

## Family Adaptations to Income and Job Loss in the U.S.

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**ABSTRACT:** Using data from the Panel Study of Income Dynamics, this study examines the extent to which families experience major economic setbacks and how they respond. Families that experience a substantial loss of income or work hours are more likely to cut back on expenditures, receive public assistance, experience divorce or separation, and move. No evidence that partners are able to compensate for a major income loss by increasing their work hours was found. Initial conditions, such as income and assets, the unemployment rate of the area, and race, affect how a family adapts. Families with fewer resources and those who live in areas of high unemployment are more likely to rely on public assistance, and they are less likely to move, increase the work hours of the female head of household, or cut food expenditures.

**KEY WORDS:** economic hardship, geographic mobility, labor force participation, public assistance, unemployment.

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## Introduction

Changes in the economy and public policy in the U.S. over the past 25 years have led to concerns regarding the impact of economic forces on the quality of family life and the well-being of the next generation. The U.S. labor market has adjusted to shifts in occupation and industry structure, changes in technology, and globalization of markets during this period. Although the economy has experienced sustained growth with low unemployment and low inflation (Blank, 1995), benefits have not been distributed equally. The economic landscape has been characterized by increasing job instability (Farber, 1995; Marcotte, 1994; Rose, 1995); rising inequality of income, wages (Duncan, Smeeding, & Rodgers, 1995; Gottschalk & Moffitt, 1994) and wealth (Oliver & Shapiro, 1995); and decreased economic mobility (Gottschalk & Danziger, 1997). Substantial segments of the population (i.e., low-income families, Black people, young people, and unskilled workers) have been doing much less well than others. For them, entry-level earning opportunities and advancement possibilities have deteriorated, and they have experienced high levels of unemployment (Blank, 1995; Bureau of Labor Statistics, 1997). Job retention rates also have declined for the same groups that experienced the sharpest relative decreases in wages (Diebold, Neumark, & Polsky, 1997).

Even in periods of stable growth, many families face economic uncertainties. Burkhauser and Duncan (1988) found that, over a ten-year period, heads of almost one-quarter of families experienced unemployment. Numerous studies have documented the extent to which the downsizing of firms in many cities across the nation has lowered the standard of living of many American workers and their families (Dudley, 1994; Harrison & Bluestone, 1988; Illes, 1996; New York Times, 1996). Duncan, Boisjoly, and Smeeding (1996) showed that highly skilled workers have not been immune to economic uncertainties either. Highly skilled workers also have had higher job-loss rates after 1980 than before.

In addition to increased levels of economic uncertainty and inequality, the public safety net for families experiencing economic hardship has shrunk over the past several decades in the U.S. (Blank, 1995). The 1996 Personal Responsibility and Work Opportunity Reconciliation Act eliminated the federal entitlement program of AFDC. This new legislation provides states with block grants to establish a Temporary Assistance for Needy Families (TANF) program. The new law

instituted a five-year lifetime limit for cash assistance, a two-year work requirement, and reduced in-kind assistance (Hofferth, 1997).

The family has been the societal unit providing for the basic needs of family members (Goode, 1970; Ogburn & Tibbits, 1965). Macroeconomic structural changes affect an individual's well-being through the functioning of families. The ability of American families to adjust to changes in the economy has major implications for the welfare of future generations. Failure to adapt to economic stress can lead to changes in family dynamics and decisions that are detrimental to the well-being of family members (Conger & Elder, 1994; McLoyd, 1989; Voydanoff & Donnelly, 1988). With public institutions less able to provide for the basic needs of individuals than in the past, family supports become increasingly important.

This study documents the extent to which American families experience major economic setbacks and examines how families adjust to two types of economic hardship: (a) a substantial loss of family income, and (b) a reduction of work hours of the family head. It is important to examine the ways families with different levels of resources and uncertainty respond to economic pressures. This paper differs from previous research in several ways: (a) a nationally-representative sample of American families is used; (b) economic losses are examined over a 15-year period with longitudinal data; (c) differences in family adaptation by socioeconomic status and other family characteristics are examined; and (d) an array of potential adaptation strategies (i.e., seeking additional income, cutting back on consumption, receiving public assistance, moving, and divorcing) are included in the analysis.

### *Theoretical Framework*

This study draws upon two theoretical traditions to examine the household response to economic setbacks: family stress theory and microeconomic theories. The crisis model originally developed by Hill (1949) forms the central concept of stress theory. The model begins with certain stressor events which precipitate changes in patterns of one or more of the following: family interaction, family goals, roles of family members, and values. Such changes potentially may destabilize the balance in the family necessary for effective family functioning. The degree to which a family adjusts depends upon the family's social-psychological and financial resources to meet the changes and the family's subjective perception of the stressor events. If the family

does not perceive and define the situation as a crisis and the family has the resources for meeting the demands of the situation created by the stressor event, it may never experience a crisis. This basic framework was extended by McCubbin and Patterson (1982) in a longitudinal study of family stress and crisis and elaborated upon by other researchers (George, 1993; Zimmerman, 1988). Empirical research shows that economic problems may alter the socio-emotional balance in the family which may result in marital discord and conflict and, perhaps, lead to divorce (Conger, R., Elder, Lorenz, Conger, K., Simons, Whitbeck, Huck, & Melby, 1990; Elder, Liker, & Cross, 1984; Moen, 1983; Liem & Liem, 1988). Stress theory also considers the social context of the family, particularly parental resources and other resources in the community.

In economic theory, a family is viewed as an economic unit in which family members pool resources and make joint decisions about consumption to achieve their optimum well-being or utility. Economic theory emphasizes the concept of permanent income (Blau & Ferber, 1992; Easterlin, 1969), which states that a family's level of consumption is based upon the potential flow of income through time. The concept of permanent income also states that a family's level of consumption typically is indicated by the educational level of the head of the family or by the family's income averaged over a number of years rather than by the family's income at any point in time. Thus, families save in good times and borrow in times of need. Families also manage by modifying the labor supply of family members. Wives and older children historically have been a source of additional income when needed by the family economy, which is the added worker hypothesis (Sassler, 1995).

### *Family Adaptations*

Conger and Elder (1994) found a strong relationship between subjective economic pressure and family adaptation strategies, such as generating additional income and cutting back on expenditures. The most common strategy to generate more income was for other family members, generally the female partner in a two-parent family or older children, to work and help with expenses. However, recent research has found little evidence that female heads of household respond directly to husbands' unemployment by entering the work force (Gruber & Cullen, 1996; Juhn & Murphy, 1996).

Generating additional income includes applying for and receiving

public assistance, such as AFDC, food stamps, and in-kind services. A family experiencing income loss also may migrate to an area with better employment opportunities than were available in the family's previous location (Long, 1992). Geographic migration has been viewed as a means of improving the allocation of human resources. People living in places where they are not fully employed are expected to move to destinations with brighter prospects (DaVanzo, 1978). Economic theory suggests that unemployed people will be more likely to migrate than employed people because the opportunity costs of moving (i.e., no wages to forgo) and job-specific capital (i.e., seniority, non-vested pensions, and firm-specific training) are lower for unemployed people than for employed people (DaVanzo, 1978).

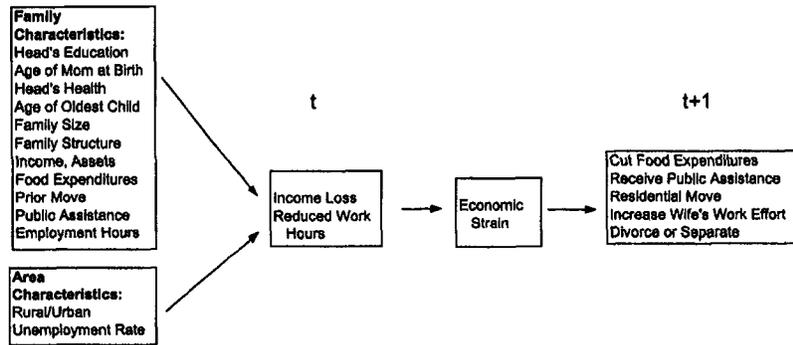
Another way of adapting is cutting back expenditures, such as reducing consumption on entertainment or food, postponing major household purchases (Conger & Elder, 1994), or moving to less expensive housing (Aaronson, 1995). However, the economic literature suggests that changes in consumption following economic loss should be small. Hall and Mishkin (1982) found that food consumption is largely responsive to permanent income rather than to fluctuating annual income.

One potential consequence of economic stress is increased marital stress that could lead to divorce. In addition to the emotional strain that a substantial economic loss may induce, there are other economic factors that may cause a family to break up in difficult economic times. In marriage, family members pool resources and benefit from economies of scale, public goods, and externalities (Blau & Ferber, 1992). Because divorce may reduce the economic benefits of remaining as an intact family unit, the likelihood of divorce may increase in the event of a major economic loss. Divorce also divests one family member of major responsibility for other family members. If other sources of income are available for these other members, such as public assistance or a new partner with a stable income, divorce may constitute a form of adaptation.

The basic conceptual framework used in the analysis in this paper is depicted in Figure 1. Background factors, family characteristics, and area characteristics (e.g., unemployment rate, rural area) affect a family's economic well-being. The family begins the period in equilibrium, with a certain level of employment, public assistance receipt, food expenditures, income, and assets. When a family head's work hours are reduced or an income loss occurs at time  $t$ , family members feel economic strain. Potential adaptation strategies in response to the economic strain may include cutting food expenditures, applying

FIGURE 1

## Model of Family Adaptation to Economic Loss



for government assistance, divorcing, increasing the work effort of other family members, or making a residential move at time  $t+1$ . While income loss is often a function of reduced work hours, this research effort does not attempt to disentangle the complex relationship between these events.

Three major factors suggested by stress and economic theories are hypothesized to affect how families adapt: social class, measured by family income and assets; race; and economic conditions in the area. The level of financial resources is one of the most important factors affecting the adaptations families make. Families who do not have assets and whose incomes are low initially will not be able to borrow during difficult periods. Income or job loss may strain further the resources of families already burdened by low income or large family size. Thus, families with low levels of income and those who do not own assets were expected to feel greater pressure and be more responsive to losses than families with high levels of income and assets.

Community resources and local economic conditions affect families' opportunities under conditions of economic hardship. First, community resources and local economic conditions may affect a family's propensity to move. Families which experience a loss of work hours in a high unemployment area are more likely to feel "pushed" from the original location and "pulled" to a new destination, which might have better employment opportunities or lower living costs than in the original high unemployment area. Second, economic loss in areas of restricted opportunity may make some types of adaptations difficult (e.g., finding employment for other family members) and make other

adaptations necessary (e.g., applying for public assistance or moving to find employment). Thus, compared to families living in areas of low unemployment, families living in areas with high levels of unemployment were expected to be more likely to move or to receive food stamps, and they were expected to be less likely to have other family members join the work force.

The third factor is subgroup cultural differences. Black families and White families differ in level of income and assets, access to help from friends and relatives, and gender roles in the family. Research has shown that Black families have very low levels of savings and assets (Oliver & Shapiro, 1995) and that the Black female traditionally has had a larger economic role in the family than the White female (Simms & Malveaux, 1986). Compared to White families, female partners in Black families may be more likely to increase their work hours or turn to public assistance as a result of the loss of work hours of the male head of household. These and other institutional factors, such as employment discrimination or residential segregation, may lead to different types of adaptations to economic loss.

### Statistical Model

The statistical model used in this study is a discrete-time logistic model of two-way transitions (Yamaguchi, 1991). This model can be used to approximate a pair of continuous-time processes that characterize transitions between two states of certain repeatable events. Since the dependent variables of interest (i.e., cutting food expenditures, food stamp receipt, divorce or separation, residential move, and increased work hours) are repeatable events from one year to the next, this model is appropriate for our purpose. Separate analyses are conducted for each of the five adaptation behaviors. The model for whether the family moved during time  $t + 1$  is as follows:

$$\ln [P_{Y_{t+1}} / 1 - P_{Y_{t+1}}] = b_0 + b_1 Y_t + b_2 X + b_3 Z_t + b_4 Y_t Z_t + b_5 J_t + b_6 I_t + b_7 X J_t + b_8 Z_t J_t$$

where:

$Y_t =$  whether family moved (level of food expenditures, whether received food stamps, whether married, and employment hours of the wife) in year  $t$ ,

- $Y_{t+1}$  = whether family moved (reduced food expenditures, whether received food stamps, whether divorced/separated, and employment hours of the wife increased) in year  $t + 1$ ,  
 $X$  = fixed exogenous variables,  
 $Z_t$  = time-varying variables at time  $t$ ,  
 $J_t$  = reduction of work hours—whether a reduction of 20 percent or more work hours in  $t$  and  $t + 1$ , whether lost 20 percent of work hours in  $t$  but not at  $t + 1$ , whether lost 20 percent of work hours at  $t + 1$  but not  $t$ , whether experienced loss of work hours at neither  $t$  nor  $t + 1$  (reference group), and  
 $I_t$  = income loss—whether the family lost 50 percent or more income at  $t$ .

Dichotomous variables are coded 0 and 1 in the logistic regression analysis.

### Data

The data in this analysis are from the Panel Study of Income Dynamics (PSID). Since 1968, the PSID has followed and interviewed annually a nationally representative sample of 5,000 American families. When children leave home to live in an independent household or when couples divorce, the PSID follows the additional families and households that are created as well as the original families. This procedure means that, with the exception of new families entering the U.S. after 1968, the PSID is self-reproducing and yields an unbiased sample of families and children each year. While sample attrition has occurred over the years since the study began, comparing the PSID data to other data and examining the levels of non-response suggest no appreciable sample biases. Sampling weights that adjust for the original sample design and for different levels of non-response among subgroups in the panel are used for all analyses in this study in order to generalize findings to the population as a whole.

The sample used for this analysis consists of the families of all children born between 1967 and 1973 and present in the PSID between birth and age 20. The PSID provides annual reports of many characteristics of parents, families, and the areas in which the families are located. This analysis uses family data from early childhood to adoles-

cence, from the birth of the child to age 15. In order to maintain independence across sample observations, information about the oldest child in the family in 1968 was used to select families for inclusion in this study.

### *Measurement of Economic Hardship*

In this study, income loss is measured by a decrease of 50% or more in the ratio of total family income to needs from year  $t-1$  to year  $t$ . This measure, which was used by Burkhauser and Duncan (1988), adjusts for family size and, therefore, is more closely reflective of perceived economic hardship and economic strain (Conger & Elder, 1994) than total family income (Mayer & Jencks, 1989).

A large reduction in work hours is defined as a combination of a decrease in the work hours of the family head amounting to 20% or more and some reported unemployment hours in year  $t$ . This definition eliminates most voluntary reduction of work hours, such as maternity leave and retirement. The 20% guideline for hours was chosen to eliminate small variations in unemployment hours that would have minimal impact on family life. A 10% guideline was used in earlier analysis and obtained similar results, but the 10% guideline had a smaller impact on subsequent changes in family behavior.

Because loss of work hours can lead to income loss, unstable employment and income loss are linked. However, given our definition of an income loss of 50% or more, the association is not very strong (not shown). Additionally, an income loss may occur without loss of work hours. For example, a family structure change, such as divorce, may result in income loss without loss of family members' work hours. Income loss also could be caused by a reduction in non-labor income, such as asset income or dividends. Both measures are used in this study to capture different dimensions of economic setback in a family.

Adjustments over one- and two-year periods were examined: (a) within the same year as an hours loss occurs, (b) in the following year, and (c) two years after the loss. For the loss of work hours measure, one variable that has four categories was created: (a) no reduction in work hours at either time point; (b) reduction of work hours between  $t-1$  and  $t$  but not between  $t$  and  $t+1$  (loss at  $t$ , no loss at  $t+1$ ); (c) reduction of work hours between  $t$  and  $t+1$  but not between  $t-1$  and  $t$  (no loss at  $t$ , loss at  $t+1$ ); and (d) reduction at both  $t$  and  $t+1$ . The group with no reduced work hours in either year is used as the reference group in the regression analysis. A four-category mea-

sure was not used for the income-loss measure as was used for hours lost because few families experienced such loss in two consecutive years.

Based upon the adaptation literature and the availability of the PSID data, the following dependent variables were selected: (a) whether the family reduced its total food expenditures by 20% or more in year  $t + 1$ , (b) whether the family made a residential move during the year  $t + 1$ , (c) whether the family received food stamps or AFDC during year  $t + 1$ , (d) whether the wife's work hours increased by 150 or more hours between year  $t$  and  $t + 1$ , and (e) whether the head divorced or separated in year  $t + 1$ . For the models of divorce or separation, a subsample consisting of two-parent families in year  $t$  is selected, and, for models of work hours of the spouse, the sample is restricted to families that remained intact in both year  $t$  and  $t + 1$ . In the case of the first three variables, the occurrence of these events is controlled in the preceding year. In the model for increased work hours, the total work hours of the wife in the previous year are controlled.

Many time-invariant and time-varying measures that characterize the social-psychological and financial resources of the family and the environmental factors that may affect a family's choices of adaptation strategies as control variables are included in the analysis. The time-invariant characteristics include the education and race of the family head, year of birth of the child, and age of the mother at the birth of the child. Missing data in mother's age at birth of the child are set to 0, and a dummy variable indicating whether information for that variable is missing is included.

The calendar years in which  $t$  falls were controlled and grouped into two categories, 1968–1974 and 1975–1981. The first period began in a business cycle peak and was relatively prosperous, and the second period began in a recession (first quarter of 1975) and ended in a recession. Other time-varying covariates which might affect the family's economic well-being also were controlled. Measures of family characteristics at time  $t$  which may change each year include: (a) annual total family income (inflated to 1993 dollars using the Consumer Price Index CPI-UX1); (b) whether the family owned a home; (c) the age of the child; (d) whether the youngest child in the family was under the age of 2; (e) family size; and (f) whether the family head had any physical or nervous conditions that limited the type of work or the amount of work he or she could do. Due to possible non-linearities in the relationship between age of child and adaptation, age

of child is grouped into three categories in the regression analysis, approximating three different developmental stages: age 0 to 5 years old (used as the reference group); age 6 to 10 years old; and age 11 to 15 years old. In addition, two measures of year-to-year change in the family head's marital status were constructed: (a) whether there was a divorce or separation, and (b) whether a marriage occurred in each year (time  $t$ ).

Time-varying area measures included as control and interaction variables are: (a) whether the family lived in a county with a high unemployment rate, defined as above 10%; and (b) whether the family lived in a rural area, defined as a county where the population in the largest city is less than 25,000.

## Results

### *Descriptive Statistics*

The sample consists of 894 families, 338 Black families and 556 White families. The top panel of Table 1 shows the extent to which families experienced a major economic loss over a 15-year period by race. In general, a higher proportion of Black than White families was affected. Thirty percent of the families experienced a 50% or more income loss at least once, 27% of White families and 48% of Black families. Compared to families who suffered a 50% or more loss, a higher proportion of families experienced a 20% or more loss of head's work hours over 15 years: 41% of families overall, 39% of White families, and 48% of Black families. More than half of the families (54%) experienced either a substantial income loss or a reduction in work hours, with more Black (66%) than White families (52%) affected in this way. On average, 17% of the families experienced both income loss and hours loss. Twice as large a proportion of Black families (30%) as White families (15%) were in this most severely affected group.

Table 1 also presents the data by income quartiles to show the interplay between race and income. Families across all income groups were affected by loss events, with a much higher proportion of low-income than high-income families being affected. More than three-quarters of families in the lowest income group experienced at least one substantial economic loss over the 15-year period and more than one-third of them experienced both income and work hours loss. About one-third of families in the highest income quartile also experi-

TABLE 1

Proportion of Families Experiencing at Least One Major Economic Loss During a Child's Entire Childhood (age 0 to 15), by Average Family Income Quartiles and Race

	Number of families	Ever income loss	Ever work hours loss	Either income or work loss	Both income and work loss
<i>Overall</i>					
All	894	.30	.41	.54	.17
Black	338	.48	.48	.66	.30
White	556	.27	.39	.52	.15
<i>1st Quartile</i> (high income)					
Black	34	.23	.10	.32	.01
White	189	.20	.26	.38	.08
<i>2nd Quartile</i>					
Black	47	.29	.44	.46	.27
White	177	.24	.34	.50	.09
<i>3rd Quartile</i>					
Black	86	.48	.67	.81	.34
White	138	.36	.58	.69	.25
<i>4th Quartile</i> (low income)					
Black	171	.62	.50	.77	.36
White	52	.51	.61	.74	.37

enced either income or lost work hours over the period, but only a small proportion experienced both. Race differences are reduced substantially when income is controlled, which indicates that the significant differences in income contribute significantly to differences by race.

For the logistic regression analysis, the sample produced 11,622 family years, 4,381 for Black families and 7,241 for White families. All analyses were conducted separately for Black and White families. Separate models were estimated for each type of adaptation. Means and standard deviations of the characteristics of this pooled sample are shown in Table 2. They differ very little from the overall means for any given year during childhood (data not shown). In contrast to the family-based statistics in Table 1, Table 2 provides information for the pooled family year sample used in the regression analysis.

Ninety percent of the family heads did not experience a substantial reduction of work hours over the pairs of two-year periods that were examined. Nine percent of families lost 20% or more work hours in one of the two years. Fewer than 1% of the family heads lost substantial work hours two years in a row. On average, 3% of families experi-

**TABLE 2**  
**Means and Standard Deviations (in parentheses) of Characteristics of the Pooled Sample**  
**(in family years), by Ethnicity of Family Head**

	Overall n = 11,622	White n = 7,241	Black n = 4,381
<i>Independent variables:</i>			
No reduction of 20% + work hrs. in t & t + 1 (reference group)	.90 (.31)	.91 (.36)	.87 (.20)
Reduction of 20% + work hrs. in t but not in t + 1	.04 (.21)	.04 (.25)	.06 (.14)
Did not lose 20% + work hrs. in t but did in t + 1	.05 (.21)	.04 (.25)	.06 (.14)
Lost 20% + work hrs. in both t & t + 1	.007 (.08)	.006 (.09)	.009 (.06)
Income loss of more than 50% at t	.03 (.18)	.03 (.20)	.05 (.13)
<i>Dependent variables:</i>			
Whether reduce food cost at t + 1	.20 (.41)	.19 (.48)	.27 (.26)
Whether received food stamps, t + 1	.11 (.32)	.07 (.46)	.36 (.29)
Whether a residential move at t + 1	.18 (.39)	.18 (.31)	.21 (.24)
Whether spouse increased work hours by 150+ hrs, t + 1	.21 (.42)	.22 (.50)	.15 (.21)
Whether a divorce/separation at t + 1	.02 (.14)	.02 + (.16)	.02 + (.08)
<i>Time-invariant control variables at time t:</i>			
Calendar year (t)			
1967-1974 (reference group)			
1975-1981	.31 (.47)	.29 + (.55)	.39 + (.29)
Age of mother at birth of the child	24.5 (8.4)	24.6 (10.0)	23.4 (4.6)
Missing data on age of mother at birth	.95 (.22)	.95 + (.26)	.96 + (.11)
Completed education of head	13.2 (2.8)	13.3 (3.3)	12.5 (1.7)

TABLE 2 (Continued)

	Overall n = 11,622	White n = 7,241	Black n = 4,381
<i>Time-varying control variables:</i>			
Whether received AFDC at year t	.08 (.28)	.05 (.26)	.30 (.27)
Whether a residential move at t	.20 (.41)	.19 (.48)	.22 (.25)
Whether received food stamps at t	.11 (.32)	.07 (.31)	.36 (.29)
Total work hours of wife at t	831 (1124)	837 + (1339)	793 + (622)
Whether a divorce/separation at t	.02 (.13)	.02 + (.16)	.02 + (.08)
Whether a (re)marriage at year t	.01 (.32)	.01 + (.14)	.01 + (.07)
Family size at year t	4.6 (1.7)	4.5 (1.8)	5.1 (1.4)
Total family income at year t (in \$10,000 1993 dollar)	4.5 (3.3)	4.8 (3.6)	2.8 (1.0)
Whether youngest child was under age 2 at t	.16 (.38)	.16 (.44)	.20 (.24)
Whether lived in area w/high unemployment rate at t	.09 (.30)	.09 + (.36)	.11 + (.19)
Whether lived in rural area	.27 (.46)	.28 (.55)	.22 (.25)
Age of child at year t			
age 0-5 (reference group)			
age 6-10	.38 (.50)	.38 + (.59)	.38 + (.29)
age 11-15	.31 (.47)	.30 + (.56)	.31 + (.28)
Head's disability at t	.10 (.46)	.09 (.35)	.17 (.22)
Whether own a home at t	.73 (.83)	.76 (.83)	.49 (.30)

+ : coefficients between Black and White families are *not* significantly different at .05 level.

enced an income loss of 50% or more in a given year. Black families generally experienced a higher incidence of economic loss than White families.

Table 2 also shows other notable differences between Black and White families. A substantially larger proportion of Black than White families received AFDC and food stamps. White families have substantially higher total family income than Black families. The average family income among Black families was \$28,000 per year, and income among White families was about \$20,000 higher, averaging \$48,000.

### *Multivariate Models*

Three logistic regression models for each dependent variable were computed. The first model included income loss, reduced work hours, and the dependent variable at time  $t$  only; the second added the control variables; and the third further added the hypothesized interactions: (a) between income and reduced work hours, and (b) between area unemployment level and reduced work hours.

The size of the effect of reduced work hours and income loss on the dependent variables declines when control variables are introduced. The control variables explain at least half of the effect of income and reduced work hours on each of the dependent variables. The introduction of control variables significantly improves the fit of all models. In Table 3, only the two models after introducing the control variables are presented, one without (Model I) and the other (Model II) with the interaction effects. The explanatory power of the models is indicated by the value of the  $-2$  log-likelihood ratios, with a lower value indicating a model with better explanation. The results for White families are presented in the first panel of Table 3, and those for Black families are presented in the second panel. The coefficient estimates for the control variables in Model II are presented in Table 4.

*Food expenditures reduction.* As hypothesized, White and Black families that experienced either substantial income loss or whose head experienced reduced work hours at either  $t+1$  or at both  $t$  and  $t+1$  were much more likely than families experiencing no loss to reduce their food expenditures at  $t+1$ . Contrary to our expectations regarding the influence of greater resources, higher income White families were more likely than lower income White families to reduce their food expenditures at  $t+1$ , if they had a loss of work hours at

TABLE 3

Logistic Regression Estimates (standard errors in parentheses) of Economic Loss on Various Types of Family Adaptation Behavior, by Ethnicity

	Food cost reduction at t + 1		Residential move at t + 1		Food stamp receipt at t + 1		Increased work hours by spouse, t + 1		Divorce/separation at t + 1	
	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II
<b>WHITE FAMILIES</b>										
<i>Income loss at t</i>	.90*** (.17)	.88*** (.17)	.53** (.19)	.52** (.19)	1.76*** (.25)	1.72*** (.26)	-.18 (.23)	-.20 (.22)	2.34*** (.27)	2.31*** (.28)
<i>Work hours loss, t &amp; t + 1</i>										
Hours loss at t, no loss at t + 1 (10)	.00 (.17)	.46 (.35)	.03 (.16)	.19 (.35)	.14 (.22)	-.12 (.48)	.11 (.17)	.01 (.36)	.03 (.43)	.11 (.91)
No loss at t, reduced work hours t + 1 (01)	.68*** (.14)	.04 (.36)	.46** (.15)	-.25 (.36)	1.80*** (.20)	1.34** (.50)	.24 (.15)	-.03 (.39)	.57 + (.33)	-.87 (.87)
Hours loss at both t & t + 1 (11)	1.31*** (.35)	1.62 + (.85)	.10 (.39)	-1.40 (1.14)	1.26** (.49)	5.99* (2.29)	-.03 (.42)	.26 (.10)	n.a.	n.a.
<i>Interaction terms</i>										
Inc * hours loss10		-.15 (.10)		-.03 (.14)		.04 (.17)		.03 (.09)		-.04 (.26)
Inc * hours loss01		.16* (.08)		.18* (.08)		.13 (.14)		.04 (.09)		.33 + (.17)
Inc * hours loss11		-.10 (.31)		.67 (.38)		-1.9 + (.96)		-.17 (.40)		n.a.



TABLE 3 (Continued)

	Food cost reduction at t+1		Residential move at t+1		Food stamp receipt at t+1		Increased work hours by spouse, t+1		Divorce/separation at t+1	
	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II
<i>Interaction terms</i>										
Inc * hours loss10	.07 (.12)		-.01 (.13)		-.11 (.17)		.23 (.18)		.14 (.25)	
Inc * hours loss01	-.24+ (.11)		.37*** (.10)		-.52*** (.19)		-.08 (.15)		-.03 (.25)	
Inc * hours loss11	.25 (.40)		-.09 (.47)		.00 (.50)		-.65 (.57)		n.a.	
Unemp rate * hrs loss10	n.a.		-1.81* (.84)		-.67 (.52)		.22 (.61)		n.a.	
Unemp rate * hrs loss01	n.a.		-1.78* (.71)		1.33* (.54)		-1.93* (.71)		n.a.	
Unemp rate * hrs loss11	n.a.		-.51 (1.22)		-1.12 (1.04)		1.23 (1.14)		n.a.	
-2 Log Likelihood	4052.0	4046.3	3890.2	3864.6	3082.1	3065.5	3187.9	2197.8	608.3	738.3
df(n)	21(4183)	24(4183)	21(4182)	27(3836)	21(4183)	27(4183)	21(2286)	27(2286)	18(2251)	22(4183)
Chi-square	833.7***	839.4***	392.7***	418.2***	2402.5***	2419.2***	349.3***	187.3***	125.6***	134.7***

Note: For variables included in the models but not presented in this table, see Table 4.

+, \*, \*\*, \*\*\* denotes p < .1, p < .05, p < .01, p < .001 respectively.

n.a.—indicates variable not included in the model due to small sample size in the cell.

TABLE 4

## Other Variables Included in Model II of TABLE 3

	Food cost reduction at t + 1		Residential move at t + 1		Food stamp receipt at t + 1		Increased work hours by spouse at t + 1		Divorce/separation at t + 1	
	White	Black	White	Black	White	Black	White	Black	White	Black
<i>Time-invariant covariates:</i>										
Calendar year t (1975-81)	.02 (.11)	.57 (.13)	-.18 (.12)	.03 (.13)	-.19 (.21)	-.20 (.15)	.26** (.10)	.02 (.17)	-.99** (.37)	-.48 (.41)
Age of mother at birth of the child	-.02 (.01)	-.01 (.01)	-.04*** (.01)	-.03*** (.01)	.01 (.01)	.01 (.01)	-.01 (.01)	.01 (.01)	-.05** (.02)	-.03 (.02)
Missing data on age of mother at birth	-.17 (.20)	.54 (.29)	1.2*** (.25)	.87** (.29)	-.48 (.40)	-.37 (.32)	-.56** (.21)	.38 (.50)	.96 (.59)	.37 (.76)
Completed ed- ucation of head	-.05*** (.01)	.02 (.01)	.03* (.01)	.08*** (.02)	-.04 (.03)	.01 (.02)	.01 (.01)	.02 (.02)	-.01 (.04)	.09* (.04)
<i>Time-varying covariates (at time t):</i>										
Age of child: 5-10	.18 (.14)	-.28 (.17)	-.05 (.15)	-.20 (.11)	.37* (.18)	.35** (.13)	.20* (.09)	.24 (.14)	.17 (.24)	-.77* (.36)

TABLE 4 (Continued)

	Food cost reduction at t+1		Residential move at t+1		Food stamp receipt at t+1		Increased work hours by spouse at t+1		Divorce/separation at t+1	
	White	Black	White	Black	White	Black	White	Black	White	Black
Age of child: 11-15	.39 (.25)	-.69 (.30)	-.12*** (.27)	-.28 (.17)	.61* (.27)	.08 (.20)	.36** (.13)	.38 (.22)	.95 (.44)	-.52* (.50)
Whether a divorce/separation occurred	.77*** (.21)	.48 (.25)	.31** (.21)	.49* (.24)	.61* (.31)	.99** (.31)	n.a.	n.a.	n.a.	n.a.
Whether a marriage occurred	-.32 (.30)	-.15 (.34)	.23* (.24)	.48 (.33)	-.64 (.49)	.01 (.42)	n.a.	n.a.	.79 (.44)	2.54*** (.42)
Family size	-.18** (.03)	-.12 (.11)	-.07* (.03)	-.06** (.02)	.17*** (.04)	.12*** (.02)	-.01 (.02)	-.16*** (.03)	.03 (.07)	.04 (.06)
Whether youngest child under age 2	.18 (.10)	.12 (.11)	-.02 (.10)	.07 (.10)	.22 (.18)	.11 (.12)	.10 (.09)	.34* (.13)	-.75* (.30)	-.06 (.29)
Total family income (in \$10,000)	-.08*** (.01)	-.21** (.03)	-.07*** (.02)	-.12*** (.03)	-.53*** (.06)	-.46*** (.05)	-.04** (.01)	-.11*** (.04)	-.05 (.04)	-.22* (.09)
Whether lived in rural area	.16* (.07)	.33** (.12)	-.00 (.08)	-.30** (.11)	-.37* (.15)	-.21** (.12)	.11 (.07)	-.04 (.13)	-.47* (.23)	-.95** (.33)
Whether lived in area w/high unemployment rate	.03 (.11)	.33 (.12)	-.03 (.14)	.05 (.14)	.01 (.24)	.11 (.16)	-.03 (.09)	.27 (.20)	-1.08 (.47)	-.90 (.52)

Head's work hours at t (in 1000 hrs)	-.06 (.05)	-.24*** (.05)	.02 (.05)	.08 (.05)	-.36*** (.08)	-.12* (.06)	.06 (.05)	.03*** (.01)	.19 (.14)	.70*** (.15)
Whether head disabled	.05 (.12)	.22 (.11)	.00 (.12)	-.18 (.12)	.53*** (.18)	.44** (.13)	-.07 (.12)	-.57* (.23)	-.47 (.39)	.50* (.35)
Whether own a home	-.16 (.08)	-.44*** (.09)	-1.43*** (.08)	-.74*** (.09)	-.53*** (.14)	-.41*** (.10)	-.18* (.08)	-.33*** (.12)	-.81*** (.20)	.63 (.25)
Food expenditures at t (in \$10,000)	1.84** (.00)	2.83*** (.13)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Whether a residential move at t	n.a.	n.a.	.66*** (.08)	.51*** (.09)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Whether received food stamps at t	n.a.	n.a.	n.a.	n.a.	2.81*** (.15)	2.58*** (.10)	n.a.	n.a.	n.a.	n.a.
Wife's work hours at t (in 1,000 hrs)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-.07 (.04)	-.21** (.07)	n.a.	n.a.

Note: n.a. indicates the variable was not included in the model.

\*, \*\*, \*\*\* denotes  $p < .05$ ,  $p < .01$ ,  $p < .001$  respectively.

$t + 1$ . The opposite was true for Black families. Perhaps low-income White families simply cannot reduce their food expenditures without endangering the well-being of family members. However, this pattern was not observed in Black families.

*Residential move.* Families that experienced a major income loss were significantly more likely to move in the subsequent year than those with no or a smaller income loss (Table 3, Column 2, Model I). White families were significantly more likely than Black families to move in the same year the head lost work hours. However, they were not more likely to move in the following year, nor did loss of work two years in a row increase the likelihood of a residential move. Adding the interaction between area unemployment rates and reduced work hours improved the fit of the model (Table 3, Column 2, Model II). Contrary to the hypothesis that families with lower incomes or those which live in an area of high unemployment are more likely to move when experiencing reduced work hours, results indicate the opposite. High-income families were more likely to move in the same year as a result of loss of work hours than were low-income families. Compared to families in areas of low unemployment, families in areas of high unemployment were less likely to move after a loss of work hours than those in an area of low unemployment. Black families were less likely to move than White families.

Regarding moving propensities for Black and White families, results showed that Black families were less likely to move given a reduction in work hours than White families (t-test results not shown). This appears to be due to the different economic conditions under which they live. When the interaction terms with income and area unemployment rate were added, differences between Black families and White families in the propensity to move disappeared.

*Public assistance: food stamp and AFDC receipt.* Similar analyses for both food stamp and AFDC receipt were conducted. Since the results and their interpretation were similar, only the results for food stamps are presented here. Consistent with hypotheses for this study, both White and Black families which experienced a major income loss were significantly more likely to receive food stamps the following year than those with no, or a smaller, income loss (Column 3, Model I). Families in which the head lost work hours in  $t + 1$  also were significantly more likely to receive food stamps in that year than those in which the head was stably employed. When a loss occurs for two

years in a row, the need for assistance is magnified. White families were three and a half times more likely to receive food stamps in year  $t + 1$  ( $e^{1.26}$ ) when the head lost 20% or more work hours for two consecutive years, compared with families with no income loss in either year.

Families with a higher income at year  $t$  and a substantial loss of work hours in two consecutive years were less likely to receive food stamps than those with lower incomes at year  $t$  and the same level of loss in work hours (Column 3, Model II). Also as predicted, those living in high unemployment areas were more likely to receive food stamps the year after a reduction of the head's work hours than those living in low unemployment areas. The effects of interactions of income and area unemployment rate with job loss at year  $t + 1$  were statistically significant for Black families. Consistent with findings in Oliver and Shapiro (1995), income and area economic conditions appear to be more important for the adaptation of Black families than White families.

*Increased work hours of spouse.* The models for increased work hours of the spouse following economic loss were restricted to family years when family heads were married or living with a long-term partner in both year  $t$  and year  $t + 1$ . The following rule of the PSID is such that in families with married or cohabiting couples the head of the household is always the male. Thus, the work hours of the spouse in this analysis refer to those of the wife or female partner in the household.

Contrary to the original hypothesis, in White families a 50% or more loss of income was not associated with an increase in the work hours of the spouse, nor was the loss of head's work hours in the present or in the prior year associated with an increase in her work hours. These results confirm findings from other research that the wife's labor supply in White families responds to other inducements, such as her own potential wages and opportunities, rather than to the labor supply of her husband. The picture does not change with the introduction of interaction terms (Model II).

For Black families, however, a significant but unexpected relationship was found between income loss and spouse's work hours. Income loss was associated with a significantly smaller likelihood that the spouse would increase work hours the following year. One explanation for this finding is that, if wives in Black families whose head experiences some substantial loss of work hours in year  $t$  immediately increase their work hours (also in year  $t$ ), they can avoid substantial

loss of income and their hours would not increase between  $t$  and  $t + 1$ . Families that do not have additional spousal work effort will experience income loss. This would lead to the negative relationship that was found between income loss at  $t$  and increased work hours of the spouse in  $t + 1$ .

Black spouses did increase work hours in  $t + 1$  among Black families when the male head lost work hours in  $t + 1$  or in both  $t$  and  $t + 1$ , although the effects became marginally significant after interaction terms were added. The findings reflect the significant economic role of females in Black families and their disposition to assume the provider role when needed.

There was no interaction between income and loss of work hours in whether wives increased work hours. However, an interaction between whether Black families owned their homes and hours loss in their effect on wives' labor force hours (data not shown) was found. Wives in Black families that owned their homes were significantly less likely to increase their work hours in the year of a loss of head's work hours than those in families that did not own their own homes. This is consistent with the permanent income hypothesis in that families with considerable assets are better able to smooth consumption and do not need to change their behavior as rapidly or sharply as families with fewer assets.

There was also a significant interaction between the area unemployment rate in the effect of reduced work hours on work hours of female partners. Wives in Black families who lived in an area with a high unemployment rate were significantly less likely to increase their work hours in the same year their husbands lost work hours than those in an area with a low unemployment rate. This supports the hypothesis that area unemployment prevents other workers from entering the work force to increase the family's income.

*Divorce or separation.* The models for whether a divorce or separation follows an economic loss were restricted to a subsample containing family years when family heads were married or living with a long-term partner in year  $t$ . As expected, income loss was associated with a significantly increased probability of divorce or separation from a partner among White families and Black families (Table 3, Column 5, Model I). Previous research showed that divorce significantly decreases family income. Results indicate that a substantial income loss also leads to marital dissolution, possibly through the emotional strain associated with the loss or through the greater attraction of alternative living arrangements for economic reasons. Loss

of work hours at  $t + 1$  was associated with a marginally elevated risk of divorce for Whites. For Blacks, reduced work hours substantially increased the probability of divorce or separation of the head from a partner. Family heads with a loss of work hours at  $t$  or  $t + 1$  had two to three times the likelihood of divorce or separation of those with no loss of work hours at either time. The difference between the coefficients of the effect of reduced work hours at  $t + 1$  for Black and White families was tested. The coefficients did not differ significantly, which suggests similar effects for Black and White families even though the coefficient for White families was only marginally significant.

### Discussion and Conclusions

This study contributes to the literature on family economic stress by presenting a longitudinal picture of the experiences of a nationally representative sample of American families. The analysis shows that more than half of families with children experienced at least one substantial economic setback during the period when children were growing up. This analysis reveals that all income groups were at risk of major economic losses. One-third of families in the top income quartile, and an alarmingly high proportion of those in the lowest quartile (three quarters) had experienced such economic hardship at some time. The proportion of families that experienced both income and job loss is twice as high for Black families as for White families.

The study also showed that loss in income and the family head's work hours induce substantial changes in family behavior. Families often adapted strategies that disturb the family process and that could be harmful to the well-being of family members. Moving may result in an improved financial situation, but it also may weaken the family's support network and detract from children's school progress. Adjusting by cutting food consumption points to the possibility of deteriorating living conditions that may threaten the survival of family members. Findings that low-income families were less likely to cut food expenditures than high-income families faced with similar economic problems suggest that cutting food expenditure may not be an option for those who already have a low food consumption level. Seeking public assistance is stigmatizing and is now only a short-term option. Findings also show that a major economic setback significantly increases the likelihood of a marital dissolution, suggesting the emotional turmoil such economic stress may bring for family members. Future research is needed to gain a better understanding of the

potential positive and negative impacts these adaptation strategies have on the well-being of both adults and children.

The lack of correlation between family head's loss of work hours and the wife's increased labor effort is suspected to be a result of an inability of the wife to secure a job or increase work hours, either because of a lack of skills or because the income loss reflects an overall loss in employment opportunities in the community. Only for Black families is there a marginally significant correlation. This finding may reflect a subcultural difference of a stronger economic role of Black females. The finding that Black families in high unemployment areas are less likely to increase the wife's work hours supports the speculation that high unemployment rates limit the employment opportunities of other family members. This finding corroborates recent findings in this area (Gruber & Cullen, 1996; Juhn & Murphy, 1996).

This research suggests that it is important to consider the interaction between stressful events and economic resources and opportunities in studying family adaptation. Overall, the analysis suggests that families with substantial income and assets and those who live in low unemployment areas tend to take active measures, such as moving and increasing partners' work effort, and have a better chance of recovering from the economic loss. Families with few resources and those in high unemployment areas are likely to rely on public assistance and to be caught in persistent economic hardship. Although Black families are at higher risk of experiencing major economic losses than White families, their adaptations were similar, with one exception: the greater likelihood of a residential move among White families than among Black families. Different policy options may be needed to assist families with different characteristics.

By analyzing families with different socio-economic characteristics, this research shows that families that are most vulnerable to economic loss are also those who have the hardest time adapting. A combination of a higher incidence of economic uncertainty for low-income and Black families and their limited resources to adapt and recover from economic setbacks may have contributed to the increasing inequality between the rich and the poor, and between Black families and White families. This inequality of the past few decades may result in greater inequality in the future than in the past. This finding contributes to an understanding of the rising income and wealth inequality in the U.S. in the past quarter century. Given that many low-income families lack economic resources, such as savings, and are not able to compensate for the loss with additional work effort, public

assistance has become a major source of income for these families in hard times. Female-headed families, in particular, are limited in their adaptation options since they do not have other adults in the family to provide emotional or financial support in time of need. Yet, the social assistance programs in America, which traditionally are less generous than those in many European countries, have become increasingly limited with the new welfare overhaul. Recent findings suggest that about 40% of current welfare recipients eventually will exceed the five-year time limit for cash assistance and that the majority of these families have depended, for a number of years, on AFDC income for at least half of their family income (Smith & Yeung, 1988). Reduction in public benefits and services may severely threaten the basic needs of these families.

Residential mobility appears to be an important adaptive strategy, but it is more likely to occur among high-income families than among low-income families. If geographic migration is viewed as a means of improving the allocation of human resources, and families with lower incomes and those who live in high unemployment rate areas are less likely to use it as an adaptation strategy, this particularly disadvantaged group would appear to have little chance to recover from economic setbacks the family experiences. It is important in future research to understand why these families are less likely to move than others.

This study helps to identify the groups in the population that are most vulnerable to economic loss and most in need of assistance. To prevent further widening of income inequality, it is crucial to provide assistance to low-income families. Public policies might include programs to help them improve job skills, provide information regarding employment opportunities, facilitate relocation by subsidizing moving costs, or assist in out-of-state job-searches for families with low incomes, especially those who live in high unemployment areas. Since economic losses significantly increase marital stress, policies that recognize the importance of reducing the emotional and financial stress of economic loss may decrease the likelihood of dissolution of the family.

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