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Have Families Experienced a Decline in Real Income since the 1973 Oil Embargo?

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ABSTRACT

This study uses the Michigan Panel study of Income Dynamics to examine the growth in family incomes over the 1967-79 period. A general consensus has developed in the United States that our standard of living has worsened since the 1973 oil embargo. Our study, of over 2500 families, shows that average growth rates of real family income did increase after 1973, but at a somewhat slower rate than before 1973. However, these average growth rates hide the substantial variation in the experiences of different families over time. Many families in our sample actually did much better in the later period, but a substantial minority (42%) experienced a decline in real income after 1973. Those families with declining incomes in this later period were disproportionately headed by women and minorities.

Have Families Experienced a Decline in Real Income Since the 1973 Oil Embargo?

While there is widespread disagreement over the appropriate policies to overcome macroeconomic problems in the U.S. economy, a general consensus concerning the manifestation of these problems has emerged in public policy circles. According to this consensus the 1973 oil embargo imposed by OPEC nations, coupled with an acceleration in the growth of the money supply, led to a rapid increase in inflation. This was followed by the 1974-75 recession, the longest and deepest since the Great Depression. The U.S. economy has never fully recovered from the combination of sharp increases in inflation and unemployment. The result has been, at best, a sluggish increase in the standard of living in the United States, and at worst, a decline in living standards.

The slowing of economic growth has been attributed to everything from lack of savings and a deteriorating work ethic to government interference in the marketplace. Although no consensus has emerged concerning solutions, there is widespread agreement that the economic record after 1973 was considerably worse than before the oil embargo.

This consensus view has been disputed by Thurow (1980a) and by other revisionists in academic circles. They argue that a closer examination of the data shows a continued increase in economic well-being after 1973, though at a somewhat slower rate.

If the revisionists are right about the rise in real incomes, why has the popular view been so gloomy? Thurow argues that dissatisfaction with the performance of the economy reflects the illusion of inflation.

Inflation accelerated people's expectations because they anticipated increased purchasing power commensurate with rises in dollar income. A feeling of economic deprivation resulted when these expectations were not realized. Nominal increases were expected to be real (discounted for inflation) increases. People felt cheated when inflation devalued their incomes, even if real incomes had risen.

Frank Levy (1982) attributes public malaise to the greater family work effort that was necessary to maintain a growth in earnings after 1973. He suggests that the rise in income for married couples was a result of the increase in labor force participation of wives. As a result, families gained money income but lost both in home production and leisure.

Thurow and Levy both agree that the post-1973 record was not nearly as bad as claimed in the popular press, but that a continuation of real growth will not be possible. Thurow's argument suggests that continued real growth is technically feasible but not politically practical if accompanied by high rates of inflation. Levy suggests that continued growth based on increased participation of women is no longer possible, for at some point the economy will run out of potential entrants into the labor market.

Our analysis leads to a somewhat different view. Using information on the incomes of the same families followed over time (longitudinal data), we show that there was indeed an increase in the proportion of families experiencing declines in real incomes. Our data show that for a sizable minority the period after the oil embargo was substantially worse than the pre-1973 period.

While Thurow is undoubtedly right that some families who were actually improving their positions felt nevertheless cheated by inflation, we have not yet run the experiment that will tell us if this malaise can be cured by a more buoyant economy. Levy may be too pessimistic in his assessment that economic growth, predicated on the increased labor force participation of married women, is self-limiting. He is right that some married couples managed to increase their real incomes over the period only because the wife entered the labor force. However, many newly working wives were in households already experiencing rising incomes. A closer examination of the data suggests that income patterns that exclude wives' earnings do not look substantially different from patterns of total family incomes.

Our analysis suggests that the number of people experiencing real declines in family incomes is large enough to discourage the view that malaise in the post-1973 period merely reflected an illusion created by inflation or by frustration at having to trade off home production for labor market earnings. On the other hand, the data are not consistent with the gloomy view that the economic policies of the post-embargo period brought to a close the era in which the American dream of a rising real standard of living could be fulfilled. For a substantial proportion of the population, real incomes did rise; and for many the rise did not result solely from increased labor force participation of wives. We will, therefore, argue that it was not "the American public" as a whole, but segments of that population who were hurt by the post-1973 events.

The paper has three sections. The first critically reviews the evidence on changes in average incomes in the pre- and post-embargo periods. In the second we turn to longitudinal data, focusing on the distributional consequences of the post-1973 slowdown. The final section presents conclusions.

REVIEW OF EVIDENCE FROM AGGREGATED DATA

Thurow (1980b) cites figures issued by the Council of Economic Advisors showing that real per capita disposable income rose 16% from 1972 to 1978, and 17% from 1966 to 1972. Table 1 shows that his conclusion is somewhat altered when one looks at periods of similar length centered on 1973 rather than 1972, in order to focus on the pre- and post-embargo periods. His main point--that there was not a decline in real incomes--holds up, however.

Those who have claimed to document a deterioration in real living standards have pointed to two alternative series, shown in columns 3 and 4. Median family income increased by 1.9% per year in the first seven-year period but showed almost no increase in the second period. Real spendable weekly earnings per worker actually showed a decline (-.5%) in the later period instead of a rise (1.0%) in the earlier period. By either of these measures, there was a substantial drop in well-being.

Table 1

Alternative Average Income Measures (dollars in 1972 values)

	Disposable Personal Income		Median Family Income[b]	Spendable Weekly Earnings per Worker
	Per Capita	Per Household[a]		
	(1)	(2)	(3)	(4)
1967	$3,389	$10,639	$11,059	$126.6
1973	4,112	11,788	12,622	133.4
1979	4,584	12,042	12,622	124.8
Annual growth rate[c]				
1967-73	.030	.015	.019	.010
1973-79	.021	.005	.003	-.005

Source: Columns 1 and 3, Economic Report of the President, 1981, pp. 259, 262. Column 4, Employment and Training Report of the President, 1980, p. 319.

[a]Households are families and unrelated individuals.

[b]Income from all sources measured before tax.

[c]Growth rates are calculated by fitting a linear time trend to the logarithm of yearly data over each period.

How can these dramatically different emphases be reconciled? The essence of the reconciliation lies in paying close attention to the income concept and the unit that received the income in each series.

As Bawden and Levy (1982) have pointed out, the rapid fall in the number of persons per household automatically led to a much slower rate of growth in income per household than in income per capita. Column 2 shows that the choice of income-receiving unit is an important element in reconciling columns 1 and 3. Real disposable personal income per household shows a pattern of declining growth rates that is similar to the median family income series. When people split off from families to form new households, the average income per household decreases unless the two households together now earn twice as much as they earned when previously living together.

The reconciliation of columns 1 and 4 hinges on the income-producing unit. Flaim (1982) argues that the spendable weekly earnings series is potentially misleading because it measures earnings per worker, a ratio which includes total earnings in the numerator and total employees in the denominator. As the number of part-time and inexperienced workers has increased, the denominator has grown much faster than the numerator, even though total earned income has increased. For example, if a wife entered the labor market but earned less than her husband, earnings per person working in the market would drop, even though the family's access to market goods increased. This was happening at a national level, leading to the sharp decline in column 4. The series should therefore not be used as a measure of well-being.

Our review of this evidence suggests that Thurow's point about average increase in well-being is correct. Real incomes did not decline, though the slowdown may have been greater than the figures he cites would indicate. The series that are used to argue that average living standards deteriorated reflect changes in household composition or labor force participation as much as they reflect declines in access to market goods. Therefore, if one looks only at average incomes one needs some additional factor to explain public malaise.

EVIDENCE FROM LONGITUDINAL DATA

The data cited so far examine only what happened to average incomes or earnings over time. They do not trace the histories of individual families. They therefore do not necessarily tell us anything about typical income patterns. To make this point clear, consider the following example. Suppose that real average incomes rise by 3%. This average could encompass all families experiencing a 3% increase in income, in which case the rise in the mean is a perfectly acceptable summary measure of individual experiences. On the other hand, the 3% increase may occur because some families experience a rapid growth in income and others experience a slow or even negative growth. It is possible that although average incomes rose in the post-1973 period, that average reflected a population with increasingly diverse patterns of earnings growth. It is conceivable that the proportion with low growth rates increased, despite the positive average growth.

In order to explore this possibility, we use the Panel Study of Income Dynamics (PSID), to examine the income histories of 1835 families which, in 1980, had household heads under 63, and of 739 families which had household heads 63 and over. All of these households were headed by the same person over the 1967-79 period.

Households are used as the accounting unit. We therefore measure changes in total household income, which do not reflect changes in individual earnings patterns within the household. By following the same household over time, we also eliminate the apparent decrease in income per household that results when individuals split off to form new households, a factor we mentioned earlier as important when examining average income.

Although households seem the most appropriate unit for our purposes, focusing on them has drawbacks. First, household income may rise as a result of increases in labor force participation of other family members, a factor that we know is important for wives during the period we study. By examining changes in income excluding wives' earnings, we will partly take account of this factor. The second drawback is that we must restrict ourselves to households headed by the same person over the 13 year period. Excluding new families and families that changed heads during this period may, however, give a distorted view of the evolving living standards of all families. Welch (1979) has shown that people just entering the labor force, who were likely to be forming new households, experienced smaller than average increases in incomes. Likewise, families which broke up may have experienced smaller growth rates in incomes if family break-ups resulted from worsened economic conditions.

Our restricted sample may therefore overstate the gains made by all families.

In order to estimate the proportion of families which experienced declines in incomes in the post-embargo period, we compare real income over the periods 1967 to 1973 and 1973 to 1979 for each of the households in our sample. Income growth is calculated by fitting a linear time trend to each family's income in the two subperiods.

Were Families Worse Off in the Post-Embargo Period?

The experience of our sample supports Thurow's statement that real incomes continued to grow on average between 1973 and 1979. Rows 1 and 2 of Table 2 show that although average growth was slower in the second period, incomes did continue to rise. The only demographic group with a negative average annual growth rate consists of households without an adult male present.[1]

Whether or not individual households were worse off in the post-embargo period depends on the criterion used. We consider three criteria: the household experienced (1) a slower rate of growth than it experienced in the pre-embargo period; (2) a slower rate of growth than households headed by people in the same age category in the pre-embargo period; and (3) a negative growth rate.

1. Slower Real Income Growth. Suppose a family in 1973 expected its income in the next six years to grow at least as fast as it had grown in the previous six years. How many families would have been disappointed by slower growth rates?

Table 2

Real Income Growth for Households with Nonaged Head, 1967-79[a]

	All Households	Adult Male Present in Household		Race of Household Head	
		Yes	No	White	Nonwhite
Mean Annual Growth[b]					
(1) 1967-73	$431	$483	$215	$491	$332
(2) 1973-79	151	209	-90	201	67
Percentage with					
(3) Accelerating Growth[c]	35.3	36.9	28.9	35.3	35.4
(4) Decelerating Positive Growth[d]	22.6	23.8	17.4	24.8	18.8
(5) Negative Growth in 1973-79 Period	42.1	39.4	53.7	39.9	45.9
	100.0	100.0	100.0	100.0	100.0
(6) Percentage with Negative Growth in 1967-73 Period	25.0	25.1	24.4	24.2	26.4
Number of Cases	1,835	1,479	356	1,148	687

Note: Data base for this and subsequent tables is a sample from the Michigan PSID.

[a]Household head less than 63 in 1980.

[b]Growth in income measured in 1967 dollars.

[c]Calculated by fitting a linear time trend to each household's income. Accelerating growth indicates 1973-79 growth was higher than 1967-73 growth.

[d]Decelerating growth indicates 1973-79 growth was lower than 1967-73 growth, but was still positive.

Rows 3, 4, and 5 of Table 2 show the proportion of households in three mutually exclusive categories that are based on their 1973-79 income growth. In row 3 we see that 35% of the households in our sample had higher income growth in the 1973-79 period than during the 1967-73 period. By this criterion, the later period was better for a sizable minority of the families in the sample. If we divide the sample into households with and without an adult male present, we see that households with a male present were more likely to have increased growth rates than households with only a female adult present. Surprisingly, whites and nonwhites were equally likely to have increased income growth rates (35%). However, the diversity of experience across demographic groups is not large.

It is important to note that for 65% of the sample, real incomes either decelerated or fell after the oil embargo. Thus, we see that a sizable proportion of the population could claim that it was worse off by this strict standard.

2. Slower Income Growth within Similar Age Cohorts. Row 4 of Table 2 shows that 23% of the sample experienced positive growth, but that their 1973-79 growth rate was lower than their growth rate in the pre-embargo period. In this limited sense these people were worse off then they might have expected to be.

Since, however, age-income profiles increase at a decreasing rate, (the rate of income growth slows as one grows older), normal life-cycle changes may lead to a deceleration in the growth of income. To control for this, Table 3 shows annual growth rates for households broken down by

Table 3

Average Annual Income Growth of Households, by Age and Sex of Head, 1967-79 (dollars in 1967 values)

Age of Head in 1967	Income Growth 1967-73 Adult Male Present		Age of Head in 1973	Income Growth 1973-79 Adult Male Present	
	Yes	No		Yes	No
(1)	(2)	(3)	(4)	(5)	(6)
15-21	$897	$282	22-28	$401	$324
22-28	515	249	29-35	384	1
29-35	521	213	36-42	347	-36
36-42	499	213	43-49	151	-133
43-49	272	194	50-56	-81	-191
50+	-16	20	57+	-245	-106

the age of the head. Looking down the columns, we see that our data conform to the usual patterns. The highest growth rates were experienced by the youngest households. Comparing income growth across rows (which shows the growth rates for the same households in the two time periods), we see that, on average, the growth in incomes slowed even for people within narrowly defined age groups.

The age categories were chosen to span seven years each (except the highest, open-ended category, which includes anyone who would reach 63 by the end of the survey period) so that we could compare the growth in income for people who were of a similar age in the two subperiods. For example, row 2 shows that male household heads who were 22 to 28 in 1967 experienced a $515 average growth in income during the early period. The men who were in the same age range in the second period experienced an increase of only $401 (row 1, column 5). Thus, even after correction for life-cycle changes, this group experienced a decline in the rate of growth relative to earlier cohorts. This pattern holds for all age and sex groups shown in Table 3. Therefore, on average, people were experiencing slower growth rates than their counterparts had experienced in the preceding seven-year period.

3. Real Income Decline. While a majority of families may have been disappointed in the deceleration in their earnings growth, this fact does not mean that a majority experienced a decline in real incomes. It would be hard to argue that an economy is in serious economic trouble if it offers lower but still positive real income growth. A modest national

goal is positive growth in real incomes so that all families can at least experience a rise in their standard of living.

By this criterion we see that the economy did not perform well in the post-1973 period. Row 5 of Table 2 shows that 42% of the sample experienced negative growth rates between 1973 and 1979, implying a reduction in the level of their real family incomes. This is not only large in absolute terms but also considerably higher than in the previous period. Between 1967 and 1973 only 25% of all families experienced a decline in real incomes (row 6). The proportion with negative growth therefore increased by over 68%.

During the earlier period, the percentage of families with negative growth rates was fairly evenly distributed across families classified according to the sex or race of the head. Households with and without an adult male present had nearly equal percentages (about 25%) of negative growth rates between 1967 and 1973. The corresponding figures for whites and nonwhites were 24% and 26%. However, in the 1973-79 period the distribution of negative growth rates changed. The proportion of negative growth rates for the households without an adult male was 54% and for nonwhites the proportion was 46%. The corresponding figures for households with an adult male (39%) and those headed by whites (40%) were considerably lower. Therefore, the percentage having negative growth roughly doubled for female- and minority-headed households. The evidence is strong that the burden of the slowdown in economic growth and policies initiated to fight inflation (i.e., the 1974-75 recession) fell disproportionately on households headed by these already disadvantaged groups.

Table 4 shows the proportion of households experiencing decreases in real income in the post-embargo period, cross-classified by their average pre-embargo incomes[2] and their demographic characteristics. The three income categories are the poor (income less than the earnings of a full-year worker receiving 150% of the minimum wage), the near poor (less than 250% of the minimum wage), and the nonpoor. Surprisingly, we find that after holding two demographic characteristics constant (sex and race of household head), it was not the low-income groups which had the largest percentage experiencing a decline in real incomes. While this is partly a statistical artifact (because real incomes seldom go below zero, which means that the incomes of the poor have a shorter distance to fall in comparison with those of the nonpoor), it is still striking that the proportion experiencing negative growth did not vary with pre-embargo incomes. Only female-headed households show a significant pattern across income classes--nonpoor, female-headed households were more likely to experience negative growth rates than their low-income counterparts. In fact, those female-headed households which had average incomes above $7280 in the pre-embargo period had by far the highest probability of experiencing a decline in incomes in the post-embargo period. They were the least firmly entrenched in their higher income status.

Impact of Increased Earnings of Wives

We have shown in Table 2 that over 42% of all households experienced declines in real income in the post-embargo period. Of the remaining 58% of households which experienced growth in real incomes over the

Table 4

Percentages of Households with Negative 1973-79 Growth Rates by Average Pre-Embargo Income and by Sex and Race of Household Head

Average Income 1967-73 (1967$)	Number of Observations	Overall Percentage	Adult Male Present		Race of Head	
			Yes	No	White	Non-White
Less than $4368	340	41.8%	35.3%	45.9%	32.5%	44.6%
$4368-$7280	393	42.5	35.9	62.2	37.4	47.1
Greater than $7280	1,102	42.1	40.8	68.6	41.1	46.2
Overall	1,835	42.1	39.4	53.7	39.9	45.9

second period, how many were relying on increased income from wives to maintain this positive growth?

Table 5 documents the increased contribution of wives to total family income. Row 1 shows that only 13.5% of nonaged households in the sample had no earnings from wives over the full 1967-79 period. Rows 2 and 3 show that, among households with wives who had some earnings over the period, the proportion of family income contributed by the wife rose from 13.7% in the pre-embargo period to 15.5% in the later period. This is consistent with other data showing an increase in the earnings of married women.

To see whether the increased earnings of wives was the primary cause of increased household income, in Table 6 we examine the income of households with working wives, including and excluding their earnings. Column 1 focuses on the 792 households which had positive growth during the post-embargo period. Was their increase in real income only a result of the increased labor market activity of the wife?

The answer to this question seems to be no. Even after excluding the wife's earnings, household income still increased by $548 per year. Including families with negative growth in the latter period (column 2) does not reverse the conclusion that, on average, families that were better off with the wife's earnings were still better off even without her earnings.

The bottom of Table 6 shows that the proportion of households with accelerating income growth is not greatly diminished if one excludes the wives' earnings. While some families were only able to accelerate their

Table 5

Contributions of Labor Market Earnings of Wives in
Nonaged Households with Adult Male Present, 1967-79

	Total	White	Non-White
(1) Percent with zero earnings of wife (1967-79)	13.5	12.9	14.9
Wife's earnings as a percent of total family income:[a]			
(2) 1967-73	13.7	12.9	15.7
(3) 1973-79	15.5	14.7	17.5

[a]Subsample of 1280 households in which the wife had some earnings over the period 1967-79.

growth by having the wife increase her earnings, 39.9% of all households (and 56.1% of households with positive growth) still had accelerating growth even after excluding the wife's earnings.

IMPLICATIONS

We have shown that for a substantial minority (42%) of families in our panel data sample, the post-1973 period was one of decline in real incomes. For these families dissatisfaction with the performance of the economy could justifiably reflect more than what Thurow termed "money illusion." A feeling of being cheated by inflation may have heightened their dissatisfaction with prevailing economic policies, but there was an even greater reason for their dissatisfaction. Many, although by no means all, of the people were experiencing declines in their real standard of living.

It must be borne in mind that we have a distributional problem as well as a macroeconomic problem. Not everyone experienced a decline in real income in the post-1973 period; almost 60% experienced at least some real income growth. It was the remaining 40% of the households, disproportionately headed by women and minorities, which bore the brunt of slow economic growth. For this group the seven-year period after the oil embargo was indeed a time of belt tightening, not of money illusion.

Table 6

Income Increases in Nonaged Households with and without Wives' Earnings, before and after 1973

	Households with Positive Growth in Total Income, 1973-79	All Households
Mean Growth (1967$)		
Total household income		
1967-73	$419	$505
1973-79	737	228
Total income excluding wives' earnings		
1967-73	355	422
1973-79	548	138
Percentage with Accelerating Growth		
Total income	60.1%	41.3%
Total excluding wives' earnings	56.1	39.9
Number of observations	792	1,280

[a]Households with a nonaged male present and in which the wife received some labor market earnings over the period 1967-79.

NOTES

[1]This terminology which is consistent with the new Census definitions corresponds to the old sex of head divisions.

[2]The income categories are calculated using the 1967 minimum wage (\$1.40), and assuming full-year employment. The cutoff for the first income class is 150% of the earnings of a full-year worker earning the minimum wage (\$1.40 x 2080 x 1.5 = \$4368). The other cutoff is 250% of the full-time minimum wage (\$1.40 x 2080 x 2.5 = \$7280).

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