

DISSERTATION

**HAVE CHANGES IN FAMILY STRUCTURE ADVERSELY AFFECTED
THE ABILITY OF ECONOMIC GROWTH TO REDUCE POVERTY?**

Submitted by

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In partial fulfillment of the requirements

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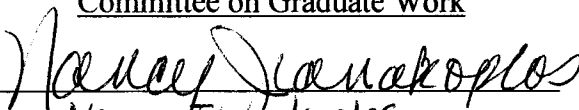
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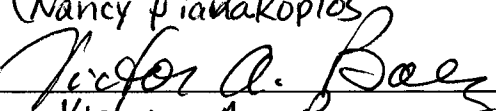
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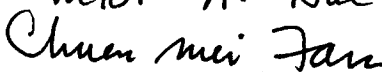
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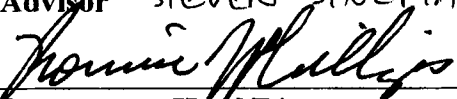

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ABSTRACT OF DISSERTATION

HAVE CHANGES IN FAMILY STRUCTURE ADVERSELY AFFECTED THE ABILITY OF ECONOMIC GROWTH TO REDUCE POVERTY?

In the United States economic growth is the primary means of fighting poverty. From 1959 to 1973 this tool was quite successful as the poverty rate declined by over 50 percent. However, since 1973 the poverty rate has remained relatively stagnant, fluctuating primarily in response to the business cycle. Many explanations have been given for this behavior such as rising wage inequality and an inaccurate means of measuring poverty. Another explanation, however, is changes in the demographic composition of the population, specifically the shift away from married-couple families to single-parent families and single individuals living alone that occurred in the post-war period.

The purpose of this study was to determine if these changes in family structure have adversely affected the ability of economic growth to reduce poverty and the implications of this both in terms of future reductions in poverty and public policy. To accomplish this, pooled time-series cross-sectional data from the Panel Study of Income Dynamics was used to estimate the elasticity or responsiveness of total family income and its components, in particular wages and labor hours, to economic growth. These elasticities were estimated using the method of Zellner's seemingly unrelated regression (SUR) for four specific family types—single individuals living alone, single-parent

families, married couples without children, and married couples with children—in order to determine if the impact of economic growth varies by family type.

The results of this analysis indicate that the demographic shift that occurred in the post-war period compromised the ability of economic growth to reduce poverty. The incomes of both single individuals without children and single-parent families were significantly less responsive to economic growth than the incomes of married couples with children. The source of these disparities is found in the labor market. For single individuals without children wages were unaffected by growth while hours worked increased only marginally. In contrast, both the wages and hours worked of heads in single-parent families were highly responsive to growth; low average wages, however, translate these changes into relatively small income gains. Given this, further significant reductions in poverty stemming from economic growth are quite unlikely.

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A project of this magnitude is certainly not completed alone. There are many individuals who have helped me over the last several years as I have worked on this dissertation and to them I owe a debt of gratitude.

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*To my husband, Kevin, who has shared in this dream from the beginning, and
to my children, Dominic, Alexander, and Julia*

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CHAPTER ONE: INTRODUCTION

In June of 1966, Sargent Shriver, the director of the Office of Economic Opportunity, the department charged with executing the directives of the War on Poverty, testified before Congress on the feasibility of eradicating poverty in the United States. He maintained that the War on Poverty could certainly be won and that this could be accomplished in a time span of about ten years.

During the last decade American scientists and engineers gained enough knowledge to say that by 1970 we would have a man on the moon. Now we have the knowledge to set 1976 as the target date for ending poverty in this land...By 1976, the 200th anniversary of the Declaration of Independence, we can finish the job.¹

Poverty is by no means a new phenomenon; indeed one could almost say with certainty that the poor have always been among us. Given this, such a bold statement as expressed in the above quotation about completely eradicating poverty, as opposed to simply alleviating poverty or mitigating its symptoms, seems a bit absurd, and, unfortunately, as it turned out, was very far off the mark.² The official poverty rate in 1976 was 11.8 percent; nearly 25 million people lived in households whose income was insufficient to pull them above the poverty line in that year. Today, nearly thirty years following this target date of 1976 and nearly forty years after Sargent Shriver set this

¹ U.S. Senate Committee on Labor and Public Welfare, (1966), p.48.

² For a complete discussion of how poverty is defined and measured in the United States please see Appendix A.

goal, the poverty rate stands at 12.7 percent with nearly 37 million men, women, and children, living in poverty.

What then gave rise to such optimism? What could have inspired Sargent Shriver to believe that the total elimination of poverty in a mere 10-year period was possible? When he made this statement in 1966 the poverty rate was 14.7 percent, with over 28 million people living in poverty, figures which in and of themselves do not necessarily inspire hope. These numbers, however, put in the context of the 15 or so years that preceded them could certainly lead one to believe that the total elimination of poverty was not impossible. Figure 1.1 graphs the official poverty rate for all persons from 1959 to 2004. From 1959 to 1966 the poverty rate fell by 7.7 percentage points, a decline of over 34 percent. Unofficial statistics on the incidence of poverty prior to 1959 indicate steady progress against poverty in the immediate post-war period as well: from 1947 to 1959 the poverty rate fell by nearly 10 percentage points, declining from 32 percent to 22.4 percent.³

What is more, this great reduction in poverty came about not by means of large government income redistribution programs, for government cash transfers were rather limited in scope at this time. For example, in 1968 total cash transfers to low-income families and individuals from all levels of government were 41 billion dollars compared to over 107 billion dollars in 2002.⁴ Rather, many economists agree that the great inroads made against poverty at this time were predominantly the result of the process of general

³ U.S. Council of Economic Advisors, (1964).

⁴ Figures in 2004 constant dollars. U.S. House of Representatives, (2004), Table K-4, p. K-8.

Poverty in the United States, 1959-2004

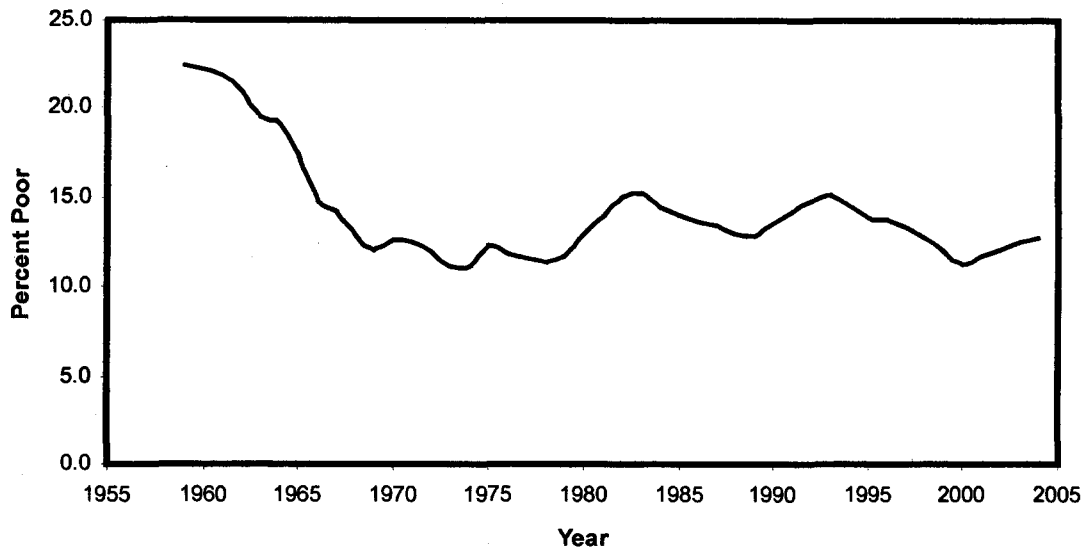


Figure 1.1
Poverty Rate for All Persons, 1959-2004

Source: DeNavas-Walt, Proctor, and Lee, *Income, Poverty, and Health Insurance Coverage in the United States: 2004*, U.S. Census Bureau, Current Population Reports, P60-229, Table B-1

economic growth.⁵ In the immediate postwar period economic growth increased family income substantially, moving many households out of poverty. In 1947 real median family income was \$21,201; by 1959 it had grown to \$29,024, an increase of nearly 37 percent. Over the course of the next ten years income continued to grow such that by 1969 median family income was \$40,563.⁶

⁵ The growth of Social Security benefits over this same time period also played a part in the reduction of poverty; however, given that the benefits of this program are confined primarily to the elderly the overall impact of Social Security on the poverty rate is somewhat limited.

⁶ Figures in 2003 constant dollars. U.S. Bureau of the Census, (2005b).

Economic growth is not the only way to fight poverty, however. There are two other principal means of reducing poverty: human capital investment and redistributive programs. Human capital investment, such as education and skills training, increases the income of poor families by increasing worker productivity and thereby wages.

Redistributive programs, on the other hand, shift resources directly to the poor either in the form of cash subsidies, such as Temporary Aid to Needy Families (TANF) and the Earned Income Tax Credit (EITC), or through in-kind benefits, such Food Stamps, housing assistance, and Medicaid.

Of the three types of policies economic growth is by far the most popular for it entails no direct cost to society. Redistributive programs, on the other hand, require the shifting of resources from one group in society to another. This process generates a welfare loss because one group in society is being made better off only at the expense of another group. Human capital programs also entail a welfare cost: tax monies must be collected from one group in society to fund programs that will benefit another group. However, the total welfare loss associated with human capital programs is typically smaller than the loss associated with redistributive programs in the sense that programs which increase worker productivity, and thereby total output, benefit all of society. What is more, investment in the human capital of the poor reduces the probability that direct cash assistance will be required in the future. Given this, human capital projects are typically better received than are redistributive programs, but because of a lack of clear evidence that these programs produce consistent results in terms of higher wages for program participants these projects too garner limited support.

Economic growth, as an anti-poverty policy, however, requires no sacrifice on the part of any group in society. What is more, all members of society, not just the poor, benefit from economic growth; as output and incomes expand, the well being of all members of society increases at the same time, although some may benefit more than others. Because of this, economic growth is by far the most popular poverty-fighting instrument among policy makers and the general public alike.

Recent trends in social welfare policy provide evidence of this fact. Beginning with the Reagan administration in the early 1980s policy changes were enacted that reduced the growth rate of particular social programs and cut benefit levels in others. At the same time major tax reform legislation was passed; tax rates were cut substantially in order to stimulate savings, investment, and work effort in order to spur economic growth. Welfare reform legislation passed in 1996 also reflects a greater reliance on economic growth and a greater reluctance to use human capital projects and redistributive programs to fight poverty. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 replaced the primary means-tested assistance program, Aid to Families with Dependent Children (AFDC), and the Job Opportunities and Basic Skills Training program (JOBS) with Temporary Assistance for Needy Families (TANF). As implied by its name, TANF is a temporary assistance program which requires participants to work after two years of reciprocity and places a cumulative five-year time limit on cash assistance, stipulations which did not exist under the former program, AFDC.

In the years following welfare reform government attention has been focused on issues related to national security and the future of the Social Security program. With shrinking tax dollars caused by a sluggish economy and rising expenditures in other areas

no new initiatives to reduce poverty have been introduced. Currently economic growth continues to be the primary means of fighting poverty in this country.^{7, 8}

Unfortunately these changes in social welfare policy have occurred at a time when economic growth appears to have lost its anti-poverty bite. The great progress made against poverty during the 1950s and 1960s came to an abrupt halt in the mid-1970s. As can be seen in Figure 1.1, the poverty rate reached an all-time low of 11.1 percent in 1973. Following this, the poverty rate maintained a counter-cyclical pattern, rising during recessions and falling during expansions. What is so disturbing about this pattern is not that the poverty rate moved with the business cycle, but rather that following each recession the poverty rate fell but not all the way back to its prior cyclical low, producing a definite upward trend. Following the first oil shock in the early 1970s the poverty rate increased to 12.3 percent in 1975. After the economy absorbed the force of this shock the poverty rate fell to 11.4 percent in 1978. During the back-to-back recessions of the early 1980s the poverty rate again increased, reaching a high of 15.2 percent in 1983. Following this economic downturn the poverty rate fell once again but this time to only 12.8 percent. The poverty rate began climbing again in the early 1990s in response to a recession, peaking at 15.1 percent in 1993. During the strong economic expansion that followed the poverty rate declined steadily, reaching a low of 11.3 percent in 2000. However, in the turbulent years following the tragic events of September 11th, 2001, the

⁷ Social Security is not a means-tested program, but as noted previously it has a large impact on the well being of the elderly, pulling many older individuals out of poverty.

⁸ The Earned Income Tax Credit and certain in-kind transfer programs that benefit the poor have expanded in recent years. However, the impact of changes in these programs is not reflected in the official measure of poverty as neither are technically considered sources of income. For more information on how poverty is measured see Appendix A.

poverty rate began to climb again to its current level of 12.7 percent. This picture becomes even more dismal when one considers that since its inception in the 1960s the poverty line has been adjusted for inflation only; that is, it represents in real terms a 1960s standard of living while average household income has grown substantially since then.⁹

Much research has been conducted on the relationship between poverty and economic growth in the post-war period. The general conclusion of these studies is that there is a strong inverse relationship between the incidence of poverty and economic growth. The experience of the 1950s, 1960s, and early 1970s certainly bears this out, but over the past thirty years the poverty rate has remained relatively stable despite consistent economic growth. What accounts for such different rates of poverty reduction over these two time periods? Has there been a change in the relationship between poverty and economic growth or are other factors at work driving a wedge between these two variables?

Several theories have been advanced to explain this seeming break in the relationship between the incidence of poverty and economic growth. One such theory attributes the lack of progress against poverty to changes in public assistance programs initiated under the Reagan administration.¹⁰ Other researchers have pointed to the decline in employment in the manufacturing sector and the concomitant rise in relatively low-paying jobs in the service sector.¹¹ Still others have claimed that poverty

⁹ For further discussion of how poverty is measured in the United States see Appendix A.

¹⁰ See Blank, (1993) and (1997).

¹¹ See Azam and Redmon, (1993).

measurement itself is to blame, arguing that the yardstick used to measure poverty is highly flawed and that if measured correctly the upward trend in the poverty rate disappears.¹² By far, however, the most popular explanation for the smaller impact of economic growth on poverty, particularly over the 1980s, points to adverse changes in the market for unskilled labor which have led to rising wage inequality and stagnant real wages for those at the bottom of the income distribution.¹³

There is, however, another possible explanation for why economic growth has been less effective in terms of fighting poverty over much of the past three decades. Changes in family structure may have dampened the impact of economic growth on the incidence of poverty. Beginning as early as the 1950s the proportion of single-parent families, predominantly female-headed families, and the proportion of “unrelated individuals”, or rather single individuals living alone, in the total population began to increase while the proportion of married-couple families began to fall. In 1959 only 10 percent of all families had a female head; today, 18.2 percent of all families have a female head, an increase of 82 percent.¹⁴ Similarly, in 1959 unrelated individuals comprised only 6.1 percent of the total population; today this proportion is 16.6 percent, an increase of 172 percent.¹⁵ This change in the overall population has been mirrored in the poverty population as well. In 1959, single-parent families and single individuals living alone accounted for slightly more than 30 percent of the poverty population; today

¹² See Slesnick, (1993).

¹³ See Blank, (1993) and (1997); Blank and Card, (1993); Cutler and Katz, (1991); and Danziger and Gottschalk, (1995).

¹⁴ DeNavas-Walt, Proctor, and Lee, (2005), Table B-3.

¹⁵ De-Navas-Walt, et al., Table B-1.

over 61 percent of the poor are either single individuals living alone or live in families with a female head.¹⁶ This change is significant because poverty rates among both single-parent families and single individuals tend to be higher than other family types because of the high probability that these households contain only one worker. In addition, these two groups may have weaker ties to the labor market as well. Many single individuals living alone are elderly while single-parent families may be less connected to the labor market because of childcare responsibilities that constrain labor market participation. Given this, as these groups have become a larger proportion of the total population the overall level of poverty has increased over time as well.¹⁷

Higher overall poverty rates do not necessarily mean, however, that demographic changes have caused economic growth to be a less effective anti-poverty tool. In order to determine this, one must look beyond mere poverty rates to the process by which economic growth reduces poverty. Economic growth reduces poverty primarily by means of the labor market. As the economy grows and expands the demand for labor increases. This increase in demand increases both wages and employment opportunities among the poor. For example, those who are unemployed are able to secure a job, while those who are underemployed are able to increase the number of hours they work in a given time period. Rising wages and employment cause income to increase as well, thereby reducing poverty. However, if the poverty population is mainly comprised of single individuals living alone and single-parent families who may have weaker ties to the labor market it is possible that economic growth may be less effective in terms of

¹⁶ ibid.

¹⁷ See Blank, (1993), and Danziger and Gottschalk, (1995).

reducing poverty because the wages and labor hours of these two groups are less affected by economic growth than are other demographic groups such as married couples both with and without children.

Given that economic growth is the main policy instrument for fighting poverty in the United States and that the impact of this growth has been relatively small over much of the past thirty years a re-examination of the relationship between economic growth and the incidence of poverty at this point in time is quite relevant. The purpose of this dissertation is to determine if the changes in family structure that occurred in the post-World War II period have adversely affected the ability of economic growth to reduce poverty and the implications of this, both in terms of public policy and further poverty reduction in the future. To achieve this objective, pooled time-series cross-sectional data from the Panel Study of Income Dynamics was used to estimate the elasticity or responsiveness of total family income and its components, in particular wages and labor hours, to economic growth. These elasticities were estimated for four specific family types—single individuals without children, single-parent families, married couples without children, and married couples with children—in order to determine if the poverty-reducing benefits of economic growth vary by family type. Of particular interest are the estimated elasticities of those demographic groups who now comprise a much greater share of the overall population as well as the poverty population: single individuals without children and single-parent families. Specifically, it is hypothesized that the elasticities of total family income and its components for single individuals without children and single-parent families are statistically different from these same

elasticities for married couples both with and without children, with the elasticities of this latter group being larger than those of the former.

If these estimated elasticities reveal that total family income and its components, specifically labor earnings, for single individuals and single-parent families are relatively insensitive to economic growth this would seem to indicate that economic growth alone will not significantly reduce the incidence of poverty among these demographic groups and that changing demographics have compromised the effectiveness of economic growth as a poverty-fighting tool. What is more, further significant poverty reductions stemming from economic growth are much less likely, creating the need for alternative anti-poverty policies.

CHAPTER TWO: REVIEW OF THE LITERATURE

As discussed in the previous introductory chapter, the poverty rate declined substantially in the years following World War II, reaching an all-time low of 11.1 percent in 1973. Unfortunately, progress against poverty has significantly slowed since then. From the mid-1970s until today the poverty rate has followed primarily a cyclical pattern, rising during recessions and falling during expansions. Again, what is so disturbing about recent trends in poverty is not the cyclical fluctuations but rather the definite upward trend that the poverty rate appears to be following over the long run.

As noted previously, the great inroads made against poverty in the immediate post-war period were the result of a stable economy combined with robust economic growth. There was the perception at that time that as long as economic growth remained strong, further consistent declines in poverty were possible.¹⁸ The rising output and incomes associated with this growth would lead to an increase in the well-being of everyone, particularly those at the bottom of the income distribution. There were those, however, who did not agree with this argument. Michael Harrington in his book *The Other America* and John Kenneth Galbraith in *The Affluent Society* both raised concerns that the seemingly widespread prosperity was not so widespread after all and that the

¹⁸ Lampman, (1959).

“rising tide” of economic growth had not in fact raised all boats. Galbraith, in particular, maintained that “modern” poverty was immune to the effects of economic growth.

Modern poverty, according to Galbraith, could be divided into two distinct types: case poverty and insular poverty. Case poverty stems from certain characteristics peculiar to a particular individual or family such as “mental deficiency, bad health, ... excessive procreation, alcohol, insufficient education, or perhaps a combination of several of these” which prohibit these individuals from participating in the mainstream of economic life.¹⁹ Insular poverty, on the other hand, refers to “islands” or geographic pockets of poverty in which everyone or nearly everyone is poor because of certain characteristics of the economic environment. Within these islands of poverty the homing instinct is very strong such that migration to areas of greater economic opportunity, which historically has been a very significant means of escaping poverty, is not seen as a viable alternative.

Galbraith did not believe that economic growth was an effective means of reducing case poverty or insular poverty:

The most certain thing about modern poverty is that it is not efficiently remedied by a general and tolerably well-distributed advance in income. Case poverty is not remedied because the specific individual inadequacy precludes employment and participation in the general advance. Insular poverty is not directly alleviated because the advance does not necessarily remove the specific frustrations of environment to which the people of these islands are subject. This is not to say it has no effect. Secure job opportunities elsewhere, a concomitant of industrial advance, work against the homing instinct. And so, even more directly, does the spread of industrialization... But it remains that advance cannot improve the position of those who, by virtue of self or environment, cannot participate or are not reached.²⁰

¹⁹ Galbraith, (1958), p. 325.

²⁰ *ibid*, p. 327.

I. Initial Studies of the Effectiveness of Economic Growth in Reducing Poverty

In response to these concerns several studies were conducted on the effectiveness of economic growth in reducing poverty. Robert Lampman addressed Galbraith, in particular.²¹ He noted that with regard to “island” poverty, migration, particularly from rural to urban areas, had been very instrumental in reducing the poverty rate in the post-war period. With respect to “case” poverty Lampman maintained that certain characteristics of the population change over time and, given this, the impact of these characteristics on the poverty rate changes as well. For example, if individuals who have a low level of education are more likely to be poor, then as the general population becomes more educated over time poverty stemming from this characteristic will begin to decrease. In addition, Lampman noted that Galbraith failed to include in his analysis those characteristics thought to be most important in determining whether or not an individual is poor: age, race, and sex of the head of the household.

What is ironic about Lampman’s refutation of Galbraith is that although the general level of education has risen significantly in the United States over the past several decades this education has not necessarily guaranteed an escape from poverty. In 1959 when Lampman reported the results of his study to Congress 56.3 percent of the adult population age 25 years and older had less than a high school education; in 2004, 85.2 percent of this same group had at least a high school education, if not more.²² In 1959 only 8.1 percent of the adult population age 25 years and older had earned a college

²¹ See Lampman, (1959).

²² U.S. Bureau of the Census, (2000a).

degree; in 2004 this same figure was 27.7 percent, an increase of over 240 percent.

Initially these increases in educational attainment coincided with significant reductions in poverty, but over the past three decades rising levels of education have been associated with persistent poverty.

Lampman did concede, however, that some groups in society do not benefit as much as others from the process of economic growth. Those individuals who do not have strong ties to the labor market tend to have an immunity to the effects of growth, specifically those in households having elderly, disabled, or female heads. He concluded that this would have an impact on the future effectiveness of economic growth in reducing poverty.

As persons having one or more of these three characteristics (old age, disability, and female head-ship) come to be a larger part of the remaining low income population it would seem probable, unless offsetting factors work in the other direction, that subsequent general growth would do proportionally less to reduce the number of low incomes.²³

Lampman did, however, temper this statement by noting that

the composition of the low income population changes very gradually and it does not appear that the characteristics of old age, disability, and female-head, which now account for about one-third of the group will account for as much as one-half of the low income population for many decades.²⁴

More than four decades have passed since Lampman made that statement and the composition of the poverty population has changed substantially. In 2004 approximately

²³ Lampman, (1959), p. 28.

²⁴ *ibid.*

44 percent of the poor were either elderly or lived in a family headed by a female.²⁵ If, as Lampman noted, these groups have weaker ties to the labor market, growth may be less effective in fighting poverty today than it was in the immediate post-war period because of demographic changes in the composition of the poverty population.

W. H. Locke Anderson, on the other hand, was more supportive of Harrington and Galbraith, arguing that “the elimination of poverty through ‘trickling down’ is likely to be slower and more uncertain in the future than it has been in the past”.²⁶ This conclusion stemmed from Anderson’s “poverty curve”, a sigmoid curve representing the relationship between the poverty rate and the log of median income. Anderson hypothesized, given the shape of the income distribution and a fixed poverty line, that when the vast majority of the population in a particular society is poor only a few people move above the poverty line as income grows. As time passes and median income approaches the poverty line, however, many people spill over the line into relative affluence. On the other hand, as the general population becomes increasingly affluent, further income growth pulls fewer and fewer families over the boundary.

There are two significant conclusions that can be drawn from Anderson’s poverty curve both of which played a significant role in later research. First, by looking expressly at the relationship between the shape of the income distribution and changes in median income relative to an absolute poverty line, Anderson showed that in terms of poverty reduction there are diminishing returns to economic growth over time. As the economy

²⁵ DeNavas-Walt, Proctor, and Lee, (2005), Tables B-1 and B-2.

²⁶ Anderson, (1964), p. 512.

grows and the center of the income distribution moves to the right fewer and fewer individuals remain in the left tail of the distribution. Given this, over time more and more growth is necessary to move consistent numbers above the poverty line. Or, in other words, a constant growth rate moves fewer and fewer individuals above the poverty line such that growth appears to be less effective in terms of reducing poverty over time.

Second, Anderson's poverty curve demonstrates that there may be a certain portion of the population that is entirely or somewhat immune to the effects of economic growth. In order to test this particular hypothesis, Anderson divided the total population into eight subgroups based upon various characteristics, such as race, sex, and age of the head of the household. He then fitted a series of regressions relating the percentage change in each subgroup's median income to the percentage change in deflated personal income per capita for the population as a whole in order to calculate the elasticity of each subgroup's income with respect to economic growth for the years 1947 through 1960. Not surprisingly, he found that the income of white, non-farm families who were headed by a male less than 65 years of age were very responsive to growth. However, he also concluded:

The remaining groups of families—the farm families and the families headed by a woman or an aged person— are to a great degree isolated from economic growth. Their median incomes are not reliably responsive to aggregate income. Although they constitute only about 25 percent of the families in the population, they have 60 percent of the nation's poor families. For these, income simply does not “trickle down” directly enough to be counted upon to reduce poverty.²⁷

²⁷ *ibid*, p. 524.

Given this, Anderson maintained that only special government programs could alleviate poverty among these groups.

Several other studies also attempted to discern the relative importance of economic growth in reducing poverty and to determine if, in fact, certain groups in society were bypassed by the benefits of economic growth. This research is summarized in Table 2.1 below. There are many similarities among these studies both in terms of methodology and in terms of conclusions. All of the studies used simple reduced form regression equations to relate changes in the poverty rate over time to certain macroeconomic variables, for the most part some measure of income and the unemployment rate. These two particular variables provided the opportunity to distinguish between secular and cyclical changes in the poverty rate. Several of the studies also attempted to account for the declining impact of economic growth over time in terms of reducing poverty, as originally proposed by Anderson, by means of the functional form of the regression equation. Most importantly, however, all of these studies found a significant inverse relationship at the aggregate level between economic growth, as represented by changes in income, and the poverty rate, although the magnitude of this relationship varied considerably across this body of research.

In order to determine, however, if certain portions of the population are immune to the effects of economic growth a disaggregated analysis, which looks at the response of the poverty rate of different demographic groups to overall economic growth, is necessary. Nearly all of the studies summarized in Table 2.1 performed this type of analysis, and it is here that wide variations in results are found. For example, Aaron

TABLE 2.1
INITIAL STUDIES OF THE EFFECTIVENESS OF ECONOMIC GROWTH IN REDUCING POVERTY

Study	Period of Analysis	Dependent Variable	Independent Variables	Major Findings
Galloway (1965)	1947-1963	natural log of the poverty rate ^a	<ul style="list-style-type: none"> • median family income • annual average unemployment rate 	For all families, a one percent increase in median family income was associated with a 0.6 percent decrease in the incidence of poverty.
Aaron (1967)	1947-1963	natural log of the poverty rate ^a	<ul style="list-style-type: none"> • natural log of median family income • natural log of the annual average unemployment rate 	For all families, a one percent increase in median family income was associated with a 1.33 percent decrease in the incidence of poverty. For white and non-white families these elasticities were -1.41 and -1.11, respectively.
Perl and Solnick (1971)	1947-1964	first difference of the poverty rate (ΔP) ^a	<ul style="list-style-type: none"> • percentage change in personal per capita income 	<p>A one percent increase in personal per capita income was associated with a 0.789 percentage point decrease in the poverty rate of non-white families.</p> <p>The incidence of poverty among female-headed families was unresponsive to changes in personal per capita income over the period of analysis.</p>
Plotnick and Skidmore (1975)	1965, 1968, 1970, 1972 ^b	natural log of the <i>pre-transfer</i> poverty rate	<ul style="list-style-type: none"> • natural log of mean pre-transfer income • natural log of the unemployment rate • regional dummy variable 	<p>For all families, a one percent increase in mean family pre-transfer income was associated with a 0.97 percent decrease in the incidence of pre-transfer poverty. For white families with a male head under 65 this elasticity was -2.14; for similar black families this elasticity was -2.97.</p> <p>The incidence of pre-transfer poverty among female-headed families was unresponsive to changes in mean pre-transfer income over the period of analysis.</p>

Thornton, Agnello, and Link (1978)	1947-1974	first difference of the poverty rate (ΔP)	<ul style="list-style-type: none"> • percentage change in real GNP per capita • unemployment rate • percentage change in real transfer payments per capita • interaction dummy variable 	<p>Between 1947 and 1963 a one percent increase in real GNP per capita was associated with a 0.355 percentage point decrease in the poverty rate of all families. Over this same time period these coefficients were equal to -0.332 and -0.466 for white and non-white families, respectively.</p> <p>Between 1964 and 1974, a one percent increase in real GNP per capita was associated with a 0.146 percentage point decrease in the poverty rate of all families.</p> <p>The incidence of poverty among female-headed families was unresponsive to changes in real GNP per capita over the entire period of analysis.</p>
Hirsch (1980)	1947-1974	annual percentage change in the poverty rate	<ul style="list-style-type: none"> • percentage change in real GNP per capita • unemployment rate • percentage change in real transfer payments per capita • interaction dummy variable 	<p>A one percent increase in real GNP per capita was associated with a 1.163 percentage point decrease in the poverty rate of all families. For white and non-white families these same coefficients were equal to -1.217 and -0.697, respectively.</p> <p>The incidence of poverty among female-headed families was unresponsive to changes in real GNP per capita over period of analysis.</p>
Murray (1982)	1950-1980	first difference in the poverty rate (ΔP)	<ul style="list-style-type: none"> • first difference in real GNP per household 	<p>Correlation coefficient between the poverty rate and real GNP per household equal to -0.69</p>

Notes:

- a. The author(s) used a measure of poverty developed by the U.S. Council of Economic Advisors (1964) under which a family was considered poor if its annual income fell below \$3,000 in 1963 dollars, regardless of its size and composition. The use of this measure does not significantly change the number of people living in poverty over the period of analysis; however, it does have an impact on the composition of the poverty population.
- b. The authors used annual observations of the dependent and independent variables for the years 1965, 1968, 1970, and 1972 in each of the four census regions: Northeast, Northcentral, South, and West. This produced 16 observations on each variable for each regression equation.

found the poverty rate of white families more responsive to changes in median income than the poverty rate of nonwhite families. On the other hand, he found the incidence of poverty among non-whites more sensitive to changes in the unemployment rate than their white counterparts. These findings are not very surprising given the high degree of racial discrimination in practice over the period of analysis. Plotnick and Skidmore, however, obtained just the opposite results, finding the incidence of poverty among non-whites more sensitive to economic growth and less sensitive to fluctuations in the unemployment rate than whites. Thornton, Agnello, and Link, on the other hand, concluded that non-whites were more sensitive to changes in both income and the unemployment rate, but Hirsch using the same data and almost identical methodology came to conclusions similar to those of Aaron. However, all of the studies that performed a disaggregated analysis found the poverty rate of female-headed families and the elderly either less responsive or completely unresponsive to changes in income, and thereby economic growth, consistent with the earlier research of Lampman and Anderson.

Why such conflicting results when using disaggregated data? This inconsistency in results could be caused by differences in methodology or data, such as variations in the functional form of the regression equation, the period of analysis, or the specific measures used to capture secular and cyclical effects. For example, the seven studies included in Table 2.1 utilized four different measures of economic growth: median family income, mean pre-transfer income, percentage change in real GNP per capita, and the first difference in real GNP per household. However, two of the studies, Thornton et al. and Hirsch, used the exact same data and employed almost identical methodologies, the only

difference between the two being the choice of the dependent variable; Thornton, Agnello, and Link used the first difference of the poverty rate while Hirsch used the percentage change in the poverty rate as the dependent variable. This slight difference, however, as noted above, lead to quite different conclusions.

Gottschalk and Danziger examined this issue in great depth.²⁸ They estimated a large number of time-series regressions similar in form to those found in previous studies, regressing the natural log of the official poverty rate against measures of economic growth, cyclical conditions, and cash transfers. Specifically, they used three different measures of economic growth: real GNP per household, real median family income, and a simple quadratic time trend. In addition, they estimated these regression equations over two different time periods: 1966-1982 and 1949-1982. After running several series of regressions Gottschalk and Danziger found that minor, seemingly unimportant changes in functional form or variable measure had a significant effect on the results, substantially changing the value and the significance of the regression coefficients. For example, when the log of real median family income was used as a proxy for economic growth, both the unemployment rate and cash transfers were insignificant, implying that only economic growth had an impact on the poverty rate over the period of analysis. However, when the log of real GNP per household was used to measure economic growth instead, the results were reversed: Economic growth had no impact on the incidence of poverty; only the unemployment rate and cash transfers were weakly significant. Varying the time period of analysis did not improve the stability of the coefficients either.

²⁸ See Gottschalk and Danziger, (1983).

Gottschalk and Danziger concluded that the instability of the regression coefficients was due to the presence of multicollinearity among the independent variables. The unemployment rate, cash transfer payments, and measures of economic growth, such as real median family income or real GNP per household, tend to be highly collinear. Median family income and GNP per household contain a secular component that reflects real economic growth, but they also contain a cyclical component whose fluctuations may mirror fluctuations in the unemployment rate. Transfer payments also have a secular and cyclical component which may cause them to move in a fashion similar to the unemployment rate and measures of economic growth. Because of the presence of multicollinearity, the coefficients in these regressions have high standard errors causing the results to vary widely. Given this, Gottschalk and Danziger concluded that

previous estimates from time-series regressions of the relative importance of growth and transfers in reducing poverty should be viewed with a great deal of skepticism. Running such regressions with highly collinear series is basically a futile exercise if one is interested in understanding the relationship between economic growth, increases in transfers, and poverty reduction.²⁹

Because of the instability of the regression coefficients these reduced form models cannot provide consistent information on the relative effectiveness of economic growth in reducing poverty. However, even if these types of models did provide stable coefficients they would only reveal the direction and the magnitude of the relationship between economic growth and poverty; they would convey nothing about the underlying process through which growth reduces the incidence of poverty. In other words, these models only tell us if growth is more or less effective in terms of reducing poverty, but they do

²⁹ Gottschalk and Danziger, (1983), p. 17.

not reveal why this is the case or what may have caused a breakdown in the relationship between economic growth and poverty.

Another criticism of early research on the relationship between economic growth and poverty is that it did not take into account changes in the shape of the distribution of income. The poverty rate is affected not only by changes in the mean of the income distribution caused by economic growth and cyclical fluctuations but also by changes in the dispersion of that income about the mean. The use of real GNP per household or real median family income as a measure of growth only takes into account changes in poverty caused by changes in the central tendency of the income distribution. However, if income inequality is growing at the same time the mean of the distribution is increasing poverty may rise despite economic growth.

Taking the deficiencies found in earlier work into account, Gottschalk and Danziger developed a “conceptual framework that links cyclical and secular changes in macroeconomic activity to moments in the income distribution, and thus to changes in poverty”.³⁰ They defined poverty as the area under the density function of the distribution of income to the left of a fixed poverty line. Given this, poverty will change if there are changes in either the mean or the shape of the distribution of income. Changes in the mean of the income distribution reflect secular and cyclical changes in macroeconomic variables. For example, as economic growth increases income, the mean of the income distribution increases as well causing the distribution of income to shift to the right, thereby reducing poverty. On the other hand, changes in the dispersion of the income

³⁰ Gottschalk and Danziger, (1983), p. 3.

distribution are associated with changes in income inequality which also affect the incidence of poverty. For example, if income inequality increases the distribution of income becomes flatter pushing more individuals to the left of a fixed poverty line, thereby increasing poverty.

In order to determine the effectiveness of economic growth in reducing poverty relative to cash transfers, Gottschalk and Danziger assumed that all income was either market derived or in the form of cash transfers. The joint distribution of this market and transfer income was assumed to be a displaced log-normal distribution with the following three parameters: μ_1 , σ_1^2 , and c , where c is a displacement factor which reflects the skewness of this joint income distribution. Further, they assumed that this distribution was fully specified by these three parameters, such that changes in the poverty rate could be de-composed into changes in these three parameters, as expressed in the following equation:

$$\frac{dPr}{dt} = \frac{\partial Pr}{\partial \mu_1} \left[\frac{d\mu_M}{dt} + \frac{d\mu_T}{dt} \right] + \frac{\partial Pr}{\partial \sigma_1^2} \left[\frac{d\sigma_M^2}{dt} + 2 \frac{d\sigma_{MT}}{dt} + \frac{d\sigma_T^2}{dt} \right] + \frac{\partial Pr}{\partial c} \frac{dc}{dt}$$

Where

Pr = poverty rate

t = time

μ_1 = mean of the joint distribution of market and transfer income

μ_M = mean market income

μ_T = mean cash transfer income

σ_1^2 = variance of the joint distribution of market and transfer income

σ_M^2 = variance of market income

σ_T^2 = variance of transfer income

σ_{MT} = covariance of market and transfer income³¹

c = displacement factor

Using data from the Current Population Survey for the years 1967 through 1981, Gottschalk and Danziger decomposed changes in the poverty rate into components that reflected changes in the underlying moments of the joint distribution of market and transfer income. Between 1967 and 1981 the official poverty rate declined negligibly, falling by a mere .3 percentage points. However, when this change is decomposed into the elements specified in the above equation a much richer story emerges. In the absence of all other factors, changes in mean market income over this period would have caused the poverty rate to decline by 3.2 percentage points. However, changes in the variance of market income over this same time period caused the poverty rate to increase by 3.3 percentage points, negating the influence of rising market incomes. Changes in the displacement or skewness factor also caused an increase in the incidence of poverty. However, rising mean transfer income over this period outweighed both of these factors, leading to an overall decrease in the poverty rate.

Gottschalk and Danziger also performed a disaggregated analysis, decomposing changes in the poverty rate over time for three groups in particular: young men less than

³¹ This co-variance term is assumed to be non-zero. It reflects the fact that market income varies with cash transfers due to labor supply responses and that cash transfers vary with market income if these transfers are means-tested.

25 years of age; prime-aged men, age 25 to 64 years; and the elderly.³² Not surprisingly, changes in both the mean and the variance of market income had a much larger impact on the poverty rates of young and prime-aged men than did changes in the mean and variance of cash transfers. The incidence of poverty among the elderly, on the other hand, was influenced more by fluctuations in transfers than changes in market income. The most significant contribution of this research, however, was its emphasis on the tremendous impact that changes in the dispersion of income had on the poverty rate which had hitherto been ignored by other researchers.

There are, however, some drawbacks to the work of Gottschalk and Danziger. Like earlier research in this area, it does not reveal the underlying process through which economic growth reduces poverty and why that process may be less effective at this point in time. Market and transfer incomes are a function of several variables and changes in the mean values and dispersion of these sources of income stem from various sources. Changes in the distribution of income certainly offer one a place to start but they do not tell the entire story. While Gottschalk and Danziger's methodology avoids the problem of multicollinearity associated with earlier work and certainly provides a much richer analysis, their inability to perform a more disaggregated analysis, however, is a major weakness given the heterogeneity of the poverty population and the increasing number of poor families headed by women.

³² Gottschalk and Danziger were unable to perform a disaggregated analysis by either race or sex because the displaced log-normal distribution was not a good approximation of the income distribution of either blacks or women over this time period.

During the 1990s a new body of research emerged on the relationship between the incidence of poverty and economic growth. The focus of these studies, however, was different from those that had preceded them. Rather than trying to determine the *relative* effectiveness of economic growth in reducing poverty and to what extent particular groups in society benefitted from this growth, this new research focused on the seeming unresponsiveness of the poverty rate to economic growth over the economic expansion of the 1980s.

II. Later Studies of the Effectiveness of Economic Growth in Reducing Poverty

As noted previously in Chapter 1, the poverty rate declined substantially in the immediate post-World War II period. Between 1947 and 1969, the poverty rate fell by nearly 20 percentage points, from 32 percent to 12.1 percent. This significant reduction in the poverty rate was the result of a robust economy paired with strong economic growth. On the other hand, the economically turbulent years of the 1970s saw very little in the way of poverty reduction. After reaching a historical low of 11.1 percent in 1973, the poverty rate fluctuated with the business cycle over the remainder of the 1970s; at the end of this ten-year period the poverty rate stood at 11.7 percent.

In January of 1980 the U.S. economy entered into a short-lived recession; by July of the same year the economy was already moving into a recovery. Regardless of its short duration, however, the impact of this recession on the incidence of poverty was significant; pushing the poverty rate to 13 percent in 1980. Just one year later the economy again fell into a recession and the poverty rate edged higher to 14 percent in

1981. Although the recovery officially began in November of 1982 the poverty rate continued to increase, reaching 15.2 percent in 1983, the highest it had been in almost twenty years.

Following these back-to-back recessions the poverty rate fell but, as noted earlier, not all the way back to its prior cyclical low. In 1989, the peak of the 1980s expansion, the poverty rate of 12.8 percent was higher than it had been twenty years earlier in 1969 at the peak of the 1960s expansion. It is certainly not surprising that little or no progress was made against poverty in the 1970s, a decade characterized by relatively slow economic growth, rising unemployment, and inflation. However, the expansion that followed the back-to-back recessions of the early 1980s was, at that time, the second longest in the post-war period, second only to the expansion of the 1960s and that by only 14 months. These two periods were similar in other ways as well. Between 1963 and 1969 real gross national product (GNP) grew by 34.7 percent, while between 1983 and 1989 real GNP grew by 30.1 percent.³³ The unemployment rate fell by 37 percent over the 1960s expansion while declining 45.3 percent in the later expansion. Prices also grew at a very similar rate during the two periods: The inflation rate was 24.8 percent between 1963 and 1969 and 26.3 percent between 1983 and 1989. Given these strong similarities in the performance of certain macroeconomic variables, why didn't the poverty rate respond to overall macroeconomic conditions in the 1980s in the same way that it did in the 1960s? Between 1963 and 1969 the poverty rate fell by 37.9 percent but declined by only 15.8 percent between 1983 and 1989. Was there a change in the relationship

³³ Blank, (1993), Table 2.3.

between the poverty rate and the performance of the macroeconomy, or was some other factor at work driving a wedge between the two variables? The purpose of this second group of studies was to answer this question.

Cutler and Katz investigated this issue closely.³⁴ Using a model originally developed by Blank and Blinder, they estimated the relationship between macroeconomic activity and the poverty rate for the years 1959-1989 using the following equation:³⁵

$$p_t = \beta_0 + \beta_1 (P/Y)_t + \beta_2 \pi_t + \beta_3 u_t + \beta_4 T + \beta_5 p_{t-1} + \varepsilon_t$$

Where:

p_t = poverty rate at time t

$(P/Y)_t$ = ratio of the poverty line to median or mean family income

π_t = inflation rate (measured by changes in the CPI)

u_t = unemployment rate for men aged 25-54 years

T = post-1983 time trend

p_{t-1} = lagged poverty rate

ε_t = error term

The ratio of the poverty line to median or mean family income controls for the density of the income distribution near the poverty line. It captures both the impact of economic growth on the incidence of poverty and the diminishing returns to growth over time. The

³⁴ See Cutler and Katz, (1991).

³⁵ See Blank and Blinder, (1986).

unemployment rate and the inflation rate capture the impact of cyclical conditions on the poverty rate. The post-1983 time trend captures any break in the relationship between macroeconomic conditions and the poverty rate. Finally, a lagged value of the poverty rate is included to control for any long-lasting effects of macroeconomic shocks on the poverty rate. The estimated coefficients for this model are presented below in Table 2.2.

Like earlier research performed in the 1960s and 1970s, Cutler and Katz found a strong relationship between economic growth, as measured by the ratio of the poverty line to median or mean family income, and the incidence of poverty. They also found changes in the unemployment rate to be a significant source of fluctuations in the poverty rate. The inflation rate, on the other hand, was either insignificant or weakly significant in all the regressions performed by Cutler and Katz, implying that changes in the price level have very little influence on the poverty rate. It is not difficult to see why this might be the case. Inflation may lead to an increase in poverty among those who rely on nominally fixed payments for a portion of their income. In terms of the poverty population, however, this impact is dampened by the fact that only a small proportion of the poor receive non-indexed cash transfer payments; the largest cash transfer program, Social Security, is adjusted for the effects of inflation.³⁶ Furthermore, these non-indexed, means-tested cash transfers are too limited in most states to lift very few families above the poverty line.³⁷ An increase in the price level might increase the poverty gap, the average amount of income necessary to bring all poor individuals up to the poverty line,

³⁶ Tin, (1996), and Lester and Tin, (2004).

³⁷ Blank, (1993).

TABLE 2.2

PARAMETER ESTIMATES OF THE RELATIONSHIP BETWEEN THE
POVERTY RATE AND MACROECONOMIC PERFORMANCE, 1959-1989
AS ESTIMATED BY CUTLER AND KATZ, (1991)

poverty line/ median income	poverty line/mean income	inflation rate	unemploy- ment rate	Post- 1983 trend	Lagged poverty rate	R ²
0.645 (0.021)	-----	-0.078 (0.034)	0.277 (0.048)	0.346 (0.058)	-----	0.988
0.411 (0.066)	-----	0.028 (0.039)	0.263 (0.039)	0.232 (0.057)	0.388 (0.101)	0.991
-----	0.371 (0.067)	0.050 (0.040)	0.358 (0.046)	0.316 (0.073)	0.479 (0.098)	0.990

Notes: Standard errors are in parentheses. The dependent variable in all three specifications is the official poverty rate.

Source: Cutler and Katz, (1991), Table 1.

but it wouldn't have much impact on the overall incidence of poverty. The most significant of their results, however, stems from the coefficient on the post-1983 trend variable. This coefficient is positive and significant, implying an increase in the poverty rate between 1983 and 1989 of between .23 and .35 percentage points per year that cannot be attributed to changes in macroeconomic variables.

While this particular set of variables does explain a significant portion of the variation in the poverty rate over time, it clearly does not explain everything. Cutler and Katz re-estimated the regression equations in Table 2.2 using data only through 1983. These estimated equations were then used to predict the poverty rate between 1984 and

1989. These regression equations produced estimates significantly below actual poverty rates over this time period. If the median-income equation is used (including the lagged value of the poverty rate) the difference between the estimated poverty rate and the actual poverty rate is 2.1 percentage points in 1989; if the mean-income equation is used, on the other hand, the difference is 3.4 percentage points in 1989.

Given this, it is clear that other factors are also important in terms of explaining the incidence of poverty, and it may be these factors that are driving a wedge between macroeconomic performance and the incidence of poverty. Cutler and Katz examined three possible explanations for abnormally high poverty rates in the 1980s: changing factor payments, changes in the composition of families, and increasing wage inequality.

One potential explanation for unusually high poverty rates in the 1980s is that the economic expansion of the 1980s disproportionately benefitted capital relative to labor. Income stemming from capital ownership, such as personal interest income and dividends, grew more quickly over the 1980s than did labor income. Since the ownership of capital is more concentrated at the top of the income distribution a shift in national income from labor to capital could lead to increased income inequality, and thereby a greater incidence of poverty. To evaluate this explanation, Cutler and Katz calculated labor's share of national income, measured by the following ratio of labor payments to total factor compensation, from 1950 to 1989:

$$\frac{(\text{employee compensation} + 2/3 \text{ of proprietors' income})}{(\text{employee compensation} + \text{proprietors' income} + \text{net interest} + \text{corporate profits} + \text{depreciation} + \text{personal rental income})}$$

Cutler and Katz found this ratio relatively constant between 1979 and 1989, and, therefore, dismissed changing factor shares as an explanation for the high poverty rates of the 1980s.

A second possible explanation is that changes in family composition have led to higher poverty rates. As noted in the introduction, over the last forty-five years there has been a significant shift in the population away from married-couple families to single-parent families, predominantly female-headed families. Female-headed families have higher poverty rates than do married-couple families such that an increase in the number of female-headed households could lead to higher overall poverty rates.

To test this hypothesis Cutler and Katz compared changes in the actual poverty rate between 1963 and 1989 to changes in a fixed-weighted poverty rate, “constructed by taking the poverty rate for each family type in each year and weighting it by the average share of the population in that family type over the entire period”.³⁸ Based on this measure, they concluded that changes in family composition had a significant impact on the poverty rate over time. For example, the poverty rate in 1989 would have been more than one percentage point lower than its actual value if the demographic composition of the population in that year had matched the average composition over the entire period.

Regardless of this fact, however, Cutler and Katz did not attribute higher poverty rates in the 1980s to changes in family structure. They noted, first of all, the timing of the demographic shift; changes in family structure occurred throughout the entire 1963-1989 period, but the most significant changes occurred prior to 1980. If the change in the

³⁸ Cutler and Katz, (1991), p. 21.

composition of families was primarily responsible for the high poverty rates of the 1980s, then we should have seen higher poverty rates in the 1960s and 1970s as well when most of the demographic shift occurred. However, the 1960s, as noted earlier, were characterized by dramatic declines in poverty while the 1970s were associated with relatively stable poverty rates.

Cutler and Katz also rejected this hypothesis because, while they attributed the higher *level* of poverty to changes in family structure, they maintained that the overall *trend* in the poverty rate was driven by other factors. They based this conclusion on the fact that changes in the actual poverty rate were quite similar to changes in their fixed-weighted poverty rate in both the 1963-1969 period and the 1983-1989 period. Between 1963 and 1969 the actual poverty rate declined by 7.3 percentage points while their adjusted poverty rate fell by 8 percentage points; between 1983 and 1989 the actual poverty rate declined by 2.2 percentage points while their adjusted rate fell by 2.6 percentage points. The implication of this is that something else, other than changes in family composition, was driving the overall trend in the poverty rate in both periods. During the 1970s, however, the two series diverge; the actual poverty rate declined by only 1.6 percentage points between 1969 and 1979 but the fixed-weighted poverty rate declined by 3.7 percentage points. Given this, they concluded:

Thus, to the extent that changes in family structure are exogenous, part of the steadiness of poverty rates in the 1970s can be explained by these changes; changing family structure, however, does not appear to explain poverty trends in the 1960s or 1980s.³⁹

³⁹ Cutler and Katz, (1991), pp. 22-23.

There are several problems with this analysis. First, Cutler and Katz do not explain why changes in the actual poverty rate and the adjusted poverty rate diverge in the 1970s. If there is any time period that these two series should mirror one another it should be in the 1970s when the average population weights would most closely approximate the actual weights. If the only difference between the actual poverty rate and the adjusted poverty rate over time is the weights used to calculate them, why do these two series diverge in the 1970s?

Second, regarding the timing of the changes in family composition, one must keep in mind that family structure was not the only factor affecting the incidence of poverty that was changing over this time period. Other variables that influence the poverty rate were also changing between 1963 and 1989, variables that could dampen the effects of changes in family structure on the poverty rate or exacerbate them. For example, throughout the 1960s and early 1970s, when much of the demographic shift occurred, both real wages and government transfers to poor families increased significantly, reducing the impact of changing family structure on the poverty rate over this time period. On the other hand, beginning in the mid-1970s real wages began to stagnate for those at the bottom of the income distribution. In addition, the Reagan retrenchment of the 1980s was associated with a decline in means-tested cash transfers. These falling transfer payments and stagnating real wages compounded the effects of changing family structure on the incidence of poverty. Given this, the fact that the poverty rate declined throughout the 1960s and early 1970s when much of the demographic shift occurred does not mean

that changes in family composition had no effect on poverty or the ability of economic growth to reduce poverty.

The third major issue concerns their methodology. Like Cutler and Katz, other researchers who investigated this same phenomenon compared changes in the actual poverty rate over time to a fixed-weighted poverty rate, but the weights were based on the actual composition of the population in a given base year rather than on the average composition of the population over the entire period of analysis.⁴⁰ The use of average weights understates the cumulative impact of demographic changes over time. According to Cutler and Katz, the actual poverty rate would have been 1.1 percentage points lower in 1989 if the demographic composition of the population in that year had matched the average composition over the entire period. A much more relevant comparison would be between actual poverty rates in the 1980s when poverty seemed immune to the effects of economic growth and poverty rates in the 1980s calculated using population weights from the early 1960s when the demographic shift began. For example, Rebecca Blank finds that the poverty rate in 1989 was 2.73 percentage points higher than it would have been had the composition of the population matched the composition in 1963.⁴¹

After rejecting changing factor payments and the changing composition of families as valid explanations for the abnormally high poverty rates of the 1980s, Cutler and Katz investigated the role that increasing family income inequality played in the higher poverty rates of the 1980s. They showed that rising family income inequality,

⁴⁰ See Gottschalk and Danziger, (1984), and Blank, (1993).

⁴¹ Blank, (1993).

particularly in the 1980s, stemmed primarily from increasing wage inequality. Rising wage inequality in the 1980s, in turn, was the result of a shift in labor demand which favored more educated and more skilled workers over less-educated and unskilled workers. This shift in labor demand can be linked to increasing globalization and changes in technology. Given this, Cutler and Katz stated:

We conclude that while the disadvantaged are greatly affected by the state of the macroeconomy, economic growth is not the only factor affecting the economic outcomes of the disadvantaged...Changes in relative labor demand against the less skilled offset the effects of improved aggregate employment opportunities during the expansion of 1983 to 1989. In an environment of persistent and severe shifts in relative labor demand against the less skilled, a buoyant macroeconomy alone may not be sufficient to improve the absolute and relative living conditions of those from disadvantaged backgrounds.⁴²

The increase in income inequality is certainly well-documented, as is the increase in wage inequality, particularly among men. However, Cutler and Katz do not provide any statistical evidence linking increasing wage inequality to the unusually high poverty rates of the 1980s. They demonstrate very effectively that while macroeconomic conditions account for a significant portion of the variation in the poverty rate over time controlling for these variables does not fully explain the lack of progress against poverty in the 1980s. They discount two possible explanations for this phenomenon: changing factor income shares and changing family composition. Having rejected these two hypotheses, Cutler and Katz then document rising income inequality stemming from wage inequality. They then conclude that the abnormally high poverty rates of the 1980s must be linked to changes in income inequality. Certainly changes in the distribution of

⁴² Cutler and Katz, (1991), pp. 3-4.

income have an effect on poverty. As noted earlier, Danziger and Gottschalk showed that changes in the shape of the income distribution are just as important in explaining fluctuations in the poverty rate as are changes in the mean of the income distribution. However, is rising inequality the only factor, or the primary factor, that is responsible for the lackluster progress against poverty in the 1980s?

Using a similar model, Rebecca Blank also investigated the relationship between macroeconomic activity, in particular economic growth, and the poverty rate in the post-war period.^{43, 44} Her results, summarized in Table 2.3 below, are quite consistent with those of Cutler and Katz. For example, using data from 1959 to 1983 (column [1]), Blank found a strong relationship between economic growth, as measured by the ratio of the poverty line to mean income, and the incidence of poverty. She also found changes in the unemployment rate to be a significant source of fluctuations in the poverty rate. On the other hand, the inflation rate was only weakly significant while government transfers as a percentage of GNP were not a significant source of fluctuations in the poverty rate over this time period.

In addition, Blank, like Cutler and Katz, used the regression coefficients estimated with data from 1959 to 1983 to forecast the poverty rate through 1989. These forecasts fell far short of the actual poverty rate, however. Blank's model predicted that the poverty rate would fall to 9.3 percent by 1989, but the actual poverty rate was 12.8 percent. In order to investigate this seeming inability of macroeconomic variables to

⁴³ See Blank, (1993).

⁴⁴ For a similar treatment see Powers, (1995b).

TABLE 2.3

**PARAMETER ESTIMATES OF THE RELATIONSHIP BETWEEN THE
POVERTY RATE AND MACROECONOMIC PERFORMANCE
AS ESTIMATED BY BLANK, (1993)**

	1959-1983 [1]	1959-1989 [2]	1959-1989 [3]
Constant	-5.532 (3.941)	-8.987 (4.740)	-5.440 (4.246)
Male unemployment rate	0.649 (0.254)	0.078 (0.261)	0.646 (0.262)
Inflation (CPI growth)	0.082 (0.045)	0.011 (0.050)	0.076 (0.041)
Poverty line/Mean income	0.386 (0.087)	0.268 (0.100)	0.386 (0.103)
Gov't transfers/GNP	-0.295 (0.265)	0.290 (0.272)	-0.293 (0.261)
Lag poverty rate	0.341 (0.117)	0.712 (0.082)	0.337 (0.116)
Dummy variable (1983-1989 = 1)			-9.112 (11.462)
(Male unemployment rate) * dummy variable			-0.925 (0.320)
(Gov't transfers/GNP) * dummy variable			1.338 (1.105)
Adjusted R ²	0.989	0.979	0.988

Notes: Standard errors are in parentheses. The dependent variable in all three specifications is the official poverty rate.

Source: Blank, (1993), Table 2.1.

predict the poverty rate and the perverse results obtained when the sample period was lengthened to include values of the variables from 1984 to 1989 (see column [2] of Table 2.3), Blank expanded her original model, adding three new variables, and extended the period of analysis through 1989. The first of these new variables, a dummy variable, equal to 1 from 1983 through 1989, was included to allow for a change in the overall level of poverty over the 1980s expansion. The second variable that Blank added to her model was the product of this dummy variable and the male unemployment rate; this interaction variable was included in order to test for a structural change in the relationship between unemployment and the incidence of poverty over the 1980s. Finally, she added the product of the dummy variable and government transfers as a percentage of GNP in order to test for a structural change in the relationship between the poverty rate and government transfers over the 1980s as well. The estimated parameters of this larger model are presented in column [3] of Table 2.3.

The results obtained using this expanded model are not substantially different in terms of sign or magnitude from those in column [1] of Table 2.3, estimated using a more simple model and data from only 1959 to 1983. The coefficients on the post-1982 dummy variable and the product of this dummy variable and government transfers as a percentage of GNP were not significant, implying that there was no break in the overall level of poverty nor was there a change in the relationship between government transfers and the poverty rate over the 1980s. On the other hand, the coefficient on the dummy variable combined with the male unemployment rate was significant, but the results indicate a change in the nature of the relationship between the poverty rate and the level

of unemployment. Prior to 1983 there was a positive relationship between the unemployment rate and the incidence of poverty; an increase in the unemployment rate was associated with an increase in the poverty rate. Between 1983 and 1989, however, Blank's model suggests that an inverse relationship existed between these two variables; that is, a decrease in the unemployment rate was associated with an increase in poverty. Given that the poverty rate followed a cyclical pattern over the 1980s it is highly unlikely that this was the case. Rather, it is more likely that, although macroeconomic variables are important in terms of explaining changes in the level of poverty over time, other factors not included in the model exerted a strong influence over the poverty rate in the 1980s.

In order to determine what these other factors might be Blank evaluated four "non-earnings-related" hypotheses concerning the reduced effectiveness of economic growth in terms of reducing poverty. The first of these hypotheses linked relatively high poverty rates in the 1980s to problems with the measurement of poverty. One of the most significant criticisms leveled at the official measure of poverty is that it does not take into account the value of in-kind transfers, such as food stamps, housing assistance, and Medicaid, while cash transfers, on the other hand, are included in the definition of income. Clearly, in-kind benefits increase family resources and well-being in much the same way that cash transfers do. However, in the early 1960s when Mollie Orshansky developed the official poverty measure most in-kind programs were quite small in scale or nonexistent, but beginning in the mid-1960s with the War on Poverty these programs began to expand rapidly. The exclusion of in-kind transfers causes the poverty rate to be

higher than it would be if these benefits were taken into account. Given this, the apparent non-responsiveness of poverty to the macroeconomy could simply be the result of the exclusion of in-kind transfers from the data.

In order to evaluate this hypothesis, Blank utilized two unofficial poverty series calculated by the Bureau of the Census. The first series measures the incidence of poverty with the value of in-kind food and housing benefits included in income. The second series is identical to the first except that it includes the value of in-kind medical benefits in the measure of household resources as well. To test this theory, Blank compared the change in the official poverty rate between 1983 and 1987 to changes in both of the unofficial series over this same time period. The changes in the unofficial measures of poverty over this five-year period were virtually identical to the change in the official poverty rate. Given this, she concluded that “the differential responsiveness of poverty to economic growth over the expansion of the 1980s is probably not due to the omission of in-kind benefits in the calculation of poverty rates”.⁴⁵

The second non-earnings related hypothesis that Blank explored concerns the geographical location of the poor over the expansion of the 1980s. There were relatively large regional variations in economic performance over this time period. The New England and Mid-Atlantic states, in particular, saw significant growth in employment and economic activity while other areas of the country, such as the industrial Midwest, did not experience this growth to the same extent. If the poor were disproportionately located in those areas that experienced lower growth, then the reduced effectiveness of economic

⁴⁵ Blank, (1993), p. 30.

growth in terms of reducing poverty over the expansion of the 1980s may simply reflect regional differences in economic performance.

Using data from the March 1979 and 1989 Current Population Survey, Blank looked at the distribution of the poor across the nine census regions in these two years. A chi-squared test revealed that the two distributions were statistically identical implying that the regional distribution of the poor was unchanged over the decade of the 1980s.⁴⁶ Given this, she rejected the hypothesis that regional differences in the distribution of the poor caused economic growth to be less effective in reducing poverty during the expansion of the 1980s.

Blank did note, however, that the relevant geographical measure might not be the proportion of the poor living in a particular region or state but rather the proportion of the poor living in “concentrated areas of urban poverty”. If a greater percentage of the poor were located in inner cities in the 1980s than in the 1960s and if it is more difficult to secure employment and escape poverty in these areas then the geographical location of the poor might still be significant in terms of explaining the reduced responsiveness of poverty to economic growth during the 1980s. Utilizing data once again from the Current Population Survey, Blank looked at the percentage of both the poor and the non-poor living in central city locations and those living outside central city locations but inside a major metropolitan area between 1964 and 1990. Over this time period, the percentage of the poor living in central cities increased slightly from 32.8 percent to 35.2 percent, while

⁴⁶ Blank also performed a similar test based on the distribution of the poor across states and obtained the same result.

the percentage of the poor living outside of an inner city but within a major metropolitan area increased from 17.9 percent to 22.9 percent. This would seem to indicate that the inability of economic growth in terms of fighting poverty over the 1980s was not necessarily tied to the changing location of the poor. However, it is worth noting that while the percentage of the poor living in central city locations did not change significantly between 1964 and 1990 the percentage of the non-poor living in central cities declined considerably, falling from 35.3 percent in 1964 to 25.2 percent in 1990. This outward migration may have left inner cities economically vulnerable; the smaller economic base may have reduced employment opportunities among the remaining poor residents, leaving fewer avenues of escape from poverty.

The third non-earnings related hypothesis that Blank investigated focused on the impact on the poverty rate of public policy changes implemented during the Reagan administration. In the early 1980s significant changes were made to cash transfer programs, in particular those targeted at the poor. Aid to Families with Dependent Children (AFDC), the primary means-tested cash transfer program at that time, saw changes that both limited program eligibility and reduced benefit levels. Because cash transfers are included in the measure of income used to calculate the poverty rate, changes in both eligibility rules and benefit levels that reduced the amount of cash assistance to poor families could have caused the poverty rate to remain relatively high despite the economic growth that occurred over the 1980s.

Again using data from the March 1979 and 1989 Current Population Survey, Blank tested this hypothesis by simulating the impact of 1978 eligibility rules and benefit

levels on three key variables in 1988: the percentage of the population receiving AFDC benefits, the poverty rate, and the poverty gap. By comparing the simulated values with the actual values of these variables in 1988 she was able to estimate the marginal impact of these policy changes. The simulated figures for 1988 were very similar to the actual 1988 values. The simulated 1988 poverty rate was a mere one-tenth of one percentage point lower than its actual value, while the poverty gap was only slightly higher in 1988 under the new program rules than it would have been if the eligibility rules and benefit levels had remained unchanged from their prior levels. The percentage of the population receiving AFDC was identical regardless of whether the 1978 program rules or the program rules implemented under President Reagan were used. Given this, Blank rejected this theory as well, maintaining that changes in transfer programs were unlikely to have caused the poverty rate to be less responsive to economic growth during the expansion of the 1980s.

The final non-earnings related hypothesis that Blank evaluated linked the non-responsiveness of the poverty rate to economic growth over the 1980s to changes in the demographic composition of families. As noted earlier, over the past forty-five years there has been a significant demographic shift away from married-couple families to single-parent families, predominantly female-headed families. Poverty rates among female-headed families tend to be higher than those of other household types which could cause the overall level of poverty to be higher than it would be in the absence of these demographic changes. More importantly, however, previous research in this area had demonstrated that poverty among female-headed families is less responsive to economic

growth due to the fact that female-headed families have relatively weak ties to the labor market, making economic growth a less effective means of fighting the poverty of this particular demographic group. Therefore, the unusually high poverty rates of the 1980s may simply reflect recent demographic trends and not necessarily a decline in the effectiveness of economic growth per se.

To test this theory Blank again utilized data from the March Current Population Survey, calculating the poverty rate from 1963 to 1989 for all *family units*. A family unit consists of all related persons who live in the same household and is assumed to be the relevant economic unit in terms of shared income. She then re-calculated the poverty rate over this same time period, holding the demographic composition of the population constant at 1964 levels. Specifically, she held constant the population shares of six demographic groups: single female heads with other relatives in the family unit, single male heads with other relatives, married couples with other relatives, married couples living alone, single females living alone, and single males living alone.

Between 1963 and 1989 the poverty rate among all family units fell by 8.42 percentage points. If, however, the demographic composition of the population had remained constant over this time period the poverty rate would have fallen by 11.15 percentage points. In other words, the poverty rate would have been almost three percentage points lower in 1989 if these demographic shifts had not occurred. Given this, Blank concluded that “demographic shifts affected the level and trend of the poverty rate

over the past three decades”; however, she cautioned that this “does not provide direct evidence on their effect on the responsiveness of poverty to macroeconomic growth”.⁴⁷

In order to specifically isolate the impact of demographic shifts on the ability of economic growth to reduce poverty Blank used the following model:

$$PR_{t,i} - PR_{t-1,i} = \alpha_1 * PCGNP_1 + \alpha_2 * PCGNP_2 + \alpha_3 * PCGNP_3$$

Where:

$PR_{t,i}$ = poverty rate of group i at time t

$PCGNP_1$ = percent change in real GNP for years 1963-1969, 0 otherwise

$PCGNP_2$ = percent change in real GNP for years 1970-1982, 0 otherwise

$PCGNP_3$ = percent change in real GNP for years 1983-1989, 0 otherwise

She estimated this equation for all family units as well as for each of the six demographic groups specified above. In addition, she also estimated this same model using a different dependent variable. Rather than using the change in the poverty rate as the dependent variable, Blank used the change in a *constant-population-weight* poverty rate, calculated by holding constant the population shares of the six demographic groups previously identified at their 1964 levels. The estimated values of the α_1 and α_3 coefficients are presented in Table 2.4 below. These coefficients should be interpreted as the percentage point change in the level of poverty given a one percent increase in GNP over the given time period.

In order to determine if demographic changes impaired the ability of economic growth to reduce poverty over the 1980s expansion, Blank compared the responsiveness

⁴⁷ Blank, (1993), p. 38.

TABLE 2.4

**ESTIMATED PARAMETERS OF THE RELATIONSHIP BETWEEN THE
POVERTY RATE AMONG VARIOUS DEMOGRAPHIC GROUPS AND
REAL GNP GROWTH AS ESTIMATED BY BLANK, (1993)**

	Coefficient on Percent Change in Real GNP	
	1963-1969	1983-1989
All family units	-0.26 (0.05)	-0.09 (0.05)
Single females with other relatives	-0.30 (0.12)	-0.16 (0.13)
Single males with other relatives	-0.13 (0.17)	-0.08 (0.17)
Married couples with other relatives	-0.23 (0.06)	-0.09 (0.06)
Married couples living alone	-0.21 (0.08)	-0.06 (0.08)
Single females living alone	-0.44 (0.12)	-0.19 (0.13)
Single males living alone	-0.38 (0.08)	-0.12 (0.08)
All family units with constant population weights	-0.27 (0.05)	-0.10 (0.06)

Notes: Standard errors are in parentheses. The dependent variable in both model specifications is the first difference of the poverty rate.

Source: Blank, (1993), Table 2.10.

of the poverty rate for all family units to GNP growth between 1983 and 1989 to the responsiveness of the 'constant-population-weight' poverty rate to economic growth over

this same time period. If changing demographics played an important role in the abnormally high poverty rates of the 1980s then the α_3 coefficient should be significantly larger in the model estimated using the constant-population-weight poverty rate as the dependent variable than the α_3 coefficient estimated using the non-adjusted poverty rate.

As can be seen in Table 2.4 these two coefficients are virtually identical. Between 1983 and 1989 a one percent increase in real GNP was associated with .09 percentage point decline in the poverty rate of all family units. If the constant-population-weight poverty rate is used as the dependent variable the responsiveness of the poverty rate to economic growth increases negligibly; a one percent increase in real GNP was associated with a 0.10 percentage point reduction in the poverty rate over this time period. Given this Blank concluded that “the changing demographic composition among the poor has had almost no effect on making poverty ‘stickier’ over the 1980s”.⁴⁸

Care should be taken when interpreting these results, however. The coefficient that Blank bases this conclusion on is an aggregate statistic; that is, it reflects the responsiveness of the poverty rate of *all* family units to a one percent change in GNP, regardless of whether that poverty rate is calculated using current populations weights or constant population weights. Note, however, that between 1983 and 1989 the poverty rate of single females living with other relatives was not responsive to GNP growth; a one percent increase in real GNP had no impact on the incidence of poverty among female-headed families living with other relatives over this time period. Given this, the aggregate statistic largely reflects the responsiveness of the poverty rate of other groups to

⁴⁸ Blank, (1993), pp. 40-41.

economic growth. The fact that female-headed families are a larger proportion of the total poverty population today is irrelevant if this aggregate coefficient, calculated using current population weights or constant population weights, primarily reflects the responsiveness of other demographic groups to GNP growth.

It is difficult to determine which group's behavior this aggregate statistic might reflect, however, because nearly all the coefficients estimated for the 1983-1989 period are either insignificant or merely marginally significant from zero at conventional levels, a circumstance which can be attributed to the limited number of data points that Blank used to estimate the coefficients for each time period. Nonetheless, the point is that aggregate statistics such as these cannot capture the impact of changing demographics on the ability of economic growth to reduce poverty because they will be heavily influenced by those groups who are the most responsive to economic growth, such as married couple families or families with a male head. Therefore, it may still be the case that demographic shifts have reduced the effectiveness of economic growth in reducing poverty.⁴⁹

Having rejected four non-earnings related explanations for the reduced effectiveness of economic growth in terms of fighting poverty over the 1980s, Blank investigated the possibility that labor market earnings were less responsive to growth over this time period than during the 1960s. Using the following model she estimated the responsiveness of different types of income for family units in various quintiles and deciles of the income distribution to real GNP growth.

⁴⁹ For a similar argument see Aaron, (1967).

$$Y_{t,i} - Y_{t-1,i} = \alpha_1 * PCGNP_1 + \alpha_2 * PCGNP_2 + \alpha_3 * PCGNP_3$$

Where:

$Y_{t,i}$ = income of group i at time t

$PCGNP_1$ = percent change in real GNP for years 1963-1969, 0 otherwise

$PCGNP_2$ = percent change in real GNP for years 1970-1982, 0 otherwise

$PCGNP_3$ = percent change in real GNP for years 1983-1989, 0 otherwise

Specifically, Blank divided total family income into three major categories:

earnings of the head of the family unit, spouse's earnings, and other income. For the bottom two deciles total income was much less responsive to GNP growth between 1983 and 1989 than between 1963 and 1969.⁵⁰ The source of this reduced responsiveness is clear. The labor market earnings of the head of the family unit were significantly less responsive to economic growth in the latter time period. Between 1963 and 1969 a one percent rise in real GNP increased the annual earnings of the head of the household in the bottom decile by \$30; between 1983 and 1989, however, a one percent increase in real GNP produced no change in the annual earnings of the head. The results for the second decile were similar. On the other hand, the coefficient measuring the responsiveness of spouses' earnings to economic growth for family units in the bottom decile was insignificant in both the expansion of the 1960s and the 1980s; for the second decile this same coefficient was largely unchanged between the two time periods and was only weakly significant in both periods, indicating that changes in spouse's earnings were not responsible for the reduced effectiveness of growth in fighting poverty. The final income

⁵⁰ The bottom decile is composed entirely of poor family units while approximately 30 to 40 percent of the second decile is comprised of poor family units.

category, other income, is quite broad, including several different types of income. For those at the bottom of the income distribution this category contains mainly transfer income which also proved to be largely unresponsive to economic growth for the bottom two deciles of the income distribution over these two expansionary periods.

Having determined that the earnings of the head of the household were much less responsive to economic growth over the 1980s expansion than during the 1960s and given that earnings are the product of the wage rate and hours worked, Blank set out to determine if the non-responsiveness of earnings was the result of changes in labor market participation among the poor or stagnant wage rates. Using a model similar to that identified above, she estimated the responsiveness of real weekly wages and various measures of labor market participation to growth in real GNP over the three time periods previously specified.⁵¹ She found that labor market involvement within the bottom 20 percent of the income distribution was more responsive to economic growth over the 1980s than during the 1960s. On the other hand, the wages of the head of those family units in the bottom two deciles of the income distribution were completely unresponsive to economic growth in the later time period. Given this Blank concludes:

The story ... is clear: For the bottom two deciles of the income distribution, the decreased responsiveness of total income to economic growth occurred primarily because of the decreased responsiveness of head's earnings to economic growth. This in turn was due entirely to the non-responsiveness of real weekly wages to economic growth among primary earners. Indeed, labor market involvement among the bottom 20 percent expanded more rapidly in the 1980s than in the

⁵¹ Blank used the following indicators as measures of labor market involvement: the probability of unemployment last year, the probability of employment last year, number of weeks worked last year, and the probability of part-time employment last year.

1960s. Had wages risen with the macroeconomy as they did (in) the 1960s, poverty would have fallen faster than in the earlier decade.⁵²

The methodology which Blank employs to investigate the reduced responsiveness of the poverty rate to economic growth is certainly an improvement over that used by earlier researchers. Rather than basing her conclusions on a reduced form equation which can only reveal the correlation between the poverty rate and certain macroeconomic variables, Blank used a more structural approach, looking at the responsiveness of family income and its main components to GNP growth. In addition, she performed a disaggregated analysis which allowed her to focus specifically on the experiences of the poor. Unfortunately, however, this methodology did not illuminate different experiences among the poor. For example, did the wages of female heads move in a similar fashion to those of male heads over the 1980s expansion? Did the labor market participation of female heads increase as dramatically as that of male heads? In order to discredit changing demographics as a potential source of “sticky” poverty rates the focus must be on key labor market variables such as wages and employment among female-headed families.

In March of 1991 the U.S. economy entered the longest economic expansion of the post-World War II era. Between 1992 and 2000 the unemployment rate fell from a high of 7.8 percent to 3.9 percent, a thirty year low.⁵³ Over this same nine-year period

⁵² Blank, (1993), pp. 48-49.

⁵³ U.S. Bureau of Labor Statistics, (2005a).

real GDP grew by nearly 34 percent, increasing over 3.7 percent per year on average.⁵⁴ Slow but steady progress was made against poverty as well over the 1990s. The poverty rate fell from a high of 15.1 percent in 1993 to 11.3 percent in 2000, the lowest poverty figure in twenty-five years. In the 1980s, however, poverty seemed impervious to economic growth; in 1989, at the peak of the 1980s expansion, the poverty rate stood at 12.8 percent, falling only 2.4 percentage points over the entire 1980s expansion. Given the strong macroeconomic performance of the economy during the 1990s and the concomitant decline in the poverty rate is it possible that the break in the relationship between the poverty rate and economic growth that occurred during the 1980s evaporated over the economic expansion of the 1990s? Has there been a return to the traditional relationship between poverty and economic growth that was evidenced in the 1960s?

Haveman and Schwabish attempted to answer this question.⁵⁵ Expanding upon earlier research, they utilized a model very similar to that of Blank.⁵⁶ That is, they assumed that fluctuations in the poverty rate over time were associated with changes in the overall level of macroeconomic activity, as measured by fluctuations in the unemployment rate, the inflation rate, and the growth rate of GDP, as well as with changes in other variables such as the level of government transfers and the ratio of the poverty line to the mean level of income. In addition to this base set of explanatory variables, Haveman and Schwabish added several other variables to their model in order

⁵⁴ U.S. Department of Commerce, (2005).

⁵⁵ See Haveman and Schwabish, (2000).

⁵⁶ See Blank, (1993).

to capture the differential impact of macroeconomic activity on the poverty rate over time. First of all, they divided the period of analysis, 1959-1998, into four separate sub-periods: the strong growth years of 1959 thru 1972; the stagflationary years of 1973-1981; the 1980s expansion, 1982-1992; and the most recent period of economic growth, 1993-1998. They then incorporated these different time periods into their model by means of dummy variables. Finally, they interacted these period dummies with both the unemployment rate and a lagged value of the GDP growth rate in order to test for structural changes in the relationship between these indicators of macroeconomic activity and the poverty rate over time. The estimated coefficients derived from this model are presented below in Table 2.5.

Haveman and Schwabish hypothesized that the strong relationship between the poverty rate and the level of macroeconomic activity that existed during the long economic expansion of the 1960s became weaker during the economically tumultuous years of the 1970s and 1980s. They also maintained, however, that this traditional relationship re-emerged during the expansionary years of the 1990s. To test these two hypotheses Haveman and Schwabish focused primarily on two relationships over time: the relationship between the poverty rate and the unemployment rate and the relationship between the poverty rate and the growth rate of GDP. As can be seen in the first column of Table 2.5 there was a positive relationship between the incidence of poverty and the unemployment rate between 1959 and 1972. During this time period a one percentage point decrease in the unemployment rate was associated with a .46 percentage point decrease in the poverty rate. Beginning in 1973, however, this relationship began to

TABLE 2.5

**PARAMETER ESTIMATES OF THE RELATIONSHIP BETWEEN
THE POVERTY RATE AND MACROECONOMIC PERFORMANCE
AS ESTIMATED BY HAVEMAN AND SCHWABISH, (2000)**

	1959-1998	1963-1997 ^a
Constant	-13.850 (3.619)	-17.819 (4.964)
Poverty line/mean income	0.636 (0.124)	0.695 (0.139)
Lagged poverty rate	0.232 (0.122)	0.140 (0.134)
Inflation rate	-0.025 (0.052)	-0.057 (0.056)
Government transfers/GDP	-0.465 (0.276)	-0.466 (0.302)
Variance of the Logarithm of Earnings	-----	1.780 (1.044)
Unemployment rate	0.458 (0.196)	0.329 (0.229)
UR * 1973-1981 dummy	-0.219 (0.098)	-0.166 (0.107)
UR * 1982-1992 dummy	-0.223 (0.101)	-0.200 (0.108)
UR * 1993-1998 dummy	-0.026 (0.135)	0.056 (0.155)
Lagged GDP growth	-0.077 (0.064)	-0.041 (0.076)
Lagged GDP growth * 1973-1981 dummy	0.108 (0.061)	0.060 (0.074)
Lagged GDP growth * 1982-1992 dummy	0.128 (0.069)	0.067 (0.082)
Lagged GDP growth * 1993-1998 dummy	-0.006 (0.158)	-0.172 (0.227)
Entire-period trend	0.218 (0.035)	0.265 (0.046)
Number of Observations	38	35
Adjusted R ²	.986	.975

Notes: Standard errors are in parentheses. In both model specifications the dependent variable is the poverty rate.

Source: Haveman and Schwabish, (2000), Table 1 and Table 2.

^a Due to data limitations on the variance of the logarithm of earnings the authors were restricted to the 1963-1997 time period for the second set of estimated coefficients.

deteriorate as can be seen by the negative coefficients on the interaction variables.⁵⁷

Between 1973 and 1992 a one percentage point decrease in the unemployment rate was associated with a mere .24 percentage point decrease in the poverty rate. In the most recent period, on the other hand, the relationship between the unemployment rate and the poverty rate has regained most of its former strength. The coefficient on the interaction variable for this period, although negative, is quite small indicating a relationship between the poverty rate and the level of unemployment similar to that seen in the 1960s.

A similar pattern exists in the relationship between the poverty rate and the growth rate of GDP. Between 1959 and 1972 the relationship between the incidence of poverty and economic growth was negative; during this time period a one percentage point increase in the growth rate of GDP produced a .07 percentage point decrease in the poverty rate. As was the case with the unemployment rate the relationship between poverty and economic growth became weaker between 1973 and 1992, however. As can be seen in the first column of Table 2.5, the coefficients on the interaction variables for the 1973-1981 and the 1982-1992 periods are both positive, reducing the negative impact of economic growth on the poverty rate over these two time periods. What is more, these positive coefficients actually overwhelm the negative value of the overall growth coefficient, producing the perverse result that growth in GDP was associated with an increase in the incidence of poverty over much of the 1970s and 1980s. In the most

⁵⁷ The coefficients on the interaction variables should be interpreted as adjustments to the overall coefficient on the unemployment rate. That is, the impact of the unemployment rate in any given time period is simply the sum of the overall coefficient on the unemployment rate and the coefficient on the interaction variable for the given time period.

recent period, however, this situation has been reversed. The coefficient on the interaction variable for the period 1993-1998 is both negative and substantially smaller than the same coefficient in the two prior periods, implying that in the most recent economic expansion the relationship between poverty and economic growth was as strong as, if not slightly stronger, than it was in the 1960s.

Because previous researchers had attributed the decline in the effectiveness of economic growth in terms of reducing poverty to rising wage inequality, Haveman and Schwabish attempted to control for this factor by adding a measure of earnings inequality, the variance of the logarithm of earnings of all workers, to their model. The inclusion of this new variable, however, does not change the results of their analysis as can be seen from the estimated parameters of this expanded model which are presented in the second column of Table 2.5. It is interesting to note, however, that after controlling for earnings inequality Haveman and Schwabish still find evidence of a structural change in the relationship between both the poverty rate and the unemployment rate and the poverty rate and the growth rate of GDP, as can be seen in the signs and magnitudes of the coefficients on the interaction variables. This would seem to imply that additional factors, other than rising earnings inequality, must be influencing the relationship between economic growth and the incidence of poverty.

Great caution must be taken in interpreting these results. In order to determine if the strong relationship between poverty and economic growth that existed during the long economic expansion of the 1960s re-emerged in the 1990s Haveman and Schwabish focused on the value of the interaction coefficients for the 1993-1998 period. In neither

of the equations presented in Table 2.5 are the estimated coefficients on these interaction variables for the most recent expansionary period significantly different from zero at conventional levels. Haveman and Schwabish noted that this stemmed from the small number of observations and the relatively large number of variables in their estimated model which produced relatively high standard errors for the estimated coefficients. Given this weak econometric evidence, clearly additional research needs to be done in this area before any conclusions can be drawn on the nature of the relationship between economic growth and poverty during the economic expansion of the 1990s.

Even if one gives their work the benefit of the doubt, however, there are still other concerns. First of all, Haveman and Schwabish do not offer any explanation for the recent increased effectiveness of economic growth in terms of reducing poverty. If, as they and other researchers maintain, the reduced responsiveness of poverty to economic growth between 1973 and 1992 was caused by rising earnings inequality, what then is responsible for the reversal of this trend over the 1990s? Have wages at the bottom of the distribution begun to increase in real terms or is some other factor at work? If there has been a “return to normalcy” as they hypothesized clearly something has changed. What is this factor?

Second, the analysis is very aggregate in nature. The poverty population, however, is a very heterogeneous group. Earlier research in this area demonstrated that not all demographic groups benefit to the same extent from economic growth. Has the improvement in the relationship between poverty and the level of macroeconomic activity

that occurred over the 1990s affected all population groups equally or have only certain groups benefitted from this change?

Taken as a whole this more recent body of work on the relationship between macroeconomic activity and the incidence of poverty certainly builds upon and expands upon earlier research in this area. Cutler and Katz, Blank, and Haveman and Schwabish developed more complex economic models than those employed by earlier researchers in this area, and they had a greater wealth of data at their disposal as well. But there are problems, however, with this more recent research. First of all, the econometric results found in this body of work and the interpretation of these results are somewhat questionable. In some instances conclusions are based on statistically insignificant or marginally significant coefficients while in other cases estimated models produce theoretically perverse results. For example, Blank finds that between 1983 and 1989 a one percentage point decrease in the unemployment rate was associated with a .28 percentage point increase in the incidence of poverty. Haveman and Schwabish, on the other hand, find that between 1982 and 1992 a one percentage point increase in the growth rate of GDP was associated with between a .03 and a .05 percentage point increase in the poverty rate. Both of these findings imply counter-cyclical movement in the poverty rate; the actual poverty figures, however, do not display such a pattern. This would seem to indicate either a problem with model specification or the use of too few data points in estimating a given model's parameters, rather than a significant break between economic theory and experience.

A second major drawback of this research lies in its treatment of demographics. One of the most important contributions of early research on the relationship between poverty and economic growth was its recognition of the heterogeneity of the poverty population and the discovery that not all demographic groups benefit equally from economic growth.⁵⁸ Poverty among female-headed families, for example, had been shown to be more impervious to economic growth than the incidence of poverty among other family types. Given this and the major demographic shifts that have occurred over the last several decades any meaningful investigation of the relationship between poverty and economic growth, in particular the supposed deterioration of this relationship, should be conducted on a disaggregated basis. Haveman and Schwabish do not perform any sort of disaggregated analysis and while Cutler and Katz investigated the role that changing family structure played in the non-responsiveness of the poverty rate to economic growth over the 1980s they failed to look at the differential impact of this growth among various family types.⁵⁹ Only Blank attempted to measure the differential response of the poverty rate of various demographic groups to economic growth.

The most significant drawback of this work, however, lies in the types of models employed to investigate the relationship between the poverty rate and economic growth. The type of reduced-form equations utilized in this body of research can only determine if

⁵⁸ See Anderson, (1964) and Aaron, (1967).

⁵⁹ Cutler and Katz did estimate the differential impact of macroeconomic performance on the poverty rates of three separate age groups--children, adults aged 18-64, and the elderly--in order to demonstrate that the break that occurred in the 1980s between the poverty rate and economic growth affected family heads of working age only.

growth is more or less effective over time in terms of reducing poverty, but they do not reveal why this is the case or what may have caused a breakdown in the relationship between economic growth and poverty. For example, Cutler and Katz, Blank, and Haveman and Schwabish all detect a change in the relationship between macroeconomic activity and the incidence of poverty over the 1980s expansion, but none of their models indicate the source of this change. Rather, each rounds up a list of the “usual suspects”, such as falling transfer payments, rising earnings inequality, changing factor payments, and changing family structure, and evaluates each theory separately, not within the context of one overarching model, but rather outside of the model, using different methodologies.

The exception to this is Blank who takes a more structural approach to this issue, focusing on the process by which economic growth reduces poverty. Economic growth reduces poverty by increasing the income of the poor. For poor households the source of income most influenced by economic growth is labor earnings. Earnings are the product of the wage rate and labor market participation. In order to determine why economic growth is more or less effective in terms of reducing poverty one must begin by looking at the responsiveness of both wages and labor market participation to economic growth. Blank certainly takes this approach; the only thing missing from her work is a focus on the different experiences of various family types in addition to her estimates for several income deciles and quintiles.

Blank and Card, also investigating the weakened relationship between economic growth and poverty over the 1980s, corrected for these deficiencies.⁶⁰ In order to generate more stable parameter estimates, and thereby more reliable econometric results, they employed a much larger data set than had previous researchers in this area. Rather than utilizing annual time-series data on poverty which limited the number of observations to slightly more than thirty, Blank and Card used pooled time-series cross-sectional data from the March Current Population Survey. Specifically, they extracted annual data on poverty for the nine census regions of the United States and for the U.S. as a whole, expanding their available data by a factor of nine. In addition to utilizing a much larger data set, Blank and Card also expanded upon earlier research in this area by creating a model more structural in nature. Instead of regressing the poverty rate on any and all variables that influence it, such as cash transfers, the unemployment rate, the inflation rate, and the ratio of the poverty threshold to median income, they focused on those variables that translate growth of the economy into poverty reduction by means of the following model:

$$Y_{jt} = X_{jt}\beta + \alpha_j + \theta_t + u_{jt}$$

Where:

Y_{jt} = poverty rate for region j at time t

X_{jt} = set of observed control variables for the region and the year

α_j = region-specific fixed effect

θ_t = year-specific fixed effect

u_{jt} = region- and year-specific error component

⁶⁰ See Blank and Card, (1993).

The vector of control variables utilized by Blank and Card contained the regional unemployment rate, the median log wage in each region, and a measure of wage dispersion in each region, specifically the standard deviation of log wages. Also included were a set of seven demographic control variables based on the average characteristics of families or family heads in each region.⁶¹ Because this model includes the wage rate and a measure of labor market opportunity, the unemployment rate, it incorporates the mechanisms through which economic growth reduces poverty. Blank and Card also included a measure of wage dispersion in order to control for rising wage inequality, a factor considered by many to be the primary cause of high poverty rates over the 1980s. The region-specific fixed effect captures any permanent differences in the poverty rate across regions. The year-specific fixed effect, on the other hand, controls for any economy wide factor that affects the poverty rate in all regions in year t . The estimated coefficients for this model are presented in the first two columns of Table 2.6 below.

As can be seen in the table the three primary control variables are all highly significant and thereby strongly influence the poverty rate. Given this, Blank and Card concluded that abnormally high poverty rates in the 1980s were not caused by a breakdown in the relationship between labor market variables, such as the unemployment rate and the level of real wages, and the incidence of poverty but rather by the poor performance of these variables, in particular the trend in real wages. It is certainly true

⁶¹ The control variables are: the percent of family units in a central city, the percent of family units outside a metropolitan area, the percent of family units headed by a single female, the percent of family units headed by an elderly person, the percent of family heads that are black, the percent of family heads that are married, and the average education level of the family head.

TABLE 2.6

**PARAMETER ESTIMATES OF THE RELATIONSHIP BETWEEN
REGIONAL POVERTY RATES AND KEY LABOR MARKET VARIABLES
AS ESTIMATED BY BLANK AND CARD, (1993)**

	1973-1991	1973-1991	Fixed (1967) Family Weights Poverty Rate	Fixed (1991) Family Weights Poverty Rate
Regional Unemployment Rate	0.16 (0.05)	0.20 (0.05)	0.15 (0.05)	.21 (0.05)
Median Log Wage in Region	-12.63 (1.72)	-7.86 (1.74)	-6.94 (1.63)	-8.40 (1.85)
Wage dispersion in Region	20.39 (7.45)	17.01 (6.31)	15.57 (5.92)	17.57 (6.71)
Region and Year Effects	yes	yes	yes	yes
Family and Head Characteristics	no	yes	yes	yes
R ²	.94	.96	.97	.96

Notes: Standard errors are in parentheses. The dependent variable in all four specifications is the regional poverty rate.

Source: Blank and Card, (1993), Table 9.

that the economy grew over the expansion of the 1980s but this growth in real output stemmed primarily from employment growth and not from increases in productivity per worker. This lack of productivity growth combined with adverse changes in the demand for unskilled labor put downward pressure on the wages of those at the bottom of the income distribution, thereby causing poverty to be less responsive to economic growth.

Blank and Card, like other researchers before them, also investigated the impact of changes in family structure on the poverty rate over time. To do this they “constructed a constant-weight poverty rate, using actual poverty rates for each family type in each year weighted by their 1967 population shares”.⁶² They also calculated a similar poverty series using 1991 family shares. Comparing these two series over time Blank and Card concluded, as did others before them, that the poverty rate is higher today because of demographic changes, in particular the shift away from married-couple families toward more single-parent families. But they, like Blank, questioned whether or not this has had any impact on the ability of economic growth to reduce poverty: “While family composition changes affect the level of poverty, they have much less effect on the responsiveness of poverty to economic changes”.⁶³

To illustrate this, Blank and Card re-estimated the parameters of their model using both the 1967 fixed-weight poverty rate series and the 1991 fixed-weight poverty rates. The estimated coefficients are presented in the third and fourth columns of Table 2.6. Blank and Card noted that the parameter estimates generated by both poverty series were quite similar, indicating that changes in family composition have had little or no effect on the responsiveness of regional poverty rates to changes in unemployment or wage rates. What is more, the coefficients estimated with the 1991 constant-weight poverty series are actually larger than those generated by the 1967 constant-weight poverty rates, suggesting

⁶² Blank and Card, (1993), p. 318.

⁶³ *ibid*, p. 319.

that regional poverty rates are *more* responsive to changes in labor market conditions today than they would be had the composition of families remained constant.

To further demonstrate this point, Blank and Card performed a disaggregated analysis, estimating the parameters of their original model for five different family types: families with an elderly head, single heads with children, single heads without children, married-couple families with children, and married couples without children. The estimated coefficients are presented in Table 2.7 below. Blank and Card note that the coefficients for single heads with children are larger than those of any other family type. The implication of this is that the incidence of poverty among single-parent families is more responsive to changes in real wages and the unemployment rate than any other family type and that given the current composition of the poverty population poverty should be more responsive to changes in labor market conditions today than in the in the immediate post-war period before any demographic shifts occurred. They concluded: “Other things equal, the responsiveness of poverty rates to economic changes in the labor market would have been expected to increase with the rising fraction of families headed by a single person”.⁶⁴

There is, however, a problem with this interpretation. Blank and Card’s model measures the responsiveness of the poverty rate of various family types to changes in the regional unemployment rate, the median level of wages, and a measure of regional wage dispersion. Given this particular model specification, it is not surprising that the estimated coefficients are largest for single-parent families, but this does not necessarily

⁶⁴ Blank and Card, (1993), p. 320.

TABLE 2.7

**PARAMETER ESTIMATES OF THE RELATIONSHIP BETWEEN
REGIONAL POVERTY RATES AND KEY LABOR MARKET VARIABLES
BY FAMILY TYPE, 1973-1991,
AS ESTIMATED BY BLANK AND CARD, (1993)**

Independent Variable	Elderly Heads	Single Heads		Married Couples	
		Children	No Children	Children	No Children
Regional Unemployment Rate	- 0.46 (0.10)	0.95 (0.18)	0.47 (0.10)	0.26 (0.06)	0.05 (0.05)
Median Log Wage in Region	- 4.08 (3.26)	-27.86 (6.00)	-14.53 (3.14)	-5.00 (2.06)	- 4.44 (1.80)
Regional Wage Dispersion	14.02 (13.81)	22.87 (26.11)	18.61 (13.97)	10.86 (8.19)	8.06 (7.15)
R ²	0.97	0.85	0.86	0.92	0.83

Notes: Standard errors are in parentheses. The dependent variable in all specifications is the regional poverty rate.

Source: Blank and Card, (1993), Table 10.

mean that poverty among single-parent families is more responsive to economic growth than any other family type or that demographic changes have had no impact on the ability of economic growth to reduce poverty. Single-parent families typically have only one worker; because of this, these families are much more likely to be pushed into poverty by a spell of unemployment than are other families. Married couples, on the other hand, particularly those who do not have children, tend to be insulated from poverty during cyclical downturns because of the high probability of multiple earners in the family. This

is supported by the relatively small parameter estimates for married couples both with and without children found in Table 2.7. Likewise, because single-parent families typically rely on the earnings of just one worker their income, and thereby poverty status, is much more sensitive to fluctuations in real wages than married-couple families. However, the fact that single-parent families are more vulnerable than any other family type to fluctuations in real wages and the unemployment rate does not mean that changing conditions within the labor market are the most important factors affecting the incidence of poverty among single-parent families or that the poverty of these families is more responsive to economic growth than poverty among other family types.

This point is reinforced by Blank and Card's own analysis. Using the estimated coefficients in Table 2.7 they forecasted the change in the poverty rate of various family types between 1979 and 1989 based on actual changes in regional unemployment rates, the median log wage in each region, and a measure of regional wage dispersion. Over this time period the poverty rate among married couples with children increased by 1.3 percentage points. Blank and Card predicted that this same poverty rate would rise by .5 percentage points, generating an unexplained change of only .8 percentage points. For married couples without children the fit was even tighter. Between 1979 and 1989 the poverty rate among this group increased by .3 percentage points; Blank and Card predicted, based solely on changes in labor market conditions, that this poverty rate would increase by .4 percentage points, a difference of only one-tenth of one percentage point. Clearly conditions within the labor market strongly influence the incidence of poverty among married-couple families.

The poverty rate among single-parent families, on the other hand, increased by 2.8 percentage points between 1979 and 1989; Blank and Card, however, predicted an increase in the poverty rate of this group of only .6 percentage points. This would seem to indicate that additional factors, other than changing conditions within the labor market, are important in explaining variations in the poverty rate of this family type over time. Furthermore, given that economic growth reduces poverty primarily through increases in real wages and enhanced employment opportunities, these results would also seem to imply that economic growth is a much more effective tool for reducing the incidence of poverty among married-couple families than the poverty of single-parent families.

There is another problem with Blank and Card's analysis that is somewhat related to the first. This problem stems from their model specification. Blank and Card certainly took a more structural approach to the relationship between economic growth and the incidence of poverty than did previous work in this area by focusing on the labor market and the process through which growth reduces poverty. However, they concentrated on the wrong part of this process. Blank and Card's model estimates the impact of changes in the unemployment rate and the median level of wages on regional poverty rates. The relationship between these variables, however, is very simple and quite clear. If real wages fall, as they did for those at the bottom of the income distribution over the 1980s, then real household income falls, pushing more families below the poverty line. Likewise if the unemployment rate falls, family income increases due to an increase in employment opportunities which pulls families out of poverty. The more interesting question is not whether or not the poverty rate responds to changes in real wages or the unemployment

rate, but rather to what degree do these variables respond to economic growth over time? What impact does economic growth have on real wages and labor market participation among the poor? Does this impact vary by race, gender, or family composition? Has the impact of economic growth on real wages and employment changed over time, particularly during the 1980s, and if so, what accounts for these changes?

Finally, it is interesting to note that the coefficient measuring the effect of regional wage dispersion on the poverty rate is not statistically different from zero at conventional levels of significance in all of the five estimated equations presented in Table 2.7. Rising wage inequality was the main explanation given by most researchers for the lack of progress against poverty over the 1980s; in this instance, however, it appears to exert no influence on the poverty rate.

Following Blank and Card, other researchers employed similar methodologies to investigate the relationship between the performance of the macroeconomy and the incidence of poverty.⁶⁵ Like Blank and Card, much of this work focused on the process by which macroeconomic activity affects poverty, estimating the responsiveness of the poverty rate to changes in wages and employment. Several of these studies utilized pooled time-series cross-sectional data while others performed a disaggregated analysis looking at differential responses to changes in labor market variables by race and family type. For the most part, the conclusions of these studies were very similar: changes in labor market variables have a strong influence on the poverty rate. Unfortunately because all these studies focused on the impact of changes in wages and employment on the

⁶⁵ See Freeman, (2001); LeBlanc, (2001); Tobin, (1994); and Gundersen and Ziliak, (2001).

poverty rate, rather than the responsiveness of these variables to changes in macroeconomic conditions many of the same criticisms made of Blank and Card apply to this work as well.

Stepping back and surveying this entire body of literature on the relationship between the incidence of poverty and economic growth reveals some significant strengths but also some weaknesses as well. Early work in this area, beginning with Galbraith and Lampman, enhanced our understanding of poverty by recognizing the heterogeneity of the poverty population and the important role that demographics play in the ability of economic growth to reduce poverty. Specifically, these early studies discovered that certain groups in society, in particular those having relatively weak ties to the labor market, benefit very little from economic growth. Because of this, economic growth may be a less effective means of reducing poverty among these groups with more tenuous ties to the labor market, such as the elderly, single-parent families, and the disabled.

Unfortunately, however, the empirical analysis in this early work is rather weak. First of all, these researchers did not have access to the wealth of data available today. Second, in testing their hypotheses, they relied primarily on simple reduced-form equations which related the poverty rate to certain macroeconomic variables, such as median family income and the unemployment rate. As argued earlier, these reduced-form models have significant limitations. They can determine the nature and the strength of the relationship between the poverty rate and certain macroeconomic variables as well as whether or not this relationship has deteriorated over time, but they cannot reveal why

this might be the case, information which from a policy perspective is vitally important. Only a structural model that focuses on the process by which economic growth reduces poverty—the links in the chain which connect economic growth and poverty—can reveal why certain groups respond more to economic growth than others and why economic growth may be more or less effective over time.

In contrast, later work in this area was much more sophisticated from an empirical standpoint. Later researchers utilized both a wider variety and a greater amount of data, and although for the most part they still used reduced-form equations to estimate the responsiveness of the poverty rate to changes in the level of macroeconomic activity these models were much more complex, controlling for a larger number of variables that influence the poverty rate. The most recent work in this area, however, has taken a more structural approach to modeling the relationship between economic growth and poverty, focusing on the mechanisms through which growth reduces poverty. Economic growth alleviates poverty by means of the labor market, stimulating employment growth and increasing real wages; to reflect this, these most recent studies have estimated the impact of fluctuations in wages and the unemployment rate on the incidence of poverty.

These later studies, however, lack the appreciation found in earlier work of the important role of demographics in poverty research. In particular, these studies failed to recognize that even under the best economic circumstances--i.e. strong wage growth and low unemployment--the income of certain groups in society may be unaffected by economic growth, thereby limiting its effectiveness as an anti-poverty tool. Given the dramatic changes in the composition of the population that have taken place over the past

several decades, shifts towards family types much more vulnerable to poverty and less connected to the labor market, the role of demographics in evaluating the impact of economic growth on poverty seems more important today than in the past.

Not that demographics have been completely ignored, however. Rather than focusing on the differential impact of economic growth on the incidence of poverty among various demographic groups as did early research in this area, several more recent studies investigated the impact of demographic changes, in particular the shift away from married-couple families to single-parent families, on the overall level of poverty. By holding the population shares of various demographic groups constant at some base year level but allowing the poverty rates of these groups to vary over time, these studies estimated the marginal impact of these demographic shifts on the incidence of poverty, demonstrating that the overall poverty rate is indeed higher today because of these changes. For example, as noted earlier, Rebecca Blank found that the poverty rate in 1989 would have been nearly three percentage points lower if the composition of the population had remained unchanged since 1964. In addition, Danziger and Gottschalk determined that changing demographics alone caused the poverty rate to increase by two percentage points between 1973 and 1991. However, it is not only important to understand the impact of demographic shifts on the overall level of poverty but also the impact of these changes on policies used to fight poverty, such as economic growth. In particular, if poverty among certain groups in society is less responsive to economic growth, as hypothesized by early researchers in this area, and these groups are a growing

proportion of the poverty population, what impact has this had on the ability of economic growth to fight poverty?

As discussed earlier, both Blank, and Blank and Card addressed this issue, focusing particularly on the period of the 1980s. Both studies concluded that demographic changes in the post-war period had no impact on the ability of economic growth to reduce poverty. Blank and Card even went so far as to say that poverty among single-parent families is more responsive to changes in wages and the unemployment rate than any other family type, and, given this, the shift toward more single-parent families should have caused the poverty rate to become *more* responsive to changes in the macroeconomy. As noted earlier, it is not surprising that the poverty rate of this group is very sensitive to changes in wages and unemployment because the presence of only one worker makes these families very vulnerable to poverty if either of these variables change in an adverse fashion. Again what is important is not the responsiveness of the poverty rate to changes in wages and employment, but rather the responsiveness of these variables to economic growth. If, as hypothesized in early work in this area, poverty among certain groups is immune to the effects of economic growth it must be the case that their income is unaffected by growth. Income is derived from many sources but the source most affected by growth among the poor is labor market earnings. If earnings are unresponsive to economic growth then it must be the case that wages and/or labor market participation is not responsive to growth. This is the link that must be investigated.

If changes in the composition of families have had no impact on the relationship between economic growth and the incidence of poverty what then accounts for our

lackluster progress against poverty over much of the past 30 years? Most economists attribute it to adverse changes in the labor market which have led to rising wage inequality and stagnant real wages for those at the bottom of the income distribution. While the trend in real wages among men is certainly well-documented, the trend in women's wages is less clear.⁶⁶ Danziger and Gottschalk find that between 1973 and 1992 median weekly earnings declined steadily for men, but over this same time period median weekly earnings among women increased by 16 percent.⁶⁷ Increasing earnings do not necessarily mean rising real wages; they might simply reflect increased labor market participation. Nonetheless, clearly women have made income gains during a time period when men have not, and given that nearly half of all poor families are headed by women this would seem to indicate that rising wage inequality and stagnant real wages among men, while certainly important, are not the only factors contributing to the relatively high poverty rates of the past several years.

⁶⁶ For a summary of this literature see Levy and Murnane, (1992).

⁶⁷ See Danziger and Gottschalk, (1995).

CHAPTER THREE: THE METHODOLOGY

In order to determine if the changes in family structure that occurred in the post-World War II period reduced the effectiveness of economic growth in terms of reducing poverty a quantitative analysis of secondary data was performed. The first section of this chapter describes the source and characteristics of this secondary data. The second section develops the economic and statistical models within which the data were analyzed. The third section details the specific analytical procedures used to address the research question and to test the working hypotheses. The chapter then concludes with a discussion of the delimitations and limitations of this study.

I. The Data

The data used in this study were drawn from the Panel Study of Income Dynamics (PSID). The PSID is a longitudinal survey of individuals in the United States and the families in which they live. It is administered by the Survey Research Center, Institute for Social Research at the University of Michigan. The PSID collects data annually on a wide variety of topics ranging from economic and demographic variables to sociological and psychological measures. Of particular importance to this study is the very detailed set of income and labor market variables contained within the PSID.

The PSID grew out of the War on Poverty, specifically the need to assess the impact of various programs and initiatives under the War on Poverty on the economic

well being of low-income families. To this end, the U.S. Bureau of the Census, working under the Office of Economic Opportunity, administered the Survey of Economic Opportunity (SEO) in both 1966 and 1967, conducting interviews with approximately 30,000 households. In the following year, 2,000 low-income households with heads under the age of sixty were selected from the SEO respondents. This sub-sample was confined to Standard Metropolitan Statistical Areas (SMSA's) in the North and non-SMSA's in the South. It was then combined with approximately 3,000 households drawn by the Survey Research Center (SRC) from an equal probability sample of households in the 48 contiguous states. The combined SEO and SRC samples became the PSID.

The primary unit of analysis within the PSID is the family. A limited data set is collected annually for all individuals living in PSID families; however, this data set contains primarily demographic data. Most variables within the PSID, rather, are reported with respect to the family. Within the PSID a family is defined as "a group of individuals living together who are related by blood, marriage, or adoption".⁶⁸ This definition of family is consistent with the definition of family employed by the U.S. Census Bureau in its two main income and employment surveys, the Survey of Income and Program Participation (SIPP) and the March Supplement to the Current Population Survey (CPS). There are, however, two aspects of the PSID definition of family that make this survey somewhat unique.

The first of these is the treatment of single individuals living alone. The Census Bureau refers to these single individuals as *unrelated individuals* and as such they are not considered part of any family. The PSID, however, simply treats this group as single-

⁶⁸ Hill, (1992), p. 54.

person families, gathering the same information on these single individuals that it does for all other families. A more significant difference, however, between the PSID definition of family and the definition employed by the Census Bureau is in the treatment of cohabiters, that is, unmarried couples living together. Under the Census Bureau definition of family cohabiters reside in the same *household* but are not part of the same *family*. The PSID, on the other hand, treats non-married cohabiters having a fairly permanent living arrangement the same as it treats any husband/wife pair, asking the cohabiter the same set of questions that they ask of a husband or wife.⁶⁹

Over time, the PSID has tracked the members of the original 1968 sample families regardless of whether or not they were living in the same household with the same people. For example, as the children within these core families grew to adulthood and established households of their own, they, too, were followed as separate PSID families. If a married couple divorced, the PSID tracked both halves of the now split family as long as both the husband and wife were members of the original 1968 sample. It is in this way that new families have been introduced into the PSID sample, causing the PSID to grow from 4,802 families in 1968 to nearly 8,500 in 1996. These tracking rules also allow the sample to replicate the dynamic process of family building within our society and, thus, to remain representative of the U.S. as a whole over time.

Between 1968 and 1996 the PSID remained relatively unchanged with only one major exception. Changing patterns of immigration change the face of the population in the United States. In order to remain a representative sample and to capture recent trends

⁶⁹ If the cohabitation extends beyond one interviewing cycle, that is, one year, the cohabitating couple is treated as though they were married. This designation is carried forward in subsequent years as long as the couple continues to live together.

in immigration, a Latino sample of 2,000 families originally from Mexico, Puerto Rico, and Cuba was added in 1990. However, while this sample did capture these three important immigrant groups it did not represent the full range of post-1968 immigrants, Asians in particular. Because of this major shortcoming and a lack of funding the Latino sample was dropped in 1995.

In 1997, a second attempt was made to incorporate post-1968 trends in immigration into the PSID sample. Specifically, 441 immigrant families were added to the PSID, families of Hispanic origin as well as families of Asian decent. While the addition of these new immigrant families increased the number of families in the PSID, a second change in 1997, however, significantly reduced the size of the PSID sample. Due to funding limitations, the SEO portion of the sample was reduced by two-thirds.

The PSID is not the only longitudinal study that tracks economic and demographic variables. As mentioned previously, the U.S. Census Bureau administers two income and employment surveys, the SIPP and the CPS. Both of these surveys provide a viable alternative to the PSID in the sense that they both contain relatively detailed income and labor market data for a large number of individuals and their families over time; in fact, the SIPP contains much greater income detail than does the PSID and the sample size over certain time periods is significantly larger. However, there are two characteristics of the PSID that make it the best data source for this particular study: the unit of analysis within the PSID and the time frame over which the data have been collected.

As noted above, the primary unit of analysis within the PSID is the family and the PSID employs a broader definition of family than does the Census Bureau, specifically

with regard to its treatment of cohabitating couples. This broader definition of family better captures the income and expense sharing that occurs within a given household and, thereby, better reflects the economic well being of a given family.

The second reason that the PSID is better suited for this particular study stems from the time frame covered by the PSID. PSID data is available on an annual basis from 1968 to 1997 and bi-annually following this. SIPP data, on the other hand, dates back only as far as 1984. Given that the poverty rate became relatively stagnant in the early-to-mid 1970s and that the purpose of this study is to explore potential causes of this stagnation, it is necessary to use a data source that captures changes in income and employment over the past thirty years. Unfortunately, the SIPP does not do this.

II. The Economic and Statistical Models

To analyze the data within the PSID an economic model originally developed by Rebecca Blank was employed.⁷⁰ This particular model allows one to focus on the specific mechanisms or channels through which economic growth affects income, and thereby poverty. Within this model total family income can be viewed as the sum of four major components:

$$\begin{array}{r} \text{Total Family} \\ \text{Income} \\ \text{(Annual)} \end{array} = \begin{array}{r} \text{Labor Income} \\ \text{of the Head of} \\ \text{the Family} \end{array} + \begin{array}{r} \text{Labor Income} \\ \text{of the Wife} \end{array} + \begin{array}{r} \text{Transfer} \\ \text{Income} \end{array} + \begin{array}{r} \text{Other} \\ \text{Income} \end{array}$$

Where:

⁷⁰ See Blank, (1989).

⁷¹ Within a given family unit, the husband or cohabitating boyfriend is automatically designated as the head of the family under PSID rules. However, if the husband or boyfriend is incapacitated and unable to fulfill the functions of the head or if no male is present then the family has a female head.

$$\begin{array}{l} \text{Labor Income of the} \\ \text{Head of the Family} \\ \text{(Annual)} \end{array} = \begin{array}{l} \text{Average Hourly} \\ \text{Earnings of} \\ \text{the Head} \end{array} \times \begin{array}{l} \text{Annual Labor} \\ \text{Hours of} \\ \text{the Head} \end{array}$$

$$\begin{array}{l} \text{Labor Income} \\ \text{of the Wife} \\ \text{(Annual)} \end{array} = \begin{array}{l} \text{Average Hourly} \\ \text{Earnings of} \\ \text{the Wife} \end{array} \times \begin{array}{l} \text{Annual Labor} \\ \text{Hours of} \\ \text{the Wife} \end{array}$$

Transfer income consists of cash transfers from both public and private sources.

It can be further decomposed into the following six components:

$$\begin{array}{l} \text{Transfer} \\ \text{Income} \end{array} = \begin{array}{l} \text{AFDC} \\ + \\ \text{Unemployment and Worker's Compensation} \\ + \\ \text{Alimony and Child Support} \\ + \\ \text{Other Retirement Income} \\ + \\ \text{Other Transfer Income} \end{array}$$

AFDC represents Aid to Families with Dependent Children, the primary cash transfer program for low-income families for most of the post-war period. It was replaced by a new cash transfer program, Temporary Assistance to Needy Families (TANF), in 1996 under welfare reform legislation. *Other retirement income* includes all income generated by pension funds and annuities separate from those received from Social Security. *Other transfer income* contains cash transfers from other government programs besides those received from AFDC, Social Security, and unemployment and worker's compensation. It also includes any cash transfers from relatives and other sources of transfer income.

Other income is a residual category and consists of asset income, such as rents, dividends, and interest payments. This category also includes the taxable income of any family member other than the head or the wife.

Economic growth reduces poverty by increasing family income. If changes in family structure have reduced the effectiveness of economic growth in terms of reducing poverty it is because the income of certain family types is less responsive to economic

growth than is others. Therefore, it is necessary to measure the responsiveness of total family income and its various components to economic growth and, furthermore, to ascertain if this responsiveness varies significantly by family type. Four family types were considered in this study: single individuals without children, single-parent families, married-couples without children, and married couples with children.

The responsiveness of total family income and its components to economic growth for each of these four family types was measured by means of the following regression equation:

$$\text{PctChg}(X)_{jt} = \beta_{1j} + \beta_{2j}\text{PctChgGDP}_t + \varepsilon_{jt} \quad (1)$$

The $\text{PctChg}(X)_{jt}$ is the percentage change in income component X for family type j at time t. It was calculated using the following equation:

$$\text{PctChg}(X)_{jt} = \frac{\sum_{i=1}^{n_{jt}} (X_{ijt+1} - X_{ijt})}{\sum_{i=1}^{n_{jt}} X_{ijt}} \quad (2)$$

where there are n_{jt} families in population j at time t. PctChgGDP_t is the percentage change in Gross Domestic Product at time t. It was used as the measure of economic growth and was calculated by means of the following equation:

$$\text{PctChgGDP}_t = (\text{GDP}_{t+1} - \text{GDP}_t) / \text{GDP}_t \quad (3)$$

The term ε_{jt} is a random error term assumed to be independently and identically distributed.

The $\text{PctChg}(X)_{jt}$ is the mean change in income component X for the given family type j at time t. This measure includes both those families that receive income component X as well as non-recipients, thus allowing changes in both the number of

recipients as well as the level of X among those recipients. Ideally it would be better to focus on changes in income, wages, and employment within individual families rather than use an aggregate measure such as this. However, regressing micro-level variables that have a high degree of variation against an aggregate measure such as GDP rarely produces statistically significant results. Given this difficulty, the $\text{PctChg}(X)_{jt}$ is a good alternative in the sense that it not only captures income changes that occur within individual families but it also provides a measure that is more compatible with GDP growth rates.

The parameter of interest in equation (1) is β_{2j} . It measures the responsiveness of each income component to economic growth for each family type. More specifically, it is the elasticity of income component X for family type j with respect to GDP, or the percentage change in income component X generated by a one percent change in GDP. If changes in family structure have reduced the effectiveness of economic growth in terms of reducing poverty the estimated elasticities should vary statistically between the different family types. In particular, one would anticipate that in regards to labor market variables such as wages and labor hours single-parent families would generate the smallest elasticities.

While these estimated elasticities provide a good measure of the responsiveness of total family income and its components to economic growth, they do, however, have certain limitations. Specifically, percentage change values are very sensitive to the size of the base off which they are calculated. Rather large base levels typically generate relatively small percentage changes that can mask rather large changes in absolute levels. The converse of this is also true: relatively small base levels may lead to rather large and

potentially misleading percentage changes. Given this, the level responses of total family income and its components to the percentage change in GDP for each of the four family types were also estimated. These level responses were generated by means of the following regression equation:

$$\text{LvlChg}(X)_{jt} = \beta_{1j} + \beta_{2j}\text{PctChgGDP}_t + \varepsilon_{jt} \quad (4)$$

The $\text{LvlChg}(X)_{jt}$ is the level change in income component X, measured in either constant dollars or labor hours, for family type j at time t. It was calculated using the following equation:

$$\text{LvlChg}(X)_{jt} = \sum_{i=1}^{n_{jt}} (X_{ijt+1} - X_{ijt}) / n_{jt} \quad (5)$$

where there are n_{jt} families in population j at time t. The PctChgGDP_t was calculated using equation (3) above. The term ε_{jt} is again a random disturbance term assumed to be independently and identically distributed. In this instance, however, β_{2j} is interpreted as the mean dollar change in income component X among all families in population j resulting from a one percent change in GDP.

III. Procedures and Data Analysis

PSID data is available on an annual basis from 1968 through 1997. In 1997 the PSID survey instrument was redesigned to allow for bi-annual data collection. Following this redesign, the survey was administered in 1999, 2001, and again in 2003.

Unfortunately, this change in the method of data collection created discontinuity in some of the income variables within the PSID as this information was gathered for the previous year only and not the two preceding years. Given that this study utilizes annual

percentage changes in total income and its various components the three most recent waves of PSID data could not be used, reducing the available data to the years 1968 through 1997. However, given the major change in the composition of the PSID sample that occurred in 1997- specifically, the reduction of the SEO portion of the sample- for consistency reasons the 1997 data was not used either.⁷²

Unfortunately, another issue arose that led to yet a further reduction in the sample size. PSID data for the sample years of 1994, 1995, and 1996 are available in an early release format only that is not completely compatible in terms of data definitions with previous waves of the study, making analysis much more difficult. More troubling, though, was the absence over this time period of certain demographic variables that were needed to ensure the constancy of family structure over time. Given these issues the period of analysis in this study was limited to the years of 1968 through 1993. Because income and labor market variables within the PSID are recorded for the prior twelve-month period, using sample data from 1968 through 1993 generated income and employment data from 1967 to 1992.

Despite the restrictions placed on the analysis by the data there is still much that can be learned from this study. The twenty-five years of income and employment data used in this analysis reflect a wide range of macroeconomic experiences. The strong growth of the late 1960s and the mid-to-late 1980s provide a strong contrast to the severe economic downturn of the mid-1970s and the back-to-back recessions of the early 1980s, thus ensuring the general applicability of the results. What is more, when this rich data is combined with the rather unique methodology employed in this study that focuses on

⁷² The Latino sub-sample that was added to the PSID in 1990 and later dropped from the sample in 1995 was also excluded from the data set in this study for consistency reasons.

the very mechanisms or channels through which economic growth reduces poverty it provides very valuable information to policy makers which can be used to design policies that are specifically targeted at those groups and those components of income that are less affected by economic growth.

Early release files notwithstanding, the data within the PSID are of very high quality. In addition to average annual response rates in excess of 95 percent all data is thoroughly edited and cleaned to ensure the highest level of accuracy. When possible, missing information is imputed using data from prior waves of the study or similar data from the current year. At times, interviewers are also sent back to respondents to gather missing information. As a result of this thorough editing process, very few of the variables employed in this study contained missing values. Specifically, the income and employment variables that were used in the data analysis contained no missing values; rather, companion accuracy-code variables that specified whether or not a value had been imputed and the quality of this imputed value were attached to each of these variables. The demographic variables that were necessary for determining family structure and the constancy thereof, on the other hand, did contain some missing values, but this was true for only select years of the study. Given the difficulty of imputing values to variables such as marital status and the number of children, when a family unit with a missing value was encountered it was simply dropped from the sample; this methodology, however, resulted in the loss of very few families over the entire period of analysis.

In calculating the mean annual percentage changes in the various income and employment variables for each of the four distinct family types as required for the regression analysis, it is possible, given the tracking rules within the PSID, to follow the

exact same families over very long periods of time. However, while this strategy may be feasible, it is not necessarily desirable for this particular study because though the identities of the families within the PSID remain relatively unchanged over time, the structure of these families does not. As children mature and leave home, married couples with children become married couples without children. When married couples divorce this creates two new family units each with different family structure. Given that the purpose of this study is to determine if the responsiveness of various income and labor market variables to economic growth varies by family type, it is necessary to maintain an adequate sample of each respective family type over the entire 1968-1993 period. This would be very difficult to do if only those families whose structure remained constant over the full length of the study were selected.

To overcome this difficulty, a methodology employed by Blank was followed.⁷³ Specifically, twenty-five separate adjoining-year samples were constructed within which family structure remained constant over each given two-year time period. That is, for each consecutive two-year period beginning in 1968 and running through 1993 a sub-sample of families whose structure remained constant over the two-year time period in question was generated. More specifically, only those families whose head and wife (if present) remained constant for the given two-year period were selected, allowing changes only in the number of children and other family unit members from one year to the next.⁷⁴

⁷³ See Blank, (1989).

⁷⁴ The number of children was allowed to vary only in those families already having children. Families that did not have children in the first year of the two-year period but did in the second were dropped from the sample as were those families where children were present in the first year but not in the second.

This process generated 25 adjoining-year samples ranging from 1968/1969 to 1992/1993. Given the PSID's tracking rules the 1968/1969 sub-sample is very similar to the 1969/1970 sub-sample, including many of the same families; the differences between the two stem primarily from attrition and major changes in family structure. When each of these sub-samples is properly weighted, however, they look virtually identical.

Within each of these two-year adjoining samples the mean percentage changes and mean level changes in each of the income and employment variables for each of the four family types were calculated using equations (2) and (5) respectively.⁷⁵ Because the sample of families within the PSID is not a purely random sample, in performing these calculations observations on individual families were weighted using weights provided by the PSID, weights that adjust for differential rates of attrition as well as unequal selection probabilities.⁷⁶ These mean percentage and level changes calculated for each two-year time period were then combined to form a time series of annual data for each income and labor market variable from 1967 to 1992 for each of the four family types.

All family income data were adjusted for inflation by means of the Consumer Price Index (CPI-U). GDP data, on the other hand, were converted to real dollars using the GDP implicit price deflator. The rationale for using two different price deflators to adjust for the effects of inflation is based upon the different scope of the CPI versus the GDP deflator. The CPI measures changes in the prices of goods and services purchased by urban consumers. The GDP deflator, however, reflects changes in the prices of all

⁷⁵ Please see Appendix C for the number of observations used to generate the percentage and level changes in total family income and each of its components within each of the adjoining-year samples.

⁷⁶ For a complete discussion of how the PSID weights are constructed see Hill, (1992), pp. 19-24.

final goods and services within the economy regardless of whether they are purchased by consumers, producers, or government. Given that family income is typically used to purchase consumption goods the CPI better captures the real purchasing power of family income and is, therefore, a better tool for converting family income to real dollars, while GDP, on the other hand, is more accurately adjusted for inflation using the implicit price deflator.

The elasticity parameters in the statistical models expressed in equations (1) and (4) above could be estimated by simply running a separate regression for each component of total family income for each family type using the method of ordinary least squares (OLS). However, more efficient parameter estimates could potentially be obtained using the method of Zellner's seemingly unrelated regression (SUR).⁷⁷ For each component of total family income Zellner's SUR model allows the joint estimation of the four regression equations, one equation for each of the four family types. This joint estimation technique employs a feasible generalized least squares (FGLS) estimator, rather than OLS, with the efficiency gains stemming from the assumption that the error terms associated with each of the four equations for a given component of income are contemporaneously correlated. Given the aggregate nature of the data used in this study it is highly probable that the random disturbances that influence the various components of family income for one family type are similar to those affecting the other three, causing the error terms at any single point in time for a given component of income to be correlated across the four regression equations.

⁷⁷ See Zellner, (1962); Zellner and Huang, (1962); and Zellner, (1963).

While there is certainly the potential for more efficient parameter estimates using the method of SUR these efficiency gains may not always materialize. Specifically, there are four conditions under which the method of OLS will generate parameter estimates that are equally efficient or even more so than those obtained using a SUR model. The first of these conditions relates to the number of observations used in the analysis. In large samples the FGLS estimator employed in the SUR model performs very well, generating estimates of the coefficients that are not only unbiased but also having minimum variance. On the other hand, the finite or small sample properties of the FGLS estimator are largely unknown. While the parameter estimates remain unbiased much less is known about the variance of these coefficients in small samples, particularly in regards to the variance of parameter estimates obtained under OLS, although encouraging results have been obtained in several studies.⁷⁸ Given that a sample size of 25 may not constitute a large sample, care should be taken in interpreting the results of the regression analysis.

Other reasons why a SUR model may not produce efficiency gains over and above OLS stem from the set of explanatory variables used in the SUR equations. If all four of the equations in the model have the same set of explanatory variables there are no efficiency gains and the results are identical to OLS in terms of coefficient values and standard errors. In addition, if the regressors in one equation are a subset of those in another there are no efficiency gains. Finally, if the error terms are, in fact, independent across equations there are no gains in efficiency and the results are the same as those under OLS. However, from a practical standpoint, cross-equation tests of the parameter

⁷⁸ See Zellner, (1963); Kmenta and Gilbert, (1968); and Revankar, (1974).

estimates can easily be performed if a SUR model is used to estimate the elasticity coefficients. Specifically, these cross-equation tests allows one to determine whether or not the elasticity coefficients associated with a given component of income for each of the four family types are statistically different from one another, and thereby determine whether the responsiveness of income and its components to economic growth varies by family type.

IV. Delimitations and Limitations of This Study

The mid-to-late 1990s were characterized by strong economic growth. Because the period of analysis in this study extends only through 1993, or rather 1992 due to the fact that income and employment variables within the PSID are reported for the previous year, a major delimitation of this study is that it does not capture the impact of these high-growth years on income and employment.

On the other hand, the 1990s were also characterized by significant changes in social welfare policy in the United States. In 1996 the Personal Responsibility and Work Opportunity Reconciliation Act was passed that dramatically changed the face of cash welfare payments in the United States. The new legislation placed both short-term and long-term time limitations upon welfare recipients. Specifically, program participants were required to work after two years of reciprocity and a cumulative five-year limit was placed on cash assistance.

Given this dramatic change in policy there were most certainly changes in behavior, in particular the number of hours worked by the heads of single-parent families who were the most affected by this change. As a result of this, any changes in income and labor market participation over the mid-to-late 1990s would most certainly be

influenced not only by economic growth but also by these changes in government policy, thereby distorting the results. At the individual family level, it would be very difficult to separate the impact of economic growth from the impact of changes in government policy on income, wages, and employment. At the aggregate level, however, a dummy variable could be included in each regression to account for this change in legislation. Unfortunately, the estimates of the coefficients associated with these dummy variables would be very unstable given the limited number of post-1996 observations available.⁷⁹

A second limitation of this study also stems from a lack of data but in this case a lack of data prior to 1968. If the tests of the working hypotheses should determine that the estimated elasticities are not statistically different from one another, that is, if tests reveal that total family income and its components for each of the four family types were equally responsive to economic growth over the period of analysis, it is possible then that the stagnancy of the poverty rate following 1973 could have been caused by a change in the nature of the relationship between economic growth and the components of total family income that occurred at this time affecting all family types. In other words, a structural change in the relationship between economic growth and certain components of total family income may have occurred after 1973 and determining which of these components were affected would help to isolate the cause of this stagnancy. To test for structural change would require breaking the sample into two separate parts and running separate regressions on each of the two sub-samples. Unfortunately, there are only seven years of PSID data available up to and including 1973; this small of a sample would again lead to rather unstable parameter estimates and, thereby, inconclusive results.

⁷⁹ Recall that the PSID moved to bi-annual data collection beginning in 1997. Given this, there are only three waves of data available following the 1996 change in legislation.

CHAPTER FOUR: THE RESULTS

At first glance the results of the data analysis seem to support the central theory of this dissertation; that is, changes in family structure that have occurred in the post-World War II period, predominantly the shift away from married-couple families to greater numbers of single-parent families and single individuals living alone, have reduced the effectiveness of economic growth in terms of reducing poverty. Because economic growth is the primary means of fighting poverty in the United States, this reduction in the effectiveness of economic growth has caused the poverty rate to remain relatively stagnant for approximately thirty years, fluctuating primarily in response to the business cycle. However, a more careful look at the results indicates that the source of the problem lies not so much in economic growth or the inefficacy thereof, but rather it is a function of variables that are unrelated to the movement of the macro economy.

Table 4.1 and Appendix Table D.1 provide descriptive information on the sample. Specifically, they contain the mean values of total family income and its components, expressed in either constant dollars or labor hours, for each of the four family types over the entire twenty-five-year period of analysis. Note, however, that for any given component of income--be it labor income, Social Security, or alimony and child support, etc.--some families within each demographic group receive income from this source while others do not; to include those families that do not receive income from the given source in the calculation of its mean would artificially depress the results. Therefore, the

TABLE 4.1
THE COMPONENTS OF TOTAL FAMILY INCOME:
AVERAGE VALUES AND COMPONENT RATIOS, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Composition of the Sample				
Percentage Share of the Sample ^a	25.8	13.7	22.4	38.2
Percentage of Families with Female Heads	65.4	92.1	----- ^b	----- ^b
Total Family Income				
Total Family Income, Mean (\$)	30,438	30,642	67,940	69,942
(Standard Deviation)	(2,440)	(2,248)	(9,099)	(4,895)
Percentage Share of Total Family Income Arising From: ^a				
Head's Labor Income	58.8	51.9	50.9	71.1
Wife's Labor Income	-----	-----	16.8	15.5
Transfer Income	20.1	26.0	13.6	3.1
Other Income	21.0	21.7	18.7	10.2
Head Labor Income				
Percentage of Heads with Labor Income	64.0	73.2	74.5	96.9
Head's Labor Income, Mean (\$)	28,072	21,674	46,430	51,358
(Standard Deviation)	(2,805)	(2,007)	(4,798)	(1,986)
Average Hourly Earnings, Mean (\$)	16.09	13.07	24.39	23.18
(Standard Deviation)	(.91)	(1.03)	(2.59)	(.91)
Annual Labor Hours, Mean	1,745	1,600	1,973	2,274
(Standard Deviation)	(105)	(65)	(49)	(43)

Wife Labor Income				
Percentage of Families with Working Wives	----	----	52.0	63.2
Wife's Labor Income, Mean (\$)	----	----	22,083	17,064
(Standard Deviation)			(2,579)	(2,680)
Average Hourly Earnings, Mean (\$)	----	----	14.91	13.71
(Standard Deviation)			(1.18)	(.98)
Annual Labor Hours, Mean	----	----	1,498	1,274
(Standard Deviation)			(96)	(127)
Transfer Income				
Percentage of Families Receiving Transfers	61.7	80.1	52.7	28.7
Transfer Income, Mean (\$)	9,903	9,978	17,523	7,626
(Standard Deviation)	(913)	(2,050)	(2,735)	(641)
Percentage Share of Transfer Income Arising From: ^{a, c}				
AFDC	0.3	24.5	0.0	6.0
Social Security	48.1	23.1	48.0	19.3
Other Retirement Income	23.5	4.7	39.3	20.0
Unemployment/Worker's Compensation	3.2	3.0	3.1	17.3
Child Support/Alimony	1.3	22.0	0.0	4.6
Other Transfer Income	20.2	20.7	8.7	30.5
Other Income				
Other Income, Mean (\$)	11,770	14,743	17,513	12,237
(Standard Deviation)	(1,021)	(1,112)	(3,973)	(1,404)

Notes: Dollar amounts are in constant 2004 dollars. All figures are based on weighted data from 1968 to 1993 unless otherwise noted. Mean dollar values as well as mean labor hours were calculated using only those families for which the value of the given income component was greater than zero.

^a Percentage values do not sum to one hundred due to rounding as well as the average-of-averages process used to generate the figures.

^b For married-couple families the PSID automatically designates the husband as the head of the family unless the husband is incapacitated and unable to fulfill the functions of the head. As a result, less than 1 percent of married couples have a female head.

^c Figures are based on data from 1970 to 1993.

mean values included in these two tables were generated using only those families having positive income from the given source.

To calculate the figures within these two tables, mean values of each income component for each family type were first calculated for each year separately using the following formula:

$$\overline{X}_{jt} = \frac{\sum_{i=1}^{n_{xjt}} X_{ijt}}{n_{xjt}} \quad (6)$$

where there are n_{xjt} families in demographic group j who receive some positive income from income component X at time t .⁸⁰ This process generated a series of twenty-five separate mean values for each component of income for each family type. Each of these different series was then averaged over twenty-five years using the following formula to create the actual values expressed in the table.⁸¹

$$\overline{X}_j = \frac{\sum_{t=1}^{25} X_{jt}}{25} \quad (7)$$

Also included in Table 4.1 are the mean values of the proportion of families within each group that receive income from specific sources as well as figures on the relative importance of the various components of income for each family type. These ratios were calculated in a manner very similar to that of the mean dollar and labor hour values detailed above. That is, the mean value of each of these ratios was first calculated for each family type for each sample year separately. The different series were then

⁸⁰ These single-year values are based on income and employment data from the first year of each of the adjoining-year sub-samples.

⁸¹ For the components of transfer income found in Table D.1 the denominator in this equation was 23 due to the fact that data on the individual components of transfer income is only available from 1970 forward.

averaged over twenty-five years using equation (7) above to arrive at the figures in the table.

Looking at Table 4.1, note, first of all, the significant difference between the mean value of total family income for families with single heads and that of married couples. Married couples have at their disposal a level of income that is on average more than double that of single individuals both with and without children. Certainly this is not surprising given that married couples have the possibility for higher labor income due to the presence of two potential workers within the family; however, the additional earnings of wives do not completely fill this gap as they constitute less than 20 percent of total family income for married couples. Rather these vast differences can be attributed to large disparities in the labor earnings of single and married heads.

Single heads earn substantially less on average than do their married counterparts, as is evident from the figures on head labor income in Table 4.1. This stems from both lower average wages for single heads as well as from fewer hours worked. The heads of single-parent families work approximately 31 hours per week over the course of a year while married heads with children work nearly 44 hours per week on average and earn ten dollars more for each hour worked. Wage differentials can be linked to two factors, the first having to do with the greater proportion of female heads within single-head families and the second with differences in human capital. More than half of single individuals without children are female, while over 92 percent of single-parent families have a female head. It is well documented that men earn consistently more than do women, even when factors such as age, education, and experience are controlled for. In

addition, these female heads typically have lower levels of human capital than do their married male counterparts which also contributes to lower wages.

Despite these large disparities in wages and hours worked, there are, however, two factors, both of which are tied to the labor market, that create the potential for economic growth to increase income among families with single heads, and thereby reduce the incidence of poverty among them. First of all, note that the labor income of the head is the most significant source of income for all family types. While it is true that both single individuals and single-parent families derive a significant portion of their income from transfers the greatest proportion, however, comes from labor income. This is encouraging in terms of poverty reduction because economic growth has a greater impact on labor income than on any other income component, an assertion that will be substantiated below. The second encouraging factor is the large proportion of single-parents with positive labor income. Common stereotypes would lead us to believe that this is a group that is largely detached from the labor market with large numbers relying heavily on transfers to provide the bulk of income, but clearly this is not so. If labor market income is the most significant source of income for all family types and such a large proportion of single parents work, the potential for economic growth to reduce poverty among families with single heads certainly exists.

The summary statistics on transfer income contained in Table 4.1 and Table D.1 reveal nothing unusual. While labor income is the most significant source of income for single-parent families, over 80 percent of these households receive some form of transfers. The sources of this transfer income are not surprising either, with the vast majority coming from AFDC and alimony and child support, although a significant

proportion also comes from Social Security. Perhaps less expected, though, is the large proportion of families without children, married and otherwise, that receive transfers and the relatively large mean value of these transfers for married couples without children, in particular. The reason for this is that these two family types are comprised predominantly of older individuals who receive most of their transfer income from Social Security and other forms of retirement income.⁸²

Moving to the very bottom of Table 4.1, mean values for the category of other income do not vary substantially between the four family types. Recall from Chapter Three that other income is a residual category that contains all forms of asset income but also the taxable income of any family member other than the head or the wife. While the average value of this income category does not differ very much between the four family types, the breakdown of other income into its two main component parts, capital income and the taxable income of others, however, does vary considerably among the four different demographic groups. Single parent families, for example, report very little asset income; nearly 90 percent of other income is derived from the taxable income of others. Married couples without children, on the other hand, receive nearly 70 percent of this income category in the form of interest, rent, or dividends. For the other two family types, single individuals without children and married couples with children, the proportion stemming from sources of capital income is 53 and 61 percent respectively.

Differences in the mean values of these various components of income among the four demographic groups, however, do not support nor do they refute the theory that changes in family structure have reduced the effectiveness of economic growth in terms

⁸² For the distribution of sample households by age of the head see Appendix B.

of reducing poverty. To address this issue, the focus must shift away from these average values to the responsiveness of family income and its components to economic growth, looking specifically for any differences in this responsiveness by family type. Tables 4.2 through Table 4.6 contain the estimated elasticity coefficients that measure the responsiveness of the various income components to economic growth from the statistical models presented in Chapter Three. In estimating these elasticity coefficients several different functional forms besides the two basic models expressed in equations (1) and (4) in the previous chapter were explored. Specifically, in addition to the percentage change in GDP, a squared value of the percentage change in GDP as well as a one-period lag in the percentage change in GDP and its square were also included as regressors to allow for a non-linear relationship between GDP and the components of family income as well as for a lag in the impact of changes in GDP on income and labor market variables. Another variable experimented with was the mean age of the head of the family for each given family type. Within each demographic group the distribution of families by the age of the head varies widely; certain groups contain predominantly older heads while others contain mainly younger heads.⁸³ The inclusion of the mean age of the head in the various regression equations attempts to control for these differences and to account for the impact that they have on changes in income and labor market variables over time. It should be noted, however, that while several different functional forms were explored the final specification for any given income component for a particular family type included the percentage change in GDP and only those other variables that proved to be statistically significant or improved the overall fit of the equation to the data.

⁸³ See Appendix B.

Table 4.2 contains the estimated elasticity coefficients for total family income and its four main components; these figures should be interpreted as the percentage change in total family income and its main components associated with a one percent change in GDP. Focusing, first of all, on total family income, notice that the estimated elasticities for all four groups are statistically significant, providing evidence that the total income of each group is responsive to economic growth and that each group should experience some reduction in poverty as a result of this growth. The strength of this relationship, however, is not the same for all four family types as is evidenced by the fact that the absolute value of this elasticity coefficient for married couples with children is significantly larger than that of the other three groups. That is, a one percent change in GDP produces a much larger percentage change in total family income for married couples with children than for the other three family types, a difference that is statistically significant as well. What is more, this estimated elasticity for married couples with children is the only coefficient that is elastic with respect to GDP, with a one percent change in GDP producing a more than one percent change in total family income. For the other three family types a given percentage change in GDP produces a proportionately smaller change in total family income.

While these estimated elasticities seem to support the existence of a stronger relationship between economic growth and total family income for married couples with children than for the other three family types, it is the level change in total family income, however, that has the greatest impact as far as poverty reduction is concerned. Poverty is measured in terms of absolute dollars; therefore it is important to not only look at

TABLE 4.2
THE PERCENTAGE CHANGE IN THE PRIMARY COMPONENTS OF TOTAL FAMILY INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Total Family Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.618*** (0.126)	.613** (0.290)	.578** (0.234)	1.142*** (0.181)
Mean Age of the Head	-----	.007** (0.003)	-----	-----
Adjusted R ²	[.50] ^a	[.21]	[.20]	[.62]
Head Labor Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.528*** (0.173)	1.523*** (0.312)	.915*** (0.273)	1.221*** (0.205)
Mean Age of the Head	-.007*** (0.002)	-----	-----	-----
Adjusted R ²	[.33]	[.49]	[.30]	[.59]
Wife Labor Income^b				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-----	-----	.239 (0.268)	.640** (0.240)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-1.279** (0.517)

One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	17.909*
Adjusted R ²			[.00]	[.34]
Transfer Income^b				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-.099 (0.238)	.325 (0.774)	-.120 (0.324)	-3.090*** (0.507)
One-period Lag in the Percentage Change in GDP	-.699*** (0.213)	-----	-----	-----
Mean Age of the Head	.007** (0.003)	-----	-.024*** (0.009)	-----
Adjusted R ²	[.41]	[.00]	[.01]	[.56]
Other Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	1.482*** (0.284)	-.633 (0.994)	-2.381 (1.848)	2.428** (0.910)
Percentage Change in GDP Squared	-----	-----	75.115** (32.986)	-----
Mean Age of the Head	-----	.020** (0.010)	-----	-----
Adjusted R ²	[.53] ^a	[.09]	[.10]	[.21]

Notes: Each coefficient should be interpreted as the percentage change in the given income component caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

^b The number of observations is 24.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

differences by family type in the percentage change in family income associated with economic growth but the differences in the level change as well.

Table 4.3 contains the estimated level responses of total family income and its four main components to economic growth; these figures should be interpreted as the mean change in total family income and its main components associated with a one percent change in GDP. The disparity between married couples with children and the other family types in terms of the responsiveness of total family income to economic growth revealed in Table 4.2 is magnified in Table 4.3. A one percent change in GDP produces a gain of nearly \$800 for married couples with children. Single-parent families and single individuals without children earn only a fraction of that gain, a difference that once again is statistically significant. Further evidence of a relatively weak link between economic growth and changes in family income for single-head families is the fact that for single-parent families, in particular, an increase in the mean age of the head is just as effective in raising income as is an increase in GDP.

These initial results would seem to confirm that changes in family structure have, in fact, had a negative impact on the ability of economic growth to reduce poverty. As the composition of the poverty population has shifted over time away from married couples with children to more single individuals living alone and single-parent families the relatively weak impact of GDP growth on the incomes of these families has translated into fewer families being lifted out of poverty.

If the relationship between economic growth and family income is so much stronger for married couples with children than it is for the other three family types, wherein lies the source of this difference? Specifically, which components of family

TABLE 4.3
THE LEVEL CHANGE IN THE PRIMARY COMPONENTS OF TOTAL FAMILY INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Total Family Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$186.27*** (38.321)	\$192.51** (90.059)	\$367.94** (169.466)	\$775.88*** (120.646)
Mean Age of the Head	-----	\$207.02** (100.776)	-----	-----
Adjusted R ²	[.50] ^a	[.20]	[.16]	[.63]
Head Labor Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$96.27*** (30.805)	\$230.63*** (42.317)	\$312.68*** (101.631)	\$602.14*** (100.911)
Mean Age of the Head	-\$130.27*** (37.183)	-----	-----	-----
Adjusted R ²	[.35]	[.54]	[.26]	[.59]
Wife Labor Income^b				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-----	-----	\$25.01 (29.721)	\$75.74** (28.740)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-\$130.60** (60.964)

One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	\$17.82 (11.282)
Adjusted R ²			[.00]	[.30]
Transfer Income^b				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-\$6.40 (14.658)	\$19.68 (63.425)	-\$10.25 (23.565)	-\$63.94*** (11.007)
One-period Lag in the Percentage Change in GDP	-\$45.89*** (13.793)	-----	-----	-----
Mean Age of the Head	\$40.39* (21.416)	-----	-----	-----
Adjusted R ²	[.41]	[.00]	[.00]	[.56]
Other Income				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$92.99*** (19.728)	-\$62.82 (76.332)	-\$409.79* (228.903)	\$169.39*** (60.111)
Percentage Change in GDP Squared	-----	-----	\$106.04** (40.664)	-----
Adjusted R ²	[.50] ^a	[.00]	[.12]	[.22]

Notes: Each coefficient should be interpreted as the level change, measured in 2004 constant dollars, in the given income component caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the level response of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a This is not a true measure of the “goodness of fit” due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

^b The number of observations is 24.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

income for married couples with children are so much more affected by economic growth so as to generate these great disparities in the responsiveness of total income to economic growth? As was revealed to be the case earlier, the culprit seems to be head labor income, although at first glance this may not appear to be entirely so. Looking once again at Table 4.2 notice that while a one percent change in GDP produces only a .53 percent change in the head labor earnings of single individuals without children, a one percent change in GDP produces a 1.52 percent change in head labor income for single-parent families, the largest elasticity coefficient among the four family types.⁸⁴ The overall fit of the data for single-parent families is relatively high, as well, indicating a strong response to growth. However, the estimated level responses reveal a different story.

As was the case with total family income married heads with children experience greater earnings growth in absolute terms as a result of changes in GDP than do the other three groups, a difference that yet again is statistically significant. The level change in head labor earnings caused by a one percent change in GDP for married couples with children is nearly three times that of single-parent families and more than six times that of single individuals without children. Some of this disparity can be attributed to differences between the four family types in terms of the age distribution of the head. As noted previously both single individuals and married couples without children tend to have older heads causing both groups to have somewhat weaker ties to the labor market which is certainly reflected in the lower response of head labor income to economic growth for these two groups compared to married couples with children. Indeed, single

⁸⁴ While in absolute terms this figure is larger than that of the other three groups statistically it is only different from this same elasticity for single individuals living alone.

individuals without children experience just as much of a gain in labor income when the mean age of this group falls as they do from a one percent increase in GDP. This same explanation cannot be applied to single-parent families, however.

Further evidence that differences by family type in the responsiveness of total family income to economic growth stem from factors within the labor market can be found by looking at the estimated elasticity coefficients for the other major components of total family income found in Table 4.2 and Table 4.3. It is certainly possible that some of the large disparity between married couples with children and single-head families can be explained by significant gains in the labor income of wives due to economic growth. This explanation can be easily dismissed, however, for the impact of economic growth on the labor income of wives is relatively small. For married women without children labor market earnings are completely unresponsive to economic growth while married women with children, on the other hand, earn only an additional \$76 annually for every one percent increase in GDP. What is more, the evidence suggests that this positive impact of economic growth on the earnings of wives with children is somewhat fleeting. The negative sign attached to the elasticity coefficient associated with the lagged value of GDP indicates that the labor market earnings of married women with children are counter-cyclical over time, suggesting an increase in labor force participation when the economy is soft but a decline when the economy is strong.⁸⁵

⁸⁵ The strength of this assertion depends upon the statistical significance of the coefficient associated with the lagged value of GDP squared. For the level change data this coefficient is not statistically significant from zero; for the percentage change data it is significant but only at the 90 percent level. Even if the significance of this coefficient is taken into account, however, the growth rate in the previous period must exceed 3.57 percent in order to produce an increase in the labor market earnings of married women with children in the current period.

It is also highly unlikely that transfer income is the driving force behind the differences in the relationship between economic growth and total family income. Transfer income is a rather insignificant component of total family income for married couples with children. What is more, as can be seen in both Table 4.2 and Table 4.3 transfers are counter-cyclical for married couples with children; an increase in GDP causes a decline in transfer income and thereby a decline in total family income. This can be traced to the counter-cyclical behavior of some of the individual components of transfer income, such as unemployment and worker's compensation as well as other transfers, a category that includes financial support received from relatives.⁸⁶

A more plausible explanation for the significant difference between married couples with children and the other three demographic groups in terms of the responsiveness of total family income to economic growth would be that these disparities stem from the differential response of other income to economic growth. While only approximately ten percent of total family income for married couples with children comes from other income this income component is highly responsive to economic growth. A one percent change in GDP causes a 2.43 percent change in other income; if measured in dollars married couples with children experience an increase of \$169 in other income for each one percent change in GDP. For single-parent families, this same estimated elasticity is statistically insignificant. Nonetheless, like the labor income gains of wives, changes in other income do not completely fill the gap between the experiences of married couples with children and single-head families. It certainly appears that the significant differences between family types in terms of the responsiveness of total family

⁸⁶ See Appendix D for estimated elasticity coefficients for the individual components of transfer income.

income to economic growth stem from differences in the responsiveness of head labor income to economic growth.

Having determined that the major source of this variation is head labor income, the question that remains unanswered is what is driving these differences in the responsiveness of head labor income to economic growth? Are the wages of married heads with children so much more responsive to growth than are the wages of single heads, or do these differences stem from unequal changes in labor hours as a result of economic growth? Economic growth reduces poverty by increasing income, predominantly by increasing labor income. Labor income increases because individuals secure more labor hours and enjoy rising wages. Which of these two components is more important in terms of explaining the different experiences of single heads and married heads with children, wages or labor hours?

Table 4.4 and Table 4.5 contain the estimated elasticity coefficients for average hourly earnings and labor hours for both heads and wives for each of the four family types. These coefficients should be interpreted in the same manner as those in Table 4.2 and Table 4.3. Unlike the above results, however, these estimated elasticities paint quite a different picture; specifically, it is at this level of analysis that the experiences of single heads without children and single-parent families diverge. Focusing first on head average hourly earnings, note that the wages of single individuals without children are completely unresponsive to economic growth, reflecting once again the weaker ties of this somewhat older group to the labor market. For single-parent families, on the other hand, the results are much more positive with a one percent change in GDP producing a 1.15 percent change in head average hourly wages, a percentage change that translates

TABLE 4.4
THE PERCENTAGE CHANGE IN THE COMPONENTS OF HEAD AND WIFE LABOR INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Head Average Hourly Earnings^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.058 (0.472)	1.149** (0.546)	.630 (0.585)	.655** (0.312)
One-period Lag in the Percentage Change in GDP	-----	-----	-1.430 (1.068)	-----
One-period Lag in the Percentage Change in GDP Squared	-----	-----	41.485** (19.761)	-----
Mean Age of the Head	-----	-----	-----	.026 (0.018)
Adjusted R ²	[.00]	[.12]	[.13]	[.25]
Head Labor Hours^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-.224 (0.241)	1.292*** (0.283)	.554*** (0.123)	.663*** (0.069)
Percentage Change in GDP Squared	9.495** (4.194)	-----	-----	-----
One-period Lag in the Percentage Change in GDP	.254** (0.125)	1.007* (0.553)	.548** (0.269)	.372*** (0.140)
One-period Lag in the Percentage Change in GDP Squared	-----	-15.395 (9.895)	-8.491* (4.984)	-7.696*** (2.520)
Mean Age of the Head	-.005*** (0.002)	-----	-----	-.009*** (0.003)
Adjusted R ²	[.46]	[.47]	[.47]	[.81]

Wife Average Hourly Earnings^a

Explanatory Variables:

Percentage Change in GDP	-----	-----	.254 (0.521)	.866* (0.502)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-2.972*** (0.959)
One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	37.237** (17.665)
Adjusted R ²			[.00] ^b	[.31]

Wife Labor Hours

Explanatory Variables:

Percentage Change in GDP	-----	-----	.270 (0.208)	-.570 (0.553)
Percentage Change in GDP Squared	-----	-----	-----	22.795** (9.812)
Adjusted R ²			[.03]	[.28]

Notes: Each coefficient should be interpreted as the percentage change in the given component of labor income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a The number of observations is 24.

^b This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

TABLE 4.5
THE LEVEL CHANGE IN THE COMPONENTS OF HEAD AND WIFE LABOR INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Head Average Hourly Earnings^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$0.01 (0.049)	\$0.12** (0.052)	\$0.12 (0.112)	\$0.15** (0.071)
One-period Lag in the Percentage Change in GDP	-----	-----	-\$0.30 (0.205)	-----
One-period Lag in the Percentage Change in GDP Squared	-----	-----	\$0.09** (0.038)	-----
Mean Age of the Head	-----	-----	-----	\$0.52 (0.403)
Adjusted R ²	[.00]	[.13]	[.12]	[.23]
Head Labor Hours^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-2.96 (2.695)	14.38*** (3.089)	8.34*** (1.909)	14.56*** (1.511)
Percentage Change in GDP Squared	1.15** (0.469)	-----	-----	-----
One-period Lag in the Percentage Change in GDP	2.85** (1.415)	13.16** (5.988)	7.86* (4.179)	8.31*** (3.048)
One-period Lag in the Percentage Change in GDP Squared	-----	-2.02* (1.068)	-1.27 (0.773)	-1.73*** (0.551)
Mean Age of the Head	-5.15*** (1.845)	-----	-----	-17.36** (7.171)
Adjusted R ²	[.45]	[.48]	[.45]	[.81]

Wife Average Hourly Earnings^a

Explanatory Variables:

Percentage Change in GDP	-----	-----	\$0.02 (0.041)	\$0.09 (0.050)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-\$0.25** (0.094)
One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	\$0.03 (0.017)
Adjusted R ²			[.00] ^b	[.26]

Wife Labor Hours

Explanatory Variables:

Percentage Change in GDP	-----	-----	1.97 (1.675)	-5.15 (4.058)
Percentage Change in GDP Squared	-----	-----	-----	1.99*** (0.724)
Adjusted R ²			[.02]	[.36]

Notes: Each coefficient should be interpreted as the level change, measured in either 2004 constant dollars or labor hours, in the given component of labor income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the level response of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a The number of observations is 24.

^b This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

into an additional \$.12 per hour for every one percent change in GDP. For married couples with children, a one percent change in GDP leads to a .66 percent increase in head average hourly earnings, a figure that is not statistically different from this same elasticity for single-parent families. Indeed, the level change in head average hourly earnings associated with a one percent change in GDP for married heads with children is \$.15 per hour, a figure that is nearly identical to that of single heads with children.

While the unresponsiveness of wages to economic growth for single individuals without children goes a long way in explaining why the labor income of this group is much less responsive to economic growth compared to married heads with children, this explanation, however, does not resolve this same issue for single-parent families. If the wages of both single and married heads with children are equally responsive to economic growth the difference must lie in the differential response of labor hours to economic growth. Upon closer examination, however, this does not appear to be the case either.

The estimated elasticity coefficients for head labor hours present a rather complex relationship between economic growth and hours worked. Turning first to single individuals without children this group once again responds in a very limited fashion to economic growth. In the current period a one percent change in GDP produces a .19 percent increase in head labor hours, a figure that is highly inelastic. In level terms this value, while statistically significant, is quite small; a one percent increase in GDP causes the labor hours of single heads without children to rise by only 2.3 hours annually. Both of these figures are statistically smaller than those of single-parent families and married couples with children. These estimated elasticities, however, do not reflect the full impact of economic growth on the labor hours of single heads without children; there is a

lagged effect of GDP growth on the labor hours of this group. Specifically, a one percent increase in GDP in the current period produces a .25 percent increase in head labor hours over the course of the next year, a figure, nonetheless, that is still quite inelastic and that translates into a mere 2.9 additional labor hours in the following year. Given these results, the large gap between this group and married couples with children in terms of the responsiveness of head labor income to economic growth can certainly be attributed to both the unresponsiveness of wages and the weak response of labor hours to growth in the macroeconomy.

For single-parent families, however, the results are much more puzzling. Head labor hours for this group, unlike single individuals without children, are quite responsive to economic growth. A one percent change in GDP produces a more than one percent change in head labor hours in the current period, a figure that is statistically larger than this same elasticity for married couples with children. What is more, if one focuses on the level change in head labor hours, the additional 14.4 hours associated with a one percent change in GDP are not statistically different from the 14.6 additional hours gained by married heads with children. Again, however, as was the case with single individuals without children, the full impact of economic growth on head labor hours is not completely realized in the current year; some additional gains are made in the following year as well. For single-parent families a one percent increase in GDP in the current period generates an additional 9.1 labor hours for the head over the course of the next year; for married couples with children this same level response is only 4.9 hours, a figure that merely reinforces the very similar experiences of these two groups in terms of the responsiveness of labor hours to economic growth.

The estimated elasticities found in Tables 4.4 and 4.5 reflect the impact of growth on the wages and labor hours of the heads of *all* families within a given family type; therefore they reflect the combined effect of growth on wages and hours worked for both current workers and new entrants into the labor market. It is possible that the strong relationship between economic growth and the wages and labor hours of heads in single-parent families disproportionately reflects the experiences of new workers as opposed to those who are currently working. That is, changes in the mean level of wages and labor hours may be more heavily influenced by increases in the values of these variables for new workers rather than current workers, producing a somewhat distorted picture of the impact of growth on key labor market variables and thereby the poverty-reducing effects of economic growth. Appendix Tables E.1 and E.2 contain the estimated percentage elasticities and level responses of average hourly earnings and labor hours for workers only by family type. These results, however, merely reinforce those found above. While there are subtle differences between the data in Tables 4.4 and 4.5 and Appendix Tables E.1 and E.2, most notably a somewhat stronger response in the head labor hours of single individuals without children and a somewhat weaker response in the head labor hours of single-parent families, for the most part the estimated elasticities for workers only are quite similar to those of all families.

Additional evidence of the relatively strong impact of economic growth on the labor market variables of single-parent families can be found by looking at the responsiveness of the labor force participation rate of this group to growth in the macroeconomy. Table 4.6 presents the estimated elasticity coefficients for the labor force participation rates of both heads and wives for each of the four demographic

TABLE 4.6
THE PERCENTAGE CHANGE IN THE LABOR FORCE PARTICIPATION RATE
GIVEN A ONE PERCENT CHANGE IN GDP, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Head Labor Force Participation Rate				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-.058 (0.150)	.723*** (0.268)	.150 (0.133)	.142*** (0.026)
Adjusted R ²	[.00]	[.19] ^a	[.00]	[.52]
Wife Labor Force Participation Rate				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-----	-----	.223 (0.268)	.467 (0.363)
Adjusted R ²			[.00]	[.03]

Notes: Each coefficient should be interpreted as the percentage change in the proportion of working heads or wives caused by a one percent change in GDP; in other words, each coefficient is the elasticity of the given labor force participation rate with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25.

^a This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

- * Significantly different from zero at the 10-percent level.
- ** Significantly different from zero at the 5-percent level.
- *** Significantly different from zero at the 1-percent level.

groups. These coefficients should be interpreted as the percentage change in the proportion of working heads or wives caused by a one percent change in GDP. Notice that this estimated elasticity is statistically different from zero only for the heads of single-parent families and the heads of married couples with children. The coefficient for single-parent families, however, is significantly larger than that of married couples with children, a difference that is statistically significant as well.

How can all of this be explained? If both the wages and labor hours of single-parent families are highly responsive to growth as well as the labor force participation rate, how can there be such large differences between single-parent heads and married heads with children in the responsiveness of head labor income to economic growth? Sadly, the only conclusion that can be drawn from the data is that the wages of single-parents are so much smaller than those of married heads with children that the total impact on head labor income of economic growth for single-parent families is quite small compared to married couples with children. While single parents are working just as many additional hours as their married counterparts for every one percent increase in GDP, the total impact of this is so much smaller for these families because of their low wage levels. Given this, it is not that economic growth is ineffective, because economic growth is generating rising real wages and encouraging additional labor market participation among the members of this group, but rather that wages are inadequate. It is changes in family structure that are to blame for stagnant poverty levels, but for single-parent families it has nothing to do with economic growth and everything to do with low wage levels.

For single heads without children, however, clearly economic growth as an anti-poverty tool has limited impact. For this group wages are unresponsive to growth in the macroeconomy and labor hours are only marginally affected by growth, producing a very limited effect on head labor income. On the other hand, the category of other income is quite responsive to economic growth, as can be seen in Tables 4.2 and 4.3. However, the combined effects of these two income categories are quite small when compared to the impact of economic growth on the total income of married couples with children. Given this, the hypothesis that changes in family structure have made economic growth less effective in terms of reducing poverty is true but only for single individuals without children.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

I. Summary and Conclusions

The purpose of this study was to determine if the changes in family structure that occurred in the post-World War II period, specifically the shift away from married-couple families to single-parent families and single individuals living alone, had adversely affected the ability of economic growth to reduce poverty. To accomplish this, the elasticity, or responsiveness, of total family income and its main components to economic growth was estimated for four distinct family types: single individuals without children, single-parent families, married couples without children, and married couples with children. The reason for estimating these elasticities was to find out whether the responsiveness of income and its main components to growth of the macroeconomy varied significantly by family type. Specifically, if the estimated elasticities of single individuals without children and single-parent families proved to be significantly smaller than those of married couples both with and without children this would provide evidence that the incomes of those groups that have become a larger proportion of both the total population as well as the poverty population are less responsive to growth and that, therefore, economic growth is a less effective tool in terms of reducing poverty as a result of this demographic shift.

The analysis of the data revealed, on the one hand, relationships that were quite predictable given the characteristics of each of the four demographic groups, yet, on the

other, it produced findings that were quite surprising. In terms of being predictable, mean income for single individuals living alone and single-parent families was found to be substantially lower than that of married couples both with and without children. On average, married couples enjoyed a level of income that was more than twice that of their non-married counterparts. A simple explanation for this is the presence of a second earner in married-couple families. However, the labor earnings of wives do not completely fill the gap between the average income of those families with single heads and those with married heads. Only 63.2 percent of wives with children worked, while the percentage of wives without children that worked was even smaller at 52 percent. In addition to this, the earnings of wives accounted for less than twenty percent of total family income for these two groups. Rather, the source of these disparities in total family income lies in differences in the average level of head labor income among the four family types.

Labor market earnings of the head of the family were the most significant source of income for all four family types; given this, it is not surprising that disparities in total family income would be driven to a large extent by disparities in the earnings of the head. Married heads earned on average nearly twice as much annually as did single heads. This can be attributed to both higher wages among married heads as well as the fact that married heads worked more hours on average than did single individuals without children and the heads of single-parent families.

To a large extent these same disparities were also reflected in the estimated elasticity coefficients. While total family income for all four groups grew in response to economic growth, the estimated elasticity coefficient for married couples with children

was statistically larger than those of the other three groups. What is more, the main components of total family income—head labor earnings, wife labor earnings, transfer income, and other income—were all responsive to growth in the macroeconomy, providing many different channels through which economic growth might increase income and thereby reduce poverty. On the other hand, for single individuals living alone only head labor income and other income increased in response to economic growth while for single-parent families the only main component of total income that responded positively to economic growth was the labor earnings of the head. This result is particularly significant given early research in this area. Recall that most of the early studies on the relationship between poverty and economic growth found the poverty rates of certain groups, female-headed families in particular, to be unaffected by changes in the macroeconomy due to a weak connection to the labor market. The results of this study, on the other hand, would seem to refute this.

Unfortunately, however, for single-parent families as well as single individuals living without children the increase in head labor income attributed to economic growth was somewhat limited compared to that of married couples with children. While the labor market earnings of all four groups responded positively to economic growth absolute gains for married couples with children were nearly three times the gains seen by single-parent families and over six times those of single individuals without children. Given that labor market earnings are the product of hours worked and the wage rate it must be the case that for single-parent families and single individuals living alone either wages or hours worked were less responsive to growth than these same variables for the heads of married couples with children.

It is the results of this disaggregated analysis that focused specifically on changes in wage rates and labor hours as a result of economic growth that are truly surprising. Again early researchers in this area maintained that single-parent families had weak ties to the labor market and that this was why the poverty of this group was unaffected by economic growth. However, this had not been substantiated by studies of wage rates and labor hours and, more importantly, their responsiveness to economic growth for this particular demographic group. The results of this study show that this particular assertion could not be further from the truth. Both wages and hours worked among heads of single-parent families were highly responsive to economic growth. What is more, there was no statistical difference between the heads of married couples with children and the heads of single-parent families in terms of the magnitude of changes in both wage rates and hours worked as a result of economic growth. Whether you look at current workers or all families, whether you look at wages, labor hours, or labor force participation rates, the heads of single-parent families respond in a similar fashion to economic growth as do these same variables for heads of married couples with children. Rather, it is the low level of average wages among the heads of single-parent families that explains the disparities between these two groups in terms of the overall growth in head labor income as a result of economic growth.

The story is not the same for single individuals without children, however. For this group the relatively small increase in head labor earnings stemming from economic growth can be explained by wage rates that are completely unresponsive to growth as well as labor hours that change only marginally as the economic grows.

Taken as a whole these findings imply that economic growth has become a less effective anti-poverty tool as a result of demographic shifts that occurred in the post-war period. Poverty is a direct function of income. Given that the incomes of both single-parent families and single individuals without children are less responsive to economic growth than income among married-couple families, the shift in the composition of the population away from married-couple families to single-parent families and single individuals living alone has certainly limited the reductions in poverty stemming from economic growth over the past three decades.

II. The Implications of the Research

What are the implications of these findings? Specifically, what do these results mean in terms of further reductions in poverty as well as public policy? Focusing first on future reductions in poverty associated with economic growth, the picture is quite clear. The major demographic shift that occurred in the post-World War II period generated a poverty population that consists predominantly of people living in families with a female head and single individuals living alone. Because economic growth has a limited impact on the total income of these two groups growth of the macroeconomy will have a limited impact on poverty in the future. Our most recent economic expansion bears this out.

In March of 1991 the United States entered the longest period of sustained economic growth in the post-war period. Between 1991 and 2000 real GDP grew by 38 percent while the unemployment rate fell by over 50 percent.⁸⁷ In terms of poverty reduction, however, this same time frame did not produce any significant inroads against

⁸⁷ U.S. Department of Commerce, (2005), and U.S. Bureau of Labor Statistics, (2005a).

poverty. From its high of 15.1 percent in 1993 the poverty rate declined to 11.3 percent, a figure nearly identical to the all-time low of 11.1 percent reached in 1973.⁸⁸ While at first glance this might seem somewhat impressive, indicating real progress against poverty, in reality, however, the gains were relatively small. The income thresholds that are used to determine whether or not a family is poor are fixed in real terms. That is, in real terms the poverty thresholds were the same in 2000 as they were in 1973 when the historic low was reached.⁸⁹ The bar has not been raised in real terms since the adoption of the “official” poverty measure by the federal government in 1969. Real median income, on the other hand, increased by over 25 percent between 1973 and 2000.⁹⁰

If economic growth alone will not generate additional steady declines in the poverty rate over time what does this mean in terms of public policy? Clearly it means that society, acting through the arm of federal, state, and local governments, will have to assume an active role if poverty is to be significantly reduced beyond its current level. However, public policy must be tailored to fit the needs and characteristics of a given household for the experiences of different family types can vary widely as this study demonstrates.

Specifically, regarding single-parent families obviously it is very important that public policy strives to make work pay and encourages continued labor market participation among this group. For single-parent families, as well as all other family types, labor market earnings of the head are the most significant source of income and

⁸⁸ DeNavas-Walt, Proctor, and Lee, (2005), Table B-1.

⁸⁹ For more information on how these thresholds are calculated see Appendix A.

⁹⁰ U.S. Bureau of the Census, (2005b).

these earnings are highly responsive to economic growth. However, low wage levels coupled with relatively fewer labor hours compared to married heads significantly reduces the impact of this growth on total family income. Therefore, policies are needed that both increase wages as well as encourage additional labor market participation. To achieve these goals there are three primary means that can be used: wage subsidies, human capital investment, and programs that reduce the transaction costs associated with labor market participation.

Focusing first on wage subsidies there is already in place a program that directly subsidizes the wages of workers: The Earned Income Tax Credit (EITC). Enacted in 1975 as a means of offsetting the regressive burden of the Social Security payroll tax the EITC is a means-tested cash transfer program that operates through the income tax system; specifically it is a refundable tax credit *for those individuals and families with positive labor earnings*. Given that low-income families pay negligible federal income taxes, if any, the EITC directly supplements the incomes of the working poor. The EITC has received wide support since its inception and bears the distinction of being the only means-tested, cash-transfer program that has experienced significant expansions over the past twenty-five years. For single-parent families with two or more children the EITC can provide as much as \$4,400 in additional income annually, although the average credit received is substantially smaller than this.⁹¹ For single individuals without children, on the other hand, the EITC is much less generous, providing a maximum benefit level of only \$399 per year with eligibility restricted to those earning less than \$11,750

⁹¹ U.S. Department of the Treasury, (2005).

annually.⁹² This is particularly unfortunate for single individuals under the age of 65 because, in spite of the limited impact of economic growth on labor income, this is the only cash transfer program for which this group is eligible.

While the EITC has expanded several times in its history additional expansions of this credit would further improve the well-being of the working poor, particularly single individuals without children who currently receive such a small benefit under this program. One possible avenue for this expansion is through the individual states. Currently only 17 states and the District of Columbia have an earned-income tax credit in place and not all of these credits are refundable.⁹³ Another improvement to the EITC would be to expand the number of volunteer tax preparation programs nationwide. In 2003, 71 percent of EITC recipients filed their tax returns through paid tax preparers.⁹⁴ This reduces the size of the credit for a group that so desperately needs these funds.

A significant drawback of the EITC, however, is that technically speaking it has absolutely no effect on poverty. This does not stem from any limitations of the program per se, but rather is entirely due to the way in which poverty is measured. To calculate the size of the poverty population in any given year the Census Bureau compares the annual pre-tax money income of families and unrelated individuals to a set of income thresholds.⁹⁵ While pre-tax income includes the value of cash transfer programs that provide aid to low-income families, such as Social Security and TANF, it specifically excludes any cash transfers that are administered through the income tax system,

⁹² Ibid.

⁹³ Holt, (2006).

⁹⁴ Berube, (2006).

⁹⁵ For more information on how poverty is measured see Appendix A.

specifically the EITC. Given this, the current impact of this program on poverty as well as any future expansions are not or will not be reflected in statistics on poverty.

A second means of increasing the returns to work for single-parent families as well as increasing the earnings potential of single individuals without children is to provide the heads of these families with the skills and training necessary for them to secure higher wages on their own through the labor market. Many single parents have low levels of human capital and unfortunately the less-skilled do not fare well in our current economy. As mentioned previously earnings inequality has increased over the last twenty-five years with highly skilled workers experiencing real gains in wages while less-skilled workers have actually experienced real declines in wages. Given this disparity in wages, education and skills training can greatly increase the long-run earnings of both single individuals and the heads of single-parent families. However, while the EITC has experienced substantial increases in funding, post-secondary education has not. The last several years, in particular, have been characterized by tighter federal and state budgets that have resulted in less funding for higher education, which, in turn, has led to higher tuition at many institutions. At the same time the generosity of loan and grant programs has decreased. The irony of this is that dis-investment in post-secondary education deals a double blow. Not only does it limit opportunities for those near the bottom of the income distribution, it also limits the economic growth that supposedly lifts them out of poverty in the first place. Given this, more resources should be devoted to post-secondary education and skills training rather than less.

What is more, single parents, in particular, face several obstacles, predominantly the financial obligations and time constraints associated with being the primary or only

care-giver in a given household, that greatly reduce their chances of successfully completing their education or skills training. One way to reduce these obstacles as well as encourage labor market participation is to minimize the transaction costs associated with work. One of the largest criticisms of the AFDC program was that it discouraged work among program participants. As individuals on welfare began to work more hours not only did the amount of cash assistance from the government begin to fall, but program participants incurred additional expenses as well such as childcare, transportation expenditures, and the loss of health insurance. Under welfare reform, however, program rules changed to ease the transition from welfare to work. Specifically, TANF recipients receive financial assistance for childcare, transportation, and other work related expenses in addition to remaining eligible for Medicaid as they move from welfare to work. Unfortunately, these benefits are restricted to TANF recipients, yet the well-being of many working poor families could be greatly enhanced by accessibility to these same services.

None of these policy recommendations require the implementation of a new program; they simply reflect expansions of already existing ones. Yet the probability of more federal and state funds being allocated to these programs is quite low. As budget deficits grow, as the future of Social Security remains so uncertain, and as we continue to wage a war in Iraq attention as well as financial resources will most certainly be focused elsewhere.

III. Limitations of the Study and Suggestions for Further Research

Like most research this study suffers from some limitations that provide opportunities for further research in this area. Perhaps one of the most significant

limitations of this research was the inability to effectively control for the varying age distribution within each of the four demographic groups. While the distribution of single-parent families and married-couples with children by the age of the head is relatively uniform, this same distribution for single individuals living alone and married-couples without children is much more dispersed.⁹⁶ This is significant because both wage rates and the number of hours worked by an individual are heavily influenced by age. In order to control for this and given the aggregate nature of the methodology employed in this study, the mean age of each demographic group was included as an explanatory variable in the estimation of the elasticity parameters. However, in many instances the coefficient for this variable was not statistically different from zero, in large part because of a lack of variability in the mean age of each of the four groups over time. Because of this, it is difficult to determine if the results reflect the behavior of each group as a whole or if they are more representative of certain sub-populations within each group. For example, do the estimated elasticity coefficients for single individuals without children predominantly reflect the experiences of the elderly or do they reflect the experiences of this group as a whole? Given the lack of poverty research that has been done on single individuals living alone this is a serious shortcoming.

To correct for this further research should attempt to exploit more of the cross-sectional characteristics of the data as well as its time-series dimensions. The mean age of the head within each of the four demographic groups did not change substantially over time but within each group there is certainly a high degree of variability which might prove age to be a much more significant factor than it appears in the current analysis.

⁹⁶ Please see Appendix B.

There is, however, one serious limitation of using cross-sectional data on individual families to estimate the impact of economic growth. As mentioned previously in Chapter 3, it is very difficult to obtain significant coefficients with micro level data and aggregate measures of economic growth. To avoid this issue and yet still control for the effects of age another approach would be to limit the analysis to only those heads between the ages of 18 and 65, thereby capturing only the working-age population.

A second major shortcoming of this study, which also offers possibilities for further research, is the lack of a direct link between the estimated elasticities and poverty, per se. The purpose of this dissertation was to determine if changes in family structure have reduced the effectiveness of economic growth in terms of reducing poverty. To do so the responsiveness of total family income and its components to economic growth was estimated for each of four different family types. However, rather than focusing on the responsiveness of income and its main components for *poor* families within each of these four groups elasticities were estimated for the groups as a whole. Certain characteristics of the poverty population, though, such as lower levels of skill and education, disabilities, and other barriers to employment could cause parameter estimates for the poor within each of these groups to be quite different than those of the groups as a whole.

To estimate separate elasticities for the poor, however, requires a definition of poverty, a means to distinguish the poor from the non-poor. Given the nearly unanimous sentiment that our current measure of poverty is quite inaccurate perhaps a better methodology would be to estimate the elasticity of total family income and its main components with respect to economic growth for different groups within the distribution of income rather than specifically for the poor.

Another limitation of this research is that it does not control for changes in labor market participation caused by factors other than economic growth. Specifically, the 1980s were characterized by significant changes in tax policy that greatly affected the returns to work. The Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986 dramatically reduced marginal tax rates on personal income taxes, cutting the marginal tax rate in the top bracket from 70 percent to 33 percent. The primary purpose of this legislation was to increase the financial rewards associated with work, saving, and investment and thereby encourage such activities. Certainly such sweeping changes in tax policy would have had an impact on the labor supply of the heads of all four demographic groups; given this, the estimated elasticities and level responses, particularly with respect to labor hours, are biased upward, reflecting more than just changes spurred by economic growth. However, these policies would certainly have had a disproportionate affect on those at the upper end of the income distribution for it is these families who faced such high initial marginal tax rates. Most single-parent families, however, do not fall in the upper end of the income distribution and it is the estimated elasticities for this group that provide the most significant results of this study.

A final problem with this work stems from the period of analysis. To estimate the responsiveness of the various income components to economic growth annual data from 1968 to 1993 was utilized.⁹⁷ While for the most part this time period coincides with the overall stagnancy of the poverty rate it does not reflect the most recent economic expansion, the longest in the post-war period, nor does it encompass relatively recent

⁹⁷ Recall that the PSID collects information on income and employment from the previous year so that data from the sample years of 1968 through 1993 yields income and employment information from 1967 through 1992.

changes in social welfare policy that drastically changed the rules of the game for single mothers with children. The replacement of AFDC by TANF with its work requirements and time limits created a whole new incentive structure that most certainly had an impact on the number of hours worked by the heads of single-parent families. Because of this the estimated elasticities for this demographic group reflect a reality that no longer exists. However, given the fact that both wages and hours worked for single-parent families were both found to be highly responsive to economic growth the estimated parameters, if anything, would be underestimated.

Despite these limitations the message of this study is still quite clear: economic growth is not the panacea that it has often been portrayed as. It is certainly true that growth has the potential to lift some families out of poverty, yet for other families it is less effective. Given this, we as a society must take a more active role if poverty is to be reduced beyond current levels. Oftentimes, however, our efforts to help the poor are hampered by who we perceive the poor to be and the reasons for their poverty. Single-parents, specifically women, have often been viewed as less productive members of society who take advantage of the government and its generosity at every opportunity. Certainly individuals such as this do exist; however, given that the period of analysis for this study pre-dates welfare reform and the behavioral changes associated with it, clearly this is not a group completely unattached to the labor market. The results of this study indicate that being a single-parent does not mean that you are less attached to the labor market just less rewarded by it. Any prior poor choices are reinforced by conditions within the labor market making it difficult for these families to break out of poverty.

We live in the richest country on earth and yet one out every eight individuals in this country lives in poverty. In 1966, Sargent Shriver felt that we had the resources to eliminate poverty in ten years. That date has long since come and gone and there are more people living in poverty today than when Sargent Shriver set this goal. This should not come as a surprise, though, because with the exception of the War on Poverty, poverty reduction has not been a national priority. Statistics on poverty while publicly available are not common knowledge. As the poor remain out-of-sight and out-of-mind public policy will continue to overlook them. Yet given the results of this study the “undeserving” poor are certainly deserving of our help. That we do not do so is to our great shame.

APPENDICES

APPENDIX A

THE MEASUREMENT OF POVERTY IN THE UNITED STATES

What is meant by poverty? How is poverty defined in the United States? What does it mean to be poor? Does the word poverty imply an absolute physiological standard of need such that an individual is considered poor if he/she lacks an adequate amount of the basic necessities of life, such as food, clothing and shelter? Or does poverty refer to a relative concept under which an individual is considered poor if he/she cannot meaningfully participate in society, a concept that would certainly change over time? The official U.S. poverty measure falls in the middle of these two concepts of poverty; it is neither completely absolute in nature nor completely relative.

The official measure of poverty was constructed in the early 1960s by Mollie Orshansky, a staff economist at the Social Security Administration. Utilizing data from a 1955 food expenditure survey, Orshansky noted that the average American family of three or more devoted one-third of its after-tax income to food expenditures. Orshansky then calculated the poverty line as three times the cost of an “economy” food budget that had been developed by the Department of Agriculture. This economy food budget had been constructed by experts on nutrition at the Department of Agriculture and represented a caloric intake consistent with minimum nutritional requirements. It was implicitly assumed that if the cost of food could be reduced to the lowest minimum possible all other expenditures, such as clothing and housing, could also be adjusted accordingly. Given this methodology, Orshansky derived a poverty line of \$3,165 in 1963 for a family of four.

Orshansky originally constructed 124 separate thresholds based upon differences among families according to the age and sex of the head of the household, the total number of adults and children under the age of eighteen, and whether or not the family

lived on a farm.⁹⁸ These separate thresholds were created to recognize the fact that larger families have greater consumption needs than do smaller families and that the consumption needs of individuals vary with age. Farm families were perceived to need less income than their non-farm counterparts because a certain proportion of their food could be grown on the farm. Housing, too, might be considered part of the farm operation thereby further reducing the need for income. The farm poverty thresholds were initially set at 60 percent of the corresponding non-farm poverty thresholds.⁹⁹

Since their initial development, very few changes have been made to the poverty thresholds. In 1965 the farm/non-farm differential was raised to 70 percent; in 1969 it was raised again to 85 percent. Finally, in 1981 the differential was completely eliminated. Also eliminated at this time were all differentials based on the sex of the head of the household, as these differentials were perceived as sexist. The only other changes that have been made to the thresholds since the 1960s are the annual adjustments made by means of the Consumer Price Index to reflect changes in prices. In real terms, however, the poverty thresholds remain unchanged from their 1960s level. The size of the poverty population in any given year is determined by counting the number of persons in families and unrelated individuals with annual pre-tax money income below these thresholds.¹⁰⁰

98 Orshansky, (1965).

99 Orshansky, (1963).

100 Annual money income before taxes as defined by the Census Bureau includes income from the following sources: wages and salaries, unemployment and workers' compensation, Social Security, private pensions, rent, interest, dividends, alimony and child support payments, and cash public assistance payments. Capital gains and the value of in-kind benefits (such as food stamps, housing assistance, and Medicaid) are excluded from this definition.

The criticisms of the official poverty measure are many. However, it is beyond the scope of this work to review these criticisms here.¹⁰¹ It is merely necessary to understand what is meant by poverty and those factors which by definition influence the poverty rate. However, it should be emphasized that the poverty thresholds are fixed in real terms; they represent a 1960s standard of living. Given this, one would expect that over time as the economy expands and incomes grow the poverty rate would fall. The fact that the poverty rate has remained relatively stagnant over the past 30 years despite nearly continuous income growth would seem to indicate that our progress against poverty has been even more limited than it would appear at first glance, if we have made any real progress at all.

¹⁰¹ See Citro and Michael, (1995), and Ruggles, (1990), for a critique of the official U.S. poverty measure.

APPENDIX B

**THE DISTRIBUTION OF SAMPLE HOUSEHOLDS
BY AGE OF THE HEAD, SELECTED YEARS**

FIGURE B.1

**THE DISTRIBUTION OF SINGLE INDIVIDUALS WITHOUT CHILDREN
BY AGE OF THE HEAD, SELECTED YEARS**

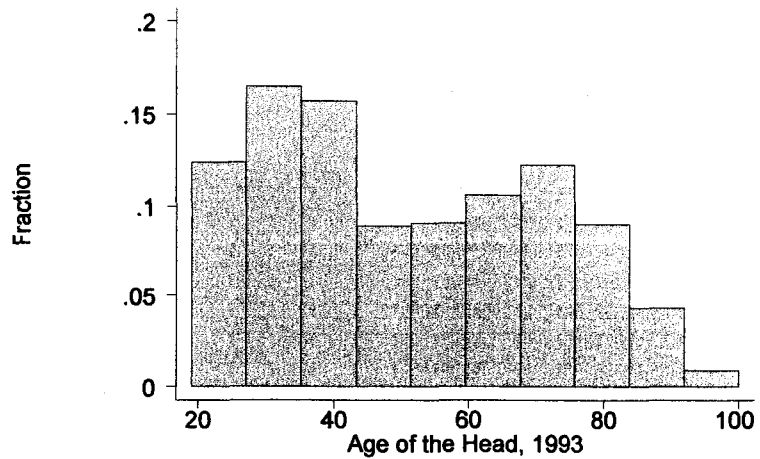
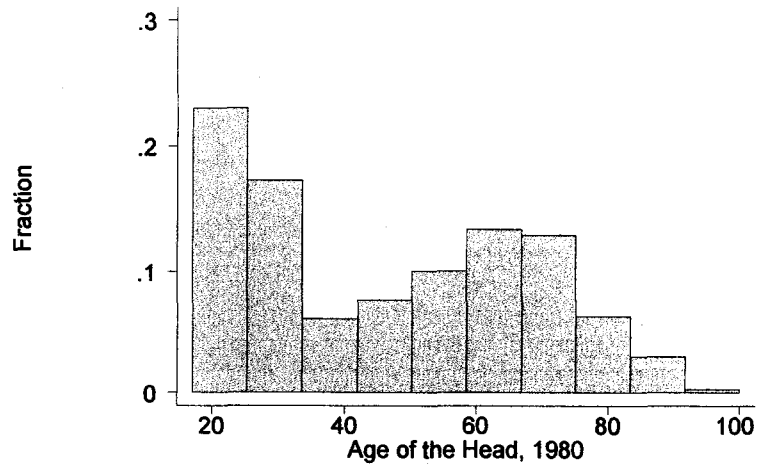
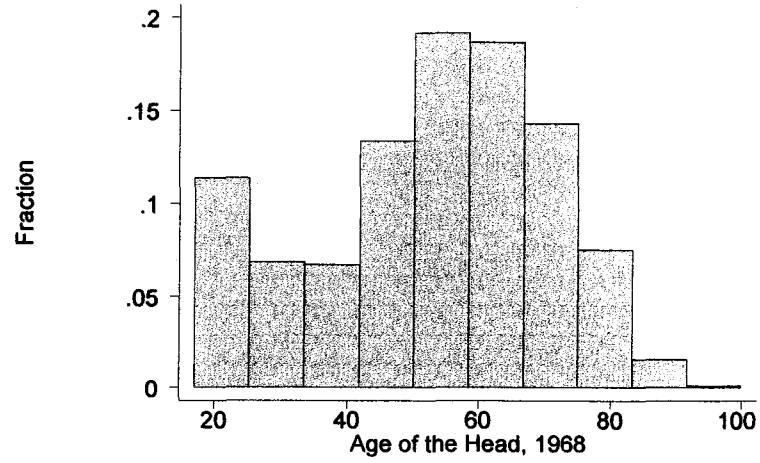


FIGURE B.2

**THE DISTRIBUTION OF SINGLE-PARENT FAMILIES
BY AGE OF THE HEAD, SELECTED YEARS**

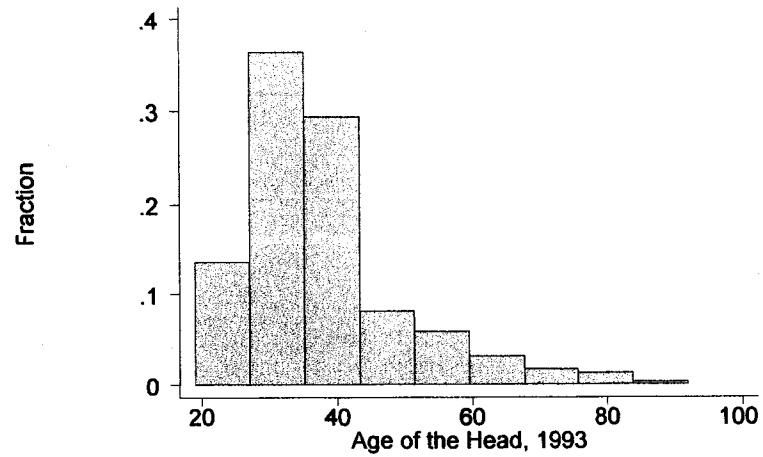
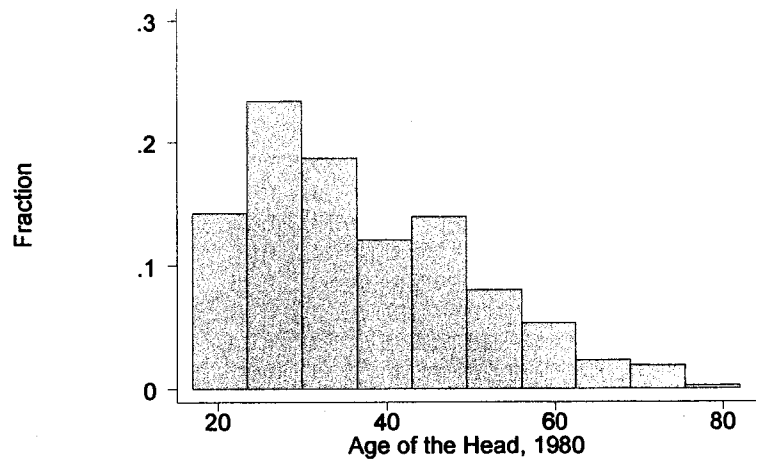
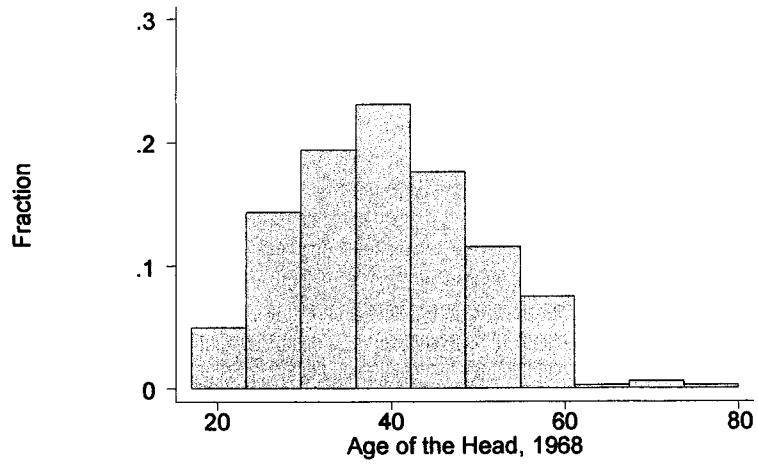


FIGURE B.3

**THE DISTRIBUTION OF MARRIED COUPLES WITHOUT CHILDREN
BY AGE OF THE HEAD, SELECTED YEARS**

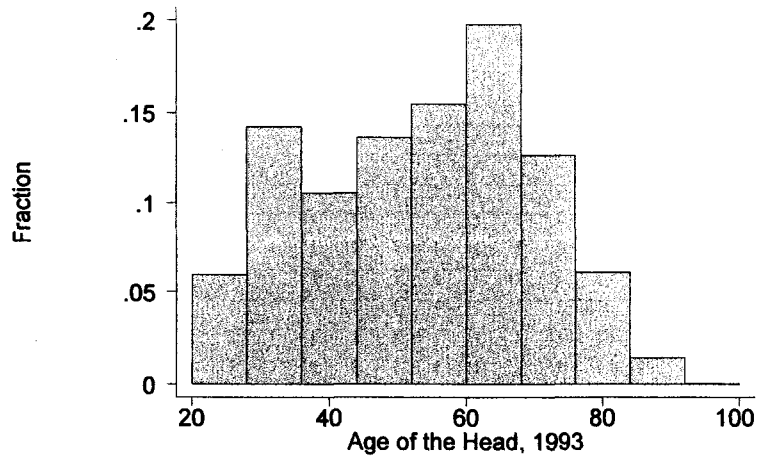
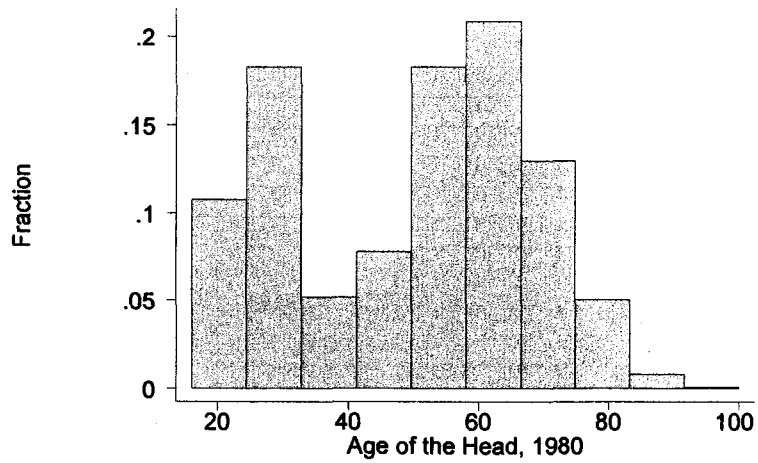
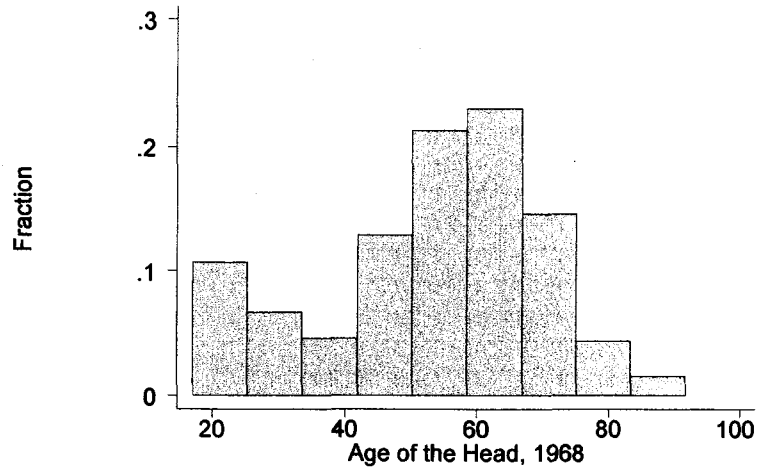
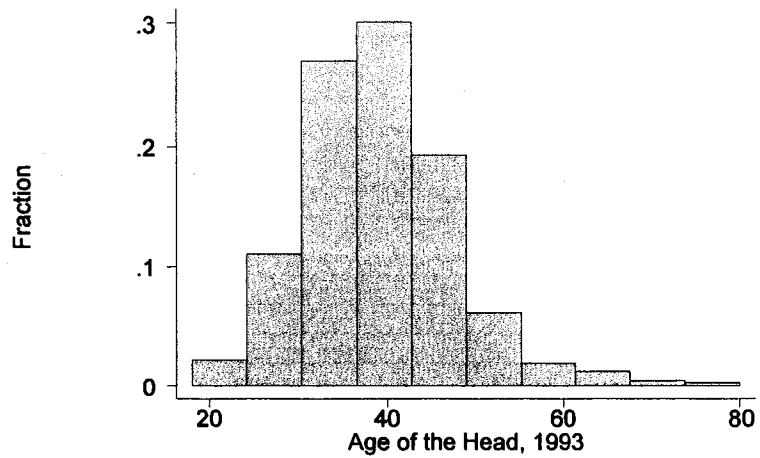
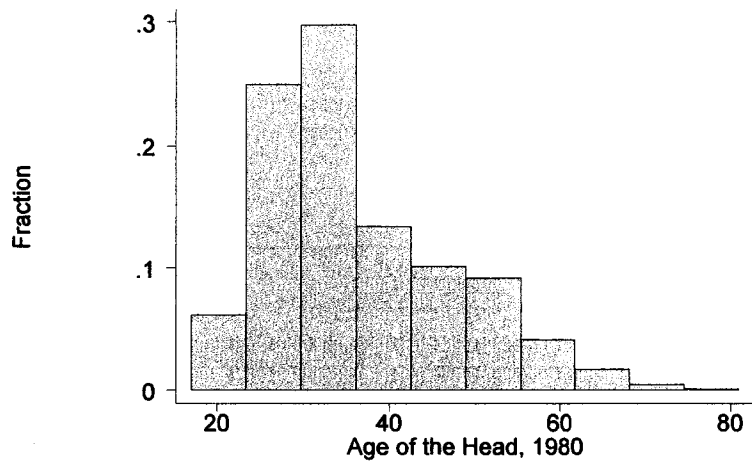
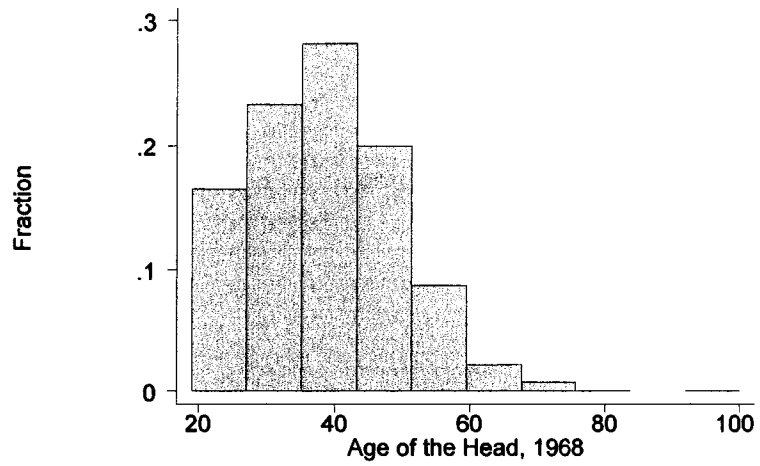


FIGURE B.4

**THE DISTRIBUTION OF MARRIED COUPLES WITH CHILDREN
BY AGE OF THE HEAD, SELECTED YEARS**



APPENDIX C

**THE NUMBER OF OBSERVATIONS USED TO GENERATE
THE DEPENDENT VARIABLES USED IN THE STUDY**

TABLE C.1

THE NUMBER OF OBSERVATIONS USED TO GENERATE THE PERCENTAGE AND LEVEL CHANGES IN TOTAL FAMILY INCOME AND EACH OF ITS COMPONENTS BY FAMILY TYPE, 1968 - 1993

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1968-69	735	603	765	1,747
1969-70	768	598	804	1,758
1970-71	838	612	850	1,765
1971-72	917	633	890	1,796
1972-73	965	643	935	1,872
1973-74	1,047	638	997	1,929
1974-75	1,143	664	1,027	1,965
1975-76	1,225	679	1,040	2,007
1976-77	1,295	695	1,063	2,060
1977-78	1,356	707	1,102	2,105
1978-79	1,406	723	1,102	2,108

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1979- 80	1,476	694	1,149	2,161
1980- 81	1,584	732	1,161	2,212
1981- 82	1,621	761	1,200	2,166
1982- 83	1,645	758	1,256	2,157
1983- 84	1,674	751	1,282	2,187
1984- 85	1,701	747	1,279	2,183
1985- 86	1,773	769	1,355	2,212
1986- 87	1,737	770	1,370	2,175
1987- 88	1,768	755	1,377	2,186
1988- 89	1,817	759	1,407	2,184
1989- 90	1,841	746	1,437	2,182
1990- 91	1,924	754	1,505	2,163
1991- 92	1,940	763	1,502	2,178
1992- 93	1,952	748	1,464	2,100

TABLE C.2

THE NUMBER OF OBSERVATIONS USED TO GENERATE THE PERCENTAGE AND LEVEL CHANGES IN THE COMPONENTS OF HEAD LABOR INCOME FOR CURRENT WORKERS ONLY, 1968 – 1993

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1968-69	480	384	610	1,685
1969-70	499	391	648	1,690
1970-71	568	422	697	1,707
1971-72	639	420	727	1,734
1972-73	657	404	763	1,813
1973-74	694	407	811	1,874
1974-75	756	425	840	1,909
1975-76	792	444	824	1,933
1976-77	833	429	842	1,954
1977-78	879	444	869	2,005
1978-79	902	462	869	2,019

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1979- 80	989	448	902	2,066
1980- 81	1,071	495	904	2,114
1981- 82	1,101	504	919	2,062
1982- 83	1,097	470	944	2,057
1983- 84	1,092	465	950	2,058
1984- 85	1,106	472	930	2,064
1985- 86	1,166	503	997	2,095
1986- 87	1,143	516	1,001	2,072
1987- 88	1,163	507	995	2,086
1988- 89	1,187	536	1,028	2,068
1989- 90	1,206	510	1,059	2,076
1990- 91	1,247	521	1,105	2,061
1991- 92	1,234	538	1,074	2,074
1992- 93	1,245	511	1,059	1,996

TABLE C.3

THE NUMBER OF OBSERVATIONS USED TO GENERATE THE PERCENTAGE AND LEVEL CHANGES IN THE COMPONENTS OF WIFE LABOR INCOME FOR CURRENT WORKERS ONLY, 1968 – 1993

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1968-69	-----	-----	346	748
1969-70	-----	-----	377	850
1970-71	-----	-----	448	913
1971-72	-----	-----	458	917
1972-73	-----	-----	491	1,002
1973-74	-----	-----	532	979
1974-75	-----	-----	576	1,052
1975-76	-----	-----	574	1,092
1976-77	-----	-----	622	1,186
1977-78	-----	-----	634	1,206
1978-79	-----	-----	600	1,267

<u>Year</u>	<u>Single Individuals Without Children</u>	<u>Single-Parent Families</u>	<u>Married Couples Without Children</u>	<u>Married Couples With Children</u>
1979- 80	-----	-----	646	1,384
1980- 81	-----	-----	681	1,460
1981- 82	-----	-----	703	1,446
1982- 83	-----	-----	721	1,438
1983- 84	-----	-----	753	1,459
1984- 85	-----	-----	749	1,503
1985- 86	-----	-----	826	1,638
1986- 87	-----	-----	825	1,579
1987- 88	-----	-----	839	1,609
1988- 89	-----	-----	880	1,600
1989- 90	-----	-----	904	1,658
1990- 91	-----	-----	963	1,694
1991- 92	-----	-----	967	1,698
1992- 93	-----	-----	941	1,615

APPENDIX D

**THE COMPONENTS OF TRANSFER INCOME:
AVERAGE VALUES AND ESTIMATED ELASTICITY COEFFICIENTS**

TABLE D.1
AVERAGE VALUES OF THE COMPONENTS OF TRANSFER INCOME, 1970-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Aid to Families with Dependent Children, Mean (\$) (Standard Deviation)	\$4,829 (1,952)	\$7,394 (2,327)	----- ^a -----	\$6,954 (2,069)
Social Security, Mean (\$) (Standard Deviation)	8,013 (929)	11,328 (1,297)	13,177 (1,912)	12,343 (1,626)
Other Retirement Income, Mean (\$) (Standard Deviation)	8,165 (413)	7,420 (1,392)	14,460 (1,621)	11,039 (1,633)
Unemployment and Worker's Compensation, Mean (\$) (Standard Deviation)	3,583 (752)	3,709 (1,292)	4,479 (1,034)	3,826 (509)
Child Support and Alimony, Mean (\$) (Standard Deviation)	6,786 (2,269)	5,924 (1,095)	----- ^a -----	4,604 (1,015)
Other Transfer Income, Mean (\$) (Standard Deviation)	5,078 (625)	5,162 (952)	5,811 (448)	5,128 (769)

Notes: Dollar amounts are in constant 2004 dollars. All figures are based on weighted data from 1970 to 1993. Mean values were calculated using only those families for which the value of the given component of transfer income was greater than zero.

^a In most instances, married couples without children are not eligible to receive this type of transfer payment.

TABLE D.2
THE PERCENTAGE CHANGE IN THE COMPONENTS OF TRANSFER INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1970-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Aid to Families with Dependent Children				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-2.926 (2.409)	-.613 (0.864)	----- ^a	-3.688** (1.666)
Adjusted R ²	[.02]	[.00]		[.16] ^b
Social Security^c				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.417 (0.419)	1.096* (0.641)	-.211 (0.636)	.155 (1.181)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-2.032* (1.109)
Mean Age of the Head	.013* (0.007)	-----	-----	-----
Adjusted R ²	[.22]	[.00] ^b	[.11] ^b	[.05]
Other Retirement Income^c				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.775 (0.474)	1.305 (3.231)	.334 (0.566)	-.729 (1.919)
One-period Lag in the Percentage Change in GDP	-.899* (0.456)	-----	-----	-----
Adjusted R ²	[.13]	[.00]	[.00]	[.00]

Unemployment and Worker's Compensation

Explanatory Variables:

Percentage Change in GDP	-9.352*** (2.327)	-9.467** (4.499)	-11.056*** (2.788)	-13.966*** (2.323)
Adjusted R ²	[.41]	[.13]	[.40]	[.61]

Alimony and Child Support

Explanatory Variables:

Percentage Change in GDP	-1.977 (2.512)	1.930* (1.113)	----- ^a	-2.222 (3.698)
Mean Age of the Head	-----	-.035** (0.014)	-----	.365 (0.240)
Adjusted R ²	[.00]	[.28]		[.07]

Other Transfers

Explanatory Variables:

Percentage Change in GDP	-3.337* (1.851)	-.337 (0.942)	-2.058 (1.906)	-3.327* (1.748)
Mean Age of the Head	-----	-----	-.104** (0.043)	-----
Adjusted R ²	[.06]	[.00] ^b	[.10]	[.07]

Notes: Each coefficient should be interpreted as the percentage change in the given component of transfer income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 23 unless otherwise noted.

^a In most instances, married couples without children are not eligible to receive this type of transfer payment.

^b This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

^c The number of observations is 22.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

TABLE D.3
THE LEVEL CHANGE IN THE COMPONENTS OF TRANSFER INCOME
GIVEN A ONE PERCENT CHANGE IN GDP, 1970-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Aid to Families with Dependent Children				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-\$0.95 (0.764)	-\$18.06 (17.955)	----- ^a	-\$5.37** (2.288)
Adjusted R ²	[.02]	[.00]		[.20] ^b
Social Security^c				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$6.08 (12.059)	\$6.58 (17.522)	\$2.90 (18.713)	\$1.02 (3.649)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-\$7.86** (3.563)
Adjusted R ²	[.00]	[.00]	[.00]	[.11] ^b
Other Retirement Income^c				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	\$11.22 (6.854)	\$6.46 (7.942)	\$11.91 (21.711)	-\$4.91 (7.343)
One-period Lag in the Percentage Change in GDP	-\$12.78* (6.662)	-----	-----	-----
Adjusted R ²	[.13]	[.00]	[.00]	[.00]

Unemployment and Worker's Compensation

Explanatory Variables:

Percentage Change in GDP	-\$20.14*** (4.679)	-\$13.11*** (4.760)	-\$23.05*** (6.944)	-\$45.52*** (5.278)
Adjusted R ²	[.44]	[.23] ^b	[.32]	[.77] ^b

Alimony and Child Support^c

Explanatory Variables:

Percentage Change in GDP	-\$1.21 (1.604)	\$33.43* (16.896)	----- ^a	-\$1.58 (1.754)
One-period Lag in the Percentage Change in GDP	\$8.15** (3.425)	-----	-----	-----
One-period Lag in the Percentage Change in GDP Squared	-\$1.54** (0.650)	-----	-----	-----
Mean Age of the Head	-\$6.68** (3.086)	-\$41.49* (21.433)	-----	\$30.37** (11.514)
Adjusted R ²	[.24]	[.24]		[.23]

Other Transfers^c

Explanatory Variables:

Percentage Change in GDP	-\$32.71* (18.932)	-\$1.45 (16.473)	-\$9.46 (17.967)	\$8.94 (18.906)
Percentage Change in GDP Squared	-----	-----	-----	-\$7.75** (3.138)
One-period Lag in the Percentage Change in GDP	-----	-----	-----	-\$44.18** (17.780)
One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	\$8.48*** (3.214)
Mean Age of the Head	-----	-----	-\$91.11* (47.503)	-----
Adjusted R ²	[.07]	[.00] ^b	[.04]	[.28]

Notes: Each coefficient should be interpreted as the level change, measured in 2004 constant dollars, in the given component of transfer income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the level elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 23 unless otherwise noted.

^a In most instances, married couples without children are not eligible to receive this type of transfer payment.

^b This is not a true measure of the “goodness of fit” due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

^c The number of observations is 22.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

APPENDIX E

**THE COMPONENTS OF HEAD AND WIFE LABOR INCOME:
ESTIMATED PERCENTAGE AND LEVEL ELASTICITIES
FOR CURRENT WORKERS ONLY**

TABLE E.1
THE PERCENTAGE CHANGE IN THE COMPONENTS OF HEAD AND WIFE LABOR INCOME
GIVEN A ONE PERCENT CHANGE IN GDP FOR WORKERS ONLY, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Head Average Hourly Earnings^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-.389 (0.454)	.922* (0.483)	.524 (0.564)	.608* (0.308)
One-period Lag in the Percentage Change in GDP	-1.968** (0.934)	-----	-1.761 (1.096)	-----
One-period Lag in the Percentage Change in GDP Squared	32.267* (17.284)	-----	45.259** (20.287)	-----
Mean Age of the Head	-----	-----	-----	.028 (0.017)
Adjusted R ²	[.00]	[.09]	[.13]	[.23]
Head Labor Hours^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	.283** (0.127)	1.071*** (0.210)	.546*** (0.088)	.601*** (0.065)
One-period Lag in the Percentage Change in GDP	.274** (0.110)	-----	-----	.309** (0.120)
One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	-6.001*** (2.200)
Mean Age of the Head	-.007*** (0.002)	-----	-----	-.008** (0.003)
Adjusted R ²	[.46]	[.48]	[.62] ^b	[.77]

Wife Average Hourly Earnings

Explanatory Variables:

Percentage Change in GDP	-----	-----	.146 (0.385)	.626 (0.610)
Mean Age of the Head	-----	-----	.013 (0.009)	-----
Adjusted R ²			[.06] ^b	[.00]

Wife Labor Hours

Explanatory Variables:

Percentage Change in GDP	-----	-----	.161 (0.170)	-.528 (0.405)
Percentage Change in GDP Squared	-----	-----	-----	13.746* (7.277)
Mean Age of the Head	-----	-----	-----	-.030*** (0.010)
Adjusted R ²			[.00]	[.34]

Notes: Each coefficient should be interpreted as the percentage change in the given component of labor income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a The number of observations is 24.

^b This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

TABLE E.2
THE LEVEL CHANGE IN THE COMPONENTS OF HEAD AND WIFE LABOR INCOME
GIVEN A ONE PERCENT CHANGE IN GDP FOR WORKERS ONLY, 1968-1993

	Single Individuals Without Children	Single- Parent Families	Married Couples Without Children	Married Couples With Children
Head Average Hourly Earnings^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	-\$0.06 (0.075)	\$0.12* (0.065)	\$0.14 (0.153)	\$0.15** (0.073)
One-period Lag in the Percentage Change in GDP	-\$0.32** (0.155)	-----	-\$0.51* (0.298)	-----
One-period Lag in the Percentage Change in GDP Squared	\$0.05* (0.029)	-----	\$0.13** (0.055)	-----
Mean Age of the Head	-----	-----	-----	\$0.59 (0.396)
Adjusted R ²	[.00]	[.09]	[.11]	[.22]
Head Labor Hours^a				
<i>Explanatory Variables:</i>				
Percentage Change in GDP	4.95** (2.290)	16.99*** (3.346)	10.88*** (1.662)	13.60*** (1.465)
One-period Lag in the Percentage Change in GDP	4.80** (1.987)	-----	-----	7.08** (2.715)
One-period Lag in the Percentage Change in GDP Squared	-----	-----	-----	-1.40*** (0.498)
Mean Age of the Head	-11.75*** (3.045)	-----	-----	-17.24** (7.597)
Adjusted R ²	[.43]	[.48]	[.65] ^b	[.80]

Wife Average Hourly Earnings

Explanatory Variables:

Percentage Change in GDP	-----	-----	\$0.02 (0.060)	\$0.09 (0.084)
Mean Age of the Head	-----	-----	\$0.19 (0.141)	-----
Adjusted R ²			[.05] ^b	[.00]

Wife Labor Hours

Explanatory Variables:

Percentage Change in GDP	-----	-----	2.26 (2.598)	-7.48 (4.929)
Percentage Change in GDP Squared	-----	-----	-----	1.94** (0.888)
Mean Age of the Head	-----	-----	-----	-33.65*** (12.577)
Adjusted R ²			[.00]	[.34]

Notes: Each coefficient should be interpreted as the level change, measured in either 2004 constant dollars or labor hours, in the given component of labor income caused by a one unit change in the explanatory variable. In the particular case where the regressor is the percentage change in GDP the coefficient can be interpreted as the level elasticity of the given income component with respect to GDP. A constant term was included in all of the regressions but is not reported here. Standard errors are in parentheses, while the adjusted coefficient of determination associated with each individual regression if estimated separately is reported in brackets. The number of observations is 25 unless otherwise noted.

^a The number of observations is 24.

^b This is not a true measure of the "goodness of fit" due to the presence of autocorrelated errors and the fact that the data were transformed using the Prais-Winsten methodology to correct for this.

* Significantly different from zero at the 10-percent level.

** Significantly different from zero at the 5-percent level.

*** Significantly different from zero at the 1-percent level.

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