
Expenditures on Children by Families, 1999

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Since 1960 the U.S. Department of Agriculture has provided estimates of expenditures on children from birth through age 17. This article presents the most recent estimates for husband-wife and single-parent families. Data are from the 1990-92 Consumer Expenditure Survey. The Consumer Price Index is used to update income and expenditures to 1999 dollars. Data and methods used in calculating child-rearing expenses are described. Estimates are provided for major components of the budget by age of the child, family income, and region of residence. Expenses on the younger child in a two-child, husband-wife household for the overall United States averaged \$6,080 to \$13,800 in 1999, depending on the child's age and family income group. Adjustment factors for number of children in the household are also provided. Results of this study can be used in developing State child support guidelines and foster care payments and in developing family educational programs.

Since 1960 the U.S. Department of Agriculture (USDA) has provided estimates of expenditures on children from birth through age 17. These estimates are used in setting child support guidelines and foster care payments and in developing educational programs on parenthood. This study presents the latest child-rearing expense estimates, which are based on 1990-92 expenditure data updated to 1999 dollars. The study presents these new estimates for husband-wife and single-parent families. It briefly describes the data and methods used in calculating child-rearing expenses¹ and then discusses the estimated expenses.

The estimates are provided for the overall United States. The child-rearing expense estimates for husband-wife families are also provided for urban areas in four regions (Northeast, South, Midwest, and West) and rural areas throughout the United States² to adjust partially for price differentials and varying patterns of expenditures. For single-parent families, estimates are provided only for the overall United States because of limitations in the sample size. Expenditures on children are estimated for the major budgetary components: Housing, food, transportation, clothing, health care, child care and education, and miscellaneous goods and services. The box describes each expenditure component.

¹The report "Expenditures on Children by Families: 1999 Annual Report" provides a more detailed description of the data and methods. To obtain a copy, contact USDA, Center for Nutrition Policy and Promotion, 1120 20th Street NW, Suite 200 North Lobby, Washington, DC 20036 (telephone: 202-418-2312) or download from <http://www.usda.gov/cnpp>.

²Urban areas are defined as Metropolitan Statistical Areas (MSA's) and other places of 2,500 or more people outside an MSA; rural areas are places of less than 2,500 people outside an MSA.

Categories of Household Expenditures

Housing expenses consists of shelter (mortgage interest, property taxes, or rent; maintenance and repairs; and insurance), utilities (gas, electricity, fuel, telephone, and water), and house furnishings and equipment (furniture, floor coverings, major appliances, and small appliances). For homeowners, housing expenses do not include mortgage principal payments; in the Consumer Expenditure Survey, such payments are considered to be part of savings. So, total dollars allocated to housing by homeowners are underestimated in this report.

Food expenses consists of food and nonalcoholic beverages purchased at grocery, convenience, and specialty stores, including purchases with food stamps; dining at restaurants; and household expenditures on school meals.

Transportation expenses consists of the net outlay on purchase of new and used vehicles, vehicle finance charges, gasoline and motor oil, maintenance and repairs, insurance, and public transportation.

Clothing expenses consists of children's apparel such as diapers, shirts, pants, dresses, and suits; footwear; and clothing services such as dry cleaning, alterations and repair, and storage.

Health care expenses consists of medical and dental services not covered by insurance, prescription drugs and medical supplies not covered by insurance, and health insurance premiums not paid by employer or other organization.

Child care and education expenses consists of day care tuition and supplies; baby-sitting; and elementary and high school tuition, books, and supplies.

Miscellaneous expenses consists of personal care items, entertainment, and reading materials.

Data

The 1990-92 Consumer Expenditure Survey (CE) is used to estimate expenditures on children. Administered by the Bureau of Labor Statistics (BLS), the CE collects information on socio-demographic characteristics, income, and expenditures of households.

The CE has been conducted annually since 1980 and interviews about 5,000 households each quarter over a 1-year period. Each quarter is deemed an independent sample by BLS; thus, the total number of households in the 1990-92 survey is about 60,000.

Husband-wife and single-parent families were selected from these households for this study if (1) they had at least one

child of their own—age 17 or under—in the household, (2) they had six or fewer children, (3) there were no other related or unrelated people present in the household except their own children, and (4) they were complete income reporters. Complete income reporters are households that provide values for major sources of income, such as wages and salaries, self-employment income, and Social Security income. Quarterly expenditures were annualized. The sample consisted of 12,850 husband-wife households and 3,395 single-parent households. BLS weighting methods were used to weight the sample to reflect the U.S. population of interest. Although based on 1990-92 data, the expense estimates were updated to 1999 dollars by using the Consumer Price Index (CPI-U). (Expenditure and income data for 1990

and 1991 were first converted to 1992 dollars; then all 3 years of data were updated to 1999 dollars.)

Methods

The CE collects overall household expenditure data for some budgetary components (housing, food, transportation, health care, and miscellaneous goods and services) and child-specific expenditure data for other components (clothing, child care, and education). Multivariate analysis was used to estimate household and child-specific expenditures. Income level, family size, and age of the younger child were controlled so that estimates could be made for families with these varying characteristics. Regional estimates were derived by controlling for region.

The three income groups of husband-wife households were determined by dividing the sample for the overall United States into equal thirds. The income groups were before-tax income under \$31,000, between \$31,000 and \$52,160, and over \$52,160 in 1992 dollars.

For each income level, the estimates were for husband-wife families with two children. The younger child was in one of six age categories: 0-2, 3-5, 6-8, 9-11, 12-14, and 15-17. Households with four members (two children) were selected as the standard because in 1990-92 this was the average household size of two-parent families. The focus was on the younger child in a household because the older child was sometimes over age 17.

The estimates are based on CE interviews of households with and without specific expenses; so for some families, expenditures may be higher or lower than the mean estimates, depending on whether they incur the expense. This particularly applies to child care and education for which about 50 percent of families in the study had no expenditure. Also, the estimates only cover out-of-pocket expenditures on children made by the parents and not by others, such as grandparents or friends. For example, the value of clothing gifts to children from grandparents would not be included in clothing expenses.

Regional income categories were based on the national income categories in 1992 dollars, updated to 1999 dollars by using regional CPI's. The regional income categories were not divided into equal thirds for each region as was done for the overall United States.

After the various overall household and child-specific expenditures were estimated, these total amounts were allocated among the four family members (husband, wife, older child, and younger child). The estimated expenditures for clothing and child care and education were only for children. It was assumed that these expenses were equally allocated to each child; therefore, the estimated expenditures were divided by two (the number of children in the household).

Because the CE did not collect expenditures on food and health care by family member, data from other Federal studies were used to apportion these budgetary components to children by age. Food budget shares as a percentage of total food expenditures—for the younger child in a husband-wife household with two children—were determined by using the 1994 USDA food plans (9). These shares were estimated by age of the child and household income level. The food budget shares were then applied to estimated household food expenditures to determine food expenses on children. Health care shares, as a percentage of total health care expenses for the younger child in a husband-wife household with two children, were calculated from the 1987 National Medical Expenditure Survey (4). These shares were estimated by age of the child and applied to estimated household health care expenditures to determine expenses on children.

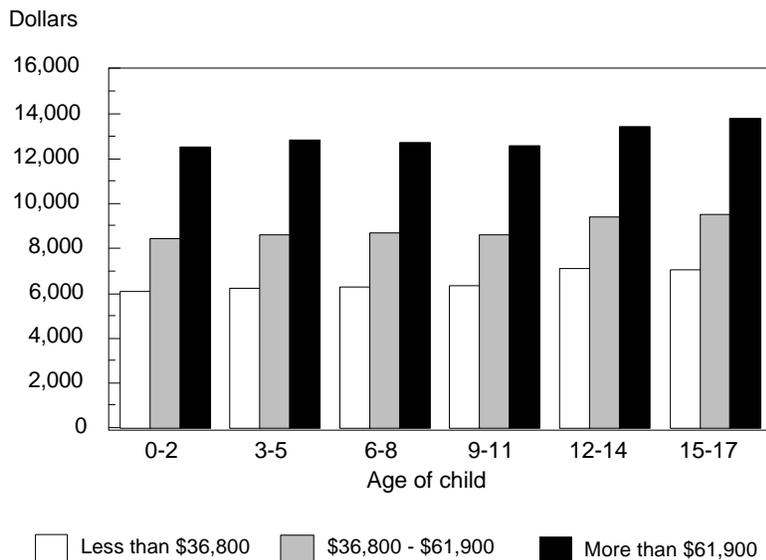
No research base exists for allocating estimated household expenditures on housing, transportation, and miscellaneous goods and services among household members. Two of the most common approaches for allocating these expenses are the marginal cost method and the per capita method.

The marginal cost method measures expenditures on children as the difference in expenses between couples with children and equivalent childless couples. This method depends on development of an equivalency measure; however, there is no universally accepted measure. Proposed methods have produced different estimates of expenditures on children.³ Some of the marginal cost approaches assume that parents or couples do not alter expenditures on themselves after a child is added to a household. Also, couples without children often buy larger-than-needed homes at the time of purchase in anticipation of children. Comparing the expenditures of childless couples with expenditures of similar couples that have children could lead to underestimated expenditures on children. Lastly, the marginal cost method does not provide a direct estimate of how much is spent on a child. It estimates how much money families with children must be compensated to bring the parents to the same utility level (as gauged by an equivalence scale) of couples without children. This is a different question from “how much do parents spend on children?”

For these reasons, the USDA uses the per capita method to allocate housing, transportation, and miscellaneous goods and services among household members. The per capita method allocates expenses among household members in equal proportions. Although the per capita method has limitations, these limitations were considered less severe than those of the marginal cost approach.

³For a review of equivalency measures and estimates of expenditures on children resulting from them, see U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, 1990, *Estimates of Expenditures on Children and Child Support Guidelines* (11).

Figure 1. Estimated 1999 annual family expenditures on a child, by before-tax income level and age of child¹



¹U.S. average for the younger child in husband-wife families with children.

A major limitation of the per capita method is that expenditures for an additional child may be less than average expenditures. Consequently, adjustment formulas were devised to estimate expenditures on one child or three or more children for households of different sizes. These formulas are discussed later in the paper. Transportation expenses resulting from employment activities are not related to expenses on children, so these costs were excluded from the estimated household transportation expenses. Data used to estimate work-related transportation expenses were from a 1990 U.S. Department of Transportation study (12).

Although the USDA uses the per capita approach rather than a marginal cost approach in allocating housing, transportation, and miscellaneous expenditures to children in a household, a USDA study

examined how these expenses would be allocated using different marginal cost approaches (5). These approaches produced estimates of expenditures on children for housing and miscellaneous goods and services below those produced by the per capita method. In addition, these approaches produced estimates of transportation expenditures on children above those produced by the per capita method.

Estimated Expenditures on Children by Husband-Wife Households

Estimates of family expenditures on the younger child in husband-wife households with two children are presented in tables 2 through 7 on pp. 68-73. The estimates are for the overall United States, urban regions of the country, and overall rural areas. Household income levels were

updated to 1999 dollars by using the all-items category of the CPI-U, and expenditures were updated by using the CPI for the corresponding item (i.e., the CPI's for housing, food, etc.). Regional estimates were updated to 1999 dollars by using the regional CPI's. The following subsections highlight the child-rearing expense estimates for the younger child in a two-child household for the overall United States by income level, budgetary component, and age of the child. Child-rearing expenses by region are also discussed.

Income Level

Estimated expenses on children vary considerably by household income level (fig. 1). Depending on age of the child, the annual expenses range from \$6,080 to \$7,150 for families in the lowest income group (1999 before-tax income less than \$36,800), from \$8,450 to \$9,530 for families in the middle-income group (1999 before-tax income between \$36,800 and \$61,900), and from \$12,550 to \$13,800 for families in the highest income group (1999 before-tax income more than \$61,900). On average, households in the lowest group spend 28 percent of their before-tax income per year on a child; those in the middle-income group, 18 percent; and those in the highest income group, 14 percent. The range in these percentages would be narrower if after-tax income were considered, because a greater percentage of income in higher income households goes toward taxes.

Although families in the highest income group spend slightly less than twice the amount that families in the lowest income group spend on a child, on average, the amount varies by budgetary component. In general, expenses on a child for goods and services considered to be necessities (such as food and clothing) do not

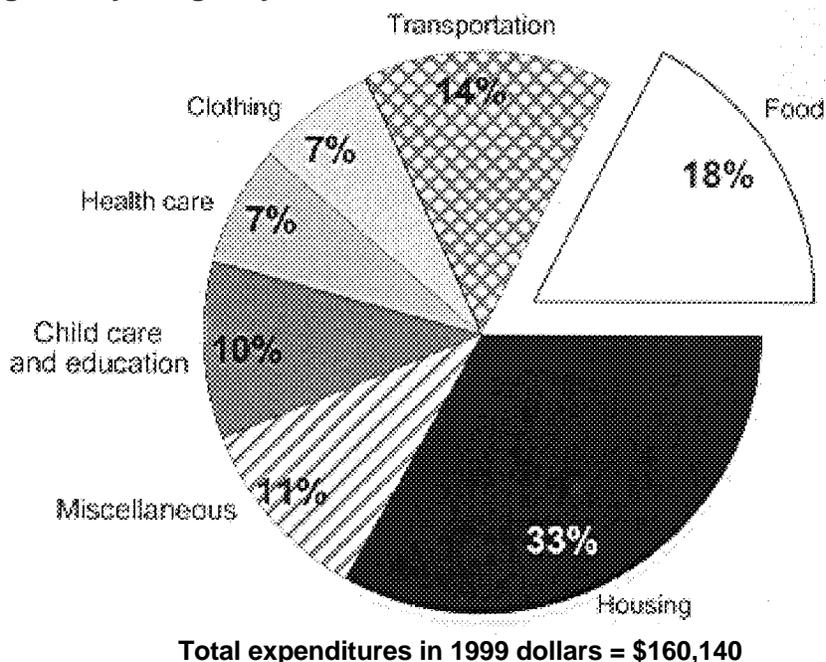
vary as much as those considered to be discretionary (such as miscellaneous expenses) among households in the three income groups. For example, clothing expenses on a child age 15-17 average \$680 in the lowest income group and \$1,030 in the highest income group, a 51-percent difference. Miscellaneous expenses on the same age child average \$630 in the lowest income group and \$1,590 in the highest income group, a 152-percent difference.

Budgetary Component

Housing accounts for the largest share of total child-rearing expenses; figure 2 shows this for families in the middle-income group. Based on an average for the six age groups, housing accounts for 33 percent of child-rearing expenses for a child in the lowest and middle-income groups and 37 percent in the highest income group. Food is the second largest average expense on a child for families regardless of income level. It accounts for 20 percent of child-rearing expenses for a child in the lowest income group, 18 percent in the middle-income group, and 15 percent in the highest income group. Transportation is the third largest child-rearing expense, making up 13 to 14 percent of child-rearing expenses across income levels.

Across the three income groups, miscellaneous goods and services (personal care items, entertainment, and reading materials) is the fourth largest expense on a child for families (10 to 13 percent). Clothing (excluding that received as gifts or hand-me-downs) accounts for 6 to 8 percent of expenses on a child for families, child care and education accounts for 8 to 11 percent, and health care accounts for 5 to 7 percent of child-rearing expenses across income groups. Estimated expenditures for health care include only out-of-pocket expenses

Figure 2. Estimated family expenditures on a child through age 17, by budgetary share¹



¹U.S. average for the younger child in middle-income (1999 before-tax income between \$36,800 and \$61,900), husband-wife families with two children.

(including insurance premiums not paid by an employer or other organization) and not that portion covered by health insurance.

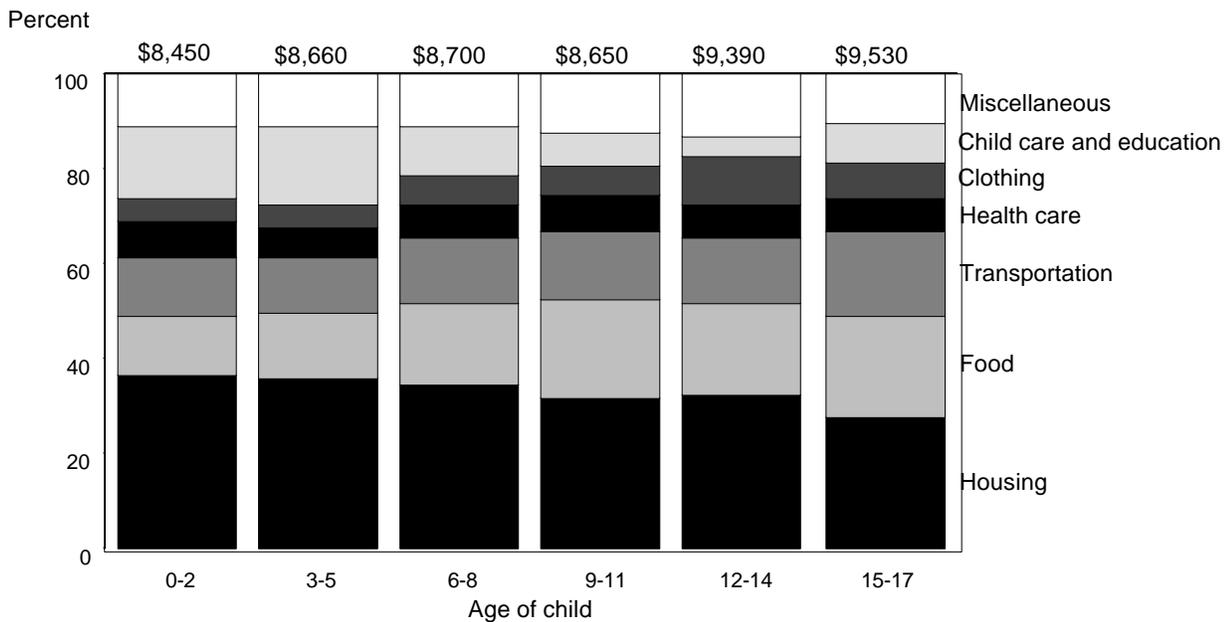
Age of Child

Expenditures on a child are lower in the younger age categories and higher in the older age categories. Figure 3 depicts this for families in the middle-income group. This held across income groups even though housing expenses, the highest child-rearing expenditure, generally decline as the child ages. The decline in housing expenses reflects diminishing interest paid by homeowners over the life of a mortgage. Payments on principal are not considered part of housing costs

in the CE; they are deemed to be part of savings.

For all three income groups, food, transportation, clothing, and health care expenses related to child-rearing generally increase as the child's age increases. Transportation expenses are highest for a child age 15-17, when he or she would start driving. Child care and education expenses are highest for a child under age 6. Most of this expense may be attributable to child care at this age. The estimated expense for child care and education may seem low for those with the expense. It should be remembered that the estimates reflect the average of households with and without the expense.

Figure 3. Estimated 1999 annual family expenditures on a child, by age and budgetary share¹



¹U.S. average for the younger child in middle-income (1999 before-tax income between \$36,800 and \$61,900), husband-wife families with two children.

Region

Child-rearing expenses in the regions of the country reflect patterns observed in the overall United States: in each region, expenses on a child increase with household income level and, generally, with age of the child. Overall child-rearing expenses are highest in the urban West, followed by the urban Northeast, and urban South. Figure 4 shows total child-rearing expenses by region and age of a child for middle-income families. Child-rearing expenses are lowest in the urban Midwest and rural areas. Much of the difference in expenses on a child among regions is related to housing costs. Total housing expenses on a child are highest in the urban West and urban Northeast and lowest in rural areas. However, child-rearing transportation expenses are highest for families in rural areas. This likely reflects the longer

traveling distances and the lack of public transportation in these areas.

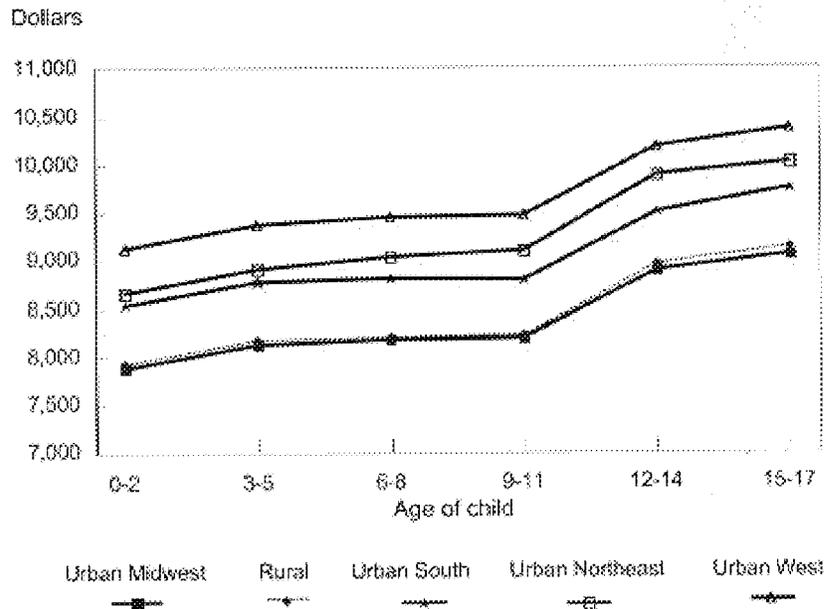
Adjustments for Older Children and Household Size

The expense estimates on a child represent expenditures on the younger child at various ages in a husband-wife household with two children. It cannot be assumed that expenses on the older child are the same at these various ages. Expenses may vary by birth order. The method described on pp. 57-59 was repeated to determine whether a difference exists, the extent of this difference, and how the expenditures may be adjusted to estimate expenses on an older child. The focus was on the older child in each of the same age categories as those used with the younger child. A two-child family was again used as the

standard. Household income and region of residence were not held constant, so findings are applicable to all families.

On average, for husband-wife households with two children, expenditures do not vary by birth order. So, the expenditures in tables 2 through 7 reflect those on either child in a two-child family. Thus, annual expenditures on children in a husband-wife, two-child family may be estimated by summing the expenses for the two appropriate age categories. For example, annual expenditures on children ages 9-11 and 15-17 in a husband-wife family in the middle-income group for the overall United States would be \$18,180 (\$8,650 + \$9,530). For specific budgetary components, annual expenses on an older child vary, compared with those on a younger child: families spend

Figure 4. Estimated 1999 annual family expenditures on a child, by region and age¹



¹U.S. average for the younger child in middle-income, husband-wife families with two children. For the urban West, the middle-income group had a 1999 before-tax income between \$36,900 and \$62,000; the urban Northeast, between \$36,500 and \$61,400; for the urban South, between \$36,800 and \$61,900; for the urban Midwest, between \$37,100 and \$62,400; and for rural areas, between \$37,200 and \$62,600.

more on clothing and education for an older child but less on transportation.

The estimates should also be adjusted if a household has only one child or more than two children. Families will spend more or less on a child depending on the number of other children in the household and economies of scale. Multi-variate analysis was used to estimate expenditures for each budgetary component to derive these figures. Household size and age of the younger child were controlled; household income level and region of the country were not. The results, therefore, are applicable to all families. These expenditures were then

assigned to a child by using the method described earlier. Compared with expenditures for each child in a husband-wife, two-child family, expenditures for the child in a one-child family average 24 percent more and for those with three or more children, 23 percent less on each child.

Therefore, to adjust the figures in tables 2 through 7 to estimate annual overall expenditures on an only child, users of this report should add 24 percent to the total expense for the child's age category. To estimate expenditures on three or more children, users should subtract 23 percent from the total expense for

each child's age category and then sum the totals. As an example of adjustments needed for different numbers of children, the total expenses for a middle-income family in the overall United States on a child age 15-17 with no siblings would be \$11,820 ($\$9,530 \times 1.24$). The total expenses on three children ages 3-5, 12-14, and 15-17 would be \$21,240 ($(\$8,660 + \$9,390 + \$9,530) \times .77$). For a particular budgetary component, the percentages may be more or less. As family size increases, food costs per child decrease less than housing and transportation costs per child decrease.

Expenditures by Single-Parent Families

The estimates of expenditures on children by husband-wife families do not apply to single-parent families, a group that accounts for an increasing percentage of families with children. Therefore, separate estimates of child-rearing expenses in single-parent households were made by using the CE data. Most single-parent families in the survey were headed by a woman: 90 percent.

The method used in determining child-rearing expenses for two-parent households was followed. Multivariate analysis was used to estimate expenditures for each budgetary component. Control variables were income level, household size, and age of the younger child (the same age categories as used with children in two-parent families). A single parent with two children was used as the standard for household size.

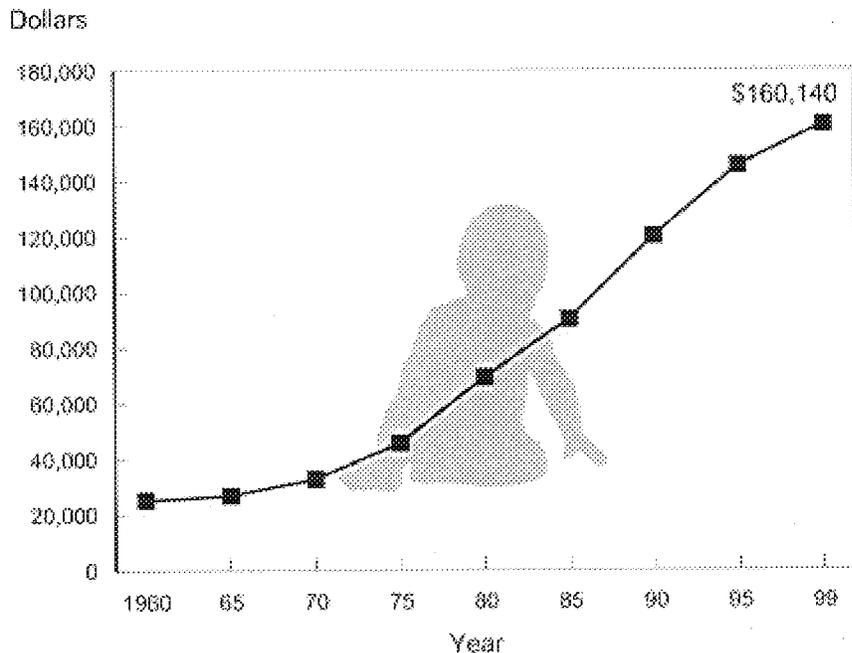
Income groups of single-parent households (before-tax income under \$31,000 and \$31,000 and over in 1992 dollars, inflated to 1999 dollars) were selected to correspond with the income groups

Expenditures on Children Over Time

Since 1960 the U.S. Department of Agriculture (USDA) has been providing estimates of expenditures on children from birth through age 17. The original estimates were based on the 1960 Consumer Expenditure Survey. The figure below examines how these expenditure estimates have changed over time at 5-year intervals. Depicted are the average total expenditures on a child from birth through age 17 in a middle-income, husband-wife family. Expenditures are in nominal (not adjusted for inflation) dollars.

Expenses to raise a child to age 18 have increased dramatically even when adjusted for inflation, from \$25,230 in 1960 (\$142,000 in 1999 dollars) to \$160,140 in 1999. New components of child-rearing costs, particularly child care, are among factors causing this increase. In 1960 child care expenses were negligible because many mothers were not in the labor force. In 1999 child care expenses were among the largest expenditures made on preschool children by middle-income families.

Total expenditures on a child for the first 18 years of life¹



¹Average expenditures for a middle-income, husband-wife family, not adjusted for inflation.

Estimating Future Costs

The estimates presented in this study represent household expenditures on a child of a certain age in 1999. To estimate these expenses for the first 17 years, future price changes need to be incorporated in the figures. To do this, a future cost formula is used such that:

$$C_f = C_p (1 + i)^n$$

where:

C_f = projected future annual dollar expenditure on a child of a particular age

C_p = present (1999) annual dollar expenditure on a child of a particular age

i = projected annual inflation (or deflation)

n = number of years from present until child will reach a particular age

An example of estimated future expenditures on the younger child in a husband-wife family with two children for each of the three income groups for the overall United States is presented.

The example assumes a child is born in 1999 and reaches age 17 in the year 2016. The example also assumes that the average annual inflation rate over this time is 4.3 percent (the average annual inflation rate over the past 20 years) (10). Thus total family expenses on a child through age 17 would be \$174,090, \$236,660, and \$344,800 for households in the lowest, middle, and highest income groups, respectively. In 1999 dollars, these figures would be \$117,390, \$160,140, and \$233,850.

Inflation rates other than 4.3 percent could be used in the formula if projections of these rates vary in the future. Also, it is somewhat unrealistic to assume that households remain in one income category as a child ages. For most families, income rises over time. In addition, such projections assume child-rearing expenditures change only with inflation, but parental expenditure patterns also change over time.

Estimated annual expenditures on a child born in 1999, by income group¹

Year	Age	Income group		
		Lowest	Middle	Highest
1999	<1	\$6,080	\$8,450	\$12,550
2000	1	6,340	8,810	13,090
2001	2	6,610	9,190	13,650
2002	3	7,050	9,830	14,570
2003	4	7,350	10,250	15,200
2004	5	7,670	10,690	15,850
2005	6	8,120	11,200	16,360
2006	7	8,470	11,680	17,070
2007	8	8,840	12,180	17,800
2008	9	9,250	12,630	18,400
2009	10	9,640	13,180	19,200
2010	11	10,060	13,740	20,020
2011	12	11,850	15,560	22,290
2012	13	12,360	16,230	23,250
2013	14	12,890	16,930	24,250
2014	15	13,260	17,920	25,950
2015	16	13,830	18,690	27,070
2016	17	14,420	19,500	28,230
Total		\$174,090	\$236,660	\$344,800

¹Estimates are for the younger child in husband-wife families with two children.

used in estimating child-rearing expenditures in husband-wife households. This income includes child support payments. The two higher income groups of two-parent families (income between \$31,000 and \$52,160 and over \$52,160 in 1992 dollars) were combined because only 17 percent of single-parent households had a before-tax income of \$31,000 and over. The sample was weighted to reflect the U.S. population of interest.

Children's clothing and child care and education expenditures were divided between the two children in the one-parent household. For food and health care, household member shares were calculated for a three-member household (single parent and two children, with the younger child in one of the six age categories). The USDA food plans and the 1987 National Medical Expenditure Survey findings were used to do this. These shares for the younger child in a single-parent family were then applied to estimated food and health care expenditures to determine expenses on the younger child in each age category.

Housing, transportation, and miscellaneous expenditures were allocated among household members on a per capita basis. Transportation expenses were adjusted to account for nonemployment-related activities in single-parent families. Income and expenses were updated to 1999 dollars.

Child-rearing expense estimates for single-parent families are in table 8, p. 74. For the lower income group (1999 before-tax income less than \$36,800), a comparison of estimated expenditures on the younger child in a single-parent family with two children with those of the younger child in a husband-wife family with two children is presented in table 1. As discussed earlier, 83 percent

of single-parent families and 33 percent of husband-wife families were in this lower income group. More single-parent than husband-wife families were in the bottom range of this lower income group. Average income for single-parent families in the lower income group is \$15,400; for husband-wife families it is \$23,000. However, total expenditures on a child through age 17 are, on average, only 5 percent lower in single-parent households than in two-parent households.

Single-parent families in this lower income group, therefore, spend a larger proportion of their income on children than do two-parent families. On average, housing expenses are higher; whereas, transportation, health care, child care and education, and miscellaneous expenditures on a child are lower in single-parent than in husband-wife households. Child-related food and clothing expenditures are similar, on average, in single- and two-parent families.

For the higher income group of single-parent families (1999 before-tax income of \$36,800 and over), child-rearing expense estimates are about the same as those for two-parent households in the before-tax income group of \$61,900 and over. Total expenses, in 1999 dollars, for the younger child through age 17 are \$234,780 for single-parent families versus \$233,850 for husband-wife families. Child-rearing expenses for the higher income group of single-parent families, therefore, also are a larger proportion of income than they are in husband-wife families. Thus, expenditures on children do not differ much between single-parent and husband-wife households. What differs is household income levels. Because single-parent families have one less potential earner than do husband-wife families, on average, their total household income is lower,

Table 1. A comparison of estimated 1999 expenditures on a child by lower income single-parent and husband-wife families¹

Age of child	Single-parent households	Husband-wife households
0 - 2	\$5,090	\$6,080
3 - 5	5,770	6,210
6 - 8	6,480	6,310
9 - 11	6,070	6,330
12 - 14	6,540	7,150
15 - 17	7,240	7,050
Total (0 - 17)	\$111,570	\$117,390

¹Estimates are for the younger child in two-child families in the overall United States with 1999 before-tax income less than \$36,800.

and child-rearing expenses are a greater percentage of this income.

Estimates cover only out-of-pocket child-rearing expenditures made by the parent with primary care of the child and do not include child-related expenditures made by the parent without primary care or made by others, such as grandparents. Such expenditures could not be estimated from the data. Overall expenses by both parents on a child in a single-parent household are likely greater than this study's estimates.

The procedure detailed earlier was repeated to determine the extent of the difference in expenditures on an older child in single-parent households. The focus was on the older child, and a family with two children was used as the standard. On average, single-parent households with two children spend 7 percent less on the older than on the younger child (in addition to age-related differences). This contrasts with husband-wife households whose expenditures are unaffected by birth order.

As with husband-wife households, single-parent households spend more or less if there is only one child or three or more children. Multivariate analysis was used to estimate expenditures for each budgetary component to determine these differences. Household size and age of the younger child were control variables. Expenditures were then assigned to a child by using the method described earlier. Compared with expenditures for the younger child in a single-parent, two-child family, expenditures for an only child in a single-parent household average 35 percent more, and those with three or more children average 28 percent less on each child.

Other Expenditures on Children

Expenditures on a child that were estimated in this study are composed of direct parental expenses made on a child through age 17 for seven major budgetary components. These direct expenditures exclude costs related to childbirth and prenatal health care. In 1996 these particular health care costs averaged

\$7,090 for a normal delivery and \$11,450 for a Cesarean delivery (7). These costs may be reduced by health insurance. One of the largest expenses made on children after age 17 is the cost of a college education. The College Board (2) estimates that in 1999-2000, average annual tuition and fees are \$3,274 at 4-year public colleges and \$12,894 at 4-year private colleges. Annual room and board is \$4,533 at 4-year public colleges and \$5,224 at 4-year private colleges. For 2-year colleges in 1999-2000, average annual tuition and fees are \$1,608 at public colleges and \$7,744 at private colleges. Annual room and board is \$4,474 at 2-year private colleges. No estimates of room and board are given for 2-year public colleges. Other parental expenses on children after age 17 include those associated with children living at home or, if children do not live at home, gifts and other contributions to them.

The estimates do not include all government expenditures on children. Examples of excluded expenses are public education, Medicaid, and school meals. The actual expenditures on children (by parents and the government) would be higher than reported in this study, especially for the lowest income group.

Indirect child-rearing costs are also not included in the estimates. Although these costs are typically more difficult to measure than are direct expenditures, they can be substantial. The time involved in rearing children is considerable. In addition, one or both parents may need to cut back on hours spent in the labor force to care for children, thus reducing current earnings and future career opportunities. The indirect costs of child rearing may exceed the direct costs. For more on these indirect costs, see Bryant et al. (1), Ireland and Ward (3), Longman (6), and Spalter-Roth and Hartmann (8).

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