Income Inequality across Family Structure Types

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Abstract

Using twenty-four years of March CPS data, the present research documents trends in income inequality among families by family structure. Income inequality increased among all families and among families with children from mid-1970s until the mid-1990s. In addition, income inequality between family structure types increased during this period, indicating that family types became increasingly stratified by income. Inequality is greatest among single, female-headed families and smallest among married couple families. Decomposition analysis of the changes in aggregate inequality confirms that the demographic shifts in family structure have contributed to greater inequality, but the primary source for changes in aggregate inequality is changing inequality within family structure types.

Demographic change in family formation behavior has been dramatic over the last several decades. Since 1960, we have witnessed substantial increases in nonmarital childbearing, cohabitation, and divorce, resulting in a larger proportion of both adults and children living in single mother families, single father families, and cohabiting families (Cherlin, 1992; Wojtkiewicz, McLanahan, & Garfinkel, 1990; Eggebeen, Snyder & Manning, 1996; Casper & Cohen, 2000). The dramatic changes in family structure have led to changes in the distribution of family income because these family changes alter the pooling of resources. As such, nonintact families have lower average incomes and higher rates of poverty (U.S. Census, 1998; Danziger & Weinberg, 1994; Eggebeen & Lichter, 1991). In 1978, Treas & Walther noted that "family income reflects not only the structure of economic opportunity, but also the choices, circumstances, and conventions of family life" (866).

These demographic changes in family structure coincided with a period of increasing income inequality that began in the 1970s and accelerated during the 1980s (Levy, 1987; Karoly, 1993). Inequality increased along most measurable dimensions (except gender) and within most groups (Levy, 1995). The Gini coefficient is an often-used measure of inequality, with higher values indicating a higher concentration of resources among the wealthy. The Gini coefficient for families in 1969 was 0.35 and it topped 0.40 in 1989 (Levy, 1995). Inequality continued to increase during the early 1990s, but remained relatively stable after 1993 as the economy grew (U.S. Census, 1998). In 1997, the Gini coefficient for families reached 0.43 (U.S. Census, 1998). Given the coincidence in these demographic and economic trends, the present research seeks to uncover the role of family structure for recent trends in income inequality and to document income inequality within and between different family structure types. Although most previous research has included all families in the analysis, the present research also focuses on

families with children to better understand family income inequality for children.

EXPLANATIONS OF FAMILY INCOME INEQUALILTY

Family income is an aggregate of the total income from the adults' earnings (i.e., the number of earners * their wage rates * their hours worked) and the total income from other sources, such as alimony, child support, interest, dividends, and rental income. As such, family income inequality is a function of the following components: (1) earnings inequality, (2) unemployment, (3) inequality in other sources of income, (4) household size, (5) female labor force participation, and (6) family formation behavior and marital homogamy. Jenkins (1995) notes that some of the influences affecting income inequality are "better characterized by *whom* they affect ('income recipient' influences), while others are better classified in terms of *which income source* they affect ('income package' influences)" (37; italics and parentheses in the original). In the above list, the first three factors relate to income package influences, while the latter three are income recipient influences. Over the last thirty years, family income inequality has been influenced by both income package and income recipient changes.

Changes in income packages, and especially wages, have led to increased income inequality. Like income inequality among families, earnings inequality also increased after the mid-1970s. Morris and Western (1999) identify four categories of explanations for the rise in earnings inequality: changing demographics of the labor force, post-industrial economic restructuring, changes in the political context and institutions, and the dynamics of globalization. Let us consider the evidence for each of these explanations. Demographic changes in the age structure and sex composition of the labor force have had a modest impact on earnings inequality, but the impact of immigration is not clear (Karoly, 1993; Jenkins, 1995; for a review, see Morris & Western, 1999). Economic restructuring, or "deindustrialization," and changes in

institutional factors, such as decreases in unionization and declines in the real value of the minimum wage, have greatly increased earnings inequality (Chevan & Stokes, 2000; Danziger & Gottschalk, 1993; Freeman, 1993; for a review, Morris & Western, 1999). Finally, the impact of globalization, as measured by capital flows and trade, remains unclear (Morris & Western, 1999).

The two final income package factors important for income inequality are unemployment and inequality in other sources of income. Less research has been conducted about these factors, but research finds that unemployment and government transfers and taxes have also contributed to increasing inequality between 1970 and 1990 (Chevan & Stokes, 2000; Jenkins, 1995). Gramlich, Kasten, and Sammartino (1993) find that post-transfer and post-tax income inequality in the 1980s was greater than earnings inequality because the federal government concomitantly cut transfers to the poorest families and cut taxes for the richest families.

Income recipient changes also played a role in the growth of inequality. Karoly (1993) finds that 40% of the increase in inequality in the 1980s was due changes in living arrangements. Although the present research is focused on the changes in family structure, other income recipient changes are worth noting. First, household size has decreased because of lower fertility rates and an increasing proportion of persons living independently. Decreased household size led to increased total inequality because of the loss in income pooling (Jenkins, 1995; Treas & Walther, 1978). Second, female labor force participation also impacts income inequality. Over this period, women, and especially married women and mothers, entered, returned to, and remained in the labor force in greater numbers. Increases in the labor force participation of wives and changes in wives' earnings actually helped to equalize family incomes (Cancian & Reed, 1998; 1999). Finally, family formation and dissolution behavior, as well as marital

homogamy, influences inequality. Previous research estimates that the growth of female-headed single parent families has led to increased income inequality among all families by increasing the numbers at the bottom of the income distribution (Eggebeen & Lichter, 1991; Ryscavage, Green, & Welniak, 1992; Chevan & Stokes, 2000). It is less clear how marital homogamy influences family income inequality because, although research documents that couples have similar educational and occupational statuses (e.g., Hout, 1982; Mare, 1991), the role of marriage for family inequality is a function of the following factors: (1) women's labor force participation, (2) the ratio of the wife's income to the family's income, (3) inequality among wives, (4) inequality among husbands, and (5) the percentage of the population that is married (Mare, 2003; Gronau, 1982).

Although a few have studies investigated the contribution of demographic family structure changes for aggregate inequality during the 1980s (Eggebeen & Lichter, 1991; Ryscavage, Green, & Welniak, 1992; Chevan & Stokes, 2000), only Treas and Walther (1978) have examined the levels of inequality within and between family structure types. Treas and Walther (1978) point out that overall inequality is a function of "relative income differences between family types and of income differences within types – with the weights being derived from group shares of income and from proportionate representation in the total population of recipient units" (872). Any change in these components could change inequality (Treas & Walther, 1978). Treas and Walther (1978) investigated income inequality by family structure using Current Population Surveys (CPS) from 1951, 1952, and 1954-1974 and defining family types as (1) husband-wife, (2) male-headed single, or (3) female-headed single. They found that there was greater inequality within family types than between, but that the proportion of inequality between family types increased over time (Treas & Walther, 1978). Thus, there was

increasing stratification in income by family type. By standardizing the Theil index of inequality to the population distribution of 1951, Treas and Walther find that total inequality in 1974 would have been significantly lower if the population had remained in the distribution of recipient families of 1951 (Treas & Walther, 1978). Therefore, changes in family structure contributed to increase inequality between 1951 and 1974.

The present research explicitly describes the concentration of income by family structure for all families and for families with children. The inequality patterns by family structure are expected to differ slightly between these two samples of families because changes in family structure have been more dramatic among families with children, due in part to their younger age structure. Previous research documents that the increases in inequality during the 1980s were greater for families with children than were the increases for all families (Karoly, 1993; Gottschalk & Danziger, 1993).

By moving beyond descriptions of mean differences in income by family type, we can better appreciate the possibility for similar resources across different family types and better comprehend the overlapping incomes of different family types. Therefore, the analysis requires an examination of the variation in income both within and between different family types. The specific research questions can be stated as follows:

1) What proportion of the inequality in family income is due to inequality between family structure types?
2) Which family structure types demonstrate the greatest within-group inequality?
3) What is the role of changes in family structure for changes in income inequality?

With a more complete description of how families with children are distributed across the range of family income, we can expand our understanding of family structure differences in income

that are, thus far, limited to central tendencies and poverty rates. With an eye toward the variation and concentration of income, we will arrive at a more complete picture of our social reality. In thinking about family structure differences in income, most do not think about the extent to which the family structure types overlap in their income distributions or if these distributions are diverging or converging over time. Are certain family structure types' distributions more skewed than most? And within each family structure type, how is their distribution of income changing over time? Statistics about central tendencies cannot answer these important questions. And the answers to these questions may lead to unanticipated findings that help enrich our knowledge of inequality.

DATA AND METHODS

To analyze income inequality between and within family structure types over time, between 1976 and 2000, I use data from the March supplements to the Current Population Survey (CPS).[1] While the 2000 data reflect the most current patterns, the data from the 1970s and early 1980s reflect the period when nontraditional families were becoming more common and this early period provides a glimpse into the patterns prevalent when many of the youth respondents in our longitudinal datasets (e.g., NLSY, HSB, NELS) were living at home.

The research focuses on two samples of families: (1) all families with heads under age 65 and (2) a subset of those families with related children.[2] The Census Bureau defines a "family" as the head of household with at least one resident relative or adopted child. For this analysis, I have diverged from the Census Bureau's family definition in two notable ways. First, I have

[1] I use the public-use files for survey years 1977 – 2001. Each survey has information about the family in the current year and income for the previous year. For consistency, I refer to information from each survey as information for the previous year when income is measured.

[2] A child is defined as a never married person under age 18 who is related to the family head.

included all subfamilies and secondary families as separate families in the analysis instead of including the related subfamilies as part of the primary family and instead of omitting the secondary, or unrelated, families. Second, I have tried to identify and include cohabiting couples using the Adjusted POSSLQ procedure developed by Casper and Cohen (2000).

With the Adjusted POSSLQ procedure, a household is defined as cohabiting if the following conditions are met: (1) the household head is not married and not living in group quarters, (2) there is another unmarried adult (age 15+) of the opposite sex who is not related to the household head, not a foster child of the household head, not in a related subfamily, and not a secondary individual, and (3) all other adults (age 15+) in the household are either relatives or foster children of the household head or children of unrelated subfamilies (Casper & Cohen, 2000). This new, indirect measure of cohabitation produces relatively unbiased estimates of cohabitors' characteristics and it is an improvement over the original POSSLQ measure, especially because persons with children can be included as cohabitors.[3] Although it has several advantages, the Adjusted POSSLQ does capture more noise than the original POSSLQ because in some cases it will misidentify the specific partners within a cohabiting household (Casper & Cohen, 2000). For example, in a household where a female householder is living with her daughter and the daughter's cohabiting partner, the Adjusted POSSLQ measure will identify the mother and the daughter's partner as the cohabiting pair. To the extent that this misidentification occurs, it will not bias the measure of family income because cohabitors' family income is defined as the sum of the income from each cohabitor's family, but this misidentification could

[3] The original POSSLQ measure identifies households as cohabiting if two, and only two, unrelated adults (age 15+) of the opposite sex lived in the same household (Casper & Cohen, 2000). Relative to the original POSSLQ measure, the Adjusted POSSLQ identifies more cohabiting households, produces higher cohabitation rates for divorced and separated persons, and is a better measure of historical trends in cohabitation (Casper & Cohen, 2000).

bias the results because the weights are based on the household head. Finally, the Adjusted POSSLQ is not as good at identifying cohabiting couples as are the direct measures found in the National Surveys of Family Growth and the National Survey of Families and Households, but it is the preferred method for longitudinal analysis with the CPS.

Family structure is based on the head of the family's current marital status and gender, as well as the Adjusted POSSLQ measure. I categorize families into the following six categories: married, widowed, female-headed divorced or separated, female-headed never married, male-headed single parent, and cohabiting pairs. Due to problems of sample size, male-headed single parent families are not distinguished by their marital history, nor are widowed families identified by the head's gender.[4] Finally, it is important to note that the category of married families includes couples in their first or later marriages. Throughout the analysis, the sample weight for the family head is used weight the data to represent families. Figure 1 presents the weighted proportion of families with children in each nontraditional family type between 1976 and 2000. As we have seen in previous research, the proportion of families with married partners or with widowed parents has declined, while the proportion headed by cohabiting partners and never-married single mothers has increased. These demographic shifts are similar for the sample of all families, but the proportion headed by single women is lower, while the proportion cohabiting is greater (figure not shown). Appendix Table 1 provides the unweighted sample counts for the number of families with children in each family type for each year.

Family income is defined as the sum of all pre-tax income from all sources for all family

[4] It is worth noting, however, that among male single parents who are neither cohabiting nor widowed, the proportion who are divorced or separated has declined over time (from 98% in 1976 to 77% in 2000), while the proportion never married has increased. As for widowed families, women headed nearly 84% of these families in 1976 and this percentage has remained fairly stable over this period.

members.[5] For cohabiting couples, it is the sum of each partner's income and incomes of their relatives living in the same household. Income from each year has been updated to 2000 dollars using the CPI-U-RS (Stewart & Reed, 1999; U.S. Census, 2002).[6] To correct for differences in the needs of families with different compositions, I have divided family income by the appropriate poverty threshold (U.S. Census, 2002). The Census Bureau imputes values for income when the data are missing, but problems in the imputation procedures could bias the present results. Research indicates that not only has the incidence of nonreport increased over time, but that the imputation procedures are biased because they are based on an invalid assumption that income does not affect non-response on income questions (Lillard, Smith, & Welch, 1986). Because the highest income persons are more likely to omit their incomes and, therefore, be assigned lower income values, the estimates of the mean and variation of income, as well as income inequality, will be biased downward and worsen over time (Lillard, Smith & Welch, 1986). For more information on the CPS income data, see Karoly (1993).

The Census Bureau topcodes income data in the CPS to protect respondents' privacy, but over this period the real value at which income is topcoded has increased. Without correcting for

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[5] Between 1976 and 1987, the Census Bureau asked respondents obtained data on income from the following sources: wages, salary, farm income, self-employment, alimony, child support, interest, dividends, net rental income, income from estates or trusts, public assistance, welfare, Supplemental Security, Social Security, unemployment and workman's compensation, veteran payments, government pensions, and retirement funds. In addition to these sources, after 1987 the Census Bureau also obtained data on income from the following sources: disability, educational assistance, regular contributions from persons not living in the same household, and other periodic income.

[6] The CPI-U-RS is preferable to the U.S. Department of Labor's official index, the CPI-U, because previous research has demonstrated that the CPI-U overstates inflation during the 1970s due to the way housing costs were calculated prior to 1983 (Karoly, 1993). An earlier, experimental Consumer Price Index, the CPI-U-X1 also adjusted for the miscalculation of housing costs, but this series was later discontinued. In some ways, the CPI-U-RS is an extension to the CPI-U-X1 (Stewart & Reed, 1999).

these changes in topcoding procedures, income inequality would appear to increase over this period because the top of the distribution would artificially expand. To control for this, I have applied consistent topcodes by identifying which year had the lowest real topcode value for each income source and then applying that topcode to all other years.

Income inequality is measured using the Mean Logarithmic Deviation. The Mean Logarithmic Deviation is scale invariant, equivalent across different population sizes, and responds to relative versus absolute changes in income (Allison, 1978; Shorrocks, 1980). In addition, it satisfies the principle of transfers, such that inequality is reduced with transfers from a richer donor to a poorer recipient (Allison, 1978; Shorrocks, 1980). To satisfy this principle computationally, total family income less than or equal to zero has been converted to equal $1 for calculation of all inequality measures. Relative to other inequality indices, including the Gini coefficient, Theil's index, or the Coefficient of Variation, the Mean Logarithmic Deviation is more sensitive to income transfers occurring at the bottom of the income distribution. Despite this sensitivity, the results presented do not depend on the inequality index used. Finally, the Mean Logarithmic Deviation can be additively partitioned into that which derives from inequalities within subgroups, here family types, and that which derives from inequality between subgroups (Shorrocks, 1980, 1984; Jenkins, 1995).

For a population of n income units, here families, with mean income μ and variance σ^2 and income for unit i denoted as y_i, the Mean Logarithmic Deviation is defined as:

$$I_0 = \frac{1}{n}\sum_{i=1}^{n}\log\left(\frac{\mu}{y_i}\right) \qquad (1)$$

In addition, the population can be partitioned into K mutually exclusive and exhaustive subgroups, here family structure types, and the k^{th} group has n_k members and a group mean

income of μ_k. One can rewrite (1) to reflect the contributions of "within-group" and "between-group" inequalities, defining the Mean Logarithmic Deviation as

$$I_0 = \sum_{k=1}^{K} v_k I_{0k} + \sum_{k=1}^{K} v_k \log(1/\lambda_k) \qquad (2)$$

where v_k (= n_k/n) is the population share of group k and λ_k (=μ_k/μ) is group k's mean income relative to the population mean. The first term denotes the "within-group" component, equal to the weighted sum of inequalities within each subgroup, and the second denotes the "between-group" component, or the inequality remaining if each family's income were equal to the subgroup mean.

The Mean Logarithmic Deviation has an additional advantage - it has a useful formulation to decompose inequality changes over a period. The change in inequality between two years, t and t+1, can be written (Mookherjee & Shorrocks, 1982; Jenkins, 1995) as:

$$\Delta I_0 \equiv I_0(t+1) - I_0(t) = \sum_{k=1}^{K} \bar{v}_k \Delta I_{0k} + \sum_{k=1}^{K} \bar{I}_{0k} \Delta v_k - \sum_{k=1}^{K} \overline{[\log(\lambda_k)]} \Delta v_k - \sum_{k=1}^{K} \bar{v}_k \Delta \log(\lambda_k) \qquad (3)$$

$$\approx \sum_{k=1}^{K} \bar{v}_k \Delta I_{0k} + \sum_{k=1}^{K} \bar{I}_{0k} \Delta v_k + \sum_{k=1}^{K} \left[\bar{\lambda}_k - \overline{\log(\lambda_k)}\right] \Delta v_k + \sum_{k=1}^{K} \left(\bar{\theta}_k - \bar{v}_k\right) \Delta \log(\mu_k)$$

[term A] [term B] [term C] [term D]

where Δ is the difference operator, a bar over variables indicates an average of t and t+1 values, and θ_k ($= v_k \lambda_k$) is the group's share of total population income. The exact decomposition is not as useful as the approximation because the approximation relates inequality changes to changes in subgroup inequalities, population shares, and mean incomes (rather than relative means) (Jenkins, 1995). Also, the approximation works very well and is used in previous research (Mookherjee & Shorrocks, 1982; Jenkins, 1995). With this approximation, changes in total

inequality can be decomposed into purely inequality changes (term *A*), changes due to the redistribution of the across different subgroups (terms *B* and *C*), and changes due to the incomes of different groups (term *D*) (Jenkins, 1995). To evaluate proportionate changes in income inequality, I divide both sides of (3) by $I_0(t)$, reflected in the notation $\%I_0 \equiv \Delta I_0/I_0(t)$. For clarification, consider the hypothesis that family structure changes have increased income inequality. This is a hypothesis about the relative numbers of nontraditional family types and, thus, would be reflected in terms *B* and *C*. If this shift in population has a large influence on income inequality, then *B* and *C* should be large relative to $\%\Delta I_0$ and have the same sign. If, on the other hand, changes in the relative incomes of different family structure types has had a large influence on changing inequality, then term *D* should be larger. If *A* is relatively large, then changes in family structure have not had a large impact on changes in aggregate inequality.

RESULTS

Since 1976, the variation in family income has increased. Figure 2 displays the trends in the standard deviation of family income between 1976 and 2000 for all families by family structure type, while Figure 3 displays the same trends for families with children. The key difference between Figures 2 and 3 is the greater variation in income among all families. Across both Figures, we can see that the standard deviation of income grew over this entire period, but the growth slowed during the early 1990s. The rate of growth was similar for different family structure types. Therefore, across this period, married couple families have the highest standard deviation in income, followed by cohabiting families and male-headed single families, widowed families, female-headed divorced/separated families, and, finally, the female-headed never married families.

To better reveal how members of different family types are dispersed across the income distribution, I have created annual quintiles of family income-to-needs. Then, I calculate the percentage of families with children in each quintile. The quintile results for 1980, 1990, and 2000 are presented in Figure 3. In the following discussion, the "1st" quintile refers to the bottom 20% of the income distribution, while the "5th" quintile refers to the top 20% of the income distribution.

Married couple families are fairly evenly distributed across the income distribution. The little change that has occurred over time has led to slight increases in the proportion located in the top two quintiles and slight decreases in the proportion in the bottom two quintiles. Although these changes are very small in percentage terms, they represent the movement of thousands of families. Single parent families headed by women not evenly dispersed across the income distribution. Instead, they are extremely concentrated at the bottom. In 1980, 61% of families headed by divorced or separated women were in the bottom quintile, as were an amazing 80% of families headed by never married women. These families have experienced a more dramatic redistribution over this period, but most of the movement has been to increasing their ranks in the second and third income quintiles. Despite this improvement, by the year 2000, half of families headed by divorced or separated women were in the bottom quintile in 2000, as were three-fourths of families headed by never-married women.

The remaining three family structure types – cohabiting families, male-headed single families, and widowed families – are more evenly distributed throughout the income distribution, but they are more concentrated at the bottom than are married families. The dispersal of cohabiting families remained relatively constant over time, but over this period they increased their representation in the bottom quintile (from 30% in 1980 to 33% in 2000). Families headed

by single males also experienced relatively little change, but they increased their ranks in the fourth quintile. Finally, among widowed families, 48% were in the bottom quintile in 1980 and 2000, but they saw experienced an improvement in their economic standing in 1990, with fewer families in the bottom quintile and more in the second and third quintiles. Overall, married families are much more evenly distributed throughout the distribution of income, followed by cohabiting families and male-headed single families, widow families, and finally the female-headed single families. The quintiles demonstrate not only the relative economic position of different family types, but also where in the income distribution each family type experienced changes over this period.

As other scholars have noted, income inequality grew over this period. Table 1 provides the annual level of total inequality according to the Mean Logarithmic Deviation for all families and for families with children. While much research has documented the increasing inequality during the 1980s (see Levy, 1985; Danziger & Gottschalk, 1993), less research documents the patterns of inequality during the 1990s. The estimates of total inequality are virtually identical for families with children and for all families. Inequality appears to increase through the first half of the 1990s, level off, and then decline slightly in 2000. Thus, it appears that the association between inequality and phases in the business cycle returned to "normal" during the 1990s, whereby inequality grows during periods of economic growth and shrinks during an economic recession (Blank & Blinder, 1986).

Table 1 also provides the decomposition of annual income inequality into the within family structure component and the between family structure component. The between family component can be interpreted as a 'pure' family structure effect. With these data we can begin answering the specific research questions outlined above. The first question asked about the

relative contribution of between-group inequality for overall inequality. In Table 1, we see that most of the variation in inequality is within family structure types. For example, in 2000, the within family structure component accounts for 83% of the total inequality among families with children and it accounts for 88% among all families. Given that the families with children share one common characteristic, having children in the home, they probably have other characteristics in common as well, especially the ages of the family head and their spouse. Therefore, it is reasonable that the within family component is reduced among families with children relative to all families.

Over time the proportion of inequality explained by a family structure "effect" grew during the 1980s and then leveled off. For both samples of families, the between family structure component increased between 1976 and 1986. Then after 1986, the between family structure component remained relatively constant until 1996, when it began to decline. This decline was more dramatic for families with children, such that by the year 2000 the proportion due to between family structure differences was only slightly higher than the proportion in 1976. For all families, the decline after 1996 did not fully offset the increases in stratification between family structures over this period. Therefore, between 1976 and 1986, family structure types became increasingly stratified by income and remained so until 1996. This pattern of increased between-group inequality for family structure during the 1980s is in contrast to what we know about other within- and between-group changes in inequality. For other group comparisons, for example by age, educational attainment, or ethnicity, income inequality within groups increased during the 1980s (Levy, 1985). In addition, the reversal in the trend for the between family structure component is interesting. Aggregate income inequality declined in the late 1990s and, as a proportion of total inequality, inequality between family structure types declined more than

did the inequality within family structure types.

Figures 4 and 5 display the Mean Logarithmic Deviation specific to each family structure type across time. To reduce needless fluctuations in the graph, the inequality measures shown are rolling three-year averages, centered around the year in question. Figure 4 displays the inequality indices for families with children and Figure 5 displays the inequality indices for all families.

To better understand the aggregate trends in within group inequality, it is helpful to know the relative ranking of different family structures across this period. Among families with children, married couple families display the lowest inequality throughout this period, especially relative to all single parent families. Cohabiting families display the next lowest levels of inequality, followed by male single parent families and widowed families. Finally, families headed by single women have the highest levels of within group inequality. Therefore, the demographic increase in the number of single female-headed families, and especially those headed by never married women, was a shift toward families with the greatest group inequality, but the increase in cohabiting families was a shift toward families with relatively low group inequality. These demographic changes could offset each other in the changes in aggregate inequality.

All family structures experienced an increase in inequality between 1976 and 2000, but this growth was not consistent across time or family type. The growth in inequality was dramatic and relatively early for families in cohabiting unions, male-headed single parent families, and widowed families, but then, during the mid-1980s, their within group inequality indices leveled off. The rate of growth in inequality was more gradual for the married families and the single parent families-headed by women. Inequality for female-headed families leveled

off during the mid-1980s, while inequality continued to increase for married families until the mid-1990s.

The relative rankings in inequality are similar for all families, as shown in Figure 5. One noticeable difference, however, is the higher level of inequality among families headed by never-married women throughout this period. Also, inequality among cohabiting unions and male-single headed families is greater among all families, while inequality among widows is lower. The differences between Figures 4 and 5 indicate that single parent and cohabiting families without children have higher incomes than their parenting peers. For widows, however, the incomes of those without children are not substantially greater than the incomes for those with children.

On the surface, it is confusing that female-headed single parent families have the highest within group income inequality and yet have the largest proportion of families at the bottom of the income distribution. This apparent discontinuity can be reconciled, however, by recognizing that inequality measures not only account for income variation, but also income concentration. For each family type, families at top of the income distribution control a larger share of the group's income than their population share. Among the female-headed families, those at the top control an even larger proportion of the group's total income. For example, whether one examines all families or families with children, the top 10% of married couple families in 2000 control 20% of the group's total income. The equivalent percentages in 2000 for the top 10% of female-headed divorced/separated families and never married families are 25% and 31%, respectively. Because so many female-headed single parent families have very low incomes, the bottom of the income distribution controls a smaller percentage of the group's total income. For example, the bottom half of married families control approximately 26% of the group's total

income, but the bottom half of female never married families only control 16% of the group's total income. Therefore, the greater concentration of single female-headed families at the bottom of the income distribution actually contributes to a higher within group inequality.

Turning now to our final research question — whether changes in family structure have led to changes in aggregate inequality, I calculate annual decompositions of the changes in income inequality. Table 2 presents the sum of the annual components in five-year segments and for the full period. Recall that the changes in income inequality can be parsed into four components, change that can be accounted for by changes in (1) within family structure inequalities [term *A*], (2) population shares [terms *B* and *C*], and (3) mean incomes for family structure groups [term *D*]. Table 2 reports the percentage change due to each of these factors and answers the third research question.

Changes in the demography of families did increase income inequality during the last twenty-four years of the twentieth century, but these changes are not the primary explanation for changes in inequality. Instead, changes in the within-group component [term *A*] accounts for most of the changes in total inequality. The terms *B* and *C* are in the expected direction, but they are small in magnitude for both samples of families. This is especially true during the periods of rapidly increasing inequality, 1976-1980 and 1981-1985. Between 1986 and 1995, however, the relative contribution of changes in population shares increased to explaining about half of the percent change in total inequality. Over the full period, changes in family structure account for 41% of the changes in inequality among families with children and 37% of the changes in inequality among all families. The greater role of family structure change for families with children reflects the fact that the changes in family structure have been more dramatic over this period among families with children than for all families.

Interestingly, changes in the mean incomes of family structure groups is actually equalizing among families with children for most periods. The exception is for 1981-1985, the period experiencing dramatic increases in income inequality. Among all families, however, changes in mean incomes both increase and decrease income inequality over this period, depending on the period in question.

Finally, the declines in inequality documented between 1995 and 2000 can be explained by two factors — changes in the groups' mean incomes and by a decline in within-group inequality. Shifts in the population shares across family structure types had no effect on the decline in aggregate inequality.

In summary, married couple families are more evenly dispersed throughout the income distribution than are single parent and cohabiting families. Single female-headed families remain concentrated in the bottom of the income distribution, despite improvements over time. Second, there is more within group inequality in income than between group inequality, but the proportion of inequality due to between group differences increased between 1977 and 1986. The trends in income inequality for families with children generally reflect the trends in inequality for married couple families given their larger population size, but inequality within other family structure types is greater than the inequality observed for married couple families. Finally, income inequality would be lower today if families were distributed across family structure types as they were in the late 1970s. Changes in family structure increased inequality, especially between 1986 and 1995, but these demographic changes are not the primary factor to explain changes in aggregate inequality.

DISCUSSION

The concentration of female-headed families at the bottom of the income distribution is

troubling. And while they remain so concentrated over this period, a declining proportion of married families occupy the lowest tiers of the income distribution. By 2000, a majority of married couple families have greater resources than the majority of female-headed families, but approximately 17% of married couple families have incomes (adjusted for needs) as low as 74% of female-headed never married families and 50% of female-headed divorced families. While the percentage of married couple families in the bottom quintile is small (17%), this percentage equates to approximately 3.1 million families. The number of married families in the bottom quintile is actually greater than the number of female-headed never married families (2.7 million) and the number of female-headed divorced/separated families (2.1 million) in the bottom quintile. While a majority of married couple families have incomes greater than a majority of female-headed never-married families, the variation in income is so great among married couple families and their population numbers so large that many married couple families are no better off than the single parent families. Therefore, marriage alone doesn't provide a sufficient safety net for some families. Recent policy proposals to reduce welfare caseloads and poverty seek to encourage marriage among poor single parents and prospective parents, but these proposals overlook the significant number of married couple families who have similarly low incomes. Marriage alone does not guarantee relief from economic hardship.

Within family structure inequality is significantly greater than inequality between family structure groups, but the proportion of total income inequality due to between group differences has increased between 1977 and 1986. Therefore, families structure types became increasingly stratified by income until 1986, just as Treas and Walther (1978) observed for the 1952-1974 period. Throughout the last twenty-three years, married couple families have had lower income inequality than all single parent families. Declines in the proportion of married couple families

has led to increased income inequality, but these changes cannot explain most of the changes in aggregate inequality.

By analyzing family income distributions and inequality measures, one develops a better understanding of the trends in total family income inequality. Given the continued numerical dominance of married couple families, trends in total family income inequality generally track the patterns for this group. The experiences of single parent families and cohabiting families are different, however. With projected population increases in the number of single parent and cohabiting families, population-level measures of income inequality among families will increasingly reflect the experiences of these nontraditional family types. Therefore, due to demographic changes alone, total income inequality is likely to increase over the next few years if the growth in female-headed single parent families outpaces the growth in cohabiting families.

There is an important caveat to note. The present research combines members of all racial and ethnic groups in the analysis due to the small sample sizes in the CPS, especially once minority groups are broken into different family structure types. Given the dominance of non-Hispanic Whites in the U.S. population, the patterns of inequality and income variation described here primarily reflect their experiences. As the American population becomes increasingly diverse, income inequality among families will increasingly reflect the inequality patterns of minority groups. To better understand differences in inequality by family structure and racial and ethnic membership, future research could utilize data from decennial censuses and conduct similar analyses as those presented here.

Setting aside this caveat, the present research has contributed to our understanding of how demographic behavior contributes to income inequality. The research extends the analysis originally conducted by Treas and Walther (1978) to the modern era. Together, the two studies

indicate that family structure types were more stratified by income at the end of the 20th century than they were fifty years earlier.

It is important to note, however, that the steady increase in proportion of aggregate inequality due to inequality between family types slowed and reversed at the end of the 20th century. Only time will tell whether this reversal is permanent or just a temporary fluctuation, but if this marks a real transition, then it is an important one. It implies that family structure types are becoming less differentiated by income or, to put it differently, nontraditional family formation patterns are becoming more common at higher levels of income. This is reasonable given the continued growth of nontraditional family forms. For these families to continually increase, then they have to "recruit" from persons from higher incomes. In the near future, it is doubtful that the median incomes of single parent families will become as high as the median incomes of married couple families, but the overlap of their incomes will increase if the level of between-group inequality continues to decline.

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Figure 1. Family Structure Trends for Families with Children

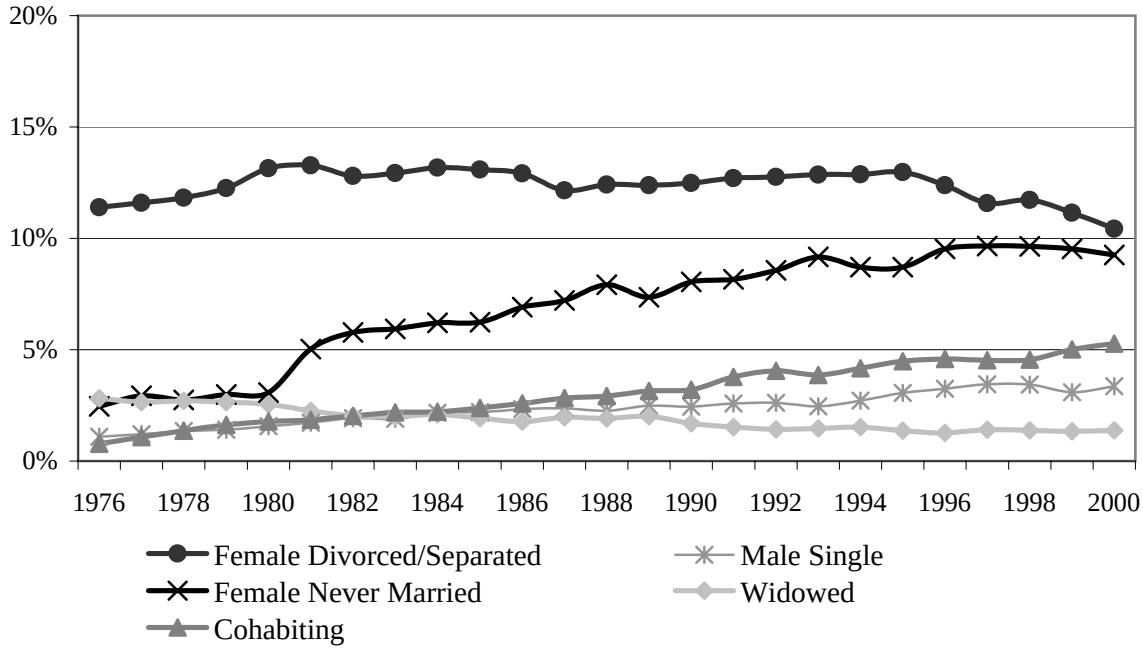

Figure 2. Standard Deviation of Family Income-to-Needs by Family Structure for All Families

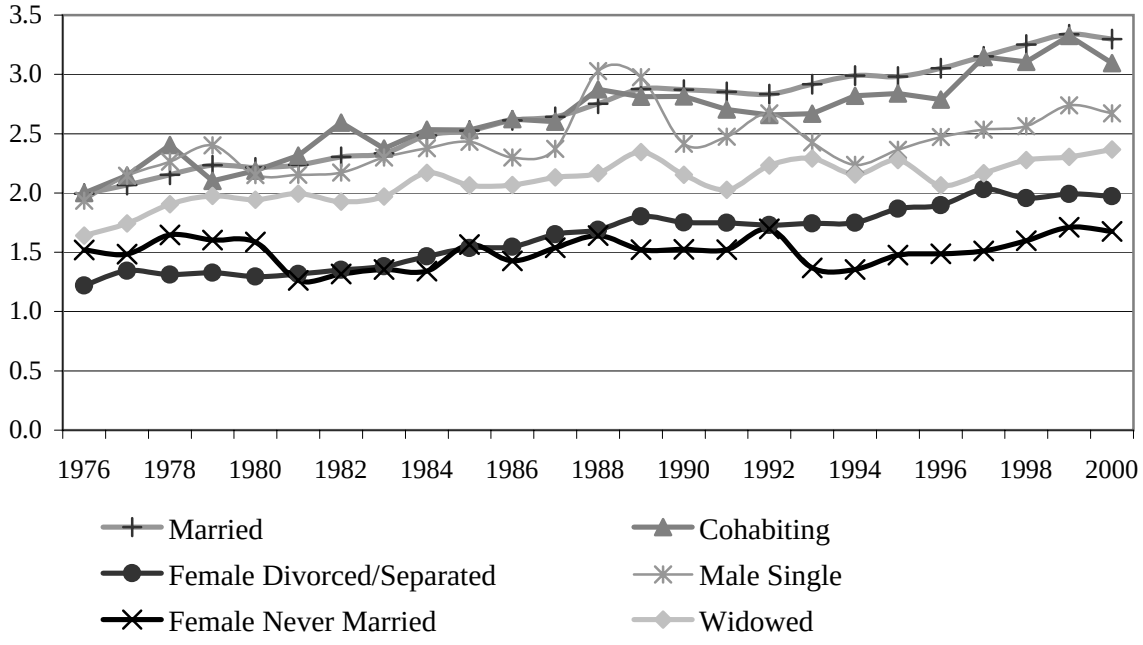

Figure 3. Standard Deviation of Family Income-to-Needs by Family Structure for Families with Children

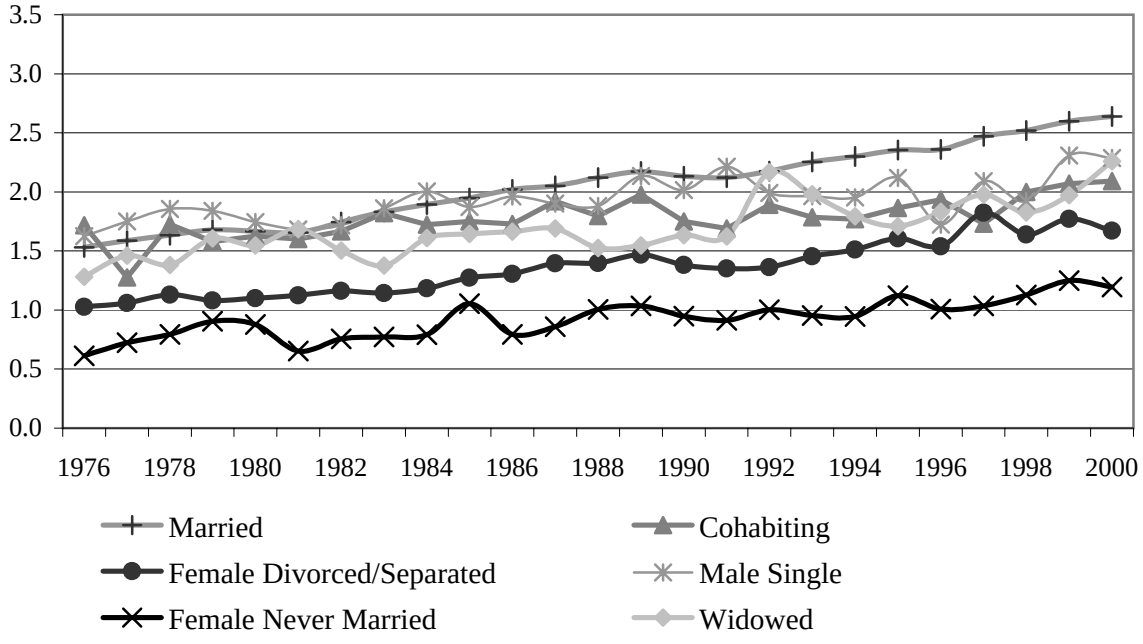

Figure 4. Distribution of Families with Children across Quintiles of Family Income-to-Needs

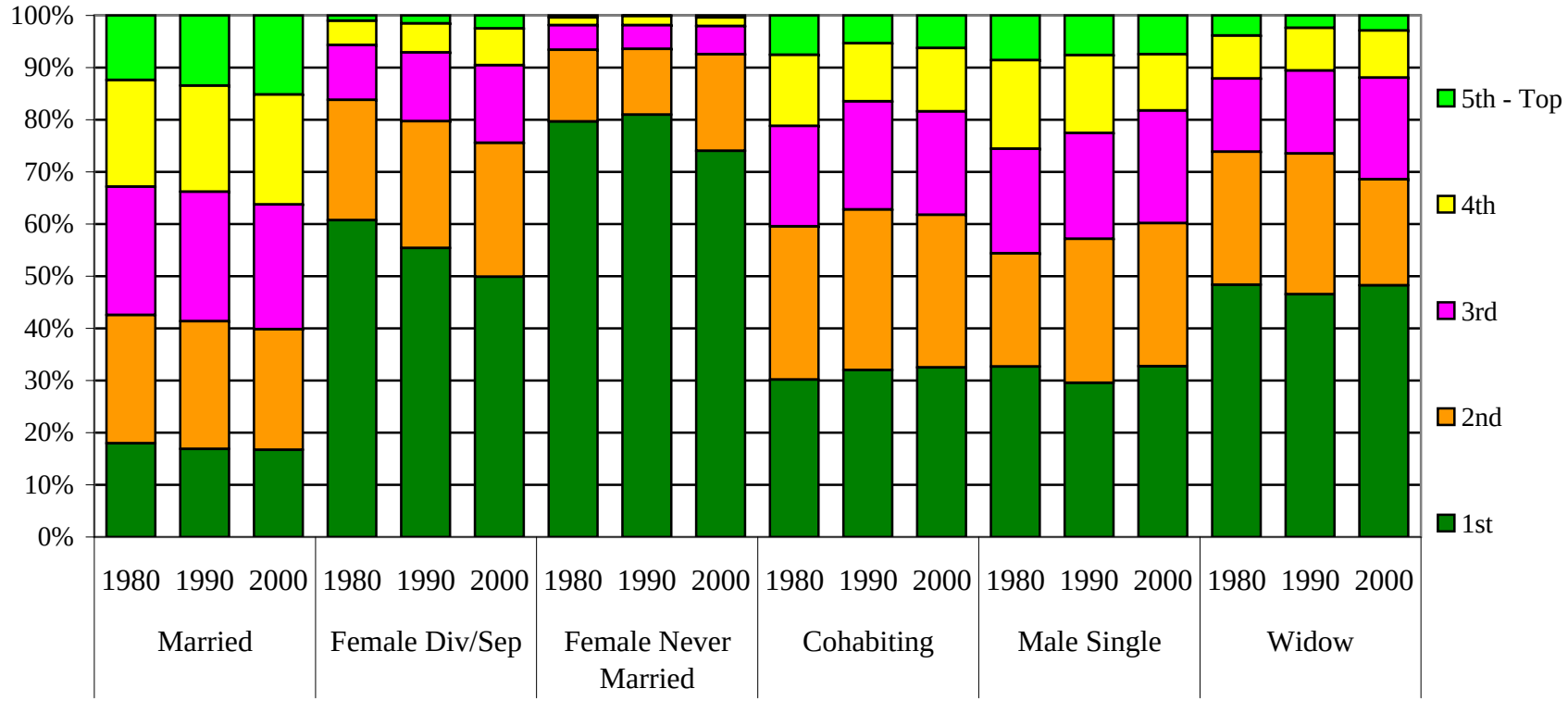

Table 1. Family Structure Decomposition of Aggregate Inequality (I_0) by Year

	Families with Children					All Families				
	Total Inequality	Within family structure		Between family structure		Total Inequality	Within family structure		Between family structure	
Year	$I_0 = I_{0W} + I_{0B}$	I_{0W}	%	I_{0B}	%	$I_0 = I_{0W} + I_{0B}$	I_{0W}	%	I_{0B}	%
1976	0.224	0.189	84	0.035	16	0.235	0.210	89	0.025	11
1977	0.227	0.192	85	0.035	15	0.239	0.215	90	0.024	10
1978	0.231	0.196	85	0.035	15	0.240	0.216	90	0.024	10
1979	0.239	0.203	85	0.036	15	0.248	0.221	89	0.026	11
1980	0.246	0.209	85	0.037	15	0.252	0.225	89	0.027	11
1981	0.270	0.221	82	0.049	18	0.277	0.241	87	0.035	13
1982	0.299	0.247	83	0.052	17	0.299	0.262	88	0.036	12
1983	0.310	0.255	82	0.055	18	0.307	0.269	88	0.038	12
1984	0.310	0.252	81	0.058	19	0.308	0.269	87	0.040	13
1985	0.312	0.256	82	0.056	18	0.308	0.271	88	0.038	12
1986	0.316	0.253	80	0.063	20	0.310	0.268	86	0.042	14
1987	0.322	0.260	81	0.062	19	0.314	0.274	87	0.040	13
1988	0.320	0.258	81	0.061	19	0.313	0.274	88	0.039	12
1989	0.316	0.259	82	0.057	18	0.314	0.274	88	0.039	12
1990	0.326	0.264	81	0.063	19	0.321	0.280	87	0.041	13
1991	0.329	0.265	81	0.064	19	0.324	0.280	87	0.044	13
1992	0.342	0.277	81	0.065	19	0.332	0.289	87	0.043	13
1993	0.355	0.285	80	0.070	20	0.343	0.293	86	0.050	14
1994	0.343	0.278	81	0.065	19	0.337	0.288	86	0.048	14
1995	0.342	0.279	82	0.063	18	0.331	0.285	86	0.046	14
1996	0.341	0.274	80	0.067	20	0.334	0.286	86	0.048	14
1997	0.338	0.275	82	0.062	18	0.330	0.285	86	0.045	14
1998	0.334	0.274	82	0.060	18	0.329	0.285	87	0.044	13
1999	0.337	0.281	83	0.056	17	0.332	0.290	87	0.042	13
2000	0.318	0.265	83	0.053	17	0.313	0.275	88	0.038	12

Figure 5. Smoothed Trends in Inequality (I_0) for Families with Children

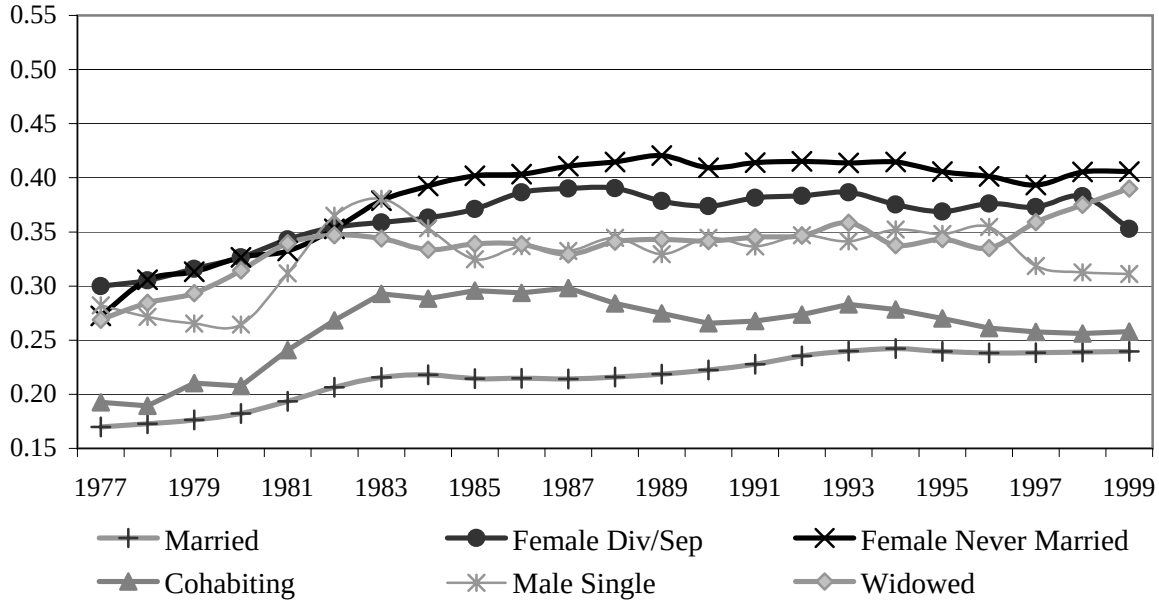

Figure 6. Smoothed Trends in Inequality (I_0) for All Families

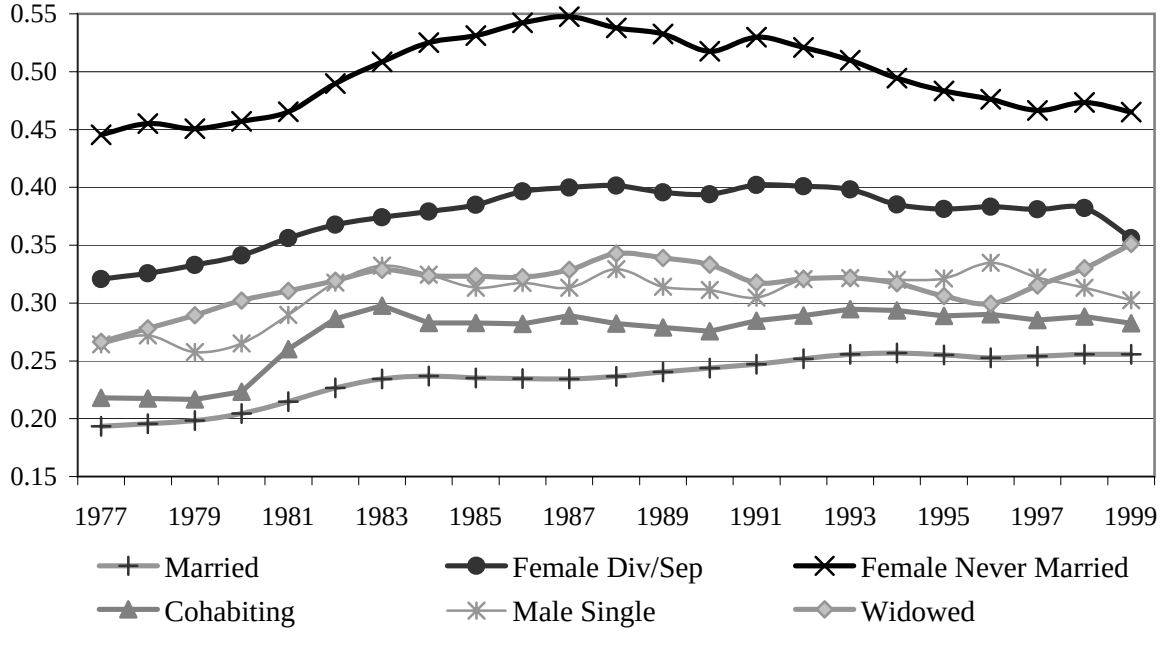

Table 2. Decomposition of the Changes in Aggregate Income Inequality (I_0), 1976-2000

	Years	% change in aggregate inequality ($\%\Delta I_0$)	% change in I_0 accounded for by changes in			
			Within inequalities (term A)	Population shares (term B)	(term C)	Group mean incomes (term D)
Families with Children	1976-80	10	7	2	2	-1
	1981-85	25	16	2	5	2
	1986-90	4	2	1	2	0
	1991-95	5	4	1	1	-1
	1996-00	-7	-4	0	0	-3
	1976-2000	37	25	4	11	-3
All Families	1976-80	7	5	1	1	0
	1981-85	21	15	2	2	2
	1986-90	4	2	1	1	0
	1991-95	3	1	1	1	1
	1996-00	-5	-3	0	0	-2
	1976-2000	30	19	5	6	0

Note: Differences between $\%\Delta I_0$ and A+B+C+D are due to rounding after computation.

Appendix Table 1. Unweighted Counts of Families in Different Family Structure Types

	Families with Children						Families with Children					
	Married	Female Div/Sep	Female Nev Mar	Cohab.	Male Single	Widow	Married	Female Div/Sep	Female Nev Mar	Cohab	Male Single	Widow
1976	19,612	2,636	554	185	257	651	31,931	3,023	729	684	651	1,183
1977	18,791	2,555	624	256	273	594	30,794	2,967	813	831	700	1,156
1978	18,482	2,607	603	316	311	601	30,367	3,014	810	978	711	1,162
1979	21,436	3,159	749	431	388	682	35,473	3,660	978	1,303	865	1,345
1980	21,220	3,375	769	493	421	675	35,088	3,948	999	1,494	1,002	1,318
1981	18,546	3,082	1,113	453	421	544	31,213	3,670	1,339	1,375	969	1,157
1982	18,358	2,958	1,263	507	466	495	31,206	3,571	1,514	1,458	983	1,121
1983	18,071	2,977	1,284	505	448	484	30,897	3,630	1,545	1,442	925	1,072
1984	17,780	3,039	1,343	520	510	499	30,728	3,747	1,597	1,448	1,068	1,123
1985	17,398	2,958	1,353	544	499	430	29,763	3,604	1,605	1,542	1,062	1,056
1986	16,967	2,960	1,493	586	514	408	29,333	3,605	1,746	1,665	1,073	999
1987	16,809	2,775	1,534	618	519	435	29,299	3,483	1,802	1,738	1,110	1,017
1988	15,551	2,559	1,368	588	486	388	27,188	3,216	1,603	1,672	1,082	888
1989	16,737	2,788	1,596	677	558	436	29,418	3,549	1,866	1,937	1,194	974
1990	16,628	2,776	1,696	730	539	387	29,100	3,560	2,000	2,007	1,203	868
1991	16,190	2,800	1,714	839	566	338	28,419	3,573	2,031	2,167	1,195	817
1992	16,118	2,788	1,803	921	609	333	28,298	3,564	2,100	2,229	1,199	789
1993	15,715	2,737	1,846	850	559	340	27,304	3,497	2,124	2,173	1,091	758
1994	15,518	2,705	1,740	891	583	346	27,173	3,411	2,031	2,227	1,183	706
1995	13,348	2,376	1,592	878	593	266	23,470	2,982	1,886	2,065	1,109	574
1996	13,372	2,320	1,733	901	606	241	23,501	2,953	2,019	2,160	1,204	571
1997	13,380	2,192	1,702	870	653	274	23,626	2,852	2,013	2,178	1,241	572
1998	13,353	2,179	1,660	899	639	269	23,648	2,850	1,996	2,291	1,286	563
1999	13,388	2,085	1,681	981	603	258	23,998	2,688	2,007	2,432	1,267	545
2000	12,811	1,874	1,598	961	623	250	23,028	2,511	1,948	2,389	1,286	506