrying. If the economic well-being of divorced women who remarry is systematically different from those who do not, then changes in the economic status of divorced women from one point in time to another are likely to be inaccurate if remarried women are included in the first time period (i.e., the two groups need to be analyzed separately).⁵⁵

As a result of these considerations, Stirling restricted the PSID sample to women who were married for at least 3 years and who remained divorced (i.e., did not remarry) for at least 5 years. A total of 99 women participating in the PSID satisfied these criteria. On average, these women were 36 years old during their first year of divorce. Eighty-four percent of them had children living with them, and 60 percent had children aged 6 or younger. Eighty-nine percent of the sample were white, and 9 percent were black.

The decline in women's economic status (as measured by the income/needs ratio) following divorce is shown in Table 5.6.⁵⁶ Income/needs declined by just under 30 percent

⁵⁴ One study that shows declines in family income preceding divorce is Heather Ross and Isabel Sawhill, Time of Transition: The Growth of Families Headed by Women, The Urban Institute, Washington, D.C., 1978.

⁵⁵ This point corresponds to a problem noted by Duncan and Hoffman in their analysis of the PSID (see footnote 49).

⁵⁶ Unlike Duncan and Hoffman, Stirling makes use of the needs standard developed for the PSID. This standard, which is based on individual weekly food expenditures by age and sex, is drawn from the Department of Agriculture's "low-cost plan" for a four-person family (Family Economics Review, June 1967). This weekly food budget is used to estimate total

Table 5.6

**Income-to-Needs Ratios For Women in the PSID
Who Were Married for at Least Three Years and Divorced for at Least Five Years**

Income/Needs	Mean	Percent Change from Previous Year	Range	Standard Deviation
During Marriage ^a	2.75		0.23-7.53	1.29
Year 1	1.94	-29.5	0.21-6.25	1.18
Year 2	1.87	-3.6	0.12-4.46	1.02
Year 3	1.91	2.1	0.20-4.86	1.07
Year 4	1.97	3.1	0.29-4.79	0.99
Year 5	1.94	-1.5	0.03-4.97	1.05
Sample Size	99			

^a Average of income-to-needs ratios in the last three years of marriage. Average family size before divorce is four members. In the first year of divorce it is three members.

Source: Kate J. Stirling, "Women Who Remain Divorced: The Long-Term Economic Consequences," *Social Science Quarterly*, Vol. 70, No. 3, September 1989.

in the first year following divorce and by 32 percent in the first two years following divorce. This lower level of income/needs remained fairly constant over the remaining years of observation. Stirling has also examined how total income and its components changed over time for the divorced women in her sample (see Table 5.7). On average, family income was observed to fall by 46 percent (from \$28,520 to \$15,390) during the first 2 years following divorce. During the remaining period (the third through the fifth year following divorce), family income generally remains unchanged. The overall trend is similar to the change in income/needs reported in Table 5.6. The divorced women in this sample experienced a sharp decline in economic status immediately following divorce, and they remained at this level during the remaining period of observation. The decline is due to a proportionately larger decline in income relative to needs. Although total family income does not vary significantly after an initial decline, the various components from which it is derived do vary over time. In the second year after divorce, taxable income of the divorced woman accounts for only 57 percent of total family income.⁵⁷ The remaining portion is derived from income

annual food requirements, and for family sizes other than 4, adjustments are made to reflect economies of scale. A total needs standard is then calculated by multiplying the adjusted food standard by a fixed factor depending on family size.

While the results of this procedure are similar to the poverty measures used by the Social Security Administration in developing the official poverty index, the PSID needs standard differs from the official standard in several ways. The official standard uses the more stringent "economy" or "thrifty" food budget plans rather than the "low-cost" plan which is approximately 25 percent higher. Also, unlike the official poverty index, which only adjusts for family size, the PSID needs standard is also adjusted for the age and sex composition of families. For more detail on the PSID needs standard, see the Center for Political Studies, Institute for Social Research, User's Guide to the Panel Study of Income Dynamics, Ann Arbor: University of Michigan, Spring 1984.

⁵⁷ Stirling also notes that this is true despite significant increases in labor force participation. Also, subsequent increases over time in the proportion of total income derived from the divorced women's income are due to increases labor force participation rather than increased wage rates.

Table 5.7

**Total Income and Components for Women in the PSID
Who Were Married for at Least Three Years and Divorced for at Least Five Years**

Variable	Total Income ^a (1)	Taxable Income of Head ^b (2)	Transfer Income of Head (3)	Taxable Income of Others ^c (4)	Transfer Income of Others (5)
During Marriage	28,520 100%	27,100 94%	860 3%	560 3%	10 0%
Year 1	17,950 100%	7,020 39%	2,530 14%	7,960 44%	440 3%
Year 2	15,390 100%	8,760 57%	3,900 25%	2,690 18%	45 0%
Year 3	15,120 100%	9,830 65%	3,090 21%	2,070 14%	120 1%
Year 4	15,940 100%	10,220 64%	3,040 19%	2,450 15%	230 2%
Year 5	15,050 100%	10,840 72%	2,420 16%	1,660 11%	130 0%
Sample Size	99				

Note: Dollar amounts are reported in 1981 dollars.

^a Figures for each cell represent mean dollar amounts and percent contribution. Column 1 is the sum of Columns 2-5. Rows may not add to 100 percent due to rounding.

^b During marriage, the income figures for "head" include the income of both husband and wife. Of this amount, the wife's annual earnings were \$5,340, on average. During the divorce, "head" refers to the divorced woman. All divorced women in the sample were heads of their own households throughout the divorce.

^c "Others" refers to older children.

Source: Kate J. Stirling, "Women Who Remain Divorced: The Long-Term Economic Consequences," *Social Science Quarterly*, Vol. 70, No. 3, September 1989.

from others in the household (18 percent) and transfer income (25 percent). Over time, however, the proportion of total family income derived from either transfer income or the income of others declines and the proportion derived from the divorced women's own earnings increases. During the fifth year following divorce, for example, women's own income accounted for 72 percent of total family income. Transfer income remained important, however, constituting 16 percent of total income (compared to a pre-divorce level of 3 percent).

5.2 Review of State and Local Study Estimates

One of the primary motivations behind many small-scale studies of the economic impact of divorce has been to assess the effects of no-fault divorce. Because legal divorce systems are established the state level, these studies have also been based on state or local samples. Independent of any legal considerations, however, the studies that have been conducted are useful in evaluating the economic effects of marital dissolution.

This section briefly reviews three such studies that apply to cities or districts in California, Connecticut, and Vermont. There are several caveats that apply equally to all three studies. First, no single-area study's findings are likely to be representative of the entire national population. Single sites are unlikely to capture the variation in labor market and employment conditions, income levels, and urban-rural variations found at the national level. While findings from local or state-level studies may be generalizable to other similar areas, inferences regarding national trends should be made with caution. In addition to the problem of representativeness, many of the studies are based on small sample sizes which may affect the reliability of the studies' estimates, even as they apply to the populations being sampled. The final sample on which the findings are based depends not only on the size of the original

sample, but on the response rate to questionnaires and/or interviews when supplementary data are collected. Despite these limitations, findings from smaller-scale studies on the economic effects of marital dissolution are useful in either confirming or qualifying nationally-representative estimates.

Weitzman

Among the most widely cited findings on the economic consequences of divorce are those of Lenore Weitzman.⁵⁸ Her analysis is based on 1978 interview data from 228 divorced men and women in Los Angeles County who had been divorced for approximately one year. Interviewees were selected through a multistage sampling process. An initial random sample was drawn from decrees of dissolution filed in Los Angeles between May and July of 1977. The sample was then stratified by marital duration, socioeconomic status, and sex, in order to ensure adequate representation on these characteristics.⁵⁹ Final sample members were selected from these stratified subsamples. The response rate for the final sample was 41.5 percent of the original sampling frame.

⁵⁸ See Lenore J. Weitzman, The Divorce Revolution: The Unexpected Social and Economic Consequences for Women and Children in America, 1985, The Free Press, New York. Many of the findings reported in The Divorce Revolution are based on previous work by the author. These can be found in "The Economics of Divorce: Social and Economic Consequences of Property, Alimony and Child Support Awards," 28 U.C.L.A. Law Review, 1181 (1980-81); Weitzman and Dixon, "The Alimony Myth: Does No-Fault Divorce Make A Difference?," 14 Family Law Quarterly, (1980); and Weitzman and Dixon, "Child Custody Awards," U.C.D. Law Review, 423 (1979).

⁵⁹ The fact that there are an equal number of men and women would seem to imply that Weitzman's sample consists of 114 formerly married couples. In an appendix to her book, however, Weitzman states that "our final aim was to obtain a sample that was evenly divided by sex so ... we randomly chose the husband as our respondent in half the cases, and the wife as our respondent in the other half, so that we ended up with half male and half female respondents." (See Appendix A, p.407-408 of The Divorce Revolution.) Thus, the reader should not assume that pre-divorce income figures are the same for the husbands and wives in Weitzman's sample.

For couples married less than 10 years, husbands' incomes one year after divorce ranged between 75 and 94 percent of their pre-divorce family incomes, while those of their wives ranged from 29 to 71 percent of their pre-divorce family incomes (see Table 5.8).⁶⁰ As pre-divorce family income increases, the difference between pre- and post-divorce incomes of women in the sample also increases. Although the same general trend holds true for the husbands in the sample, post-divorce reductions in income are not nearly as large as they are for wives. It is important to note, that while women in the highest pre-divorce family income category experienced the largest declines in post-divorce income, their post-divorce incomes remained the highest of all women in Weitzman's sample.

Not surprisingly, male-female differences in post-divorce family income are even larger after adjusting for the number of family members. Post-divorce per capita levels of family income were between 51 and 116 percent of pre-divorce per capita income for women and between 154 and 195 percent for men.⁶¹ As with total family income, the higher pre-divorce income is, the larger is the discrepancy in per capita income between the two post-divorce households. Thus, for couples with annual pre-divorce incomes under \$20,000, husbands' post-divorce per capita incomes were one and one-half times greater than those of the wives (\$10,450 compared to \$7,000). Among couples with annual pre-divorce incomes over

⁶⁰ Calculations assume full compliance with court-ordered alimony and child support awards and do not include the income of new spouses among those respondents who had remarried by the time of the interview. Weitzman notes that the inclusion of child support and alimony has the effect of underestimating male-female differences in post-divorce income levels. Ignoring spousal income, on the other hand, may overestimate (or possibly further underestimate) male-female differences in post-divorce income.

⁶¹ Recall the discussion in Chapter 2 that outlined the problems associated with interpreting per capita measures of expenditures on individual family members. Many of these problems also apply to per capita measures of family income. Because such a large proportion of a family's income is devoted to "shared goods" characterized by economies of scale, changes in per capita income are likely to overstate real changes in a family's economic well-being. This is particularly true in the case of larger families.

Table 5.8
Post-Divorce Incomes of Los Angeles Couples Married Less Than Ten Years

Pre-Divorce Yearly Family Income	Median One-Year Post-Divorce Income (adjusted)		Median Postdivorce Income as a Percentage of Pre-Divorce Family Income	
	Wife's	Husband's	Wife's	Husband's
Under \$20,000 (n=41)	9,050	10,750	71	94
\$20-\$29,999 (n=24)	13,000	18,100	56	78
\$30-\$39,999 (n=19)	15,000	30,000	39	75
\$40,000 + (n=21)	18,000	46,550	29	75

Pre-Divorce Yearly Family Income	Post-Divorce Per Capita Income (adjusted)		Postdivorce Per Capita Income as a Percentage of Pre-Divorce Per Capita Income	
	Wife's	Husband's	Wife's	Husband's
Under \$20,000 (n=41)	7,000	10,450	116	172
\$20-\$29,999 (n=24)	8,900	18,050	81	164
\$30-\$39,999 (n=19)	13,050	27,000	75	154
\$40,000 + (n=21)	12,000	45,700	51	195

Note: Based on divorces obtained in Los Angeles County between May and July of 1977. All dollar figures are rounded to the nearest \$50. Wife's adjusted income calculated by adding court-ordered alimony and child support awarded plus income from any other sources (such as wages or welfare) and husbands' income adjusted by subtracting court-ordered alimony and child support from total income.

Source: Lenore J. Weitzman, *The Divorce Revolution: The Unexpected Social and Economic Consequences for Women and Children in America*, 1985, The Free Press, New York. Tables 26 and 27.

\$40,000, however, husbands' post-divorce per capita incomes exceeded those of the wives by a factor of almost 4 (\$45,700 compared to \$12,000).⁶² Weitzman's analyses of total and per capita family income assume that child support awards are complied with; court-ordered child support amounts were deducted from husbands' total income and added to wives' total income. For the sample as a whole, mean child support awards were \$126 per month per child (\$1,512 per year) and \$195 per month per family (\$2,340 per year).

In addition to comparing pre- and post-divorce levels of total and per capita family income, Weitzman computed the income/needs of pre- and post-divorce families. The needs standard used by Weitzman is based on the Bureau of Labor Statistics' (BLS) Lower Standard Budget for an urban family of four, adjusted for family size and age-sex composition using the BLS Revised Equivalence Scales.⁶³ Using this measure of economic well-being, Weitzman found that one year after divorce men experienced a 42 percent increase in their standard of living while women experienced a decline of 73 percent.

While Weitzman's findings have attracted a great deal of attention, they have not gone unchallenged. In a recent article, Hoffman and Duncan argue that Weitzman's findings are

⁶² While Weitzman also considers marriages of longer duration (11 to 17 years and 18 years or longer), the overall findings are similar, namely (1) post-divorce family income is higher for men than for women, (2) the difference between pre- and post-divorce income is larger when per capita measures of family income are analyzed, and (3) the higher the level of pre-divorce income, the larger the post-divorce "relative deprivation" of wives compared to husbands. It is worth noting that since 1970, the median duration of marriages ending in divorce has ranged between 6.5 and 7 years.

⁶³ The original standard budget is found in Three Standards of Living for an Urban Family of Four Persons, Bureau of Labor Statistics, U.S. Department of Labor, 1967. This budget is based on a four-person family consisting of a husband, wife, and two children. Subsequent BLS adjustments of this standard (by type and size of family, age of oldest child, and age of head of household) are published in Revised Equivalence Scales for Estimating Equivalent Incomes or Budget Costs by Family Type, Bulletin No. 1570-2, Bureau of Labor Statistics, U.S. Department of Labor, 1968.

not only inconsistent with other researchers' findings but that they are internally inconsistent.⁶⁴ In order to illustrate the likely inaccuracy of Weitzman's finding that women's standard of living falls by 73 percent following divorce, they calculated the decline in income that would be required to produce such a drop in economic status (see Table 5.9). Employing the same needs standard as Weitzman, the authors first calculated the change in needs that results when family size drops by 1 for several different family types and sizes (see Column 1 of Table 5.9).⁶⁵ They then calculated the drop in total family income that, coupled with change in needs, would produce a reduction in income/needs of 73 percent (Column 2 of Table 5.9).

The drop in family income needed to effect a 73 percent drop in income/needs ranges from 73.3 percent to over 83 percent, with an average decline of 78.4 percent. While drops of this magnitude are not impossible, the authors argue that they are "suspiciously large" and, furthermore, that they are at variance with income declines reported by Weitzman herself. In the case of women married for less than 10 years, Weitzman reports declines in income between 21 percent (for families with pre-divorce incomes under \$20,000) and 71 percent (for families with pre-divorce incomes of \$40,000 or more). Note that the average decline

⁶⁴ See Saul D. Hoffman and Greg J. Duncan, "What Are the Economic Consequences of Divorce?," Demography, Vol. 25, No.4, November 1988.

For a more comprehensive (and less empirical) critique of Weitzman's work, see Jed H. Abraham, "*The Divorce Revolution Revisited: A Counter-Revolutionary Critique*," Northern Illinois University Law Review, Vol. 7, No. 2, 1989; and American Journal of Family Law, Vol. 3, No. 2, Summer 1989.

⁶⁵ The authors note that the use of the BLS budget in calculating income/needs produces needs that are approximately 25 to 30 percent higher than if the official poverty index standard were used. In addition, they comment that the BLS equivalence scales have some unusual features. The needs of a childless couple under the age of 35, for example, are 22 percent higher than the needs of a single parent with one child, while the needs of a couple with less than four children are 15 percent lower than a single-parent family of the same size.

Table 5.9

**Illustration of the Percentage Change in
Total Family Income and Per Capita Income
Needed to Effect a 73 Percent Reduction in Income/Needs**

Family Type and Size	Percent Change in Family Needs ^a	Required Percent Change in Income ^b	Expected Percent Change in Per Capita Income ^c
Household Head Under Age 35			
No Children	-25.5	-79.9	-59.8
1 Child	-32.6	-81.8	-72.7
2 Children	-6.2	-74.7	-66.3
3 Children	-1.2	-73.3	-66.6
Household Head Age 35 to 54			
No Children	-37.4	-83.1	-66.2
1 Child	-23.4	-79.3	-69.0
2 Children	-18.4	-78.0	-70.7
3 Children	-15.5	-77.2	-71.5
Average	-20.0	-78.4	-67.8

^a Needs standards are from the Bureau of Labor Statistics' (BLS) Lower Standard Budget for 1976 and 1977. Adjustments for family size and composition use Revised Equivalence Scales (BLS Bulletin No. 1570-2, 1968, Table 1). Calculations assume that family size falls by 1 after divorce.

^b The decrease in income that yields 73 percent reduction in income/needs for the change in needs in column 1.

^c Calculated from the income change in column 2.

Source: Saul D. Hoffman and Greg J. Duncan, "What Are the Economic Consequences of Divorce?," Demography, Vol. 25, No.4, November 1988.

reported in Table 5.9, 78.4 percent, does not even fall within Weitzman's range. According to Hoffman and Duncan, Weitzman's data are more consistent with declines for women and children on the order of 46.6 percent for average income, 21 percent for per capita income, and 33 percent for income/needs ratio. Thus, they conclude that "the economic consequences [of divorce] are serious, and gender-based inequities clearly exist; but the magnitude of the problem is not nearly as great as suggested by Weitzman."

In addition to the objections raised by Hoffman and Duncan, Weitzman's findings should be interpreted with caution for at least three reasons. First, the sample on which her analysis is based, 114 men and 114 women who obtained a divorce in Los Angeles County between May and July of 1977, is unlikely to be representative of the national divorced population. Second, although the study's response rate of 41.5 percent of the original sampling frame is not unreasonable, if the respondents differ systematically from the non-respondents in the original sampling frame, the results may not even be representative of the Los Angeles County divorced population. Finally, the sample size is quite small and specific dollar estimates may be quite unstable (i.e., unreliable).

McLindon

Based on case records identified through the Judicial Information Systems Division of the Connecticut State Judicial Department, McLindon examined 100 divorce cases filed in New Haven between 1982 and 1983.⁶⁶ McLindon's study is primarily devoted to assessing the effects of no-fault divorce on women; as a result, the basis of his study is a comparison of

⁶⁶ James B. McLindon, "Separate But Unequal: The Economic Disaster of Divorce for Women and Children," Family Law Quarterly, Vol. XXI, No. 3, Fall 1987.

the 1982-1983 divorce case sample with an earlier one drawn to represent the pre-no-fault divorce era.⁶⁷ McLindon summarizes this comparison as follows:

New Haven women in the no-fault era have seen their divorce awards decrease on nearly every front. Women received less alimony with less fringe benefits less often and with more restrictions. Child support, too, was lower in three of the four income groups. Women were generally granted a lower percentage of the family assets, a higher percentage of the debt, and a much smaller portion of the net assets under no-fault than under the fault regime. Finally, women of the later period also received smaller attorney's fees.⁶⁸

Among the New Haven women who were divorced during the 1982-1983 period, McLindon found that the mean level of wives' and children's per capita income dropped to 69 percent of the family's pre-divorce mean per capita income (\$122 compared to \$178 per week), while the husbands' per capita income increased to 187 percent of the pre-divorce level (\$333 compared to \$178 per week). Median levels of per capita income reflected the same general pattern: compared to their pre-divorce levels, median post-divorce per capita incomes were 62 percent for the wife and children (\$104 compared to \$168 per week), and 166 percent for the husband (\$279 compared to \$168 per week).⁶⁹

⁶⁷ In reviewing the extent to which findings based on New Haven could be generalized to the population as a whole, McLindon found average household size, rates of home ownership, and educational attainment to be very similar to national levels. With the exception of disproportionately higher concentrations in blue collar manufacturing jobs, employment patterns were also similar to those found at the national level. Compared to the nation as a whole, however, McLindon found that a larger proportion of New Haven residents live in urban areas, are white, and are older. In addition, New Haven's population was more prosperous than the national population and had a lower unemployment rate. Finally, New Haven residents were less likely to move and less likely to divorce.

⁶⁸ See p.386 of James B. McLindon, "Separate But Unequal: The Economic Disaster of Divorce for Women and Children," Family Law Quarterly, Vol. XXI, No. 3, Fall 1987.

⁶⁹ McLindon does not report either pre- or post-divorce total family incomes. He does, however, report women's pre-divorce earnings. Taken as a whole, women earned \$189 per week; these earnings ranged from \$94 per week for women in the lowest income group to \$243 per week for women in the highest income group.

The decline in post-divorce per capita income for women and children coupled with increases for the husbands was found among all income groups. Among couples with annual gross incomes (in 1984 dollars) under \$13,236, the median per capita post-divorce income among women and children was 70 percent of the pre-divorce level, while the husbands' per capita income level was 161 percent of their pre-divorce level.⁷⁰ The largest difference between husbands and wives was found among couples at the next highest income group, those couples with gross incomes between \$13,237 and \$25,000. For these couples, the median per capita post-divorce income of women and children was 62 percent of the pre-divorce level, and the husbands' per capita income level was 208 percent of pre-divorce levels. For the highest income group (those with over \$50,000 in annual gross income), the corresponding levels were 69 percent for the wife and children and 171 percent for the husband. As with many of the small scale studies reviewed in this chapter, these results should be interpreted with caution because of the very small sample sizes on which they are based. For example, the results on per capita family income are based on 63 observations. The results for various income groups are even smaller (7 observations in the case of couples earning \$13,236 and under, 15 observations for the \$13,237 to \$25,000 income group, and 13 observations for the over \$50,000 income group).

Wishik

Wishik studied the economic consequences of divorce based on data from four court districts in the state of Vermont.⁷¹ The study draws on 227 divorce cases closed between

⁷⁰ The break point of \$13,237 represents 125 percent of the poverty level for a non-farm family of four converted into 1984 dollars.

⁷¹ See Heather Ruth Wishik, "Economics of Divorce: An Exploratory Study," Family Law Quarterly, Volume XX, No. 1, Spring 1986.

October 1982 and February 1983 and includes follow-up data collected at least one year after the divorce had closed. Follow-up interviews with at least one spouse were conducted for 48 (or 21 percent) of the original cases and with both spouses in 13 cases. The interview sample differs from the whole sample on a number of related characteristics; compared to the sample as a whole, the interview sample had slightly longer marriages, a higher incidence of children, higher average income levels, and higher rates of home ownership.

Once again it is important to note that many components of Wishik's analysis are based on very small sample sizes. Data on annual pre- and post-divorce family income, for example, were only available for 25 families. Based on these cases, per capita annual income was found to drop significantly for women and children, while it rose for men. The mean annual pre-divorce per capita income was \$7,384. Husbands' annual post-divorce per capita family income rose to \$16,263 (or 220 percent of the pre-divorce level), while the level fell to \$4,941 (67 percent of pre-divorce income) for wives and \$5,505 (75 percent of pre-divorce income) for children.⁷²

In addition to the negative effects of divorce on income, Wishik found that very few women in Vermont (less than 7 percent of the 223 cases for which such data were available) received alimony or spousal maintenance awards, women were only slightly more likely than men to be awarded the family home (41 percent compared to 38 percent -- the remaining cases involved equal division or the home went to the children), and men who were awarded custody of the children were more likely to get the family home than women who were awarded custody (100 percent of the 11 men who were awarded sole custody compared to 30 percent of the 63 women who were awarded sole custody).

⁷² The reason that wives' and children's post-divorce per capita family income do not correspond is that there were three families in which the father was granted custody of the children.

Finally, with respect to child support, 82.3 percent of custodial parents in the study were awarded child support. The mean level of child support was \$23.84 per week (\$1,240 per year) for families with one child, \$41.58 per week (\$2,162 per year) for families with two children, and \$63.33 per week (\$3,293 per year) for families with three children. (No families in Wishik's sample had more than three children.)

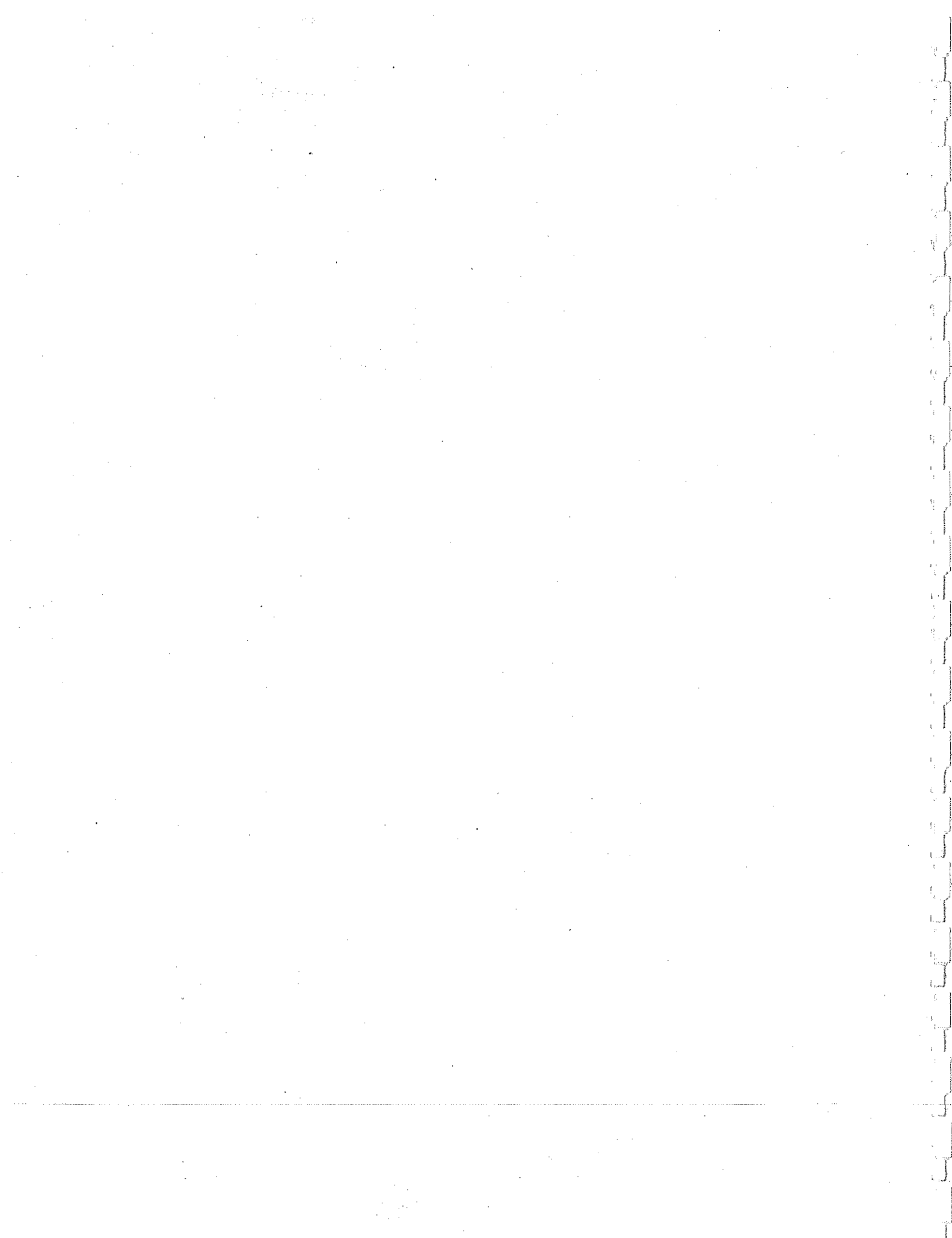
Many of the same problems characteristic of the other local-level studies apply to Wishik's study of Vermont. Based on the small size of the study sample, the low response rate, and the small number of interviews with both parents, Wishik's findings should be interpreted with caution.

5.3 Summary and Conclusions

The studies reviewed in this chapter span a period of almost 15 years: from the early-1970s to the mid-1980s. Findings from both nationally-representative studies (based on the Survey of Income and Program Participation and the Panel Study of Income Dynamics) and small-scale local studies are consistent: marital disruption is economically detrimental for women and children and generally beneficial for men. There is less consensus, however, concerning the magnitude of these effects. Estimates for the effects on women and children range from reductions in living standards on the order of 30 percent, based on analyses of the Survey of Income and Program Participation (SIPP) and the Panel Study of Income Dynamics (PSID), to a decline of 73 percent, based on Weitzman's study of data from Los Angeles County. Generally, the estimates based on local-level data tend to be higher than estimates derived from nationally-representative data. While it is possible that divorced women in the various local areas that have been studied experience relatively larger declines in economic well-being than is the case nationally, numerous methodological problems

associated with these studies suggest that these estimates may be somewhat misleading. Differences in the time periods covered and in prevailing macroeconomic conditions may also account for discrepancies in the various estimates. Finally, a number of the studies reviewed in this chapter indicate that differences in economic well-being by family type are due to the fact that economic disadvantage tends to precede marital disruption.

That women and children do experience real declines in economic well-being following divorce is clearly supported by the studies reviewed. In addition, several studies found that remarriage tends to restore economic well-being (and perhaps raise it above pre-divorce levels) for women and children. Equally important, however, is the rise in the standard of living experienced by divorced men. While the provision of child support ensures that noncustodial parents (usually fathers) continue to assume some responsibility in the costs of raising of their children, guidelines used to determine the level of child support explicitly address the issue of how reductions in economic well-being are to be divided between post-divorce custodial and noncustodial households. An overview of these guidelines and their relationship to estimates on expenditures on children are the subject of the following chapter.



6. CHILD SUPPORT GUIDELINES AND ESTIMATES OF EXPENDITURES ON CHILDREN

The Federal government has been sensitive to the increase in the number of children living in situations where child support is potentially an important source of income. Beginning in 1975, the government has taken a number of important actions to improve the nation's child support system. Legislation passed in 1984 and 1988 added enforcement tools and required states to take additional steps to ensure that their child support orders are equitable. In particular, the Family Support Act of 1988 requires states to use their child support guidelines as a rebuttable presumption; proposed regulations issued by the Department of Health and Human Services in September of 1989 address states' obligations to establish effective and equitable guidelines. The Federal government has not, however, prescribed detailed criteria for establishing the guidelines or minimum levels of support. Instead, states are required to develop their own guidelines for the child support orders in their state and are afforded significant latitude in doing so.

The first section of this chapter describes each of the three major categories of guidelines that are currently in use. Hypothetical examples (based essentially on a divorce scenario with representative child custody arrangements and neither parent having remarried) are used to demonstrate how the guidelines work in general; because of their generality, these examples do not necessarily represent the precise manner in which any particular state implements its guidelines. The second section analyzes the relationship between the existing child support guidelines and the estimates of expenditures on children that were summarized in Chapter 4. In addition to considering actual expenditure patterns on children, there are other factors that are relevant to the development of child support guidelines. While a consideration of these factors is outside the scope of this report, the third section briefly outlines some of the most important of these factors. The final section summarizes the findings and implications of this chapter.

6.1 Summary of Child Support Guideline

Although every state's child support guideline is distinct, currently, there are three major categories of state child support guidelines in use -- percentage of income, income shares, and the Melson formula. Each of these guidelines is described in turn. Appendix 6.1 contains tables that summarize the characteristics of each of the states' child support guideline formulae.

It is important to note that the references to state guidelines throughout this chapter and the summary presented in Appendix 6.1 reflect our interpretation of the states' guidelines in effect on February 1, 1990.¹ Since this date, states may have changed either the type of child support guideline in effect or the methods used to implement the guideline. Finally, in some states, officials are encouraged to take into account (or make adjustments for) factors not explicitly addressed in their guidelines. The discussion in this chapter cannot fully account for these types of situations.

Percentage of Income Guideline

The percentage of income formula is by far the simplest of the child support guidelines. Support orders are calculated as a specified percentage of the noncustodial parent's income, and the order is independent of the income level of the custodial parent.

An example may serve to make the discussion more concrete. Suppose that after a divorce the custodial parent is earning \$10,000 per year, the noncustodial parent is earning \$20,000, the couple has two children, and the guideline sets the child support order at 30 percent of the noncustodial parent's income. The support order would then be \$6,000 (30

¹ In the text, the term "state" is meant to include both states and jurisdictions (the District of Columbia, Guam, Puerto Rico, and the Virgin Islands).

percent of \$20,000). If the child support order is paid in full, income in the custodial household would be \$16,000, and the noncustodial parent's income would be \$14,000 (after paying the support). Recall that the order is unaffected by the custodial parent's income; only the noncustodial parent's income level is relevant in setting the order. In the example above, if the custodial parent's earnings were \$20,000, the award would still be the same; if the child support order is paid in full, the income of the custodial household would then be \$26,000, and the noncustodial parent's income would be \$14,000 (after paying the support).

While the percentage of income guideline is relatively straightforward, there are a few situations in which the percentage of income guideline may lead to some unexpected outcomes. These situations arise when the percentage of the noncustodial parent's income to be paid in support varies with his/her level of income and this percentage is applied to total (rather than marginal) income. Suppose, for example, that for noncustodial income levels under \$10,000, 20 percent of income must be paid in child support, and for income levels of \$10,000 or more, some other percentage of income (either higher or lower) must be paid in support. In this situation, a small change in the noncustodial parent's income (from just below \$10,000 to slightly more than \$10,000) may lead to a very large change in the amount of child support to be paid; the level of the award can increase or decrease depending on whether the percentage of income to be paid in child support at income levels of \$10,000 or more is higher or lower than the corresponding percentage at incomes less than \$10,000.²

² In one state, for example, under certain conditions child support is set at 20 percent of the noncustodial parent's income for income levels between \$7,501 and \$15,000, and at 21 percent for incomes between \$15,001 and 25,000. Thus, an increase in the annual income of the noncustodial parent from \$15,000 to \$15,001 (an increase of only \$1) results in an increase in child support of \$150. In another state, the percentage of income paid in child support declines from 21.8 percent for incomes between \$4,500 and \$8,499 to 21.4 percent for incomes between \$8,500 and \$12,249. An increase in income from \$8,499 to \$8,500

During 1989, the percentage of income guideline was used by 23 states, but by early 1990, only 17 states were still using this guideline.³ There are several variations of the percentage of income guideline currently in use. These variations arise because of differences in the definition of income that is used (net or gross), and whether the percent of income to be paid is constant or varies with income levels (see Table 6.1). Of the 17 states currently using the percentage of income formula, 10 use a flat percent of income for determining awards. The awards in these states range from 17 to 21 percent of income for one child, 25 to 32 percent of income for two children, and 29 to 41 percent of income for three children.⁴ The other 7 states use a variable percent of income for determining awards. In 2 of these states, the percentage of income to be paid in child support decreases with the level of income, and in the other 5 states the percentage of income to be paid in child support increases with the level of income. In one state, for example, the percentage of net

(again, a \$1 increase), results in a decrease in child support of \$34 (from \$1,853 to \$1,819). Only if the noncustodial parent's income increases to \$8,657 will the child support reach the former level. States can avoid such situations by using a constant rate or by applying the different rates to marginal income. For example, states could apply one rate to the first \$10,000 of income, a different rate to the next \$10,000 of income, etc. It is important to note that this situation can also arise under the income shares guideline.

³ The six states that are no longer using the percentage of income guideline are now all using the income shares guideline (described below). The shift away from the percentage of income guideline appears to have been caused in part by dissatisfaction with the absence of "cost-sharing" under this guideline (i.e., the support order does not decrease with an increase in the custodial parent's income).

It should be noted that four jurisdictions use the percentage of income guideline but also allow for consideration of the custodial parent's income under some of the following conditions: (1) the custodial parent's income exceeds a specified limit, (2) the children spend a substantial portion of their time with the noncustodial parent, or (3) there are child-rearing expenditures on items specifically not covered by the basic support amount.

⁴ It should be noted that these ranges include states that use a net definition of income as well as states that use a gross definition of income. The distinction between net and gross income is discussed below.

income to be paid for one child varies from 14 percent (when the custodial parent's monthly net income is \$500) to 25 percent (when monthly net income is greater than \$1,000); over the same range of income, the percentage to be paid for two children varies from 17 to 30 percent, while for three children the percentage varies from 20 to 35 percent. In the 7 states using a variable percentage of income, support orders range from 12 to 28.8 percent of income for one child, 16.8 to 34.6 percent of income for two children, and 20 to 38.2 percent of income for three children.⁵

TABLE 6.1
Number of States Currently Using Variations of
Percentage of Income Guideline

	INCOME BASE			
	<u>Net</u>	<u>Gross</u>	<u>Adjusted Gross</u>	<u>Total</u>
Flat Percent	5	3	2	10
Variable Percent	5	0	2	7
Total	10	3	4	17

Source: Data from the National Center for State Courts and individual state legislation. See Appendix 6.1 for more detail.

There is also considerable variation in how the states that use the percentage of income guideline define the level of income on which child support is to be paid. Ten of the states currently using the percentage of income guideline define income on a net basis,

⁵ Once again, these ranges include states that use a net definition of income as well as states that use a gross definition of income.

allowing for deductions for taxes as well as other expenses. In addition to taxes, the allowable deductions in these 10 states include:

- prior support orders (8 states),
- health programs (7 states),
- contributions to mandatory retirement or pension programs (6 states),
- union dues (6 states),
- child care expenses (1 state),
- business expenses (1 state), and
- "other" expenses (3 states).

Seven states use an adjusted gross definition of income, which allows for some expenses to be deducted, but does not allow for Federal taxes to be deducted.⁶ Three states use a gross definition of income with no deductions.

Table 6.2 summarizes the range of the percentage of income to be paid by a noncustodial parent for states using the percentage of income guideline. The ranges are reported separately for states using a net definition of income and those using an adjusted gross definition of income. In general, the results in Table 6.2 indicate that at a fixed level of income (and for a fixed number of the children), the range in the percentage of income to be paid by noncustodial parents is quite broad. The range is particularly wide for states using a net definition of income. For example, noncustodial parents who have net monthly incomes of \$500 will pay between 14 and 25 percent of this income for the support of one child. Finally, in states using either net or adjusted gross definitions of income, the percentage paid in child support increases as the number of children being supported increases.

In addition to this basic characterization of the percentage of income formula, there are other considerations that enter into the guideline in some states. Some states, for

⁶ The allowable deductions vary from state to state but are similar to those used by the 10 states that use a net definition of income.

TABLE 6.2
PERCENTAGE OF INCOME TO BE PAID BY NONCUSTODIAL PARENT
(PERCENTAGE OF INCOME GUIDELINE)

Net Definition of Income

<u>Number of Children</u>	<u>Noncustodial Parent's Monthly Income</u>			
	<u>\$500</u>	<u>\$2,000</u>	<u>\$4,000</u>	<u>\$6,000</u>
1	14.0-25.0	16.5-25.0	19.5-25.0	13.0-25.0
2	17.0-32.0	24.3-32.0	22.5-32.0	15.0-32.0
3	20.0-41.0	32.0-41.0	24.8-41.0	16.5-41.0

Adjusted Gross Definition of Income

<u>Number of Children</u>	<u>Noncustodial Parent's Monthly Income</u>			
	<u>\$500</u>	<u>\$2,000</u>	<u>\$4,000</u>	<u>\$6,000</u>
1	17.0-25.0	17.0-27.0	17.0-27.0	17.0-27.0
2	25.0-28.0	25.0-30.0	25.0-30.0	25.0-30.0
3	28.5-31.0	28.5-33.0	28.5-33.0	28.5-33.0

Note: Columns represent the minimum and maximum percentage of income that is to be paid for child support among the 17 states that are currently using the percentage of income guideline (see Appendix 6.1 for more detail). Where a range of percentages was reported in the guidelines, the mid-point of the range was used for this table.

Source: Data from the National Center for State Courts and individual state legislation.

example, allow for modifications to the basic support amount for expenses such as child care, extraordinary medical or dental needs, education, transportation, and health insurance.

Income Shares Guideline

The intent of the income shares guideline is to ensure that the same portion of combined parental income is spent on children in one-parent families as would be spent in two-parent families. These guidelines are explicitly based on empirical estimates of the expenditures that are made by parents on behalf of children in intact families.⁷ The relationship between the empirical estimates of expenditures on children and the income shares guidelines actually adopted by the states, however, is a fairly loose one. Many states appear to have taken the basic estimates of expenditures on children and adjusted them, using a variety of concepts of "fairness" and "ability to pay." In some states, for example, the percentage of income paid for child support steadily decreases as the level of combined parental income increases; in other states the percentage of income paid for child support first increases and then decreases as the level of combined parental income increases.⁸

Under the income shares guideline, each parent contributes, in accordance to his/her relative gross or net income, to meet the support level indicated by the formula. The custodial parent's portion of the support obligation is assumed to be met in the course of

⁷ Many of these guidelines are based on estimates of expenditures on children developed by Thomas Espenshade in Investing in Children: New Estimates of Parental Expenditures, Washington, D.C.: Urban Institute Press, 1984. These estimates were developed using the Engel method and are based on 1972 CEX data.

⁸ If the percentage of income paid for child support was constant (i.e., did not vary with the level of combined parental income), the income shares guideline would be identical to the percentage of income guideline. This point is discussed below.

caring for the child. The noncustodial parent's contribution is then set equal to the total level of support (as determined by the formula) minus the custodial parent's imputed contribution.

Once again, an example may serve to clarify the discussion. As before, suppose the custodial parent is earning \$10,000 per year and the noncustodial parent is earning \$20,000. Two-thirds of combined parental income is earned by the noncustodial parent; according to the income shares formula, two-thirds of the "cost" of the family's children is to be paid by that parent. Further suppose that the couple has two children, who according to the formula, would account for \$9,000 per year in expenditures in an intact family (30 percent of total income).⁹ Using the income shares formula, the noncustodial parent would be ordered to pay \$6,000 per year (two-thirds of \$9,000) in child support. As in our example for the percentage of income formula, income in the custodial household would be \$16,000, and the noncustodial parent's income would be \$14,000 (after paying the support).

There is, however, an important difference between the percentage of income and income shares guidelines. Unlike the percentage of income guideline, the noncustodial parent's child support obligations do vary with the income of the custodial parent. In the example above, suppose that the percentage of income to be paid in child support is 25 percent of income when total parental income is \$20,000, 30 percent when income is \$30,000, and 33 percent when total income is \$40,000. In this case, if the custodial parent had no income (while the noncustodial parent's income remained at \$20,000), the support order would actually decline from \$6,000 to \$5,000 (25 percent of \$20,000). If, however, the custodial parent's income increased to \$20,000, the noncustodial parent's child support order

⁹ It should be noted that while this is a hypothetical example which is not based on any particular state's formula, it closely resembles the calculations that would be made within a typical income shares state.

would increase to \$6,667 (33 percent of \$40,000 minus the custodial parent's imputed contribution of one-half of this amount).¹⁰

This difference between the percentage of income and income shares guidelines arises because under the latter guideline, the percentage of income to be paid in child support varies with the level of combined parental income. The implication of this variation is that in states that use the income shares guidelines and require that the percentage of income to be paid in child support increase with increases in combined parental income, the possibility exists that an increase in the custodial parent's income may result in an increase in the child support order for the noncustodial parent.¹¹ Conversely, a decrease in the income of the custodial parent may result in a decrease in the child support order for the noncustodial parent.¹²

In states in which the percentage of income to be paid in child support decreases with increases in combined parental income, the possibility exists that an increase in the noncustodial parent's income could result in a decrease in the child support order. Conversely, a decrease in the noncustodial parent's income could result in an increase in the child support order. These situations will only arise, however, when the change in income is

¹⁰ Note that in this example, the percent of income to be paid increases with the level of combined parental income. If, however, the percent of income to be paid decreases with the level of income, the results in the example would be reversed. A decrease in the income of the custodial parent would result in an increase in the child support obligation of the noncustodial parent, and an increase in the income of the custodial parent would result in a decrease in the child support obligation of the noncustodial parent. (In the example in the text, a decrease in the income of the custodial parent would result in a decrease in the child support obligation of the noncustodial parent, and an increase in the income of the custodial parent would result in an increase in the child support obligation of the noncustodial parent.)

¹¹ This occurs if the increase in the custodial parent's income leads to a higher percentage of income to be paid in child support.

¹² This occurs if the decrease in the custodial parent's income leads to a lower percentage of income to be paid in child support.

sufficiently large so as to shift combined parental income to a level where a different (either higher or lower) percentage of income must be paid in child support. It is the fact that the percentage of income to be paid in child support varies across income levels under the income shares guideline that gives rise to these peculiar situations.

The variation in the percentage of income to be paid in child support (as combined income changes) is, however, a key feature of the income shares guideline. If the percentage of income to be paid in child support does not vary with the level of income, then the income shares guideline is identical to the percentage of income guideline.

To understand this point, consider once again the numerical example outlined above. The child support order was \$6,000 when the custodial parent's income was \$10,000, the noncustodial parent's income was \$20,000, and 30 percent of combined parental income was to be available to the children. If this percentage remains constant as income varies, then the noncustodial parent will owe \$6,000 in child support irrespective of the custodial parent's income level.¹³ If the custodial parent has no income, the non-custodial parent owes 30 percent of \$20,000 (which is \$6,000). If the custodial parent has an income of \$20,000, then the noncustodial parent owes one-half of 30 percent of \$40,000 (combined parental income), which amounts to \$6,000. In short, the child support order does not vary with the income of the custodial parent; i.e., the income shares guideline becomes indistinguishable from the percentage of income guideline when a fixed percentage of (combined parental) income is paid in support.¹⁴

¹³ This assumes that the noncustodial parent's income remains fixed at \$20,000.

¹⁴ Algebraically, the noncustodial parent's child support order is equal to

$$p(I_C + I_{NC}) - pI_C = pI_{NC}$$

where p equals the percentage of combined parental income to be available to the children, I_C equals the income of the custodial parent, and I_{NC} equals the income of the noncustodial parent.

In income shares states, as in percentage of income states, the use of marginal child support rates will eliminate anomalies where small increases in the income of the noncustodial parent results in a reduction of the child support owed or an increase that exceeds the increase in income. However, situations can still arise where a decrease in the custodial parent's income results in a decrease in child support owed or an increase in the custodial parent's income results in an increase in the support owed. The use of marginal rates rather than average rates is likely to mitigate these effects as well.

Currently, 34 states are using a version of the income shares guideline which has been modeled after the Washington Uniform Child Support Guidelines developed in 1984. As with the percentage of income formula, there are several possible variations of the income shares formula. Six states have guidelines that vary with the age of the child. Twelve states use a net definition of income, which allows for Federal income taxes to be deducted from the base level of income on which child support is to be paid. Other allowable deductions in these states include:

- contributions to mandatory retirement or pension programs (12 states),
- health programs (10 states),
- union dues (10 states),
- prior support orders (9 states),
- deductions for business expenses (3 states),
- alimony (1 state),
- "other" expenses (1 state), and
- deductions for child care (1 state).

In the 21 states that use an adjusted gross definition of income (i.e., do not allow deductions for taxes), allowable deductions include:

- prior support orders (20 states),
- health programs (13 states),
- alimony (7 states),
- "other" expenses (3 states),
- joint debts (1 state),
- business expenses (1 state), and
- contributions to mandatory retirement and pension programs (1 state).

One state uses a gross definition of income that allows for no deductions.

As was mentioned above, the support orders in the income shares states vary with the level of combined parental income. The range of the percentage of income to be paid by a noncustodial parent and how it varies with combined parental income are summarized in Table 6.3. The top half of the table summarizes the range of income to be paid in child support in 11 states that use a net definition of income, while the bottom half summarizes the range for the 21 states that use an adjusted gross definition of income.¹⁵

An examination of Table 6.3 reveals that for both states using a net definition of income and states using an adjusted gross definition of income, the percentage of income to be paid by the noncustodial parent at various levels of combined monthly parental income spans a fairly large range. This range is particularly large at low levels of combined parental income (\$500 per month). At this level of income, some states require only a token level of child support. At slightly higher levels of combined parental income, however, the percentage of income to be paid increases substantially. At moderate to high levels of combined monthly parental income (\$2,000 to \$6,000), the range in states using adjusted gross income becomes somewhat smaller than the corresponding ranges for net income states.

In 14 of the income shares states, the percentage of income paid for child support steadily decreases as the level of combined parental income increases. In another 16 of the income shares states, the percentage of income paid for child support first increases and then decreases as the level of parental income increases. In 3 of the income shares states, the percentage of income paid to child support increases as the level of parental income increases; these increases, however, are quite modest and occur at low levels of income, after which the percentage is constant. Finally, in one jurisdiction the percentage of income

¹⁵ In one jurisdiction the basic child support award is calculated using the actual level of expenditures attributable to the children; this jurisdiction, which uses a net definition of income, is not included in Table 6.3.

TABLE 6.3
PERCENTAGE OF INCOME TO BE PAID BY NONCUSTODIAL PARENT
(INCOME SHARES GUIDELINE)

Net Definition of Income

Combined Monthly Parental Income

<u>Number of Children</u>	<u>\$500</u>	<u>\$2,000</u>	<u>\$4,000</u>	<u>\$6,000</u>
1	0.4-24.8	16.8-26.7	14.5-25.8	13.5-25.0
2	0.4-38.3	24.0-44.0	23.6-37.2	22.0-33.3
3	0.4-48.0	28.5-48.0	29.0-44.7	27.6-41.7

Adjusted Gross Definition of Income

Combined Monthly Parental Income

<u>Number of Children</u>	<u>\$500</u>	<u>\$2,000</u>	<u>\$4,000</u>	<u>\$6,000</u>
1	4.0-24.2	12.6-18.4	10.6-17.0	9.9-17.0
2	5.0-41.7	20.9-27.6	16.6-23.2	15.4-25.0
3	5.0-50.0	26.7-34.6	20.3-30.3	19.0-29.0

Note: Columns represent the minimum and maximum percentage of income that is to be paid for child support among 33 states currently using the income shares guideline. See Appendix 6.1 for more details. Where a range of percentages was reported in the guidelines, the mid-point of the range was used for this table.

Source: Data from the National Center for State Courts and individual state legislation.

paid in child support varies with each case because the amount of the basic child support award is determined by calculating the actual expenses attributed to children on a case by case basis.

Most states using the income shares guideline explicitly allow for modifications to the basic support amount for expenses such as child care, extraordinary medical or dental needs, education, transportation, and health insurance.

The Melson Formula

The Melson formula, also called the Delaware Child Support formula, was developed by Judge Elwood Melson, Jr. and was first implemented in Delaware in 1979. This guideline is based on the premise that the noncustodial parent should be allowed to meet his/her own basic needs, but that all remaining income is considered available to meet the needs of the children.

The procedure for calculating child support orders under the Melson formula consists of three steps. First, a basic needs level is established for each child and both adults. Second, each of the parents' income in excess of his/her own individual basic needs is used to meet the basic support needs of the child(ren), where the obligation is allocated on the basis of the each parent's share of net income in excess of the parents' self support allowances.¹⁶ Third, a fixed percentage of any income that remains after these basic needs are met is added to the support order, thereby enabling children to benefit from the living standards of their parents above the level at which basic needs are met. This latter amount is

¹⁶ In two of the three states using the Melson formula, the noncustodial parent is required to make a minimal child support payment even if that parent's income is too low to meet his/her own basic needs.

referred to as the standard of living adjustment (SOLA). As with the income shares formula, the custodial parent's contribution is assumed to be met in the course of caring for the child.

Following through with the example used earlier, suppose the custodial parent has a net income of \$10,000 per year, the noncustodial parent has a net income of \$20,000, and the couple has two children. The basic annual needs assumed by the Melson formula in Delaware are \$6,600 for each parent, \$2,640 for the first child, and \$1,980 for the second child (for a total of \$4,620 for the children).¹⁷ After meeting his/her own basic needs, the custodial parent has \$3,400 ($\$10,000 - \$6,600$) that can be used to meet child support obligations, while the noncustodial parent has \$13,400 ($\$20,000 - \$6,600$). Consequently, the custodial parent will be responsible for meeting 20.24 percent [$\$3,400 / (\$3,400 + \$13,400)$] of the children's basic needs, and the noncustodial parent will be responsible for the remainder. The children's basic needs obligations of the custodial and noncustodial parents are \$935 (20.24 percent of \$4,620) and \$3,685 (79.76 percent of \$4,620), respectively. This leaves the noncustodial parent with \$9,715 ($\$13,400 - \$3,685$) of "discretionary income," income above and beyond basic needs. The Delaware SOLA stipulates that two children will be awarded 27 percent of the noncustodial parent's discretionary income, so the SOLA amounts to \$2,623 in this example. As a result, the total award comes to \$6,308 ($\$3,685 + \$2,623$). If the child support is paid in full, income in the custodial parent's household would be \$16,308, and the noncustodial parent's income would be \$13,692 (after paying the support).

Three states (Delaware, Hawaii, and West Virginia) are currently using the Melson formula. They have all implemented it in the fashion outlined in the above example.¹⁸ The

¹⁷ The basic needs of each additional child are defined to be \$1,320 per annum.

¹⁸ With the exception of Delaware, which recently eliminated such considerations, the guideline also allows for work-related expenses and cohabiters (complications not considered in the example).

SOLA is between 12 and 18 percent for one child, 18 and 27 percent for two children, and 24 and 35 percent for three children. All 3 states using the Melson formula take account of prior support orders and child care expenses; 2 of these states also consider second families.¹⁹ All 3 states use a net definition of income, and one state (West Virginia) places a cap on the level of income to which the guideline is applied.

Comparison of Guidelines

The results from each of the examples outlined above are summarized in Table 6.4. Given the assumption that the custodial parent earns \$10,000 and the noncustodial parent earns \$20,000, there is remarkably little variation in the level of child support orders across the three types of guidelines currently in use (percentage of income, income shares, and Melson). It is important to note that major differences can arise when family circumstances vary from those assumed above. For example, when the noncustodial parent's income is very low (less than \$8,000), the orders set by the Melson formula would be much lower than those set by the percentage of income and income shares guidelines. The reason for this is that the Melson formula allows the noncustodial parent to keep some portion of income to cover his/her own basic needs before income is shared with the custodial household.

Table 6.5 summarizes how child support orders would vary under each guideline with a variety of combinations of income levels of both parents (prior to payment of the support).²⁰ While the examples in Table 6.5 are hypothetical they demonstrate an important

¹⁹ States which consider second families deduct the basic needs allowance of all dependents the noncustodial parent is legally obliged to support (including those living in his/her household) from the noncustodial parent's income prior to calculating the SOLA component of the child support award.

²⁰ These income levels have no special significance, rather they were chosen to demonstrate how child support orders would vary under a variety of circumstances.

TABLE 6.4

HYPOTHETICAL AWARD AND INCOME LEVELS
 UNDER ALTERNATIVE GUIDELINES^a
 (in dollars)

<u>Guideline</u>	<u>Support Order</u>	<u>Post-Award Custodial Income</u>	<u>Post-Award Noncustodial Income</u>
Percent of Income	\$6,000	\$16,000	\$14,000
Income Shares	6,000	16,000	14,000
Melson	6,308	16,308	13,692

^a In each case it is assumed that the custodial parent has income of \$10,000 per year, the noncustodial parent has income of \$20,000, and the couple has two children. For the percentage of income and income shares guidelines, it is assumed that 30 percent of income was to be paid in support. For the Melson guideline, it is assumed that basic needs for adults are \$6,600 per year, those of the two children are \$4,620, and that 27 percent of income above the basic needs level is to be paid in child support. See text for details.

TABLE 6.5
HYPOTHETICAL CHILD SUPPORT ORDER
UNDER ALTERNATIVE GUIDELINES

<u>Income of</u>								
Custodial Parent:	\$5,000	\$10,000	\$10,000	\$20,000	\$20,000	\$40,000	\$40,000	\$30,000
Noncustodial Parent:	<u>\$5,000</u>	<u>\$10,000</u>	<u>\$20,000</u>	<u>\$10,000</u>	<u>\$40,000</u>	<u>\$20,000</u>	<u>\$20,000</u>	<u>\$30,000</u>
<u>Guideline^a</u>								
Percentage of Income	\$ 1,500	\$ 3,000	\$ 6,000	\$ 3,000	\$ 12,000	\$ 6,000	\$ 6,000	\$ 9,000
Income Shares	\$ 750	\$ 3,000	\$ 6,000	\$ 3,000	\$ 8,000	\$ 4,000	\$ 4,000	\$ 6,000
Melson	\$ 100	\$ 2,604	\$ 6,308	\$ 1,601	\$ 11,425	\$ 4,584	\$ 4,584	\$ 8,004

^a For the percentage of income guideline, it is assumed that 30 percent of income is to be paid in support. For the income shares guideline it is assumed that 15, 30, and 20 percent of income is to be paid in support. If combined parental income is less than \$10,000 per year; between \$10,000 and \$40,000; and over \$40,000, respectively. For the Melson guideline, it is assumed that basic needs for adults are \$6,600 per year, those of the two children are \$4,620, that 27 percent of income above the basic needs level is to be paid in child support, and that there is a minimum award of \$50 per month per child (as is the case in Delaware).

point – the support order can vary substantially from guideline to guideline, depending on the exact circumstances of the custodial household relative to the noncustodial household. The variations in the orders across the guidelines (in relative terms) may be especially large at extremely high and low levels of parental income or when the two parents have substantially different levels of earnings.

In addition to variations in child support orders that result from differences in the type of guideline used, important variations can result from differences in the manner in which a specific guideline is implemented. In particular, even among those states using the same type of guideline, the percentage of income to be paid in child support (and, consequently, the level of child support) varies considerably. This point is discussed below.

6.2 Guidelines and Their Relationship to Expenditures on Children

In reviewing the theoretical and empirical literature on estimating expenditures on children, two key points emerged from the discussion in previous chapters. First, there are substantial conceptual and empirical difficulties involved in estimating expenditures on children.²¹ Second, while it may be possible to identify upper and lower bounds for the estimates of expenditures made on behalf of children, the range of credible estimates remains quite wide.²² In a two-parent family, the estimates indicate that the percentage of total

²¹ Chapter 4 reviewed a variety of techniques developed for estimating these expenditures. Those techniques that are strongest at a conceptual level cannot be practically implemented, while techniques that are easiest to implement (the Engel and Rothbarth estimators) suffer from conceptual difficulties.

²² Recall that the Engel estimator, which uses the percentage of family expenditures spent on food as a proxy for economic well-being, is likely to overestimate the level of expenditures made on behalf of children and the Rothbarth estimator, which uses the level of expenditures on "adult goods" as a proxy for economic well-being, is likely to underestimate expenditures parents make on behalf of children (see Chapter 2 for more detail).

family expenditures attributable to one child is between 16 and 33 percent of total expenditures; for two children it is between 27 and 50 percent; and for three children it is between 35 and 60 percent. In a one-parent family, the estimates indicate that the percentage of total family expenditures attributable to two children is between 52 and 78 percent. It is important to bear in mind that these bounds represent average expenditures obtained using different estimating techniques. The actual range in expenditures is likely to be even greater.²³ Despite this broad range, all of these estimates indicate that children represent a substantial expense to their parents.

This section considers the relationship between the child support guidelines that are currently in use, the extent to which these guidelines are based on expenditures on children, and the estimates of the expenditures on children that are summarized in Chapter 4. Three alternative scenarios, in which combined parental income is varied, are considered:

	<u>Gross Annual Parental Income</u>		
	Noncustodial	Custodial	Combined
Scenario 1:	\$15,000	\$10,000	\$25,000
Scenario 2:	\$30,000	\$15,000	\$45,000
Scenario 3:	\$35,000	\$25,000	\$60,000

In order to facilitate the comparison of the level of orders set by the guidelines to estimates of expenditures on children, it is first necessary to recalibrate the estimates summarized in Chapter 4. Those estimates reported the percentage of total family expenditures that are attributable to the family's children. The guidelines, however, stipulate that a specified

²³ Lazear and Michael (1988) present evidence in Chapter 7 of their book that the actual range of expenditures is, in fact, quite broad.

percentage of income (not expenditures) be paid in child support.²⁴ Consequently, some mechanism is needed for translating the estimates in Chapter 4 from percentage of expenditures into percentage of income.

The percentage of a family's income that is spent on its children is equal to: (A) the percentage of the family's total expenditures that is attributable to its children, multiplied by (B) the percentage of total family income that is consumed (i.e., spent).²⁵ Table 4.5 in Chapter 4 summarizes the estimates of (A), the percentage of a two-parent family's total expenditures that is attributable to two children (27-49 percent of total expenditures in average- and high-income families).²⁶ For noncustodial parents with annual incomes of \$15,000, \$30,000, and \$35,000 (monthly incomes of \$1,250, \$2,500, and \$2,917), the percentage of total noncustodial income that is spent, (B), is assumed to be 79, 70, and 67 percent, respectively.²⁷ Consequently, by multiplying (A) and (B) we conclude that under

²⁴ We noted in Chapter 4 the theoretical and practical reasons why expenditures on children are calculated as a percentage of total expenditures rather than income. For establishing child support awards, however, income is a much more practical base than expenditures because income provides a better measure of ability to pay and is less subject to manipulation (to avoid paying child support) than expenditures.

²⁵ A numerical example may clarify this point. Suppose that 35 percent of the family's total expenditures are attributable for its children and 70 percent of family income is consumed. Then it follows that the percentage of a family's income that is spent on the children is 24.5 (which is $.7 \times .35$).

²⁶ A noncustodial parent with an annual income of \$15,000, whose ex-spouse has an income of \$10,000, would be considered to be average income (by the definitions used in Table 4.5 which are based on combined parental income). A noncustodial parent with an income of \$30,000, but combined parental income of at least \$45,000, would be considered to be high income.

²⁷ The difference between income and expenditures consists of taxes and savings. The following average rates of taxation and savings are assumed:

Monthly Income	Average Tax Rate:			Average Savings Rate	Expenditures as a Percentage of Gross Income
	Federal	FICA	State & Local		
\$1,250	9.9	7.65	2.0	1.45	79
\$2,500	15.3	7.65	2.6	4.45	70
\$2,917	17.1	7.65	3.0	5.25	67

the 3 scenarios outlined above (noncustodial parent's monthly income of \$1,250, \$2,500, and \$2,917), the percentage of the parent's income that would be spent on children is 21-39, 19-34, and 18-33 percent, respectively.

In addition to recalibrating the estimates of expenditures on children that were reported in Chapter 4, it is necessary to make adjustments to account for the fact that the definition of "income" that forms the basis for calculating child support varies from state to state. Some states calculate child support as a percentage of "gross" income, allowing no deductions; others use an "adjusted gross" definition of income, allowing for a variety of deductions (e.g., previous support orders, health insurance, mandatory pension contributions, etc.); and other states use "net" income, allowing for deductions similar to those used for calculating adjusted gross income, as well as state and Federal income taxes. These deductions have the effect of decreasing the percentage of total income paid in child support for a given nominal rate.²⁸

We have adjusted the percentage of income to be paid in child support to account for the average level of health insurance premiums paid by noncustodial parents.²⁹ In states in which this deduction is not allowed, no adjustment was needed. However, in states in which this deduction is allowed, the percentage of gross income to be paid in child support is lower

The Federal tax rates are based on data from IRS publication #17, Your Federal Income Tax (1988). The state tax rates are based on data from the 1990 World Almanac. The FICA tax rates are published in the 1989 Social Security Bulletin. The savings rate is based on a national savings rate of 4 approximately percent (Table C-26, Economic Report of the President, February 1990); we have then simply assumed that this 4 percent rate is distributed across various income levels as indicated above.

²⁸ It should be noted, however, that an additional dollar of deductions does not decrease child support by one dollar; rather it decreases child support by the fraction (percentage) of each dollar that is to be paid in support.

²⁹ This particular deduction was chosen because it is the one that is most commonly used in practice. See Appendix 6.2 for more details.

than the percentage of corresponding net income to be paid in child support.³⁰ For these states, we have adjusted the statutory percentage which is to be paid on net income to account for the deductions from gross income. In other words, we report an estimate of the effective percentage of gross income to be paid in child support.

We have also adjusted the percentage of income to be paid in child support to account for taxes (Federal, state, and social security). Once again, this adjustment was only made for states that allow taxes to be deducted from the base level of income on which child support is to be paid (i.e., for states that use a net definition of income).³¹

In addition to allowable deductions, many states adjust child support orders upwards when expenses are incurred for items such as child care, education, unusual medical expenses, or special needs. These upward adjustments have the effect of increasing the percentage of gross income paid in child support. We have adjusted the percentage of income to be paid in child support to account for the average level of child care expenditures (net of tax credits to the custodial parent when applicable).³² Again, this adjustment was made only for those states that allow for such additions to the basic child support order.

Before turning to a discussion of these results, it is important to emphasize that a wide variety of alternative assumptions could have been made. The assumptions chosen here represent only one of many common cases. If actual allowable deductions are higher (lower) than what we have assumed, then the effective percentage of income paid in child support

³⁰ An example may clarify this point. Suppose that a noncustodial parent earns \$30,000 and has allowable deductions of \$6,000 and that 30 percent of net income (\$24,000) is to be paid in child support. In this case, annual child support would amount to \$7,200, which is 24 percent of gross income (\$30,000).

³¹ See Appendix 6.2 for more details.

³² Once again, this particular addition to the basic guideline was chosen because it is the one that is most commonly used in practice. See Appendix 6.2 for more details.

will be lower (higher) than our estimates. If the actual additions to the basic support order are higher (lower) than what we have assumed, then the effective percentage of income paid in child support will be higher (lower) than our estimates.

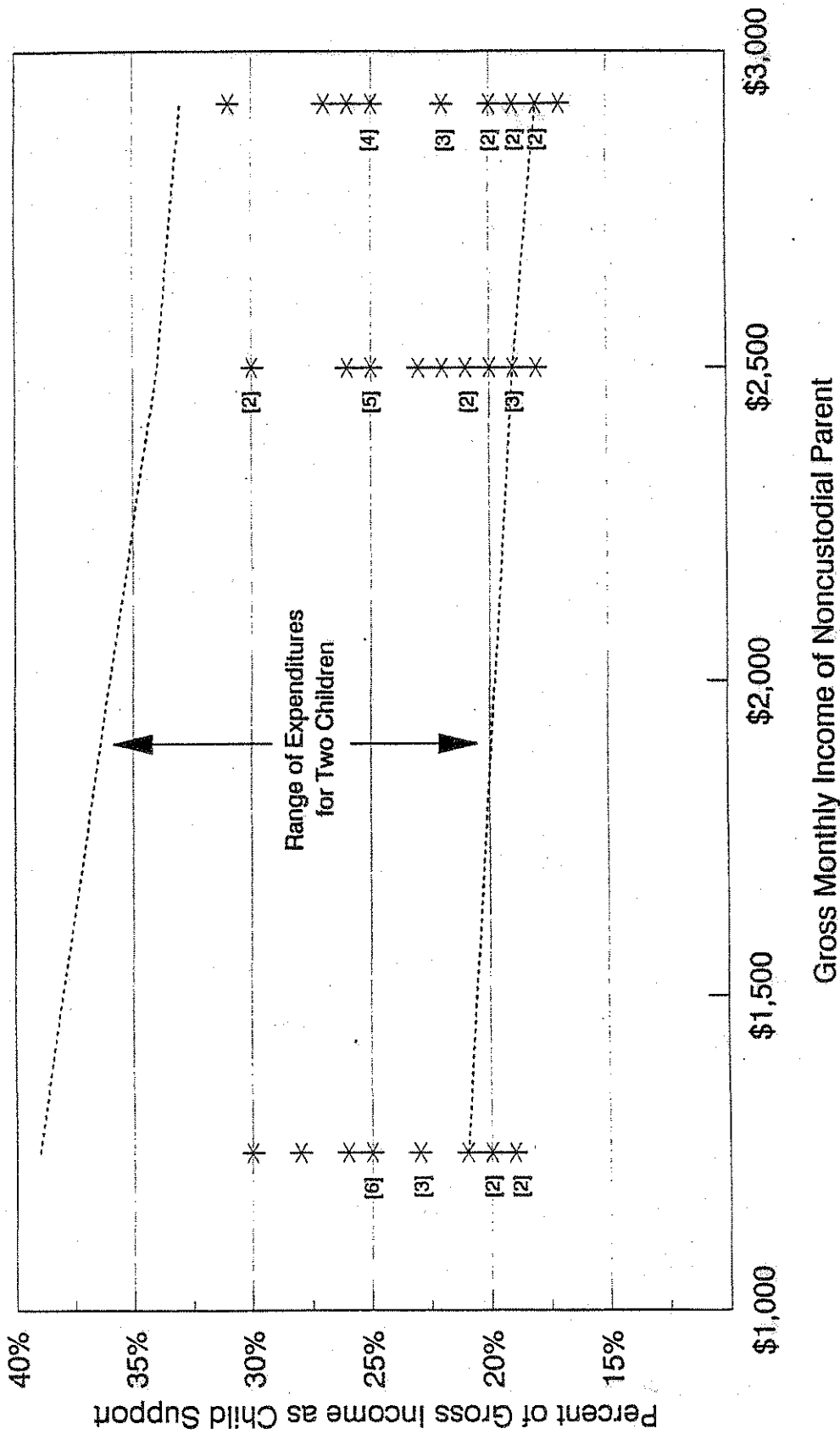
Finally, we have made assumptions about the rates of saving and taxation -- assumptions that have been used in recalibrating the estimates of expenditures on children as a percentage of total family expenditures (reported in Chapter 4) to translate them into expenditures on children as a percentage of income. The tax rate and savings rate assumptions were based on reasonable but inexact interpretations of state tax schedules and national savings and income data. Additional analysis would permit improvements in these assumptions. If the percentage of income that is spent (rather than being saved or paid in taxes) is higher (lower) than that which has been assumed here, the actual percentage of income that would be spent on children will be higher (lower) than our estimates.

The Percentage of Income Guideline

The percentage of income guideline is closely related to expenditure concepts. In all of the 17 states currently using the percentage of income guideline, the percentage of the noncustodial parent's income to be paid in child support increases with the number of children for whom support is to be paid.

Figure 6.1 plots the effective percentage of gross income to be paid in child support for two children (in each of the 3 scenarios outlined above) for the 17 states that now use the percentage of income guideline. In addition, Figure 6.1 plots the lower and upper bounds of estimates of expenditures on children (as a percentage of gross income) based on the Engel and Rothbarth estimators, thereby enabling a determination of the extent to which the percentage of income guidelines are consistent with the estimates of expenditures on

Figure 6.1
 Child Support as a Percent of Income
 Percentage of Income States



Note: Monthly incomes assumed in this figure are as follows: \$1,250, \$2,500, and \$2,917 for the noncustodial parent, and \$833, \$1,250, and \$2,083, respectively, for the custodial parent. See p. 6-21 for details.

children.³³ Recall that the three scenarios assumed the noncustodial parent's income to be \$15,000, \$30,000, and \$35,000 which corresponds to monthly incomes of \$1,250, \$2,500, and \$2,917, respectively.³⁴

Figure 6.1 indicates that in a majority of states using the percentage of income guideline, the amount to be paid in child support is roughly consistent with the estimates of the expenditures on children summarized in Chapter 4. Although child support orders in the majority of these states fall within the range of expenditures on children, at a monthly income level of \$1,250 (for the noncustodial parent), 4 states appear to require the noncustodial parent to pay a lower percentage of income in child support than would be spent if the family were intact. At monthly income levels of both \$2,500 and \$2,917, one state appears to require child support payments that are less than the lower bound of the range of expenditures on children. Many of the other states, however, fall close to the lower bound of the range of estimates of expenditures on children. Furthermore, the percentage of income states tend to cluster closer to the lower bound of the range of estimates of expenditures on children than they do to the upper bound.

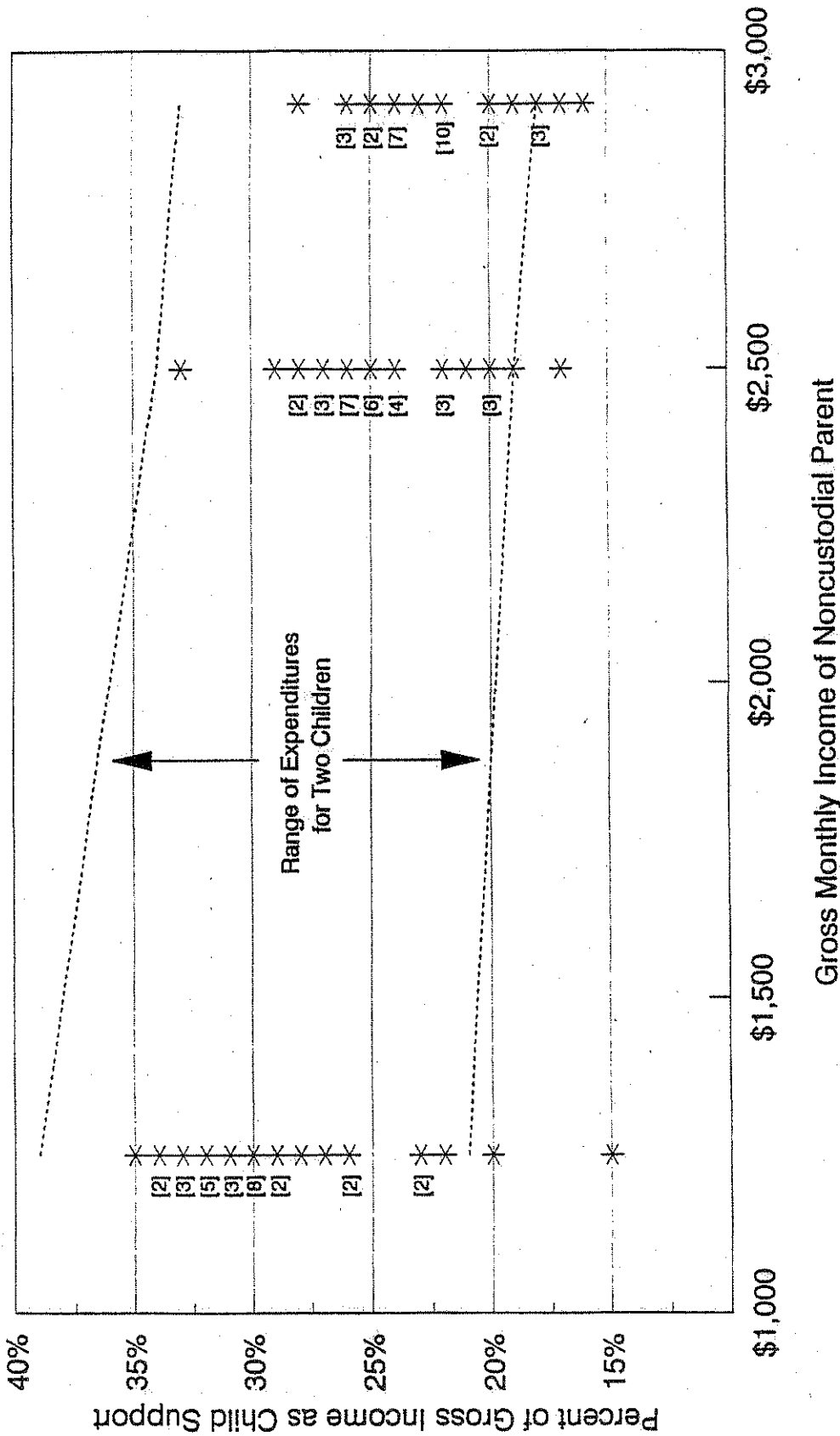
The Income Shares Guideline

The basic foundation of the income shares guideline is that the percentage of combined parental income spent on children in one-parent families should be the same as in two-parent families. Figure 6.2 plots the effective percentage of gross income to be paid in

³³ Recall that these lower and upper bounds are estimated to be 21-39, 19-34, and 18-33 percent for monthly incomes of \$1,250, \$2,500, and \$2,917, respectively.

³⁴ The corresponding monthly incomes of the custodial parent are assumed to be \$833, \$1,250, and \$2,083, respectively.

Figure 6.2
Child Support as a Percent of Income
Income Shares States



Note: Monthly incomes assumed in this figure are as follows: \$1,250, \$2,500, and \$2,917 for the noncustodial parent, and \$833, \$1,250, and \$2,063, respectively, for the custodial parent. See p. 6-21 for details. One state is excluded from the third scenario (noncustodial parent income = \$2,917) as the combined parental income in this case exceeds the maximum considered by the guideline. Another state uses the actual level of expenditures on children, and at any given income level, the child support award varies on a case by case basis.

child support (for 2 children) for 33 states currently using the income shares guideline, along with the lower and upper bounds of the range of estimates of expenditures on children.³⁵

As is the case with states that use the percentage of income guideline, estimates of child support orders in states using the income shares guideline appear to be more or less consistent with the estimates of expenditures on children. There are, however, some exceptions. At a monthly income of \$1,250 (for the noncustodial parent), 2 states appear to require the noncustodial parent to pay a lower percentage of income in child support than would be spent if the family were intact. In one of these states the child support award falls substantially below the lower bound of what the (average) noncustodial parent would have contributed to the support of the children, had the family remained intact. At income levels of \$2,500 and \$2,917 per month, 1 and 2 of the 33 income shares states appear to require the noncustodial parent to pay a lower percentage of income than would be spent if the family were intact. Many other states, however, fall very close to the lower bound of the estimates. Under the 3 scenarios assumed here, there are no cases in which the state requires the noncustodial parent to pay more in child support than would have been spent to support the children in an intact family. In general, as with the percentage of income states, the income shares states tend to cluster closer to the lower bound of the range of estimates of expenditures on children than they do to the upper bound of the range of estimates. This is particularly true at the higher income levels (\$2,500 and \$2,917 per month).

³⁵ Once again, recall that these lower and upper bounds are estimated to be 21-39, 19-34, and 18-33 percent for monthly incomes of \$1,500, \$2,500, and \$2,917, respectively.

In one jurisdiction the basic child support award is calculated using the actual level of expenditures attributable to the children; this jurisdiction is not included in Figure 6.2.

The Melson Formula

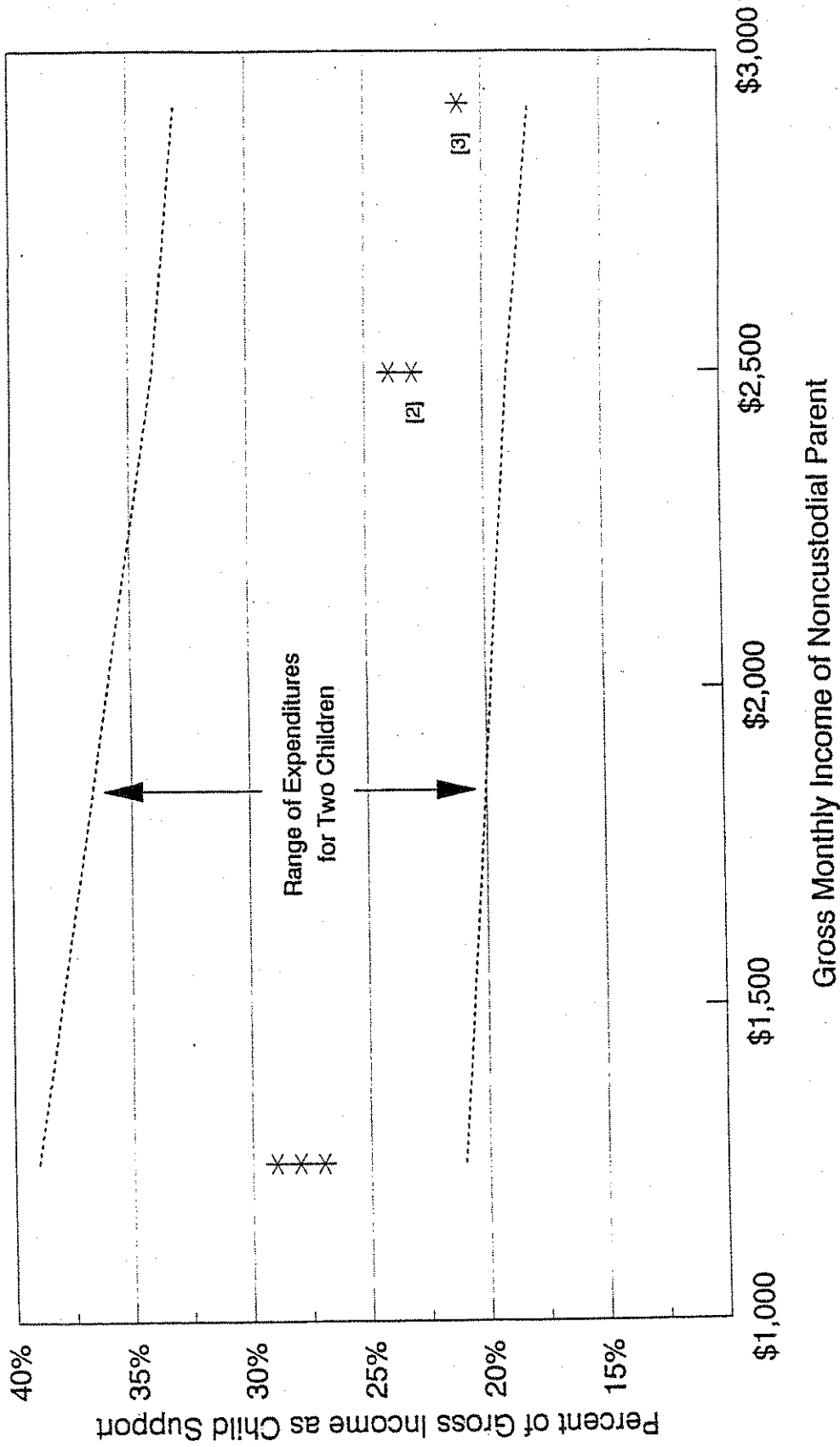
The objectives of the Melson formula are to first meet the basic needs of the children (but only after the basic needs of the noncustodial adult have been met) and then to establish a child support order that would enable the children to share in the noncustodial parent's income in excess of the basic needs obligation. Figure 6.3 plots the effective percentage of income to be paid in child support (for 2 children), along with the lower and upper bound of the range of estimates of expenditures on children, for the 3 states that now use the Melson formula.³⁶ Figure 6.3 indicates that under all 3 scenarios, the percentage of income that is to be paid in child support under the Melson formula is consistent with the estimates of expenditures on children for high-income families. However, in all 3 states using the Melson formula, at higher income levels, the required child support payments are closer to the lower bound of the range of estimates of expenditures that would have been made on children in intact families.

6.3 Other Factors that May be Considered in Establishing Child Support Guidelines

The focus of this report is on expenditures on children in households of different sizes and compositions and the relationship between these expenditure patterns and child support guidelines. There are many other factors that may be considered in developing child support guidelines. Although a detailed discussion of these factors is beyond the scope of this report, we note some of the most important factors in this section. Guidelines are not specifically required to cover the points raised here, but as guidelines are developed or

³⁶ Once again, recall that these lower and upper bounds are estimated to be 21-39, 19-34, and 18-33 percent for monthly incomes of \$1,500, \$2,500, and \$2,917, respectively.

Figure 6.3
 Child Support as a Percent of Income
 Melson Guideline States



Note: Monthly incomes assumed in this figure are as follows: \$1,250, \$2,500, and \$2,917 for the noncustodial parent, and \$833, \$1,250, and \$2,083, respectively, for the custodial parent. See p. 6-21 for details.

revised, states may want to consider how these factors are addressed in setting awards.³⁷

We have grouped the factors that should be considered into five broad categories: (1) defining the income base on which child support is calculated, (2) taking into account obligations and expenses of noncustodial parents for the children covered by the award, (3) dealing with special categories of expenditures on the children, (4) taking into account obligations and expenses for children not covered by the award, and (5) incorporating concepts of fairness into the guidelines.

Definitions of Income

Because all child support guidelines are based on the income of one or both parents, it is important that income be defined appropriately. The various definitional and operational issues that arise in this context include whether gross or net income is used, how voluntary unemployment (or underemployment) is handled, and how self-employment income is treated.

As the discussion earlier in this chapter indicated, gross income consists of all income received from earnings, dividends, interest, property, transfer payments, and other sources.

Net income is calculated by subtracting income taxes and other designated expenses from gross income. Guidelines can also be based on adjusted gross income where a limited number of adjustments are permitted.

Both of these definitions of income have advantages and disadvantages. Gross income is simpler to calculate and is less susceptible to individual manipulation than net

³⁷ There are other considerations of interest that cannot be practically incorporated into child support guidelines. For example, because of the time required to raise children the custodial parent may devote time to the children that could have been spent earning additional income or in leisure. On the other hand, the children are likely to bring pleasure to the custodial parent, increasing his/her well-being relative to the noncustodial parent. While both of these situations occur, currently, there are no practical means of incorporating them into child support guidelines.

income. For example, when net income is used a parent can spend his/her income on items that are deductible in order to affect the size of the child support order generated by the guideline. On the other hand, net income is more likely than gross income to reflect total expenditures, and states that wish to link their guidelines to estimates of expenditures on children will have to make fewer adjustments if net income is used. Thus, net income may more accurately reflect parents' ability to pay child support, and if this is viewed as desirable, net income is preferable to gross income.

The selection of gross or net income for guidelines does not by itself imply higher or lower levels of child support. While gross income is usually greater than net income, the use of higher child support rates can be used to generate generally equivalent amounts of child support for parents in similar economic circumstances.

All states consider the income of the noncustodial parent in calculating their child support awards. In states using the income shares and Melson guidelines, however, the income of the custodial parent is also a factor in determining child support. For various reasons, one or both parents may choose not to work or may take a position with low wages or fewer hours. For example, a parent may leave the workforce to care for children from a second family. In cases where parents choose not to work states can impute potential income to the parent and use this amount in calculating child support awards.

Implementing such procedures involves some difficult calculations. For example, in the case of a parent that is not employed, rules must be established for determining if the lack of employment is voluntary and what wage the person could earn. For employed parents, rules must be established regarding whether the hours and wages are at the parent's full potential.

Self-employment may also call for special considerations in the development of guidelines. Unless the percentage of income guideline is used, these considerations are relevant for both parents. First, self-employed individuals often have the flexibility of designating some portion of their income as fringe benefits rather than income. For example, self-employed individuals can provide themselves with generous health and pension benefits and have their business pay for their automobile. This can result in situations where two individuals have the same actual income, but the self-employed person appears to have lower gross and net income. Guidelines can attempt to correct for this type of situation by defining income for child support purposes differently than is done for tax purposes. Alternatively, because of the difficulties involved in specifying precisely how self-employment income should be treated, such matters can be considered grounds for rebutting the applicability of the guidelines and be decided on a case-by-case basis.

A second problem with self-employment income is that it may vary significantly from month to month or year to year. Thus, guidelines may need to address situations where income is unstable. This situation also can occur for workers whose earnings are based on commissions or who are eligible for large but unpredictable bonuses.

Expenses of the Noncustodial Parent for the Child Covered by the Award

Often both parents incur expenses for raising children even if only one parent has physical custody. In developing guidelines, consideration may be given to how the expenses of both parents are taken into account. While these issues are particularly salient in the context of shared physical custody and extended visitation with the noncustodial parent, they may also apply to expenses incurred by noncustodial parents.

In some situations the parents share physical custody of their children. Shared physical custody is likely to raise the total expenditures required to provide a child with a given standard of living, as both parents must provide living space for the child, and transportation costs may increase. These arrangements can vary from one where the parents each have custody of the children for 50 percent of the time to a situation where one parent has custody for a small fraction of the time. When custody is shared, both parents incur costs for raising the child, and the guidelines can be structured to take the expenditures of both parents into account. States have developed several formulas to deal with shared custody, often with a minimum custody threshold (e.g., a parent must have custody for at least 30 percent of the time before the formula is applied).

As with shared physical custody, extended visitation with the noncustodial parent may also be considered in developing guidelines. During an extended visitation, such as for a summer vacation period, the expenditures of the custodial parent decline while those of the noncustodial parent increase (e.g., for food). Again, guidelines can take into account the changes in expenditure patterns that result from extended visitations.

Special Categories of Expenditures

In developing their child support guidelines, many states have given special consideration to certain types of expenditures. Particular categories of interest include medical care and health insurance and work-related child care. The issues surrounding these considerations are discussed below.

Medical care and the cost of providing health insurance can be considered under all three types of guidelines currently in use, and some states have included explicit provisions to address medical and/or health insurance costs. Currently, for cases handled by state child

support enforcement agencies, the state is required to petition for inclusion of health insurance of the child when employment-based health insurance is available to the noncustodial parent, unless the custodial parent and children have satisfactory health insurance (other than Medicaid). A few states have gone beyond the Federal requirements by mandating that health insurance be provided in all child support cases or for all cases where the cost is reasonable. Some states provide credit for the provision of health insurance by deducting the cost of health insurance from parental income prior to calculating the child support award. Other states reduce the child support award to take into account the provision of health coverage provided by the noncustodial parent. Some states do both, and some do neither.

States should consider the most equitable means for distributing health care costs between the custodial and noncustodial parents. These considerations should take into account the fact that many health insurance policies do not cover routine or preventive health care or have substantial deductibles and/or co-payments which the parent seeking the health care (usually the custodial parent) would have to pay. A dollar-for-dollar reduction in the child support award based on premium cost could reduce the custodial parent's ability to cover such costs. However, when noncustodial parents are required to provide insurance coverage, some mechanism for providing credit for the cost of that coverage should be incorporated into the guidelines (e.g., reducing income by the amount of the health insurance premium attributable to the child).

States may also consider adding additional amounts of cash support to allow the custodial parent to buy the needed insurance coverage. Part of the difficulty in determining an appropriate cost-sharing strategy is that it is often not possible to determine the "cost" of such coverage, especially when the noncustodial parent (or custodial parent) may have

health insurance coverage for other dependents. Additionally, it is not possible to determine in advance what a child's health care costs will be.

The method of handling extraordinary medical expenses (especially when not covered by health insurance) also has to be considered in the development of guidelines. Some of these expenses, such as the correction of some congenital birth defects or mental illness, may be long-term and life-threatening and can place a substantial drain on the resources of both parents. Others, such as orthodontic treatment or treatment of chronic allergies, may be considered medically necessary by one parent and optional by the other. Because the insurance coverage and cost of these types of conditions vary significantly, it may not be feasible to incorporate provisions for such costs in the guidelines themselves. However, states can increase the uniform handling of both health insurance and extraordinary medical costs by developing criteria for when such issues become grounds for rebutting the presumption that the guidelines apply.

Child care expenses incurred by a working custodial parent are another special factor that may either be included or treated outside the guidelines. The costs of child care vary substantially across households, as some working parents have a relative or friend take care of children at little or no cost, while other parents must pay substantial amounts. If desired, guidelines could include child care expenditures that enable a custodial parent to work, possibly with the costs allocated between the parents in proportion to their incomes. Some parents are eligible for a Federal income tax child care credit, and to avoid oversubsidizing child care, this credit can be subtracted from the costs.

In some instances, there will be other unusual or extraordinary costs associated with raising a child. Examples include transportation, private school education, tutoring, and special dietary requirements. Like child care and extraordinary medical expenses, provision

can be made in the guidelines to accommodate these expenses. Alternatively, states might view some expenses, such as private school tuition, as inappropriate for coverage, or the guidelines can leave such expenses up to the courts or administrative agencies for decisions on a case-by case basis.

Support Obligations for Other Dependents

One of the most complex issues in developing child support guidelines is how financial obligations for other children are taken into account. Both the custodial and noncustodial parents may have financial obligations for children from relationships prior to or after their common children were born.

Several options are available for dealing with these situations, and children from prior families may be treated differently from children from subsequent families. If a support order exists for a prior family, one approach is to subtract the child support for the prior family from income in determining the award. This approach is practical, but it may result in first-born children receiving greater levels of child support than children born later. Alternatively, guidelines may treat the children equally. This may be difficult, however, if it requires modifying an established order -- particularly in cases where the orders are in different states.

Subsequent families may also be considered in developing child support guidelines. The issues that arise in this context, however, are not limited to accounting for the financial obligations for children from subsequent families. If step-children are present, the guidelines may stipulate whether or not allowances are made for their support. Also, if there is another adult in the subsequent family with income, the guidelines might specify whether or not the income of this adult should be considered in calculating child support awards. Finally, if consideration is given to other dependents and the income of other adults in the parent's

becomes difficult to determine what would have been spent on the children (and adults) had the family remained intact. Support based on current income may not correspond to the level of support provided prior to family dissolution. As a result, approaches which use the resources of both the custodial and noncustodial households to equalize the well-being of members of each household will need to consider the economic changes that result from marital dissolution and the formation of second families.

Another approach to developing "fair" child support guidelines involves allocating minimum amounts of income needed to meet the basic needs of each family member and sharing any income in excess of the basic needs amount with children. One potential problem with this approach is the difficulty of establishing a single basic needs amount that is appropriate for all circumstances. Another problem is that at low levels of income, this approach may result in very low (and possibly zero) levels of child support because all of the parent's income is needed to meet his/her basic needs. This in turn requires that the custodial parent and children bear a disproportionate share of reductions in economic well-being. On the other hand, if noncustodial parents are unable to meet their own basic needs (such as food and shelter), then they are unlikely to be able to sustain employment in order to meet their child support obligations.

Finally, many concepts of fairness in the context of child support guidelines use as a benchmark the economic well-being of children in intact families prior to marital dissolution. Child support guidelines, however, also apply to cases in which the custodial parent, noncustodial parent, and child(ren) never lived together. As a result, concepts of fairness used to develop guidelines must take into account the equitable treatment of both marital and nonmarital cases.

6.4 Summary

Although each state's child support guideline is distinct, there are currently three general types of child support guidelines in use. The first is the percentage of income guideline, which is used in 15 states, the District of Columbia, and Puerto Rico. The percentage of income guideline establishes child support orders as a specified percentage of the noncustodial parent's income. The level of the order is independent of the level of income of the custodial parent. The second is the income shares guideline, which is used in 32 states, the Virgin Islands, and Guam. The income shares guideline also establishes child support orders as a specified percentage of the noncustodial parent's income. In income shares states, however, the size of the award also varies with the level of income of the custodial parent. The third guideline, the Melson formula, establishes child support orders that require that both parents contribute (in proportion in their share of combined parental income) to the basic needs of the child after the basic needs of the adults have been met; the support order increases in proportion to the level of the noncustodial parent's income above the basic needs amount. Three states use the Melson formula.

There are a variety of ways in which each of these guidelines are actually implemented. States differ in terms of how income is defined (net income, gross income, or adjusted gross income). Many states also allow for additions to the basic support amount for unusually large expenses (e.g., child care, medical, and education) and/or deductions from the income on which support is to be paid (e.g., for previous support orders or health insurance). Finally, states differ in the percentage of income that they require the noncustodial parent to pay in child support.

Under a broad range of circumstances, the three types of guidelines currently in use set support orders that are very similar to one another. Furthermore, with some exceptions,

household, states may want to examine carefully whether their guidelines treat custodial and noncustodial parents in a similar or equitable manner.

In summary, the presence and needs of prior or subsequent families may be considered in the development of appropriate child support guidelines. The issues that arise in these situations, however, are often quite complex. The solutions that are simplest -- such as subtracting prior support orders from income or disregarding financial obligations for subsequent dependents -- will generally lead to more generous child support awards for the children born first. However, parents may be less willing to pay child support when doing so creates inequities among their children. On the other hand, trying to provide equal consideration for all children may result in child support awards that are inadequate to meet the needs of the first family. Finally, while the consideration of other adults and step-children in the household may complicate the development of guidelines, it may also be perceived as increasing the equity of the child support awards.

Concepts of Fairness

In developing child support guidelines, states often want to make the guidelines as fair as possible to all affected parties -- the children, the custodial parent, and the noncustodial parent. The issues discussed above address specific matters such as how income is defined and how particular expenses are treated. In this section, more general concepts of fairness are considered. The discussion does not propose strict rules for states to use; rather, the intent is to encourage further consideration of the goals that may be fostered by the guidelines and how achieving some goals may conflict with others.

Two factors inherent in family dissolutions complicate the development of "fair" child support guidelines. First, when a household breaks up the family members can no longer

enjoy the economies of scale that an intact family enjoys. Consequently, it is inevitable that the standard of living must decline for at least one of the two new households. A second problem is that both children and custodial parents benefit from higher levels of child support -- once a household receives income, it can be used to benefit all members of the household regardless of its source. The co-mingling of funds that inevitably occurs within a household, therefore, complicates any assessment of what is fair to children and what is fair to both the custodial and non-custodial parents. In developing guidelines, consideration should be given to alternative ways of distributing reductions in economic well-being in an equitable manner:

Because the purpose of child support is to address the needs of children, one option is to structure guidelines in such a way that children are as well off after their family splits up as they were before. Although this concept sounds appealing initially, it leads to a support structure that many would consider unfair for other reasons. Because families are likely to equalize well-being within the family, providing sufficient child support to maintain the child's level of well-being would also maintain the custodial parent's level of well-being. Thus, the noncustodial parent would be the only party whose standard of living declines, and he/she would bear the burden of maintaining not only the child's level of well-being but the custodial parent's well-being as well.

It may be considered fairer if child support guidelines ensure that declines in well-being are shared by both the custodial and noncustodial households. One such approach is to attempt to maintain the level of expenditures on children at the level that would have prevailed had the family remained intact and to divide this amount in proportion to the parents' incomes. However, if the labor force participation or income producing behavior of either parent changes as a result of marital disruption (or the formation of second families), it

all three guidelines (the percentage of income, income shares, and Melson) are implemented by the states in such a way as to be within the range of estimates of expenditures for children in two-parent families. In most of these states, however, the percentage of income to be paid in child support tends to be much closer to the lower bound of the range of estimates of expenditures on children than it is to the upper bound. Under the three representative scenarios considered in this chapter, there are no states in which the child support orders are greater than the upper bound of the range of estimates of expenditures on children.

Although the majority of states fall within the range estimates of expenditures on children, the number of states falling below the lower bound of this range is not insignificant. Under the three scenarios considered, the number of states falling below the minimum estimate of parental expenditures on children ranges between 2 and 6. This is a finding that should not be ignored, particularly in light of the very broad range covered by the empirical estimates and the generality of the scenarios considered.

It is also important to recognize that the relationship between the child support orders generated by various guidelines and the relationship between the child support orders and estimates of expenditures on children are not solely a function of the specific type of child support guideline used -- at least as important, is the manner in which a given guideline is implemented. A general exception to this point occurs in states that allow noncustodial parents to retain a minimum level of income for their basic needs (i.e., states that provide for a self-support reserve) prior to requiring more than a token level of child support. This is the case in all states using the Melson formula because the formula is designed explicitly to allow for a self-support reserve, as well as other states which have built a self-support reserve into their rate structures.

In addition to estimates of expenditures made by parents on behalf of their children, states may want to consider a number of other factors when developing or revising their guidelines. These include income-related factors (e.g., how the income base on which child support is calculated is defined, and how self-employment income and voluntary unemployment are treated), as well as other factors that can be given special consideration (e.g. shared physical custody arrangements, special child-related expenditure categories such as health care and child care expenses, and obligations and expenses for former or subsequent dependents). These additional considerations can be dealt with either by including special provisions in the guidelines or by treating them as grounds for rebutting application of the guidelines, thereby having courts and administrative agencies take them into account on an individual basis in setting awards. Finally, the development of state child support guidelines necessarily involves making judgments about fairness and equity, and these too must be considered.

A recurring theme throughout this report has been that without a substantial increase in income, a reduction in the standard of living of at least one household is inevitable when parents do not live together. The central issue that must be confronted in determining whether or not existing child support guidelines are appropriate is how the guidelines distribute the reduction in living standards between the custodial and noncustodial households. The estimates of how much parents spend on behalf of their children, both in intact and single-parent families, can help to inform this determination. Ultimately, however, the determination must be made on the basis of value judgements about what is fair and what is not.

Appendix 6.1

SUMMARY OF CHILD SUPPORT GUIDELINES

This appendix provides a summary of state child support guidelines, highlighting a number of key features of each state's child support legislation. The summary is by no means an exhaustive outline of each guideline; rather, it provides a broad overview of the various aspects of child support legislation in 54 jurisdictions (50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam). As child support legislation is constantly changing, this appendix only reflects a "snapshot" of the guidelines in effect February 1, 1990. The features of child support legislation included in the summaries are briefly described below.

MEASURE OF INCOME USED IN FORMULA

The definition of income used in the calculation of child support awards (e.g., net income, gross income, etc.), as well as deductions allowed to gross income are reported. Each state guideline varies in the type of income considered, as well as the precise definitions of allowable deductions. Only the most important and common deductions are reported; most guidelines also include others.

PERCENTAGE OF INCOME REQUIRED

The percentage of income paid for the basic child support obligation is reported as a range for one to four children for four monthly income levels: \$500, \$2,000, \$4,000, and \$6,000. If the guidelines did not prescribe a rate for low (\$500) or high (\$6,000) incomes, the rates for the lowest or highest nondiscretionary income levels are reported. The percentage reported are computed by dividing the basic child support obligation by the measure of income used in the guideline.

Note that the percentages reported apply to the combined parental income in states using the income shares guidelines, and to the noncustodial parent's income in the states using the percentage of income and Melson guidelines. Also, in some cases the percentages apply to gross income, and in others they apply to net income. Consequently, the percentages reported in Column 3 are not strictly comparable across states.

SPECIAL CIRCUMSTANCES CONSIDERED

This column highlights some particular circumstances for which adjustments to the basic child support obligation are allowed (e.g., the ages of the children, prior support obligations for the noncustodial parent, etc.).

ADDITIONS TO THE BASIC AWARD

Most states allow various additions to the basic child support obligation due to extraordinary costs the court deems necessary or appropriate. These include (but are not

limited to) child care expenses, education expenses (for private or special education), transportation expenses for visitation purposes, and extraordinary medical and dental expenses. Although many guidelines prescribe further additions, only the most common and important additions are reported.

INCOME LIMITS

Many guidelines specify income levels beyond which the guidelines do not apply (and awards are determined at the discretion of the court). Where stipulated in the guidelines, these income limits are reported in the summary. In addition, caps on the income available for consideration in child support calculations and limits to the size of the child support payment are also reported. Some guidelines do not prescribe support awards beyond the maximum income level in the child support tables, and do not explicitly address how these cases should be handled; in these cases, the maximum income level included in the guideline is reported.

CHILD SUPPORT GUIDELINES: PERCENTAGE OF INCOME GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Noncustodial Income Required by Formula (1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
ALASKA	<p>Net Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Mandatory Retirement or Pension Plan ▪ Union Dues ▪ Prior Support Orders ▪ Child Care Costs ▪ Alimony ▪ Health Program 	<p>Flat Percentage</p> <p>\$500: 20 - 36%</p> <p>\$2,000: 20 - 36</p> <p>\$4,000: 20 - 36</p> <p>\$6,000: 20 - 36</p>	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses 	\$60,000 annual noncustodial net income
ARKANSAS	<p>Net Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Health Programs ▪ Prior Support Orders 	<p>Variable Percentage</p> <p>\$500: 16.0 - 44.0%</p> <p>\$2,000: 16.5 - 44.3</p> <p>\$3,000: 14.3 - 42.2</p>	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses 	\$3,000 monthly noncustodial net income ^a
CALIFORNIA	<p>Net Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Mandatory Retirement or Pension Program ▪ Job Related Expenses 	<p>Variable Percentage^b</p> <p>\$500: 26.0 - 58.5%</p> <p>\$2,000: 20.0 - 45.0</p> <p>\$4,000: 20.0 - 45.0</p> <p>\$6,000: 16.0 - 36.0</p>	<ul style="list-style-type: none"> ▪ Age of Child(ren) 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses ▪ Health Insurance 	None
DISTRICT OF COLUMBIA	<p>Adjusted Gross Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Prior Support Order ▪ Health Insurance Costs 	<p>Variable Percentage</p> <p>\$625: 21.7 - 34.6%</p> <p>\$2,000: 22.7 - 35.7</p> <p>\$4,000: 23.8 - 36.8</p> <p>\$6,000: 24.9 - 37.9</p>	<ul style="list-style-type: none"> ▪ Prior Support Orders ▪ Age of Child(ren) 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Health Insurance 	\$75,000 annual noncustodial adjusted income
GEORGIA	<p>Gross Income</p>	<p>Flat Percentage</p> <p>\$500: 17 - 35%</p> <p>\$2,000: 17 - 35</p> <p>\$4,000: 17 - 35</p> <p>\$6,000: 17 - 35</p>	<ul style="list-style-type: none"> ▪ Age of Child(ren) ▪ Periodic Review ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses 	None

CHILD SUPPORT GUIDELINES: PERCENTAGE OF INCOME GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Noncustodial Income Required by Formula (1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
ILLINOIS	<p>Net Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Mandatory Retirement or Pension Plan ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders ▪ Business Expenses 	<p>Flat Percentage</p> <p>\$500: 20 - 40%</p> <p>\$2,000: 20 - 40</p> <p>\$4,000: 20 - 40</p> <p>\$6,000: 20 - 40</p>			None
MASSACHUSETTS	<p>Adjusted Gross Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Prior Support Orders ▪ Child Care Costs 	<p>Variable Percentage</p> <p>\$871: 23 - 33%</p> <p>\$2,000: 23 - 33</p> <p>\$4,000: 25 - 35</p> <p>\$6,000: 25 - 35</p>	<ul style="list-style-type: none"> ▪ Age of Child(ren) ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Extraordinary Medical or Dental Expenses ▪ Health Insurance ▪ Transportation Expenses 	<p>\$75,000 annual noncustodial adjusted income or \$100,000 annual combined income</p>
MINNESOTA	<p>Net Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Mandatory Retirement or Pension Plan ▪ Health Program ▪ Union Dues ▪ Prior Support Orders 	<p>Variable Percentage</p> <p>\$500: 14.0 - 22.0%</p> <p>\$2,000: 25.0 - 39.0</p> <p>\$4,000: 25.0 - 39.0</p> <p>\$6,000: 16.7 - 26.0</p>	<ul style="list-style-type: none"> ▪ Prior Support Orders 		<p>Maximum Payment at \$4,000 monthly noncustodial net income</p>
MISSISSIPPI	<p>Adjusted Gross Income</p> <p>Deductions include:</p> <ul style="list-style-type: none"> ▪ Prior Support Orders ▪ Retirement Savings ▪ Alimony 	<p>Flat Percentage</p> <p>\$500: 17 - 31%</p> <p>\$2,000: 17 - 31</p> <p>\$4,000: 17 - 31</p> <p>\$6,000: 17 - 31</p>	<ul style="list-style-type: none"> ▪ Prior Support Orders ▪ Age of Children 		None
NEVADA	<p>Gross Income</p>	<p>Flat Percentage</p> <p>\$500: 18.0 - 31.0%</p> <p>\$2,000: 18.0 - 31.0</p> <p>\$4,000: 12.5 - 31.0</p> <p>\$6,000: 8.3 - 31.0</p>		<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses ▪ Health Insurance 	<p>\$500 per child maximum monthly order</p>

CHILD SUPPORT GUIDELINES: PERCENTAGE OF INCOME GUIDELINE

STATE	Measure of Income Used in Guidelines	Percentage of Noncustodial Income Required by Formula (1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
NORTH CAROLINA	Gross Income	Flat Percentage \$500: 17 - 31% \$2,000: 17 - 31 \$4,000: 17 - 31 \$6,000: 17 - 31	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Other Expenses 	None
	Net Income	Variable Percentage \$500: 14 - 22% \$2,000: 25 - 39 \$4,000: 25 - 39 \$6,000: 25 - 39	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Educational Expenses ▪ Special Needs 	None
NORTH DAKOTA	Gross Income	Flat Percentage \$500: 18.1 - 38.5% \$2,000: 18.1 - 38.5 \$4,000: 18.1 - 38.5 \$6,000: 18.1 - 38.5	<ul style="list-style-type: none"> ▪ Age of Child(ren) ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Educational Expenses ▪ Extraordinary Housing Costs 	\$10,000 monthly combined net income*
	Net Income	Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders ▪ All Mandatory Costs	<ul style="list-style-type: none"> ▪ Age of Child(ren) ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Educational Expenses ▪ Extraordinary Housing Costs 	\$10,000 monthly combined net income*
PUERTO RICO	Gross Income	Flat Percentage \$500: 21 - 46% \$2,000: 21 - 46 \$4,000: 21 - 46 \$6,000: 21 - 46	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Health Insurance 	\$6,250 monthly noncustodial net income
	Net Income	Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Health Insurance 	\$6,250 monthly noncustodial net income
TENNESSEE	Gross Income	Flat Percentage \$500: 20 - 35% \$2,000: 20 - 35 \$4,000: 20 - 35	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses 	\$4,000 monthly noncustodial net income
	Net Income	Deductions include: ▪ Health Programs ▪ Prior Support Orders ▪ Union Dues	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses 	\$4,000 monthly noncustodial net income
TEXAS	Gross Income	Flat Percentage \$500: 20 - 35% \$2,000: 20 - 35 \$4,000: 20 - 35	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses 	\$4,000 monthly noncustodial net income
	Net Income	Deductions include: ▪ Health Programs ▪ Prior Support Orders ▪ Union Dues	<ul style="list-style-type: none"> ▪ Prior Support Orders 	<ul style="list-style-type: none"> ▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses 	\$4,000 monthly noncustodial net income

CHILD SUPPORT GUIDELINES: PERCENTAGE OF INCOME GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Noncustodial Income Required by Formula (1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
WISCONSIN	Adjusted Gross Income Deductions include: <ul style="list-style-type: none"> * Prior Support Orders * Public Assistance * Other Dependents 	Flat Percentage \$500: 17 - 31% \$2,000: 17 - 31 \$4,000: 17 - 31 \$6,000: 17 - 31	* Prior Support Orders		None
WYOMING	Net Income	Variable Percentage \$500: 17.0 - 32.0% \$2,000: 26.0 - 40.0 \$4,000: 19.5 - 30.0 \$6,000: 13.0 - 20.0	* Periodic Review		Maximum Payment at \$3,000 monthly noncustodial net income

Sources: National Center for State Courts and individual state child support guidelines.

- a Guideline provides no specific prescription for child support awards at income levels beyond those in the tables. The highest income level included in the guideline is reported.
- b Description of Judicial Council of California guideline is provided. Reported percentages represent basic child support percentages; necessary adjustments for combined parental income and time spent by noncustodial parent with children are not made.
- c Range reports child support rates for one to three children only. Child support awards for four children are determined by the discretion of the court, at an amount no less than the basic award for three children.

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
ALABAMA	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$550: 9.1 - 9.5% \$2,000: 15.9 - 34.9 \$4,000: 13.7 - 30.0 \$6,000: 12.6 - 27.6	▪ Prior Support Orders ▪ Review in Voluntary Settlements ▪ Periodic Review	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses	\$10,000 monthly combined adjusted income
ARIZONA	Adjusted Gross Income Deductions include: ▪ Prior Support Orders	\$500: 18.0 - 38.0% \$2,000: 15.9 - 34.9 \$4,000: 13.5 - 29.6 \$6,000: 11.7 - 25.4	▪ Prior Support Orders	▪ Child Care Expenses ▪ Educational Expenses ▪ Medical Insurance	\$7,500 monthly combined adjusted income
COLORADO	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Alimony	\$500: 4.0 - 8.8% \$2,000: 15.9 - 34.9 \$4,000: 13.5 - 29.6 \$6,000: 11.7 - 25.4	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses	\$10,000 monthly combined adjusted income
CONNECTICUT	Net Income Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders ▪ Child Care Costs ▪ All Mandatory Expenses	\$500: 17.3 - 17.3% \$2,000: 26.7 - 49.0 \$3,250: 26.7 - 49.0	▪ Age of Child(ren)	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Others	\$3,250 monthly combined net income
FLORIDA	Net Income Deductions include: ▪ Mandatory Retirement or Pension program. ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders	\$500: 9.6 - 9.8% \$2,000: 21.9 - 47.8 \$4,000: 19.8 - 43.3	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses	\$50,000 annual combined net income

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
GUAM	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$500: 18.0 - 38.0% \$2,000: 15.9 - 34.9 \$4,000: 13.5 - 29.6 \$6,000: 11.7 - 25.4	▪ Prior Support Orders	▪ Child Care Expenses ▪ Educational Expenses ▪ Extra 10% for Children over 12.	\$7,500 monthly combined adjusted income ^a
IDAHO	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$500: 17.0 - 31.0% \$2,000: 15.9 - 29.9 \$4,000: 14.7 - 28.3 \$5,833: 13.3 - 26.1	▪ Prior Support Orders	▪ Child Care Expenses	\$70,000 annual combined adjusted income
INDIANA	Adjusted Gross Income Deductions include: ▪ Prior support orders ▪ Health Insurance Coverage	\$500: 23.8 - 50.0% \$2,000: 18.9 - 40.1 \$4,000: 15.5 - 32.6 \$6,000: 14.2 - 30.0	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses	\$104,000 annual combined adjusted income
IOWA	Net Income Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Program ▪ Union Dues	\$500: 21.3 - 43.6% \$2,000: 20.4 - 40.7 \$4,000: 16.8 - 33.5 \$6,000: 16.8 - 33.5			None
KANSAS	Adjusted Gross Income Deductions include: ▪ Prior Support Orders	\$500: 16.5 - 42.9% \$2,000: 15.3 - 36.6 \$4,000: 14.8 - 33.9 \$6,000: 14.5 - 32.4	▪ Age of Child(ren) ▪ Prior Support Orders	▪ Child Care Expenses ▪ Health Insurance ▪ Transportation Expenses	\$8,400 monthly combined adjusted income ^a
KENTUCKY	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$500: 20.0 - 23.0% \$2,000: 17.5 - 36.4 \$4,000: 14.3 - 29.8 \$6,000: 12.9 - 27.2	▪ Prior Support Orders	▪ Child Care Expenses	\$10,000 monthly combined adjusted income

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
LOUISIANA	Adjusted Gross Income Deductions include: ▪ Prior Support Orders	\$600: 14.5 - 15.0% \$2,000: 16.9 - 36.9 \$4,000: 14.6 - 32.1 \$6,000: 13.3 - 29.0	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses ▪ Transportation Expenses ▪ Health Insurance	\$10,000 monthly combined adjusted income
MAINE	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$500: 14.3 - 15.6% \$2,000: 15.7 - 34.7 \$4,000: 13.2 - 28.6 \$6,000: 12.1 - 26.4	▪ Age of Child(ren) ▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Expenses ▪ Transportation Expenses ▪ Capital Gains Income	\$126,000 annual combined adjusted income
MARYLAND	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Alimony	\$600: 14.2 - 14.5% \$2,000: 16.6 - 36.4 \$4,000: 13.9 - 27.1 \$6,000: 12.9 - 25.1			\$10,000 monthly combined adjusted income
MICHIGAN	Net Income Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Programs ▪ Union Dues ▪ Prior Support Orders ▪ Alimony	\$500: 10.0 - 10.0% \$2,000: 21.1 - 46.3 \$4,000: 17.3 - 38.2 \$6,000: 15.3 - 33.3	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses	None
MISSOURI	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Alimony	\$500: 22.4 - 49.2% \$2,000: 15.9 - 34.9 \$4,000: 13.5 - 29.6 \$6,000: 11.7 - 25.4	▪ Prior Support Orders		\$10,000 monthly combined adjusted income*

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
MONTANA	<p>Net Income</p> <ul style="list-style-type: none"> • Deductions include: <ul style="list-style-type: none"> • Mandatory Retirement or Pension Program • Health Programs • Union Dues • Prior Support Orders • Business Expenses 	<p>\$500: 24.4 - 53.4%</p> <p>\$2,000: 19.5 - 42.7</p> <p>\$4,000: 15.2 - 33.4</p> <p>\$6,000: 15.2 - 33.4</p>	<ul style="list-style-type: none"> • Age of Child(ren) • Prior Support Orders 	<ul style="list-style-type: none"> • Child Care Expenses • Extraordinary Medical and Dental Expenses 	None
NEBRASKA	<p>Net Income</p> <ul style="list-style-type: none"> • Deductions include: <ul style="list-style-type: none"> • Mandatory Retirement or Pension Program • Health Program • Union Dues • Prior Support Orders 	<p>\$500: 0.4 - 0.4%</p> <p>\$2,000: 19.1 - 41.9</p> <p>\$4,000: 16.2 - 35.5</p> <p>\$6,000: 14.2 - 31.1</p>	<ul style="list-style-type: none"> • Prior Support Orders 	<ul style="list-style-type: none"> • Child Care Expenses 	\$8,000 monthly combined net income
NEW HAMPSHIRE	<p>Net Income</p> <ul style="list-style-type: none"> • Deductions include: <ul style="list-style-type: none"> • Mandatory Retirement or Pension Program • Health Programs • Prior Support Orders 	<p>\$500: 10.0 - 10.0%</p> <p>\$2,000: 25.0 - 45.0</p> <p>\$4,000: 25.0 - 45.0</p> <p>\$6,000: 25.0 - 45.0</p>	<ul style="list-style-type: none"> • Prior Support Orders 	<ul style="list-style-type: none"> • Child Care Expenses • Extraordinary Medical and Dental Expenses • Educational Expenses 	None
NEW JERSEY	<p>Net Income</p> <ul style="list-style-type: none"> • Deductions include: <ul style="list-style-type: none"> • Mandatory Retirement or Pension Program • Health Program • Union Dues • Prior Support Orders 	<p>\$500: 10.5 - 10.5%</p> <p>\$2,000: 21.5 - 47.5</p> <p>\$4,000: 20.1 - 44.0</p> <p>\$4,333: 20.0 - 42.5</p>	<ul style="list-style-type: none"> • Prior Support Orders • Periodic Review 	<ul style="list-style-type: none"> • Child Care Expenses • Extraordinary Medical and Dental Expenses 	\$52,000 annual combined net income
NEW MEXICO	<p>Gross Income</p>	<p>\$600: 14.8 - 22.3%</p> <p>\$2,000: 15.9 - 34.9</p> <p>\$4,000: 13.5 - 29.6</p> <p>\$6,000: 11.7 - 25.4</p>	<ul style="list-style-type: none"> • Child Care • Extraordinary Medical and Dental Expenses • Educational Expenses • Transportation Expenses • Health Insurance 	<ul style="list-style-type: none"> • Child Care • Extraordinary Medical and Dental Expenses • Educational Expenses • Transportation Expenses • Health Insurance 	None

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
NEW YORK	Adjusted Gross Income Deductions include: ▪ Mandatory Retirement or Pension Programs ▪ Prior Support Orders ▪ Alimony	\$500: 5.0 - 5.0% \$2,000: 17.0 - 31.0 \$4,000: 17.0 - 31.0 \$6,000: 17.0 - 31.0	▪ Prior Support Orders	▪ Child Care Expenses ▪ Educational Expenses ▪ Health Care Expenses ▪ Extraordinary Medical and Dental Expenses	\$100,000 annual combined adjusted income
OHIO	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Alimony	\$500: 4.0 - 8.8% \$2,000: 15.9 - 34.9 \$4,000: 13.5 - 23.6 \$6,000: 11.7 - 25.4	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses	\$10,000 monthly combined adjusted income
OKLAHOMA	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Joint Debts	\$500: 15.4 - 40.0% \$2,000: 13.8 - 30.3 \$4,000: 11.0 - 23.1 \$6,000: 9.9 - 21.7	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Transportation Expenses	\$10,000 monthly combined adjusted gross income
OREGON	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Alimony	\$700: 9.6 - 9.9% \$2,000: 16.7 - 36.6 \$4,000: 13.7 - 30.1 \$6,000: 12.8 - 27.9	▪ Prior Support Orders	▪ Child Care Expenses ▪ Medical Insurance ▪ Educational Expenses	\$10,000 monthly combined adjusted income
PENNSYLVANIA	Net Income Deductions include: ▪ Mandatory Retirement or Pension Program ▪ Health Programs ▪ Union Dues	\$500: 23.5 - 50.0% \$2,000: 19.5 - 42.7 \$4,000: 14.5 - 33.7 \$6,000: 13.5 - 31.9	▪ Age of Child(ren) ▪ Periodic Review	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses	\$8,000 monthly combined net income
RHODE ISLAND	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Other	\$600: 16.7 - 17.3% \$2,000: 17.3 - 37.7 \$4,000: 14.4 - 31.5 \$6,000: 13.2 - 28.8	▪ Prior Support Orders	▪ Child Care Expenses	\$10,000 monthly combined adjusted income

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
SOUTH CAROLINA	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs ▪ Fixed Payments	\$600: 13.6 - 14.2% \$2,000: 15.6 - 34.1 \$4,000: 13.1 - 28.8 \$6,000: 12.1 - 26.4	▪ Prior Support Orders ▪ Periodic Review	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses	\$10,000 monthly combined adjusted income
SOUTH DAKOTA	Net Income ▪ Mandatory Retirement or Pension Program ▪ Prior Support Orders ▪ Business Expenses	\$600: 7.2 - 9.0% \$2,000: 18.0 - 39.4 \$4,000: 15.9 - 34.8	▪ Prior Support Orders ▪ Periodic Review	▪ Child Care Expenses ▪ Transportation Expenses ▪ Health Insurance	\$4,000 monthly combined net income
UTAH	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Alimony	\$500: 18.4 - 24.4% \$2,000: 12.6 - 30.8 \$4,000: 10.6 - 26.5 \$6,000: 10.2 - 25.1	▪ Prior Support Orders ▪ Periodic Review	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses	\$10,000 monthly combined adjusted income
VERMONT	Adjusted Gross Income Deductions include: ▪ Prior Support Orders ▪ Health Insurance Costs	\$575: 24.6 - 53.9% \$2,000: 17.2 - 37.8 \$4,000: 14.4 - 31.6 \$6,000: 13.2 - 28.8	▪ Prior Support Orders	▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses ▪ Educational Expenses	\$10,024 monthly combined adjusted income
VIRGIN ISLANDS	Net Income Deductions include: ▪ Mandatory Retirement or Pension Programs ▪ Health Programs ▪ Union Dues	Basic Child Support based on actual expenses determined on a case by case basis.	▪ Medical and Dental Expenses ▪ Child Care Expenses		
VIRGINIA	Adjusted Gross Income Deductions include: ▪ Large Expenses	\$500: 13.0 - 13.0% \$2,000: 16.9 - 37.0 \$4,000: 13.8 - 30.4 \$6,000: 12.7 - 27.9		▪ Child Care Expenses ▪ Extraordinary Medical and Dental Expenses	\$10,000 monthly combined adjusted income

CHILD SUPPORT GUIDELINES: INCOME SHARES GUIDELINE

STATE	Measure of Income Used in Guideline	Percentage of Income Required (Range for 1 to 4 Children)	Special Circumstances Considered by Guideline	Additions to Basic Support Amount	Income Limit
WASHINGTON	Net Income Deductions include: * Mandatory Retirement or Pension Program * Union Dues * Business Expenses	\$600: 24.8 - 54.3% \$2,000: 23.9 - 52.3 \$4,000: 22.7 - 49.8 \$6,000: 21.4 - 47.0	* Age of Child(ren) * Prior Support Orders	* Child Care Expenses * Extraordinary Medical and Dental Expenses * Educational Expenses * Transportation Expenses	\$7,000 monthly combined net income

Sources: National Center for State Courts and individual state child support guidelines.

Note: Percentage of Income figures (Column 3) represent the range of required support percentages, for the given monthly incomes, for one to four children. Some state child-support tables had different rates for younger children (0 to 11 years) and for older children (12 to 18 years). In such cases, the percentages reported above are the means for all age groups.

* Guideline provides no specific prescription for child support awards at income levels beyond those in the tables. Figures reported above represent the highest income level included in the table.

CHILD SUPPORT GUIDELINES: THE MELSON GUIDELINE

STATE	Measure of Income Used in Guideline	Primary Support Allowances and Obligations (per month) ^a	SOLA Obligation Percentage of Noncustodial Income Children Receive above the Minimum	Special Circumstances Considered by Guideline	Income Limit
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DELAWARE

Net Income

Deductions include:

- Mandatory Deductions
- Prior Support Orders
- Union Dues
- Alimony Payments
- Business Expenses
- Health Programs

Allowance: \$550

Obligation:

First Child: \$220

Second Child: \$165

Third Child: \$165

Fourth Child: \$110

First Child: 18^b

Second Child: 9

Third Child: 8

Fourth Child: 5

▪ Secondary Families

▪ Prior Support Orders

▪ Child Care Expenses

None

HAWAII

Net Income

Deductions include:

- Health Programs
- Prior Support Orders

Allowance: \$454

Obligation:

First Child: \$200

Second Child: \$150

Third Child: \$150

Fourth Child: \$100

First Child: 12%

Second Child: 6

Third Child: 6

Fourth Child: 4

▪ Child Care Expenses

▪ Prior Support Orders

▪ Guideline Review in Voluntary Settlements

None

WEST VIRGINIA

Net Income^c

Deductions include:

- Mandatory Deductions
- Business Expenses
- Health Programs
- Debt Payments

Allowance: \$450

Obligation:

First Child: \$180

Second Child: \$135

Third Child: \$135

Fourth Child: \$90

First Child: 15%

Second Child: 10

Third Child: 10

Fourth Child: 5

▪ Child Care Expenses

▪ Secondary Families

▪ Prior Support Orders

\$6,000 monthly noncustodial net income, or \$8,000 monthly combined net income.

Sources: National Center for State Courts and individual state child support guidelines.

- a The "Primary Support Allowance" is defined as the amount a reasonable, prudent parent might be expected to spend on self-support in light of his/her obligation to meet the needs of the children. The "Primary Support Obligation" is the minimum amount necessary to fulfill the basic needs of the child(ren).
- b Maximum SOLA contribution is limited to 50% of total discretionary income.
- c In West Virginia, when the noncustodial parent has remarried or is cohabiting with another person in the relation of husband and wife, the basic self support allowance for the noncustodial parent is reduced to 50% of the sum of \$450, \$180 (for the second person in the household), and \$100 in work-related expenses for the spouse.

Appendix 6.2

ASSUMPTIONS

GENERAL ASSUMPTIONS

1. No prior child support orders from another union.
2. No mandatory contributions to retirement or pension programs from gross income.
3. No union dues.
4. No significant business expenses.
5. No in-kind fringe benefits from employment which would have otherwise been purchased by the noncustodial parent (e.g., company car, rent subsidies for housing, etc.).
6. No extraordinary medical, dental, or psychological expenses.
7. Children receive no outside income.
8. No alimony payments from any marriage (including the one related to the child support order).
9. No extraordinary educational expenses (e.g., private school tuition).
10. No significant transportation expenses for noncustodial visits.
11. No capital gains income for noncustodial or custodial parent.
12. No deductions required by an employer as a condition of employment.
13. No deductions for payments made on the children's behalf (e.g., college savings).
14. No special debts incurred for the necessary support of any child of noncustodial parent (with regard to food, clothing, shelter, and medical care).
15. Family has two children, ages 4 and 8. Only one child requires child care.
16. No public assistance income received by noncustodial parent.
17. All income received is taxable (subject to Federal and state income tax and FICA).
18. Custodial parent has sole or primary custody. Sole and primary custody is defined according to the state statute.
19. Both parents work at full earnings capacity (as determined by the court).
20. Noncustodial parent has no special needs and no excessive financial burden.
21. Health/medical insurance is available to the noncustodial parent through his/her employer, and is provided at reasonable cost.
22. Neither parent has remarried at the time of award.
23. Annual out-of-pocket health insurance costs are as follows:

Employee Alone	\$322
Employee and Spouse	\$718
Employee and Family	\$806
Child(ren) Only	\$483

Source: A Survey of Health and Welfare Insurance Plans Covering Salaried Employees in the United States: 1988, The Wyatt Corporation, 1988.

24. Child care costs net of Federal Work Related Child Care Credit are as follows:

<u>Custodial Parent Income</u>	<u>Annual Expenses</u>	<u>Monthly Expenses</u>
\$10,000	\$1,670	\$139
\$15,000	\$1,741	\$145
\$25,000	\$1,861	\$155

Source: *Weekly Child Care Expenditures and Monthly Family Income, 1986,* Press Release No. July CB89-119; Bureau of the Census, U.S. Department of Commerce, 1989.

TAX ASSUMPTIONS

25. Federal Income Taxes

In determining child support payments, federal income taxes are deducted from gross income in all states using a net definition of income. Federal income tax was estimated based on the marginal rates for the tax year 1989. Source: The World Almanac and Book of Facts, 1990, (New York: Pharoah Books), 1990; and Your Federal Income Tax (Rev. Nov. 88), IRS Publication 17, Internal Revenue Service, U.S. Department of the Treasury, 1988.

Taxable Income

Taxable income is calculated based on adjusted gross income less the standard deduction and exemptions. Noncustodial parents are assumed to take the standard deduction (non-itemized, \$3,100) and standard exemption (\$2,000) for a single individual, and the custodial parent is assumed to take the standard deduction for a head of household (non-itemized, \$4,550) and the standard exemption for herself or himself and the two children ($\$2,000 \times 3 = \$6,000$).

Marginal Rates Based on Filing Status

Single

15 percent of the first \$18,550 of taxable income and 28 percent of income in excess of \$18,550.

Head of Household

15 percent of the first \$24,850 of taxable income and 28 percent of income in excess of \$24,850.

26. State Income Taxes

Estimated state income taxes were determined for all states with state income tax that use net income in child support calculations. As the level of state income taxes vary, average tax rates were determined individually for each state based on marginal rates, standard exemptions, and deduction. Source: World Almanac, 1990.

27. FICA

FICA contributions are calculated at 7.65 percent of all gross taxable income up to \$51,300. Source: Social Security Bulletin, Annual Statistical Supplement, 1989, Social Security Administration, U.S. Department of Health and Human Services, Washington, D.C., 1989.

7. SUMMARY AND RECOMMENDATIONS

This report fulfills the requirements of Section 128 of the Family Support Act of 1988 which calls for the Secretary of Health and Human Services to report on the study of expenditures families make on children:

The Secretary of Health and Human Services shall, by grant or contract, conduct a study of the patterns of expenditures on children in 2-parent families, in single-parent families following divorce or separation, and in single-parent families in which the parents were never married, giving particular attention to the relative standards of living in households in which both parents and all of the children do not live together. The Secretary shall submit to the Congress no later than 2 years after the date of the enactment of this Act a full and complete report of the results of such study, including such recommendations as the Secretary may have for legislative, administrative, and other actions.

The study required by Section 128 of the Family Support Act of 1988 was conducted by Professor David Betson of Notre Dame University.¹ The current report reviews the analytical methods and empirical findings on how much parents in single-parent and two-parent families spend on their children; summarizes the literature on the effects of marital dissolution on families' economic well-being; and discusses the implications of these findings for establishing guidelines for setting child support awards. This chapter summarizes the major findings and conclusions of this report, and provides the Secretary's recommendations.

7.1 Summary of Major Findings

Procedures for Estimating Expenditures on Children

Chapter 2 of this report reviews the methods that have been developed to estimate expenditures on children in one and two-parent households. Although it might appear that estimating expenditures on children would be straightforward, there are two reasons why it is not:

¹ The Betson study did not analyze expenditure patterns for different types of single-parent families because the data base used, the Consumer Expenditure Survey, did not include enough observations in the various categories.

- Many goods and services purchased by families are consumed jointly by both children and adults. Examples include housing and transportation. While data on families' total consumption of these types of goods can be obtained from consumer surveys, there are no universally accepted methods of allocating this consumption across household members or assigning costs to children.
- Even for goods that are privately consumed by individual members of a household, data used to estimate consumption patterns in the United States (data from the Consumer Expenditure Survey) are not detailed enough to estimate individual household members' consumption of these goods. For example, the Consumer Expenditure Survey collects information on how much food a household purchases, but it does not collect data on how much food is consumed by individual family members.

Goods that are either jointly consumed or individually consumed by both children and adults account for approximately 90 percent of a typical family's total expenditures.

Consequently, researchers have had to develop indirect methods of estimating expenditures on children. By making specific assumptions about the determinants of economic well-being, these methods have been used to estimate the amount that households with different characteristics and sizes spend on their children.

The techniques most commonly used by economists to develop such estimates are referred to as the Engel method and the Rothbarth method. The Engel method is based on the premise that two households that spend the same proportion of total consumption on food are equally well off. The Rothbarth method is based on the assumption that two households with the same level of expenditures on goods consumed by adults only (often defined as alcohol, tobacco, and adult clothing), have the same level of well-being. Using either of these two assumptions, expenditures on one child can be estimated by calculating the difference in total consumption between a childless household and an equally well-off household with one child. Similarly, estimates of expenditures on more than one child can be made by comparing consumption in households with more than one child to households with

the same level of well-being with only one child. Other methods, based on alternative measures of well-being, have also been used to estimate expenditures on children.

All of the methods that have been developed to estimate expenditures on children rely on very strong assumptions about measures of a family's economic well-being. As the discussion in Chapter 2 indicates, no single estimation technique is likely to measure the "true" level of expenditures on children; expenditures made on behalf of children vary with parental income and preferences, with the ages and number of children, and perhaps with community standards as well. All of the available estimation techniques have potential shortcomings because of the difficulties inherent in any attempt to determine how much parents spend on behalf of their children. Consequently, it is advisable to identify a range of expenditure estimates using a variety of techniques.

Among the techniques considered the most reliable, the Rothbarth estimator (which uses the level of consumption on adult goods as a measure for economic well-being) probably underestimates the true level of expenditures that parents make on behalf of their children, and the Engel estimator (which uses the percentage of a family's total expenditures that are spent on food as a measure of economic well-being) probably overestimates the true level of expenditures made on behalf of children. As a result, these two estimators can be used to calculate likely upper and lower bounds for the true average level of expenditures on children.

Estimates of Expenditures on Children

The most practical data base for developing estimates of expenditures on children in the United States is the Consumer Expenditure Survey (CEX). The range of estimates

developed using data from the CEX and a variety of estimation techniques is quite broad.

However, there are some well-defined regularities that emerge from the estimates:

- Expenditures made on behalf of children do not increase in direct proportion to their numbers; each additional child accounts for a smaller increase in expenditures. For example, in two-parent families, expenditures on two children are estimated to be between 1.40 and 1.73 times the level of expenditures for one child; expenditures on three children are estimated to be between 1.56 and 2.24 times the level of expenditures for one child.
- The percentage of total family expenditures spent on a child increases with the age of the child. For example, in a two-parent family with two children between the ages of 0 and 8, the children are estimated to account for 19 to 46 percent of total family expenditures. In a similar family with two children between the ages of 10 and 17, however, the children are estimated to account for 32 to 53 percent of total family expenditures.
- There is some evidence that expenditures on children as a percentage of total family expenditures decrease slightly as income increases. The absolute level of spending on children, however, increases as income increases.²
- Children in one-parent families account for a higher percentage of total family expenditures than children in similar two-parent families. In a two-parent family with two children, the children are estimated to account for 27 to 50 percent of total expenditures. In a one-parent family, the children are estimated to account for 52 to 78 percent of total family expenditures.³

² It should be noted that because of small sample sizes, none of the studies on which these findings are based examined expenditure patterns among relatively high-income families. The Betson study, for example, does not consider families with annual incomes greater than \$75,000.

³ This general finding is to be expected; if income is held constant while family size decreases (i.e., one adult is no longer there), the children are likely to receive a higher percentage of the family's expenditures. However, it is important to note that while a higher percentage of expenditures may be attributable to the children in one-parent families than in two-parent families, in most cases the level of expenditures is likely to be lower because one-parent families typically have lower income levels than demographically comparable two-parent families.

It is important to emphasize that these estimates represent average expenditures. The range of actual expenditures is broader still; the decisions made within households about how to allocate spending among family members are subject to a great deal of variability. Both preferences and needs vary substantially across households. The estimates of average expenditures will be too low for families who prefer to spend large amounts on their children, who have children with special needs, or who otherwise have unusually high expenditures on items such as children's medical care, education, or child care. Conversely, for families who have unusually high expenditures on non-child-related items, the estimates of average expenditures on children will be too high.

The Economic Consequences of Marital Dissolution

In order to examine the transition from a two-parent to a one-parent household, this report reviews and summarizes the research literature on the effects of marital dissolution on families' well-being. This literature, which requires longitudinal or retrospective data on families before and after family disruption, is based on data sources other than the Consumer Expenditure Survey. The studies that were reviewed span a period of almost 15 years: from the early-1970s to the mid-1980s. Findings from both nationally-representative studies (based on the Survey of Income and Program Participation and the Panel Study of Income Dynamics) and small-scale local studies are consistent: marital disruption is economically detrimental for women and children and generally beneficial for men. While declines in economic well-being among women with high pre-divorce incomes are generally greater than among women with lower pre-divorce incomes, the post-divorce incomes of this first group continue to be higher than the level of income available to women who had low incomes prior to divorce.

Despite this consensus, there is less agreement concerning the magnitude of the effects. Estimates for the effects on women and children range from reductions in living standards on the order of 30 percent, based on analyses of the Panel Study of Income Dynamics and the Survey of Income and Program Participation, to a decline of 73 percent, based on Weitzman's study of data from Los Angeles County. Generally, estimates based on local-level data tend to be higher than estimates derived from nationally-representative data. While it is possible that divorced women in the various local areas that have been studied experience relatively larger declines in economic well-being than is the case nationally, the small sample sizes and methodological problems associated with these studies suggest that the local-area estimates may be somewhat misleading. Differences in the time-periods covered and in prevailing macroeconomic conditions may also account for discrepancies in the various estimates. Finally, a number of the studies reviewed indicate that some differences in economic well-being between one- and two-parent families are due to the fact that economic disadvantage tends to precede family dissolution.

All of the studies of marital disruption reviewed are based on data collected prior to the institution of guidelines in 1984 and the 1988 mandate that required states to follow their guidelines as a rebuttable presumption. Thus, these studies may not accurately reflect the economic consequences of marital disruption today.

State Child Support Guidelines

In recent years the U.S. Congress has passed legislation that requires states to establish and use child support guidelines. In the Child Support Amendments of 1984, Congress required that states establish child support guidelines. These guidelines, which could be advisory or presumptive, had to be made available to all judges and other child

support officials in the state. The Family Support Act of 1988 strengthened the guidelines provision by requiring states to use their guidelines as a rebuttable presumption.

The U.S. Department of Health and Human Services has published proposed regulations to implement these requirements. The proposed regulations would require states to take into account the earnings, income, and resources of the noncustodial parent; to base guidelines on specific descriptive and numeric criteria and result in a computation of the support obligation; and provide for coverage of the child's health care needs. In addition, the states' review of the guidelines (every four years) would require an analysis of data on compliance and deviation from the guidelines. The Department's final regulations are expected to be published in fiscal year 1991. Within the parameters set by the Federal legislation and regulations, states have been given broad authority to develop guidelines consistent with their political and philosophical views on the equitable allocation of child support expenditures between parents.

There are three general types of child support guidelines in use as of February 1, 1990. The first is the percentage of income guideline, which is used in 15 states, the District of Columbia, and Puerto Rico. The percentage of income guideline establishes child support orders as a specified percentage of the noncustodial parent's income. The level of the order is independent of the level of income of the custodial parent. The second is the income shares guideline, which is used in 32 states, the Virgin Islands, and Guam. The income shares guideline establishes child support orders as a specified percentage of the combined income of both parents. The third guideline, the Melson guideline, establishes child support orders that require that both parents contribute (in proportion to their share of combined parental income) to the basic needs of the child after the basic needs of the adults have been

met; the support order increases in proportion to the level of the noncustodial parent's income above the basic needs amount. Three states use the Melson guideline.

There are a variety of ways in which each of these guidelines are implemented. States differ in terms of how income is defined (net income, gross income, or adjusted gross income). Many states also allow for additions to the basic support amount for unusually large expenses (e.g., child care, medical expenses, and education) and/or deductions from the income on which support is to be paid (e.g., for previous support orders or health insurance). Finally, states differ in the percentage of income that they require the noncustodial parent to pay in child support.

Under a broad range of circumstances, the three types of guidelines currently in use set support orders that are very similar to one another. The Melson formula, however, establishes very low levels of child support at low levels of income for the noncustodial parent because the formula is designed to allow noncustodial parents to retain a minimum level of income for their basic needs (i.e., provides for a self-support reserve) prior to requiring more than a token level of child support. At low levels of (noncustodial parent) income, very low levels of child support are also generated in percentage of income and income shares states that have self-support reserves. In cases where the custodial parent's income is nearly equal to (or greater than) the noncustodial parent's, the percentage of income guideline may establish support orders that are higher than would be established by either the Melson or income shares guidelines. In general, it is at the high and low ends of the income distribution and in cases where the two parents' earnings are very different that the three categories of guidelines may differ most markedly from one another in the levels of child support that they generate. These differences are caused by variations in how the guidelines treat the basic needs of the noncustodial parent and the income of the custodial parent (in the case of the

income shares guideline) as well as differences in the percentage of income the noncustodial parent pays in child support and how that percentage varies over different income levels.

Guidelines and Their Relationship to Expenditures on Children

With some exceptions, all three guidelines (the percentage of income, income shares, and Melson) are implemented by the states in such a way as to be within the range of estimates of expenditures for children in two-parent families. In most cases, however, the percentage of income to be paid in child support tends to be closer to the lower bound of the range of estimates of expenditures on children than it is to the upper bound. In 8 states, the estimates of child support orders appear to be less than the lower bound of the range of estimates of expenditures on children (at least under one of the three scenarios considered). There are, however, no states (at least under the scenarios considered) where the child support orders are greater than the upper bound of the range of estimates of expenditures on children. It should be noted that these findings are based on simulations using reasonable but inexact interpretations of tax schedules and savings data. Furthermore, states requiring child support payments less than the lower bound of estimates of expenditures on children do not violate any Federal laws or regulations.

In cases where the income of the noncustodial parent is particularly low, the Melson formula and guidelines in some percentage of income and income shares states require very low child support because these states permit the parents to meet their own basic needs before more than token child support is required. This is the situation where the amount of the child support order diverges most markedly from the estimates of expenditures on children.

The review in Chapter 6 indicates that there are a number of circumstances which require careful consideration. For example, in some states that use the income shares guideline, the percentage of income paid in child support increases (at least over some range of income) as combined parental income increases. In these states, it is possible for the child support order to increase as the income of the custodial parent increases (while the income of the noncustodial parent is unchanged). Similarly, the support order may decrease as the income of the custodial parent decreases (while the income of the noncustodial parent is unchanged). If, on the other hand, the percentage of income to be paid in child support decreases as combined parental income increases (as it does in some states), it is possible for the child support order to increase as the income of the noncustodial parent decreases (while the income of the custodial parent remains unchanged), or for the order to decrease as the income of the noncustodial parent increases (while the income of the custodial parent remains unchanged). These peculiar outcomes may be perceived as inequitable and may lead to challenges of the guidelines. If, however, the percentage of income to be paid in child support is constant (i.e., does not increase or decrease with income) then the income shares guideline is very similar to the percentage of income guideline.

Finally, a difficulty related to the one outlined above may arise in states that use either the income shares or percentage of income guidelines when the percentage of income paid for child support varies with the level of income, but the percentage is applied to all income. In states where the percentage of income to be paid in child support increases with income, very small increases in income can result in disproportionately large changes in the level of the child support award.⁴ In states where the percentage decreases with total income, an

⁴ For example, in one state under some circumstances child support is equal to 20 percent of income for incomes between \$7,501 and \$15,000, and child support is equal to 21 percent of income for incomes between \$15,001 and 25,000. Thus, an increase in annual

increase in the noncustodial parent's income can actually result in a reduction in child support.⁵ States can avoid such situations by using a constant rate or by applying the different rates to marginal income.⁶

Topics not Addressed in this Report

Some potentially important theoretical and practical topics relating to expenditures on children and child support guidelines are not covered in depth in this report. At the theoretical level, the nonmonetary costs and benefits of children are not considered, and at the practical level the many special circumstances that vary across households are not discussed in detail.

In general, having children is voluntary, and children provide substantial benefits to their parents. When a family splits up and the children remain with one of the parents, the custodial parent retains a greater share of these nonmonetary benefits, while the noncustodial parent loses some of these benefits. Although the benefits derived from the children are real, it is difficult or impossible to place a monetary value on them, and they are not generally taken into account in child support guidelines. Children also impose indirect costs on the custodial and, to a lesser extent, noncustodial parents. Caring for children requires substantial time that could be devoted to compensated work or leisure. However, these

income of the noncustodial parent from \$15,000 to \$15,001 (an increase of \$1) results in an increase in child support of \$150.

⁵ In one state, for example, the percentage of income paid as child support under some circumstances declines from 21.8 percent for incomes between \$4,500 and \$8,499 to 21.4 percent for incomes between \$8,500 and \$12,249. Thus, an increase in income from \$8,499 to \$8,500 results in a decrease in child support from \$1,853 to \$1,819. Only if income increases to \$8,657 will the child support reach the former level.

⁶ For example, states could apply one rate to the first \$10,000 of income, a different rate to the next \$10,000 of income, etc.

"opportunity costs" of children are not generally taken into account in child support guidelines because it is not feasible to do so.

In addition to deciding on the general method of establishing guidelines, states must also decide how to deal with special circumstances that sometimes arise relating to income or child-related expenses. Among the circumstances of interest are support obligations for other dependents, shared physical custody arrangements, extended visitations, health insurance costs, medical expenses, child care expenses, child-related expenses of the noncustodial parent, voluntary unemployment and underemployment, and self-employment income. These special circumstances should be carefully considered in the development of guidelines. They can be dealt with either by including provisions in the guidelines or by providing courts and administrative agencies with guidance on how to take them into account in setting awards.

Finally, guidelines should take into account the concept of fairness to the child, the custodial parent, and the noncustodial parent. Fairness issues are complicated by two factors. First, as noted previously, when a family splits into two households there is generally a loss of economies of scale -- at least one of the newly-formed households will experience a decline in economic well-being if total income does not increase. Second, efforts to assist the child will generally also benefit the custodial parent because once a household receives income, it can be used to benefit all members of the household regardless of its source. Child support guidelines should consider how declines in economic well-being can most equitably be spread among the children and parents.

- Estimating the earnings that parents forego in raising children and the effect of children on parental savings over time, and examining how these two factors can be included in estimates of expenditures on children.
- Studying how expenditure patterns among families in which the parents have joint physical custody of the children differ from those of other families.
- Examining how the formation of second families (by both custodial and noncustodial parents) affects expenditure patterns.
- Empirically examining what is perceived to be fair (to custodial parents, noncustodial parents, and children) in a variety of situations involving child support.
- Developing new approaches to estimating expenditures on children including the possibility of directly estimating these expenditures by asking families how much they spend on their children.

Although there are many problems inherent in estimating expenditures that parents make on behalf of their children, the data problems are less constraining than many of the underlying theoretical problems. Several data problems stem from an inability to distinguish between various categories of expenditures; these categories include distinguishing clothing for 16 to 17 year olds from clothing for adults, health care costs for children from health care costs for adults, and work-related child care from non-work-related child care. The first of these (clothing for older children) limits our ability to accurately implement the Rothbarth estimation technique for older children, while the two latter categories are likely to be useful as alternative methods of estimating expenditures on children are developed. Finally, the data collected on income and savings in the Consumer Expenditure Survey are generally not considered to be as reliable as the expenditure data. Because child support guidelines are based on income rather than expenditures, the current CEX structure does not permit expenditure patterns in different family types to be accurately linked to income. In light of these considerations, the Department of Labor may want to consider the following changes to the Consumer Expenditure Survey:

- Distinguishing between expenditures on clothing for 16 and 17 year old children and expenditures on clothing for adults.

- Distinguishing between health care expenditures made on behalf of adults from those that are made on behalf of children.
- Collecting data on child care expenditures such that work-related child care expenses can be distinguished from non-work-related child care expenses.
- Improving the accuracy of the income and savings data.

Conclusions

The recurring theme throughout this report is that because of lost household economies (or economies of scale), a reduction in the standard of living of at least one household is inevitable when the parents of children do not live together (unless there is a substantial increase in income). The central issue that must be confronted in determining whether or not existing child support guidelines are appropriate is whether or not the guidelines distribute this reduction in living standards fairly between the custodial and noncustodial households. The estimates of how much parents spend on behalf of their children, in both intact and single-parent families, can help to inform this determination.

Ultimately, however, the determination must be made on the basis of value judgments concerning what is fair and what is not. All states have responded to the mandate to develop guidelines, and many states have continued to debate the merits of alternative structures, as evidenced by the large number of states that have revised their guidelines in recent years.

This report is intended to provide information to Congress and the states that may prove useful as the states continue to refine, revise, and update their guidelines over time.

7.2 Recommendations and Conclusions

Recommendations for State Guidelines

The guidelines developed by the states generally fall within the range of expenditures on children. However, some of the states' guidelines may lead to child support orders that could be considered too low, and some guidelines may inadvertently generate orders that vary in unintended ways with changes in income. The findings presented in this report suggest that states should consider the following points in the development of their child support guidelines:

- States should periodically review their guidelines in conjunction with the most recent estimates of expenditures on children to be sure that their guidelines generate support orders that are consistent with estimates of expenditures on children. In particular, states should review the basic rates used in their guidelines to see if the child support awards they generate fall below the minimum estimate of expenditures on children.
- Because the amount spent on children increases as parental income increases, the resources available to children in single-parent households should increase with the income of the parent(s). This implies that in the case of the percentage of income guideline, child support awards should increase with increases in the noncustodial parent's income, and for the income shares and Melson guidelines, child support should increase with increases in combined parental income.^{7 8}
- Order amounts should increase as the number of children increases, although it should be recognized that expenditures on children do not increase in direct proportion to the number of children.
- Because the expenditure estimates indicate that more is spent on older children than on younger children, it may be desirable to vary order amounts with the age of children (increasing awards as children grow older).

⁷ The fact the amount spent on children increases as parental income increases should not be interpreted to mean that the percentage of parental income spent on children increases as income increases. In fact, there is some evidence that as income increases there is a slight decrease in the percentage of income spent on children.

⁸ However, if different percentages are used, application of a different rate should be on a marginal or next-dollar basis rather than on all income.

States may also want to carefully consider the following in developing their guidelines:

- Procedures to account for expenditures over and above the usual levels on items such as child care, tuition, special needs, medical care, and transportation. An attempt can be made to differentiate between required and discretionary expenditures.
- Cases in which (individual or combined) parental income is unusually high or unusually low. These cases require careful consideration for at least two reasons. First, it appears that it is at the high and low ends of the income distribution that there is the greatest danger of child support guidelines generating unintended inequities. Second, it is under these circumstances that cases are most likely to be brought to court, and the guidelines challenged.
- The implications of varying the percentage of income that is to be paid in child support with the level of income. Unless the guidelines are carefully constructed, it is possible that (i) a small change in income could result in a large change in the support order or (ii) an increase in income may result in a decrease in the support order. To avoid such problems, states can apply varying rates to marginal income (as is the case with the Federal personal income tax).
- States using income shares guidelines should consider the implications of varying the support rate. For example, under some circumstances if the support rate declines as income increases, an increase in the income of the noncustodial parent may result in a decrease in the size of the child support award.

Recommendations for Future Research and Improved Data Collection

There are a number of problems inherent in estimating the expenditures that parents make on behalf of their children. These include both theoretical difficulties, as well as empirical difficulties that arise (in part) because of the extreme expense of collecting detailed longitudinal expenditure data. In light of the findings presented in this report, the research community may want to consider the following in future work:

- Periodically updating estimates of expenditures on children by replicating procedures used by previous researchers and incorporating the most current data available.
- Determining if the differences in the estimates from various expenditure pattern studies based on the CEX are a result of changes over time in expenditure patterns or the estimation techniques used.